"Minorized" Augmented Sixths: Introducing a New Family of Augmented-Sixth Chords

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ABSTRACT

Harmonic theories typically recognize three types of augmented-sixth chords. Referred to as the Italian, French, and German sixths, all three chords have a major third above the lower note of the augmented-sixth interval. In late-tonal styles, however, composers frequently used various types of augmented-sixth chords that instead feature a minor third or augmented second above the lower note; I call these chords "minorized augmented sixths." I have gathered numerous examples of such chords, which appear in a wide range of contexts (e.g., prolongational progressions, sequences, cadences, enharmonic pivots, and chromatic wedge progressions). Unlike other hallmarks of late-tonal harmonic practice, minorized augmented sixths have not yet been the object of substantial or systematic theorizing. To date, only one type has received significant theoretical attention, namely, the one that is enharmonically equivalent to a half-diminished seventh chord (e.g., Harrison 1995, Martin 2008). Other types, such as the one equivalent to a minor-seventh chord, are frequently encountered in late-tonal repertoires, but examples of such chords are rarely mentioned in the theoretical literature.

My dissertation fills this gap by providing a systematic account of the most common types of minorized augmented sixths and their various behaviors. I show that the minor third or augmented second characteristic of minorized augmented sixths are often what make these chords functionally distinct from the regular Italian, French, and German sixths. I analyze the function of these minorized augmented sixths using Harrison's (1994, 1995) approach for late-tonal music as well as Swinden's (2005) extension of Harrison's theory. I also discuss the use of minorized augmented sixths in enharmonic modulations, where standard half-diminished and minor-seventh chords acquire a dual function, and may be reinterpreted enharmonically as minorized augmented sixths, thus allowing composers to expand the set of enharmonic pivots beyond those traditionally used for this purpose. Minorized augmented sixths also arise in inverted omnibus progressions, which feature half-diminished seventh chords behaving like augmented sixths. While the inverted omnibus has so far been discussed only as a theoretical possibility (Ziehn 1912, Telesco 2001, Rockwell 2009), I analyze in my dissertation four examples of this progression that I have found in works by Grieg, Taneyev, Medtner, and Magnard. Lastly, I review historical treatises from the nineteenth as well as the twentieth century that have included some of these chords. Starting with François-Joseph Fétis's *Traité complet*

(1844), I examine how some of these chords emerged as valid harmonic entities in various theories, and explore the reasons why certain chords may have been more discussed than others.

RÉSUMÉ

Les théories harmoniques reconnaissent généralement trois types de sixte augmentée. Ces accords — communément appelés sixte italienne, française et allemande — incluent tous une tierce majeure au-dessus de la note inférieure de l'intervalle de sixte augmentée. Toutefois, dans le langage tonal élargi, les compositeurs ont fréquemment utilisé des accords de sixte augmentée qui comportent une tierce mineure ou une seconde augmentée au-dessus de la note inférieure ; j'appelle ces sonorités « accords de sixte augmentée minorisés ». J'ai recensé de nombreux exemples de ces accords qui apparaissent dans une grande variété de contextes harmoniques (par exemple, dans les prolongations, les marches harmoniques, les cadences, les pivots enharmoniques et les progressions où les voix extrêmes évoluent par mouvement contraire). Contrairement à d'autres aspects des pratiques tonales élargies, les accords de sixte augmentée minorisés n'ont pas encore fait l'objet d'une théorisation substantielle ou systématique. Jusqu'à maintenant, un seul d'entre eux a reçu une attention théorique significative : l'équivalent enharmonique de l'accord de septième mineure et quinte diminuée (Harrison 1995 ; Martin 2008). Les autres types, comme par exemple l'équivalent de l'accord de septième mineure, surviennent fréquemment dans le répertoire de la fin de la période romantique, mais sont rarement mentionnés dans la littérature théorique.

Ma thèse comble cette lacune en fournissant un compte-rendu systématique des types les plus courants de sixte augmentée minorisées ainsi que de leurs contextes. Je montre que la tierce mineure ou la seconde augmentée caractéristiques des sixtes augmentées minorisées les distinguent fonctionnellement des sixtes italienne, française et allemande. J'analyse la fonction de ces sixtes augmentées minorisées en utilisant l'approche de Harrison (1994, 1995) pour la musique tonale élargie ainsi que l'extension de la théorie de Harrison par Swinden (2005). J'aborde également l'utilisation des sixtes augmentées minorisées dans les modulations enharmoniques, où les accords de septième mineure et quinte diminuée ainsi que les accords de septième mineure constitutifs d'une tonalité acquièrent une double fonction, et peuvent être réinterprétés enharmoniquement comme des sixtes augmentées minorisées, permettant ainsi aux compositeurs d'élargir les possibilités de pivots enharmoniques au-delà de ceux traditionnellement utilisés à cette fin. Les sixtes augmentées minorisées apparaissent également dans les progressions « omnibus » inversées, qui comportent des accords de septième mineure et quinte diminuée se comportant comme des sixtes augmentées. Bien que l'omnibus

inversé n'ait été abordé jusqu'à présent que comme une possibilité théorique (Ziehn 1912 ; Telesco 2001 ; Rockwell 2009), j'analyse quatre exemples de cette progression dans des œuvres de Grieg, Taneyev, Medtner et Magnard. Enfin, j'étudie des traités d'harmonie des XIX^{e} et XX^{e} siècles qui ont inclus des sixtes augmentées minorisées. En commençant par le *Traité complet* de François-Joseph Fétis (1844), j'examine pourquoi certains de ces accords ont été considérés comme des entités harmoniques légitimes dans diverses théories, et j'explore les raisons pour lesquelles certains ont pu être plus étudiés que d'autres.

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I must thank Émile Gingras who typeset most of the examples that appear in this dissertation. Not only did he do excellent work, but he was incredibly efficient. I am also thankful to my friends Daria Michirin, Malcolm Sailor, Tobias Tschiedl, and Mael Oudin, who provided additional help with the examples.

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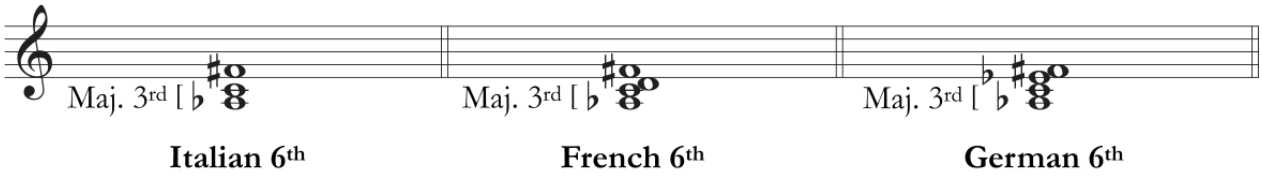
INTRODUCTION

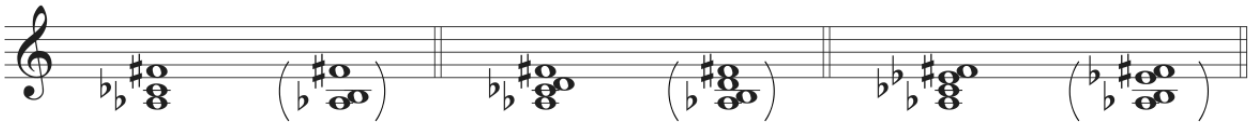
Conventional harmonic theories typically recognize three types of augmented-sixth chords. Referred to as the Italian, French, and German sixths,[1] all three chords have a major third above the lower note of the augmented-sixth interval (**Figure 1a**). In late-tonal styles, however, composers frequently used various types of augmented-sixth chords that instead feature a minor third or augmented second above the lower note of the augmented sixth (**Figure 1b**).

Figure 1: Conventional vs. "minorized" augmented sixths.

a) Conventional augmented sixths.



b) "Minorized" augmented sixths.

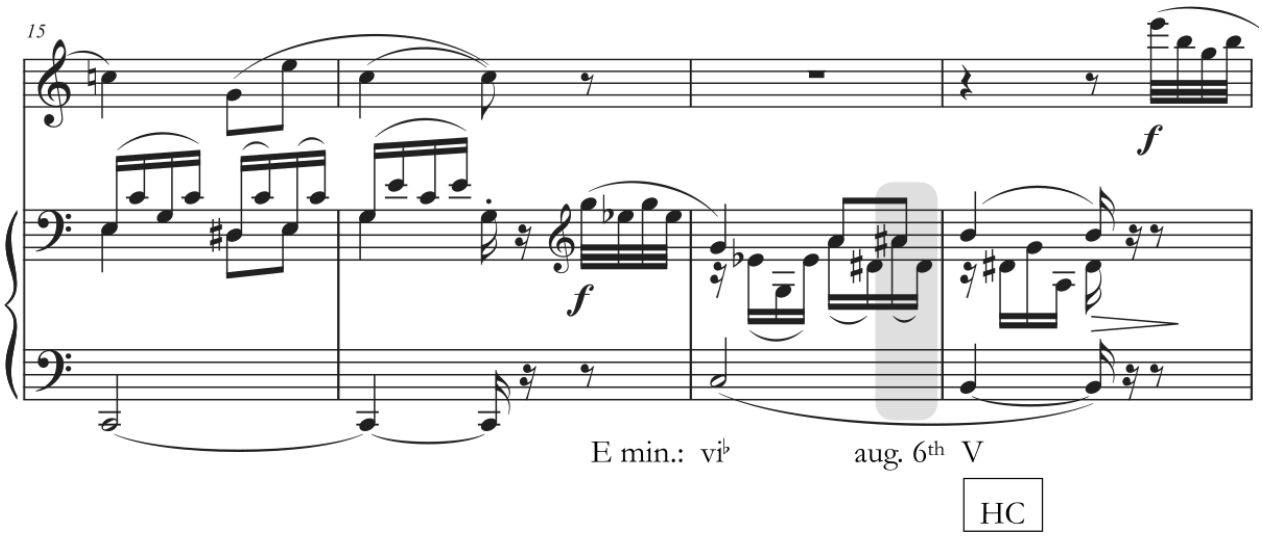


Examples 1–3 illustrate different types of minorized augmented sixths. In mm. 17–18 of the first movement of Poulenc's Flute Sonata (**Example 1**), the half cadence in E minor is approached by the augmented sixth C–D♯–A♯, which appears to function in this context as a variant of the Italian sixth (C–E–A♯). **Example 2**, from Nikolai Medtner's *Romantic Sketches for the Young* op. 54, features a cadential six-four in m. 97 which is preceded by the chord B♭–C♯–E–G♯. This chord shares similarities with the French augmented sixth on ♭$\hat{6}$ in that key (B♭–D–E–G♯), but instead of the major third B♭–D, it includes the augmented second B♭–C♯. **Example 3**, from the opening of the Swedish composer Hugo Alfvén's song "Gammalt kväde från Helsingland" op. 4 No. 10, features unusual treatments of

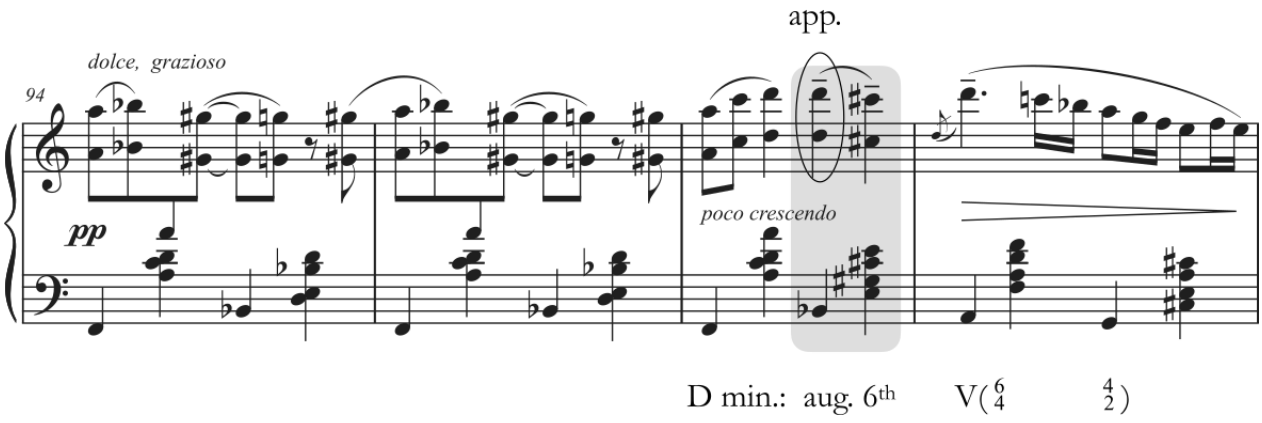
[1] John Wall Callcott's *A Musical Grammar* (1806, 238–40) is the earliest-known treatise in this tradition to feature all three nicknames. David Damschroder (2008, 166), however, notes that the "Italian sixth" label appeared in John Holden's treatise from 1770 and observes that "[t]hough the versions of the chord that Holden presents correspond to what we now regard as the 'French' and 'German' varieties of the chord, his comment confirms that a special nomenclature for augmented sixth chords was in use among the British by 1770" (*ibid.*).

augmented-sixth chords. The song starts in A minor; in mm. 2–3, the German augmented sixth F–A–C–D♯ suggests a resolution to a dominant chord (E or E7), but it instead resolves to III (C Major). This mediant chord is then prolonged in m. 4 by the augmented sixth F–A♭–C–D♯, which is enharmonically equivalent to the minor-seventh chord F–A♭–C–E♭.

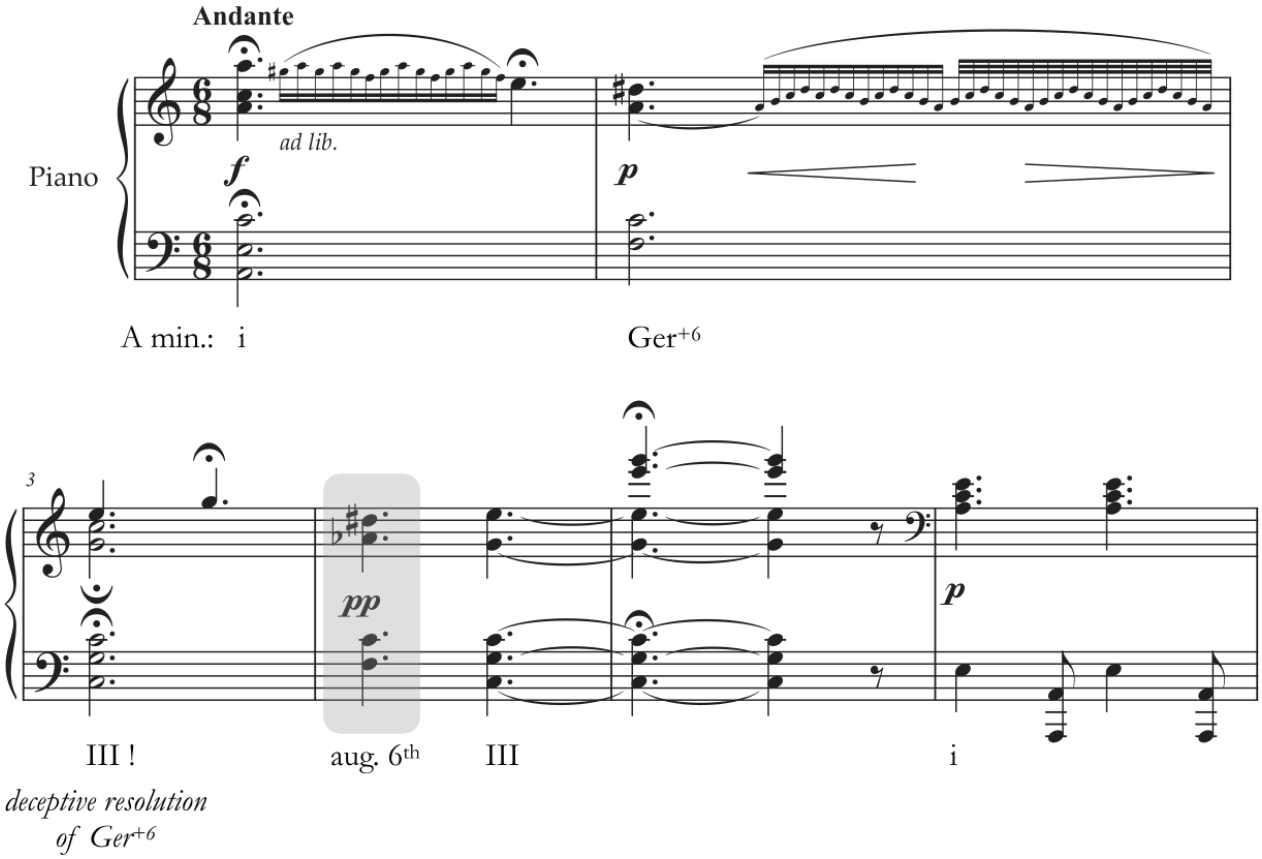
Example 1: Francis Poulenc, Flute Sonata, i, mm. 15–18.



Example 2: Nikolai Medtner, *Romantic Sketches for the Young* op. 54, "The Organ Grinder," mm. 94–97.



Example 3: Hugo Alfvén, 10 Sånger op. 4, No. 10 "Gammalt kväde från Helsingland" ("Old songs from Helsingland"), mm. 1–6.



When I started researching the topic of unusual augmented sixths in late-Romantic music, I surmised that minorized augmented-sixth chords were uncommon in that repertoire. I did not expect that having a label for these chords would in fact help me find numerous examples, in works by various composers and in a broad range of harmonic contexts. I have gathered numerous examples of such minorized augmented-sixth chords, which appear in a wide range of contexts: prolongational progressions, sequences, cadences, enharmonic pivots, and chromatic wedge progressions.

Since I first encountered these chords in works by Swedish composers such as Hugo Alfvén (1872–1960), Ture Rangström (1884–1947), and Kurt Atterberg (1887–1974), I referred to this new family as "Swedish sixths" in earlier versions of this work,[2] in the tradition of national appellations for

[2] For instance, when I presented this research in 2018 at the annual meeting of the Society for Music Theory and at the New England Conference of Music Theorists, I titled my paper "The 'Swedish Sixth' Chord: Introducing a New Family of Augmented Sixths."

augmented sixths. However, this was no more intended as a literal descriptor of national style than the traditional "Italian," "French," and "German" labels, since these augmented sixths are also found in works by non-Swedish composers, including Wagner, Strauss, and Rachmaninoff. For this reason, I changed the label to "minorized augmented sixths," to emphasize the difference between those chords and the traditional augmented sixths with a major third above the lower note of the augmented-sixth interval.

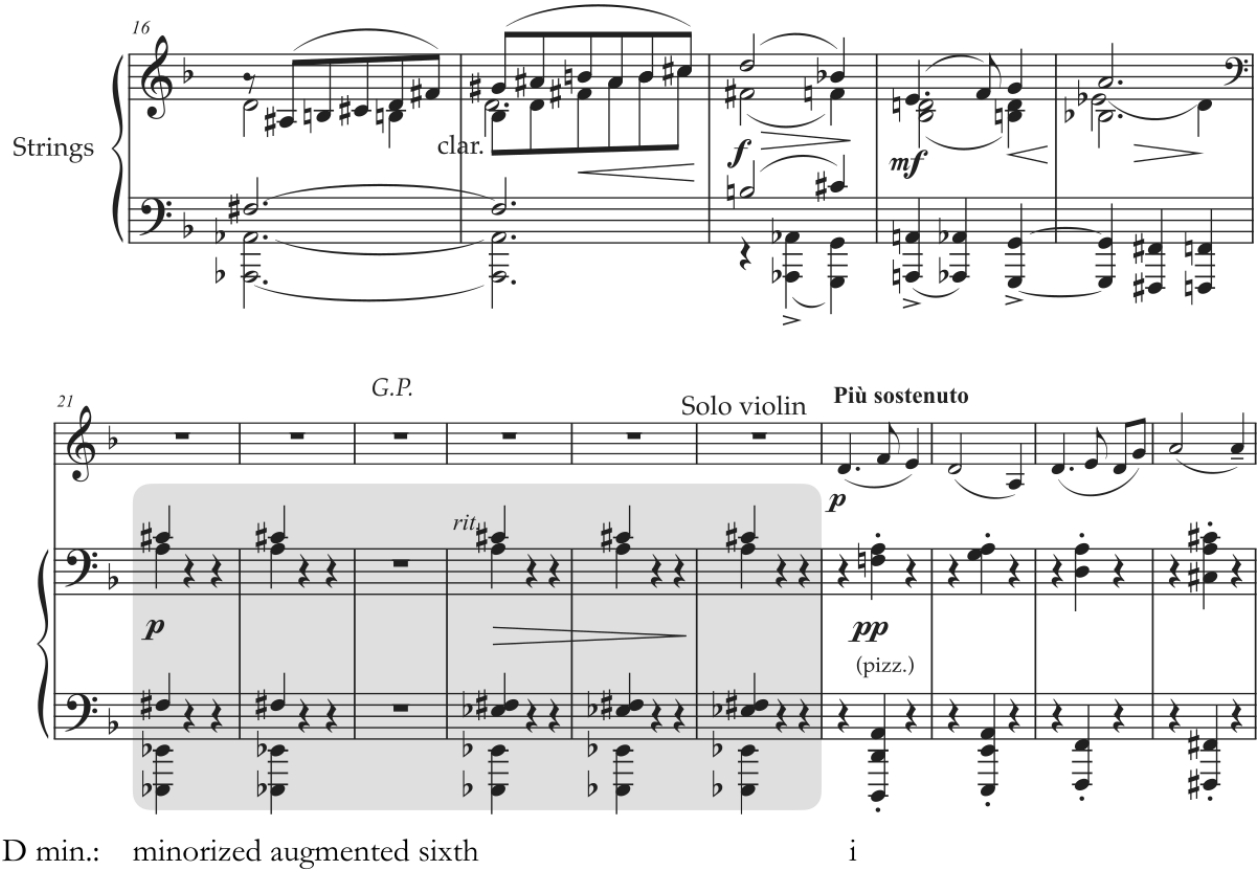
Unlike other hallmarks of late-tonal harmonic practice (e.g., chromatic mediant relationships between consonant triads and symmetrical divisions of the octave), minorized augmented sixths have not been the object of substantial or systematic theorizing. Some instances of these chords have nevertheless been discussed in the literature. Scott Murphy, in his recent paper in the *Analytical Approaches to 20th-Century Russian Music* (2021), explores how Russian composer Nikolai Myaskovsky used unfamiliar tonic prolongational progressions, which he calls "antitonic events." He suggests that Myaskovsky is most likely one of the earliest composers to rely consistently on a wide variety of antitonic chords, some of them being quite innovative compared to the ones found in the music of previous generations of tonal composers.[3] Many of the examples he cites as novel antitonic progressions correspond to my concept of "minorized augmented sixths."[4] His approach to these chords has the advantage that it provides a systematic nomenclature for labelling antitonic chords—Murphy labels the distance between the roots of the tonic and antitonic chords, and identifies the chord types involved—but it is limited to instances where these chords prolong tonic-functioning harmony. While some of my examples fall under this category, I have found several instances of minorized augmented sixths in other harmonic contexts, where they function as dominants, subdominants, predominants, or a combination of those functions, but also in enharmonic modulations and chromatic wedge progressions. In fact, several instances of minorized augmented sixths play a structural role in the piece in which they appear and thus cannot be explained as embellishing harmonies. These chords sometimes occur at the junction between two large sections, where they are used to prepare the return of the tonic chord, a role that is usually fulfilled by a dominant

[3] Murphy hypothesizes that "that Myaskovsky has achieved a greater harmonic variety of antitonic novelty in his oeuvre than many other composers, including many chromatic tonal composers generally more well known than he" (2021, 37).

[4] See his Examples 2.1, 2.3a and b, 2.6, and 2.12.

chord in common-practice works. For instance, in the first movement of Myaskovsky's Violin Concerto (**Example 4**), the orchestral introduction ends with a minorized augmented sixth (E♭–F♯–A–C♯) that spans six measures (mm. 21–26). The chord resolves to tonic harmony in m. 27 when the solo violin enters. The augmented sixth in mm. 21–26 cannot be explained as an antitonic harmony because it is not preceded by a tonic chord. In sum, the concept of antitonicity can be useful for describing the role played by some minorized augmented sixths, but it cannot be used to characterize all the contexts where these chords occur in late-tonal music.

Example 4: Nikolai Myaskovsky, Violin Concerto op. 44, i, mm. 16–30.



Regarding the various types of minorized augmented sixths, only one of them has received significant theoretical attention: the one that is enharmonically equivalent to a half-diminished chord, largely because of its famous use in Wagner's *Tristan und Isolde* and in Strauss's *Till Eulenspiegels lustige Streiche*. Daniel Harrison refers to this chord as the "dual German-sixth chord" (1995, 182–184) since

the chord inverts the intervals of the German augmented sixth (see his Example 10), resulting in a sonority enharmonically equivalent to a half-diminished seventh.[5]

Other types of minorized augmented sixths, such as the one equivalent to a minor-seventh chord (see **Figure 1b**, m. 3, p. 1), are also encountered relatively frequently in late-Romantic music, but examples of such chords are rarely mentioned in the theoretical literature. The absence of this chord in harmony textbooks can, however, easily be explained: it is rarely used in common-practice repertoires that are traditionally analyzed in undergraduate curricula. Indeed, the earliest examples I have found, in works by Franz Liszt and Charles Gounod (**Examples 5** and **6**), were composed in the 1850s.[6] The minor-seventh augmented sixth nevertheless became common in late-Romantic music, as the subsequent chapters of this dissertation will demonstrate. One source that features it prominently is Konrad Harley's (2014) dissertation on harmony in Prokofiev's music;[7] Harley illustrates the possible resolutions of this augmented-sixth chord to consonant major and minor triads and analyzes the functional complexities of these progressions using Harrison's (1994) theory of harmonic function in chromatic music. Because of the topic of his dissertation, Harley's examples of the "minor-seventh" augmented sixth are all drawn from Prokofiev's music, but instances in the works of other composers, whose language is closer to the tonal idiom (e.g., Rachmaninoff, Myaskovsky), are encountered frequently. Moreover, the focus on one specific type of minorized augmented sixth in Harley does not acknowledge how this augmented-sixth chord relates to other chord types that are similar to it, such as the "half-diminished" augmented sixth.

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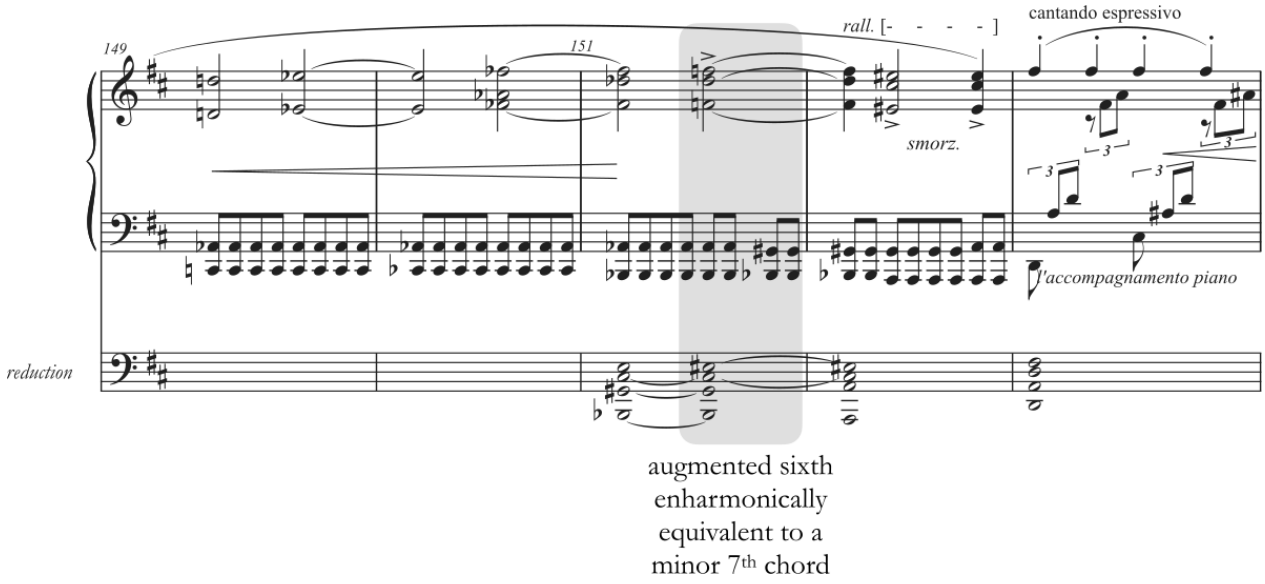
[5] Nathan Martin (2008) provides additional examples of this chord in nineteenth-century music. See also Richard Bass (2001 and 2007) and Jill Brasky (2010) for various uses of half-diminished seventh chords, some of them corresponding to augmented-sixth resolutions.

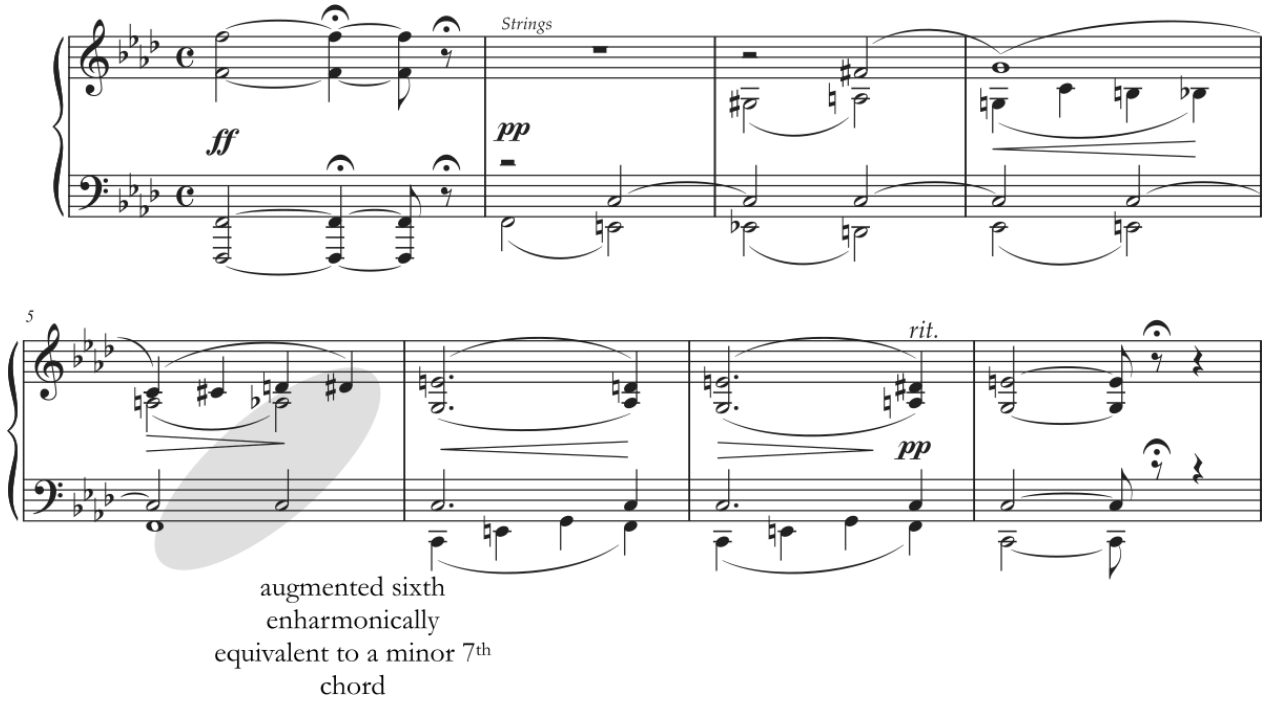
[6] The example from Gounod's *Faust* appears in Robert W. Ottman's textbook (1972, 219).

[7] This chord type is also mentioned in passing in Mark Ellis's demonstration of the evolution of augmented-sixth chords over the tonal period (2010, 37, Table 2.1r), where he cites the last measures of Richard Strauss's "Frühling" from the *Vier letzte Lieder* as an example of a new type of augmented-sixth chord (those measures feature the augmented sixth F–G♯–B♯–D♯ in an A-major context. Ellis notes that the chord is closely related to the German augmented sixth: "[t]his augmented sixth takes an augmented second (G♯) in place of a third, but is otherwise a German sixth" (*ibid.*, 45). I discuss this example in Chapter 2 (see **Example 27**, p. 61).

Example 5: Franz Liszt, Piano Sonata (1853), mm. 149–153.



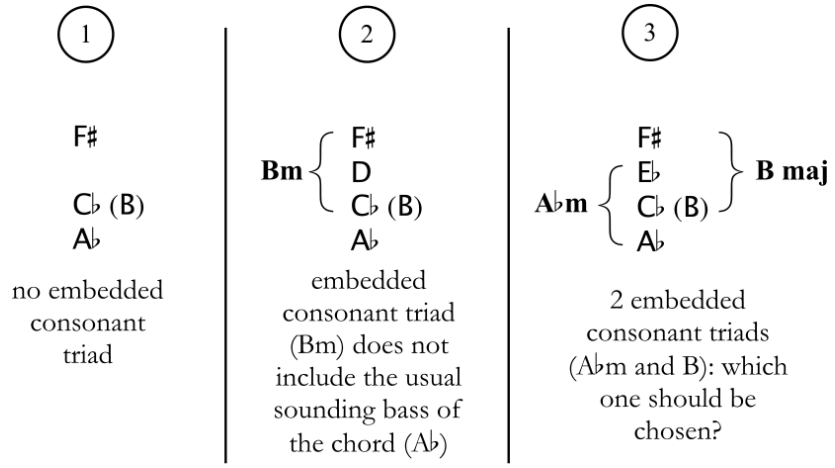
Example 6: Charles Gounod, *Faust* (1859), Introduction to Act I, mm. 1–8.



A few examples of minorized augmented sixths are featured in scholarly works that employ neo-Riemannian approaches (e.g., Hunt 2007, 178, Example 1b; Cohn 2012, 144, Figure 7.3d and e), but the strict application of these theories does not always reflect the rich harmonic vocabulary used in late-tonal works. Such approaches have traditionally focused on transformations between consonant

triads as their primary harmonic object (e.g., Cohn 1996 and 1998);[8] they typically extract the consonant triads embedded in the dissonant chords and are thus not ideally suited for showing how augmented-sixth resolutions play a role in harmonic progressions found in these repertoires. Moreover, it is problematic in practice to reduce the various types of minorized augmented sixths to a consonant subset. The first type illustrated in **Figure 2** (A♭–C♭[B]–F♯) does not have an embedded consonant triad, while the second one (A♭–C♭[B]–D–F♯) does contain a triad (B–D–F♯), but the usual sounding bass of the chord (A♭) is, counterintuitively, not part of that triad.[9] Lastly, the third chord in **Figure 2** (A♭–C♭[B]–E♭–F♯) contains two consonant triads (A♭–C♭–E♭ and B–D♯–F♯); it is unclear which one of these triads should be chosen when applying neo-Riemannian transformations.

Figure 2: Problems with reducing minorized augmented sixths to consonant triads.



Graham Hunt, in his (2007) article on motives in Wagner's *Ring*, features instances of "half-diminished" augmented sixths, analyzed through a transformational lens. Hunt proposes the new transformational label "Leittonwechsel split" (abbreviated as S^*_L) for progressions that either map a major triad onto a half-diminished seventh chord whose root is a half-step higher (e.g., C Major–C♯ø7) or map a minor triad onto a dominant seventh whose root is a major third lower (e.g., C minor–A♭7).

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[8] While other transformational approaches have been developed to map relationships between seventh chords (e.g., Childs 1998; Bass 2001), consonant triads remain the focus of neo-Riemannian theories.

[9] Richard Cohn (2012, 143) argues that it can be productive to reduce a half-diminished seventh chord to its embedded minor triad; he views the remaining note as an "under-seventh," a subposed dissonance a seventh below the fifth of the minor triad. This perspective, Cohn recognizes, is not entirely new; he traces similar views in Jean-Philippe Rameau's writings and in the dualist theories of Arthur von Oettingen and Hugo Riemann. Cohn shows in his analysis of Wagner's *Parsifal* that this method of reducing half-diminished seventh chords to their consonant subset can reveal insightful voice-leading connections between passages (*ibid.*, 144–147).

In those progressions, the minor third is held, while the remaining pitch class "splits" into the two semitones that are adjacent to it. In the C Major–C♯ø7 progression, this means that the minor third E–G is held while the root C splits into C♯ and B. When the initial chord is the half-diminished seventh sonority, the transformation makes the pair of pitch classes that are a whole step apart "fuses" into the same pitch class, by proceeding by contrary semitonal motion.[10] The latter progression corresponds to one of the types of minorized augmented sixths described above in **Figure 1b** (see m. 2, p. 1).[11] But this transformation describes only one type of minorized augmented sixth (the one enharmonically equivalent to a half-diminished seventh) and only one of the possible resolutions (to the root of a major triad). The other resolutions (e.g., to the third or fifth of a major triad, or to the root, third, or fifth of a minor triad) are not easily captured by this new transformational label, since they would require at least two transformations. Moreover, the perspective adopted in this dissertation does not focus strictly on the voice leading of minorized augmented sixths, but on their harmonic function. For this reason, I do not rely heavily on transformational theories; rather, I have found the analytical approaches developed by Daniel Harrison (1994, 1995) and Kevin Swinden (2005) more useful as a starting point.

My dissertation fills the current gaps in the literature by providing a systematic account of the most common types of minorized augmented sixths in late-tonal repertoires—including but not limited to the one equivalent to a half-diminished augmented sixth—as well as rarer types of minorized augmented sixths. I show how these sonorities, which are associated with various bass lines, intervene as functional chords in a broad range of harmonic contexts. I also uncover how these minorized augmented sixths offer late-Romantic composers new harmonic possibilities that stretch the limits of tonal syntax, without doing away with them completely.

The goals of this dissertation are threefold. First, I demonstrate that augmented-sixth chords featuring a minor third or augmented second above the lower note of the augmented sixth are far more common in late-tonal repertoires than music theorists have generally recognized. Second, I argue that such chords may be productively categorized into a single family, the minorized augmented-sixth

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[10] The concepts of "split" and "fuse" are borrowed from Clifton Callender's (1998) paper on Scriabin.

[11] The "Leittonwechsel split" applied to a dominant seventh sonority (e.g., A♭7–C minor) corresponds to a common-tone German sixth.

chords, complementary to the better-known family of augmented-sixth chords with major thirds above the lower note of the augmented-sixth interval. Third, I show that, like conventional augmented sixths, minorized sixths can appear either as functional harmonies or as embellishing harmonies. While it is tempting to explain these chords as contrapuntal and non-functional because they do not fit into any conventional chord categories, I argue that recognizing minorized augmented sixths will help to elucidate how these chords enjoy full participation in the harmonic syntax of late-tonal practice.

This dissertation is in five chapters. The first one provides definitions of concepts that are crucial for the study of augmented sixths and explains the analytical notation that is used throughout my dissertation. In the second chapter, I describe the main types of minorized sixths and their different resolutions and voice leadings. Chapter 3 discusses the harmonic function of minorized augmented sixths in tonally stable contexts. I start by exploring how the use of a minorized augmented sixth instead of a regular augmented sixth in the typical resolution to a dominant affects the function of the augmented sixth. I then analyze other instances of these chords on various scale degrees, where they function either as primarily dominant, predominant, or subdominant-functioning harmonies, or as combinations of these functions. I analyze the function of these minorized augmented sixths using Harrison's (1994, 1995) approach for late-tonal music as well as Swinden's (2005) extension of Harrison's theory, where a chord's function results from its scale-degree components and from the behavior of these scale degrees in their motion to the next chord. The fourth chapter focuses on the use of minorized augmented sixths in tonally unstable contexts. I show the potential for minorized augmented sixths to be enharmonically reinterpreted for modulations, a possibility that allowed composers to expand the set of chords beyond those that were traditionally used for this purpose, and I illustrate how composers have used minorized augmented sixths in chromatic wedge progressions. The final chapter reviews historical treatises from the nineteenth as well as the twentieth century that have included some of these chords. While composers have used a wide range of minorized augmented sixths types in various contexts (as will be illustrated in Chapters 3 and 4), most theoretical writings where they appear feature only a few possibilities. Starting with François-Joseph Fétis's *Traité complet* (1844), which is the first theoretical work I am aware of that includes progressions with minorized augmented sixths, I examine how some of these chords emerged as valid harmonic entities in various theories, and explore the reasons why certain chords may have been more discussed than others.

CHAPTER 1 – PRELIMINARIES

This chapter lays out key concepts pertaining to augmented-sixth chords that appear throughout this dissertation. I start with the terminology used to refer to the chord factors of augmented-sixth chords. I then move on to the analytical notation I developed in this study in order to reflect the behavior of augmented sixths, especially those that exhibit non-traditional behaviors. I conclude by reviewing definitions of augmented-sixth chords found in harmony textbooks and recent publications on the topic, and propose a revised definition that accounts for borderline cases encountered in late-tonal repertoires.

Chord factors of augmented sixths

Few scholarly writings on augmented sixths feature a systematic nomenclature to refer to the different chord factors that make up these chords; instead, music theorists typically use scale degrees—e.g., ♭$\hat{6}$, $\hat{1}$, ♯$\hat{4}$—to refer to specific members of augmented-sixth chords. This is not surprising, given the lack of consensus on what the "real" root of these chords is, even when they appear straightforwardly as dominant preparations with ♭$\hat{6}$ in the bass.[12] However, in late-Romantic music, where augmented sixths occur in a wide variety of tonal contexts, it is crucial to rely on a systematic nomenclature to describe the individual members of these chords. The terminology used in this dissertation is inspired by the one put forward by Dmitri Tymoczko in *A Geometry of Music* (2011), where he calls the pair of notes that form the augmented-sixth interval the "converging notes" which resolve to a "target note" in the following harmony.[13]

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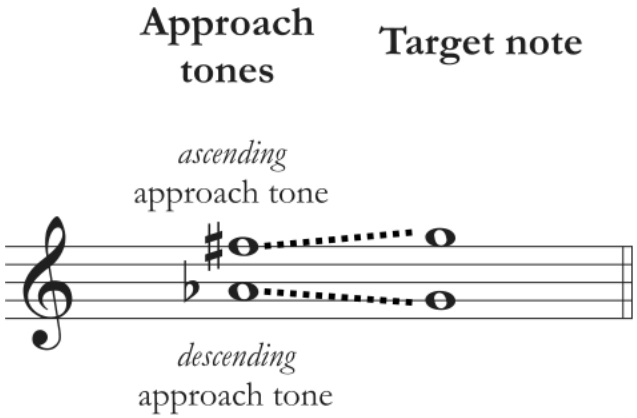
[12] Conventional augmented-sixth chords have been variously analyzed as either chromaticized subdominant harmonies, altered applied dominants of V, or a combination of both. See Harrison (1995, 172–73 fn 4) for a survey of the literature on this question.

[13] Tymoczko employs "converging notes" and "target note" not only for augmented-sixth chords resolving to triads, but also for all progressions involving a seventh chord going to a triad using efficient voice leading. He views augmented-sixth chords as belonging to a "special subset of these voice leadings" (2011, 275). In his book, Tymoczko also identifies the chord factors of augmented sixths as the root, third, fifth, and seventh, noting that the root and seventh are, in general, the pitches that are involved in the augmented-sixth interval (*ibid.*, 273–75). (One exception is the V7 chord with a raised fifth, which features the augmented sixth/diminished third between the fifth and seventh.) In his approach, those terms are shorthands for "sounding root" and "sounding minor seventh"; they do not imply that these chord factors behave as their name suggests. To avoid any confusion, however, I prefer to refer to the different chord factors as I explain in this chapter.

The appellation "converging notes" is visually consistent with Tymoczko's abstract representation of the parsimonious voice leading from a four-note chord to a triad (see his Figure 8.2.2, *ibid.*, 273) but it can be misleading when applied to actual instances of augmented-sixth resolutions: it suggests that the pair of notes *contract* to the target note (thus the augmented-sixth interval is inverted to a diminished third/tenth resolving to a unison/octave), while in practice, it is more common that these voices *expand* to the target note (e.g., the augmented sixth goes to an octave). I therefore choose instead to refer to the notes of the augmented-sixth or diminished-third interval as the "approach tones" (**Figure 3**), which, contrary to "converging notes," does not suggest a specific voicing. Additionally, I use "descending approach tone" and "ascending approach tone" to talk about the two members of the augmented-sixth interval. The descending approach tone is, as its name suggests, the note that resolves by a descending half step to the target note of the following chord when parsimonious voice leading is used (i.e., A♭ in **Figure 3**), while the ascending approach tone is the one that resolves by an ascending half step (i.e., F♯ in **Figure 3**).[14] These voices can move either literally or abstractly to the target note (these abstract resolutions will be further explained below).

Figure 3: Approach tones and target note.



The "descending approach tone" label is meant here to refer to the voice that typically resolves by descending half step in an augmented-sixth resolution; I do not consider it to stand for the "root"

[14] Mark Ellis (2010, xv) calls the lower note of the augmented-sixth interval the "flat note" and opposes it to the "sharp note," the upper note of the augmented sixth. While this nomenclature is appropriate in a few keys because it reflects the accidentals that would appear in the score in standard predominant augmented-sixth chords (e.g., in C, D, and G), in other keys, referring to the "flat" or "sharp" note is potentially confusing. Moreover, if the augmented sixth occurs between scale degrees other than ♭$\hat{6}$ and ♯$\hat{4}$ (e.g., $\hat{4}$ and ♯$\hat{2}$), the terms "flat" or "sharp" do not always coincide with how these scale degrees are understood in a given key (e.g., in the pair $\hat{4}$–♯$\hat{2}$, $\hat{4}$ is not chromatically lowered). For these reasons, I choose instead to use descending and ascending approach tones to refer to the members of the augmented-sixth interval.

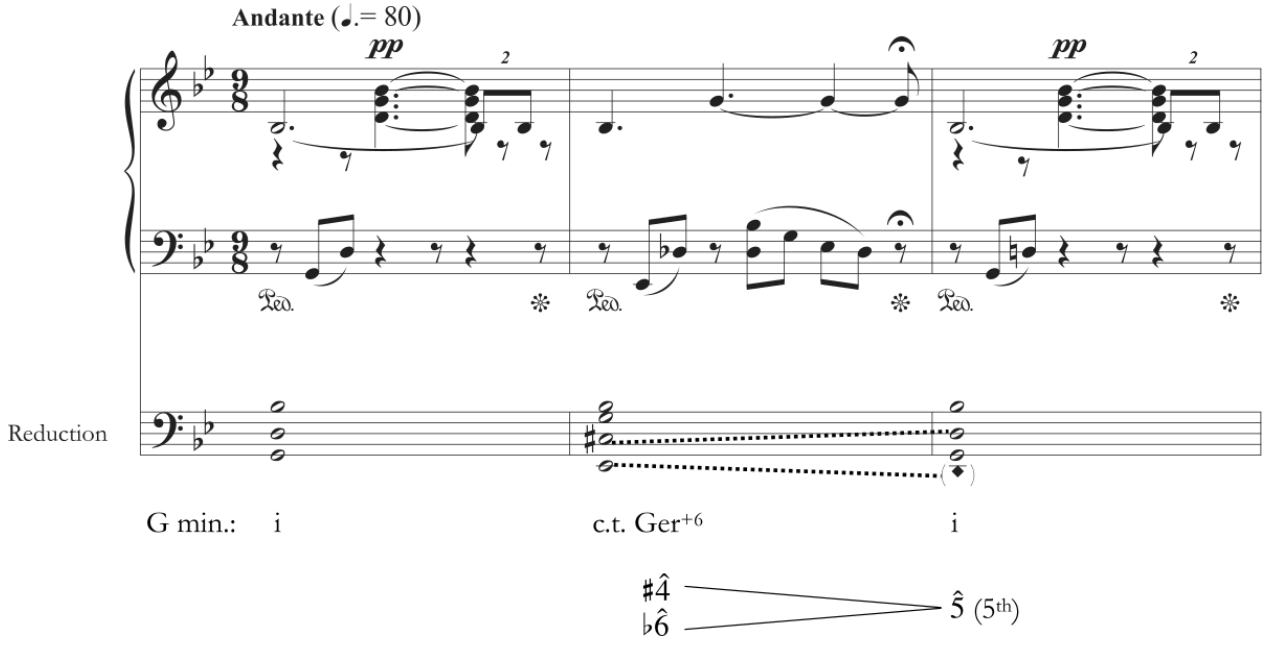
of the augmented-sixth chord. While music theorists generally view the root as *generating* the other notes of the chord, which in the common practice are usually constructed by stacking thirds, the descending approach tone of an augmented sixth does not generate the other notes of the chord; it acts instead as a pitch of reference against which the other intervals are measured.

Proposed analytical notation for augmented-sixth chords

The standard analytical notation for augmented-sixth chords—which is most often limited to the labels It^{+6}, Fr^{+6}, and Ger^{+6}—lacks precision. Unlike Roman-numeral analysis, which allows one to reconstruct the harmonic progression of a given passage by providing the root, inversion, and quality of any given chords, the conventional labels for augmented sixths only indicate the presence of an augmented-sixth interval and the sonority type (i.e., Italian, French, or German). In the common practice, these labels do give enough information to reconstruct a given harmonic progression, since most augmented-sixth chords correspond to one of the three traditional chord types and tend to occur on ♭$\hat{6}$ in the bass, leading to a root-position dominant. The behavior of the augmented-sixth interval is also highly predictable, as it almost invariably resolves to the root of the dominant chord. In late-tonal styles, however, more information needs to be provided because of the following considerations: augmented sixths often differ from the standard varieties, or occur between other pairs of scale degrees than ♭$\hat{6}$–♯$\hat{4}$, or else they may resolve to chord factors other than the root of the following harmony.

I therefore propose here to adopt a more detailed analytical notation for augmented sixths. This notation highlights the various possible behaviors of these chords and can be used in conjunction with standard Roman numerals and functional analysis. I use the beginning of Fauré's Prelude op. 103 No. 3 (**Example 7**) to illustrate how this notation works.

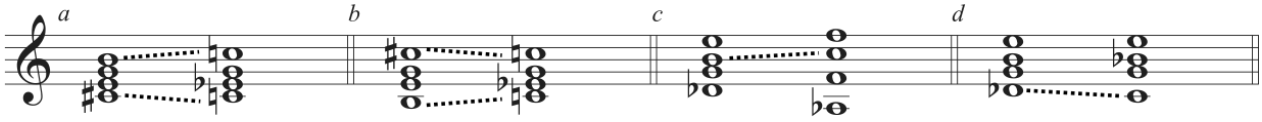
Example 7: Gabriel Fauré, Prélude op. 103 No. 3, mm. 1–3.



In the reductions of the examples presented in this study, I use an idealized spelling that shows the tonal role of the individual scale degrees. Therefore, when an example includes a minor-seventh interval that functions as an augmented sixth (or a major second that functions as a diminished third), I respell it as the latter. Since the notation of chromatic chords in late-Romantic music does not always reflect the function of the scale degrees involved, I choose instead to attribute greater tonal significance to a chord's sonority and behavior than to its spelling. Therefore, even a chord spelled so as to contain a minor seventh (or its inversion, a major second), can qualify as an augmented-sixth chord, if the pitch class adjacent to both members of the interval belongs to the following harmony. This implies a voice-leading connection where both voices involved can potentially (if not literally) proceed by semitonal motion. For example, in **Figure 4a**, the written minor seventh between C♯ and B in the first chord is more accurately understood as an augmented sixth, because the chord of resolution features a C♮ that can be reached by contrary semitonal motion in both voices. This resolution is realized in both voices in **Figure 4a** and **b**, but is implied in one of the voices in **c** and **d**.

Figure 4: Enharmonic spelling of the augmented-sixth and diminished-third intervals and implied resolutions.

a) Minor seventh interval (C♯–B) resolving as an augmented sixth; b) compound major second (B–C♯) resolving as a diminished third; c) resolution of the ascending approach tone of the augmented sixth only; d) resolution of the descending approach tone of the augmented sixth only.



In **Example 7** (p. 14), the tonic chord G minor is prolonged with E♭7, which functions as a common-tone German sixth. I have respelled the seventh D♭ as C♯ in my reduction to reflect that it behaves as the ascending approach tone of an augmented-sixth interval (because of its ascending resolution to D) rather than a seventh (which would instead go down by step).

I use **dotted lines** to connect the approach tones to the target note in the reduction. If one voice does not literally move to the target note, the implied note of resolution is added in parentheses in the reduction. In **Example 7**, the pitches E♭ and C♯ (spelled as D♭ in the score) are adjacent to D, the fifth of the tonic chord. Only the ascending approach tone C♯ resolves to D; the E♭ in the bass is left unresolved and leaps instead to the tonic. Because the bass E♭ does not proceed to D as expected, I have added the target note D in parentheses below the actual bass note G.

I indicate below the augmented-sixth label the scale degrees involved in the augmented-sixth interval (e.g., ♭$\hat{6}$ and ♯$\hat{4}$ in **Example 7**) as well as the target note's scale degree and corresponding chord factor in the chord of resolution (e.g., $\hat{5}$ is the fifth of the tonic chord). I use in this study what Kevin Swinden calls a "fixed notation of scale degrees in relation to the tonic pitch" (Swinden 2005, 250, fn 2). For the sake of simplicity, the major scale is the default in this system and all the other scale degrees are analyzed as deviations from it. For instance, E♭ corresponds to ♭$\hat{3}$ relative to the tonic C, regardless of the mode. While Swinden employs this nomenclature because modal mixture is a crucial aspect of late-Romantic music,[15] I use this fixed notation for practical reasons. I

[15] "As modal mixture is a fundamental principle of chromatic harmony, throughout the article all scale-step numbers and Roman numerals are based on a fixed notation in relation to the tonic pitch, regardless of modality. That is, in relation to A major-minor, F and an F-major triad are notated as ♭$\hat{6}$ and ♭VI respectively. The modality of a local key area may be inferred by the quality of the tonic chord (I or i) should the reader wish to take special note of instances of mixture" (Swinden 2005, 250 fn 2).

classify augmented-sixth chords according to several characteristics, including the bass line on which they occur and the scale degrees involved in the augmented-sixth interval; it is therefore necessary to use a system that facilitates comparisons across numerous examples. I choose for instance to talk about the ♭$\hat{6}$–♯$\hat{4}$ augmented sixth regardless of the mode, so that the similarity between all the examples featuring these scale degrees will be immediately apparent. Otherwise, the A♭–F♯ pair would be referred to as ♭$\hat{6}$–♯$\hat{4}$ in major, but $\hat{6}$–♯$\hat{4}$ in minor, because the submediant is a semitone away from $\hat{5}$ in the harmonic and natural minor scales. One downside of this system is that it takes the major mode as the default. It therefore emphasizes chromaticism only when the key is major; in minor, the borrowings to the major mode are less marked. I nevertheless prefer the fixed notation of scale degrees in this study for the practical reasons mentioned above.

Unlike Kevin Swinden, however, I do not use a fixed system for Roman numerals. Even though modal mixture is, as many theorists recognize, a fundamental element of chromatic music, most often the mode of a passage is not ambiguous. For instance, in my examples, an A♭ major chord in C minor is labeled VI rather than ♭VI. I indicate the chord quality by using the more traditional system of lower case and upper case Roman numerals.

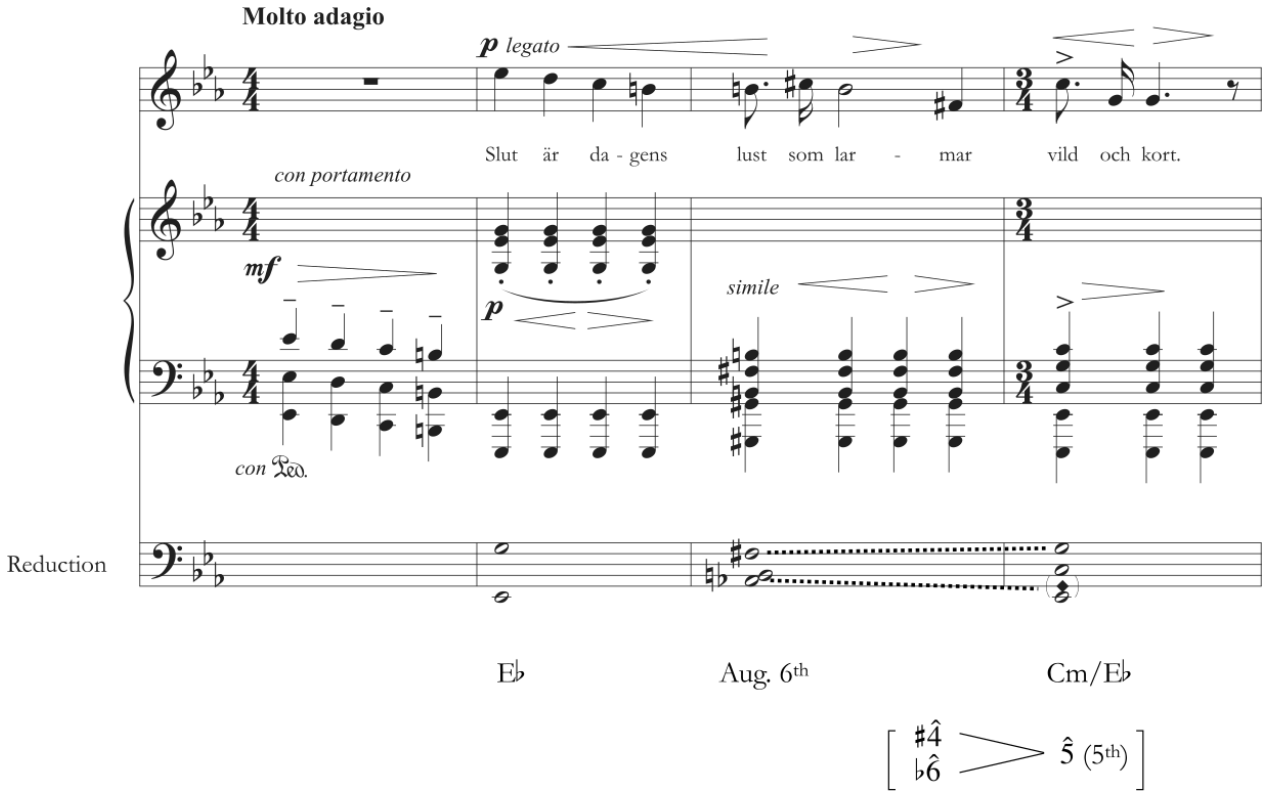
In examples where the tonal center is unclear, I analyze the scale degrees as "applied" to the chord of resolution and put them in brackets. For instance, the opening of Rangström's song "Bön till natten," reproduced in **Example 8**, could be analyzed in either E♭ major or C minor. The scalar motion at the beginning of the song, descending from E♭ to B♮,[16] suggests C minor, but there is no C minor triad until m. 4. When the descending scale is repeated in m. 2, it is harmonized by the dyad E♭–G, which is shared by the two possible tonics. I am more inclined to hear the opening as suggesting an E♭ chord because of the E♭ in the bass, but also because the C in the melody appears to be only a passing tone. However, since the tonal center is not clearly established, I choose here to indicate the scale degrees of the augmented-sixth chord in m. 3 as applied to C minor, the chord to which it resolves.[17] Similarly to the Fauré prelude analyzed above, the spelling in this passage is misleading: while the chord in m. 3 contains the notated minor seventh G♯–F♯, I interpret it as the augmented sixth A♭–F♯ because the target note G appears in the next chord. Only the ascending approach tone F♯ resolves to G; the

[16] B♮ could also be heard as C♭ (i.e., ♭6 in E♭), which would imply a move to the dominant B♭.

[17] A more detailed analysis of this passage appears in Chapter 3 (see **Example 54**, p. 128).

bass instead leaps down a fourth from A♭ (spelled as G♯) to E♭, echoing the characteristic interval found in the bass line of plagal cadences, but with ♭$\hat{6}$–♭$\hat{3}$ instead of $\hat{4}$–$\hat{1}$.

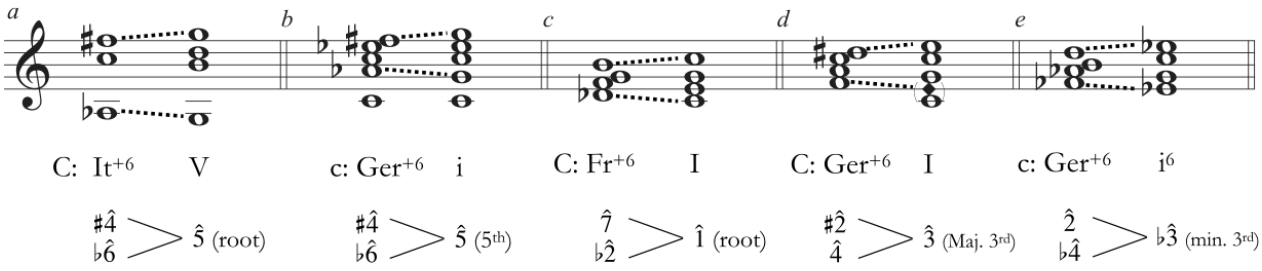
Example 8: Ture Rangström, "Bön till natten" ("Prayer to the Night"), mm. 1–4.



To further illustrate how my analytical notation works, I have included in **Figure 5** various types of resolutions of augmented-sixth chords, using the standard Italian, French, and German sixths. **Figure 5a** corresponds to the standard resolution of an Italian augmented sixth to a dominant chord, with the approach tones expanding to $\hat{5}$. A common-tone German sixth leading to a tonic harmony is included in **b**, where the progression occurs over a tonic pedal in the bass. The progressions featured in **c**, **d**, and **e** feature respectively a French augmented sixth on ♭$\hat{2}$ in the bass, a "plagal" German augmented sixth whose approach tones $\hat{4}$–♯$\hat{2}$ suggest a resolution to the third of a major tonic harmony,[18] and a German sixth proceeding to a minor triad, with the augmented-sixth interval ♭$\hat{4}$–$\hat{2}$ leading to the minor third.

[18] In this progression, only the voice with ♯$\hat{2}$ resolves the augmented-sixth interval; the $\hat{4}$ in the bass instead leaps plagally to the tonic. Daniel Harrison, in his analysis of Brahms's lied "Im Herbst" op. 104 No. 5, refers to this augmented-sixth resolution as "plagal" (1995, 193).

Figure 5: Illustration of the analytical notation used in this dissertation.



The goal of the analytical notation suggested above is to spell out the behavior of the augmented-sixth interval in a given progression, instead of taking for granted that any chord labelled as an augmented sixth should resolve in a traditional way (i.e., with its approach tones resolving to the root of a dominant harmony). While Harrison's (1995) approach to augmented sixths aims to recognize a wider range of possible behavior of these chords than what is generally acknowledged, the analytical notation put forward here further advances that goal, because it makes explicit how the augmented sixth resolves and can thus accommodate less standard behaviors. I therefore recommend using this notation for any piece that features unusual treatments of augmented-sixth chords; however, this analytical apparatus becomes cumbersome if a piece includes only standard augmented-sixth progressions, with either the resolution of the approach tones to the root of a dominant harmony (**Figure 5a**), or to the fifth of a tonic (**Figure 5b**). In those cases, the standard labels should suffice.

Defining augmented sixths

Harmony textbooks tend to have a narrow understanding of augmented-sixth chords. Daniel Harrison laments the complacency with which those chords are approached in modern textbooks; he notes that augmented-sixth chords "are now docile fixtures of back-of-the-book chromatic harmony, content in their pedigreed ethnicity and ready for any novice student's four-part exercises" (1995, 170). Indeed, harmony texts typically identify only three chords types that belong to the augmented-sixth chord family—the Italian, French, and German sixths[19]—and they focus on the use of these chords as

[19] A fourth type, the "Swiss" augmented sixth (also called the "chord of the doubly augmented fourth"), is sometimes included in the augmented-sixth chord category (e.g., Laitz 2012, 682). Coined by Mark DeVoto in his 1987 edition of Walter Piston's *Harmony*, the Swiss sixth consists of ♭6̂, 1̂, #2̂, and #4̂ and resolves to a major cadential six-four (Piston 1987, 420). It is however not widely accepted as a distinct type because of its enharmonic equivalence to the German augmented

predominant harmonies occurring on ♭$\hat{6}$ in the bass leading to a root-position dominant, which can be embellished by a cadential six-four. The inversions, voice leading, and resolutions of augmented-sixth chords discussed in textbooks are also limited to a small subset of behaviors: the examples analyzed in those resources almost exclusively show the augmented sixth in its traditional inversion (i.e., with the descending approach tone in the bass),[20] the pair of voices involved in the augmented-sixth interval (i.e., the approach tones) usually resolve by contrary semitonal tonal motion to an octave,[21] and the target note of the augmented-sixth interval is almost invariably the root of dominant harmony. Most textbooks also point out the enharmonic equivalence of the German augmented sixth to a dominant seventh chord, which allows the chord to be enharmonically reinterpreted for modulations. While there is still disagreement regarding the derivation of augmented-sixth chords (i.e., whether they should be understood as altered dominants or subdominant harmonies),[22] the characteristics outlined above have remained the focus of standard teaching on the topic.

Sources that include discussions of nineteenth-century music also mention a few other less frequent treatments of augmented sixths. Common-tone augmented sixths, which typically occur when an augmented-sixth chord on ♭$\hat{6}$ resolves to a tonic harmony instead of a dominant (thus the augmented-sixth interval resolves to the fifth of the tonic chord instead of the root of the dominant,

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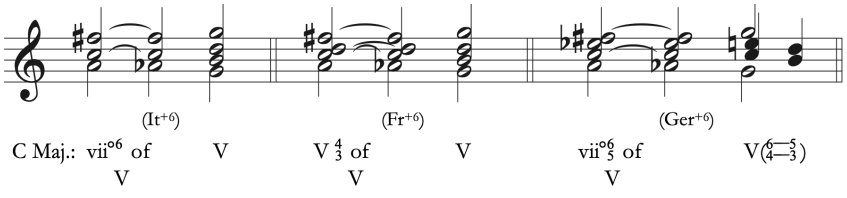
sixth, spelled with ♭$\hat{3}$ instead of ♯$\hat{2}$. Aldwell and Schachter, for instance, note that the chord is simply a "notational variant" of the German sixth (Aldwell and Schachter 2011, 518).

[20] The diminished-third inversion, where ♯$\hat{4}$ is in the bass, is discussed in several textbooks, including those by Lester (1982, vol. II, 92), Piston (1987, 427), and Aldwell and Schachter (2011, 528–30). Ellis refers to this as the "sharp inversion" because the voice that typically resolves by an upward semitone (i.e., what I call here the "ascending approach tone") is in the bass (2010, xv). Aldwell and Schachter also show examples of other inversions, with ♭$\hat{3}$ or $\hat{1}$ in the bass (*ibid.*, 530–31).

[21] A notable exception is when the chord goes to V7, in which case ♯$\hat{4}$ moves down to $\hat{4}$.

[22] For instance, Harrison conceives of the standard augmented-sixth chords as essentially subdominant-functioning entities (1994, 115). He views the linear motion from ♭$\hat{6}$ to $\hat{5}$, which usually occurs in the bass in standard augmented-sixth resolutions, as one of the characteristic voice leading of subdominant-to-dominant progressions and ascribes more weight to this motion than to the upward resolution of ♯$\hat{4}$ to 5. Harrison claims that the latter is a "contrary projection" of the ♭$\hat{6}$–$\hat{5}$ motion, meaning that ♯$\hat{4}$–$\hat{5}$ reinforces the ♭$\hat{6}$–$\hat{5}$ descending semitone motion by replicating it in contrary motion. For more information on Harrison's theory, see Chapter 3. Contrary to Harrison, Tymoczko views these chords as altered applied dominants of the dominant instead of subdominants; in his perspective, the Italian, French, and German sixths derive respectively from the applied vii°^{6}, V$^{4}_{3}$, and vii°$^{6}_{5}$ of V (2011, 269).



see **Figure 6**), appear for instance in Aldwell and Schachter (2011, 557) and Laitz (2012, 821–22). While those common-tone augmented sixths generally occur over a tonic pedal, as illustrated in **Figure 6a**, they can also appear with a leap from ♭$\hat{6}$ to $\hat{1}$ in the bass, leaving the descending approach tone unresolved (**Figure 6b**).[23] In addition, textbooks sometimes include augmented-sixth chords where the eponymous interval occurs between ♭$\hat{2}$ and the leading tone,[24] and more rarely, between $\hat{4}$ and ♯$\hat{2}$.[25] These pairs of scale degrees are usually involved in progressions where the augmented-sixth chord resolves to tonic harmony (**Figure 7**).

Figure 6: Common-tone augmented sixths.

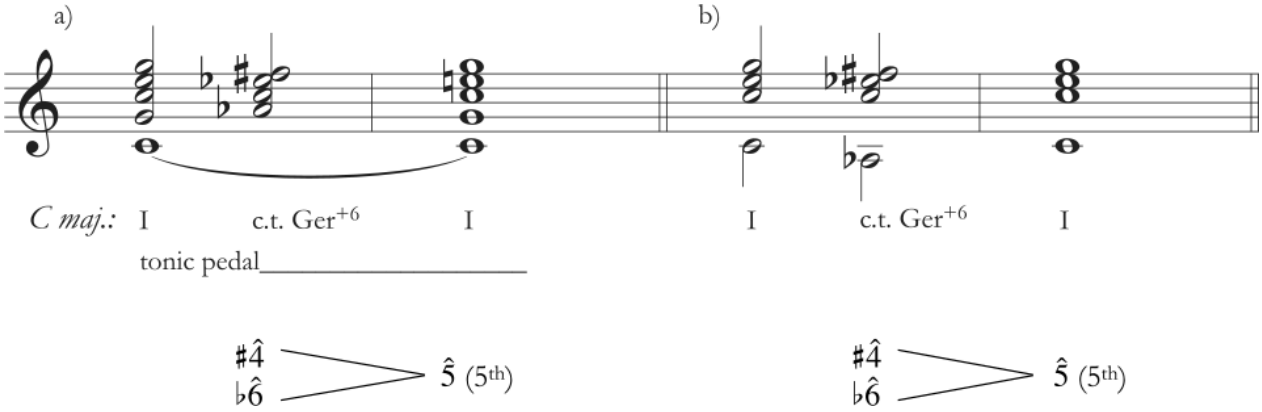
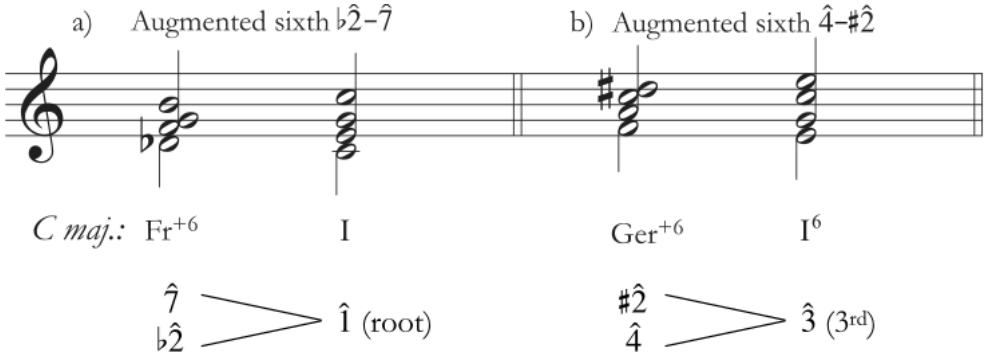


Figure 7: Other less common pairs of scale degrees forming augmented-sixth intervals.



[23] See Aldwell and Schachter's Example's 30-25 from Schubert's "Am Meer" for an instance of a common-tone German augmented sixth with a tonic pedal in the bass. They illustrate the bass leap ♭$\hat{6}$–$\hat{1}$ with a passage from Wolf's "Morgenstimmung" (see their Example 30-26), noting that the bass motion "disguises (but does not obliterate) the contrapuntal connection between the common-tone augmented 6th and the chord it decorates" (2011, 557).

[24] See Lester (1982, vol. II, 93–94) and Piston (1987, 430; see his Example 27-26 from the last movement of Schubert's String Quintet in C major). Piston classifies these augmented-sixth resolutions among the "exceptional forms of the augmented sixth" (*ibid.*).

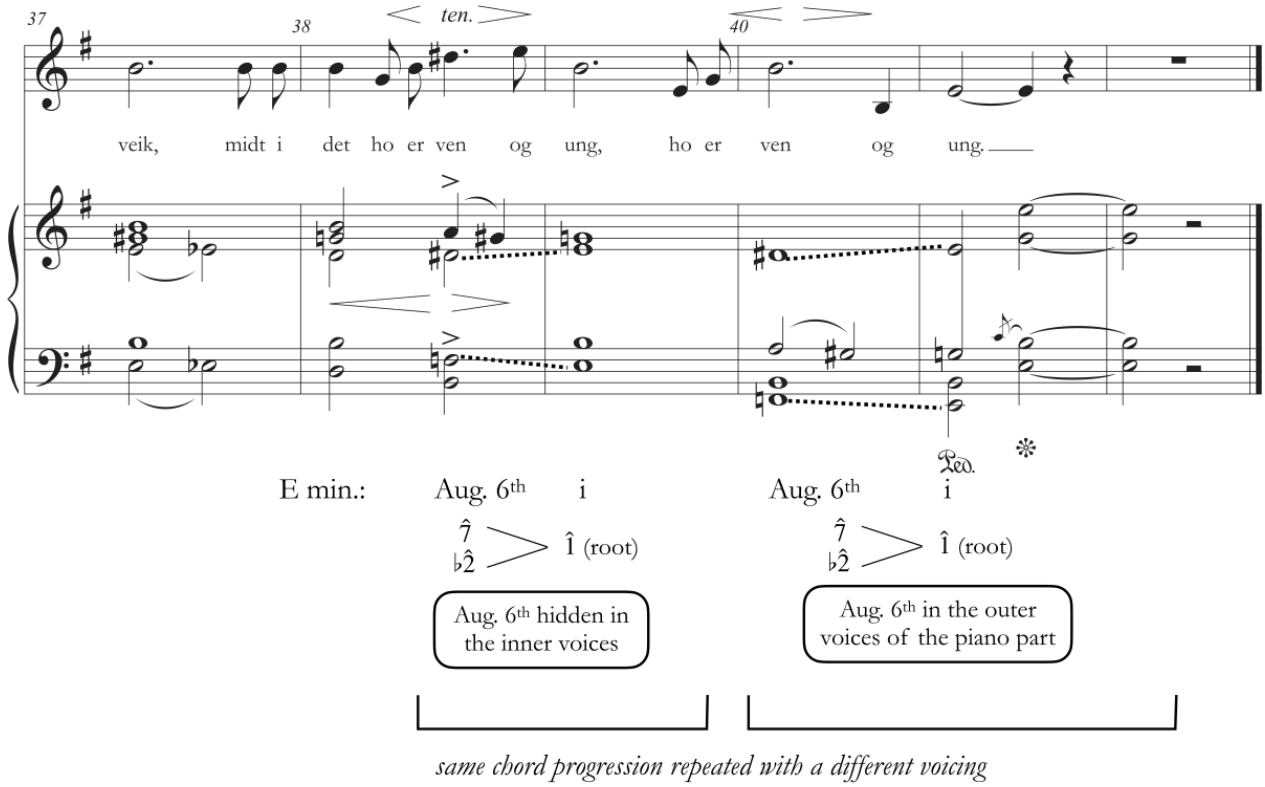
[25] See Piston's Example 27-27 (1987, 430) from the fourth movement of Schubert's Symphony No. 9.

The standard treatments of augmented sixths described in theory textbooks remain the most frequent contexts in which these chords are encountered. But in nineteenth- and early twentieth-century tonal music, composers have explored other possibilities for augmented sixths that are not limited to these situations. Even the unusual cases described in **Figures 6** and **7** above do not cover the wide range of possible behaviors of these chords. As Daniel Harrison observes,

> only those augmented-sixths exhibiting typical eighteenth- and early nineteenth-century behaviors have been tamed. Many later nineteenth-century behaviors resist the normalizing discipline administered their earlier kin and, as a result, often end up being considered unprincipled and licentious. If treated at all in a modern harmony text, it is with unease and little sympathy (1995, 170).

Indeed, the study of late-tonal repertoires reveals that definitions of augmented sixths found in textbooks often fall short because they do not accept a wide range of chords in the augmented-sixth category, and the contexts where these chords are known to occur are too limited. The recent literature on the use of augmented sixths in late-tonal repertoires tends to define these chords more broadly (e.g., Harrison 1995, Ellis 2010, Tymoczko 2011), but authors do not necessarily agree upon what can be characterized as an augmented-sixth chord. For instance, Harrison argues that it can be defined as "any chord that depends upon the augmented-sixth (or diminished-third) interval for all or most of its tonal energies" (1995, 184). While his definition allows for more flexibility in the types of chords that belong to the category of augmented sixths and the different contexts where those chords can be found, his definition nevertheless remains ambiguous. In many examples, it is hard to determine whether or not most of the "tonal energies" of a given chord depend on the augmented-sixth interval. For example, in Grieg's song "Veslemöy" (**Example 9**), the last chord in m. 38 is an altered dominant seventh in E minor whose fifth is lowered. Here, the augmented-sixth interval between F♮ and D♯ is hidden in the inner voices and therefore does not appear to participate in the chord's main "tonal energy." However, when the chord progression is repeated in mm. 40–41, the voices are switched: the bass line $\hat{5}$–$\hat{1}$ is transferred to the voice part, while the piano part emphasizes this time the augmented-sixth interval in its outer voices. Both progressions feature the same chords; only the voicing differs. Following Harrison's definition, then, the chord in m. 38 would be unlikely to qualify as an augmented sixth while the one in m. 40 would, even though they comprise the same scale degrees.

Example 9: Edvard Grieg, 8 Songs op. 67, No. 2 "Veslemöy," mm. 37–42.



Ellis's perspective on augmented-sixth chords avoids this definitional conundrum. In his monograph on the topic, Ellis observes that "the most arresting feature of the augmented sixth is its simultaneous 'flatness and sharpness,' a combination that exerts a natural outward thrust because of the tendency for sharp notes to resolve up and flat ones down" (2010, 2). He defines augmented sixths as "two to four notes, sounded either vertically or in succession, which encompass an augmented sixth" (2010, xv).[26] (Like Harrison, Ellis also includes chords where the augmented-sixth interval is inverted and appears as a diminished third.) This broad characterization leads him to accept all chords featuring an augmented-sixth interval as belonging to the augmented-sixth category; this label is therefore not limited to the conventional Italian, French, and German sixths. Unlike Harrison, Ellis

[26] The limitation to four notes largely reflects compositional practices, but in theory, augmented-sixths chords are not limited to four-note formations. Ellis himself includes an example of an augmented-sixth sonority with five notes in Schoenberg's *Kammersinfonie*. In mm. 3–4, the sonority G♭–C–E–B♭–A♭ leads to F major and includes two pairs of augmented-sixth resolutions: G♭–E resolves to F and B♭–A♭ (behaving here as G♯) goes to A♮. This example is also cited in Harrison 1995 (186, see his Example 14). See also **Examples 14** and **15** in Chapter 2 (pp. 35–36).

does not focus on the relative salience of the augmented-sixth interval in a given chord, but on its mere presence.[27]

A contrasting perspective on augmented sixths is found in Tymoczko's *Geometry of Music* (2011), where he focuses not on the tonal function of these chords, but on their voice leading to consonant triads. He understands augmented-sixth resolutions as a subset of progressions from a four-note chord to a three-note chord where "the converging notes are separated by two semitones, and they converge on the note that lies between them" (2011, 275). The types of chords he accepts as augmented sixths as well as the resolutions of these chords he illustrates in his examples accommodate a wider variety of behaviors than what is generally recognized. **Figure 8** reproduces the chord progressions of Tyomczko's Figure 8.2.5 (2011, 275); I have added to this figure the type of augmented sixths—using either traditional labels (e.g., French sixth, German sixth) or enharmonic equivalents (e.g., half-diminished seventh, minor seventh)—as well as information about the scale degrees involved in the augmented-sixth resolutions. In this figure, the target chords are assumed to have tonic function, at least locally.[28] His approach therefore foregrounds the *voice leading* of the pair of voices featuring the interval class 2; unlike Harrison (1995), he does not discuss the tonal contexts in which an interval class 2 between a pair of scale degrees can be perceived as an augmented sixth vs. a minor seventh.

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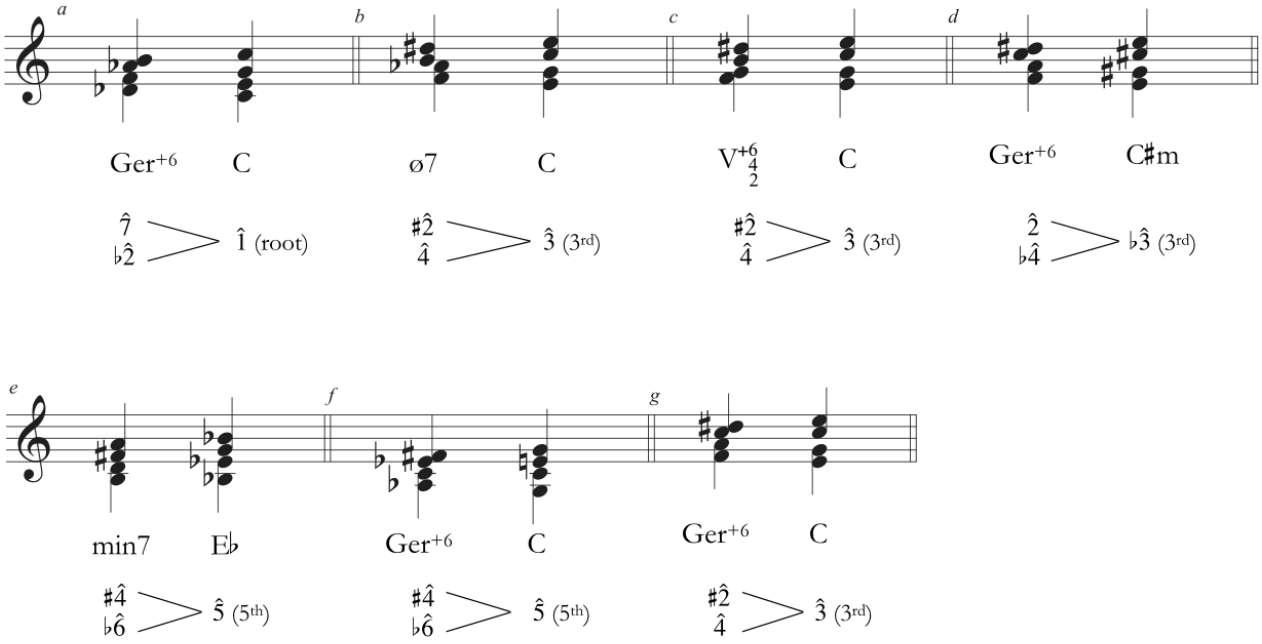
[27] The contrast between Harrison's and Ellis's perspectives can be illustrated by how they view the progressions from D♭–F–G–B or G–B–F–D♯ to a C major tonic harmony. The first progression famously appears at the end of the fourth movement of Schubert's String Quintet D. 956. Harrison criticizes Piston's analysis of the chord—Piston views it as a dominant with a lowered fifth in second inversion—by arguing that "although this analysis clearly points to the dominant origin of the chord, it does not do so in order to connect it to other augmented-sixth chords; rather, it stresses its seventh-chord structure. The augmented sixth created between the major third and diminished fifth of the chord is an accidental, not a primary quality of the chord" (1995, 181). Clearly, for Harrison, the labels "augmented sixth" and "altered dominant" are mutually exclusive because they emphasize different aspects of the chord's function and intervallic structure. He analyzes the chord G–B–D♯–F similarly: if the augmented-sixth interval is emphasized in the texture, Harrison views the chord as an augmented-sixth chord, as exemplified in his analysis of Brahms's "Im Herbst" op. 104 no. 5, mm. 30–31 (1995, 193–94) rather than a $V^{7}_{\sharp 5}$. If, however, the augmented sixth is not emphasized, he instead analyzes the chord as an altered V. In contrast, Ellis refers to these progressions as "dominant-functioning French sixth" (2010, 209) and "dominant-functioning augmented sixth" (2010, 44) respectively, suggesting that the labels "dominant" and "augmented-sixth chord" are not mutually exclusive for him.

[28] I surmise that the inclusion of second-inversion triads in Tymoczko's figure (see **Figure 8e** and **f**) arises from the augmented-sixth interval occurring systematically between the outer voices. Because these progressions are meant to show parsimonious voice leading between augmented-sixth chords and triads, the second-inversion triads have tonic function; they are not understood as cadential six-four chords.

Figure 8: Tymoczko's unconventional progressions with augmented-sixth chords (2011, 275, Figure 8.2.5).

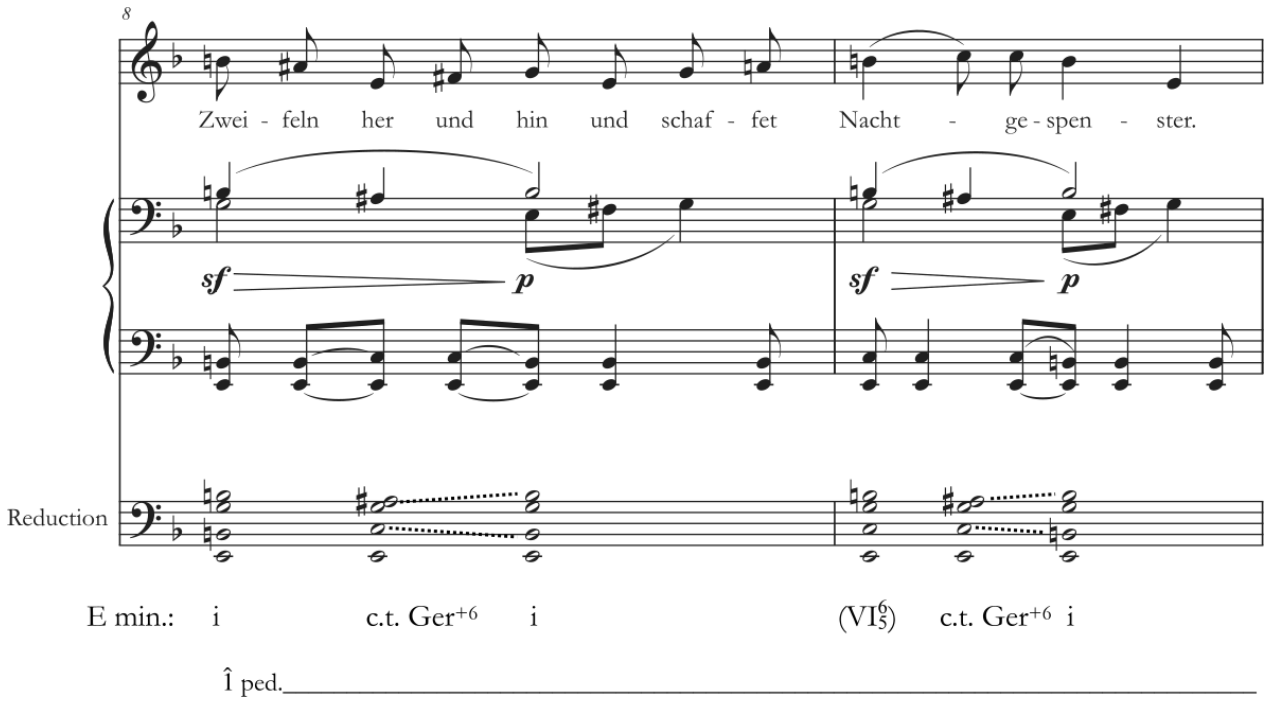
(The figure has been adapted from the original source. Annotations showing the type of augmented-sixth sonority and the resolution of the approach tones are not original to Tymoczko's figure.)

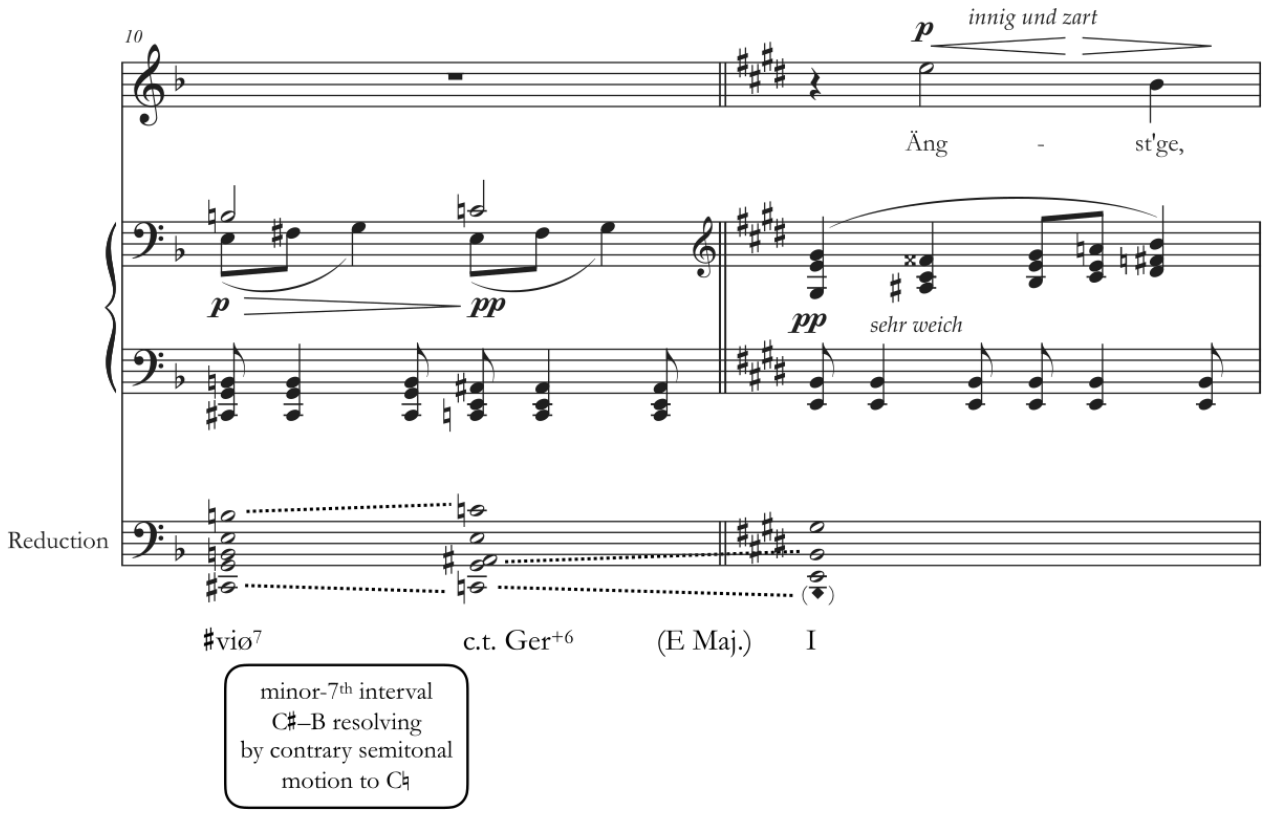


While the characteristic voice leading of augmented sixths and the scale degrees perceived tend to appear together in most examples of augmented-sixth chords in the common practice, instances where these two aspects are decoupled do occur in late-tonal repertoires. For instance, in Wolf's lied "In der Frühe" (**Example 10**), the progression from a C♯ø7 chord to C7 in m. 10 is understood in the key of E minor as a viø7 going to a German augmented sixth. The motion of the outer voices of the piano part could, however, suggest an augmented-sixth *behavior*, because the bass C♯ and the soprano B move by contrary semitonal motion to C♮, the submediant. A major issue that arises with this augmented-sixth interpretation is that the scale degrees involved here (i.e., ♮6̂ and 5̂), do not form an augmented-sixth interval, but a minor seventh. This example thus illustrates that a minor-seventh

interval in a given tonal context can borrow the stereotypical behavior of an augmented-sixth interval. Conversely, instances of pairs of voices understood as augmented sixths, in their local tonal context, that do not exhibit the associated voice leading, are relatively common: the opening of Fauré's Prelude op. 103 No. 3 discussed earlier in this chapter (**Example 7**, p. 14) features an augmented-sixth interval whose ascending approach tone resolves normally (i.e., it moves up a half step), while the descending approach tone moves by leap instead of resolving by going down a semitone.

Example 10: Hugo Wolf, "In der Frühe," mm. 8–11.



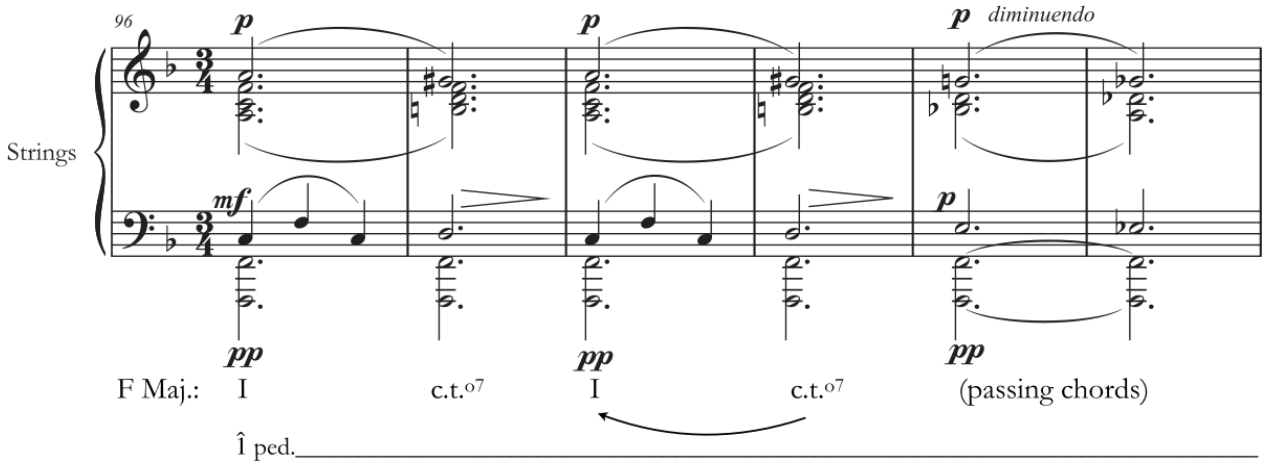


My definition of augmented sixths therefore recognizes two distinct characteristics: (1) the interval between two *scale degrees* (i.e., not the interval measured solely in semitones), and (2) the voice leading of a pair of voices. Progressions that feature both aspects are unquestionably augmented-sixth resolutions. When one of these two criteria is missing, the degree to which we can hear a chord as an augmented sixth can vary tremendously. But in general, examples that feature the scale-degree criteria in a context when the tonal center is clearly established tend to be more convincing instances of augmented sixths than the ones that feature only the voice leading without the proper scale degrees.[29] (As I have demonstrated above in the Wolf example, the characteristic voice leading of augmented sixths can occur in passages where the interval between the scale degrees involved is primarily perceived as a minor seventh rather than an augmented sixth.) The situation is different in passages where the key is temporarily suspended, since one cannot ascribe scale degrees to any given pair of pitches to evaluate whether the perceived interval is an augmented sixth or a minor seventh. The voice

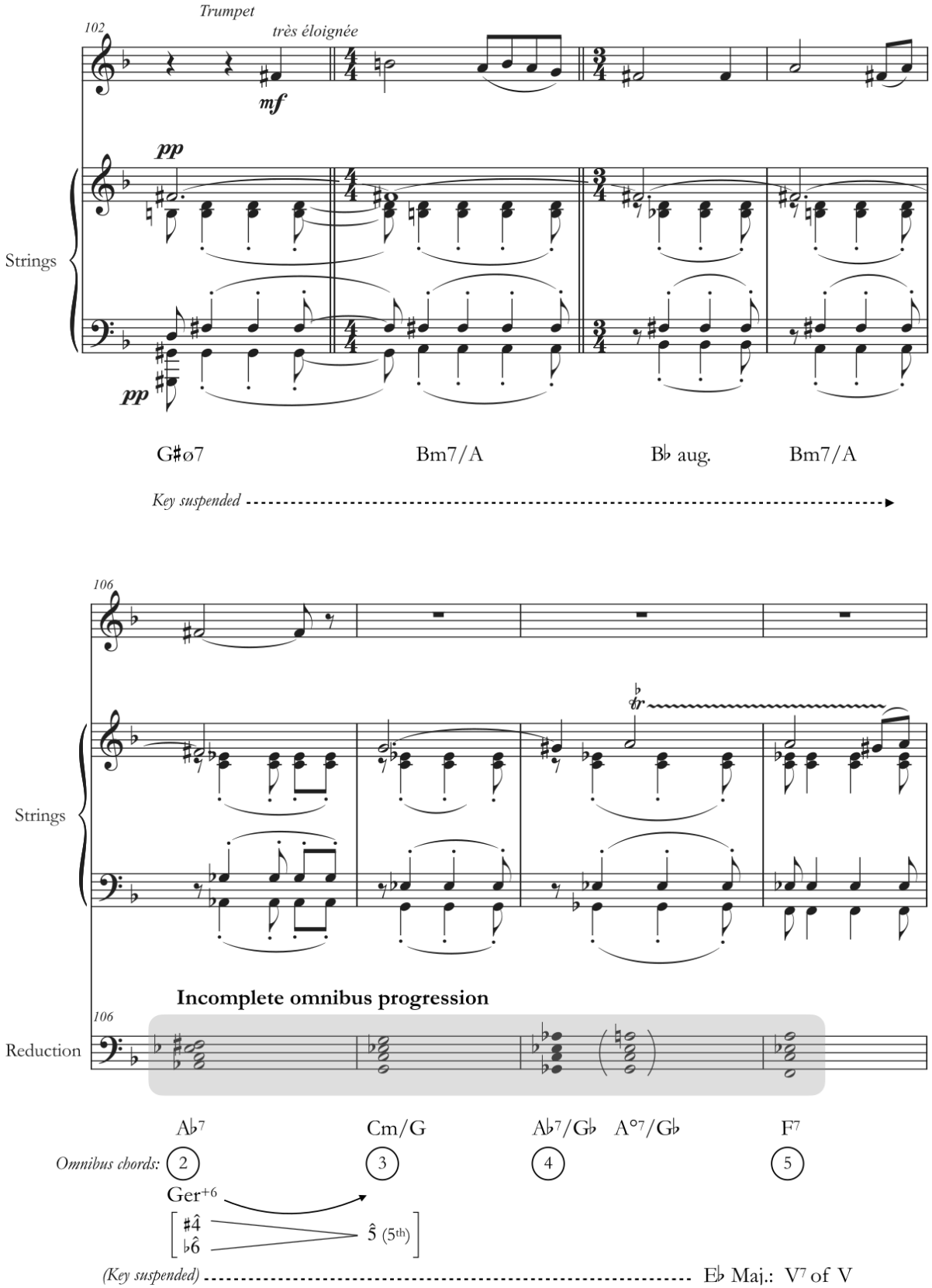
[29] For a definition of augmented sixths that puts more emphasis on the characteristic contrary semitonal resolution of the augmented-sixth interval, see Biamonte (2008). Biamonte argues that this voice leading is among the key aspects that distinguishes augmented sixths from tritone substitutions, which are characterized in part by the parallel motion of the pair of voices involved in the sounding augmented-sixth interval.

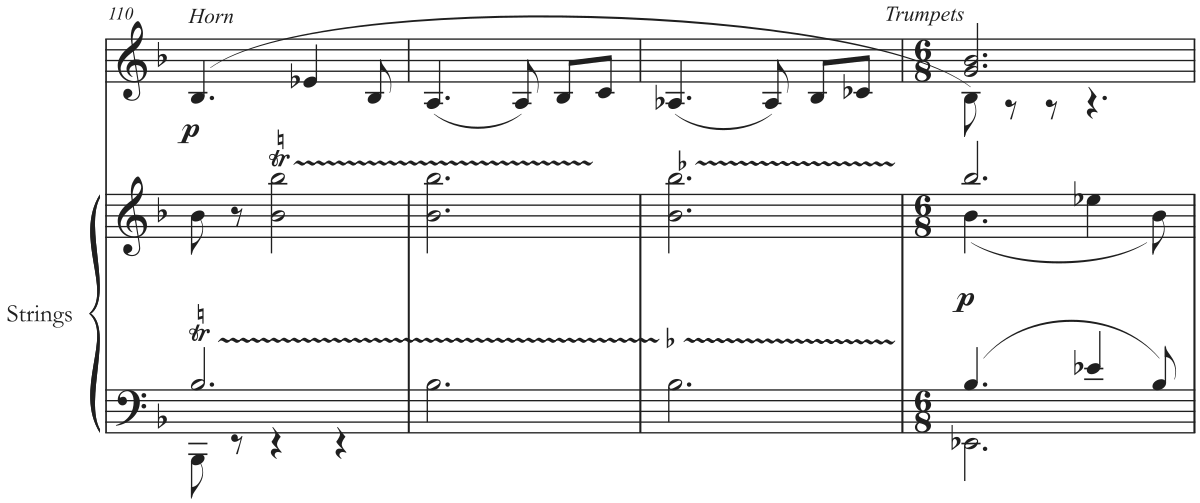
leading then becomes the only aspect that distinguishes augmented sixths from minor sevenths. For example, in omnibus progressions that connect two tonal areas, the suspension of the tonal center does not prevent the listener from hearing some chords as functioning locally as augmented sixths. In Chausson's symphonic poem *Viviane* op. 5 (**Example 11**), an omnibus-like progression connects two tonally stable passages; the first one is in F major (mm. 96–99) while the second one is in E♭ major (mm. 110–113). In mm. 106–107, an A♭7 resolves to a C-minor triad in second inversion, sounding locally as a German sixth going to a cadential six-four. (This progression corresponds to chords ② and ③ of the omnibus.)[30] I believe that this progression is a more convincing example of an augmented sixth than the one in the Wolf example precisely because the tonal center is suspended in the former. While in both cases, the voice leading corresponds to a typical augmented-sixth behavior, the relatively stable tonal context in "In der Frühe" contradicts that interpretation, because the perceived scale degrees involved do not form an augmented sixth. In contrast, in Chausson's symphonic poem *Viviane*, the suspension of the key makes scale degrees irrelevant; therefore, scale degrees cannot invalidate the augmented-sixth interpretation.

Example 11: Ernest Chausson, *Viviane* op. 5, mm. 96–113.



[30] For more on omnibus progressions, see Chapter 4.


Trumpet
très éloignée
102
mf
pp
Strings
pp
G♯ø7
Bm7/A
B♭ aug.
Bm7/A
Key suspended
106
tr
Strings
Incomplete omnibus progression
106
Reduction
A♭7
Cm/G
A♭7/G♭
A°7/G♭
F7
Omnibus chords:
2
3
4
5
Ger+6
♯4̂
♭6̂
5̂ (5th)
(Key suspended)
E♭ Maj.: V7 of V



(I vii°7 of V vii°7)

(E♭ Maj.) **V**_____ **I**_____

CHAPTER 2 – DEFINING MINORIZED AUGMENTED SIXTHS

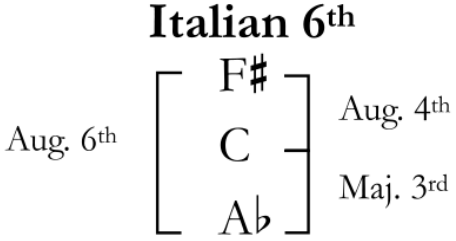
In this chapter, I first discuss some extensions to familiar augmented-sixth chords before turning to minorized augmented sixths. I focus on the three types among this family of chords that correspond to minorized versions of the Italian, French, and German sixths, and study their different resolutions to consonant and dissonant chords.

Conventional vs. minorized augmented-sixth chords

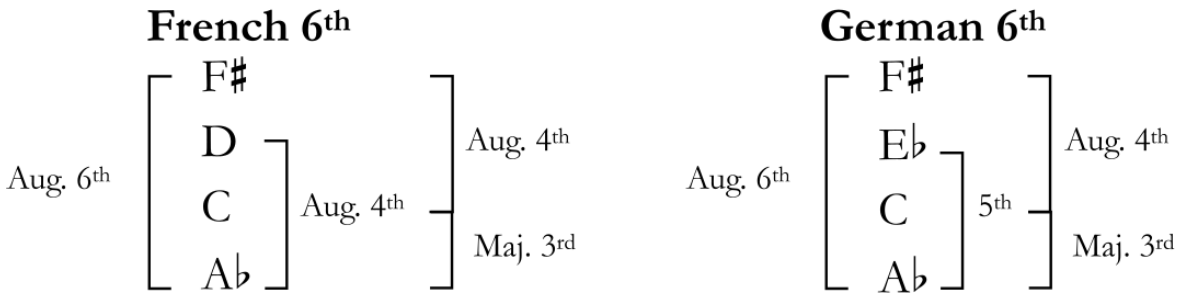
The basic structure of conventional augmented-sixth chords consists of two intervals above the descending approach tone: an augmented sixth (A♭–F♯) and a major third (A♭–C) (**Figure 9a**). The resulting chord, the so-called Italian sixth, can be inverted and/or presented with one or more added notes: the added augmented fourth and perfect fifth above the descending approach tone give rise to the French and German augmented sixths, respectively (**Figure 9b**).

Figure 9: Intervallic structure of conventional augmented sixths.

a) The Italian sixth as the basic structure of conventional augmented sixths.

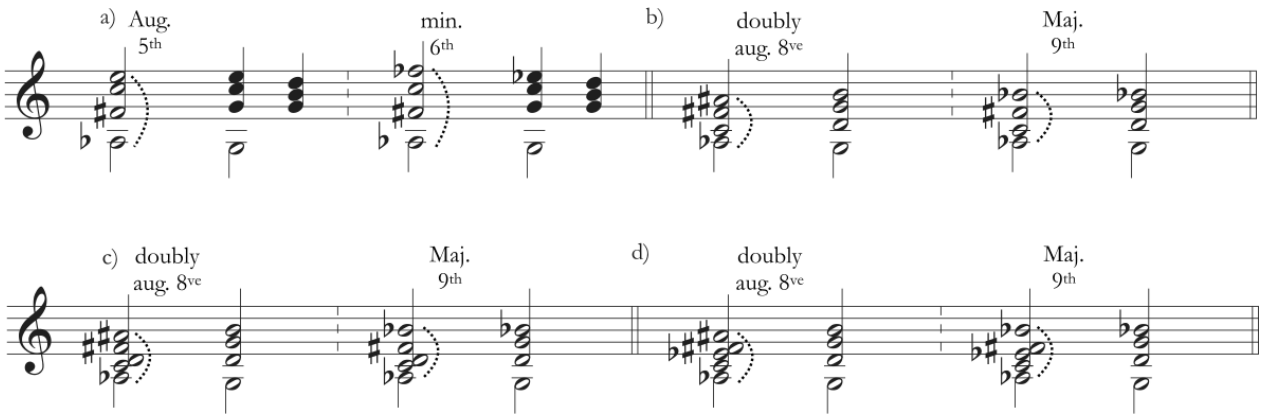


b) The French and German augmented sixths as the Italian sixth with added notes.



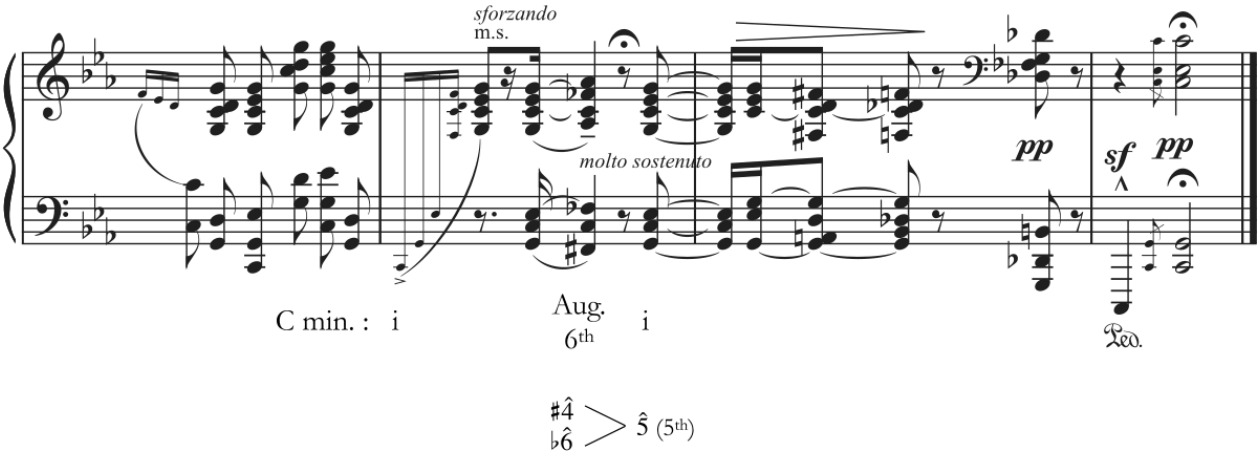
While these three chords are the most common among the augmented sixths featuring a major third above the descending approach tone, other chord types, shown in **Figure 10**, occasionally appear in the repertoire. Ebenezer Prout, for instance, cites a rare example of a passing augmented sixth in Verdi's Requiem that has an augmented fifth above the descending approach tone (Prout 1903, 281; see his Example 548).[31] This chord, transposed to C, comprises the pitches A♭–C–**E♮**–F♯ (see **Figure 10a**, m. 1); it therefore does not correspond to any of the three common types of augmented-sixth chords. When resolving directly to a minor tonic sonority, this chord can also be spelled with a minor sixth above the descending approach tone instead of an augmented fifth (**Figure 10a**, m. 2). For instance, in Medtner's second Novelette op. 17 (**Example 12)**, the inverted Italian augmented sixth F♯–C–A♭ in C minor also includes F♭, which forms a minor-sixth interval with the descending approach tone when the chord is in its usual position (i.e., with A♭ in the bass, see **Figure 10a**, m. 2). Despite the unusual sonority, the chord behaves similarly to a common-tone augmented sixth: it contains the root of the next harmony (C) and the approach tones (F♯ and A♭) resolve to the fifth (G). Its function, like most instances of common-tone augmented sixths, is to prolong the tonic harmony; the A♭, F♭, and F♯ all arise from semitonal displacements of the tonic chord.

Figure 10: Unconventional augmented-sixth chords that include a major third above the descending approach tone.



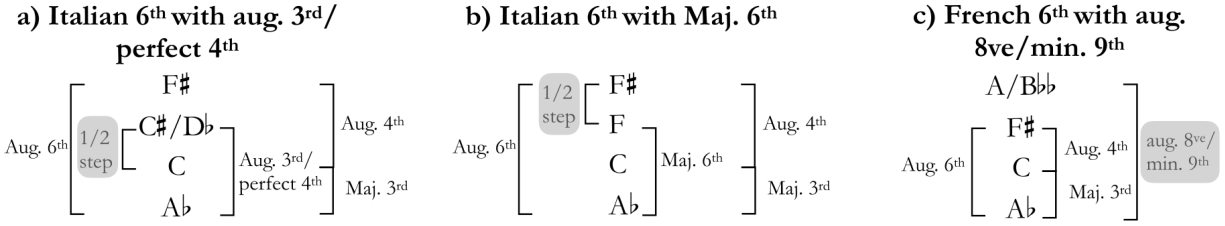
[31] This example is also cited in Harrison (1995, 182–83). Harrison notes that this type of augmented sixth is among the six varieties that Louis and Thuille recognized in their *Harmonielehre* (See Schwartz's [1982] translation, 274–76).

Example 12: Nikolai Medtner, 3 Novelettes op. 17, No. 2, last four measures.



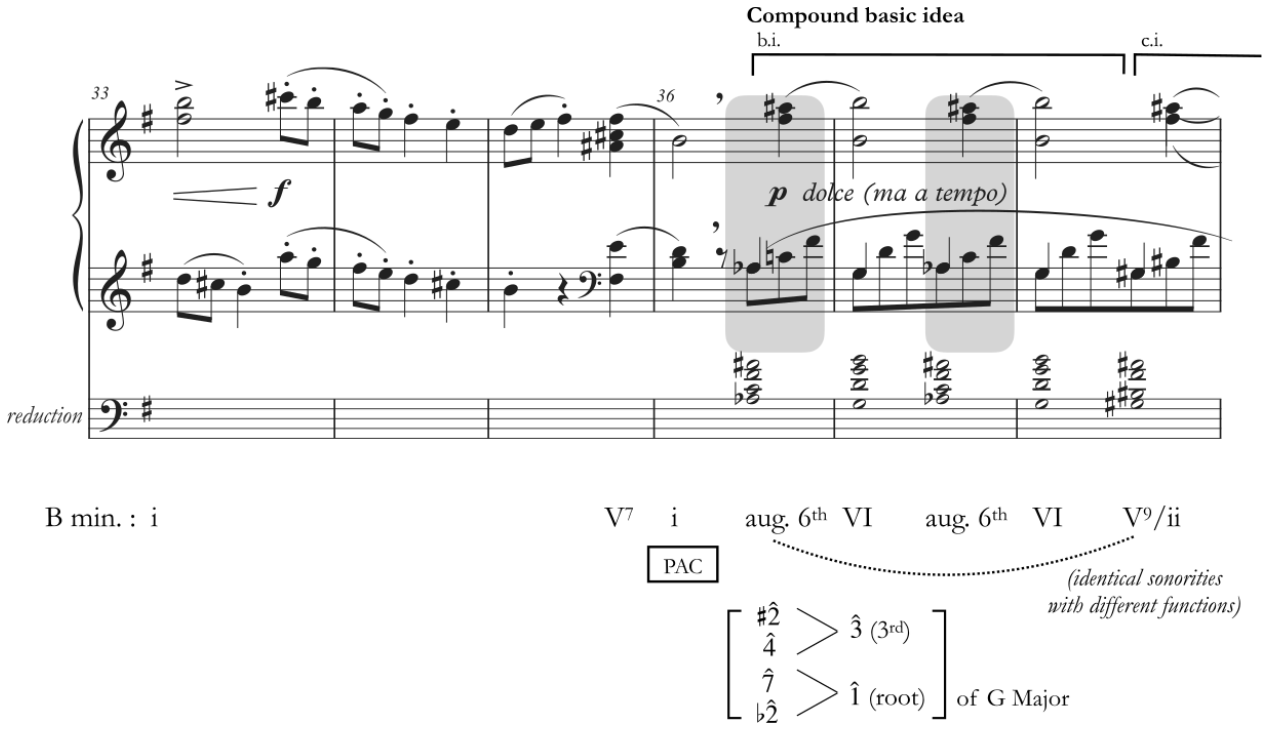
The remaining chords in **Figure 10** can be understood as the Italian, French, and German augmented sixths with an added major ninth or doubly augmented octave.[32] **Examples 13–15** illustrate these nonstandard augmented sixths in pieces by Medtner, Brahms, and Strauss. **Example 13**, from Medtner's *Romantic Sketches for the Young* op. 54, starts unambiguously in B minor (mm. 33–36). The following measures are tonally disorienting, but the B-minor tonic is clearly reaffirmed with a cadential progression in mm. 43–44. The passage in mm. 37–44 can be understood as the hybrid type *compound basis idea + consequent*. When the basic idea returns at the end of m. 40, it is transposed down a major third and shortened. The underlying harmonic progression of the passage is a descending circle of fifths: while the basic ideas feature steps of the progression embellished by augmented-sixth chords, the contrasting ideas feature faster harmonic rhythm through the circle of fifths, using in alternance dominants with major ninths and augmented triads. The chords that precede G major (mm. 36–38)

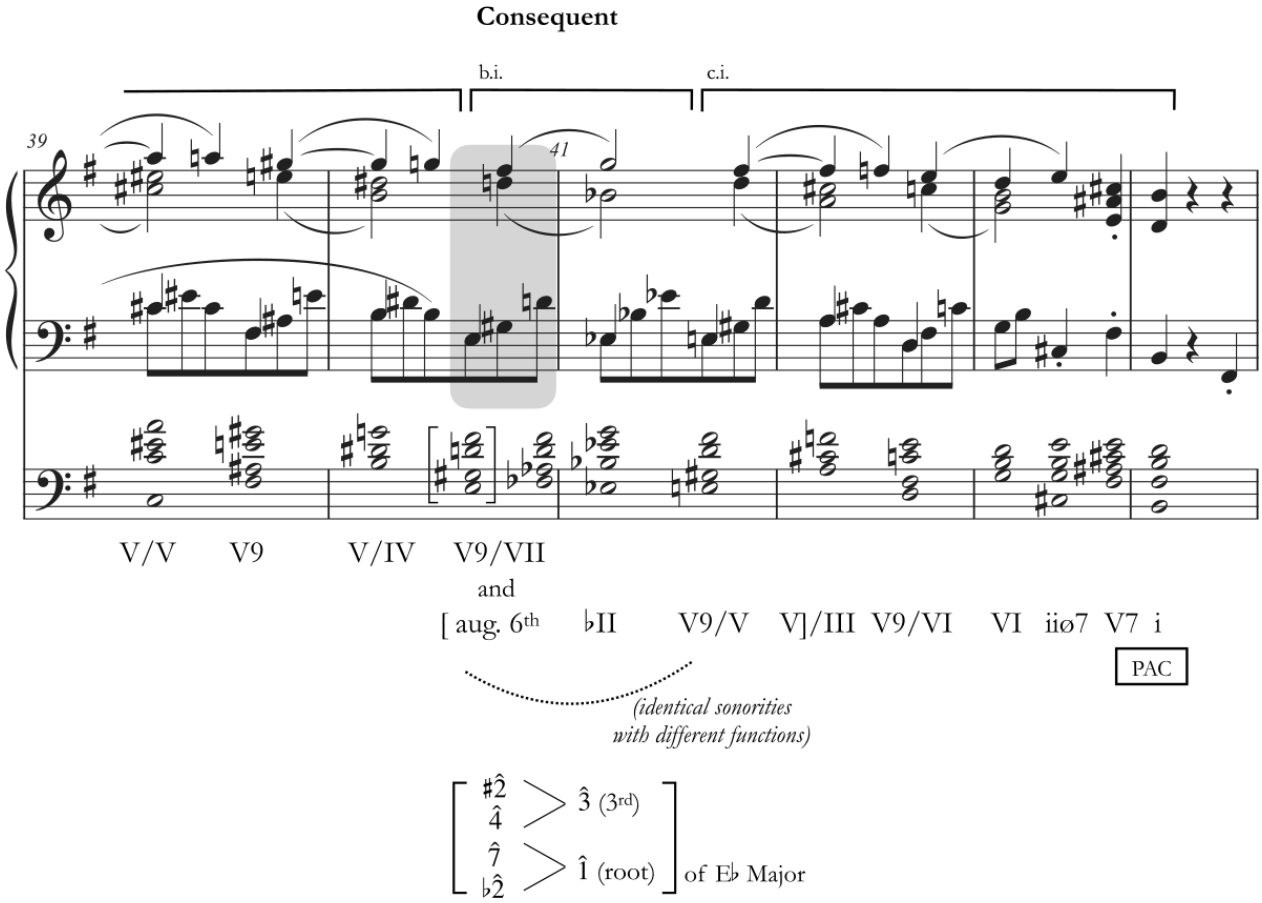
[32] I suspect that other types of augmented sixths derived from the Italian sixth remain to be found in the repertoire. The remaining intervals that could be added above the major third of the Italian sixth—the perfect fourth (or augmented third), the major sixth, and the minor ninth (or augmented octave)—all create a semitone with one of the other chord members (see the figure below). It appears that late-tonal composers, while they may have used a larger variety of chord types than their predecessors, have avoided augmented-sixth sonorities that feature a semitone between two chord members.



and E♭ major (mm. 40–41) in the basic ideas are both Italian augmented sixths with an added doubly augmented octave above the descending approach tone (i.e., in m. 36, A♭–C–F♯–**A♯**, see the augmented-sixth type in **Figure 10b**). This added note forms an augmented sixth with the major third of the chord (C–A♯), resulting in a "double augmented-sixth" sonority. Metdner uses these augmented-sixth chords enharmonically in the contrasting ideas, where they function as applied dominants with major ninths: the augmented sixth A♭–C–F♯–A♯ in m. 36 is enharmonically reinterpreted as G♯–B♯–F♯–A♯ in m. 38, where it is understood as a V9 of ii, while the augmented sixth in the basic idea of the consequent in m. 40, F♭–A♭–D–F♯ (written as an E9 chord), becomes a V9 of A in m. 41.

Example 13: Nikolai Medtner, *Romantic Sketches for the Young* op. 54, Book 2, No. 2, mm. 33–44.

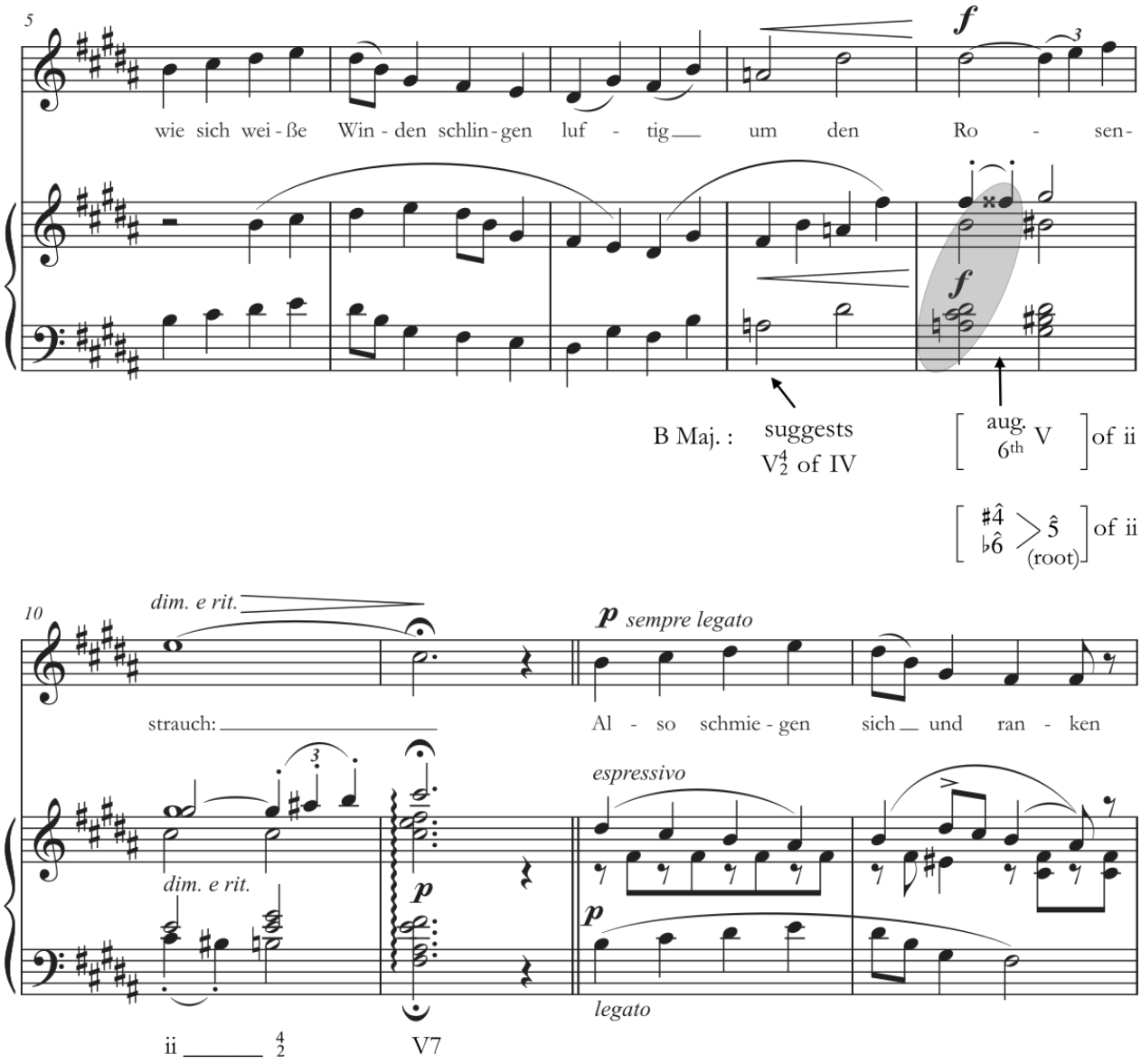




Example 14, taken from the second Lied of Brahms's op. 3, features an applied French augmented sixth with an added major ninth, which corresponds to the type shown in **Figure 10c**. The Lied starts in B major with the voice doubled at the octave by the piano (this part is not included in the example). Starting in m. 5, the vocal part and the right hand of the keyboard are in canon until m. 8, where the tonic acquires a seventh (A–B–D♯–F♯), suggesting V_2^4 of IV; in m. 9, this chord becomes a dominant ninth chord in third inversion. On the second beat, the fifth F♯ is raised to F𝄪, forming an augmented sixth with A, the seventh of V_2^4 of IV. The resolution to a G♯-major chord, which functions as a dominant of C♯ minor (which is ii in B major), suggests that the dominant ninth with a raised fifth of m. 9/beat 2 also functions as a predominant augmented sixth, tonicizing C♯ minor. The chord can thus be understood as a French sixth (A, C♯, D♯, F𝄪) with an added major ninth (B) above the descending approach tone.[33]

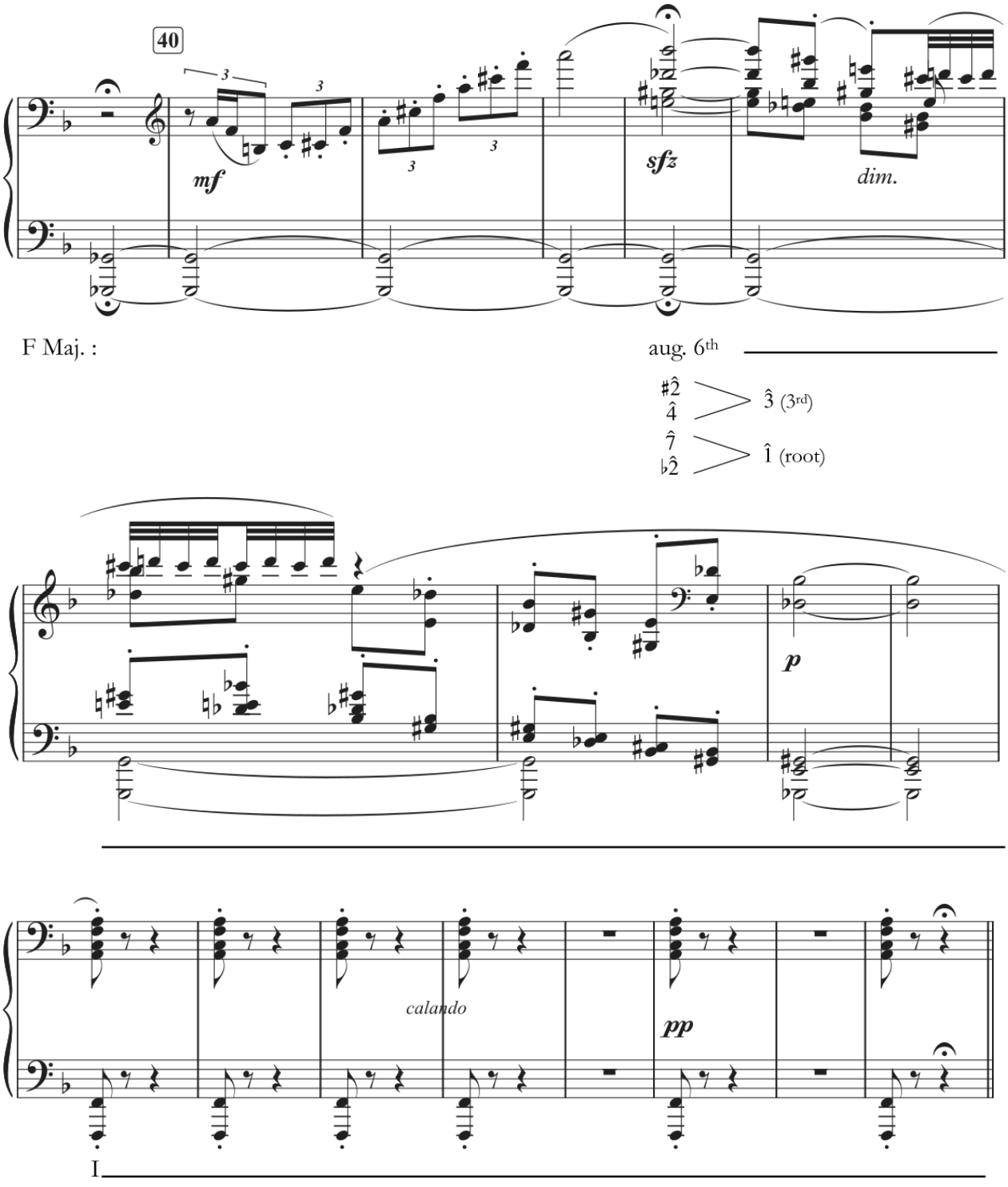
[33] The second version of this song does not include the added major ninth (B) in the augmented-sixth chord in m. 9.

Example 14: Johannes Brahms, 6 Lieder op. 3, No. 2 "Liebe und Frühling" (first version), mm. 5–13.



Strauss's *Till Eulenspiegel*, famous for the "Till sixth," also includes other types of nonstandard augmented-sixth chords. Among them is the German sixth (G♭, B♭, D♭, E) with an added doubly augmented octave (G♯) above the descending approach tone (see **Example 15** and **Figure 10d**). This chord, like the one featured in **Example 13**, is a double augmented sixth where the pairs of approach tones G♭–E and B♭–G♯ resolve to the root and third of the tonic F major.

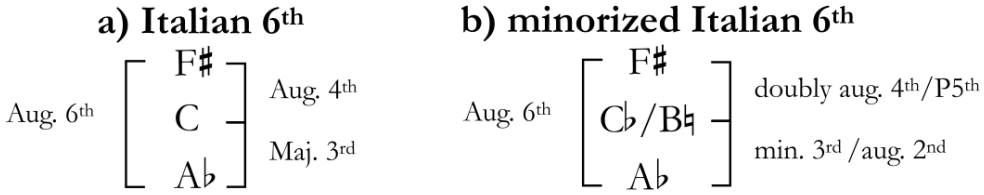
Example 15: Richard Strauss, *Till Eulenspiegel* (piano reduction by Otto Singer), rehearsal 40.



Although the augmented sixths that appear in **Examples 12–15** do not correspond to the conventional augmented-sixth chords, they all share with these chords the same basic structure with a major third above the descending approach tone. Minorized augmented sixths, on the other hand,

feature a different basic structure: instead of the major third (C) above the descending approach tone, these chords include a minor third (A♭–C♭) or its enharmonic equivalent, the augmented second (A♭–B♮, see **Figure 11**).[34] This difference affects the overall dissonance of the chord: while the Italian sixth has a tritone between the major third and the ascending approach tone (C–F♯), the minorized augmented sixth has a perfect fifth (B♮–F♯, which can also appear as a doubly augmented fourth), lending a consonant support to the upper note of the augmented sixth. In the conventional augmented sixths, the tritone imbues these chords with a strong impetus to resolve. Because minorized augmented sixths lack the tritone, they sound less dissonant than their major-third counterparts. The unusual combination of scale degrees they feature, however, endows them with a more puzzling affect than the regular augmented sixths.[35]

Figure 11: Basic structure of conventional and minorized augmented sixths.



Vincent Persichetti's approach to augmented-sixths (1961, 109–110) is similar to mine, in that he categorizes the different families of augmented-sixth chords according to the characteristic intervals above the descending approach tone. His typology comprises five basic types to which other notes can

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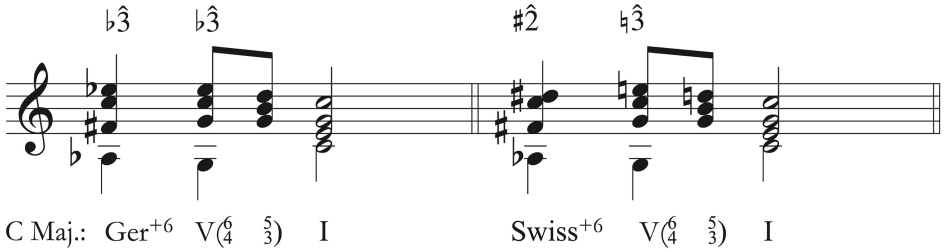
[34] Unlike Walter Piston and Mark DeVoto (1987, 420–421), who distinguish the German from the Swiss augmented sixth (i.e., A♭–C–**E♭**–F♯ vs. A♭–C–**D♯**–F♯, respectively) because the first one resolves to a minor cadential six-four while the second resolves to a major cadential six-four, I choose to categorize under the same label all subtypes of augmented sixths that are enharmonically equivalent in order to minimize the number of varieties and to emphasize these chords' possibilities for enharmonic reinterpretation.



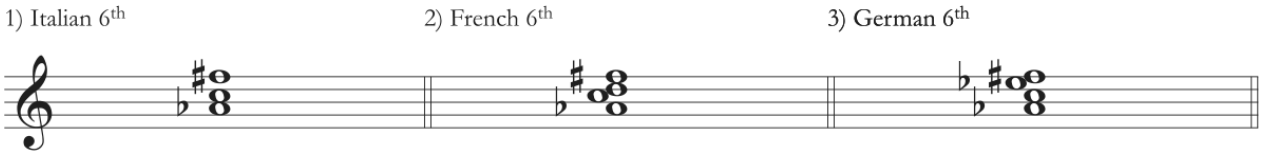
[35] For instance, when the chord A♭–B–F♯ resolves to a C minor tonic, it contains ♭6̂, 7̂, and ♯4̂. While Harrison notes that "[t]he chordal association of ♯4̂ with 7̂, in which both resolve simultaneously to 5̂ and 1̂, respectively, is rare" (Harrison 1994, 116 fn 35), I show in Chapter 3 of this dissertation that this combination of scale degrees is not as infrequent as Harrison suggests.

be added.[36] We differ, however, on the implications of these different types: while he claims that "the formation with the minor third is a color variant of the Italian augmented sixth with the major third" (110), I argue on the contrary that this change has consequences for the chord's function.[37]

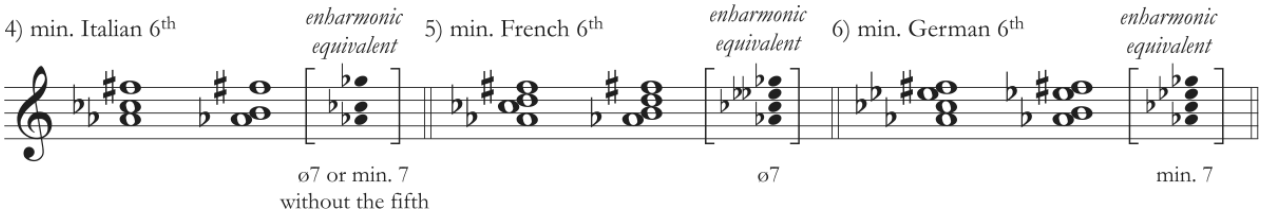
The most common minorized augmented-sixth variants are shown in **Figure 12** along with their enharmonic equivalents. Since these chords correspond to "minorized" versions of the familiar augmented sixths, I call them respectively the minorized Italian, French, and German sixths. While these types appear sporadically in previous analytical and theoretical publications,[38] they are rarely presented as a coherent family of chords, unlike the Italian, French, and German sixth chords, which are almost invariably introduced together in harmony textbooks.

Figure 12: Most common variants of minorized augmented sixths and their relationship to regular augmented-sixth chords.

a) Conventional augmented sixths



b) Minorized augmented sixths with a minor third or augmented second above the bass and their enharmonic equivalents



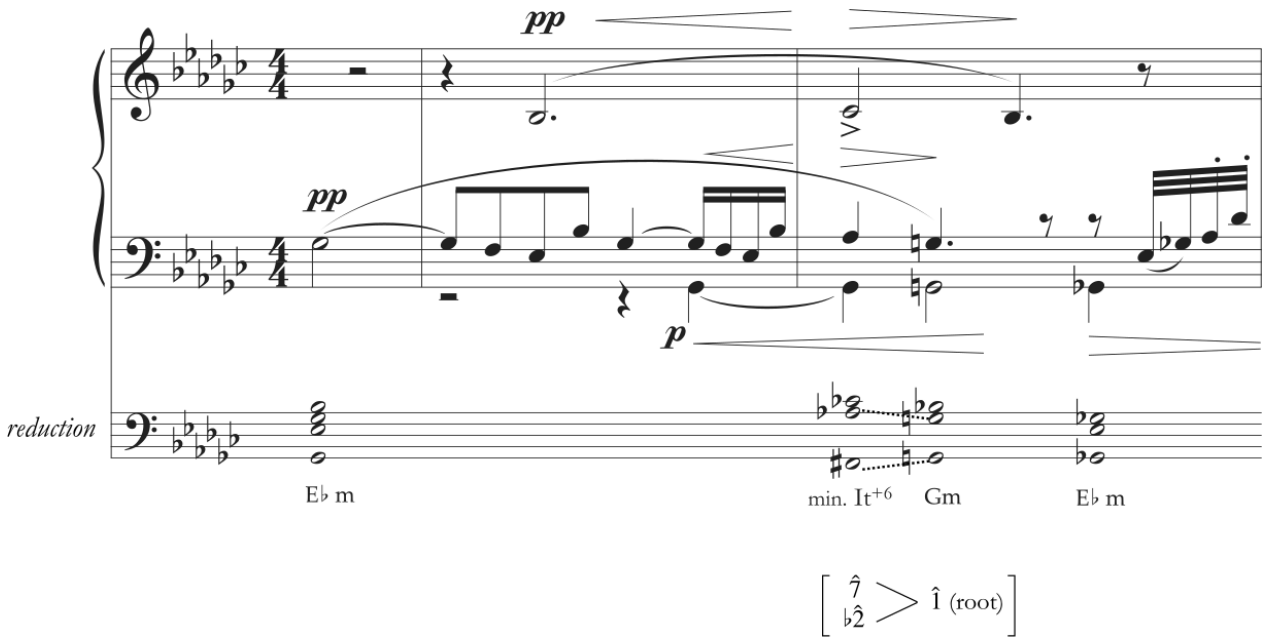
[36] Persichetti's five basic types include the Italian sixth (A♭–C–F♯), what I call the minorized Italian sixth (A♭–C♭–F♯), the Italian sixth with an added augmented octave (A♭–C–F♯–A♮), the Italian sixth with an added doubly augmented octave (A♭–C–F♯–A♯), and the augmented sixth with an augmented third above the descending approach tone (A♭–C♯–F♯). See Persichetti's Figure 5-1 (1961, 110).

[37] See **Figure 16** in this chapter (p. 51) and Chapter 3.

[38] The sources where these chords appear are specified in the subsequent section of this chapter, which deals the various resolutions of the main types of minorized augmented sixths.

Examples 16–18 each illustrate a different variety of minorized augmented sixth. **Example 16**, from the third movement of Schoenberg's String Quartet No. 2, shows an instance of an inverted minorized Italian sixth where the diminished third (F♯–A♭) resolves to G, the root of the next chord. In this example, the initial chord E♭ minor in first inversion is prolonged by the chromatic mediant G minor, which is approached by semitonal motion in all three voices. The resulting minorized Italian sixth on the downbeat of m. 2 thus intensifies the chromatic relationship between E♭ minor and G minor.[39]

Example 16: Arnold Schoenberg, String Quartet No. 2, iii, mm. 1–2.



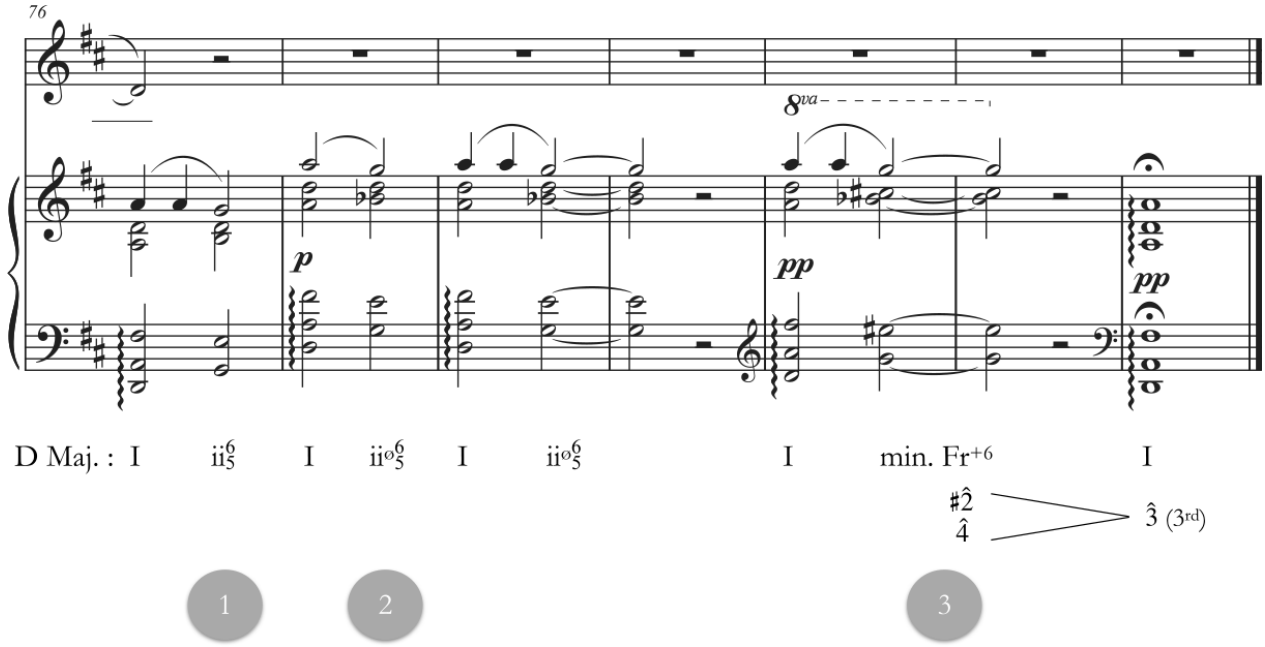
[39] While at a deeper level of the structure, the minorized Italian sixth and the G minor chords are embellishing chords, these sonorities contribute to the enigmatic character of this opening and constitute one of the main harmonic motives of the movement. For these reasons, I consider them distinct harmonic entities, at least at the foreground level. One should also note that E-flat minor acts more like a reference chord than a tonal center; hence the absence of Roman numerals in my analysis. Schoenberg himself asserted that this quartet was not written in the tonal idiom:

> [T]he Second String Quartet op. 10 … marks the transition to my second period. In this period I renounced a tonal centre–a procedure incorrectly called "atonality." In the first and second movements there are many sections in which the individual parts proceed regardless of whether or not their meeting result in codified harmonies. Still, here, and also in the third and fourth movements, the key is present distinctly at all the main dividing-points of the formal organization. Yet the overwhelming multitude of dissonances cannot be counterbalanced any longer by occasional returns to such tonal triads as represent a key. It seemed inadequate to force a movement into the Procrustean bed of tonality without supporting it by harmonic progressions that pertain to it" (Schoenberg [1952] 1991, 151).

For a more detailed analysis of this movement, see Dale (1993).

The final measures of Ropartz's *Berceuse* include a minorized French augmented sixth (**Example 17**). In the postlude, the D-major tonic harmony alternates with various chords on $\hat{4}$ in the bass: Ropartz uses ii^6_5 (chord 1), $ii\text{ø}^6_5$ (chord 2), and an augmented sixth enharmonically equivalent to a root-position half-diminished seventh chord built on $\hat{4}$ (chord 3, G–B♭–C♯–E♯, which is equivalent to Gø7). Because of its similarity to the French sixth (G–**B♭**–C♯–E♯ vs. G–**B**–C♯–E♯), I call this chord the "minorized French sixth."[40] The augmented sixth between $\hat{4}$ and $\sharp\hat{2}$ resolves to $\hat{3}$, the major third of the following tonic harmony. However, because the bass leaps from $\hat{4}$ to $\hat{1}$, the resolution is implied in that voice.[41]

Example 17: Guy Ropartz, *Berceuse*, mm. 76–82.



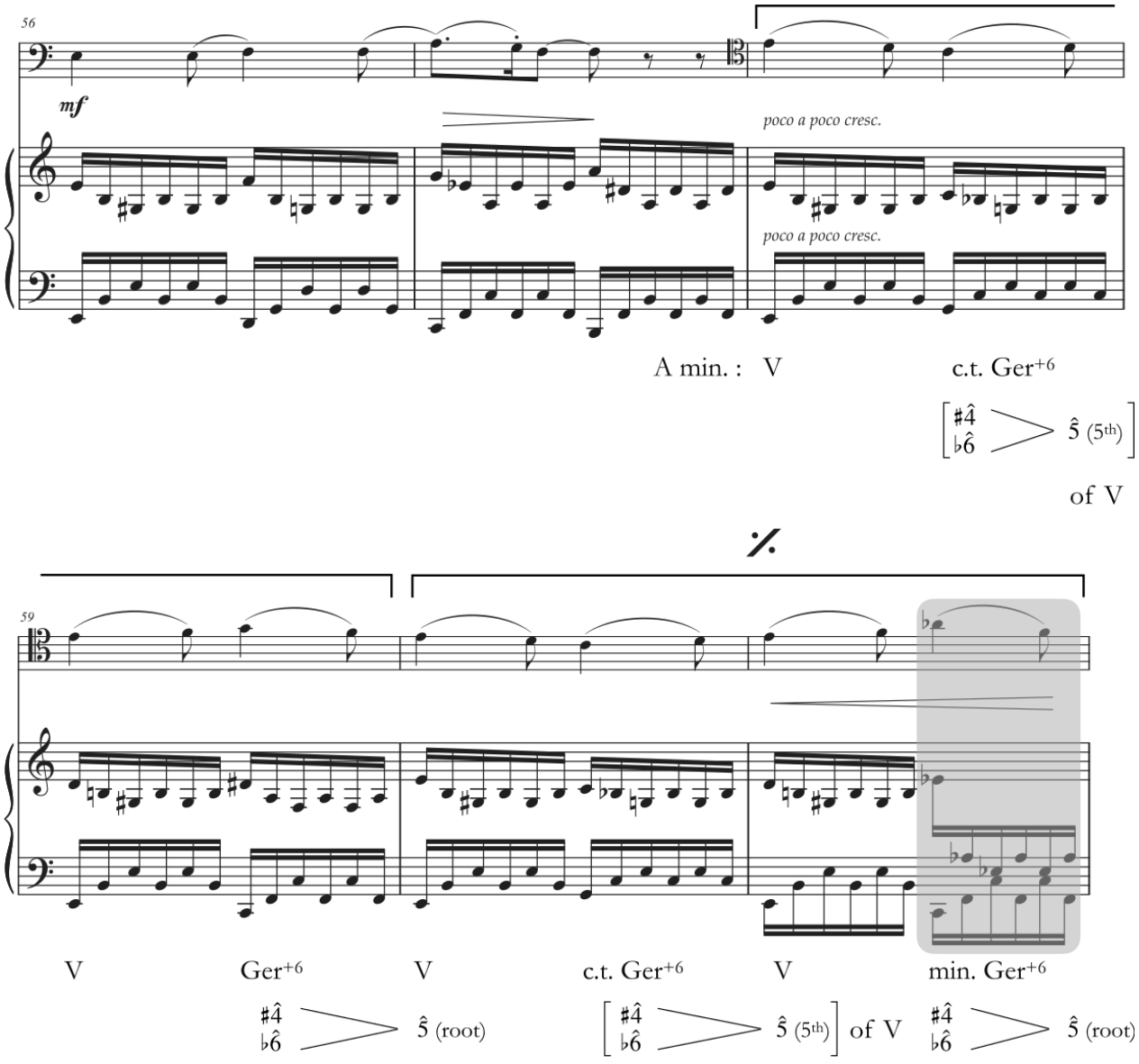
The transition of the first movement of Léon Boëllmann's Cello Sonata in A minor, reproduced in **Example 18**, ends with a standing on the dominant in the home key. The chords on

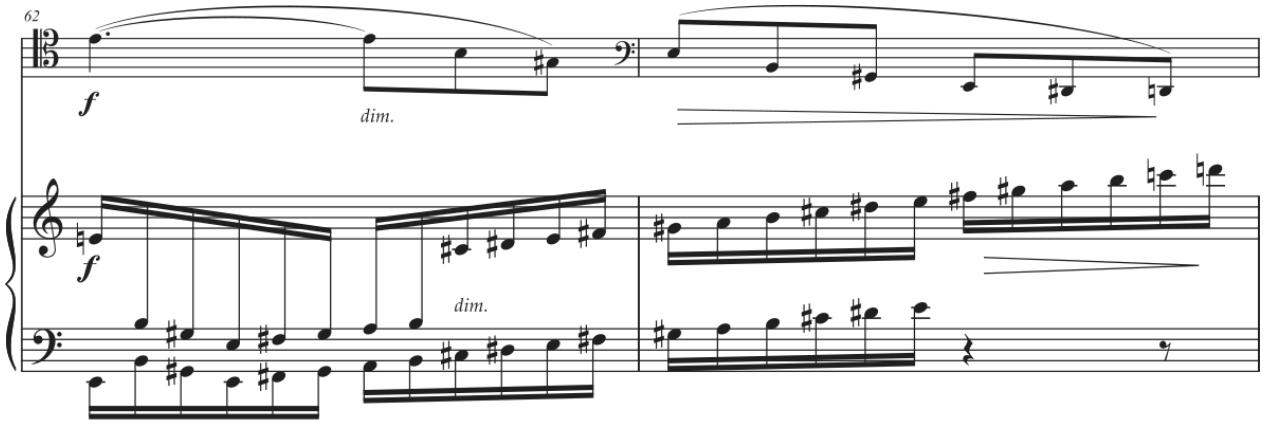
[40] While Daniel Harrison (1995, 183) labels this chord as a "dual" German sixth because it corresponds to a mirror inversion of the German augmented-sixth chord, I prefer calling it the minorized French sixth because it allows one to visualize the chord's intervallic structure more directly.

[41] The penultimate chord of **Example 12** (p. 32) also falls into the minorized French sixth category. While the $\hat{5}$–$\hat{1}$ motion in the bass conveys a clear sense of a dominant-to-tonic progression, the upper voices do not feature a traditional dominant chord. Instead, it is a D♭ø7 where the D♭ and F♭ can be understood as the lowered fifth and lowered seventh of V7. Tymockzo (2011, 272) notes that this chord is "extremely rare" in nineteenth-century music, but does occur in later tonal repertoires.

the downbeats of mm. 58–61 are root-position dominant chords, while the ones on the second beat are various augmented-sixth sonorities. The dominant E is first prolonged by an inverted common-tone German sixth (C–E–G–B♭[=A♯], m. 58) whose approach tones resolve to the fifth of the dominant, then by an inverted German sixth (F–A–C–D♯, m. 59) whose approach tones resolve to the root of the dominant. When the progression is repeated in mm. 60–61, the first augmented sixth is identical to the one in m. 58, but the second one is a minorized German sixth instead of the German sixth that appeared in the analogous spot (i.e., F–**A**–C–D♯ vs. F–**A♭**–C–E♭[=D♯]).

Example 18: Léon Boëllmann, Cello Sonata in A minor, i, mm. 56–63.

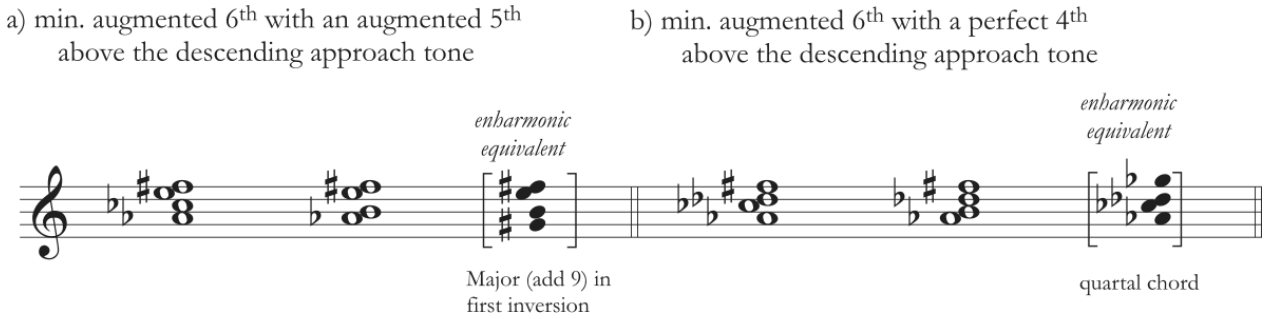




These three chords, the minorized Italian, French, and German sixths, are the main focus of this study, although they are not the only types of minorized augmented sixths that appear in late-tonal repertoires. I suspect that the minorized Italian, French, and German sixths were particularly interesting chordal formations for composers because they are equivalent to common structures of diatonic harmony—the half-diminished and minor-seventh chords with or without the fifth (see **Figure 12**, p. 38)—and yet as augmented sixths they exhibit non-traditional voice leadings. In other words, they are familiar objects that behave in unfamiliar ways. The other types of minorized augmented sixths sometimes encountered in late-tonal repertoires (**Figure 13**) are less suited to this use since they correspond to rather uncommon sonorities: the chord with an added augmented fifth above the descending approach tone (**Figure 13a**) is equivalent to an inverted major triad with an added major ninth, while the chord with an added perfect fourth above the descending approach tone (**Figure 13b**) is equivalent to a quartal chord. While in theory, any note can be added to the basic structure, in practice, composers have tended to use chords that are equivalent to those of the common practice, which are largely tertian sonorities. In fact, the minorized Italian, French, and German sixths are the only additional possibilities of augmented-sixth chords that sound like diatonic seventh chords.[42]

[42] Thanks to Joseph Straus who shared this observation with me. The Italian sixth sounds like a dominant seventh without the fifth; the German sixth is equivalent to a complete V7 chord. The French sixth is the only one that does not correspond to any diatonic seventh chord of the major-minor key system.

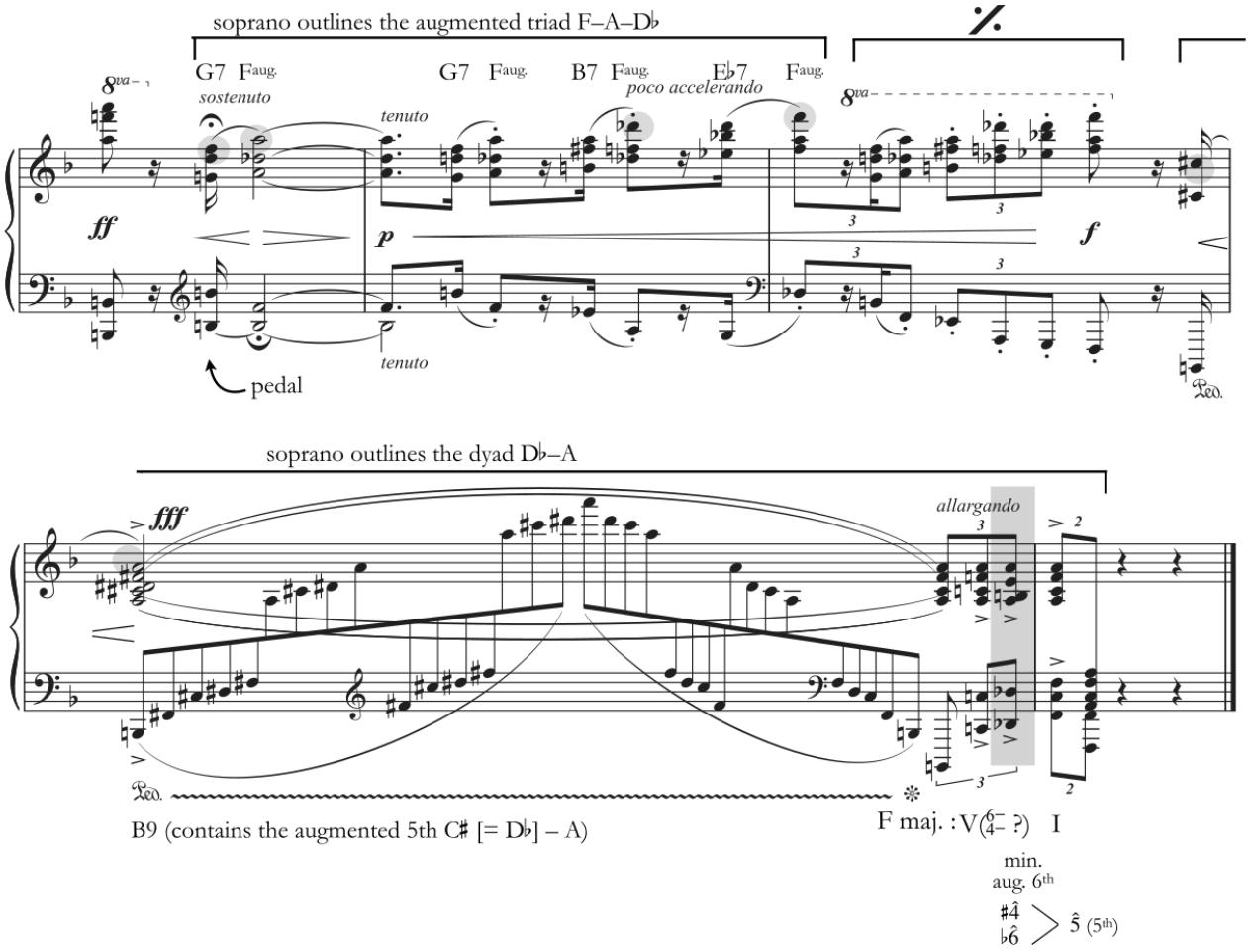
Figure 13: Less common variants of minorized augmented-sixths and their enharmonic equivalents.



Instances of these rare minorized augmented-sixth chords in the repertoire are reproduced in **Examples 19–22**. The end of Medtner's Sonata minacciosa (**Example 19**) features a minorized Italian sixth (D♭–E–B) with an added augmented fifth (A) above the descending approach tone. In the measures leading to the final cadence, the soprano outlines the augmented triad F–A–D♭. The chords prolonging the augmented triad—G7, B7, and E♭7—divide the octave symmetrically into major thirds. The roots of those chords, combined with the notes of the augmented triad, result in a whole-tone collection (i.e., F–G–A–B–D♭–E♭). The soprano of the last two measures of the piece (including the anacrusis) outlines the dyad D♭–A, which is a subset of the augmented triad F–A–D♭. The A is harmonized first by a B9 chord (which contains A and C♯, two common tones shared with the augmented triad F–A–C♯). The A is then harmonized by a cadential six-four in F major; instead of resolving to a conventional root-position dominant harmony, it goes to a minorized augmented sixth that includes an augmented fifth above the descending approach tone (D♭–E–**A**–B), which allows the A in the melody to be held. The sixth of the cadential six-four (A) is thus left unresolved, but the fourth (F) proceeds as expected to the leading tone (E), conferring a dominant quality to this nonstandard chord. It then resolves directly to tonic harmony.[43]

[43] We can also notice in the second-to-last measure of this example the chromatic voice exchange B–C–D♭ against C♯–C–B between the bass and the second-lowest voice of the right hand. The functional ambiguity of the minorized augmented sixth in this example is analyzed in more depth in Chapter 3 (see **Example 50**, p. 122).

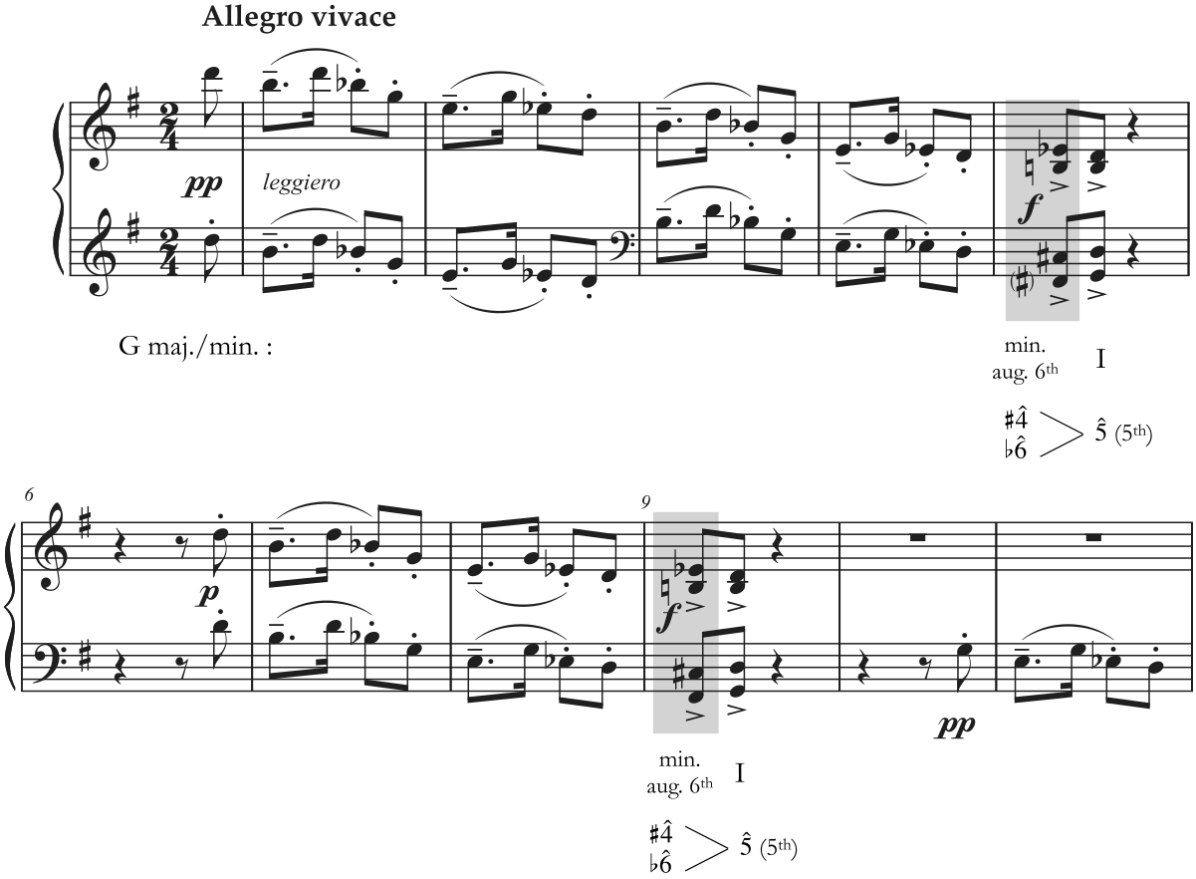
Example 19: Nikolai Medtner, Sonata minacciosa op. 53 No. 2, last five measures.



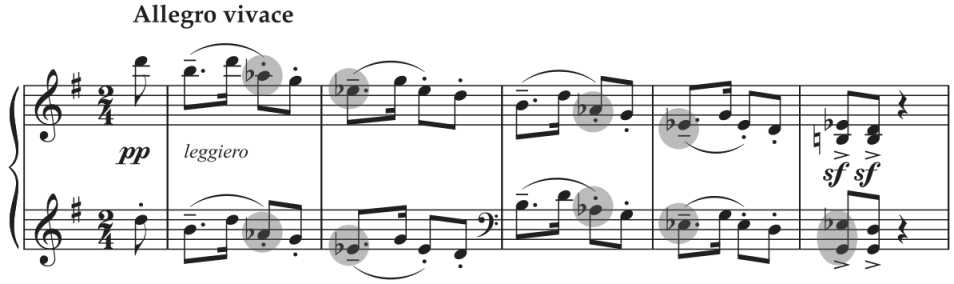
Example 20, taken from the opening of Rachmaninoff's *Morceaux de salon* No. 5, also features a minorized Italian augmented sixth (E♭–F♯–C♯) with an augmented fifth (B) above the descending approach tone (mm. 5 and 9). This chord, whose augmented sixth E♭–C♯ resolves to D, the fifth of the tonic harmony G major, appears here in a less common inversion with the leading tone F♯ in the bass, instead of the descending approach tone E♭. The additional B is therefore a common tone between the two chords; the other voices move semitonally to the other chord factors. When the material is fragmented in mm. 11–12 and 13–14, the augmented-sixth chord is changed into a minorized German sixth (E♭–F♯–**B♭**–C♯), allowing all four voices, this time, to resolve by semitonal motion to the members of the tonic chord G major. The ambiguity between the major and minor modes in this opening, which features in close succession B♮ and B♭ in mm. 1 and 3, as well as E♮ and E♭ in mm. 2 and 4, is reflected in the two types of minorized augmented sixths used in this excerpt:

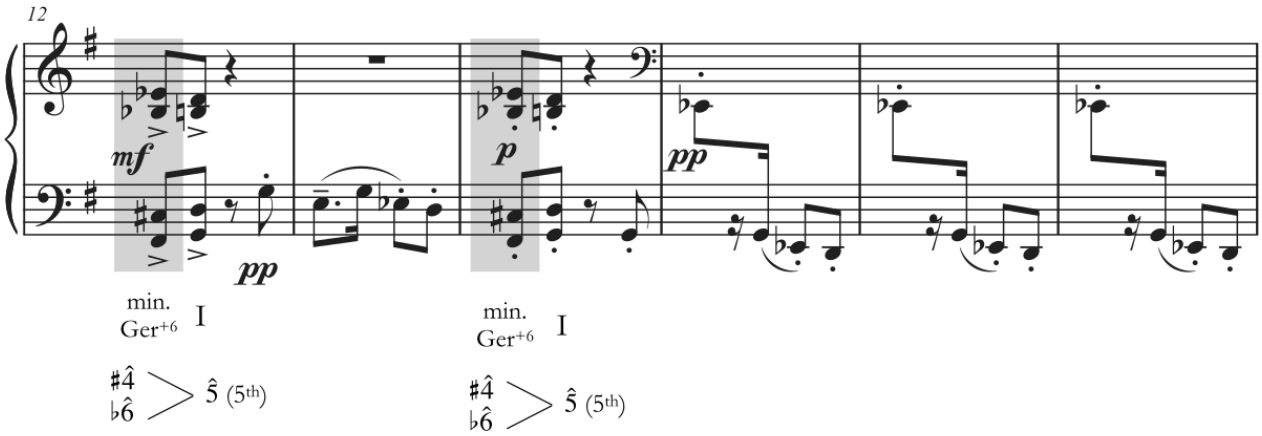
the ones that appear in m. 5 and 9 contain a B♮, while the ones that appear in m. 12 and 14 contain a B♭.[44]

Example 20: Sergei Rachmaninoff, *7 Morceaux de salon*, op. 10, No. 5 "Humoresque" (2nd version, 1940), mm. 1–16.



[44] I use in this example the second version of this piece, published in 1940. The original version (1894) has a slightly different opening melody and does not feature augmented-sixth chords in mm. 5, 9, 12, and 14. Instead, the tonic harmony is simply embellished with an E♭ delaying the fifth D. The differences between the two versions are highlighted in the score below.





Although the augmented sixths of the example above are all appoggiatura chords delaying the appearance of the tonic and are therefore subservient to this function, I argue, similarly to Scott Murphy (2021) in his study of Myaskovsky's music, that because these prolongational chords are in sharp contrast with the usual sonorities employed for that purpose in common-practice repertoires, they remain analytically significant.

In his *Theory of Harmony*, Schoenberg discusses the quartal chords found in his work *Pelleas und Melisande* (**Example 21**), which constitute, to his knowledge, the earliest instances of such harmonies in his own music. The first chord of **Example 21**, G♯–B–C♯–F♯, corresponds to a minorized Italian sixth with and added perfect fourth D♭ (spelled C♯) above the bass. (I have respelled the progression in **Figure 14**.) This chord contains two pairs of approach tones: A♭ and F♯, which suggests an augmented-sixth resolution because the following harmony C minor contains the target note G, and B–D♭, functioning as a diminished third contracting to C. In this example, the resolution to G in the lowest voice is implicit, since the bass A♭ moves plagally to E♭, the third of the chord of resolution, instead of resolving to G.[45] The two-chord progression is sequenced down a whole tone in the next bar.

[45] This plagal resolution resembles the one in Rangström's song "Bön till natten" (see **Example 8**, p. 17).

Example 21: Arnold Schoenberg, excerpt from *Pelleas und Melisande*, 3rd and 4th measures before rehearsal 9, cited in his *Theory of Harmony* ([1911] 1983, 403).

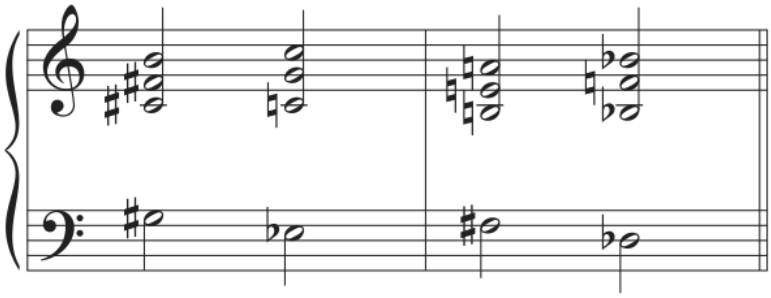
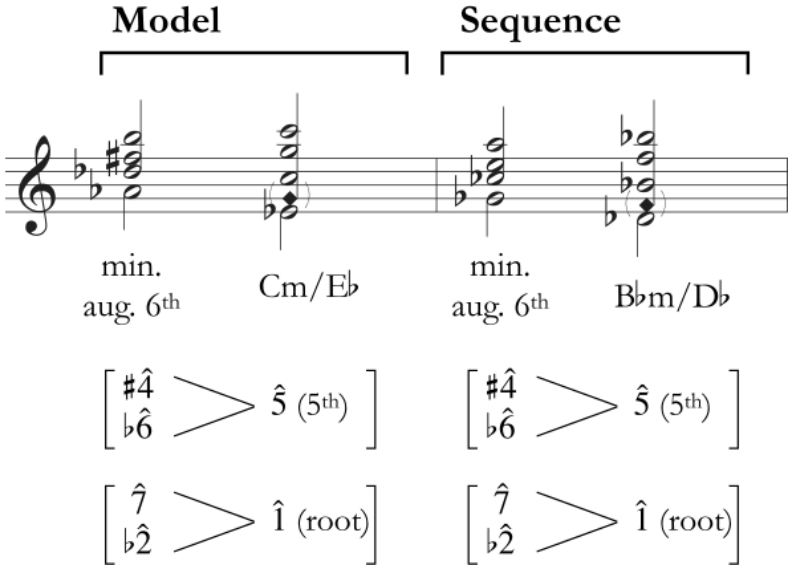


Figure 14: Respelling of Example 21.

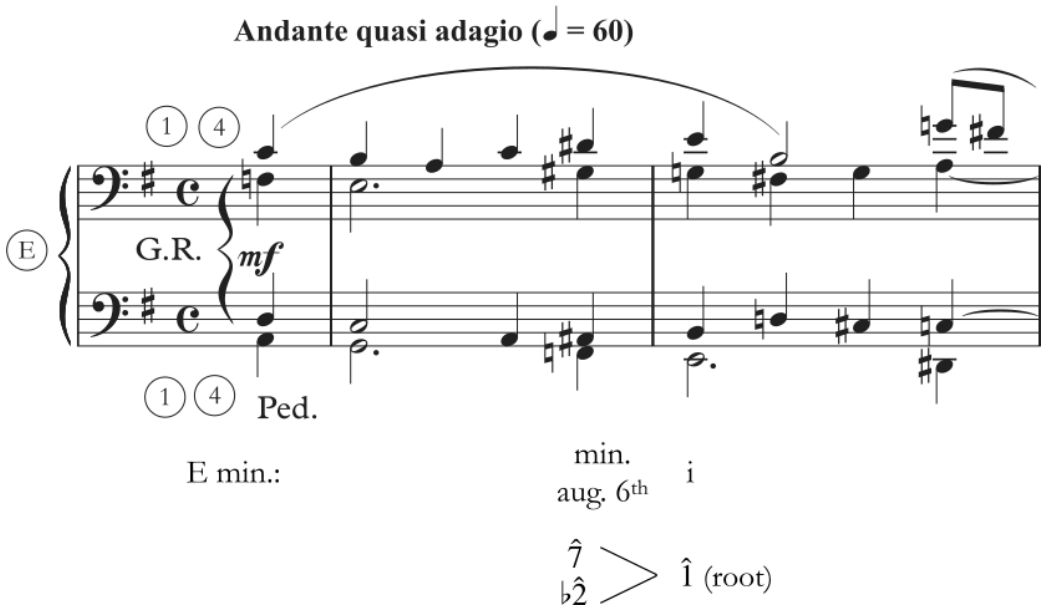


Quartal minorized augmented sixths include two instances of interval class 2, which can both potentially function as augmented sixths or diminished thirds to the next harmony if the pitch class that lies between them appear in the following chord, as it does in **Example 21**.[46] In other examples, however, only one pair of notes implies an augmented-sixth resolution. For instance, in the "Offertoire" of Louis Vierne's *Messe basse pour les défunts* (**Example 22**), the sonority F–G♯–A♯–D♯, enharmonically equivalent to a quartal chord (F–B♭–E♭–A♭), resolves smoothly to the tonic E minor. F and D♯ resolve by contrary motion to the root E, but the other interval class 2, G♯ and A♯, does not behave as a pair of approach tones, since the pitch that lies between them, A♮, does not appear in the

[46] Other examples of such "double augmented sixths" appear in **Examples 13** and **15**.

chord of resolution. Instead, the pair resolves outwards: G♯ moves to G♮, the third of Em, and A♯ moves to the fifth B.

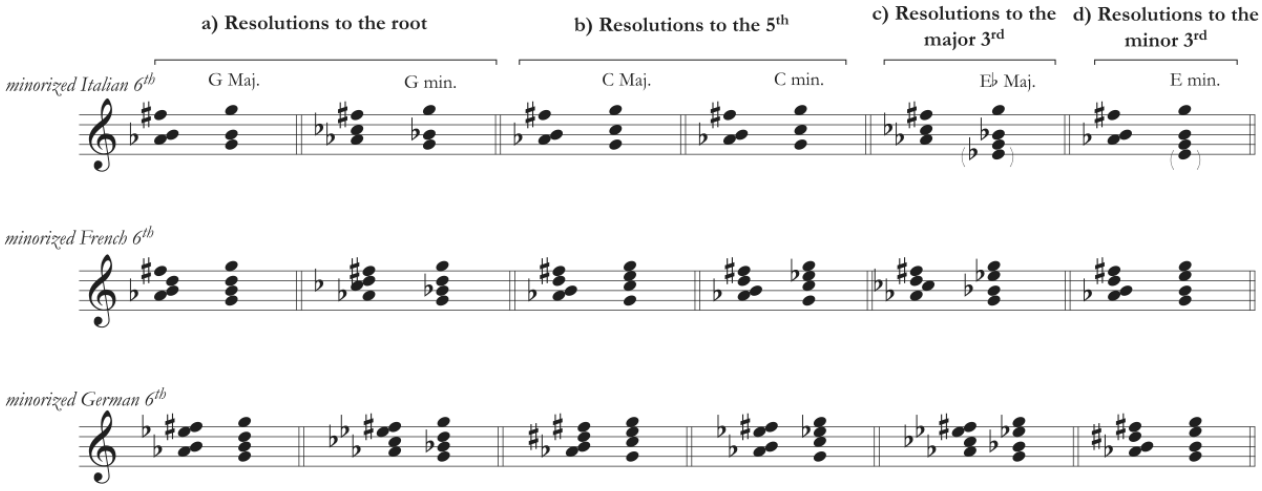
Example 22: Louis Vierne, *Messe basse pour les défunts*, III. Offertoire, mm. 1–2.



Resolutions to consonant chords

Figure 15 gives the efficient voice leadings for each of the three main minorized augmented-sixth types defined above (see **Figure 12b**, p. 38), where the augmented-sixth interval resolves to various chord factors. Since minorized augmented sixths most often resolve to consonant triads, I consider for now only the resolutions to consonant chord factors (root, fifth, major and minor thirds) and will discuss later the resolutions to dissonant ones (see p. 66–70). In **Figure 15**, the augmented sixth between A♭ and F♯ resolves to G by contrary semitonal motion in all the progressions, but G can be either the root of a G major or minor chord (a), the fifth of C major or minor (b), the major third of E♭ major (c), or the minor third of E minor (d). Each augmented-sixth type thus yields six possible resolutions to consonant triads.

Figure 15: Efficient voice leading of the minorized Italian, French, and German sixths.[47]



Some of these resolutions appear in previous publications. Richard Bass (2007), Konrad Harley (2014), and Scott Murphy (2021) have systematized the resolutions of either the minorized French or German sixths, or both of these chords.[48] The various resolutions of the minorized Italian sixth have, however, been overlooked in the literature on chromatic harmony.[49] Moreover, unlike the conventional augmented sixths, these chords are usually not presented as a coherent family of chords, even though they share key tonal features.[50] As mentioned above, these three chords are characterized by the

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[47] In **Figure 15**, I spell the members of the augmented-sixth chords depending on the pitches included in the chord of resolution: I use the same note names where there are common tones (e.g., in mm. 1, 7, and 13, B is a common tone) while I highlight the semitone motions by using two different letter names (e.g., in mm. 2, 8, and 14, C♭ goes down to B♭).

[48] See, for instance, Bass (2007, 87, Table 4) for the six possible voice leadings of the minorized French sixth (i.e., a half-diminished seventh chord treated as an augmented sixth). A systematic account of all the possible resolutions to major and minor triads of the augmented sixth enharmonically equivalent to a minor seventh chord, which I call "minorized German sixth" in this study, appears in Konrad Harley's dissertation on harmony in Prokofiev's music (2014, 34). Murphy's (2021, 46) system for categorizing "antitonic" harmony (i.e., any chord whose function is to provide contrast with the tonic) features all the possible resolutions of the half-diminished and minor seventh chords to major and minor triads, including those where the interval class 2 can be treated as an augmented sixth. His Example 2.10 (2021, 46) includes all the resolutions of the minorized French and German sixths.

[49] Harley's dissertation includes an example of a minorized Italian sixth (2014, 32; see the last measure of his Example 2.6), but he analyzes it as an incomplete minor-seventh augmented sixth (*ibid*, 34). I also discuss this example in Chapter 3 (see **Example 33**, p. 86).

[50] What I call the minorized French and German sixths belong to the same chordal family in Murphy's (2021) paper on "antitonic chords" in Myaskovsky's music. This family of chords is not limited to minorized augmented sixths; it encompasses a large variety of chord types (major, minor, augmented, dominant seventh, half-diminished seventh, minor seventh, French sixth, and diminished seventh) whose roots can form different intervals with the root of the tonic. (For the complete list of antitonic progressions, see Example 2.10 in Murphy 2021, 46.) The family of antitonic chords is, however, too large for my purpose here, since I seek to emphasize the difference between the regular augmented sixths and the minorized types. Furthermore, these nonstandard augmented-sixth chords do not solely resolve to tonic harmony

sounding perfect fifth between the minor third/augmented second (B or C♭) and the ascending approach tone (F♯) (see **Figure 11**, p. 37); their sonority thus contrasts sharply with the conventional augmented sixths which instead feature a dissonant tritone between the third (C) and the ascending approach tone (F♯). A functional analysis of these chords also highlights that for most resolutions, the three types of minorized augmented sixths share a similar functional profile. In fact, the minor third or augmented second is what lends them a functionally distinct component compared to the regular augmented sixths. **Figure 16** compares the scale degrees involved when the approach tones of the Italian and minorized Italian sixth resolve to different chord factors, assuming that the chord of resolution has tonic function. In the resolution to the root of a tonic harmony, the minor third above the descending approach tone (**Figure 16a**) corresponds to ♭$\hat{4}$, a scale degree that appears far more infrequently than the $\hat{4}$ of the regular augmented sixths in this type of resolution.[51] The resolutions to the fifth of major and minor triads (**Figure 16b**) include an even greater functional contrast. The tonic is a common tone when the augmented sixth is of the Italian, French, or German variety; the function of these augmented sixths is usually understood as purely ornamental (Aldwell and Schachter 2011, 557). These chords can also be viewed as expressing subdominant function because of the ♭$\hat{6}$–$\hat{5}$ motion, a hallmark of S-to-T progressions.[52] The lack of a stereotypical voice leading that would suggest a D-to-T motion (either $\hat{7}$–$\hat{1}$ or $\hat{5}$–$\hat{1}$) also allows the subdominant quality of these chords to come to the fore.[53] Additionally, when these chords appear over a ♭$\hat{6}$–$\hat{1}$ or ♭$\hat{6}$–♭$\hat{3}$ bass line, the sense of a subdominant discharge is even stronger, since these bass lines are most commonly associated with

in the examples I have gathered (see Chapter 3); the appellation "antitonic" would therefore not reflect the different contexts where these chords appear.

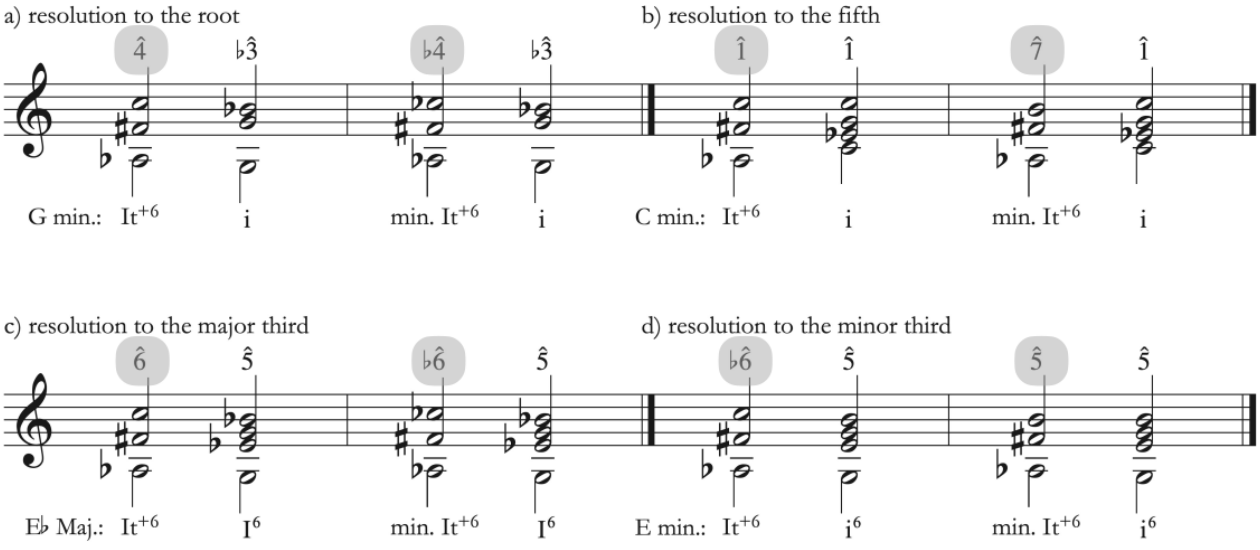
[51] Tymoczko notes that the lowered $\hat{4}$ is rather uncommon in Romantic music; he hypothesized that its absence stems from the minor mode being viewed as "the dual or shadow of the major… since the lowered fourth scale degree is not available in major, composers may have shied away from it in minor" (2011, 271). He observes that it does appear in twentieth-century works, such as Shostakovich's G minor Piano Quintet (1940). See my **Examples 16**, **22**, **56–58**, **65**, and **70** for additional instances of augmented sixths with ♭$\hat{4}$.

[52] For more on the scale-degree behaviors involved in S-to-T progressions, see Harrison (1994, 91–92).

[53] Margaret Notley, in her article on the role of plagal harmony in Brahms's music, underlines that the avoidance of the leading tone (the characteristic ingredient of dominant function) is precisely what allows subdominant harmonies to temporarily "take over the cadential function of the dominant" (Notley 2005, 94). She notes that the authentic and plagal systems, although presented as counterparts in dualistic theories (e.g., Riemann, Harrison), are not equal. Since the authentic system is far more common than the plagal one, this discrepancy gives the latter a "marked" character.

plagal progressions.[54] When lowering the third, however, $\hat{1}$ is apt to become $\hat{7}$, which strongly implies a dominant-to-tonic progression when it resolves to $\hat{1}$. The resolutions of minorized augmented sixths to the major third (**Figure 16c**) all feature $\flat\hat{6}$ instead of $\hat{6}$, which does not change the function of these chords, but it intensifies their subdominant color, by introducing a descending semitone where a descending whole tone would have occurred. Lastly, the resolutions to the minor third all include $\hat{5}$ instead of $\flat\hat{6}$ (**Figure 16d**): this change imbues the progression with a dominant-to-tonic quality, especially if the $\hat{5}$–$\hat{1}$ resolution appears in the bass.[55]

Figure 16: Various resolutions of the Italian and minorized Italian sixth to tonic harmony.



Some of the resolutions of **Figure 15** display voice-leading problems when considered through the lens of common-practice conventions: incomplete harmonies, resolutions to second-inversion triads, or parallel fifths. The following section examines ways composers have handled these limitations.

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[54] Swinden (2005) categorizes bass lines according to whether they can happen with only one functional progression in common-practice tonality or whether they belong to various functional progressions. For example, while $\hat{5}$–$\hat{1}$ in the bass unequivocally conveys a dominant-to-tonic motion, $\hat{4}$–$\hat{3}$ is less decisive, since it can happen in subdominant-to-tonic progressions (IV–I^6) as well as dominant-to-tonic ones (V^4_2–I^6). See Swinden 2005, 258–259.

[55] This brief comparison of the function of minorized augmented sixths to their major-third counterparts covers only the progressions where the chord of resolution has tonic function. As Harrison argues, the function of an augmented sixth depends largely on the function of the chord to which it resolves (1995, 185–187). Chapter 3 will discuss the intricacies of the harmonic function of these chords in a wider variety of contexts, where the function of the chord following the augmented sixth is not limited to tonic.

The minorized Italian sixth must resolve to an incomplete triad when proceeding by efficient voice leading in a three-voice texture. Since the two voices forming the augmented-sixth interval resolve to a single pitch class, only one voice remains to complete the chord. For example, in the resolution to the root of a G-minor chord, both A♭ and F♯ move to G, while C♭ moves to B♭ (**Figure 15**, m. 2); the resulting chord therefore does not have a fifth. This resolution of the minorized Italian sixth is, however, the least problematic, because omitting the fifth of a triad, as opposed to omitting the root or the third, generally does not affect the sonorous balance of the chord nor its perceived function (Harrison 1994, 55). **Example 16** (p. 39) showed an example of an inverted minorized Italian sixth where the diminished third resolves to the root of the next chord.

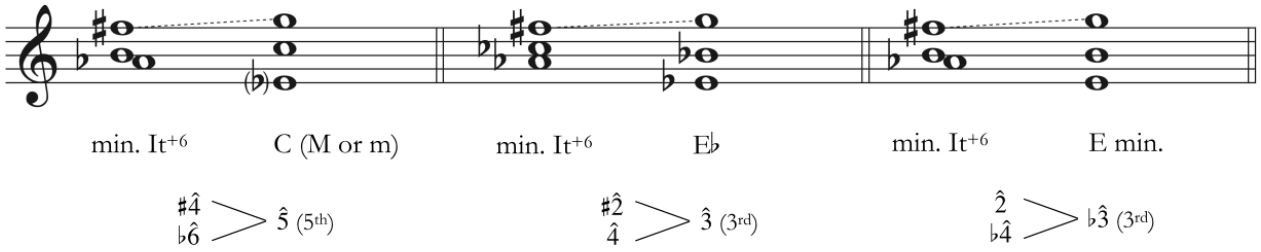
The other types of resolution of the minorized Italian sixth, however, are more problematic: the third is missing in the resolution to the fifth (**Figure 15**, mm. 3–4), while the resolutions to the major and minor thirds lack the root of the chord (**Figure 15**, mm. 5–6). This is perhaps why the minorized Italian sixth is far less common than the minorized French and German sixths, which can both resolve to complete triads when proceeding by efficient voice leading.

The voice-leading problems of the minorized Italian sixth can, however, be avoided by using a leap to the missing chord factor, instead of resolving the descending approach tone by semitone motion (**Figure 17**). The Swedish composer Ture Rangström uses this technique at the opening of his song "Bön till natten" (**Example 23**):[56] in mm. 3 and 4, the plagal leap in the bass from G♯ to E♭ (enharmonically ♭$\hat{6}$ to ♭$\hat{3}$ in C minor) allows the resolution of the augmented sixth to a complete triad in this three-voice texture.[57]

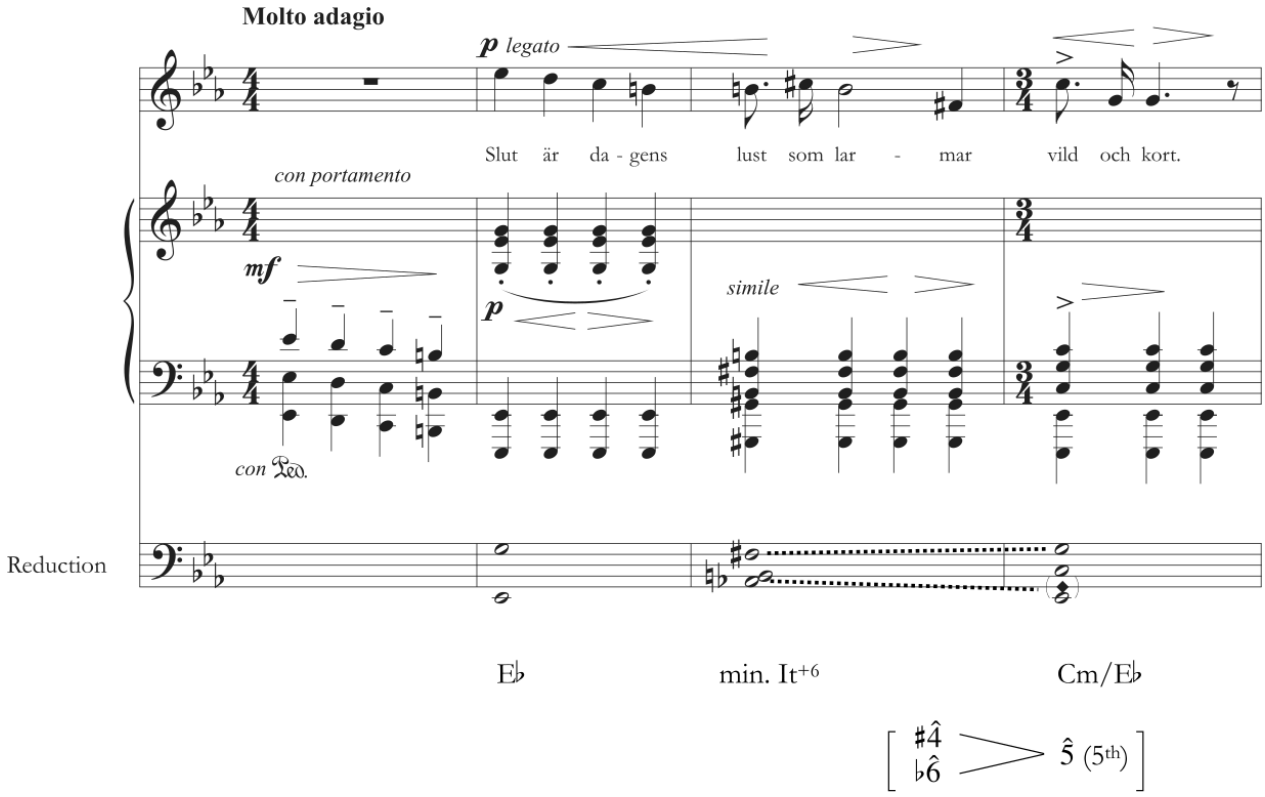
[56] The opening of this song is also discussed in Chapter 1 (**Example 8**, p. 17) and Chapter 3 (**Example 54**, p. 128).

[57] When the progression returns at the end of the song, the augmented sixths resolve to a C-major harmony instead of C minor, with the leap G♯(=A♭)–E♮ in the bass.

Figure 17: Alternate voice leadings for the resolutions of the minorized Italian sixth with leaps in the bass.



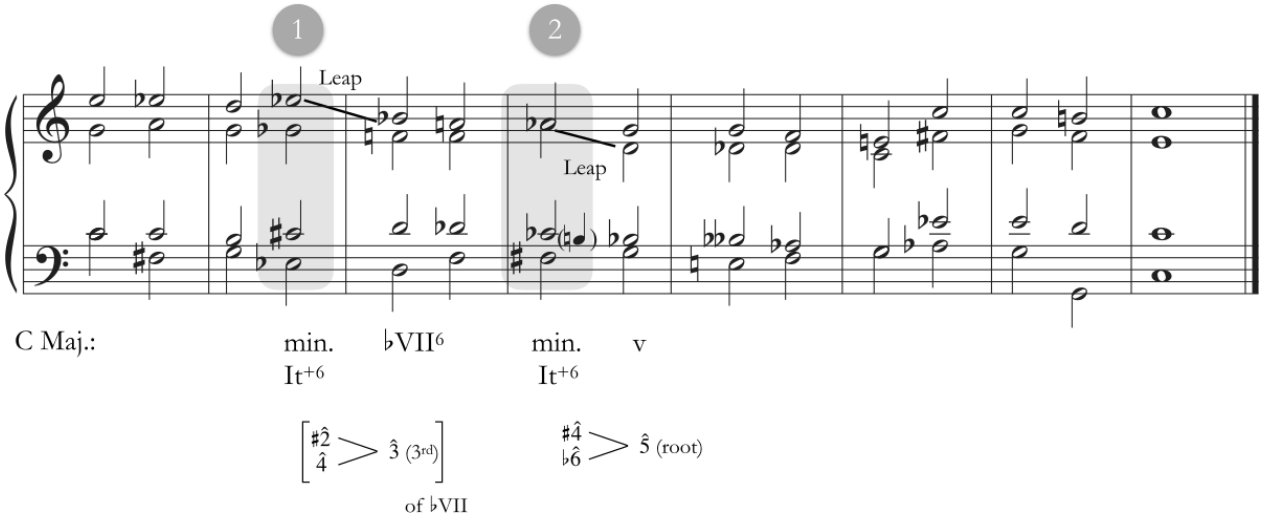
Example 23: Ture Rangström, "Bön till natten," mm. 1–4.



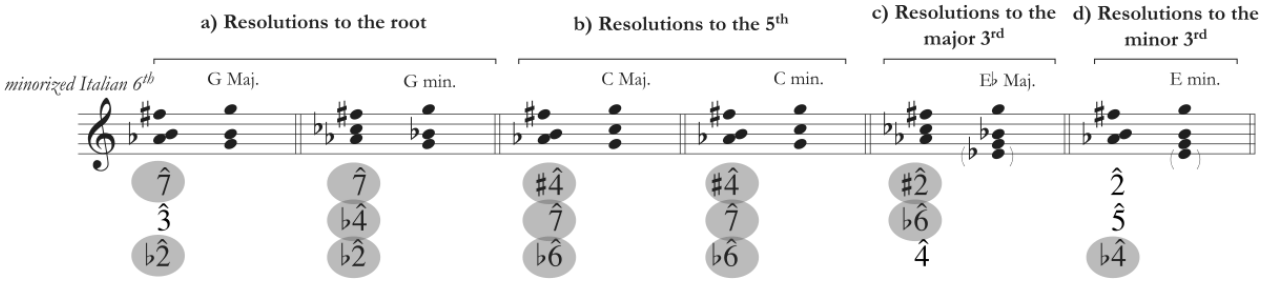
In a four-voice texture, various doublings can be used. While all the notes of the minorized Italian sixth are often tendency tones,[58] doubling the descending approach tone is usually the best compromise, perhaps because the inherent tonal tension of a descending tendency tone is relatively lower than the one of an ascending tendency tone. Schoenberg, in his *Theory of Harmony*, includes progressions with what I call here minorized Italian sixths in a four-part choral texture (**Figure 18**): in the first progression, he doubles the descending approach tone E♭, which leaps down a fourth in the soprano part to B♭, the root of the chord of resolution. In the second progression, he also doubles the descending approach tone (A♭), but this time it leaps in the alto to the fifth of the next harmony (i.e., it leaps to D, the fifth of G minor).

Figure 18: Doublings of minorized Italian sixths in Schoenberg's *Theory of Harmony* ([1911] 1983, 354).

(Annotations showing minorized Italian sixths are not original to Schoenberg's figure.)



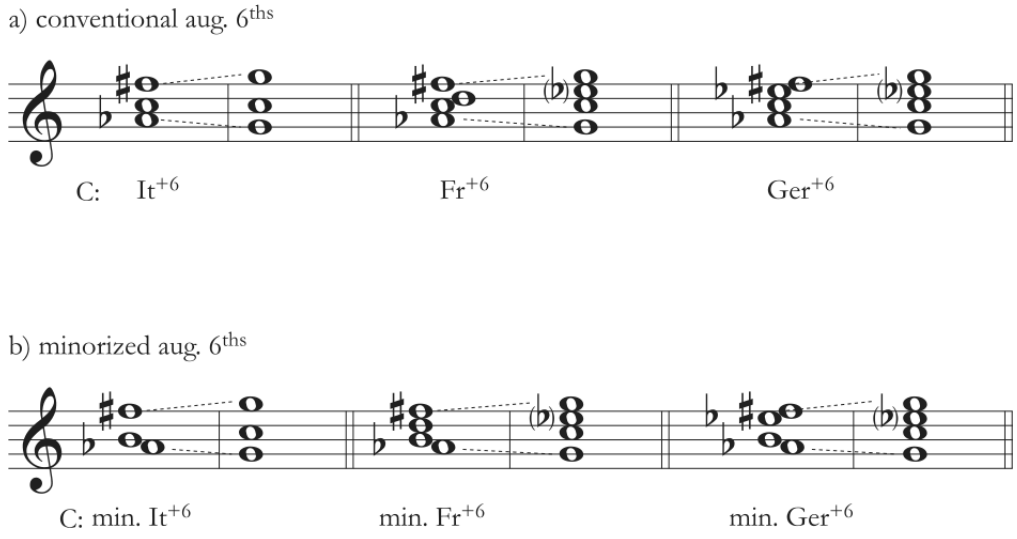
[58] For example, if we look at all the resolutions of the minorized Italian sixth to tonic triads, we get the collection of scale degrees shown in the figure below. The highlighted scale degrees indicate tendency tones.



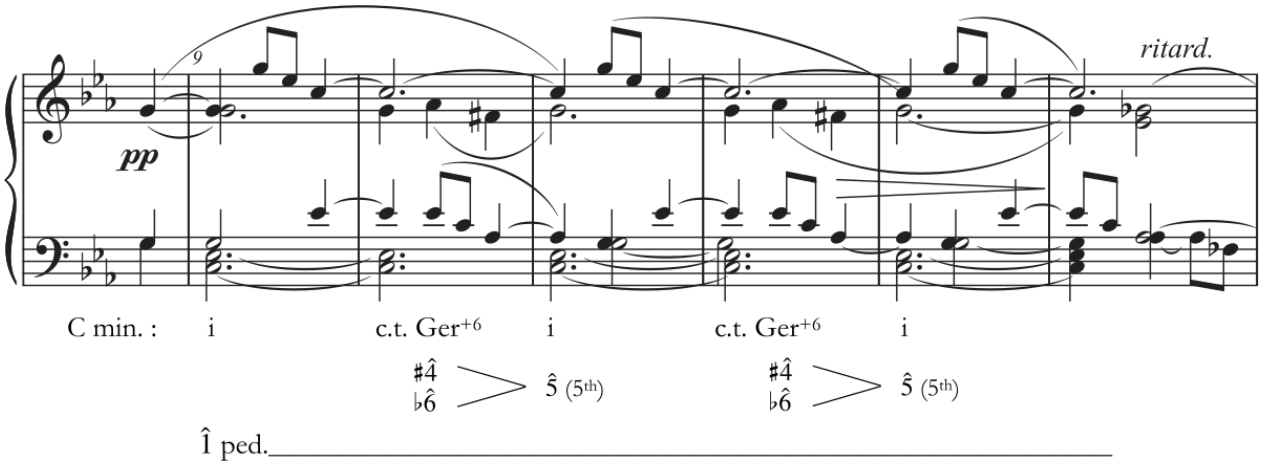
Another voice-leading problem common to all augmented-sixth chords (both conventional and minorized augmented sixths) arises in examples where the eponymous interval resolves to the fifth of the next harmony. When an augmented-sixth chord has the conventional bass note and the voice leading is efficient, it leads to a second-inversion chord (or at least, a sonority with a fourth above the bass), which may not be desired in a non-cadential context (**Figure 19**). This is probably why composers who have employed the Italian, French, and German sixths resolving to the fifth have tended to use these chords in nonstandard positions, generally privileging a voice leading where the common tone, the root of the chord of resolution, is in the bass (as in **Example 24,** where the common tone C is held in the bass from m. 9 through 13). Since the common tone forms a major third with the descending approach tone of the augmented-sixth chord, this strategy is unavailable for minorized augmented sixths because they have a minor third or augmented second instead of a major third above the descending approach tone. They therefore do not include the root of the next chord unless they occur over a tonic pedal in the bass. For instance, in **Example 25**, the tonic harmony E♭ major is prolonged by a chord enharmonically equivalent to Bm7 on the downbeat of the first measure. The augmented-sixth interval C♭–A♮ resolves to B♭, the fifth of the tonic, while the common-tone E♭ in the bass creates a sharp dissonance with D, the characteristic augmented second above the descending approach tone of the minorized German sixth.[59]

[59] This example is cited in Tymoczko (2011, 273–275) to illustrate the similarity of this progression with the common-tone German sixth, because the augmented sixth interval resolves to the fifth of the next chord in both cases. Tymoczko observes that only the change from $\hat{1}$ to $\hat{7}$ differentiates the two progressions.

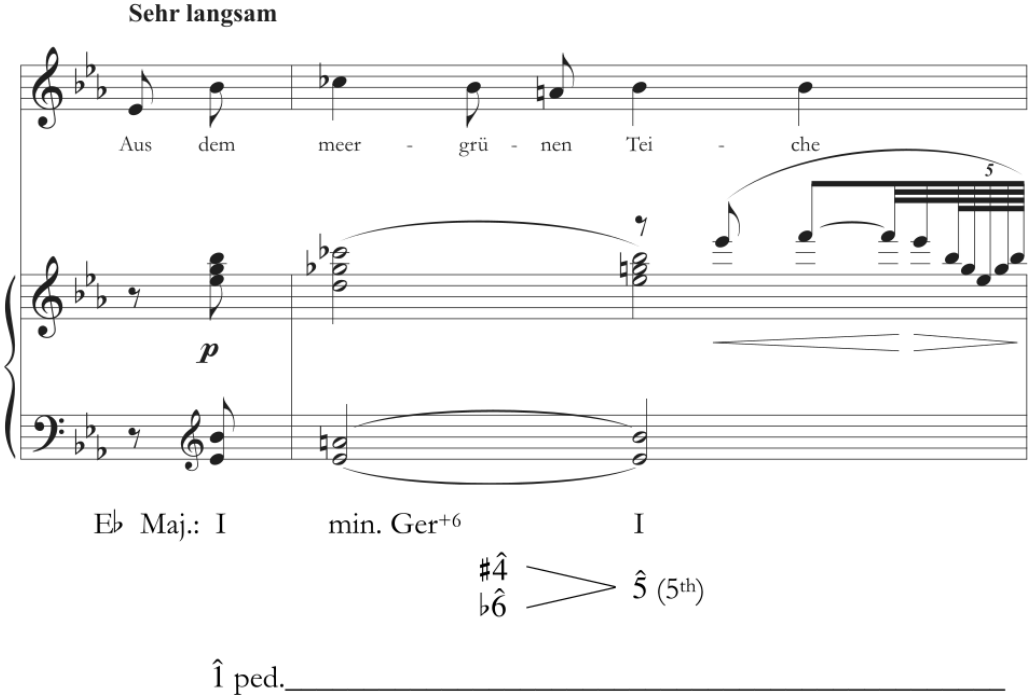
Figure 19: Resolutions of conventional and minorized augmented-sixth chords whose augmented sixth goes to the fifth of the next harmony.



Example 24: Clara Schumann, 3 Romances op. 11, No. 3, mm. 9–14.

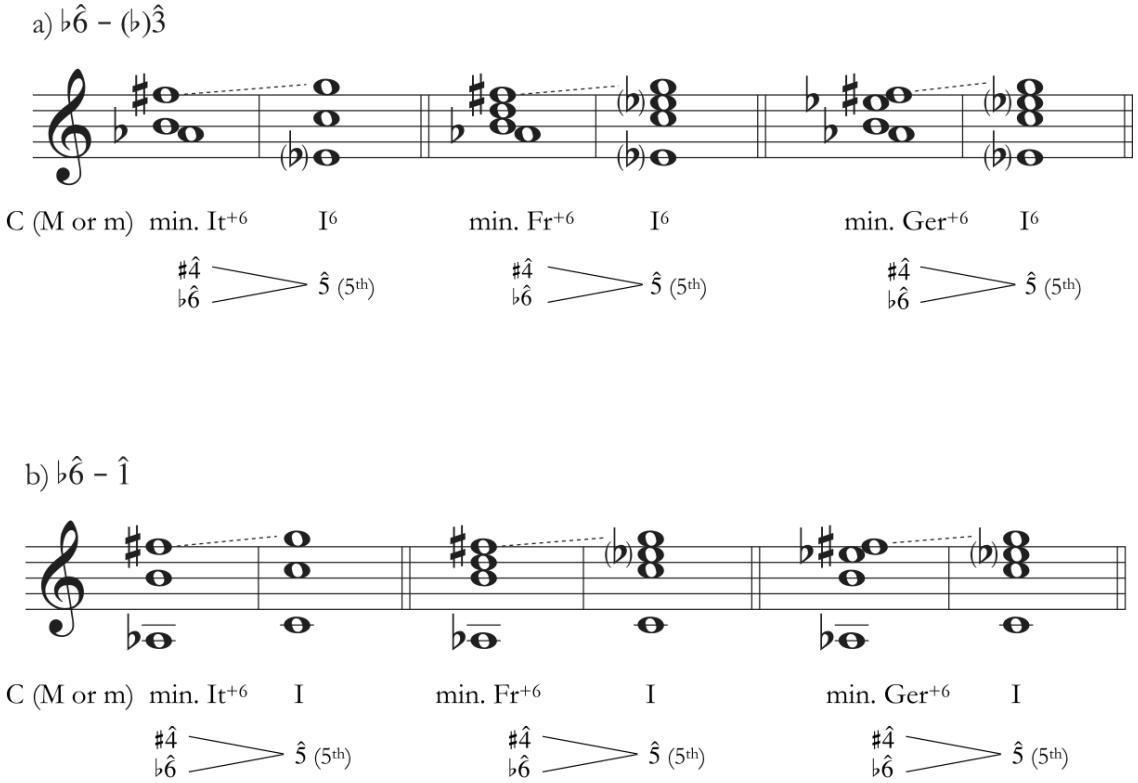


Example 25: Arnold Schoenberg, 4 Lieder op. 2, No. 1 "Erwartung", m. 1.

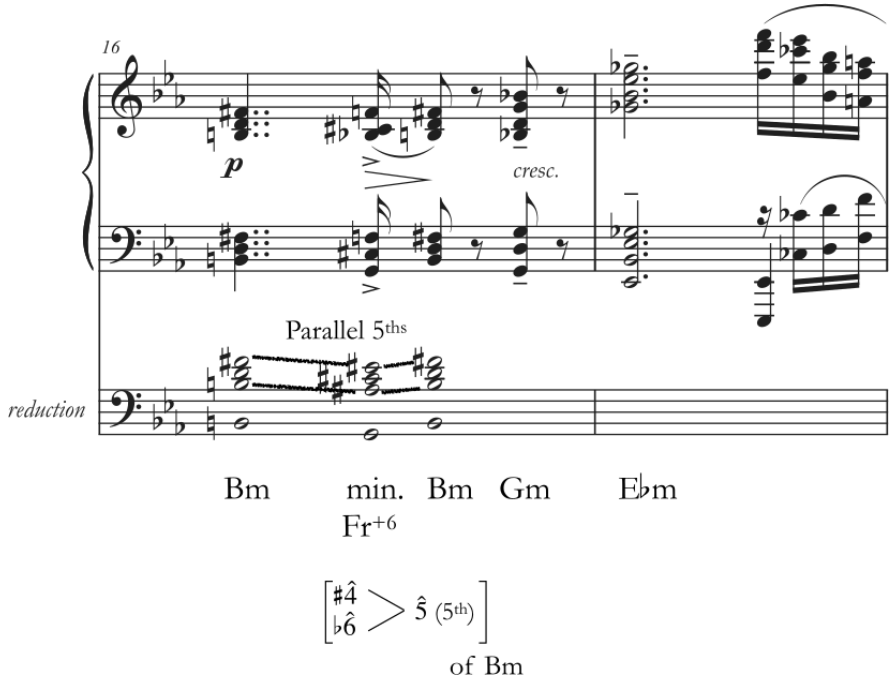


To avoid resolutions of minorized augmented sixths to six-four chords, composers have used leaps from ♭6̂ to (♭)3̂ or from ♭6̂ to 1̂ instead of resolving ♭6̂ to 5̂ (**Figure 20**). **Example 26**, taken from Rachmaninoff's Étude-tableau No. 7 op. 39, illustrates a leap from ♭6̂ to 1̂ in the resolution of the minorized augmented sixth. In m. 16, the B minor triad is embellished with a minorized French sixth on G. The augmented-sixth interval between G and E♯ (spelled F♮ in the score) implies a resolution to the target note F♯. The G in the bass does not, however, move directly to F♯, but instead leaps to B.

Figure 20: Alternate voice leadings for minorized augmented sixths resolving to the fifth.



Example 26: Sergei Rachmaninoff, Sergei. Études-tableaux Op. 39, No. 7, mm. 16–17.

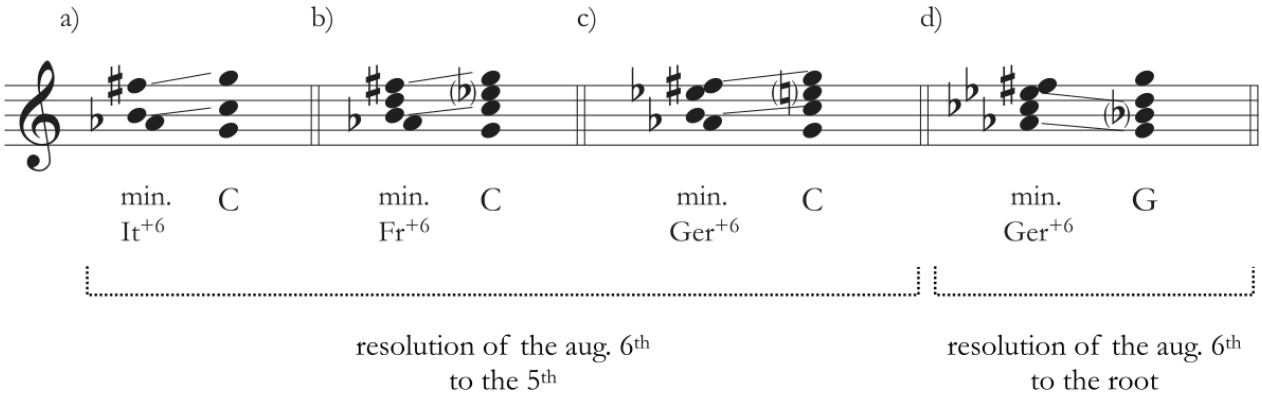


The voice leading in Rangström's song, reproduced in **Example 23** (p. 53), also avoids the resolution of the minorized Italian sixth to a six-four chord by using a leap in the bass. In this example,

the leap thus achieves two goals: (1) it allows the chord to be complete by reaching the third, which is missing when the voice leading is efficient, and (2) it prevents the resolution to a second-inversion chord.

The last voice-leading problem concerns parallel fifths, which can happen with all types of minorized augmented sixths resolving to the fifth (**Figure 21a–c**) as well as the minorized German sixth resolving to the root (**Figure 21d**).

Figure 21: Parallel fifths in resolutions of minorized augmented sixths.

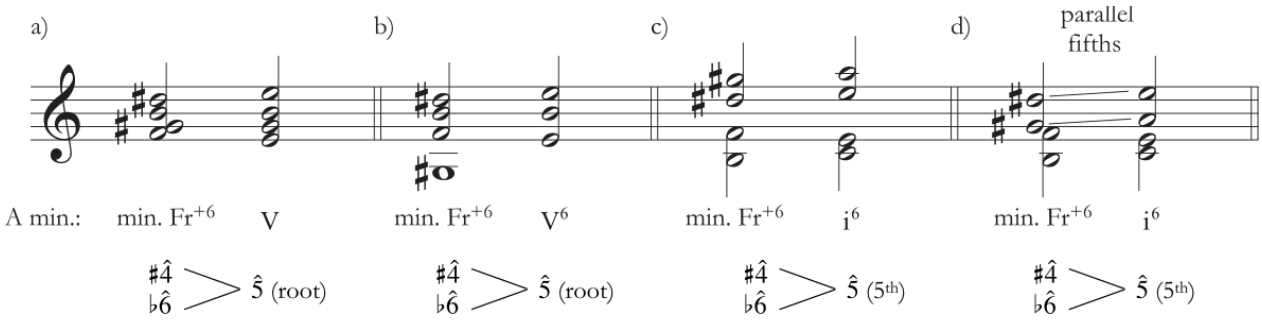


Rudolf Louis and Ludwig Thuille, in their harmonic treatise ([1907] 1913), warn readers to be careful to avoid parallel fifths when the half-diminished augmented sixth on ♭$\hat{6}$—which they analyze as a vii°7 with a raised $\hat{4}$—resolves to the tonic (**Figure 22**):

> If this chord resolves immediately to the tonic, some care must be taken to avoid parallel fifths (although they are not considered to be completely questionable). Both leading-tones proceeding simultaneously upward to the tonic and dominant give rise to such parallel fifths (translated in Schwartz 1982, 281).

Figure 22: The vii°7 with ♯$\hat{4}$ (i.e., the minorized French sixth) in Louis and Thuille's *Harmonielehre* (see Schwartz's [1982] translation, 281).

(Annotations showing the type of augmented-sixth chord and the resolution of the approach tones are not original to Louis and Thuille's figure.)



Even though it is technically possible to avoid the parallel fifths by revoicing the minorized augmented-sixth chords (for example by inverting the parallel fifths so they become parallel fourths, as in **Figure 22c**), composers who used them did not systematically avoid parallels in this way. For example, both the Rangström and the Rachmaninoff excerpts cited above (**Examples 23 and 26**) feature striking parallel fifths. In the Rangström song, these occur when B and F♯ move to C and G, respectively. In the Rachmaninoff example, the fifths are in the right hand (m. 16): the two voices forming the fifth B–F♯ move down in parallel motion to B♭–F, before returning to the initial fifth B–F♯. Even though composers have often employed parallel fifths in progressions involving minorized augmented sixth, this voice-leading issue might help explain why early twentieth-century theorists like Louis and Thuille were hesitant to recognize these augmented-sixth chords as acceptable harmonies, since they implied violations of still-canonical voice-leading rules.[60]

A smooth resolution of the minorized German sixth, when it appears with the descending approach tone in the bass, inevitably causes parallel fifths (**Figure 21d**), which is illustrated in the final measures of Strauss's "Frühling" from the *Vier letzte Lieder* (**Example 27**).[61] However, the minorized German sixth often occurs inverted, commonly with the ascending approach tone in the

[60] For more detail on changing views of parallel fifths in late-tonal repertoires, see Harrison (1994, 123–126).

[61] In **Example 27**, the spelling conceals the parallel fifths. The "faulty" voice leading appears between F and B♯ (= C), which move down to E and B♮ respectively.

bass; this voicing makes it possible to avoid parallel fifths (**Figure 23**).[62]

Example 27: Richard Strauss, *Vier letzte Lieder*, I. Frühling (piano reduction by Max Wolff), final measures.

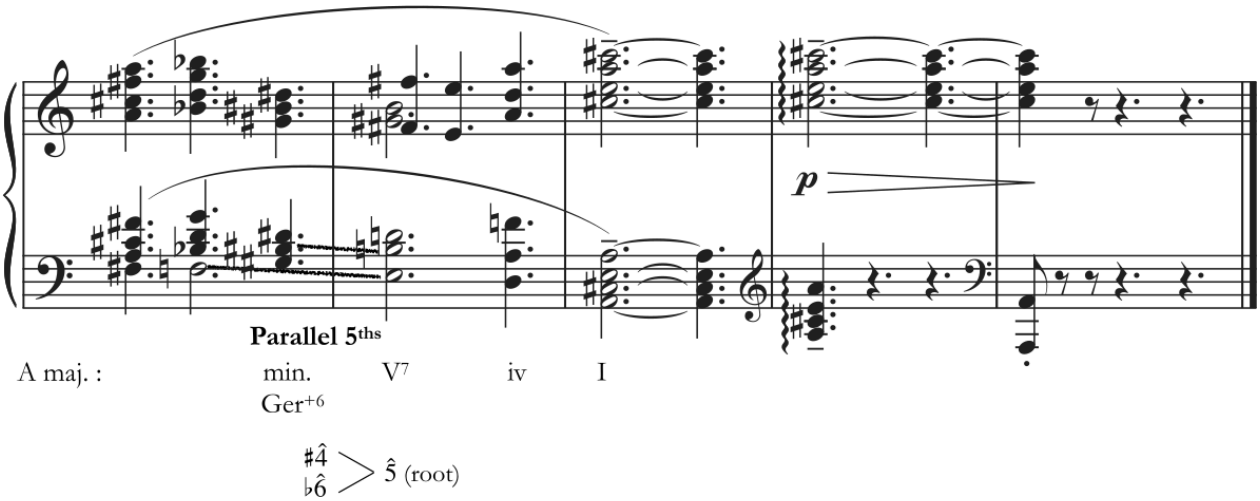
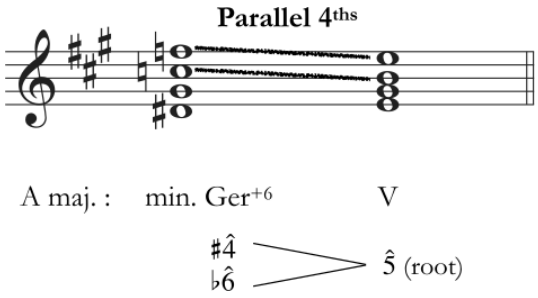


Figure 23: The inverted minorized German sixth.



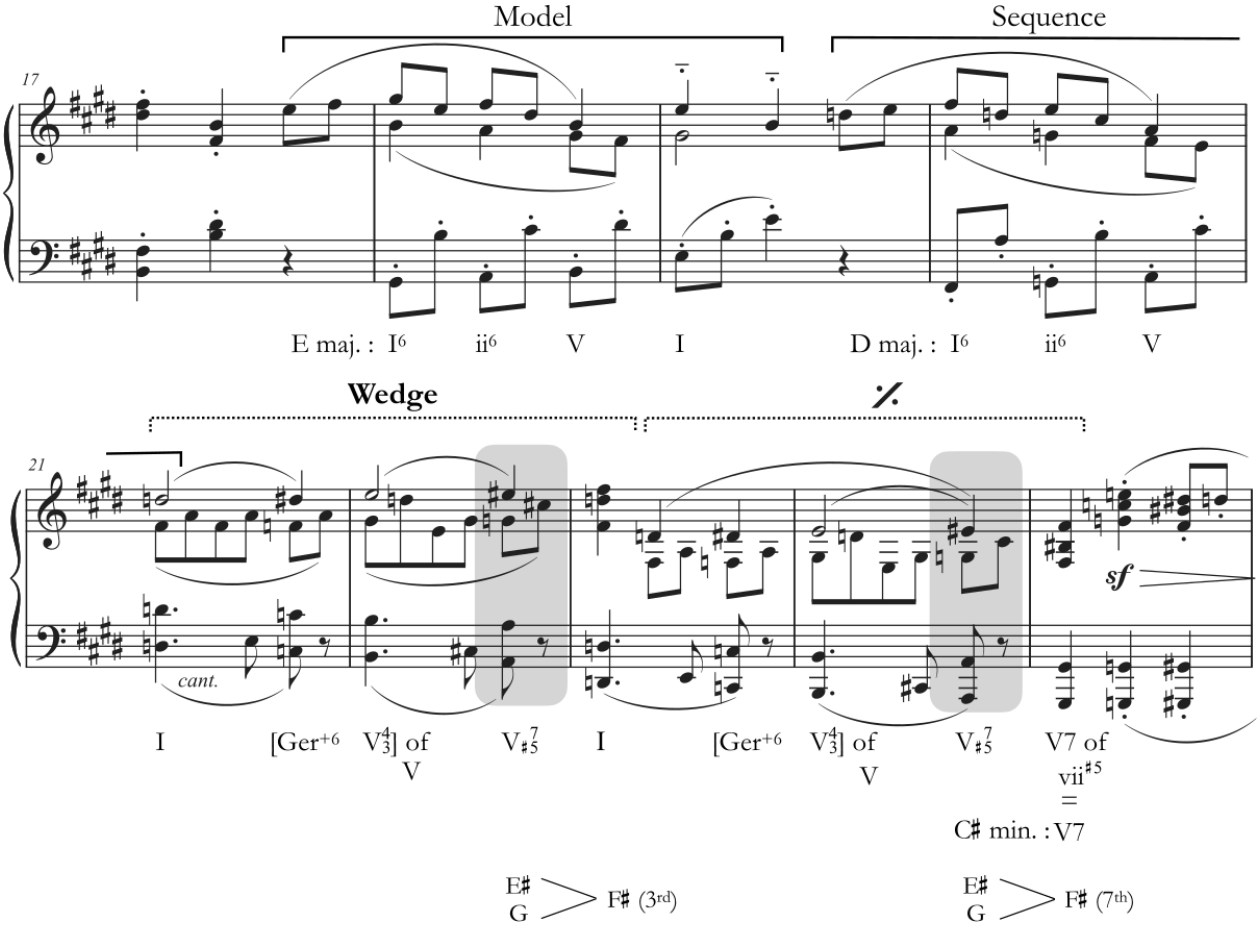
Resolutions to dissonant chords

While minorized augmented sixths typically resolve to consonant triads, resolutions to dissonant chords occur when the augmented sixth proceeds to a dominant seventh harmony, as in the *Tristan* prelude. In virtually all the examples I have gathered, however, the augmented-sixth interval nevertheless resolves to consonant chord factors (e.g., root, third, or fifth), since resolutions to the seventh necessarily give rise to problematic doublings when using efficient voice leading. As Harrison

[62] The opening of Ponce's *Folia de España* for guitar features such a resolution in the progression leading to a half cadence in D minor in mm. 7–8. The minorized German sixth (B♭–C♯–F–G♯) appears with the ascending approach tone G♯ in the bass, which allows the potential parallel fifths B♭–F to A–E to be revoiced as parallel fourths as the augmented-sixth chord resolves to the dominant.

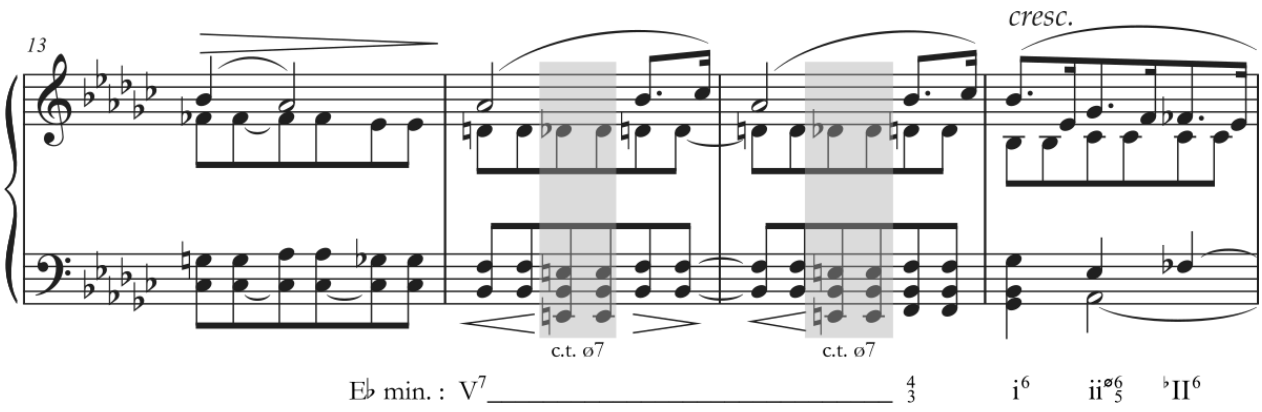
explains, "[i]t is reasonable to stipulate that the scale degree of resolution cannot be a seventh, ninth, etc. of a chord since such members cannot, according to standard teachings, sustain the doubling that augmented-sixth resolution creates" (1995, 174, fn 10). I am indeed not aware of any example where a minorized augmented sixth resolves to the seventh, but instances of other types of augmented sixths resolving to the seventh occur on rare occasions. One such example appears in the theme of Medtner's Variations op. 55 (**Example 28**): in mm. 21–23, a wedge progression harmonizes an ascending chromatic scale between D and F♯ in the upper voice. The bass moves in the opposite direction for the first four chords of the progressions. When the ascending scale is repeated in mm. 23–25, it is harmonized slightly differently, where the $V\sharp^{7}_{5}$ of D (i.e., A–C♯–E♯–G) leads this time to G♯7, the dominant of the home key C♯ minor. The G–E♯ augmented sixth resolves to F♯, which is the third of D in the first progression (m. 23), but the seventh of G♯7 in the second (m. 25). Because this last resolution occurs in a modulating context, however, the doubling of the seventh does not sound utterly "incorrect"; rather, it is the bass G♯ that creates a surprising effect.

Example 28: Nikolai Medtner, Theme and Variations op. 55, theme, mm. 13–25.



When resolving to a dominant seventh chord, minorized augmented sixths tend to exhibit the resolution of the approach tones to the root. For example, in Fauré's Nocturne in E-flat minor (**Example 29**), the V7 chords in mm. 14–15 are prolonged by non-functional half-diminished seventh chords. (Because these chords include the root of the chord they prolong, I call them "common-tone half-diminished sevenths," analogously to the familiar common-tone diminished sevenths and augmented sixths.) The bass line ♭$\hat{3}$ – $\hat{4}$ – ♯$\hat{4}$ – $\hat{5}$ – $\hat{1}$ in mm. 16–18 suggests a conventional cadential progression, moving from a tonic harmony in first inversion to predominant, dominant, and tonic chords. In Fauré's realization, the leading tone appears earlier than expected in the upper voices; instead of coinciding with $\hat{5}$ in the bass at the end of m. 17, it appears when the bass is still on $\hat{4}$ on the downbeat of m. 17. The resulting chord is a German sixth that implies a resolution to the root of tonic, but the arrival of this chord is postponed to the downbeat of m. 18. Because the leading tone is held when ♯$\hat{4}$ arrives in the bass (m. 17/beat 2), what would have been a regular inverted German sixth is instead a minorized German sixth (i.e., C♭–**E♭**–G♭–A♮ vs. C♭–**D♮**–G♭–A♮). This chord thus combines characteristic elements of dominant and predominant functions, with $\hat{7}$ and ♯$\hat{4}$ located in the outer voices. Its resolution to V7 marks the end of the functional ambiguity, with a clear formulation of dominant function. In this example, one can interpret the change between predominant and dominant functions as a gradual one: following Harrison's analytical notation for the opening of *Tristan* (1994, 56), I use *crescendo* and *decrescendo* symbols in the functional analysis to show this process (**Figure 24**).

Example 29: Gabriel Fauré, Nocturne No. 1, op. 33, mm. 13–21.



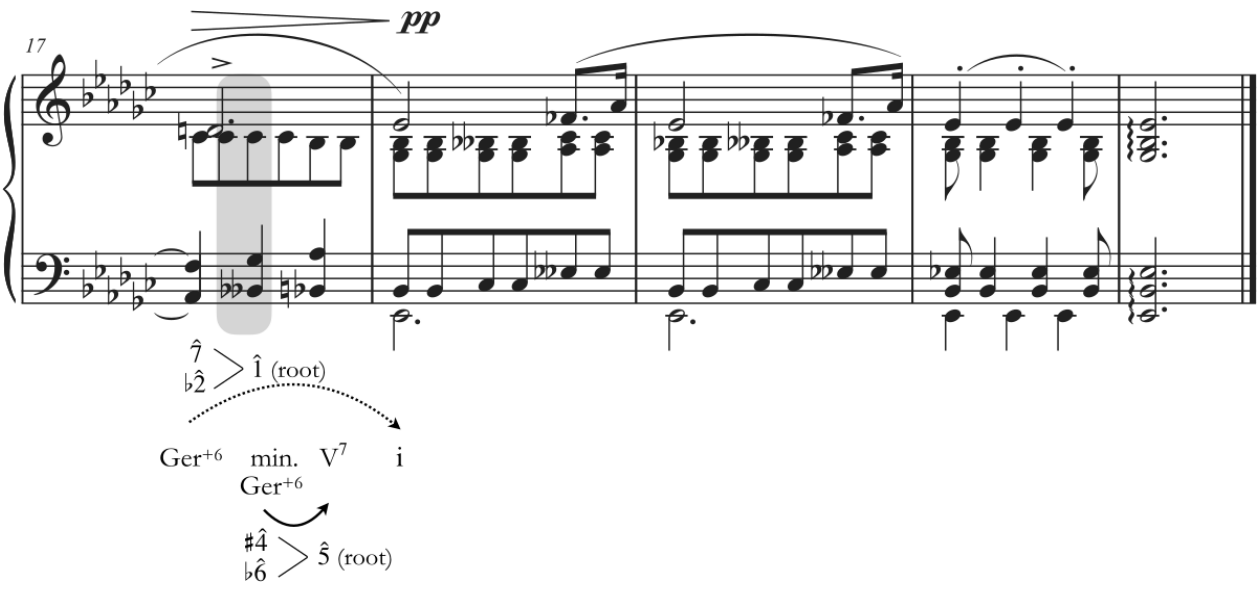
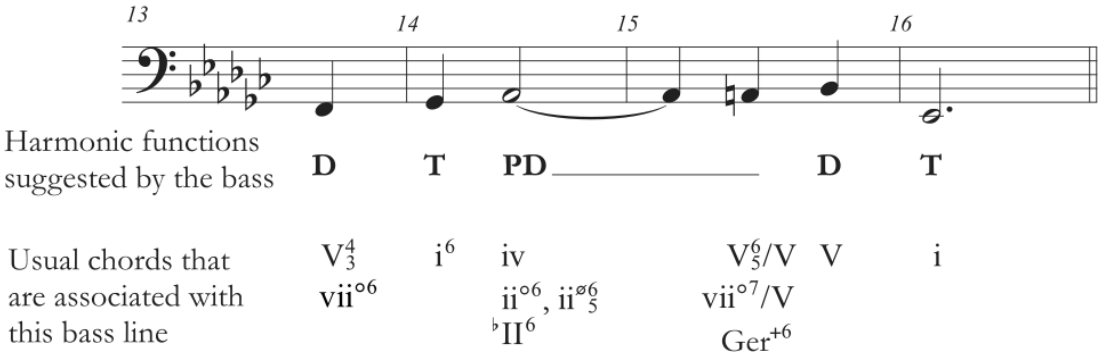
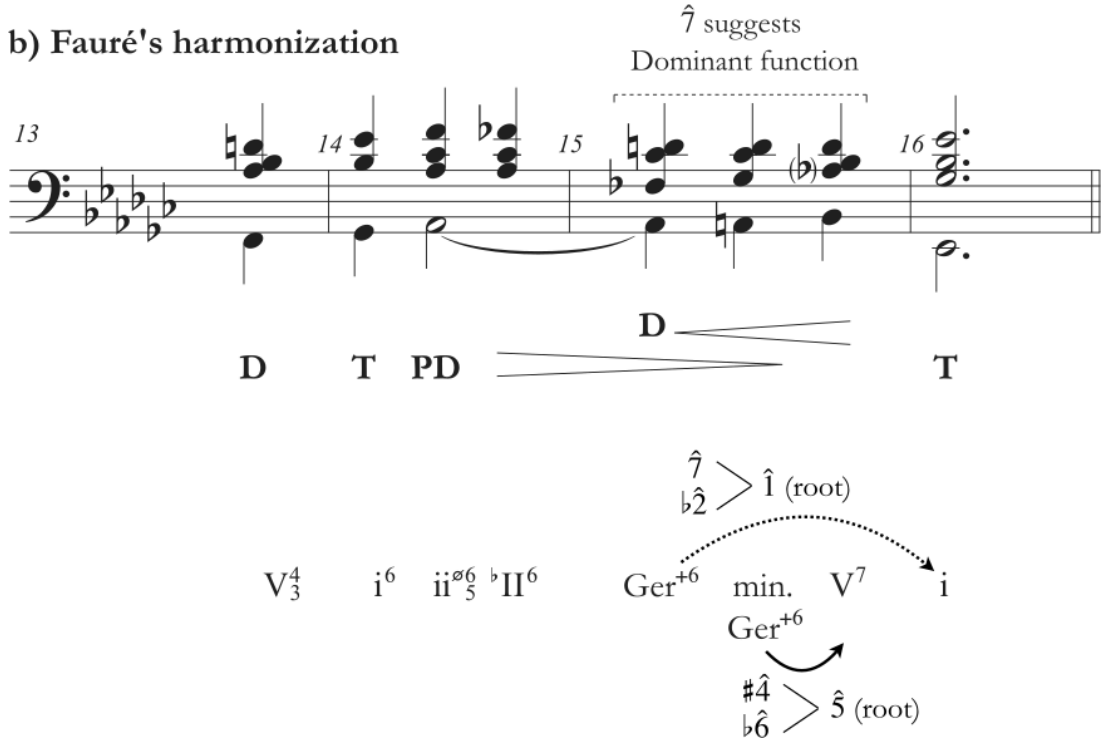


Figure 24: Gabriel Fauré, Nocturne No. 1, op. 33, reduction of mm. 13–17.

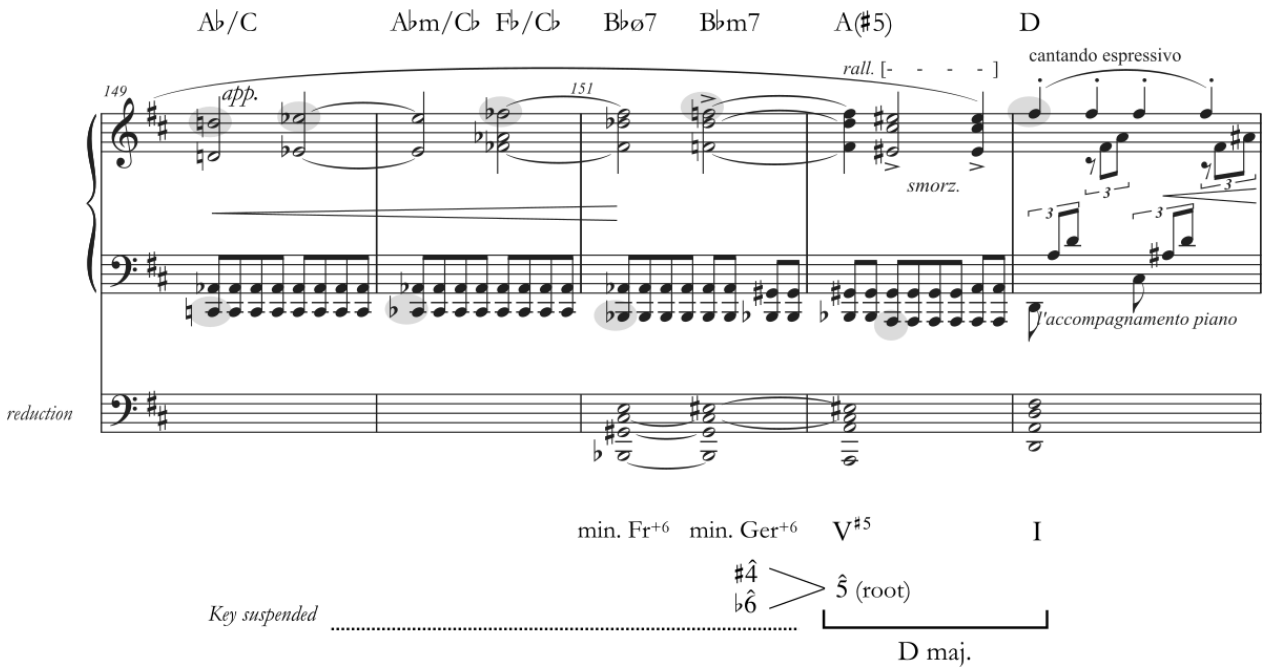
a) Standard harmonization





Minorized augmented sixths sometimes move to augmented triads, as in Liszt's Piano Sonata, excerpted in **Example 30**. In this passage, the chromatic wedge progression starts with an A♭ major chord and ends with an augmented triad on A, which functions as a dominant of D major. The chords before the augmented triad, B♭ø7 and B♭m7 (m. 151) can be interpreted retrospectively as minorized French and German sixths, whose approach tones B♭ and G♯ both move by semitonal motion to the target note A, the root of the dominant.

Example 30: Franz Liszt, Piano Sonata in B minor, mm. 149–153.



CHAPTER 3 – HARMONIC FUNCTION OF MINORIZED AUGMENTED SIXTHS

Minorized augmented sixths became increasingly common around the turn of the twentieth century, a time when formulaic and conventional harmonic progressions were declining in favor of unconventional harmonic effects.[63] It is not a coincidence that minorized augmented sixths became part of the harmonic vocabulary during this era, since they are perfectly suited to create equivocal harmonic progressions. Indeed, they sound, in isolation, like familiar chords of the common practice (i.e., they are equivalent to half-diminished seventh and minor-seventh chords), yet they behave in utterly unfamiliar ways. The large set of examples I have collected provides a fertile ground for exploring the ways in which composers tend to use minorized augmented sixths.

I show in this chapter that minorized augmented sixths are not just coloristic variants of the three conventional augmented sixths, but rather give rise to a productive functional ambiguity.[64] My perspective on these chords thus departs from that of Daniel Harrison, who argues that "the intervallic constitution of augmented-sixth chords need not be specified or prescribed since it is the augmented-sixth interval that gives the chord its powers; the remaining notes accompany the generating interval and provide it with different sonorous shadings" (1995, 184–185). Harrison's perspective certainly has an advantage: by focusing on the augmented-sixth interval instead of the intervallic composition of the chord, we avoid the problem of having to define a large number of categories of augmented sixths to account for all the individual species encountered in late-tonal pieces. In this chapter, I nevertheless propose that, beyond the fact that they contain an augmented-sixth interval, some other intervallic properties of augmented-sixth chords can convey harmonic function. I show that the quality of the

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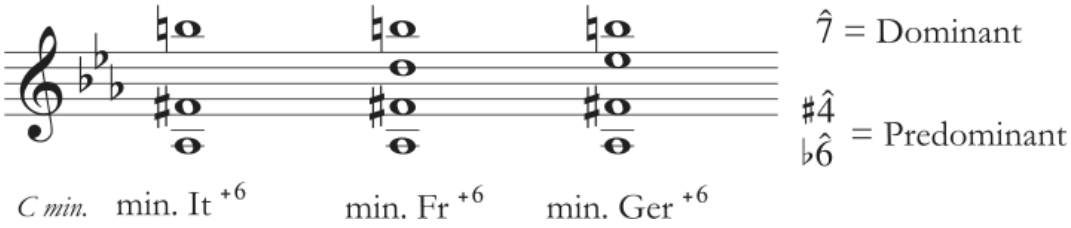
[63] Several historical as well as recent theorists have commented on the harmonic idiosyncrasies of late-Romantic repertoires. For example, Ernst Kurth, in his treatise on Romantic harmony (1920), famously described how the works of late-tonal composers, particularly Wagner's music, rely heavily on "absolute progressions," where the lack of tonal connection between two chords puts a harmonic succession "in relief against the surrounding context" (Kurth 1920, translated by Rothfarb 1991, 121). In other words, Kurth argues that listeners are drawn to the "sonic appeal" of absolute harmonic progressions precisely because the relationship between the chords is not tonal. He mentions chromatic mediant progressions as common instances of this phenomenon, among other devices (*ibid.*, 123).

[64] Although the labels "minorized Italian, French, and German sixth" employed in this dissertation suggest that I also view these chords as variants of the three common types of augmented sixths, the purpose of this terminology is to allow one to be able to quickly visualize the intervallic structure of these chords.

third, major or minor, is a crucial factor in an augmented-sixth chord's sonority and function. My approach to these chords also departs from that of Mark Ellis (2010), who views minorized augmented sixths as variants of conventional augmented-sixth chords, where the change in sonority does not affect the function of these chords.[65] Applying the approaches developed by Daniel Harrison (1994 and 1995) and Kevin Swinden (2005) to minorized augmented sixths, however, brings out the functional complexity that these chords often exhibit. The examples presented in this chapter illustrate how composers played with the inherent functional ambiguity of these chords to create new harmonic effects.

Minorized augmented sixths often combine characteristic elements of two distinct harmonic functions. For instance, when built on ♭$\hat{6}$, minorized augmented sixths are functionally more mixed than the conventional augmented sixths because ♭$\hat{6}$ and ♯$\hat{4}$, most commonly associated with predominant function,[66] sound simultaneously with the leading tone, which suggests dominant function (**Figure 25**). These chords can therefore satisfactorily resolve to either tonic or dominant; the function of minorized augmented sixths will vary depending on the bass motion, the voice leading, and the function of the chord of resolution.

Figure 25: Scale degrees involved in minorized augmented sixths on ♭$\hat{6}$.



Daniel Harrison's (1994) theory of chromatic harmony in late-Romantic music proves particularly useful for the functional analysis of minorized augmented sixths, since he argues that harmonic function depends more on the individual motion of scale degrees in a given chord that on the chord itself: "the sense of harmonic function is triggered not by a chord heard as a unified whole

[65] For instance, when discussing the use of augmented sixths in late-Romantic music compared to Classical era works, Ellis notes that "[w]ithin the late tonal language, as the chord became more commonplace, the impact of an ambiguous resolution was lessened and the structural significance had already waned. It reverted instead to a type of colouristic role. Even the famous opening example from Wagner's *Tristan und Isolde* is essentially colouristic" (Ellis 2010, 207).

[66] In this study, I use the labels "predominant" and "subdominant" as syntactical categories to distinguish chords that move to a dominant from chords that move directly to a tonic.

but by members of a chord heard individually according to their relationship to the tonal center" (Harrison 1994, 41). One main contribution of his approach is to tie function with voice leading, by disassembling chords into their scale-degree components and then analyzing how these linear motions convey a change in harmonic function. Harrison observes that

> [o]ne function does not merely give way to another; rather, it *discharges* on another, with the result that there is a sense of movement of tonal energy among the different functional states. We can honor these perceptions of motion not only by listening for the presence of functionally significant scale degrees but also by listening to how and where these scale degrees are discharged when function changes (1994, 90).

In other words, "functional discharge" in Harrison's theory refers to linear patterns that are responsible for a perceived shift in harmonic function. For instance, a dominant-to-tonic discharge can be expressed, among other things, through a $\hat{5}$–$\hat{1}$ bass line, even when the chord above it does not correspond to any of the usual dominant harmonies encountered in common-practice styles (1994, 48).[67] Other linear motions, such as $\hat{7}$–$\hat{1}$ or even $\hat{2}$–$\hat{1}$ can also convey a dominant-to-tonic discharge. Because minorized augmented sixths generally exhibit nonstandard combinations of scale degrees (as shown above in **Figure 25**), Harrison's method is more beneficial to understanding the function of these chords than conventional approaches to harmonic function.

Like most dualist theorists, Harrison assumes that the primary triads (I, IV, and V) express the three main harmonic functions (tonic, subdominant, and dominant) unambiguously. He analyzes the primary triads' components to show how their individual scale degrees express harmonic function. He assigns three types of functional roles to the different scale degrees of a chord. The *base* refers to the root, while the *agent* and the *associate* correspond to the third and the fifth, respectively. **Figure 26** illustrates Harrison's theory in two different ways: **Figure 26a** shows the role of each member of the primary triads, while **Figure 26b** shows the role(s) of each scale degrees.

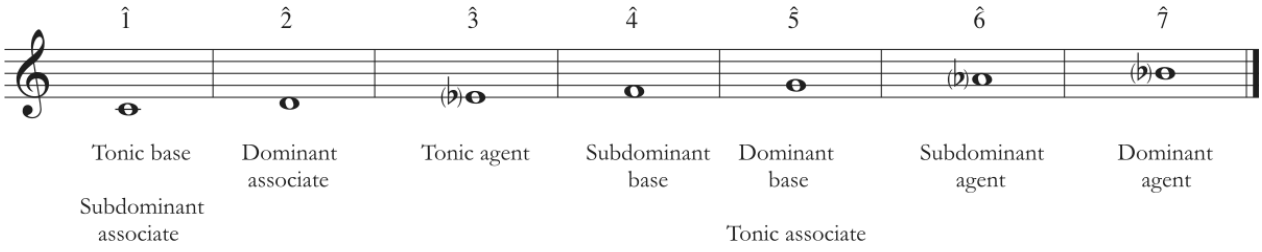
[67] Harrison illustrates this point with various chords over $\hat{5}$ in the $\hat{5}$–$\hat{1}$ bass line and catalogs all of them as authentic cadences (1994, 48).

Figure 26: Functional role of scale degrees.

a) Functional role of each member of the primary triads in C major or minor (figure based on Harrison 1994, 45, Figure 2.1).

Associates (fifths)	G	C	D
Agents (thirds)	E(♭)	A(♭)	B(♭)
Bases (roots)	C	F	G
	I Tonic	IV Subdominant	V Dominant

b) Functional role(s) of each scale degree in major and minor



Harrison defines bases as powerful means of communicating a function when they are located in the bass voice. If they appear somewhere else in the texture, they usually lose this power.[68] For example, in C major, the pitch G communicates dominant function strongly when it is located in the bass. This is why the apparent tonic six-four in progressions with a cadential six-four, with $\hat{5}$ in the bass, is usually assimilated to dominant function (as in the first chord of **Figure 27**). However, the dominant quality of this scale degree is practically absent if the same pitch is sounded in another voice and does not appear concurrently with other characteristic members of dominant function (e.g., if it does not appear with $\hat{7}$). In such case, the chord will more likely be associated with another function,

[68] Since the bases of tonic and dominant (C and G) are also associates of other functions (subdominant and tonic, respectively), Harrison poses two conditions for hearing those pitches as bases instead of associates : (1) they must appear in the bass, or (2) they must occur with the functional agent. See Harrison (1994, 46).

such as in the last chord of **Figure 27**. Here, the pitch G is the associate of the C major tonic triad, and not the base of dominant function.

Figure 27: $\hat{5}$ as the base of dominant and as the associate of tonic.

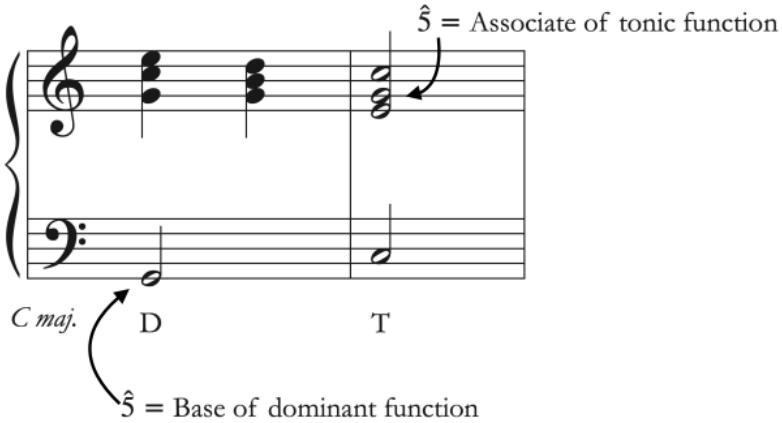


Figure 28 lists a few linear motions to and from the three functional bases $\hat{1}$, $\hat{4}$, and $\hat{5}$, which are underlined in this figure.[69] The three categories of functional progressions can be read backwards (DT becomes TD, ST becomes TS, and SD becomes DS).

Figure 28: Functional discharge to and from the functional bases.

DT	ST	SD
$\underline{\hat{5}}$–$\underline{\hat{1}}$	$\underline{\hat{4}}$–$\underline{\hat{1}}$	$\hat{4}$–$\underline{\hat{5}}$
$\underline{\hat{5}}$–$\hat{3}$	$\underline{\hat{4}}$–$\hat{3}$	$\hat{6}$–$\underline{\hat{5}}$
$\hat{2}$–$\underline{\hat{1}}$	$\hat{6}$–$\underline{\hat{1}}$	
$\hat{7}$–$\underline{\hat{1}}$		

The agents are, according to Harrison, the most powerful chord members in expressing function. Unlike bases, the power of agents does not rely on their location in the texture, because they are distinctive elements of a function, meaning that $\hat{3}$, $\hat{6}$, and $\hat{7}$, respectively the agents of tonic,

[69] This list does not appear in Harrison (1994), but it can be extrapolated from the various figures and examples of the first part of the book.

subdominant, and dominant, are not found in other primary triads (Harrison 1994, 49). They thus give a strong functional signal when they appear, no matter in which voice. Moreover, only the agents can convey modal quality because they correspond to the scale degrees that are not identical between major and minor. In contrast, bases and associates (i.e., $\hat{1}$, $\hat{2}$, $\hat{4}$, and $\hat{5}$) do not fluctuate when the mode changes from major to minor or vice versa. Given the close relationship between mode and function in Harrison's theory,[70] the agents are granted a more crucial role in expressing function than bases:

> The ability of agents to be unambiguously expressive of both function and mode gives them a powerful influence on our perception of harmonic function. Because of this modal connection, they are more significant functionally than bases, which although highly evocative of a function, are also easily undermined by other forces. Agents, then, can be utilized in ways unavailable to bases, ways that, as we shall see, lead to the central compositional innovations of chromatic music (Harrison 1994, 54–55).[71]

Harrison views the associates as the weakest elements of the primary triads. He notes that

> the base and the agent control much of the tonal attitude perceived in a function… the associates are thus left with little work to do. Neither as essential as are the agents nor invested with strong functional attributes as are the bases, associates are entirely dependent on the presence of agents or bases for what little functional power they have" (Harrison 1994, 55).

Two of the three associates are not unique to a particular function: the associate of tonic function is also the base of dominant function, while the associate of subdominant corresponds to the base of tonic function (see **Figure 26**). They therefore cannot communicate harmonic function clearly. Harrison also emphasizes that associates are not necessary for the expression of function (*ibid.*). For example, in a V7–I progression, tonal composers usually omit the associate of either one of the chords (**Figure 29**), without this omission blurring the perception of function.

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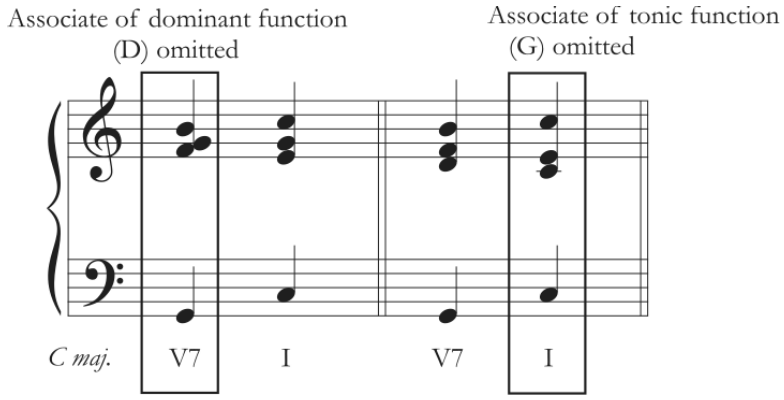
[70] For more on mode and function, see Harrison (1994, 50–55).

[71] Harrison's Figures 3.2 and 3.3 (1994, 92–93) model various functional discharges from each type of agent.

Figure 29: Omission of the associate in V7-I progressions.

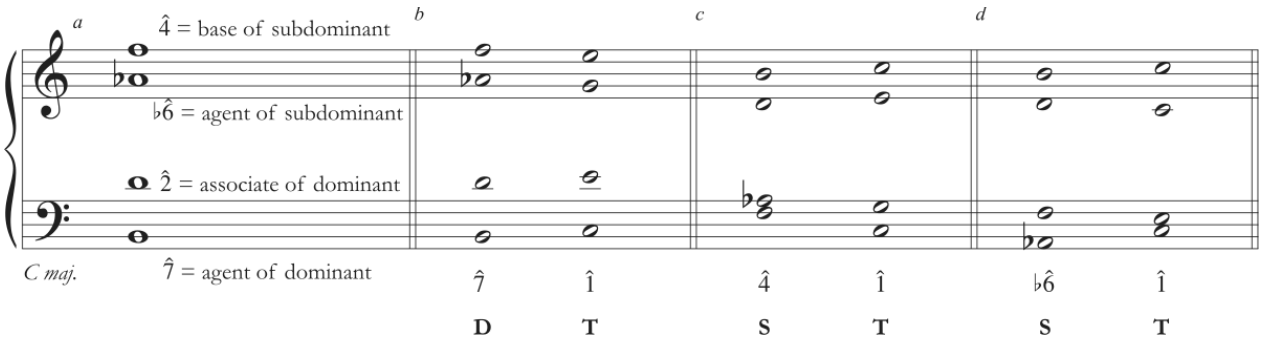


Understanding the way scale degrees express function becomes crucial when dealing with unconventional chords that innovatively combine members of various functions, an abundant occurrence in late-tonal music. Harrison reintroduces the concept of ***functional mixture***, first described by Hermann Erpf,[72] to refer to chords that include members of at least two primary triads. By definition, all secondary triads—i.e., ii, iii, vi, and vii° in major—are therefore functionally mixed in this perspective. For example, Harrison discusses how iii in major can have either dominant or tonic function depending on the voicing and tonal context (1994, 60–64). But functional mixture is a particularly far-reaching concept when analyzing dissonant chords. One traditional chord that exemplifies functional mixture is vii°7; this chord is made of $\hat{7}$ and $\hat{2}$ (the agent and associate of dominant function), and of $\hat{4}$ and $\flat\hat{6}$ (the base and agent of subdominant function, see **Figure 30a**). Because the chord contains the agents of both dominant and subdominant, Harrison argues that the chord "contains a neat balance of forces, an inherent capability strongly to communicate both Dominant and Subdominant" (1994, 66). When analyzing functionally mixed chords, Harrison notes that the doubling, voice leading, voicing, and texture lead the listener to perceive one function more prominently than the other. In this particular case, if the diminished seventh chord is presented as in **Figure 30b** with all voices moving by step, the chord has dominant function; the descending stepwise resolutions of $\hat{4}$ and $\flat\hat{6}$ are governed by dominant function, meaning that they behave as extensions (seventh and ninth respectively). However, if $\hat{4}$ or $\flat\hat{6}$ is the lowest sounding pitch and it moves directly to $\hat{1}$ (see **Figure 30c** and **d**), Harrison argues that the subdominant-to-tonic attitude of the progression comes to the fore (1994, 66–9). These chords are therefore functionally mixed because they feature

[72] See Harrison 1994 (64–72) and Erpf (1927).

characteristic voice leadings of two functions (dominant and subdominant); Harrison typically views one function as more prominent than the other depending on the voicing of the resolution. He nevertheless warns the reader that "although the chord can take a single functional label in the interests of analytic simplicity, one need never lose sight of the functional conflict, so near is it to the surface of the structure" (1994, 66).

Figure 30: Functional mixture in vii°7.



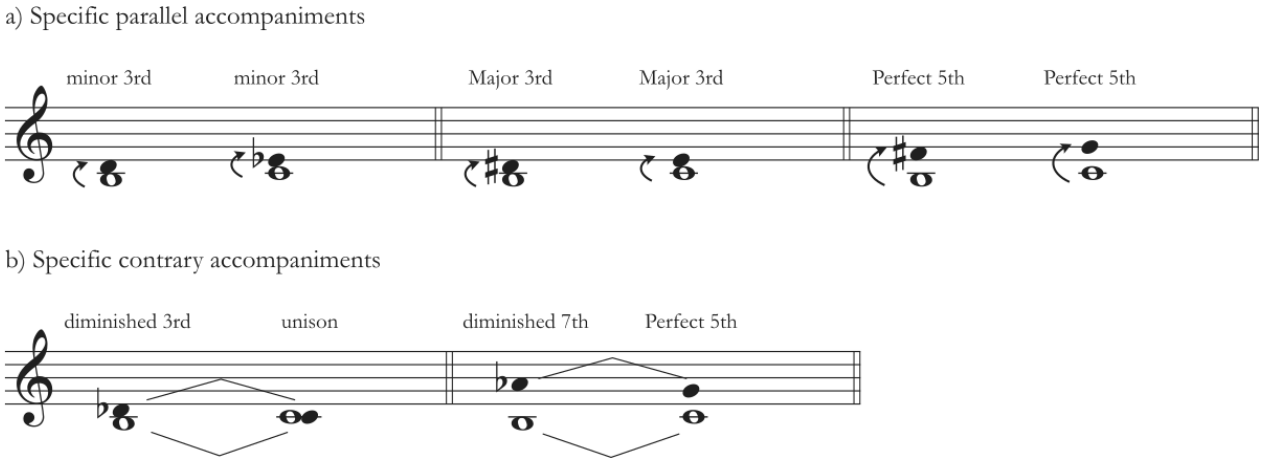
In summary, the agents and bases are responsible for most of the functional attitude of a given chord in Harrison's theory, while the other scale degrees do not convey function as strongly. So far, I have only shown applications of Harrison's analytical framework to chords using scale degrees from the major and minor modes. How then do chromatic pitches fit into his theory? Harrison argues that chromaticism often arises from what he calls *specific accompaniments* (1994, 106); this label refers to linear motions that occur simultaneously with an agent's discharge and that reproduce its intervallic content.[73] For instance, the 7̂–1̂ discharge can be accompanied by 2̂–♭3̂, ♯2̂–3̂, or ♯4̂–5̂. These motions are all, like the 7̂–1̂ discharge, ascending semitones, and are therefore categorized as *specific parallel accompaniments* (**Figure 31a**). Harrison also recognizes the possibility of *specific contrary accompaniment*, which preserves the melodic interval of the agent's discharge, but occurs in the opposite direction. Common instances of specific contrary accompaniments of the 7̂–1̂ resolution include ♭2̂–1̂ and ♭6̂–5̂ (**Figure 31b**).[74] Like Harrison, I use in **Figure 31** whole noteheads for the agent's discharge. Curved

[73] In contrast, *generic* accompaniments preserve only the generic interval: the minor third B–D going to the major third C–E is an instance of a generic accompaniment.

[74] **Figure 31** is drawn from Harrison's Example 3.15 (1994, 107), which features various accompaniments of the 7̂–1̂ discharge, generic and specific, as well as parallel and contrary, using different "shades" of 2̂ (i.e., 2̂, ♭2̂, and ♯2̂). My **Figure 31**, in contrast, does not include generic accompaniments, and I have added the ♯4̂–5̂ and ♭6̂–5̂ motions as additional examples of specific accompaniments, which Harrison recognizes as such in his book. For the ♯4̂–5̂ accompaniment, see Harrison (1994, 117); for the ♭6̂–5̂ accompaniment, see *ibid.* (109).

arrows pointing from these notes indicate parallel accompaniments, while angled lines indicate contrary accompaniments. Most accompaniments in Harrison's theory do not express function in and of themselves; their role is instead to reinforce a given discharge by replicating it at a different pitch level (1994, 108); thus, the scale-degree motions involved in accompaniments are not taken into account when analyzing function.

Figure 31: Examples of accompaniments for the $\hat{7}$–$\hat{1}$ discharge.



Harrison's emphasis on the functional significance of scale degrees allows for a great flexibility in the analysis of complex chords. His concepts of functional mixture and accompaniment explain how non-tertian and non-diatonic sonorities can still sound tonal for the listener, thus bridging the gap between perception and score analysis. He further explored the implications of his analytical model in his "Supplement to the Theory of Augmented-Sixth Chords" (1995), which delves into nonstandard uses of augmented sixths in late-Romantic repertoires. Harrison argues in this article that augmented sixths most often fall into one of the three following functional types: authentic, plagal, and predominant (1995, 185–189, see **Figure 32**). These types are defined by the scale degrees they involve, the prominence of these scale degrees in the texture, as well as the function of the chord of resolution. The authentic and plagal types both refer to augmented sixths resolving directly to tonic; the authentic type exhibits salient characteristics of dominant-to-tonic progressions, while the plagal type exhibits salient characteristics of subdominant-to-tonic progressions. The predominant functional type includes all augmented-sixth chords that precede a dominant-functioning harmony. This latter category therefore comprises contexts where the common types of augmented sixths most often appear (i.e., with the $\flat\hat{6}$–$\hat{5}$ bass line and the augmented-sixth interval resolving to the root of V),

but it also extends to any augmented sixths that lead to a V, regardless of the bass line or the chord factor to which the approach tones resolve.

Figure 32: Harrison's three functional types (1995, 187, Figure 4).

Augmented-sixth	Resolution	Functional Type
Dominant	Tonic	Authentic
Subdominant	Tonic	Plagal
Subdominant	Dominant	Predominant

One of the main advantages of Harrison's approach to function is its flexibility; it leaves much space for the analyst's musical intuitions and, as a result, can give rise to a wide range of functional interpretations of any given passage depending on which aspect is brought to the fore. On the other hand, this method can sometimes be difficult to apply since it is not as systematic as standard approaches to harmony: it requires judgement and a deep understanding of the piece on the part of the analyst to weight the various criteria used to understand harmonic function—i.e., the bass line, the scale degrees involved in each chord, the overall formal and tonal contexts, etc.—in a sensible fashion. Kevin Swinden's (2005) perspective on function in late-Romantic music addresses this issue by providing a complementary framework for the analysis of functionally ambiguous harmonic progressions. He posits that these repertoires often feature "collision" of two functions, where the bass and the upper voices convey conflicting functional progressions.[75] Swinden starts by providing a roster of diatonic bass lines that are specific to dominant-to-tonic, subdominant-to-tonic, and predominant-to-dominant progressions in common-practice tonality (Swinden 2005, Examples 8 and 9). He refers to these bass motions as "characterizing" bass lines. Swinden then analyzes the

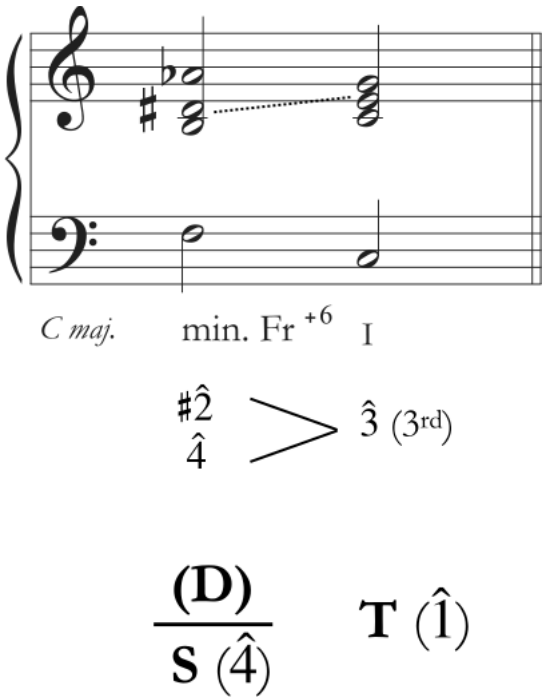
[75] Although Harrison's functional mixture and Swinden's collided functions are related concepts, they are not exactly congruent. Functional mixture concerns the inherent properties of a chord, meaning that a functionally mixed chord refers to any chordal formation that is not a primary triad, because it contains scale degrees that belong to different primary triads. These functionally mixed chords therefore have the potential (realized or not) to express different functions (see Harrison 1994, 60–75). Functional collision, on the other hand, characterizes harmonic progressions where a chord expresses two conflicting functions at the same time. For more on the differences between the two concepts, see Swinden (2005, 260, fn 22).

content of the upper voices in order to determine whether or not they match the functional progression expressed by the bass. For instance, in the vii°$^{4}_{3}$–I progression discussed above (see **Figure 30**, p. 74), the bass $\hat{4}$–$\hat{1}$ conveys a subdominant-to-tonic progression, while the $\hat{7}$–$\hat{1}$ resolution in the upper voices conveys a dominant-to-tonic progression. Unlike Harrison, who views such a progression as expressing mainly a subdominant-to-tonic discharge because of the bass, Swinden uses both the subdominant and dominant functional labels to analyze the function of the vii°$^{4}_{3}$ resolving to a root-position tonic. Swinden's functional notation highlights this conflict: the functions conveyed by the bass line are indicated in regular characters, while the functions of the upper voices, when different from the bass, are in superscript. The scale degrees in the bass appear in parentheses next to the functional labels, thus emphasizing the role of the bass in the functional analysis. The vii°$^{4}_{3}$–I progression is therefore analyzed as **S^{D} ($\hat{4}$) – T ($\hat{1}$)** in his analytical framework.

Although Swinden's article is not specifically about the function of augmented-sixth chords, his analytical method can be applied to assess their function. His theory of collided functions allows one to appreciate the harmonic richness of a given passage because it is not tied to triads or root motion and emphasizes instead the behavior of the individual voices. In fact, several of his examples include conventional as well as minorized augmented sixths. Swinden's Example 12 (2005, 263) lists some of the diatonic and chromatic chords that can express the S^{D} functional collision, where the bass moves from $\hat{4}$ or $\flat\hat{6}$ to $\hat{1}$. Out of the six chromatic chords featured in Swinden's example, five of them include an augmented-sixth interval.

In my examples, I use a functional notation that is similar to Swinden's for chords that express two functions simultaneously. While Swinden's superscripts are useful to illustrate where in the texture the competing functions occur, they also suggest that the function of the upper voices, being displayed in a smaller font, is less important than the one in the bass. Instead of superscripts, I put the function expressed by the upper voices *above* the one expressed by the bass using the same character size. When one function is less marked than the other one, I put it in parentheses. For instance, in the progression shown in **Figure 33**, the bass moves plagally from $\hat{4}$ to $\hat{1}$, but there is also a $\hat{7}$–$\hat{1}$ resolution in the upper voices. The first chord therefore combines subdominant and dominant, but since the $\hat{7}$–$\hat{1}$ resolution is hidden in an inner voice, the dominant-to-tonic effect is potentially less prominent aurally than the subdominant-to-tonic resolution articulated by the bass, hence the "(D)."

Figure 33: Functional notation used in this dissertation, based on Swinden (2005).



The next three sections of this chapter examine examples that feature minorized augmented-sixth chords associated with characterizing bass lines of (1) predominant-to-dominant, (2) dominant-to-tonic, and (3) subdominant-to-tonic progressions, using the characterizing bass lines identified by Swinden for each of these progressions (Swinden 2005, 259, Examples 8 and 9). Problems with Swinden's method can, however, arise when the bass features a pedal, or when it includes chromatic scale degrees, which are not featured in his roster of bass motions. I address those issues in the last section of this chapter, where I turn to examples where the bass does not convey a unique functional progression and investigate the analytical issues they generate.

Predominant functional type: ♭6̂–5̂, ♯4̂–5̂, and 4̂–5̂ bass lines

Because the usual function of regular augmented-sixth chords is to prepare the arrival of the dominant harmony, the "augmented-sixth chord" label is strongly associated with predominant function. The standard bass line on which these chords occurs, ♭6̂–5̂, is also among the characteristic gestures of

predominant-to-dominant progressions.[76] **Figure 34** shows the main types of minorized augmented-sixth chords that can occur with this bass line, leading either to a root-position dominant or to a cadential six-four, where the augmented-sixth interval resolves to the root of the subsequent dominant chord or to the sixth or fourth of the cadential six-four.[77] In this figure, several progressions involve functional collision of predominant and dominant functions (see progressions 1 through 7, and 9) because the bass conveys a predominant-to-dominant progression, while the leading tone in the soprano conveys dominant function.[78]

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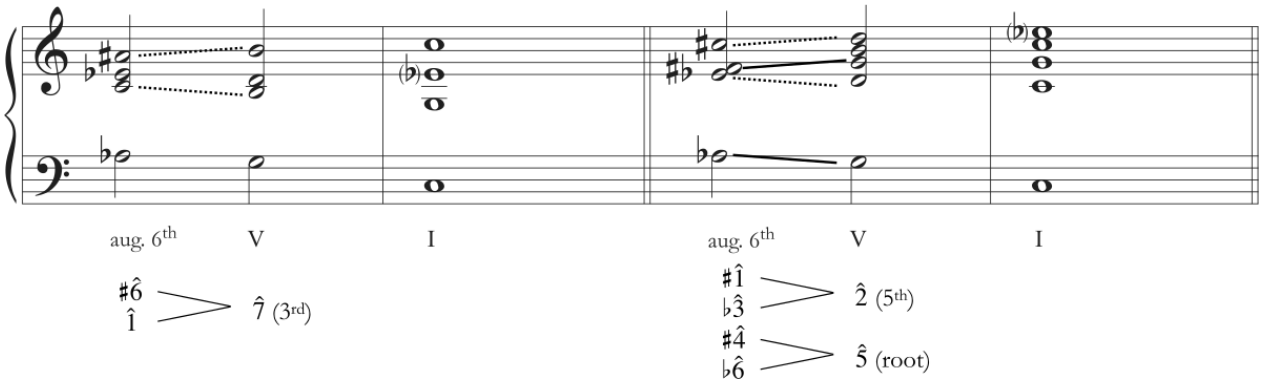
[76] See Swinden's Example 8 (2005, 259).

[77] Although the resolutions of the approach tones to the major third and fifth of V are theoretical possibilities, I have not included them here because they involve types of minorized augmented sixths that are far less common than the minorized Italian, French, and German sixths.



[78] Other progressions involving minorized augmented sixths with this bass line could feature the augmented-sixth interval being held over the ♭6̂–5̂ motion in the bass and resolving only with tonic harmony, such as in the figure below.

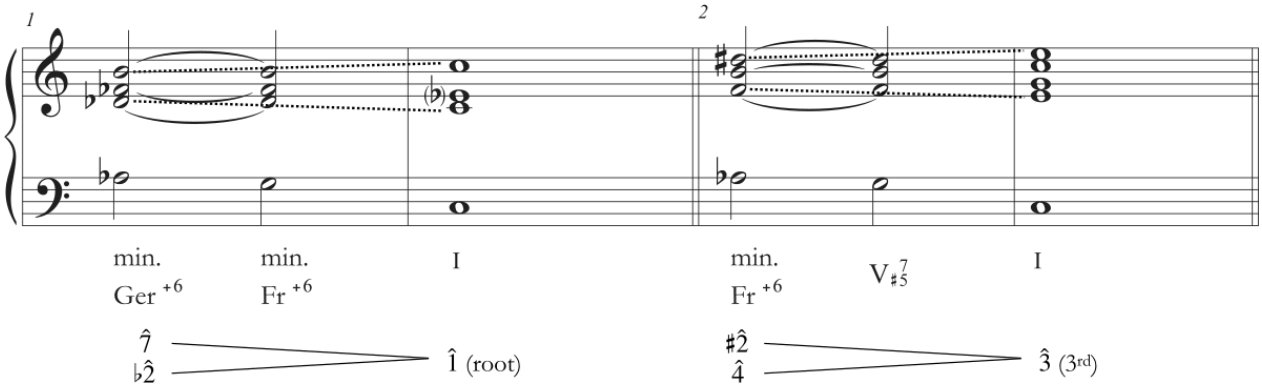
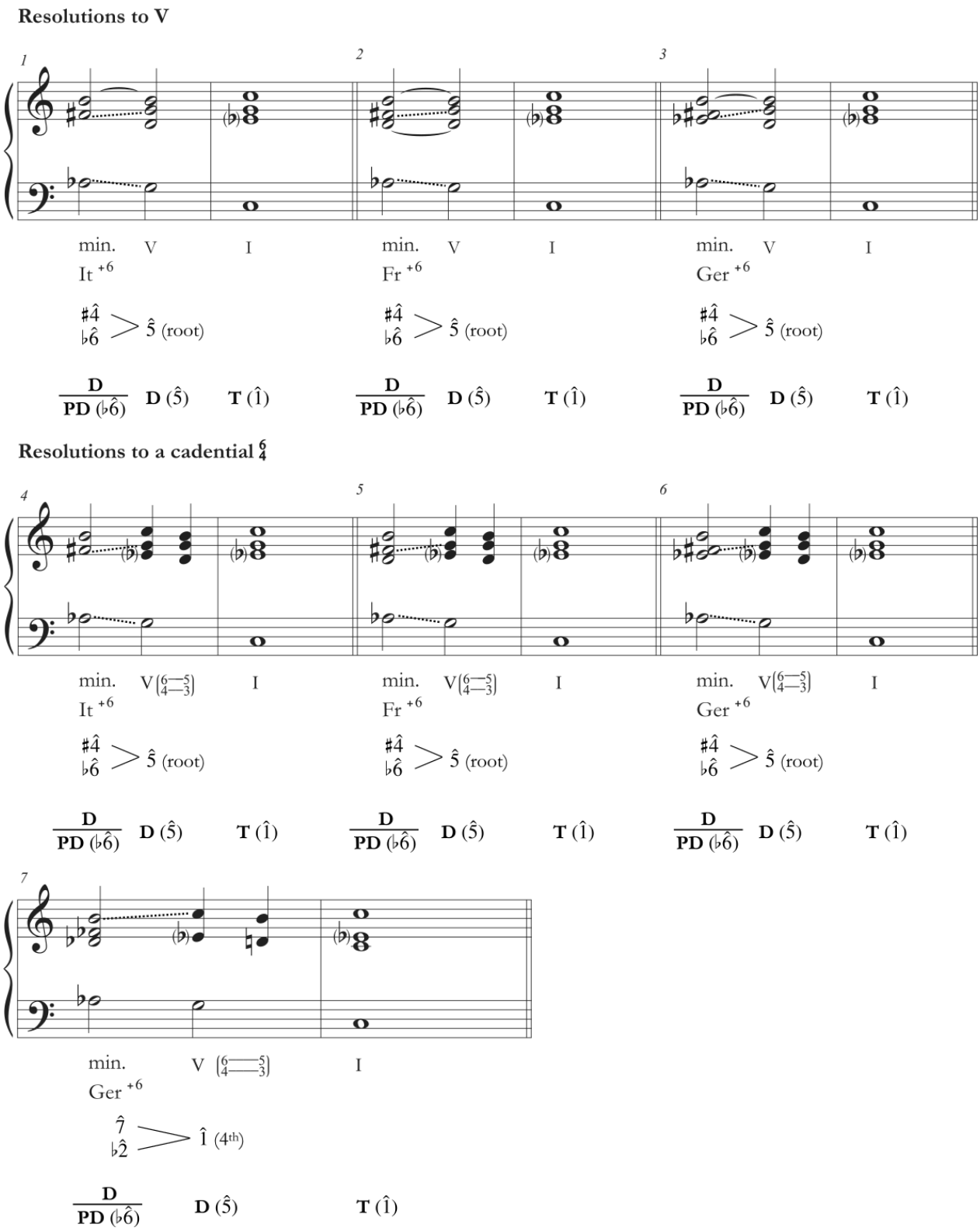
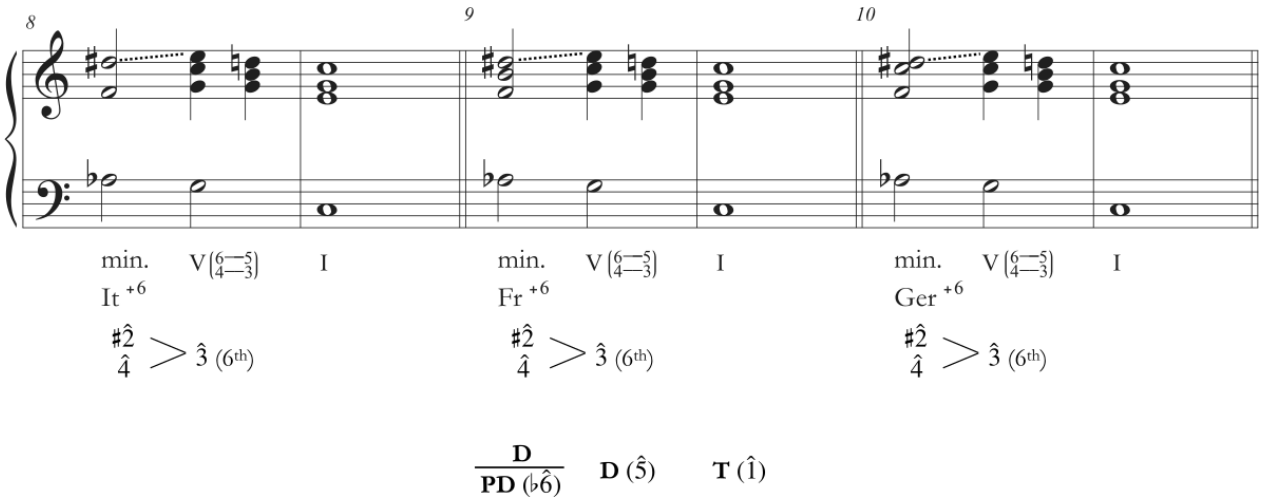


Figure 34: Minorized augmented sixths associated with the ♭$\hat{6}$–$\hat{5}$ bass line.





The progression with the minorized French sixth resolving to a root position V (see **Figure 34–2**), which resembles the opening of *Tristan* (**Example 31**), is particularly ambiguous because it shares more common tones with the dominant than the other types of minorized augmented sixth, which allows the voice leading between these chords to be very smooth. The Tristan chord shares two common tones with the dominant—one of them being the quintessential ingredient of dominant function, the leading tone (G♯)—and the other notes of the chord can resolve by semitone motion to members of the dominant harmony (F can go to E, and D♯ can go to either E or D♮, see **Figure 35**). The chord also shares three common tones with vii°7 in A minor (F, G♯, and B) and with the French sixth (F, B, and D♯). It therefore raises the question of whether the Tristan chord is a chord in and of itself, or whether it is a vertical sonority caused by simultaneous non-harmonic tones.[79]

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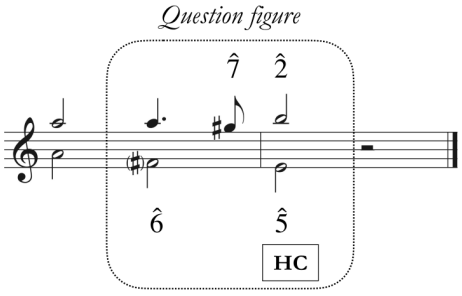
[79] For instance, John Rothgeb (1995) analyzes the G♯ in the so-called Tristan chord as an anticipation of the V occurring in m. 3. William Rothstein (1995) analyzes the opening of *Tristan* as a variation on what he calls the "question figure," which characterizes passages where a half cadence is approached by a (♭)6̂–5̂ bass line and 7̂–2̂ in the melody (see figure below). Rothstein has found numerous instances of this figure in the vocal repertoire from the Baroque era to Wagner where the gesture coincides with a question in the text.



Example 31: Richard Wagner, *Tristan*, Prelude, mm. 1–3.

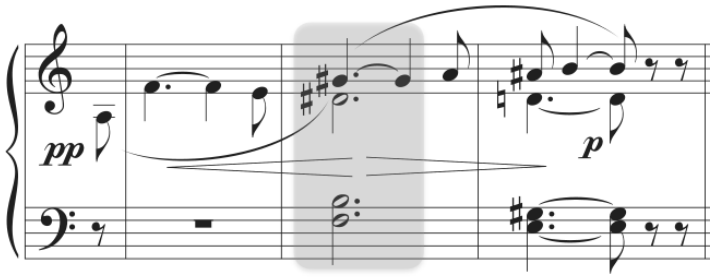
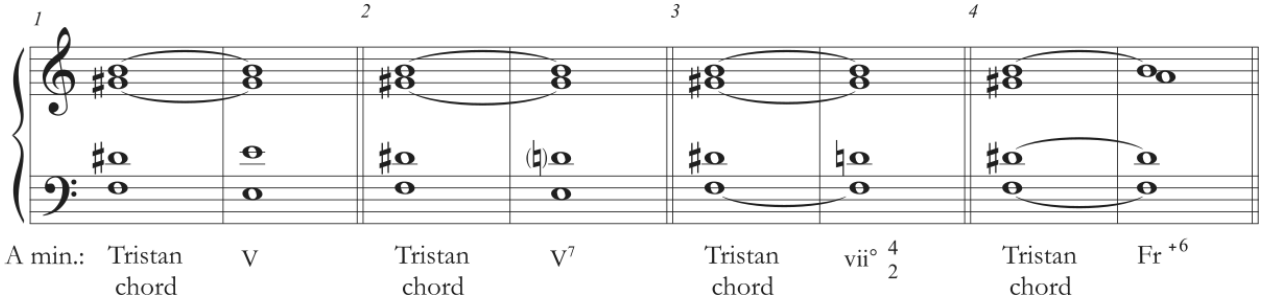


Figure 35: The Tristan chord and its shared pitch content with common chords in A minor.



Theorists who have analyzed the opening progression of Tristan have adopted various perspectives.[80] Several have viewed it as a French sixth, with the G♯ appoggiatura delaying A (e.g., Louis and Thuille 1913, Piston 1987, Ellis 2010). In contrast, some scholars have analyzed the G♯ as a chord tone and therefore have accepted the Tristan sonority as a distinct type of augmented-sixth chord (e.g., Martin 2008). Chailley (1963) and Mitchell (1967) have both famously analyzed the Tristan chord as a dominant harmony with D♯ delaying the full appearance of the dominant chord. More recently, Harrison (1994) and Swinden (2005) have argued that the Tristan chord combines two functions. Harrison analyzes the first bars of the *Tristan* prelude as a gradual change from subdominant to dominant, since the Tristan chord and the V7 include scale degrees from both functions. He argues that the ♭$\hat{6}$–$\hat{5}$ discharge in the bass conveys a subdominant-to-dominant progression, while the presence of the leading tone G♯ in both chords conveys dominant function (Harrison 1994, 156–7). As the bass moves from ♭$\hat{6}$ to $\hat{5}$ however, the balance tips towards dominant function. Harrison views the $\hat{4}$ (D) in the V7 chord as an indicator of attenuated subdominant function:

[80] For more detailed surveys on the various analyses of the Tristan chord, see Nattiez (1987) and Martin (2008). Martin also surveys non-functional perspectives on this chord that emphasize voice leading (*ibid.,* 15).

> Even though Dominant is felt to increase as the idea unfolds, Subdominant function is still active enough that the D included in the final sonority can communicate a bit more Subdominantness than is usual for a V7 chord. In other words, the Subdominant *diminuendo* is not a Subdominant *perdendosi* (Harrison 1994, 157).

Swinden's (2005) approach to the Tristan chord is similar to Harrison's, although Swinden's analytical method emphasizes more the labelling of each harmonic "chunk," while Harrisons's seeks to represent visually how the sense of harmonic function gradually changes as the music unfolds.[81] Swinden views the Tristan chord as a collision of predominant and dominant functions, caused by the PD–D bass line that conflicts with the leading tone in the upper voices**.**

Harrison's (1994) and Swinden's (2005) approaches to the function of the Tristan chord draw attention to the complexity of analyzing it functionally, and can be applied to other examples that feature a minorized augmented sixth on ♭$\hat{6}$ resolving to the root of a dominant harmony. The opening phrase of Schumann's Cello Concerto (**Example 32**), coincidentally in the same key, features striking similarities to *Tristan*:[82] in mm. 11–12, the progression from a F–G♯–B–D♯ sonority to a root-position dominant includes a voice exchange between the melody and an inner voice (G♯–A–B against B–A–G♯ (the duration of the first G♯ is, like in Tristan, considerably longer than that of the A). However, it differs from *Tristan* in that the augmented-sixth chord resolves to a consonant triad on V rather than a dominant seventh, and there is no A♯ appoggiatura before the B in the melody. In the Schumann example, I am inclined to hear the predominant function of the "Tristan chord" as more prominent than its dominant function, perhaps because it leads to a clear half cadence. Unlike *Tristan*, the progression therefore occurs in a cadential context rather than a sequential one.

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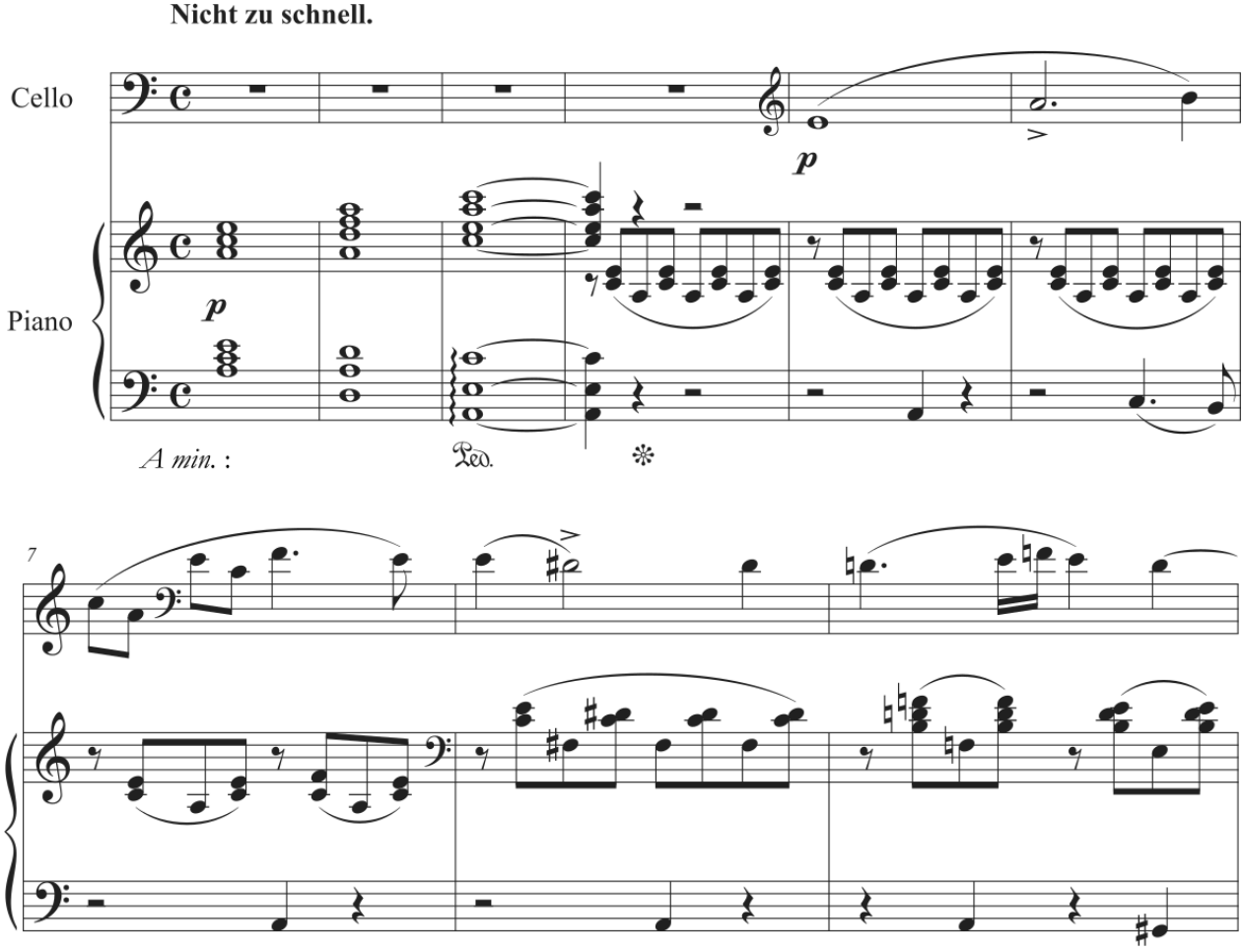
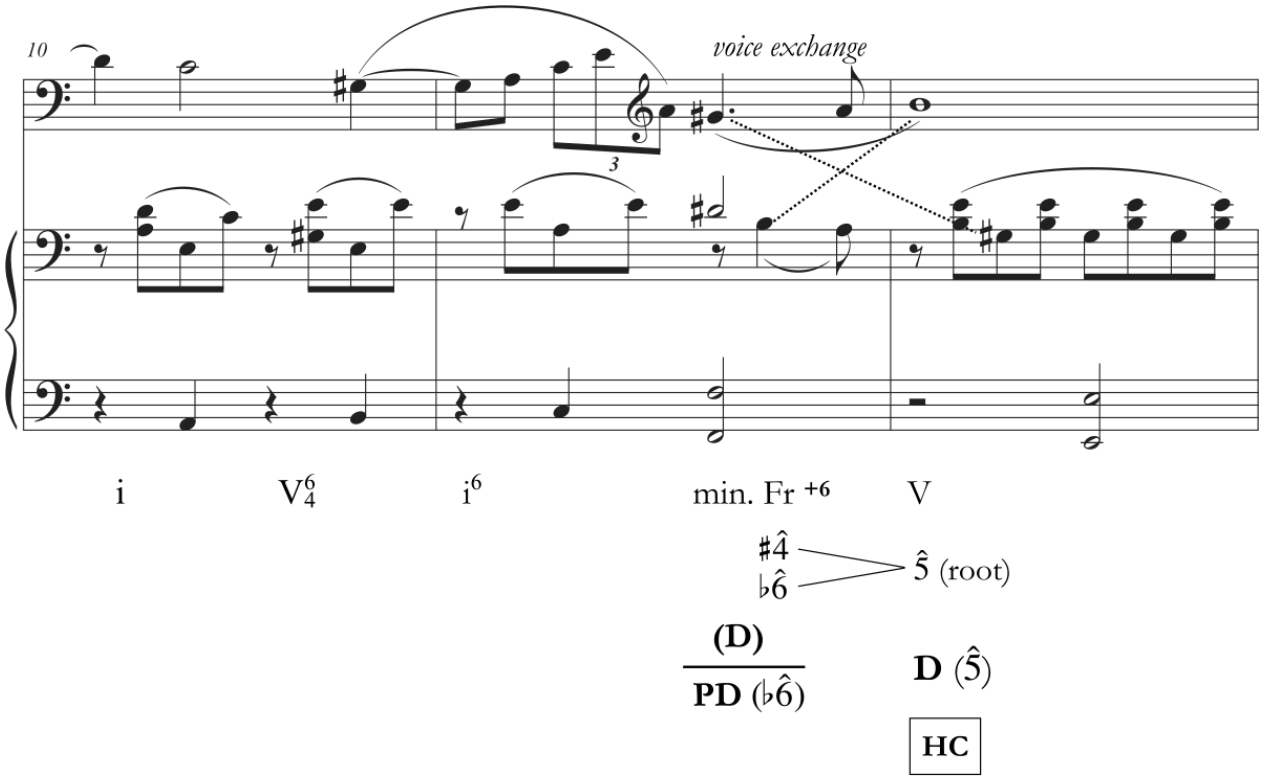
[81] Harrison's analysis of the *Tristan* prelude illustrates the second of three analytic techniques he puts forth in his book *Harmonic Function in Chromatic Music* (1994): segmental analysis, linking analysis, and accumulative analysis. Segmental analysis resembles Swinden's approach, while the linking analysis used in his analysis of the *Tristan* prelude emphasizes how linear motions express function.

[82] Schumann's Cello Concerto was composed in 1850, almost a decade before Wagner wrote *Tristan*. To my knowledge, there is no evidence that Wagner got the inspiration for the Tristan chord from Schumann. Examples of precursors of the Tristan chord in the analytical literature include Beethoven's Piano Sonata op. 31, no. 3 (m. 36), Chopin's Prelude in E minor (m. 15) and Mazurka in F minor (m. 13, see Golab 1990), but Schumann's Cello Concerto is, in my opinion, more similar to *Tristan* than those examples. Moreover, the descending chromatic motion in the solo cello part in mm. 7–9 (F–E–D♯) also resembles the opening motive of *Tristan* played by the cellos (A–F–E–D♯).

Example 32: Robert Schumann, Cello Concerto op. 129, i, mm. 1–12. Piano transcription from the C. F. Peters Edition (Leipzig, ca. 1887), edited by Friedrich Grützmacher.



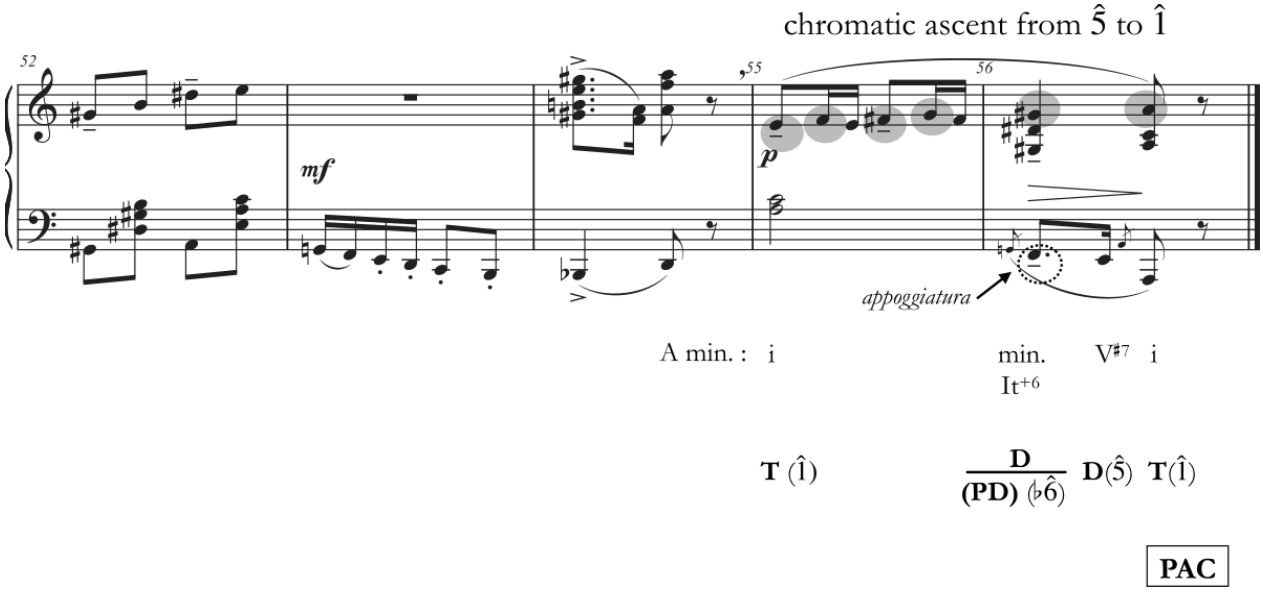


The Tristan chord and the Schumann example both feature what I call here "minorized French sixths." Instances of this bass line with minorized Italian and German sixths also occur in late-tonal repertoires. The excerpts reproduced in **Examples 33** and **34** both feature **minorized Italian sixths**, which have one common tone with the dominant harmony (7̂) and two scale degrees associated with predominant chords (♭6̂ and ♯4̂). In the Prokofiev excerpt (**Example 33**, m. 56), which is set in the key of A minor, the context leads me to hear the augmented sixth F–G♯–D♯ as functioning mostly like a dominant. The dyad G♯–D♯ is held in the upper voices when the F in the bass resolves to E; the F can therefore be understood as an appoggiatura to the root of the dominant.[83] The underlying ascending chromatic scale in the melody from 5̂ to 1̂ in mm. 55–56 also sets up expectations for a dominant harmony coinciding with the G♯ rather than a predominant.[84]

[83] Harley, in his analysis of this passage, does not comment specifically on the function of the augmented-sixth chord, but he notes that the "home-key cadence is unequivocally a D-T resolution" (2014, 34), despite the presence of the D♯ in the chord.

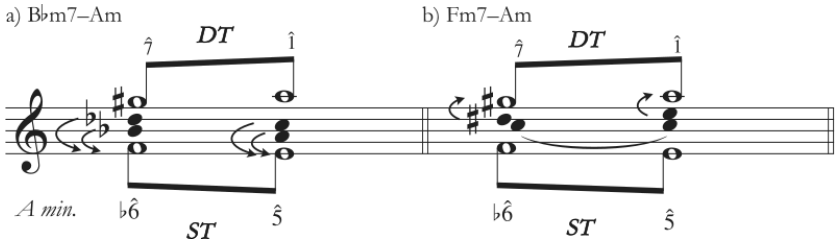
[84] In his detailed analysis of "Lily Dance," Harley (2014) shows that the final cadence combines various harmonic and motivic elements of the piece (see pp. 30–36). He observes that augmented-sixth chords enharmonically equivalent to minor seventh chords are functionally ambiguous, especially the ones resolving to the root and to the fifth of a minor triad (i.e., B♭m7–Am and Fm7–Am). These progressions both feature discharges from the agents of dominant and subdominant

Example 33: Sergei Prokofiev, "Lily Dance," op. 75, No. 9, mm. 52–56.

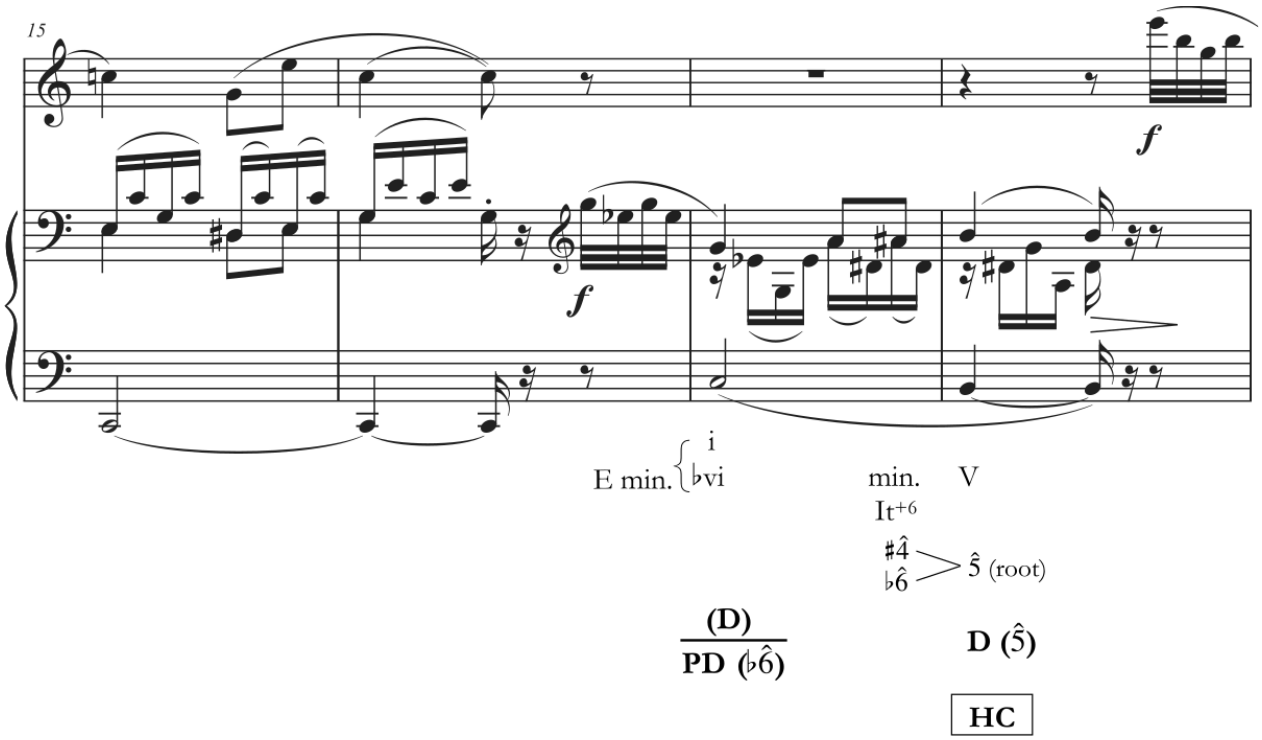


In contrast with the example above, the passing minorized augmented sixth in the Poulenc excerpt (**Example 34**), already mentioned in the introduction (see **Example 1**, p. 2), leads to a half cadence in E minor, which confers to the chords before it a stronger predominant function than dominant.

functions ($\hat{7}$–$\hat{1}$ and ♭$\hat{6}$–$\hat{5}$), which are reinforced by parallel specific accompaniments, indicated by the curved arrows in the figure below.



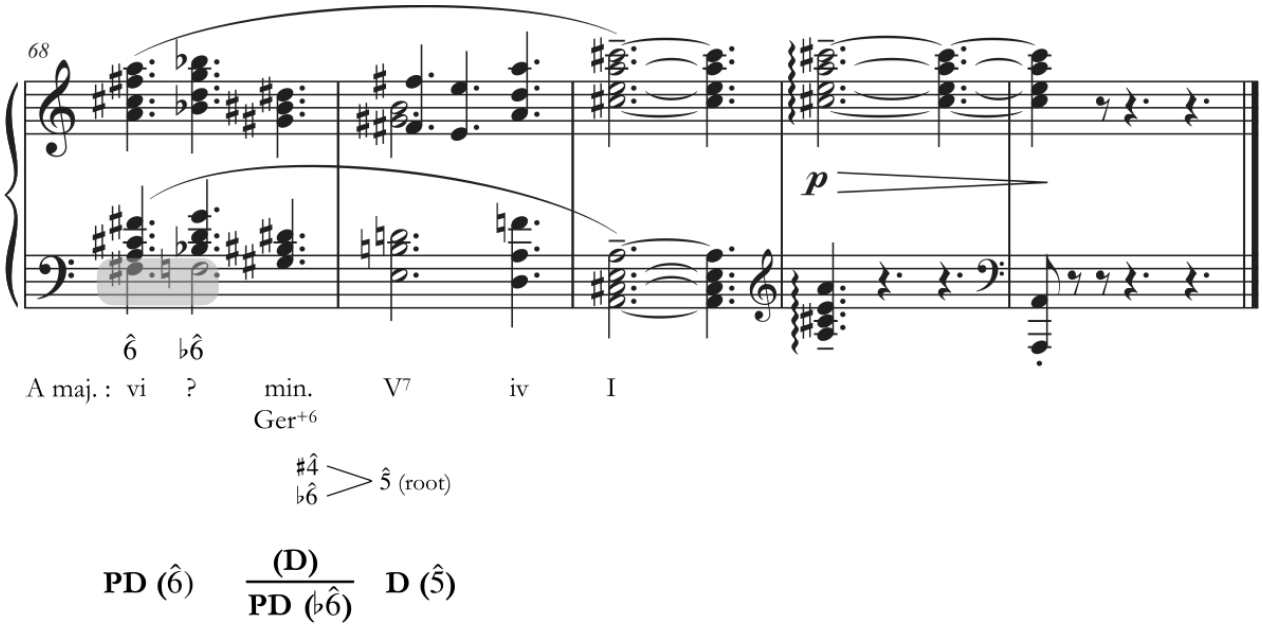
Example 34: Francis Poulenc, Flute Sonata, i, mm. 15–18.



An instance of a minorized German sixth on the ♭6̂–5̂ bass line occurs at the end of Strauss's "Frühling" from the *Vier letzte Lieder* (**Example 35**).[85] In this example, set in the key of A major, the minorized augmented sixth includes the leading tone (G♯). Similarly to the Poulenc example above, it sounds more like a predominant chord than a dominant, perhaps because the leading tone appears only on the very last beat of m. 68, while the bass emphasizes the agent of subdominant from the major and minor mode (6̂ and ♭6̂) for the whole measure.

[85] This example was also analyzed in Chapter 2. See **Example 27**, p. 61.

Example 35: Richard Strauss, *Vier letzte Lieder*, No. 1 "Frühling" (piano reduction by Max Wolff), mm. 68–72.

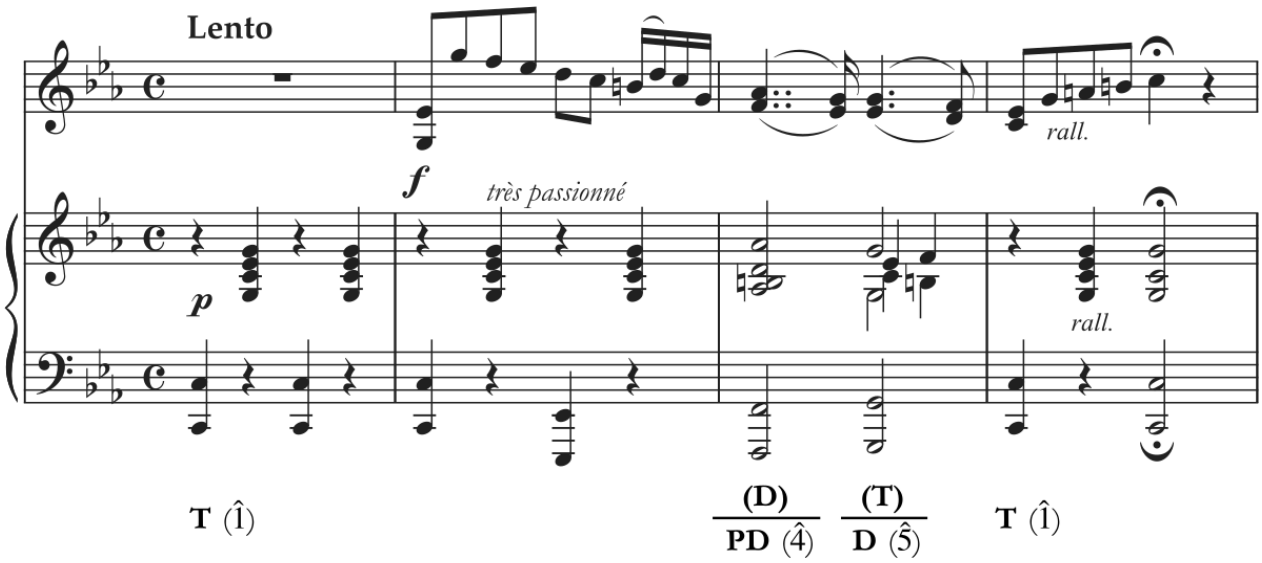


In summary, while the minorized augmented sixths in **Examples 32–35** all feature elements of both predominant and dominant functions, one function can usually be perceived as more prominent than the other depending on the texture, the relative duration of the chord, as well as the formal and harmonic contexts where these chords occur. The analytical notation used in this chapter aims to show the functional collision in these examples along with the relative importance of each function.

The functional complexity of minorized augmented sixths resolving to $\hat{5}$ is enhanced when the root-position dominant is embellished by a cadential six-four. Even though theorists traditionally ascribe dominant function to the cadential six-four, thus analyzing the sixth and fourth as dissonances delaying the fifth and third respectively, late-tonal composers played with the functional ambiguity of this chord, since it contains the same pitches as the tonic chord. Swinden analyzes a similarly ambiguous progression in Sarasate's *Ziegeunerweisen* (see his Example 23), where a $\text{vii}^{\circ 4}_{3}$ goes to a $\text{V}(^{6}_{4}\ ^{7})$. Although this example has a different bass line and does not feature a minorized augmented sixth, the collision of functions it exhibits has similarities to the chords examined in this chapter. Swinden notes that the $\hat{7}$–$\hat{1}$ resolution that occurs in the accompaniment above the $\hat{4}$–$\hat{5}$ motion in the bass anticipates the "real" dominant-to-tonic resolution that occurs when $\hat{5}$ goes to $\hat{1}$ in the bass (Swinden 2005, 269 and 272). His functional analysis does not, however, reflect the overlap of functions in the cadential

six-four. In contrast, the analysis in **Example 36** shows that the functional collision lasts for not one but two chords (i.e., the vii$^{o4}_{3}$ and the cadential six-four, as opposed to only the vii$^{o4}_{3}$). In this context, the cadential six-four has a stronger tonic flavor than when it follows an unambiguous predominant harmony.[86]

Example 36: Alternate analysis of Sarasate's *Ziegeunerwiesen*, mm. 12–15.



The opening of Atterberg's Cello Concerto (**Example 37**) illustrates how a cadential six-four can magnify the functional complexity of minorized augmented sixths. In this excerpt, each layer of the texture, taken separately, communicates a different functional analysis. The melody's first phrase (**Example 38**), taken on its own, is entirely diatonic to C minor: the emphasis on $\hat{5}$ and $\hat{1}$ at the beginning suggests a tonic chord, while the motion $\flat\hat{6}$–$\hat{5}$–$\hat{1}$ at the end of the phrase is typical of a predominant chord followed by a dominant and a tonic.

[86] Because the tonic chord in second inversion is assimilated to dominant function in the common practice, some scholars have noted that the resolution to V$^{5}_{3}$ is sometimes omitted, without affecting the perception of the apparent tonic six-four as a dominant-functioning chord. See Luce Beaudet, "L'accord de 6te et 4te à fonction ornementale," *L'oeil qui entend, l'oreille qui voit: un modèle d'analyse du discours harmonique tonal*, accessed February 21, 2023, http://bw.musique.umontreal.ca/chap2/64.htm.

Example 37: Kurt Atterberg, Cello Concerto op. 21, i, mm. 1–5.

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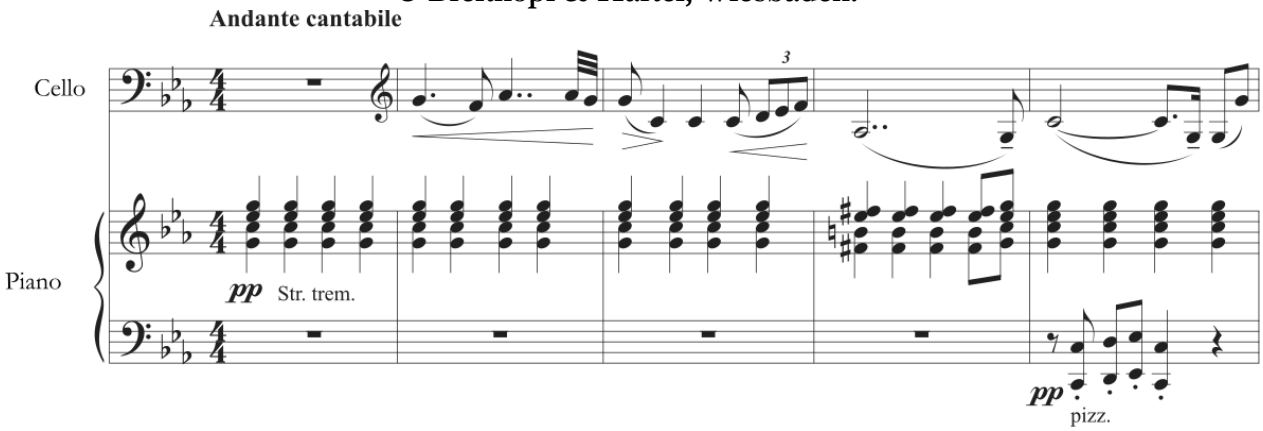
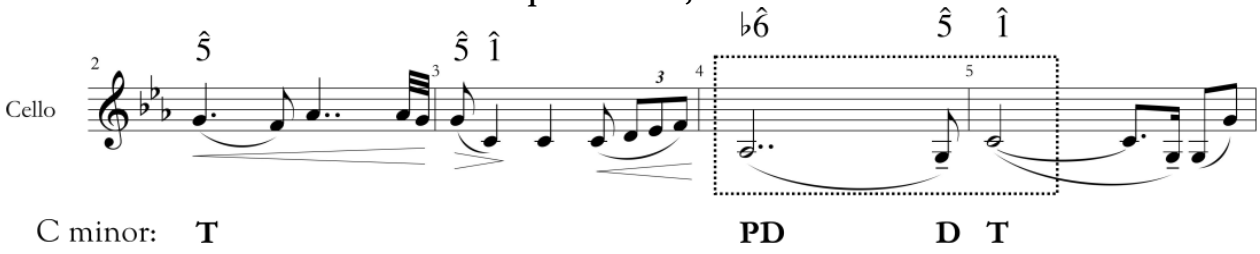


Example 38: Kurt Atterberg, Cello Concerto, i, mm. 2–5 (cello part only).

© Breitkopf & Härtel, Wiesbaden.



One can, however, infer a different harmonic analysis by looking only at the orchestral accompaniment (**Example 39**). The C-minor tonic chord of the first three bars is prolonged by B major in m. 4, a *slide* transformation (i.e., the third E♭/D♯ is held while the notes a fifth apart move in parallel motion), followed by a return to tonic harmony at the downbeat of m. 5. The tonic chord on the last eighth note of m. 4 is, in this analysis, an anticipation of the next bar.

Example 39: Kurt Atterberg, Cello Concerto, i, mm. 1–5 (orchestra).

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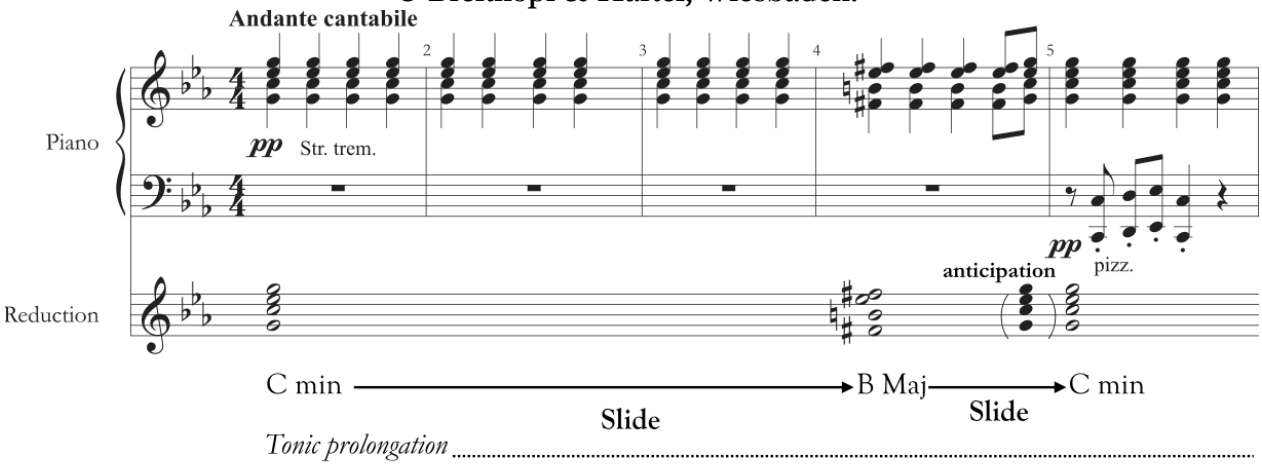

The harmonic analyses of these two layers in m. 4 can hardly be reconciled: while the cello, acting at once as the melody and the bass, suggests a complete cadential progression, the accompaniment hints at an embellishing chord. These two opposing layers result in a minorized German sixth in m. 4, followed by a second-inversion tonic chord on $\hat{5}$ which, unlike most examples of cadential six-four chords, does not resolve to a root-position dominant, but instead goes directly to a tonic. Assuming that the cello part governs the harmonic rhythm in mm. 4 and 5, the musical material can be segmented into three chords (**Figure 36**). This passage expresses three different harmonic functions—predominant, dominant, and tonic—but these functions do not align perfectly with the three chords. The first two show functional collision, in the sense that they anticipate elements of the next function, desynchronizing the different layers. As seen above, the leading tone in the minorized augmented sixth anticipates the subsequent dominant function, while the tonic triad on $\hat{5}$ anticipates the tonic function that immediately follows it. This second-inversion tonic chord at the end of m. 4 thus has two contradictory functions: it anticipates the arrival of the tonic on the following downbeat, and it coincides with the articulation of the dominant function in the cello part.

Figure 36: Kurt Atterberg, Cello Concerto, i, mm. 4–5 (desynchronized functions).

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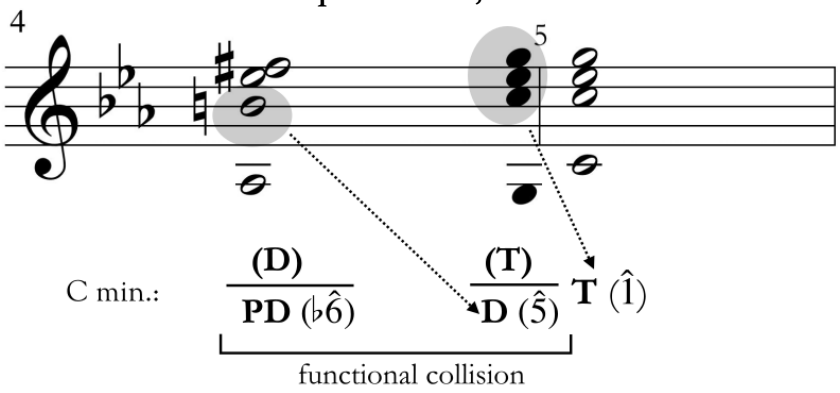


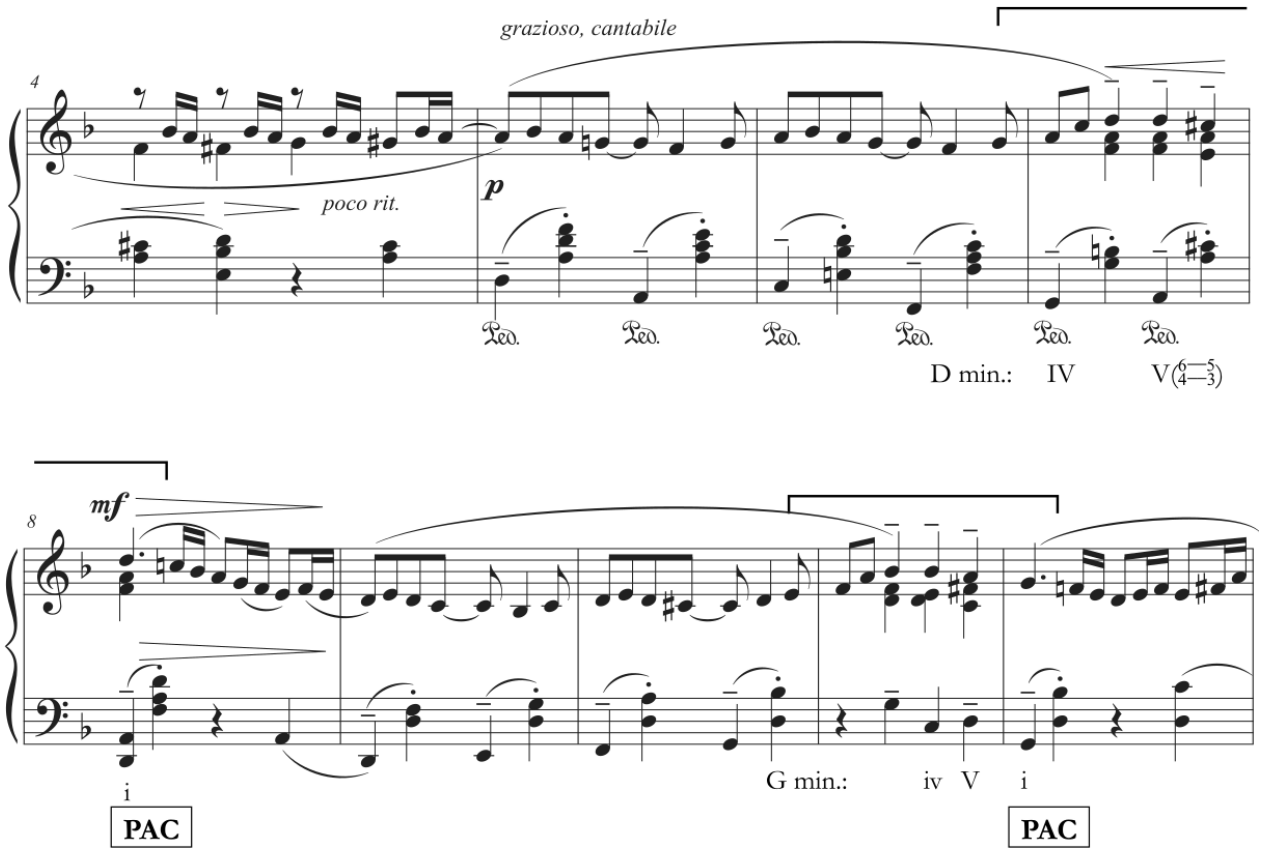
Medtner's "Organ Grinder" from *Romantic Sketches for the Young* op. 54 (**Example 40**, p. 94) contains a similarly ambiguous passage. The piece features many instances of a rhythmic pattern associated with a cadential progression (see **Figure 37**); in almost all instances of this pattern, it is harmonized with a cadential progression that has a root-position dominant harmony as the penultimate chord, followed by closure on a tonic-functioning harmony on the downbeat of the next measure. In m. 96, however, the last two beats are harmonized by a minorized French sixth in D minor instead of the expected dominant chord of that key.[87] This augmented sixth has the leading tone in the melody, and since this pattern was associated with a dominant chord, it is likely to sound mostly like a dominant, even though the bass has ♭6̂ instead of 5̂. The leading tone C♯ resolves to D in m. 97, which conveys a dominant-to-tonic functional discharge, but the bass moves from ♭6̂ to 5̂, which suggests a predominant-to-dominant functional discharge. The three functions, predominant, dominant, and tonic, are therefore compressed into two chords, each of which featuring distinct elements of dominant function: the leading tone in the minorized augmented sixth, and the base of dominant function in the cadential six-four.[88]

[87] The 1̂ in the melody on the third beat can be understood as an appoggiatura to C♯.

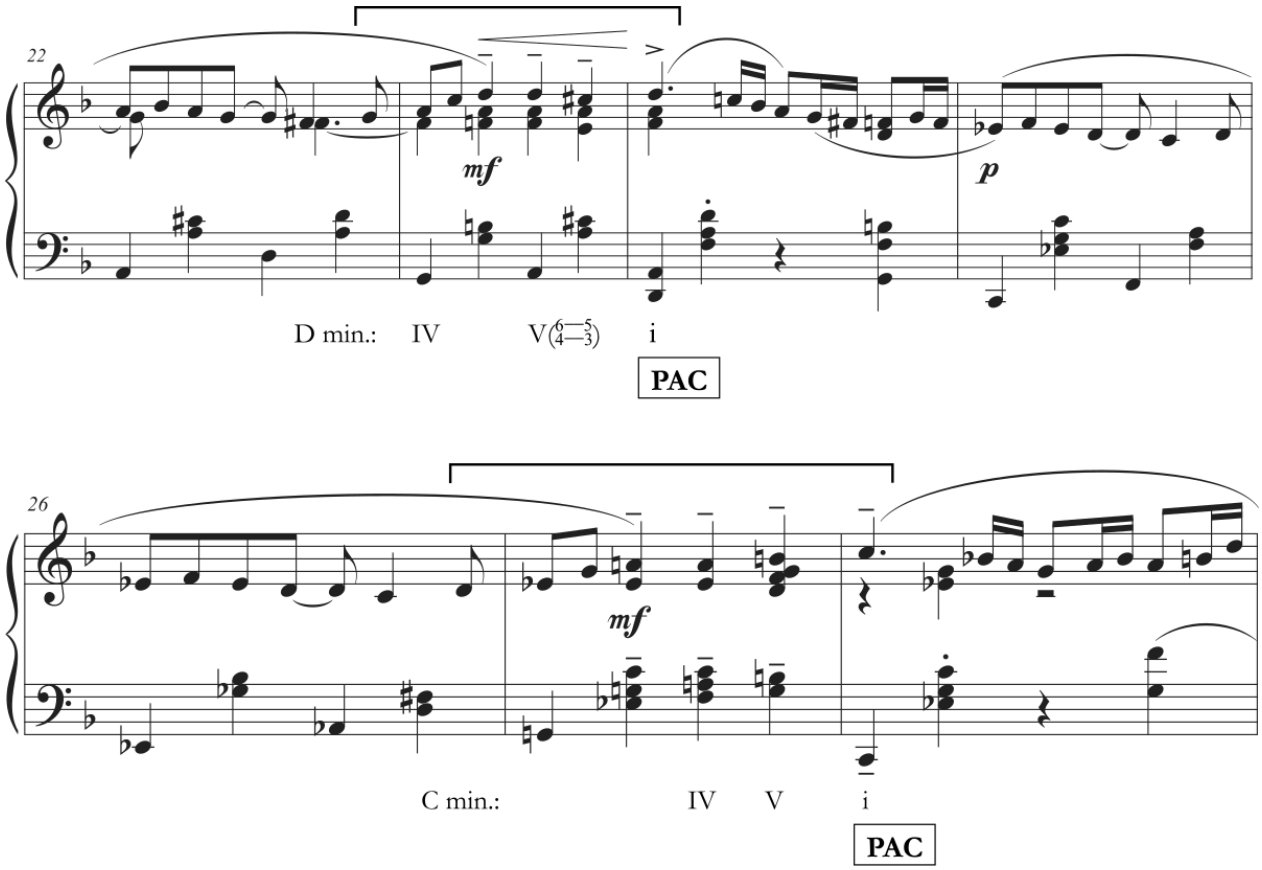
[88] The next measures of this passage are also tonally ambiguous: the V_2^4 chord that follows the cadential six-four resolves to an F–A–C–D sonority, which can be heard as a D-minor tonic with an added minor seventh, or as an F-major chord with an added sixth. To my ear, this chord sounds at first like a D-minor tonic, but because it is prolonged with the plagal gesture B♭–F in the bass, the D in the melody starts to sound more like an added sixth than a root. (The chord on B♭ in mm. 98–99 is a German augmented sixth written enharmonically, where the augmented sixth B♭-G♯, written as A♭, abstractly resolves to A, the major third of F.)

Figure 37: Rhythmic patterns signaling PACs in Medtner's Romantic Sketches for the Young op. 54, "The Organ Grinder."

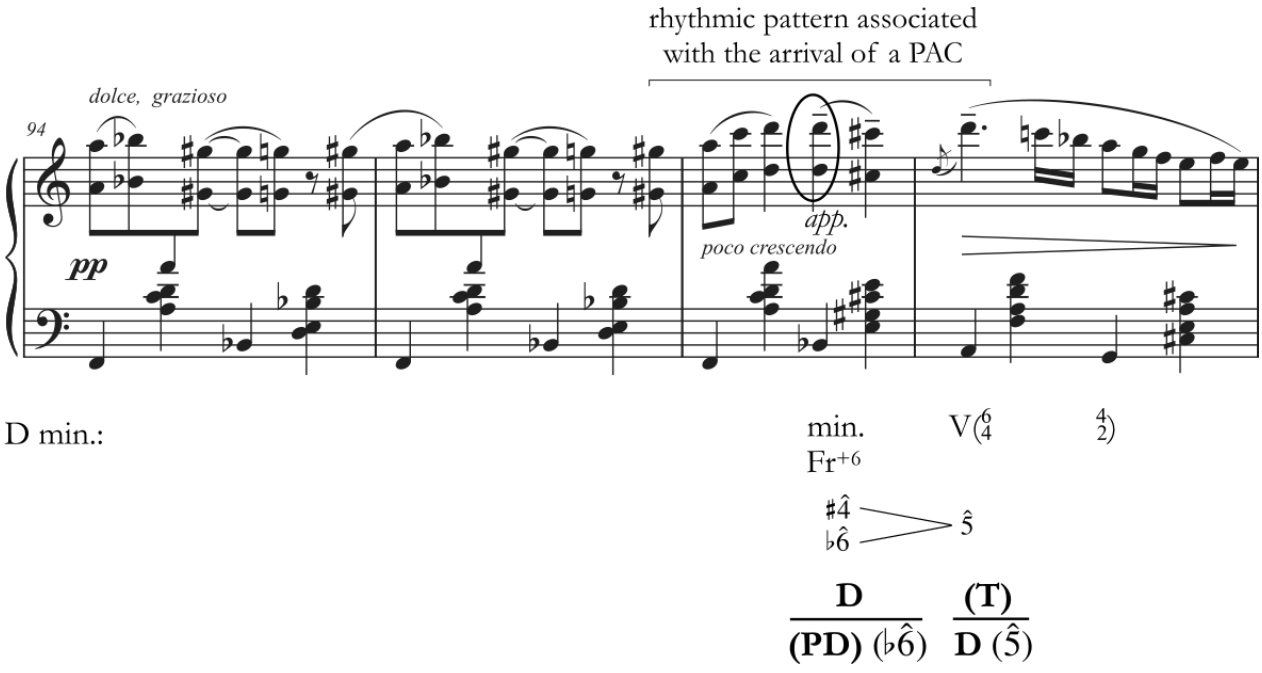
a) mm. 4–12.

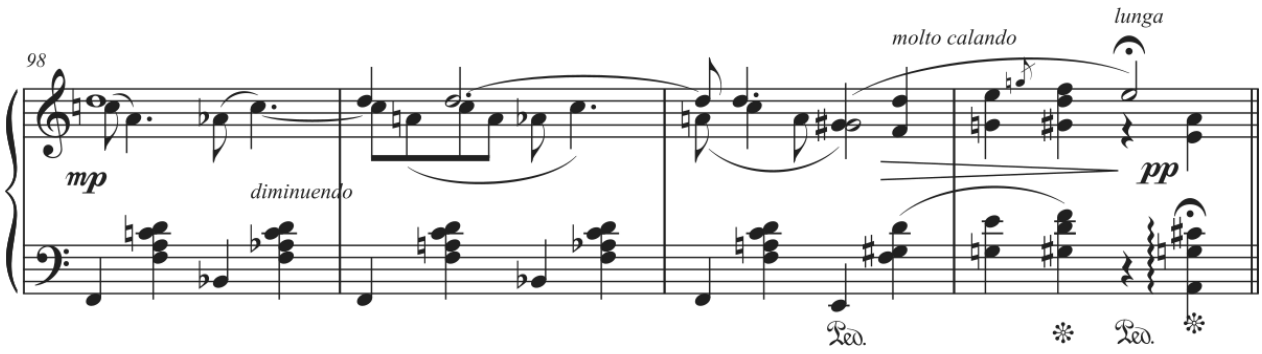


b) mm. 22–28.



Example 40: Nikolai Medtner, *Romantic Sketches for the Young* op. 54, "The Organ Grinder," mm. 94–101.

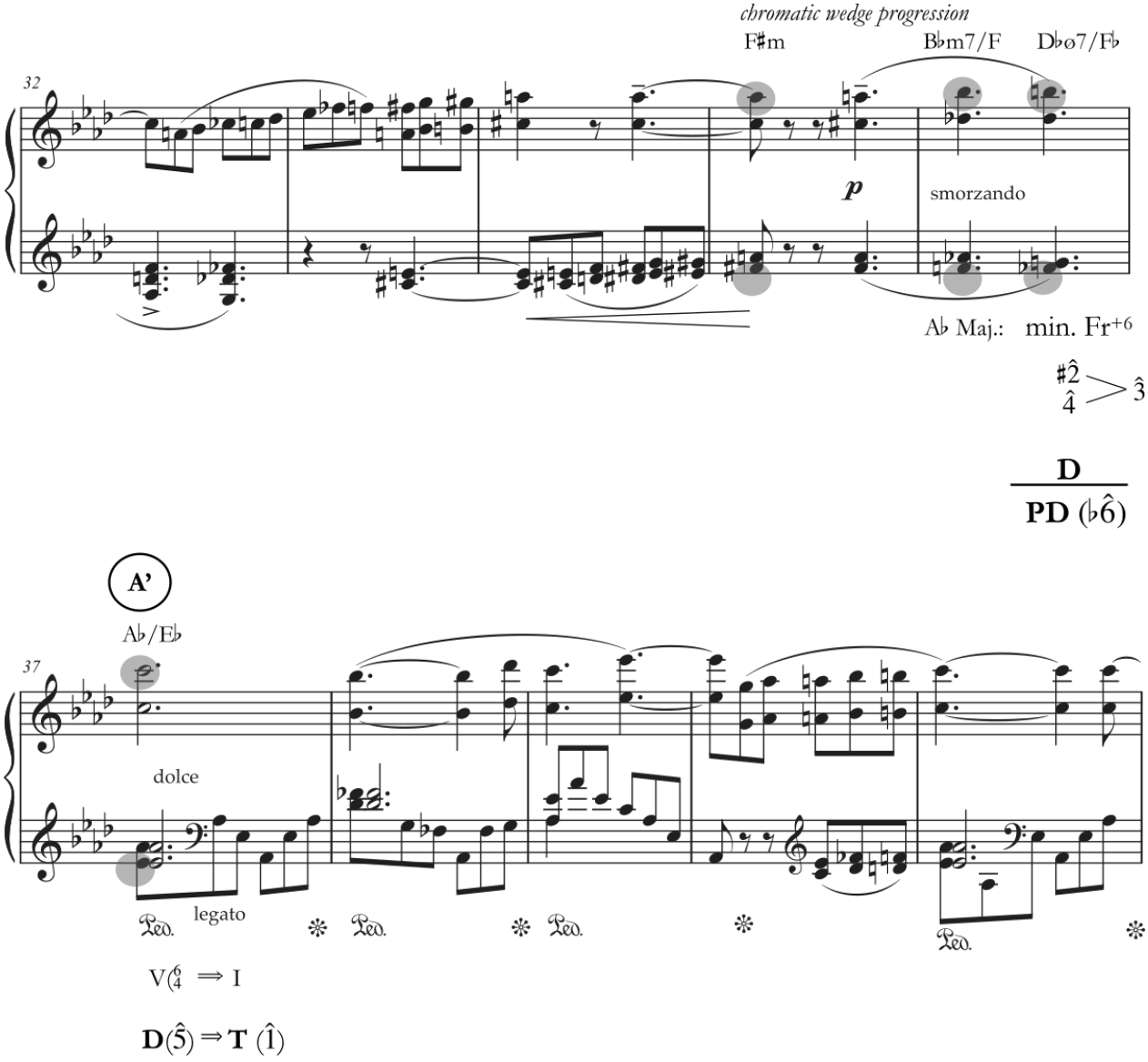




As shown in **Figure 34** (p. 80), resolutions of the augmented-sixth interval to scale degrees other than $\hat{5}$ can occur with the $\flat\hat{6}$–$\hat{5}$ bass line. In Liszt's "Sospiri!" S. 192 No. 5 (**Example 41**), the modulation from G♭ major back to the home key A♭ major occurs through a series of non-functional harmonies landing on F♯ minor in m. 35. This chord is then the starting point of a chromatic wedge progression that leads to an A♭-major chord in second inversion in m. 37. The previous chord is a minorized French sixth whose approach tones, D♭ and B♮, resolve to C ($\hat{3}$), the third of tonic harmony. Analogously to minorized augmented sixths resolving to $\hat{5}$, the progression contains the $\hat{7}$–$\hat{1}$ as well as the $\flat\hat{6}$–$\hat{5}$ discharges, which make it possible for the augmented-sixth chord to function as a dominant or as a subdominant (or a combination of those functions) depending on the context, while the chord of resolution (A♭/E♭) has elements of dominant and tonic functions. Because the A♭ chord coincides with the return of the A section, which started with a clear root-position tonic in m. 11 (not shown in the excerpt), the chord in m. 37 quickly loses its dominant flavor to shift to tonic. I show this change of perceived function with the double arrow in my analysis (meaning "becomes").[89]

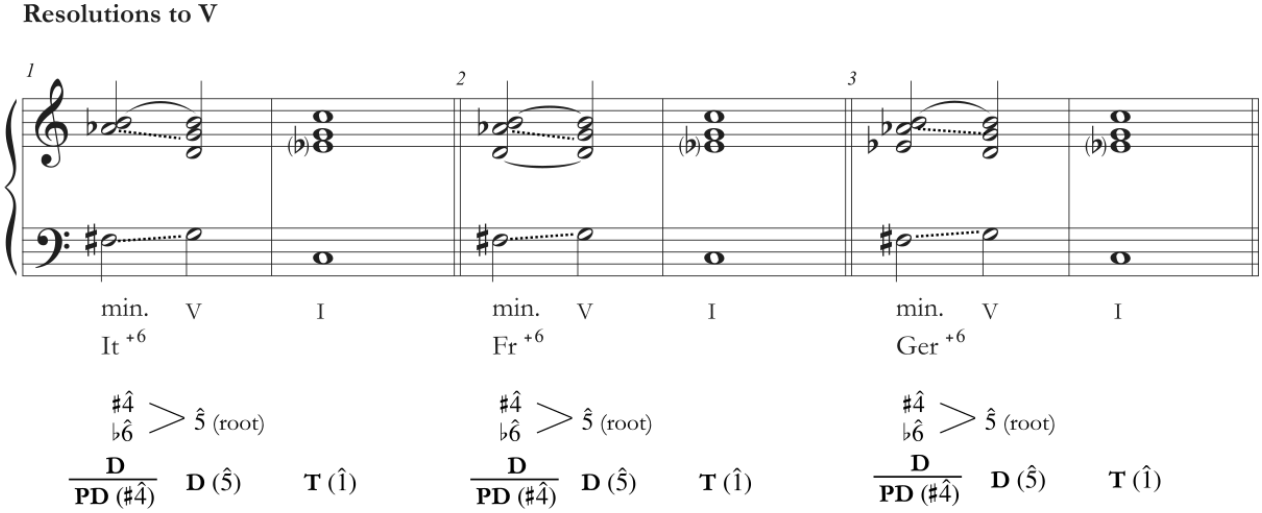
[89] The double arrow for "becomes" is advocated extensively by Janet Schmalfeldt in her book *In the Process of Becoming* (2011).

Example 41: Franz Liszt, "Sospiri!", S. 192, No. 5, mm. 27–41.

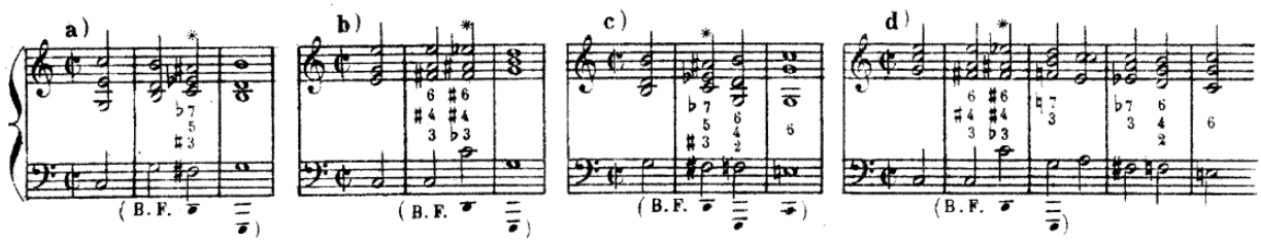


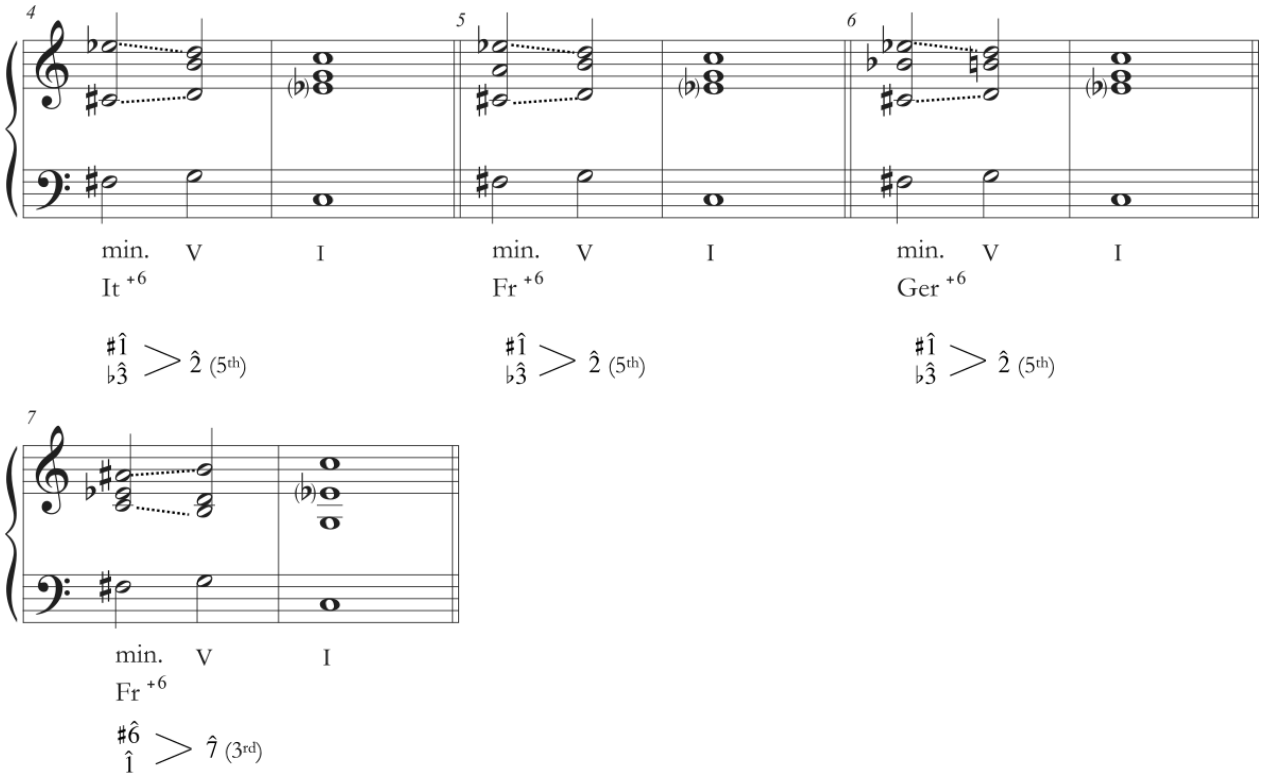
The bass line ♯$\hat{4}$–$\hat{5}$ can also support various resolutions of minorized augmented sixths to dominant-functioning harmonies (**Figure 38**). Instances that feature the resolution of the approach tones to $\hat{5}$ contain the same scale degrees as the ones shown in **Figure 34** (see progressions 1–6, p. 80); only the bass line differs (i.e., ♯$\hat{4}$–$\hat{5}$ vs. ♭$\hat{6}$–$\hat{5}$). This change of inversion nevertheless causes a change in the perceived function: bass lines of ♭$\hat{6}$–$\hat{5}$ are modeled after minor-mode diatonic PDs (iv6–V) whereas bass lines of ♯$\hat{4}$–$\hat{5}$ are modeled after applied dominants (V6/5 of V to V, or vii°7 of V to V)..[90]

Figure 38: Minorized augmented sixths associated with the ♯$\hat{4}$–$\hat{5}$ bass line.

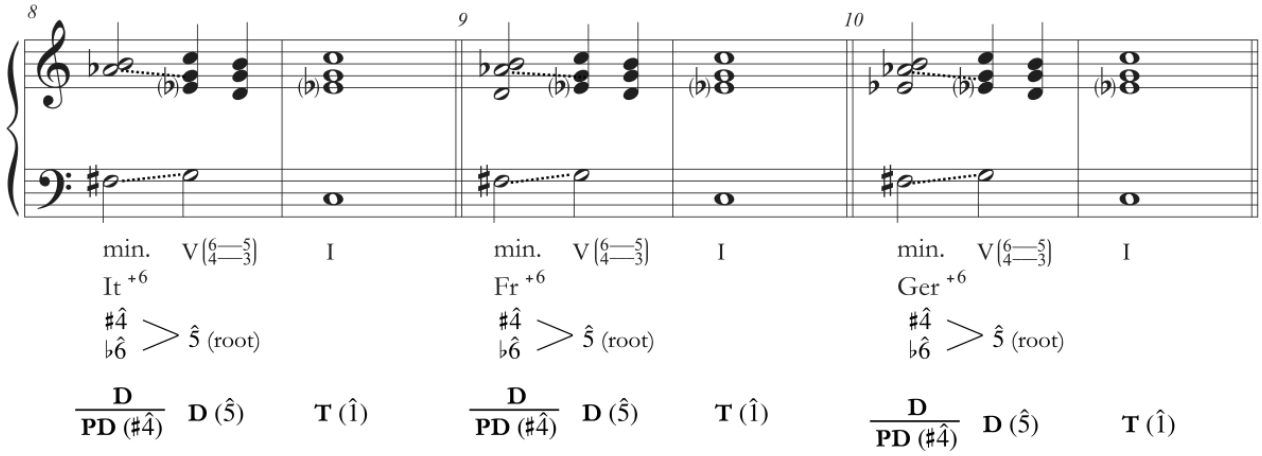


[90] The resolution of the minorized French sixth in **Figure 38–7** involves violations of traditional voice leading because the approach tones C–A♯ resolve to the leading tone B, which is doubled in V. Harrison rules out the possibility of augmented-sixth intervals between $\hat{1}$ and ♯$\hat{6}$ for this very reason (1995, 175). Curiously, the Belgian theorist François-Auguste Gevaert includes a progression with this "faulty" doubling in his treatise (1905, 220, see his Example 557a, reproduced below) when the bass moves from ♯$\hat{4}$ to $\hat{5}$. The subsequent uses of this chord he illustrates (b, c, and d), however, do not feature the doubling of the leading tone; instead, the voice with $\hat{1}$ (C) leaps to $\hat{5}$ (G) instead of resolving to the leading tone.





Resolutions to a cadential $\frac{6}{4}$



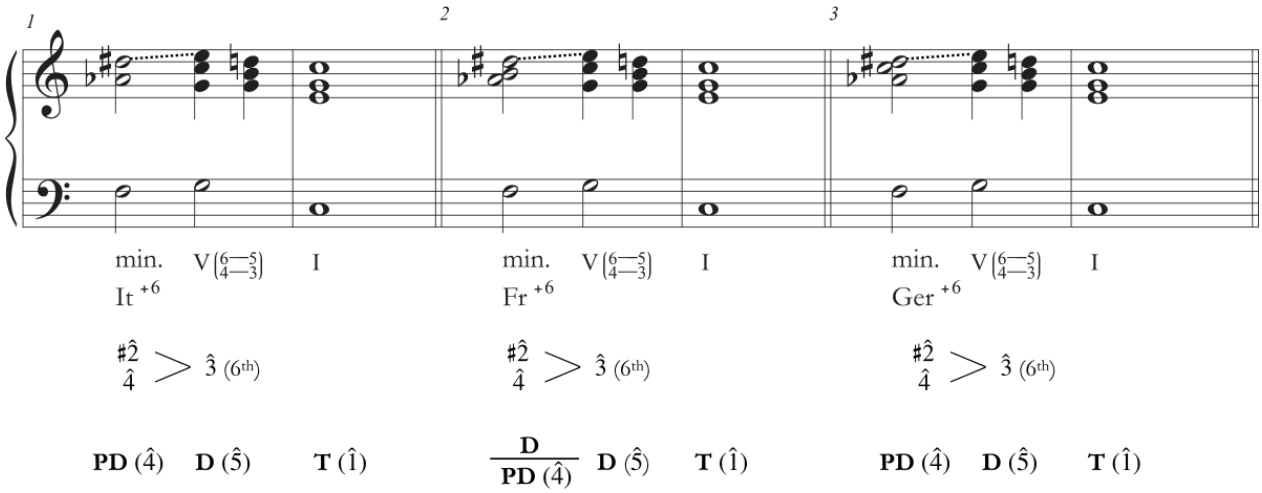
Fauré's Nocturne op. 33 in E♭ minor (see **Example 29**, p. 63) features a minorized German sixth resolving to a dominant over the #4̂–5̂ bass line. In this example, the shift from predominant to dominant is a gradual one. Because the leading tone D♮ is held throughout m. 17, I hear dominant function as being activated on the downbeat of m. 17, although the bass line 4̂–#4̂–5̂ suggests that the first two beats still belong to predominant function. It is only on the last beat of the measure that

dominant function is fully established, as the bass moves to $\hat{5}$ and the chord becomes B♭7, an unequivocal dominant of the tonic E♭ minor.

The motion from $\hat{4}$ to $\hat{5}$, also characteristic of predominant-to-dominant progressions, can involve a minorized augmented sixth if the dominant is embellished by a cadential six-four or if it resolves to a dominant with an added thirteenth (**Figure 39**); the augmented-sixth interval between $\hat{4}$ and $\#\hat{2}$ suggests a resolution to $\hat{3}$, which is only realized in the voice that has $\#\hat{2}$, since the bass moves up to $\hat{5}$ instead of resolving down to $\hat{3}$. All three types of minorized augmented sixth can be associated with this bass line, but only the minorized French sixth involves functional collision (see **Figure 39**–2), because it includes the leading tone.[91] In contrast, the minorized Italian and German sixth can be understood as subdominant harmonies with an added sixth that has been chromatically raised (i.e., $\hat{2}$ becomes $\#\hat{2}$).

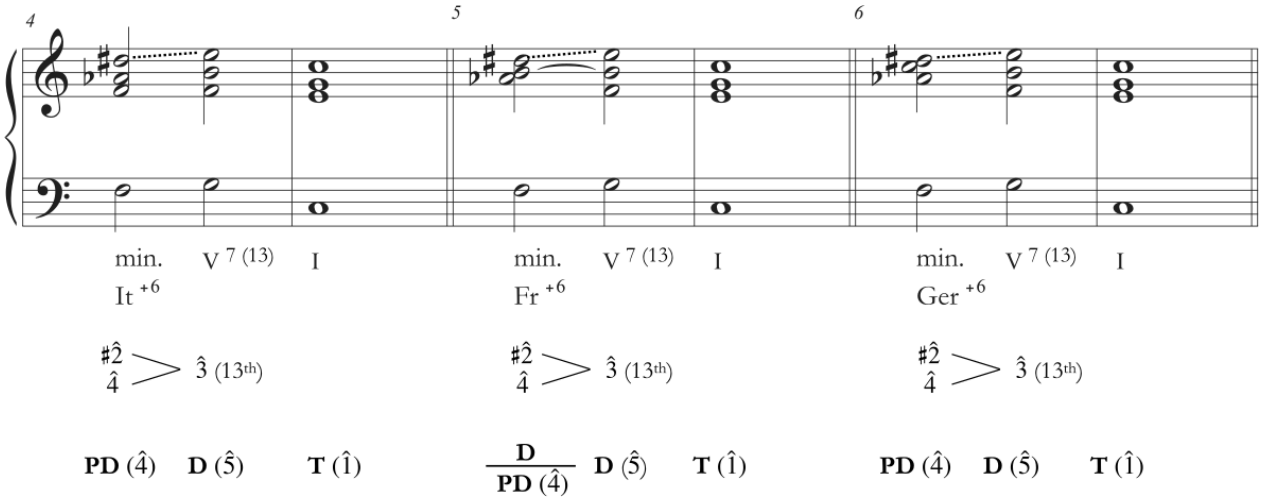
Figure 39: Minorized augmented sixths associated with the $\hat{4}$–$\hat{5}$ bass line.

Resolutions to a cadential six-four



[91] This chord appears as a theoretical possibility in Swinden's (2005) roster of chords that collide subdominant and dominant functions, labelled S^D in his nomenclature. He explains that this chord, when it leads to a dominant-functioning harmony, is understood as a combination of predominant and dominant functions (see his Example 12, p. 263).

Resolutions to a dominant with an added 13th

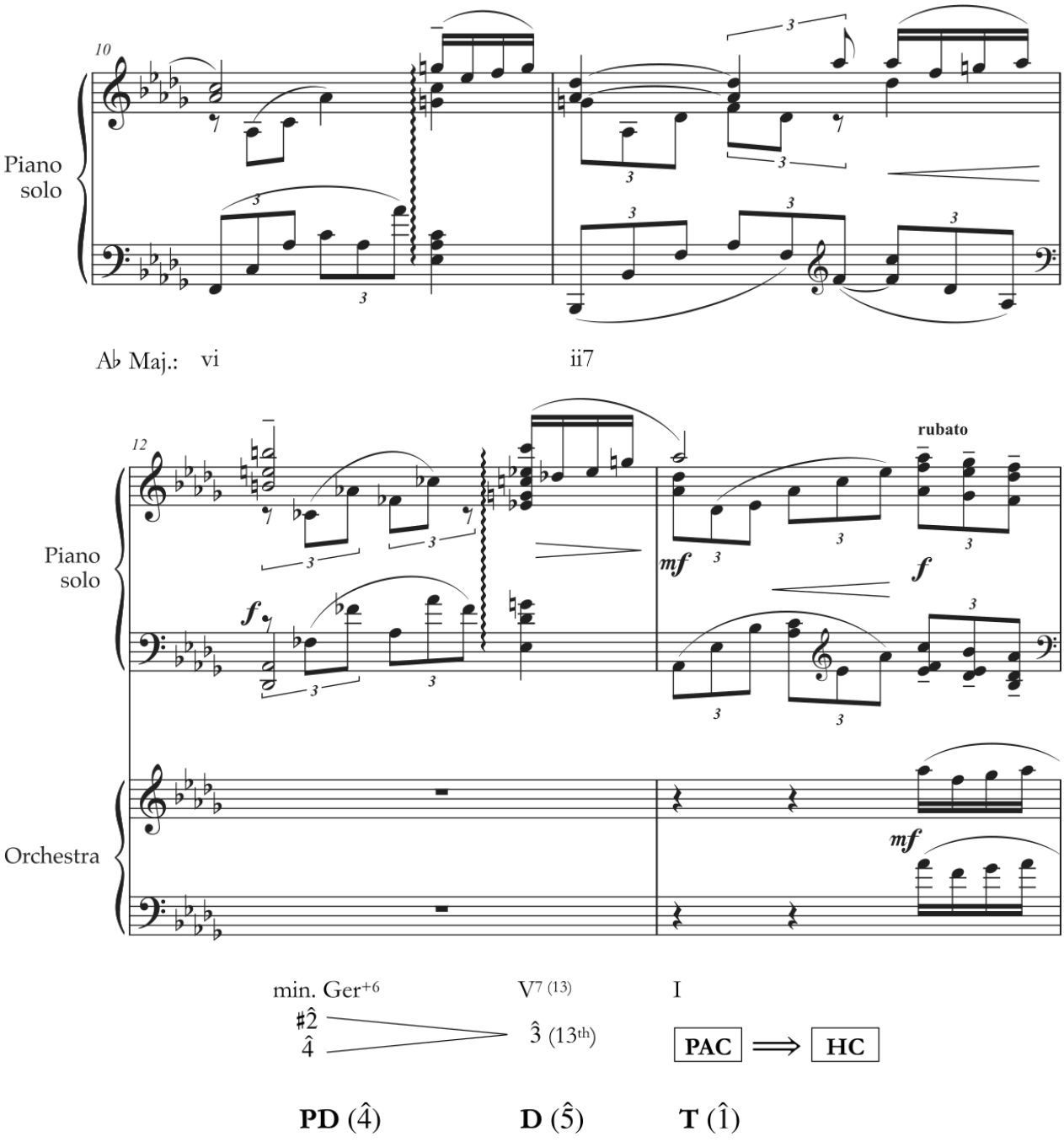


Rachmaninoff's 18th variation from his *Rhapsody on a Theme of Paganini* (**Example 42**) includes two minorized augmented sixths resolving to a dominant occurring with a $\hat{4}$–$\hat{5}$ motion in the bass. This variation, in the key of D♭ major, starts with a compound period comprising two sentences. The antecedent ends with a reinterpreted half cadence (i.e., a local PAC in the key of the dominant [A♭ major] that becomes a half cadence in the larger form, see **Example 42a**).[92] The cadential progression of this phrase includes in m. 12 a minorized German augmented sixth with D♭ in the bass, temporarily $\hat{4}$ in A♭ major, which resolves to a dominant seventh with an added thirteenth (E♭–G–D♭–**C**). In this instance, the minorized augmented sixth does not involve functional collision, since the chord includes scale degrees that can be understood as part of a chromaticized subdominant chord: $\hat{4}$, $\flat\hat{6}$, and $\hat{1}$ are the base, agent, and associate of subdominant function respectively, while $\#\hat{2}$ can be viewed as a raised added sixth. At the analogous spot in the consequent, however, the augmented sixth is instead a minorized French sixth (**Example 42b**, m. 23), which includes the leading tone and thus anticipates dominant function. Those two cadences are compared in **Figure 40** (p. 104).

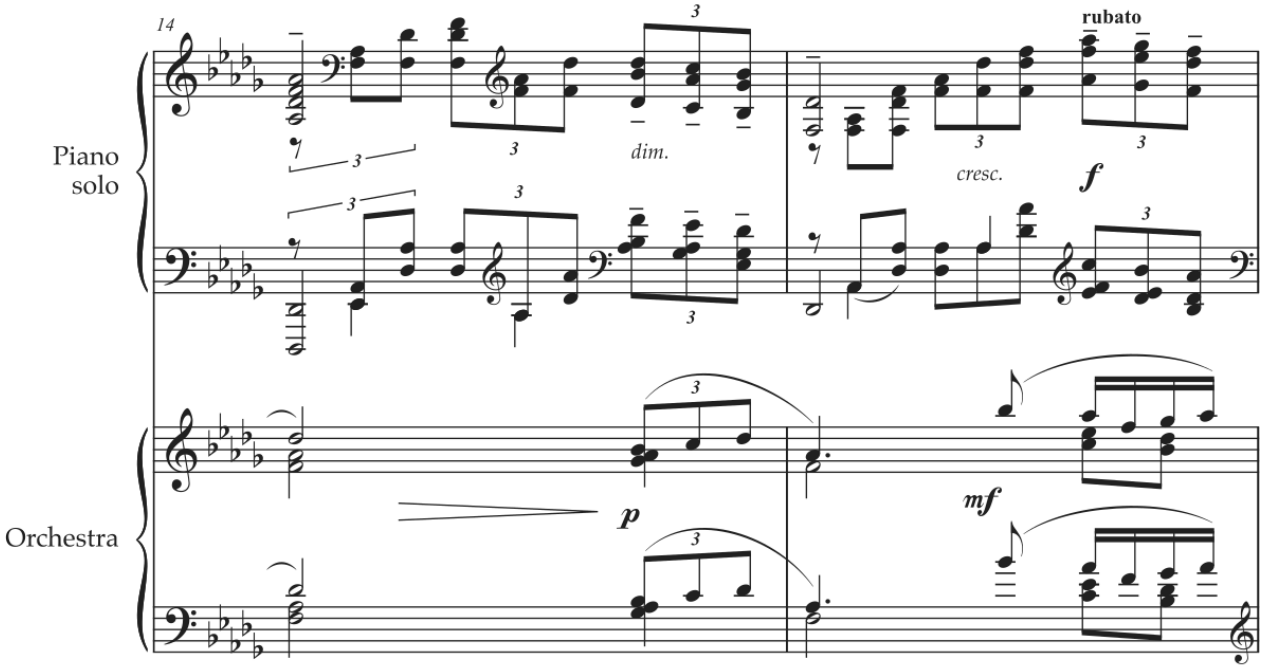
[92] For more on reinterpreted half cadences, see Caplin (2013, 90–2).

Example 42: Sergei Rachmaninoff, *Rhapsody on a Theme of Paganini*, op. 43, variation 18.

a) mm. 10–15.



Compound consequent



D♭ Maj.:

b) mm. 22–24. The bass line is played by the solo piano.

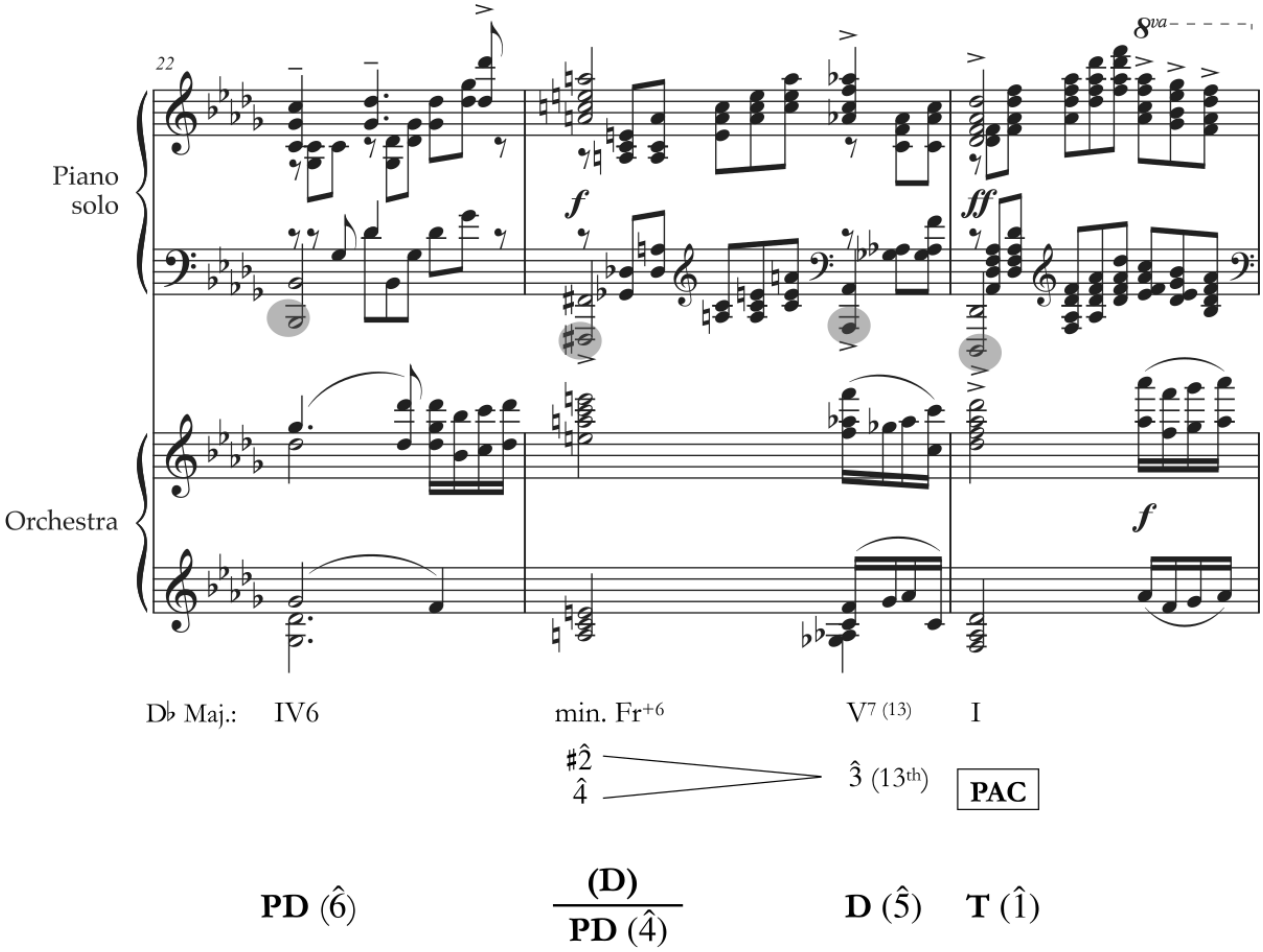
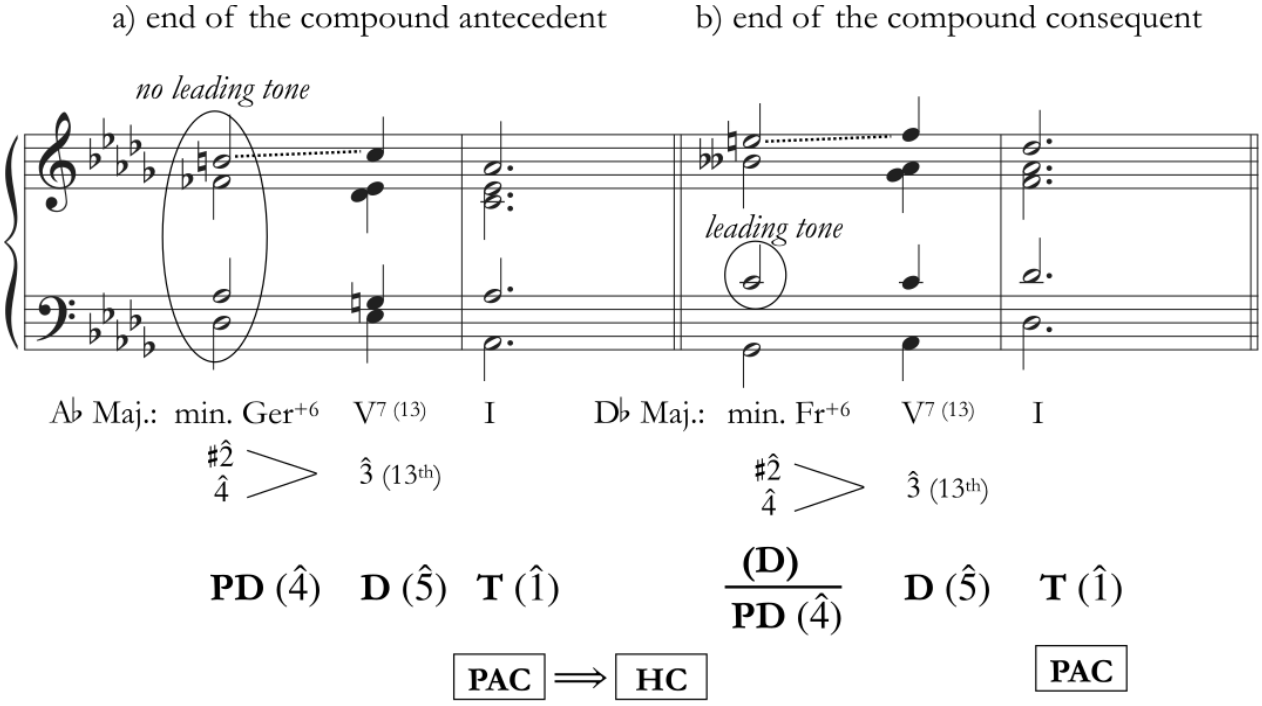


Figure 40: Minorized augmented sixths in Rachmaninoff's 18th variation on a theme of Paganini, op. 43.



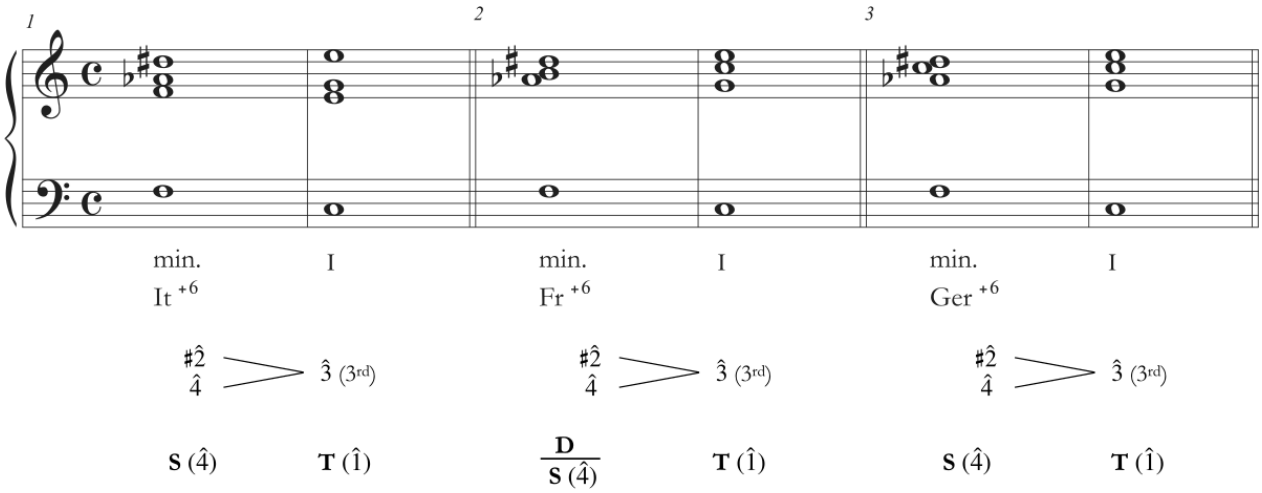
Plagal type: 4̂–1̂, (♭)6̂–1̂, and (♭)6̂–(♭)3̂ bass lines

The augmented-sixth chords described in the previous section can alternatively resolve to a tonic chord (either in root position or first inversion) instead of a dominant-functioning harmony. According to Harrison's perspective on function of augmented-sixth chords, the resolution to a tonic generally implies that the augmented sixth has either *subdominant* or *dominant* function (see Harrison 1995, Figure 4, p. 187). Similarly to minorized augmented sixths resolving to a dominant, minorized augmented sixths resolving directly to tonic often combine two functions. This section examines instances of these chords that occur over bass lines typically associated with subdominant-to-tonic progressions, such as 4̂–1̂, ♭6̂–1̂, and ♭6̂–(♭)3̂.[93]

[93] Although 6̂–1̂ or 6̂–3̂ in major are also among the characteristic bass lines of subdominant-to-tonic progressions (e.g., IV6–I and IV6–I6), Swinden does not include chords with 6̂ from the major mode in the bass in his roster of chords that collide subdominant (or predominant) and dominant functions (2005, 263; Example 12). However, a few chords can collide these functions, such as viiø$^4_2$ and an inverted French sixth whose approach tones resolve to the third of tonic harmony (in C major, these chords correspond to A–B–D–F and A–B–D♯–F respectively). I surmise that Swinden omitted these chords as potential candidates for functional collision because they do not turn up frequently in the repertoire. (I

Figure 41 shows resolutions of various minorized augmented sixths to a root-position tonic harmony, using the $\hat{4}$–$\hat{1}$ motion in the bass. This bass line, because of its association with plagal cadences, strongly conveys a subdominant-to-tonic discharge; in general, if another function is expressed in the upper voices, it is likely to be outweighed by the functional progression expressed in the bass.

Figure 41: Minorized augmented sixths associated with the $\hat{4}$–$\hat{1}$ bass line.



As shown in **Figure 41**, only the minorized French sixth collides subdominant and dominant functions. Examples of this progression arise relatively frequent in the repertoire. The most famous one is the "Till sixth" (**Example 43**), which comprises $\hat{4}$, $\flat\hat{6}$, $\hat{7}$ and $\sharp\hat{2}$. (In my classification of augmented-sixth chords, the "Till sixth" corresponds to a minorized French sixth whose approach tones resolve to the third of a major tonic harmony.) This specific instance of the chord, as well as other chords featuring the same scale degrees, has received various functional analyses in the literature, but there seems to be little agreement as to the functional categories to which such chords belong: they have variously been analyzed as altered dominant chords, as altered subdominant chords, or as a mix of both functions. These different perspectives are summarized in **Figure 42**, where the "Till sixth" is transposed into C major.

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personally have not found any examples of functional collision featuring these chords.) While regular augmented sixths can occur with $\hat{6}$ in the bass (i.e., in C major, A-D♯-F, A-B-D♯-F, and A-C-D♯-F) none of the resolutions of the minorized Italian, French, and German sixths to a consonant triad include $\hat{6}$; this is why I excluded the $\hat{6}$–$\hat{1}$ and $\hat{6}$–$\hat{3}$ bass lines in this section.

Example 43: Richard Strauss, *Till Eulenspiegel* (piano reduction by Otto Singer), mm. 46–49.

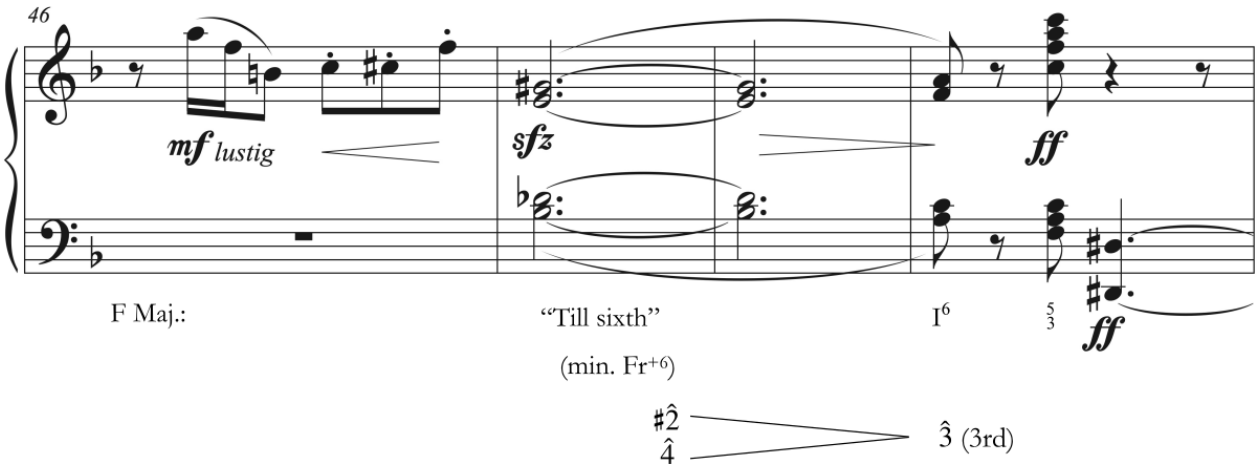
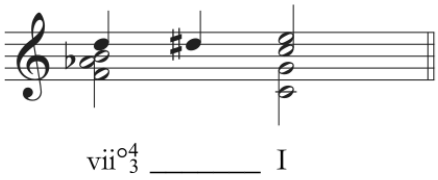


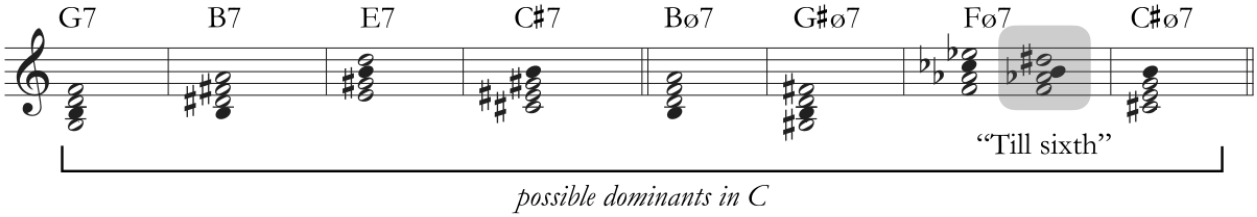
Figure 42: Analytical perspectives on Till-like sixths.

a) Lester (1982, vol. 2, 108)

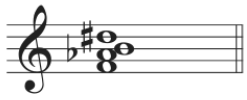


b) Smith (1986, 125, see his Table 2c and d)

Any dominant 7th or half-diminished 7th chord that includes the leading tone can potentially function as a dominant.

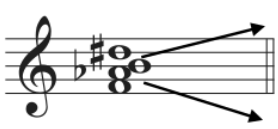


c) Tymoczko (2011, 275, see his Figure 8.2.5b)



Chord featured among augmented sixths that are "clear dominants."

d) Harrison (1995, 188)

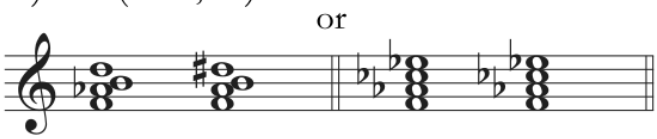


$\hat{7}$ and $\sharp\hat{2}$ express dominant function, but they are less important than the subdominant elements

$\flat\hat{6}$ and $\hat{4}$ express subdominant function

mostly subdominant

e) Gut (1993, 17)

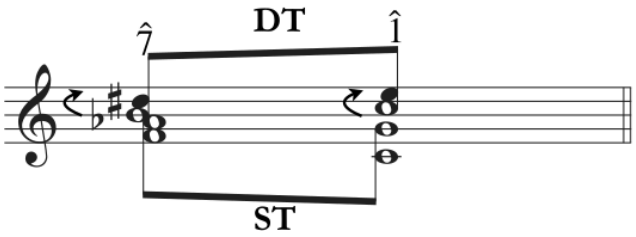


vii°$^{4}_{3}$ _____ iv7 _____

altered dominant ?

altered subdominant ?

f) Swinden (2005, 264–5)



$\hat{7}$–$\hat{1}$, accompanied by $\sharp\hat{2}$–$\hat{3}$ = DT discharge
$\hat{4}$–$\hat{1}$ and $\flat\hat{6}$–$\hat{5}$ = ST discharge

Subdominant and dominant functions are "equally balanced" (*ibid.*).

Joel Lester, Charles Smith, and Dmitri Tymoczko all view what I call here the minorized French sixth on $\hat{4}$ as a dominant-functioning harmony. Lester (1982, see **Figure 42a**) derives it from a vii°$^{4}_{3}$ whose third is raised a half step (i.e., $\hat{2}$ becomes $\sharp\hat{2}$).[94] This change allows for all voices to move by semitone when using parsimonious voice leading (i.e., when the bass does not leap from $\hat{4}$ to $\hat{1}$ but goes to $\hat{3}$ instead).[95] Charles Smith accepts it as a dominant, not necessarily because it can be derived from a standard dominant-functioning harmony, but because it is among the eight dominant sevenths

[94] Kyle Hutchinson also shares this view and analyzes the chord as an altered vii°7, whose third G has been raised to G♯ (2020, 75). His perspective seeks to emphasize the similarity between the resolution of the Till sixth and that of the vii°7. Hutchinson criticizes analyses that bring to the fore the unusual augmented-sixth chord type (e.g., Martin 2008, Swinden 2005) rather than focusing on the behavior of the chord.

[95] The example that Joel Lester analyzes is Grieg "Åse's Death" from *Peer Gynt Suite No. 1*, reproduced here in **Example 45**. He does not comment on the plagal leap in the bass ($\hat{4}$–of–$\flat\hat{6}$ going to $\flat\hat{6}$), which does not resolve the tendency tone in the bass.

and half-diminished sevenths that contain the leading tone (**Figure 42b**). In his analyses, he uses the label ivø7, which is not a functional characterization and is not meant to convey that the chord has subdominant function; it simply refers to a half-diminished sonority built on $\hat{4}$. Smith actually considers it to be a dominant-functioning harmony because it contains the leading tone. He argues that "by the end of the [19th] century, any sonority that is traditionally associated with the dominant function has become plausible as a functioning dominant —in any key to which it contains a leading tone. In other words, all four dominant sevenths and half-diminished sevenths that contain B can be used as dominants of C" (1986, 126–27). Tymoczko expresses a similar view on the half-diminished chord on $\hat{4}$ in major, to which he ascribes a "clear dominant function" because it includes the leading tone (2011, 275, see **Figure 42c**).[96]

Harrison (1995) proposes a view that contrasts with those of Lester, Smith, and Tymoczko. Although he concedes that the chord has elements of dominant function (i.e., the leading tone), he sees the subdominant elements ($\hat{4}$ and $\flat\hat{6}$) as more prominent and therefore ascribes subdominant function to the chord (1995, 188, see **Figure 42d**).

Serge Gut (1993), a French scholar whose work is rarely cited in North American literature, analyzes the chord as a blend of subdominant and dominant functions, because one can view the chord as originating from either vii°7 or iv7 (see **Figure 42e**). Gut's article discusses the Till sixth as an instance of a phenomenon he calls "fonction contrariée" ("thwarted function"), which refers to chord progressions where there is a mismatch between the scale degrees $\hat{1}$, $\hat{4}$, or $\hat{5}$ in the bass—usually supporting tonic, subdominant, and dominant function respectively—and the "basse fondamentale" (or root) of the chord. For instance, in the vii°$^4_3$–I progression, the real bass $\hat{4}$–$\hat{1}$ conveys a subdominant-to-tonic progression, while the fundamental bass corresponds to a dominant-to-tonic progression. In cases where there is a mismatch, Gut usually recognizes that the "real bass" supersedes the "basse fondamentale"; hence, he analyzes the vii°$^4_3$–I as a subdominant resolving to a tonic rather

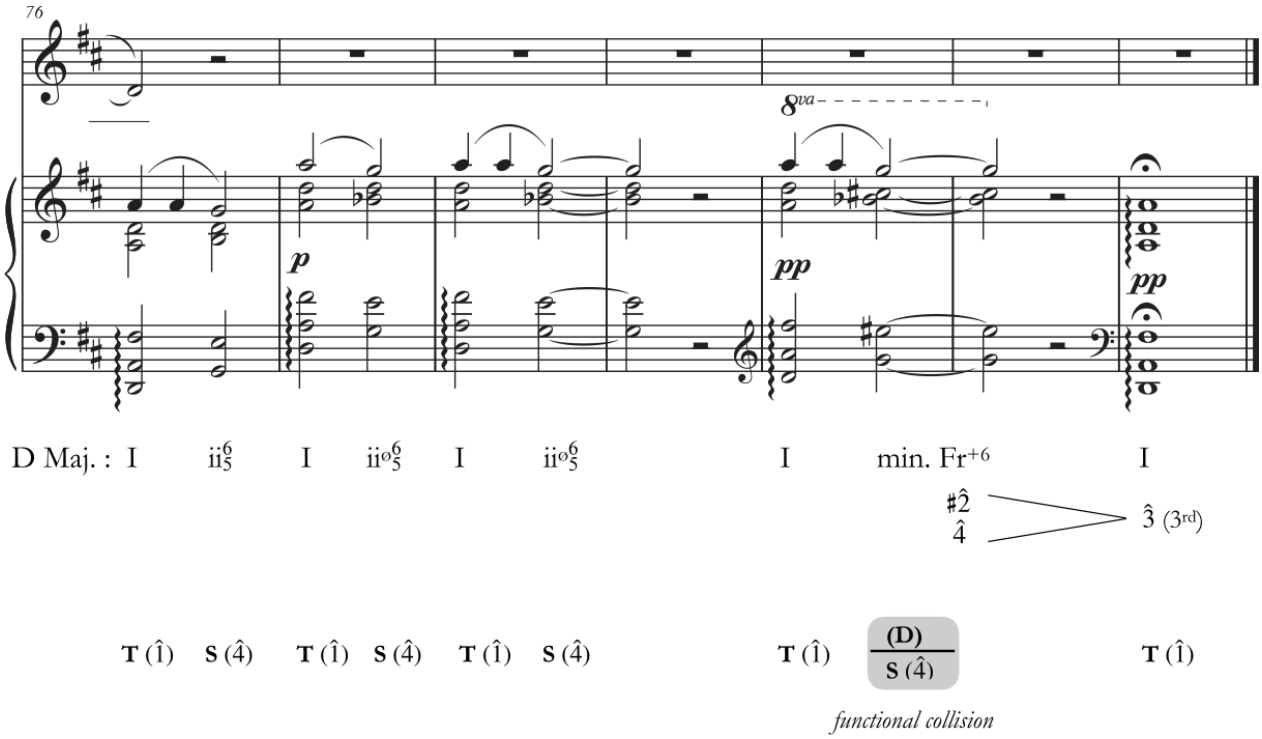
[96] Tymoczko mentions other augmented sixths that can be understood as dominant-functioning harmonies: he argues that the German sixth on $\flat\hat{2}$ (D♭–F–A♭–B) and the V7 with a raised fifth (F–G–B–D♯), both going to a major tonic, are also among the "clear dominants," while the German sixth on $\flat\hat{4}$ (F♭–A♭–B–D) going to a minor tonic and the half-diminished sonority on $\flat\hat{6}$ (A♭–B–D–F♯, corresponding to what I call here a "minorized French sixth") are classified by Tymoczko as "possible dominants" (2011, 275). This distinction between clear and possible dominants perhaps arises because the former are more common in late-Romantic music than the latter.

than a dominant going to a tonic. Like Harrison, he views the Till sixth as mainly a subdominant-functional entity (see his Example 16), while also acknowledging the chord's functional ambiguity

Swinden analyzes the Till sixth as a collision of dominant and subdominant functions (2005, 264), but unlike Harrison and Gut, Swinden views both functions as equally important. Swinden argues that because the subdominant-to-tonic motions $\hat{4}$–$\hat{1}$ and $\flat\hat{6}$–$\hat{5}$ occur simultaneously with the dominant-to-tonic motion $\hat{7}$–$\hat{1}$ (accompanied by $\sharp\hat{2}$–$\hat{3}$), "S and D are equally balanced in the discharge to T" (*ibid*, 265). In other words, because the progression includes the resolution of the agents of both dominant and subdominant ($\hat{7}$–$\hat{1}$ and $\flat\hat{6}$–$\hat{5}$ respectively), which are each supported by characteristic scale-degree motions of DT and ST ($\sharp\hat{2}$–$\hat{3}$ and $\hat{4}$–$\hat{1}$), the progression in his view truly expresses the two functions simultaneously.

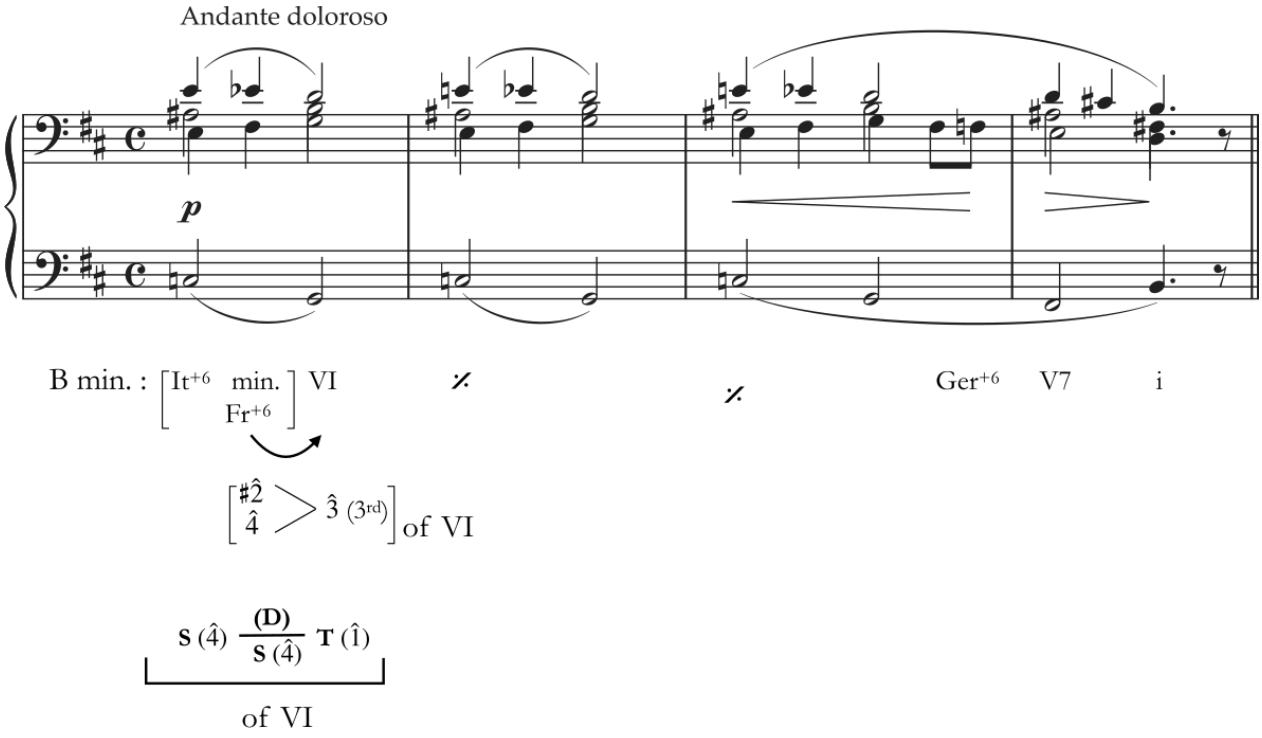
In this study, I adopt Swinden's collided-function perspective for examples where the bass line is $\hat{4}$–$\hat{1}$. However, it is important to stress that not all instances of the "Till sixth" display the same balance of subdominant and dominant functions. Ropartz's "Berceuse," analyzed in Chapter 2 (**Example 17**, p. 40) and reproduced below (**Example 44**), is a clear example where subdominant function is much more salient than the dominant, since the minorized augmented sixth emerges after a few variants of the ST progression with $\hat{4}$–$\hat{1}$ in the bass (i.e., ii^6_5–I and $ii\text{ø}^6_5$–I).

Example 44: Guy Ropartz, "Berceuse," mm. 76–82.



The example from Grieg's "Åse's Death" (**Example 45**), taken from his *Peer Gynt Suite No. 1*, also sounds like an applied subdominant of VI (a G-major triad) rather than an applied dominant. While the applied leading tone F♯ is included in the chord, it functions mostly as a passing tone, since it does not appear immediately when the chord is struck on the downbeat, but rather, connects E to G in an inner voice. Moreover, the outer voices emphasize the paradigmatic scale-degree resolutions of ST progressions: the upper voice features a chromatic descent E–E♭–D (i.e., in Harrison's terms, the subdominant agents [E and E♭] discharge to D, the associate of the tonicized chord). In summary, while the minorized French sixth can, in theory, express both dominant and subdominant functions, in Grieg's example, the subdominant elements largely outweigh the dominant elements. My analysis contrasts with that of Lester (1982, vol. 2, 108–109), who views the chord as an applied dominant to VI.

Example 45: Edvard Grieg, *Peer Gynt Suite No. 1*, "Åse's Death," mm. 9–6 from the end.



In contrast, the Atterberg example reproduced below (**Example 46**), which features the same chord progression as the Ropartz and Grieg examples, stresses the dominant function rather than the subdominant. The phrase starts and ends in E-flat major. The emphasis in the cello part on $\hat{7}$ and $\hat{5}$ before going to $\hat{1}$ (mm. 57–58) strongly suggests a dominant-to-tonic resolution, as well as the melodic line of the violins in the accompaniment, which brings attention to $\hat{7}$ and $\hat{2}$, two characteristic elements of dominant function. The lower layer of the orchestra, however, holds a G♯ø7 chord (enharmonically A♭–C♭–D–F♯).[97] Although the $\hat{4}$–$\hat{1}$ leap in the bass (A♭–E♭) conveys a plagal resolution, this layer is far less prominent than the upper parts, which emphasize the dominant. Moreover, at this point in the concerto, Atterberg has accustomed the listener to various combinations of scale degrees accompanying the leading tone that extend beyond the familiar dominant chords of the common practice (**Figure 43**). While the very first progression of the work, as analyzed in **Example 37** in the previous section of this chapter, is functionally ambiguous, most of the other instances clearly convey dominant function.

[97] This minorized French sixth could also have been used as a dominant-functioning chord in the home key, C minor.

Example 46: Kurt Atterberg, Cello Concerto op. 21, i, mm. 52–58.

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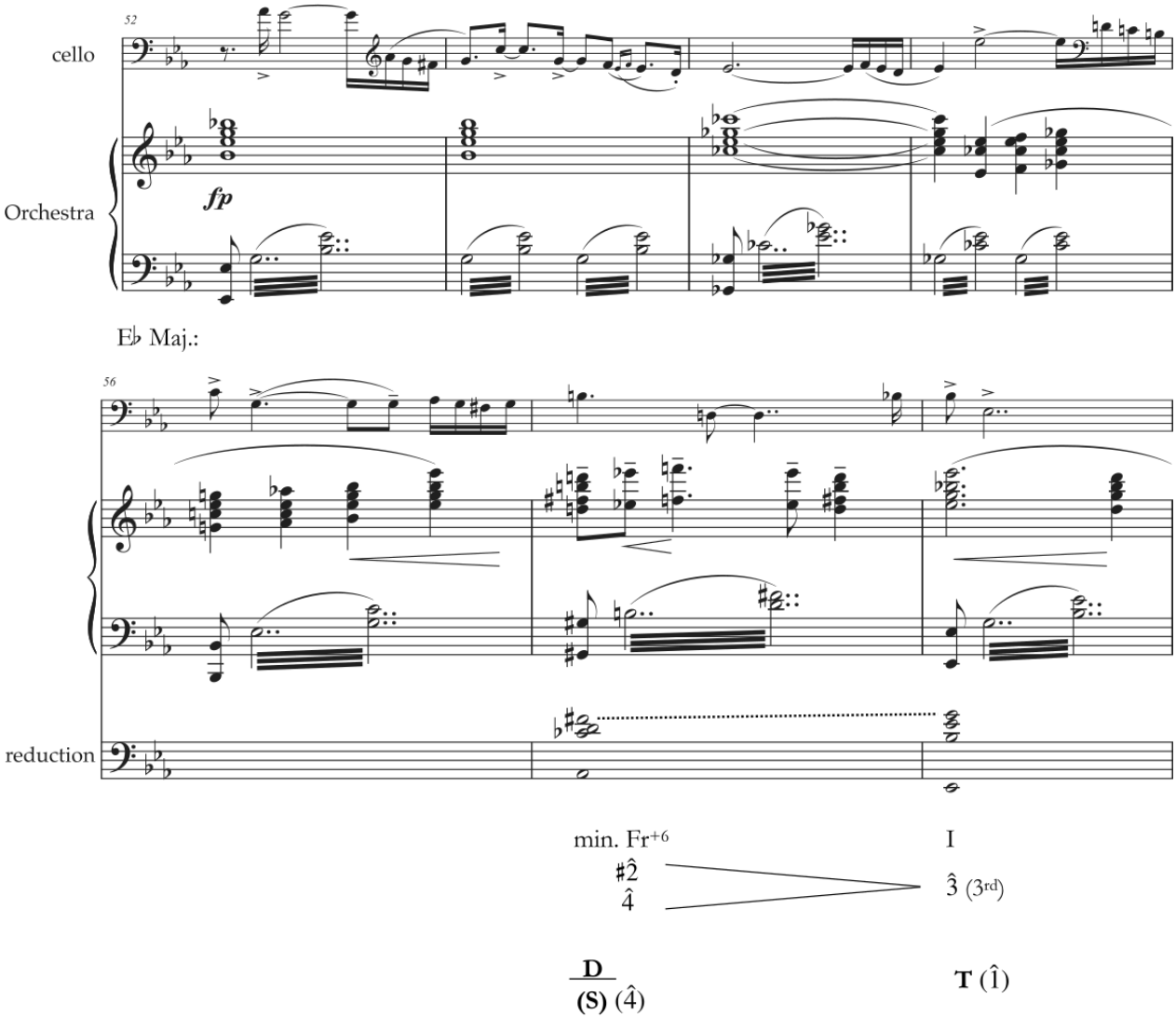
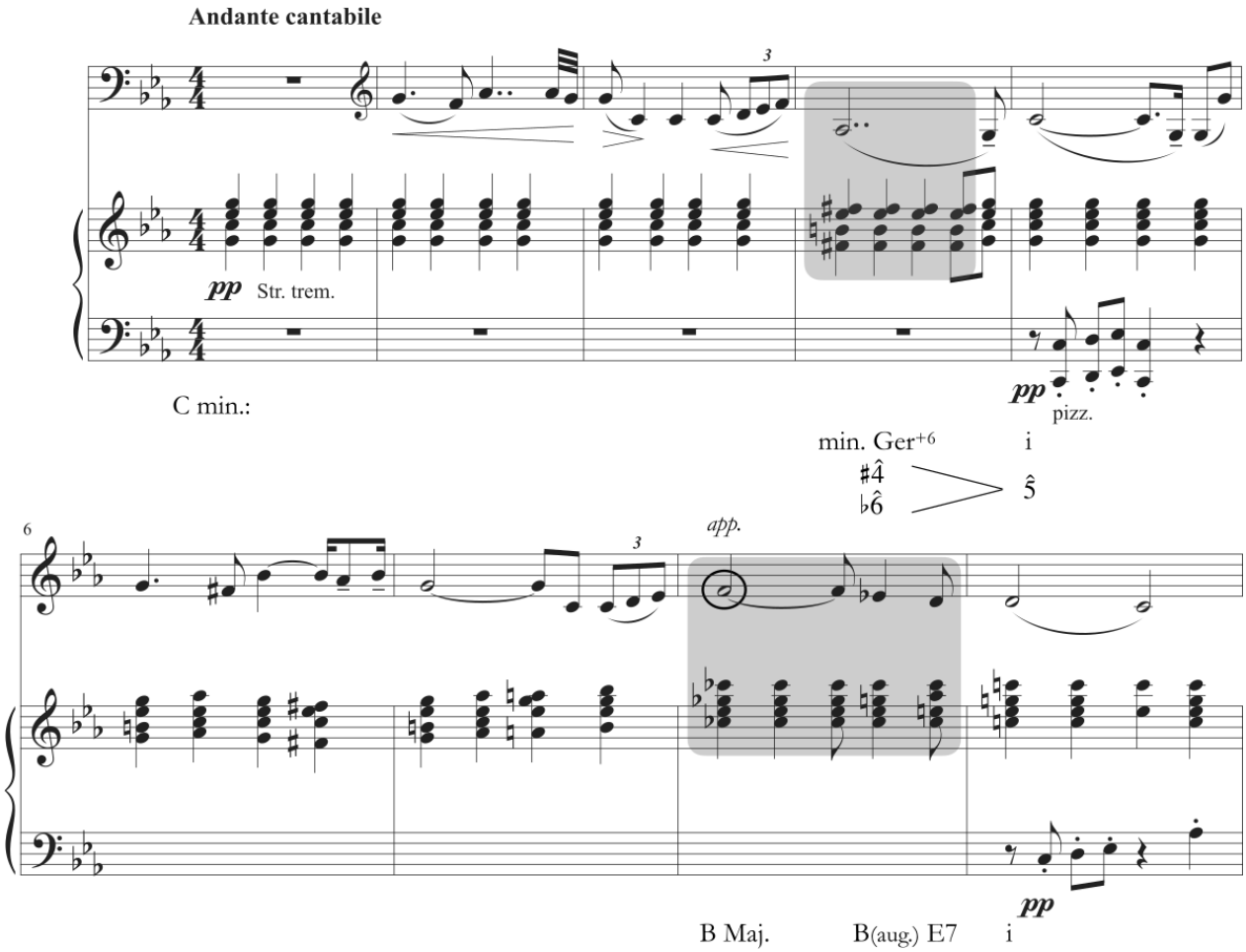


Figure 43: Various chords resolving to tonic-functioning harmonies that include the leading tone in Atterberg's Cello Concerto op. 21.

a) Kurt Atterberg, Cello Concerto op. 21, i, mm. 1–9.



b) Kurt Atterberg, Cello Concerto op. 21, i, mm. 43–50.
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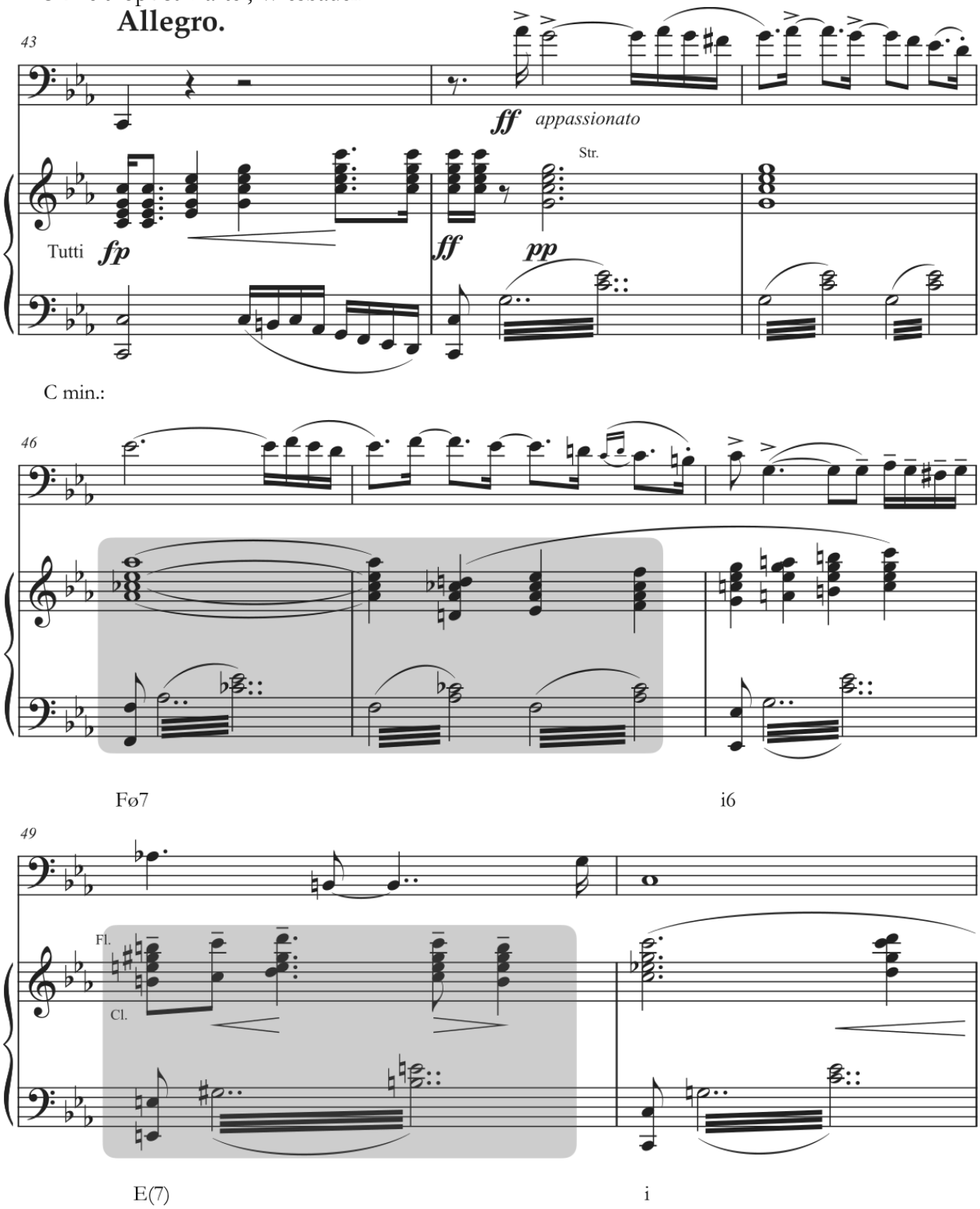
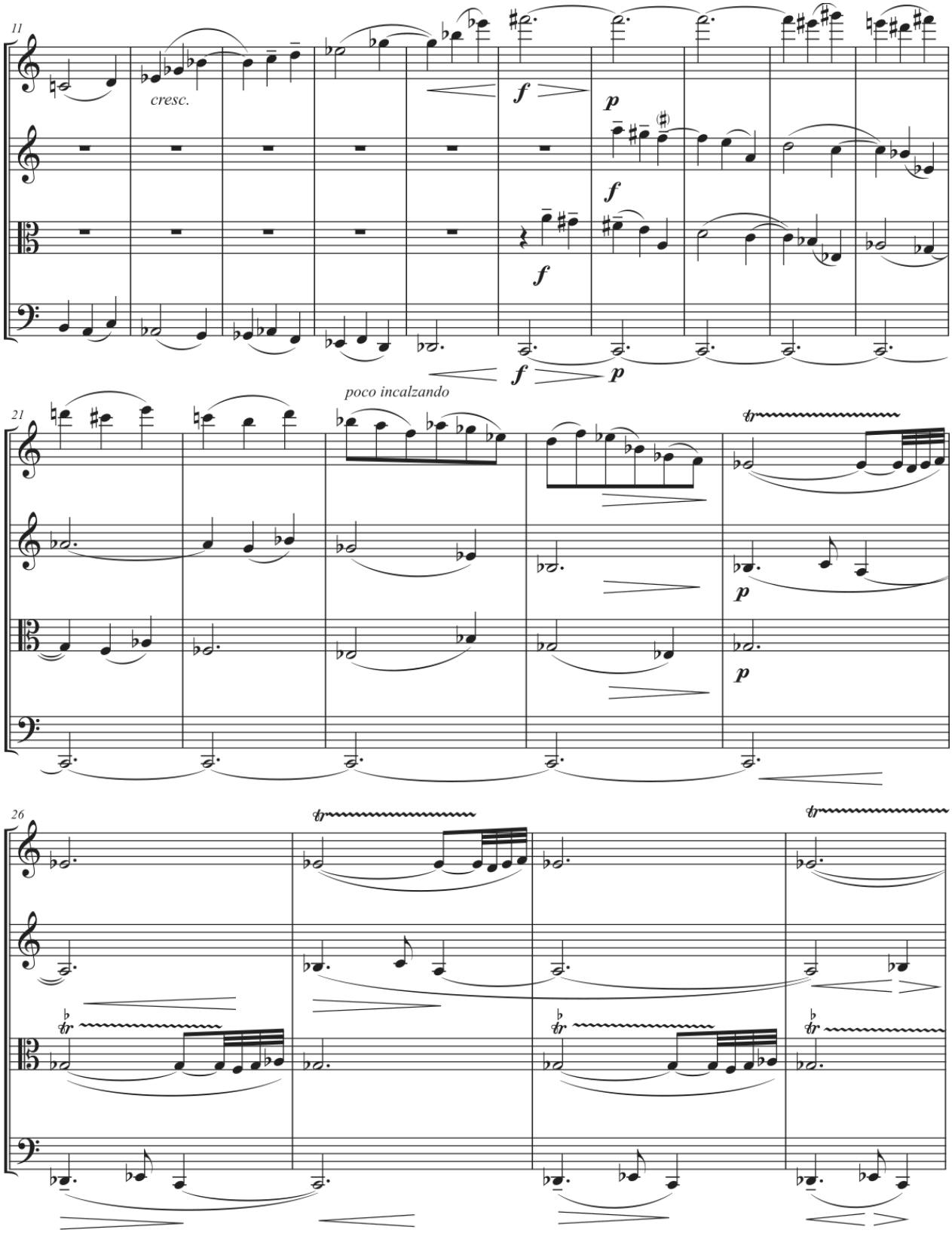
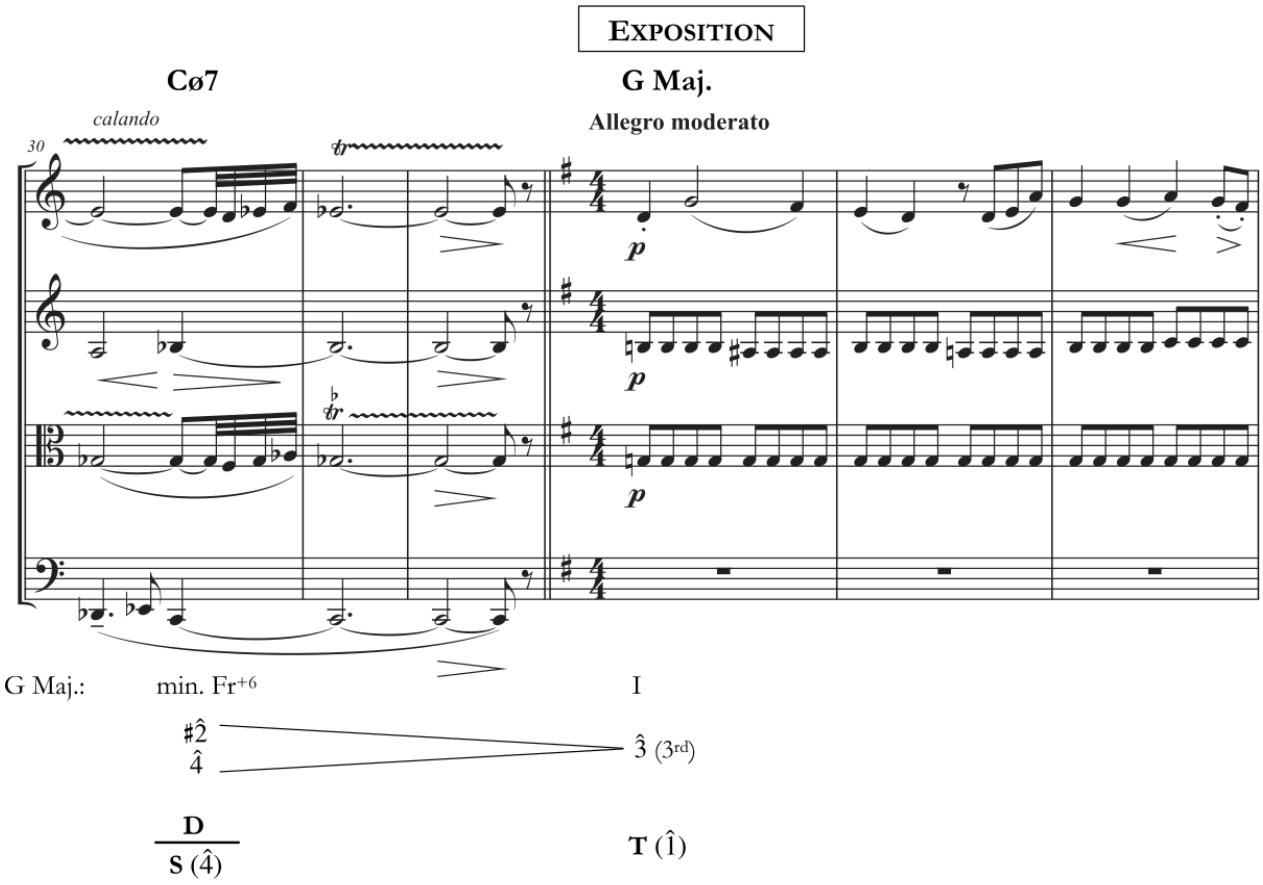


Till-like sixths can also occur at the boundaries between sections of a piece. This is the case in the first movement of Myaskovsky's String Quartet No. 12. Formally, the minorized augmented sixth replaces the usual dominant that typically occurs at the end of a slow introduction. As Caplin notes, these sections usually end with a half cadence or with a perfect authentic cadence elided with the beginning of the sonata-form movement (2013, 551–2). Because of this formal convention, one can hear the augmented sixth C–E♭–F♯–A♯ (written enharmonically in the score as Cø7) as functioning as a dominant of G, the tonic of the piece. On the other hand, because $\hat{4}$ is emphasized in the bass for the entire second half of the slow introduction, subdominant function can also potentially be more salient in this example. Hence, I have indicated both functions as equal in my analysis. By Myaskovsky's time, an elided V–I resolution at the beginning of the exposition could have sounded too cliché because of its frequency in eighteenth- and nineteenth-century sonata-form movements. The use of an unconventional non-tonic chord at this formal boundary thus avoids this cliché while maintaining a sense of harmonic resolution when the G-major chord occurs.

Example 47: Nikolai Myaskovsky, String Quartet No. 12, i, mm. 11–35.





As discussed at the outset of this section, examples featuring $\hat{4}$–$\hat{1}$ in the bass using minorized Italian and German sixths, unlike the minorized French sixth, do not involve functional collision since they do not feature the leading tone. Interestingly, these progressions appear less frequently in the pieces I have analyzed for this study than the ones with the minorized French sixth, which leads me to believe that the potential of the minorized French sixth chord to convey both subdominant and dominant functions was a desired quality rather than a side effect of chromatic voice leading.

The introduction of Gounod's opera *Faust* exemplifies a plagal use of a minorized German sixth. It starts in F minor (**Example 48**), which is suggested by the unison on F at the beginning, but this key is not confirmed until the half cadence in m. 22 (not shown in the example).[98] Instead, it opens with a model-sequence technique: the eight-measure model starting on F and ending on a C major triad gets transposed up a major third in mm. 9–16 (not shown in the excerpt reproduced below).

[98] Ottman (1972, 219) cites this passage as an example of an unconventional augmented-sixth chord.

While, broadly speaking, the C-major chord that gets emphasized at the end of the model functions as the dominant of the home key, on a small-scale level it sounds like a temporary tonic. This impression may originate from the ways the chord is prolonged. In m. 5–8, the plagal motion in the bass F–C that appears three times supports various "shades" of the subdominant. First, it appears as a standard major IV (m. 5) that gets chromaticized, leading to a minorized German sixth at the end of the measure. In m. 6, the iiø$^{6}_{5}$ prolongs C plagally, while in the subsequent measure, it is a German augmented sixth built on $\hat{4}$ that prolongs C.

Example 48: Charles Gounod, *Faust*, introduction, mm. 1–8.

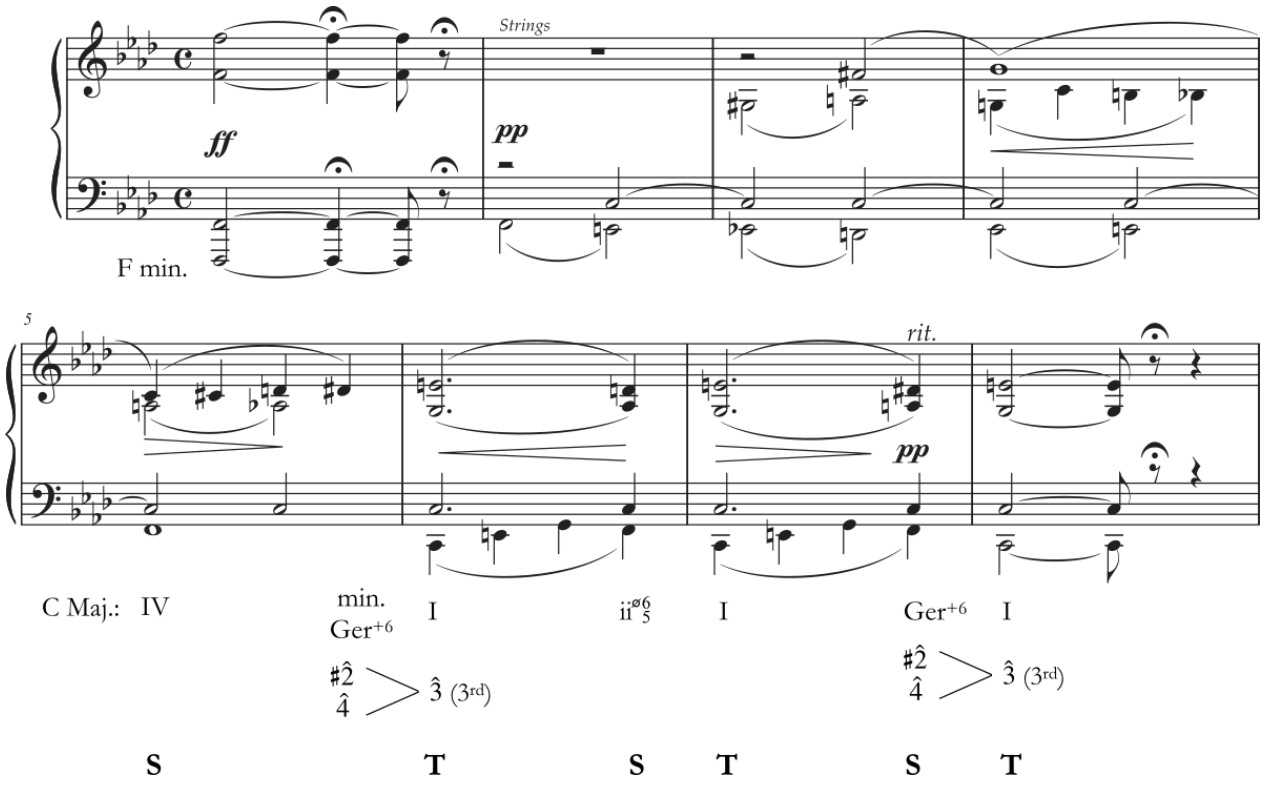
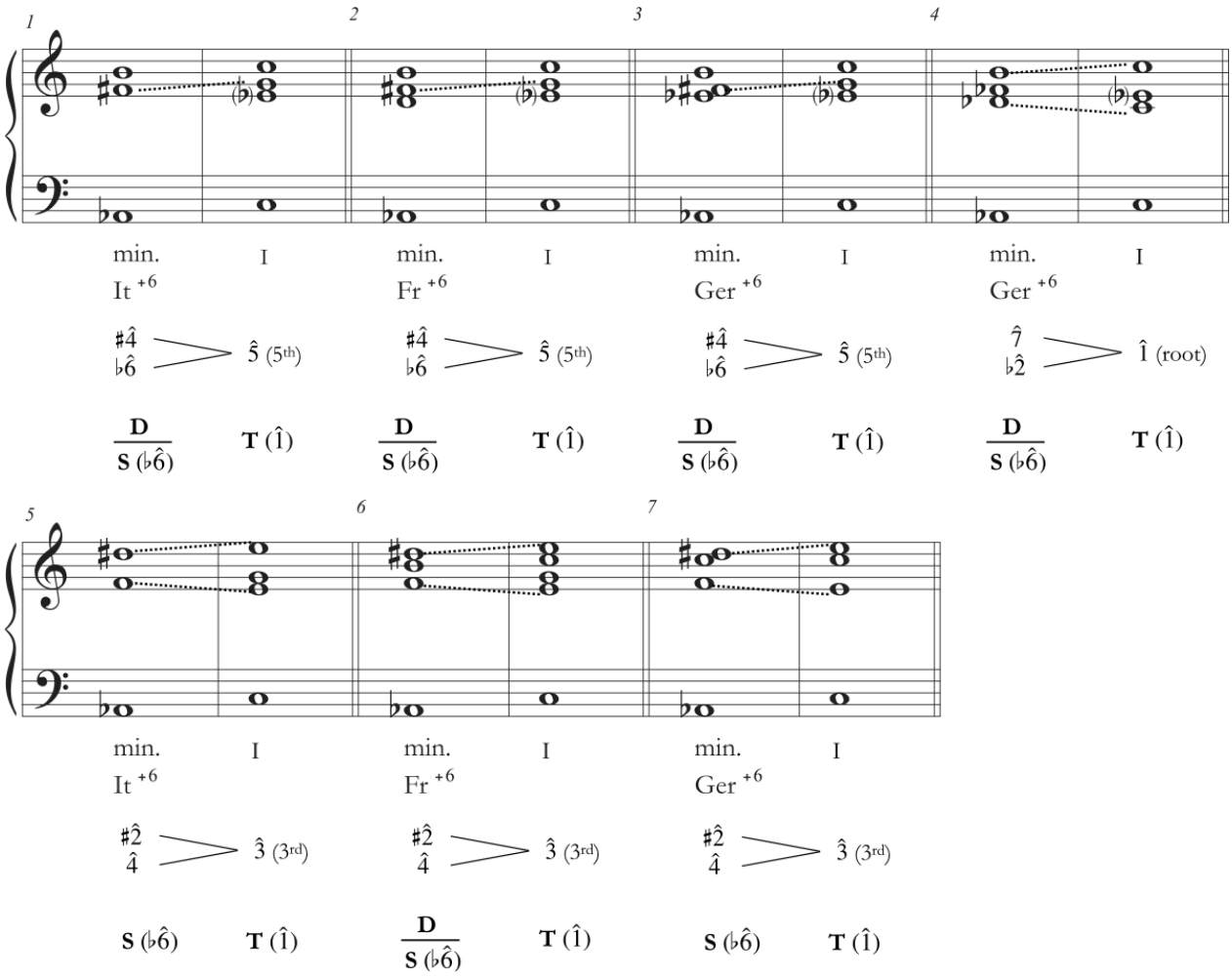


Figure 44 shows various progressions involving minorized augmented sixths on $\flat\hat{6}$ resolving to a root-position tonic harmony. Although this bass line is less common than $\hat{4}$–$\hat{1}$ for subdominant-to-tonic progressions, $\flat\hat{6}$–$\hat{1}$ can support a wider variety of augmented-sixth chords than $\hat{4}$–$\hat{1}$ (compare **Figure 44** with **Figure 41**), which makes $\flat\hat{6}$–$\hat{1}$ a particularly interesting bass line for composers who sought to explore nonstandard resolutions of augmented sixths. Some of these minorized augmented sixths collide subdominant and dominant functions, because they include a $\hat{7}$–$\hat{1}$ resolution above the

plagal motion in the bass (see **Figure 44**, progressions 1–4 and 6). The other progressions in this figure only convey an S-to-T functional discharge.

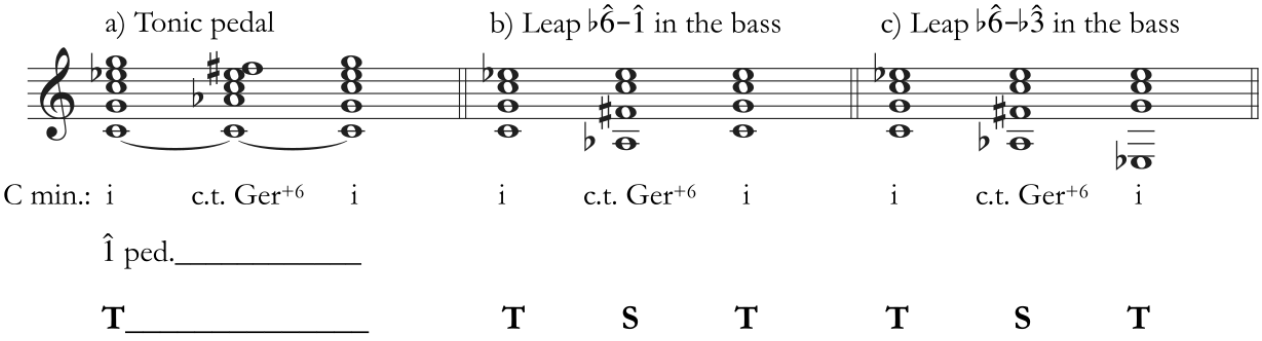
Figure 44: Minorized augmented sixths associated with the ♭6̂–1̂ bass line.



When conventional augmented sixths resolve to the fifth of the next harmony, the progression involves the root of the chord of resolution as a common tone, hence the label "common-tone augmented sixth" coined by Aldwell and Schachter (2003, 557). This progression, which often occurs over a tonic pedal, is typically analyzed as ornamental rather than functional. While the tonic pedal certainly encourages hearing the progression as purely prolongational (**Figure 45a**), I am inclined to include these progressions in the category of plagal progressions when there is motion in the bass, such as ♭6̂–1̂ or ♭6̂–(♭)3̂ (**Figure 45b** and **c**). Although this sense of plagal resolution is less strong

than with IV–I or iiø^{6}_{5}–I, I hear those common-tone augmented sixths as having some kind of subdominant flavor because of their bass lines.

Figure 45: Common-tone augmented sixths with various bass lines.



As discussed previously in this dissertation, minorized augmented sixths whose approach tones resolve to the fifth of the next harmony are functionally more complex than regular augmented sixths that have the same resolution (i.e., the common-tone augmented sixths discussed above). This is because minorized sixths include the leading tone of the next harmony (see **Figure 44**, progressions 1–3), which makes them functionally collided because they are associated with a plagal bass line. In the second movement of Atterberg's Symphony No. 4, reproduced in **Example 49** below, the minorized French sixth occurs in the context of a prolongation of a C♯-minor tonic chord. The chord is first prolonged by a Neapolitan harmony over a double pedal comprising 1̂ and 5̂, then by a minorized French sixth. Despite the plagal bass line, the presence of the leading tone in the inner voices combined with the highly dissonant sonority of the chord can make it sound more like a dominant than a subdominant.

Example 49: Kurt Atterberg, Symphony No. 4, ii, mm. 56–60.

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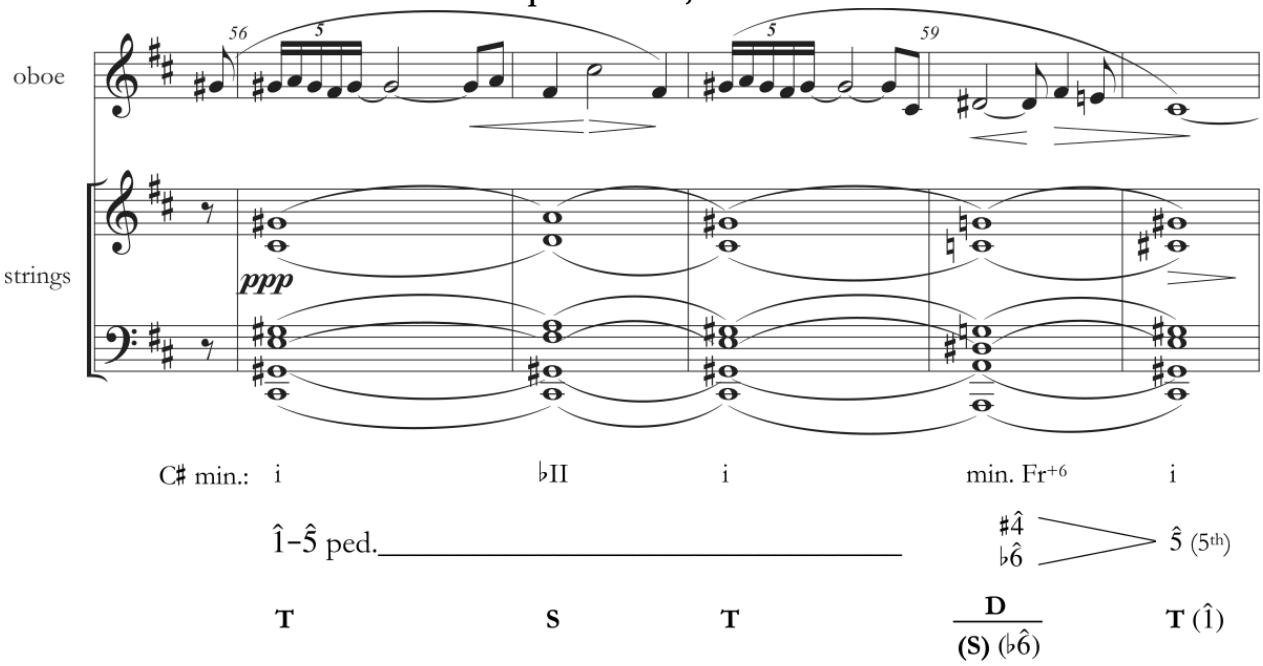
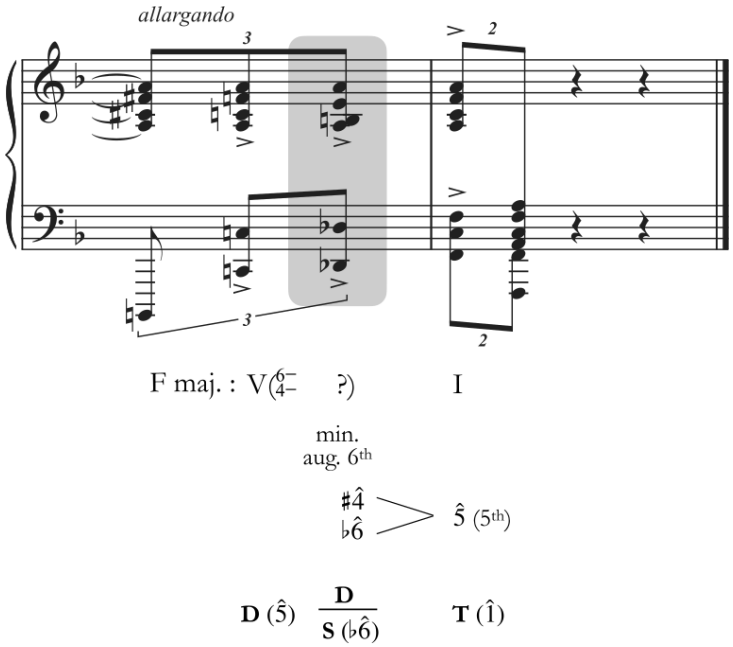


The end of Medtner's Piano Sonata op. 53 No. 2 (**Example 50**), discussed in Chapter 2 (see p. 44), also features a minorized augmented sixth on ♭6̂ resolving to tonic harmony. On the one hand, the augmented-sixth chord here replaces the expected root-position dominant chord that usually follows a cadential six-four. Since the augmented sixth includes the leading tone, it can act as a substitute for dominant function. On the other hand, the bass line, 5̂–♭6̂–Î, suggests a deceptive resolution followed by a plagal motion to the tonic.

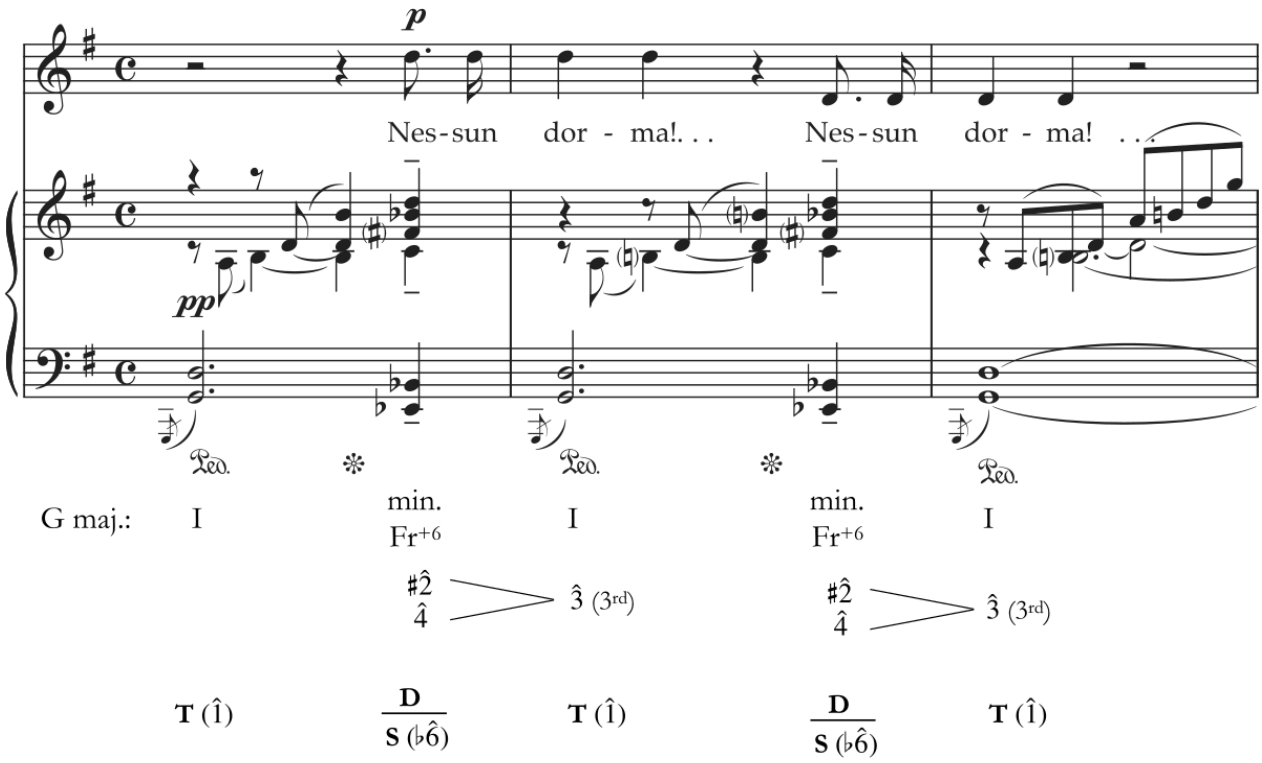
Example 50: Nikolai Medtner, Sonata minacciosa, op. 53 No. 2, end.



In progressions 5–7 from **Figure 44** (p. 119), I showed that among the minorized augmented sixths that can be associated with the ♭6̂–1̂ bass line and whose approach tones resolve to 3̂, only the minorized French sixth can convey both subdominant and dominant functions. This progression appears in Swinden's article in the example from Puccini's *Turandot* (2005, 268 and 271; see his Example 22 [my **Example 51**]). Swinden talks about the difficulty of analyzing this chord with conventional Roman-numeral analysis. The chord prolonging the tonic corresponds to E♭–F♯–B♭(=A♯)–C–D, which traditional root-finding methods would understand as a V♭9/7/♯5 in fourth inversion (i.e., the root position of this chord would be D–F♯–A♯–C–E♭). Swinden underscores that the bass leap E♭–G does not correspond to any traditional treatment of a chordal ninth; rather, he argues that the "bass tone is operating independently of the whole sonority" (*ibid.*, 268) and conveys a subdominant-to-tonic resolution, while the upper voices convey a dominant-to-tonic resolution. (He analyzes the progression as S^D (♭6̂) going to a tonic harmony). In this example, the D in the upper voice functions as a pedal; the chord below corresponds to a minorized French sixth (C–E♭–F♯–A♯) whose approach tones resolve to 3̂.

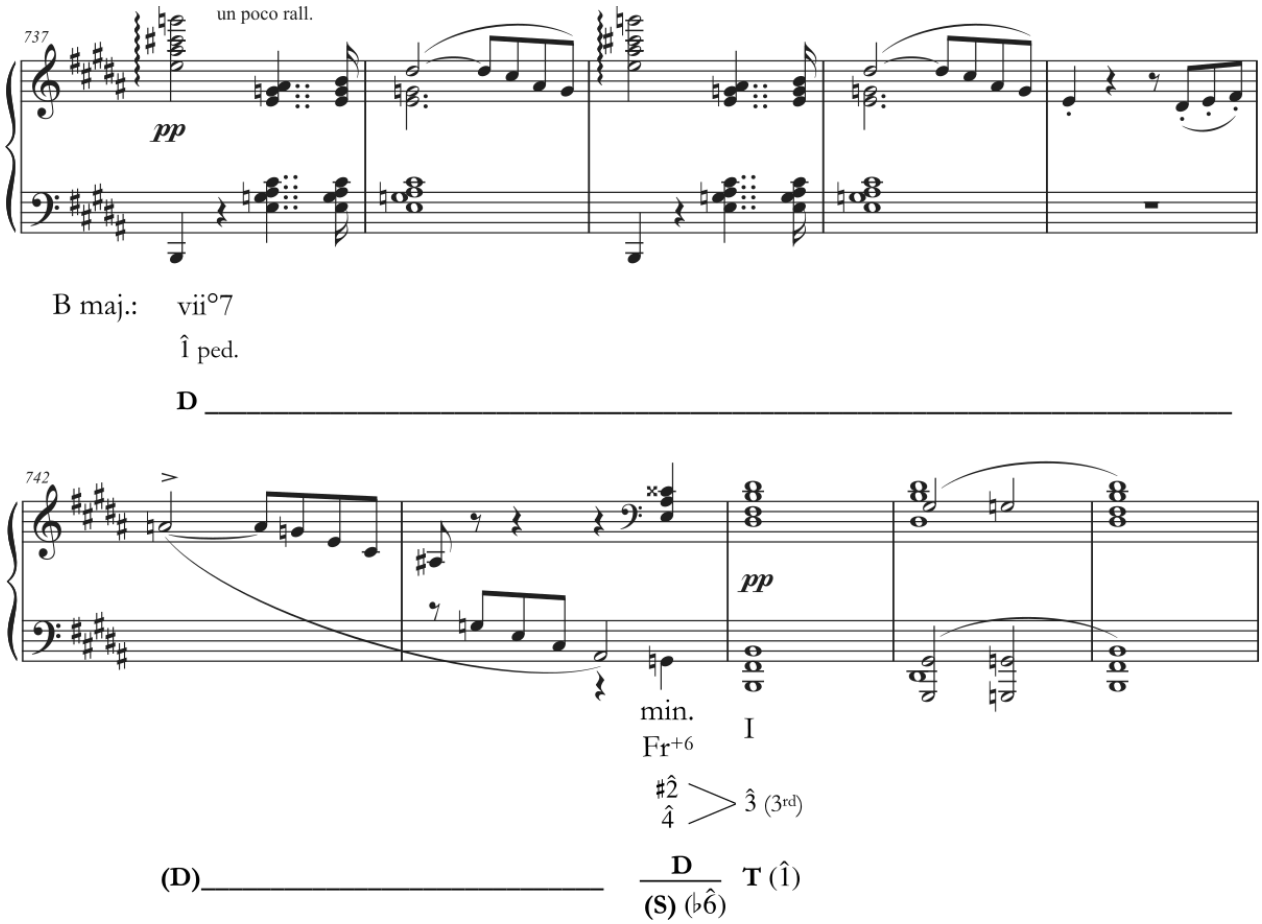
Example 51: Giacomo Puccuni, *Turandot*, ACT III/1, "Nessun dorma" (piano reduction by Guido Zuccoli), mm. 1–3.

(Example also cited in Swinden 2005, 271; see his Example 22).



In Liszt's Piano Sonata (**Example 52**), a minorized French sixth occurs after an extended vii°7 on a tonic pedal. This augmented sixth results from raising $\hat{2}$ in the vii°7 (A♯–C♯–E–G becomes A♯–**C𝄪**–E–G, creating an augmented sixth or diminished third between E and C𝄪). The chord mostly conveys dominant function because it comes directly from vii°7, but the plagal bass line gives it a singular character.

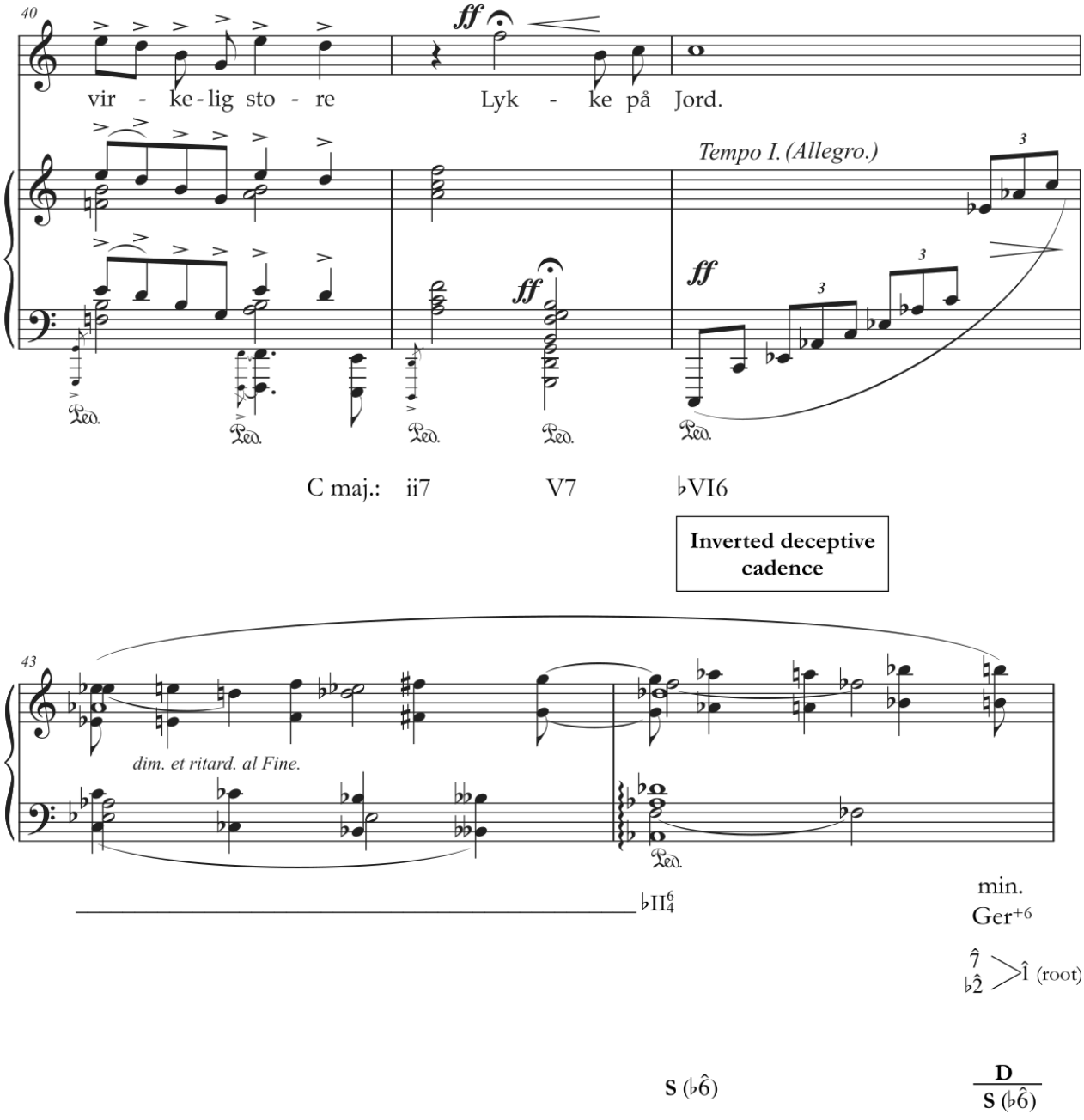
Example 52: Franz Liszt, Piano Sonata in B minor, mm. 737–746.

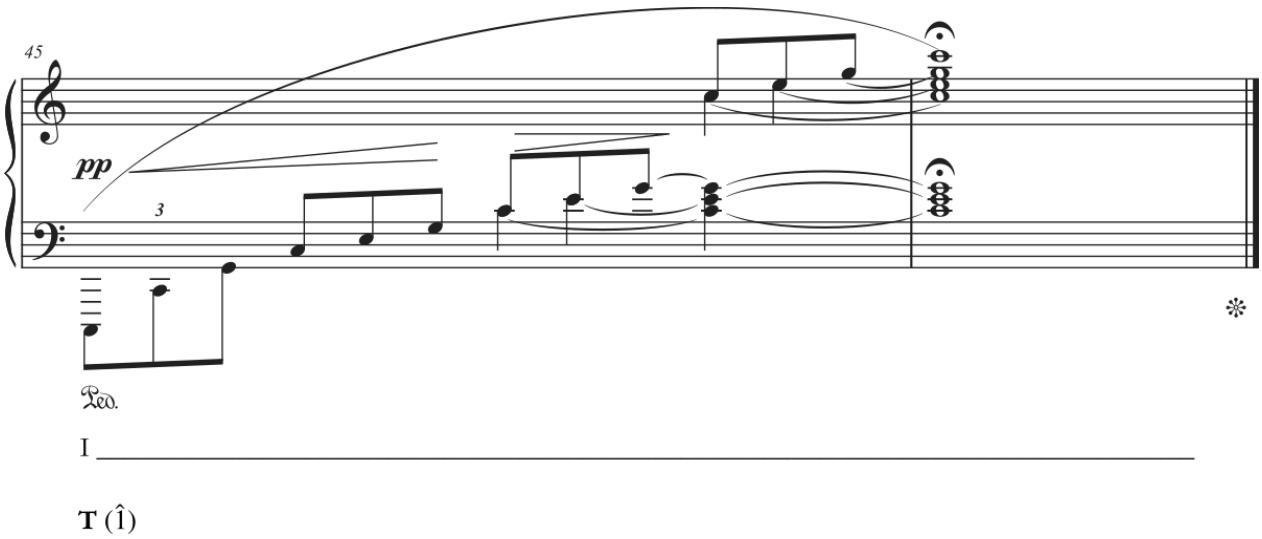


The minorized German sixth whose approach tones resolve to $\hat{1}$ can be associated with the bass line $\flat\hat{6}$–$\hat{1}$. The end of the first song of Grieg's op. 70 features this progression (**Example 53**). At the moment where a PAC in C major is expected, a $\flat$VI^6 occurs instead (m. 42). This cadential gesture resembles what Caplin (2020, 213) has called the "inverted deceptive cadence" found in Bach's *Well-Tempered Clavier*, but Grieg uses the submediant borrowed from the minor mode instead of the regular vi chord. The bass then descends chromatically to $\flat\hat{6}$ while the upper voice ascends chromatically in contrary motion. When it reaches the leading tone on the last eighth note of m. 44, which performers tend to extend dramatically, the chord corresponds to a an inverted minorized German sixth (D♭–F♭–A♭–B♮). I indicate dominant and subdominant functions as equally prominent in this functionally collided augmented sixth: while the chord seems to arise from chromatic inflections of the inverted

Neapolitan chord (see downbeat of m. 44), thus sounding like a subdominant, the leading tone in the melody is also strongly emphasized, which can make it sound like a dominant harmony.

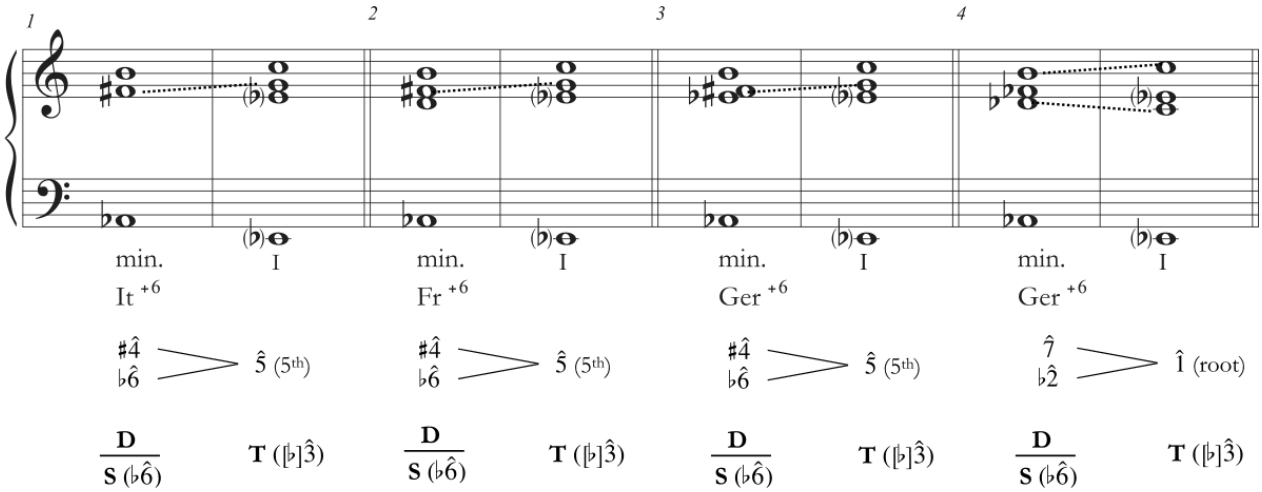
Example 53: Edvard Grieg, Songs op. 70, i, mm. 40–end.

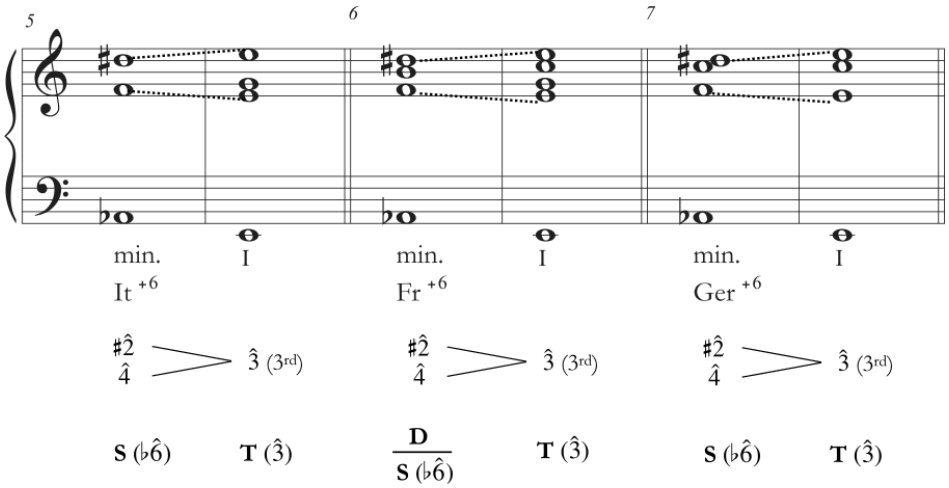




All minorized augmented sixths shown in **Figure 44** can alternatively resolve to I^6 or i^6 instead of a root-position tonic (see **Figure 46**). This ♭$\hat{6}$–(♭)$\hat{3}$ bass line replicates the characteristic descending fourth (or ascending fifth) that occurs between $\hat{4}$ and $\hat{1}$ in plagal progressions, but the use of first-inversion tonic harmony prevents these progressions from sounding cadential, which makes them appropriate for prolongational progressions and medial formal functions, as well as sequential progressions. The change in bass motion (i.e., ♭$\hat{6}$–(♭)$\hat{3}$ vs. ♭$\hat{6}$–$\hat{1}$) does not impact the harmonic function(s) of the augmented-sixth chord; hence, the chords that collided dominant and subdominant functions are the same in **Figures 44** and **46**.

Figure 46: Minorized augmented sixths associated with the ♭$\hat{6}$–(♭)$\hat{3}$ bass line.



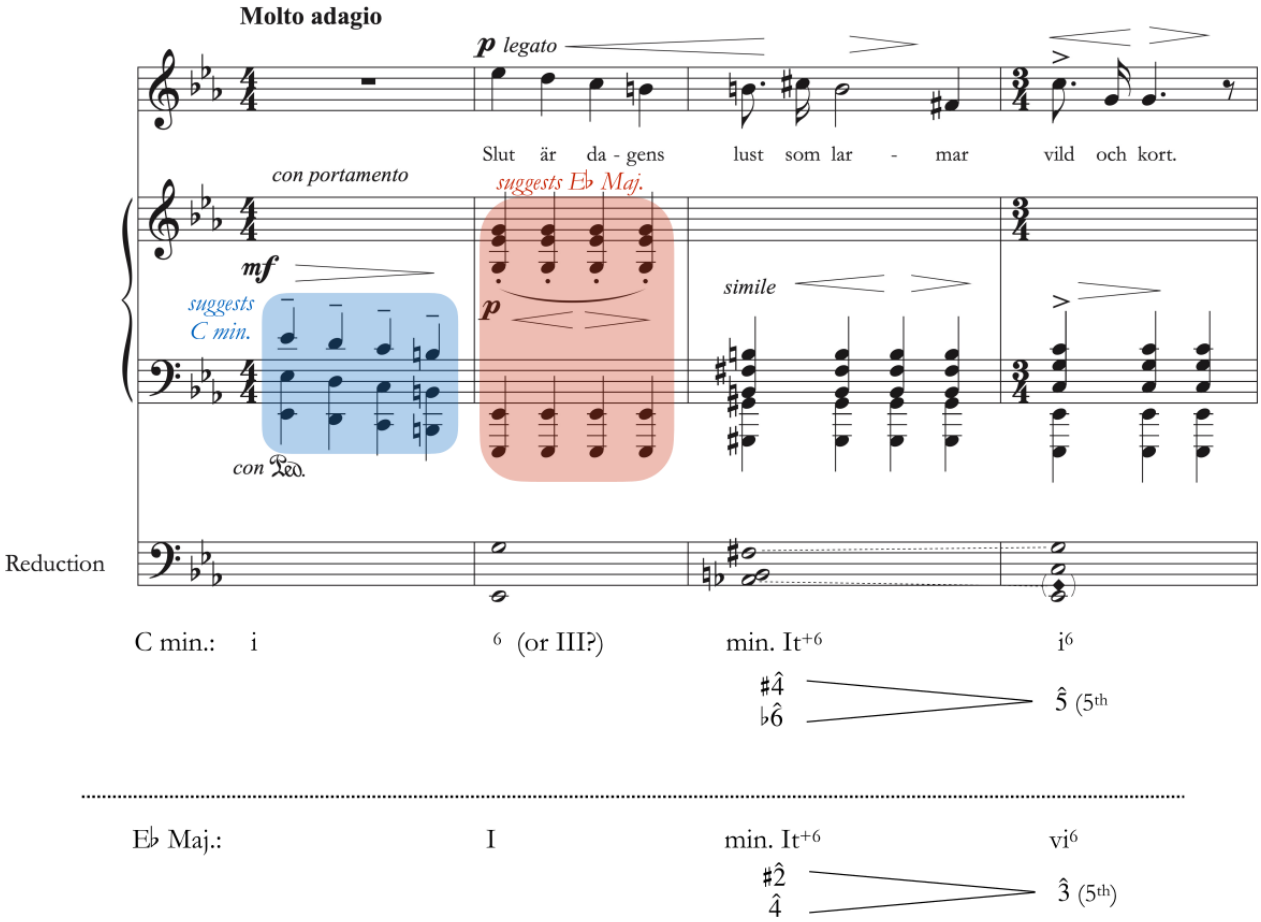


Rangström's song "Bön till natten" ("Prayer to the night," see **Example 54**) features a minorized Italian sixth resolving to a first-inversion minor triad with ♭6̂–♭3̂ in the bass. In this example, the augmented-sixth interval resolves to the fifth of the next chord (this progression corresponds to the one in **Figure 46–1**). The opening of this song is in fact tonally ambiguous because the initial scalar segment E♭–D–C–B♮ suggests C minor as the key center, while the repetition of this motive in m. 2 harmonized by an E♭–G dyad encourages analyzing the passage in E♭ major. The minorized Italian sixth in m. 3 enhances this tonal ambiguity because it is made of scale degrees that are relatively common in both keys. In E♭ major, this chord is equivalent to a subdominant seventh chord borrowed from the minor mode without its fifth (4̂–♭6̂–♭3̂). The neighboring motive in the voice part, B♮–C♯–B♮, can also be understood enharmonically as a borrowing from E♭ minor, thus embellishing ♭6 (C♭) in E♭ with ♭7 (i.e., C♭–D♭–C♭). In C minor, although the minorized Italian sixth does not correspond to any standard chord, it features common scale degrees (♭6̂, 7̂, and ♯4̂). On the one hand, the resolution of the minorized Italian sixth to C minor in first inversion (m. 4) marks the first appearance of a complete triad in this piece as well as the end of the first line of text, both of which confer to C minor a certain tonal stability. On the other hand, the E♭–A♭–E♭ motion in the bass (mm. 2–4) emphasizes E♭ as a focal pitch, prolonged by a chromatic chord on 4̂ in m. 3. When the opening returns in m. 18 (**Example 54b**), the minorized Italian sixth resolves to a C-major triad in first inversion instead of C minor (mm. 19–20). This unexpected resolution is followed by a clear cadential

progression in E♭ major (in mm. 23–24, ii7–V7–I), thus resolving the initial tonal ambiguity and recasting the E♭–D–C–B♮ motive as being in E♭ major.[99]

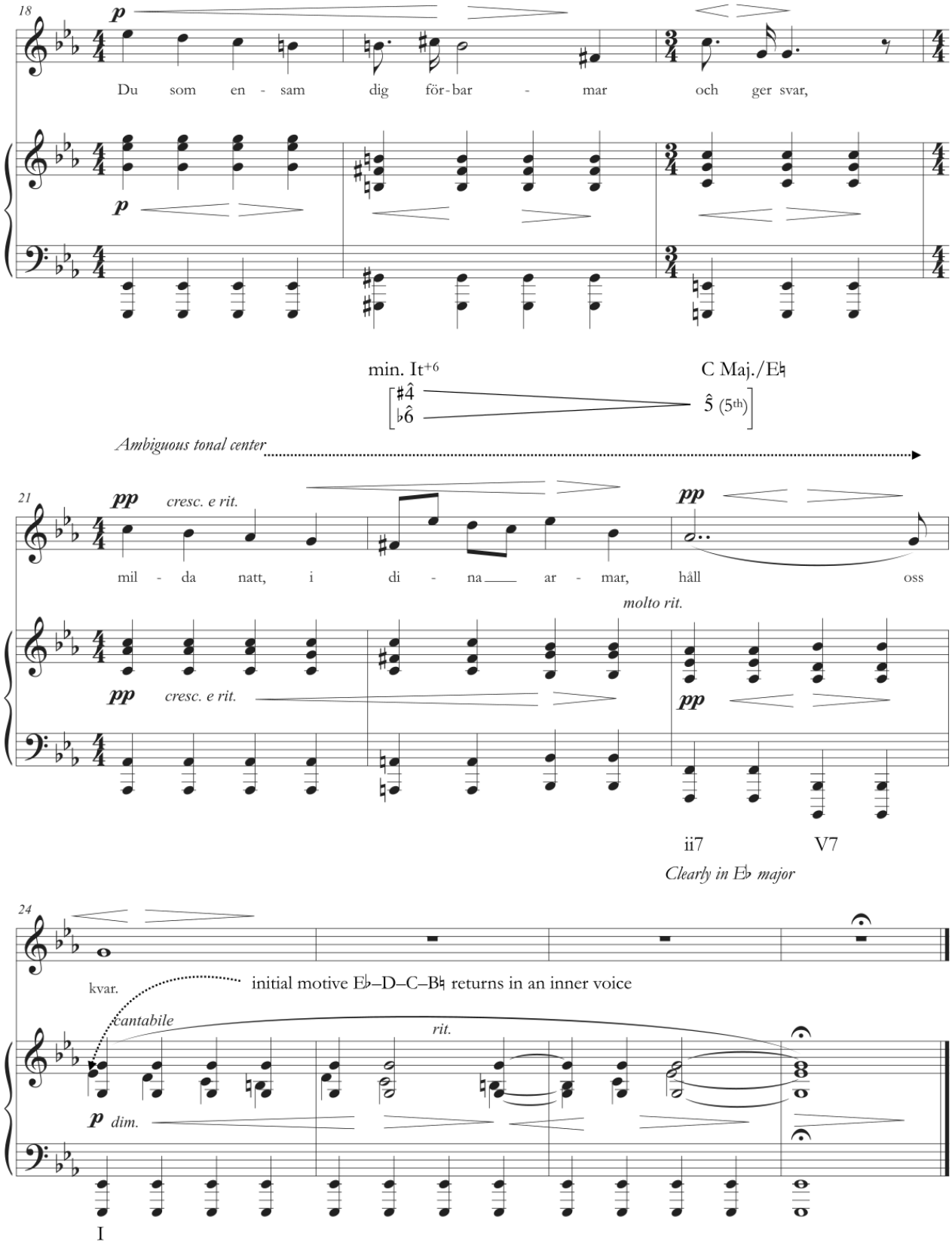
Example 54: Ture Rangström, "Bön till natten."

a) mm. 1–4 (resolution of the minorized Italian sixth to C minor in first inversion).



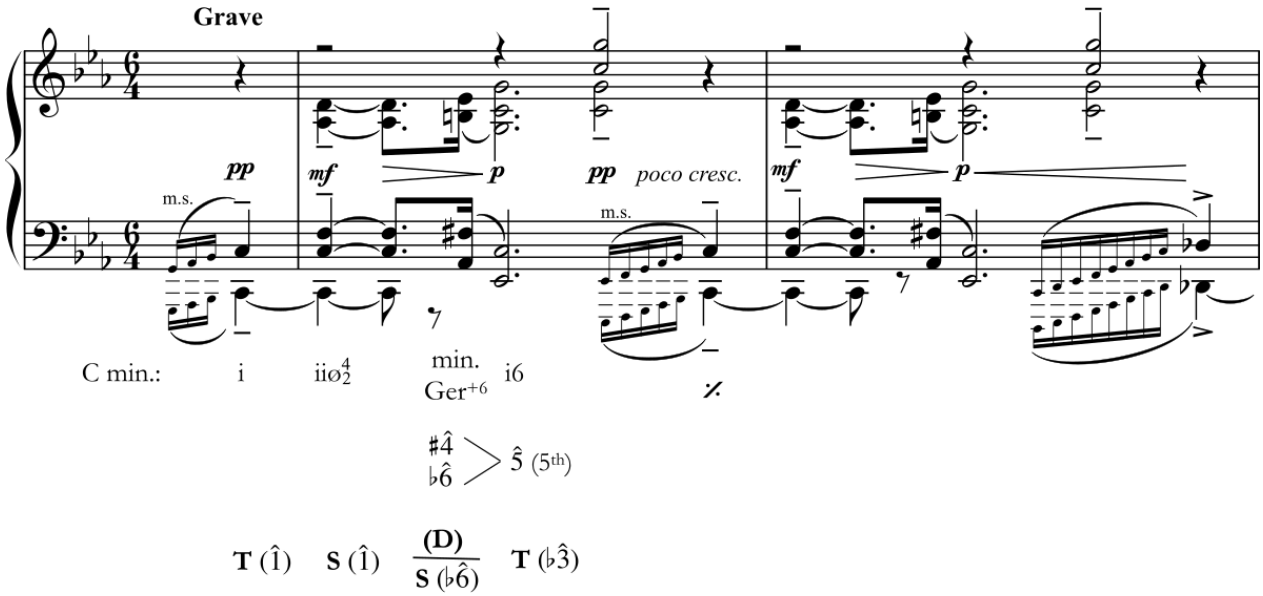
[99] This motive, transposed down a whole tone (D♭–C–B♭–A♮), appears in the opening of Rangström's own Symphony no. 3, composed five years after "Bön till natten." This work features the same tonal ambiguity at the opening, albeit on a larger scale than in the song.

b) mm. 18–end (m. 19-20: resolution of the minorized Italian sixth to C major in first inversion).



Rachmaninoff's Étude-tableau op. 33 No. 3 (**Example 55**) features a progression similar to Rangström's, but in a more stable tonal context. The Étude opens in C minor with a prolongation of tonic harmony, over a $\hat{1}$–$\flat\hat{6}$–$\flat\hat{3}$ bass line: $\hat{1}$ supports both tonic harmony and $\text{ii}\text{ø}^4_2$, while $\flat\hat{6}$ is harmonized with a minorized German sixth that resolves to tonic in first inversion. Even though the augmented-sixth chord contains elements of subdominant and dominant functions (i.e., the plagal motion in the bass and the leading tone-to-tonic resolution), subdominant function is much more prominent than dominant function because the leading tone, B♮, is hidden in an inner voice. The leading tone nevertheless gives a somber quality to the chord and thus contributes to the unique character of this opening.

Example 55: Sergei Rachmaninoff, Étude-tableau op. 33 No. 3, mm. 1–2.



Authentic type: $\hat{5}$–$\hat{1}$, $\hat{5}$–(♭)$\hat{3}$, and $\hat{7}$–$\hat{1}$ bass lines

Swinden defines three bass lines that characterize dominant-to-tonic progressions: $\hat{5}$–$\hat{1}$, $\hat{5}$–(♭)$\hat{3}$, and $\hat{7}$–$\hat{1}$ (2005, 259, Example 8b). Various progressions with minorized augmented sixths can be associated with these bass lines, which are shown in **Figure 47**. For all progressions with a bass line of $\hat{5}$–$\hat{1}$, it is also possible to vary the progression to end on a first-inversion tonic (with a bass line of $\hat{5}$–$\hat{3}$).

Figure 47: Minorized augmented sixths associated with the $\hat{5}$–$\hat{1}$ and $\hat{7}$–$\hat{1}$ bass lines.

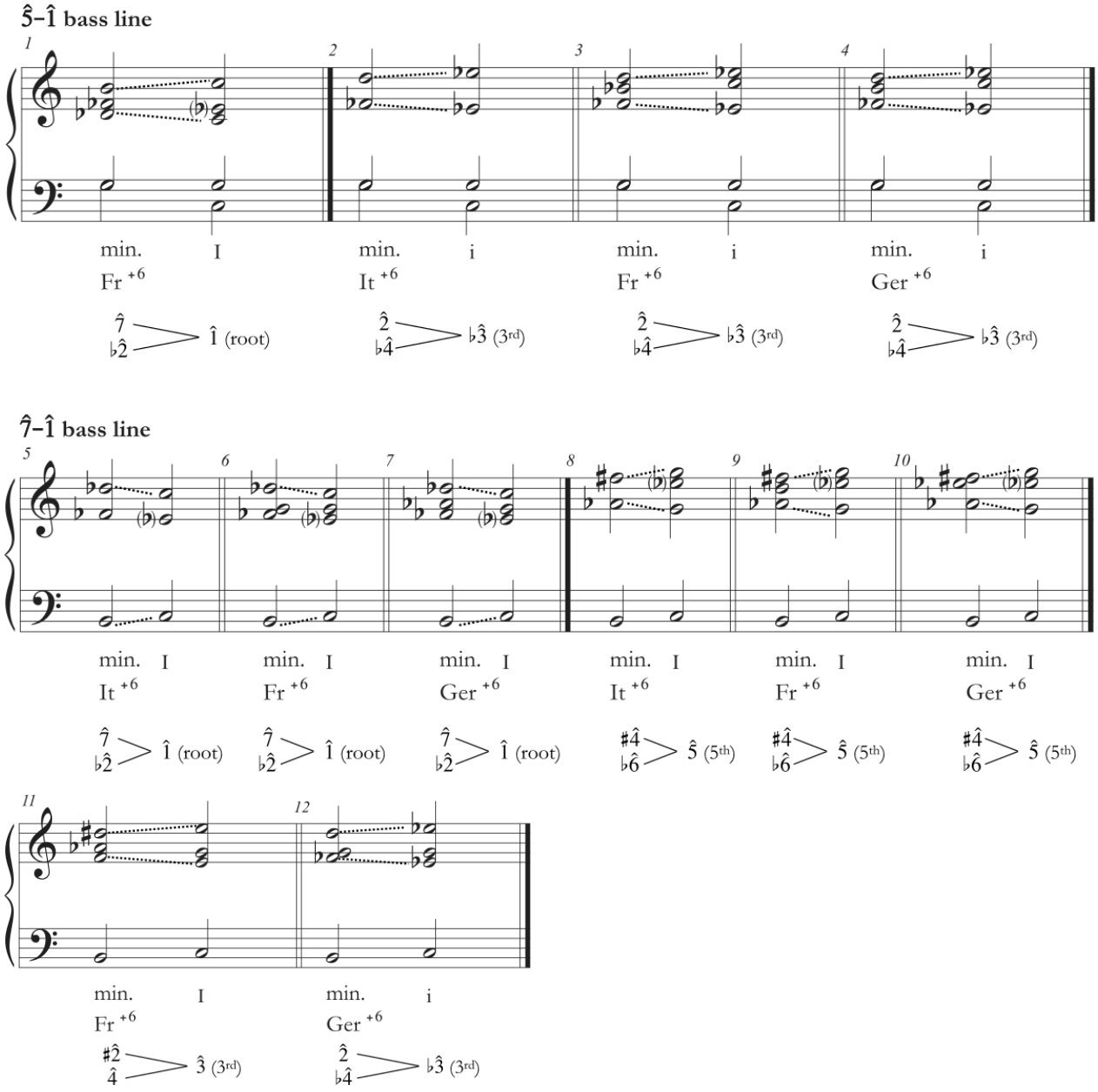
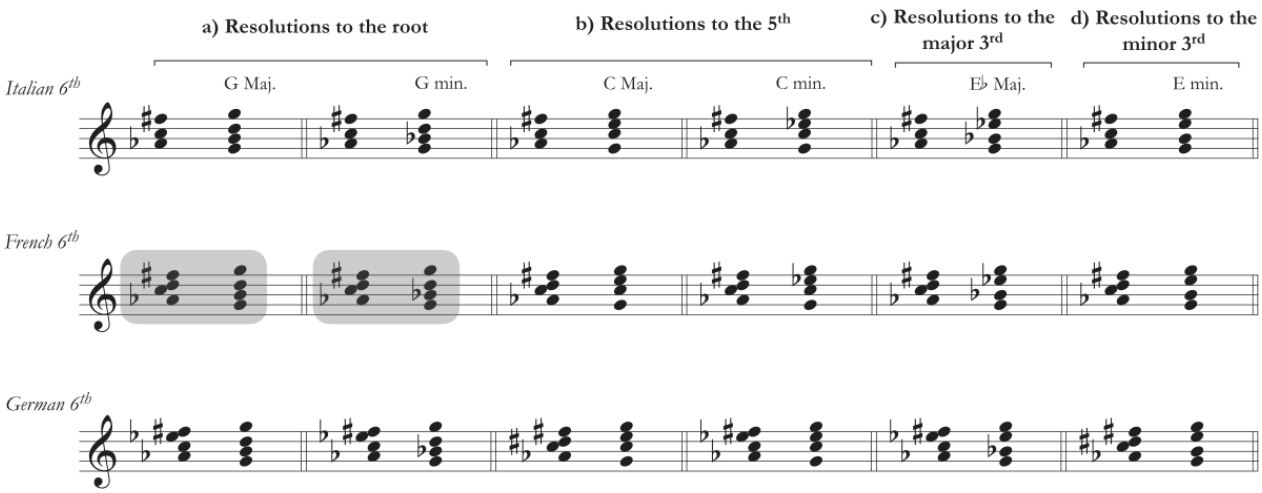


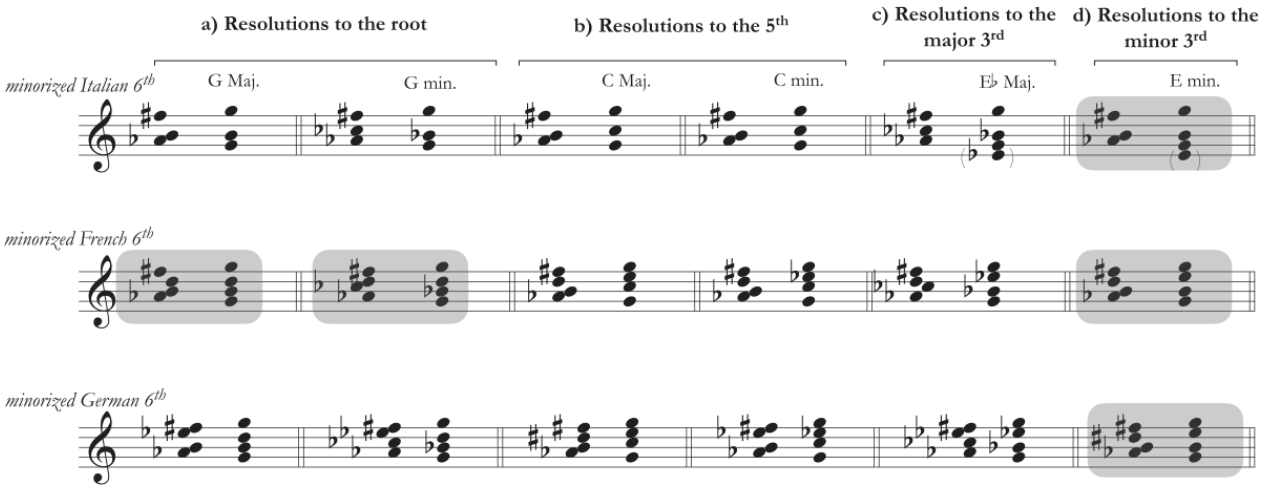
Figure 47 reveals that only a handful of progressions with minorized augmented sixths can be associated with the $\hat{5}$–$\hat{1}$ bass line: the minorized French sixth resolving to the root of a major or minor triad, and the minorized Italian, French, and German sixths resolving to the third of a minor triad. The range of possibilities is, however, broader with minorized augmented sixths than with regular "major-third" augmented sixths, since only the French sixth resolving to the root of a major or minor triad can feature a $\hat{5}$–$\hat{1}$ motion. Indeed, none of the other possible resolutions of these chords include the $\hat{5}$ of the target chord, as shown in **Figure 48**.

Figure 48: Conventional vs. minorized augmented sixths including the $\hat{5}$ of the chord of resolution.

a) conventional augmented sixths (Italian, French, and German)



b) minorized augmented sixths



The bass motion $\hat{5}$–$\hat{1}$ is so strongly associated with dominant-to-tonic progressions that even when the chord above $\hat{5}$ does not correspond to any of the typical dominant chords (e.g., major triad on $\hat{5}$, dominant seventh, dominant ninth), it still conveys a functional discharge from dominant to tonic. Harrison (1994) illustrates a few of those nonstandard progressions that can all be understood as authentic cadences because of their $\hat{5}$–$\hat{1}$ bass line (see his Example 2.1, *ibid.*, 48). He observes that

> [i]n some of the motions, it is clearly difficult to hear a given base as the root of the chord in question using traditional root-seeking methods. But the sense of $\hat{5}$ as a Dominant force and of $\hat{1}$ as a Tonic force is not thereby affected. Of course, the strength and the aspect of the functions are different for

> each progression—strong and clear for some, weak and clouded for others. But the essential sense of harmonic attitude is nonetheless the same for all (1994, 48).

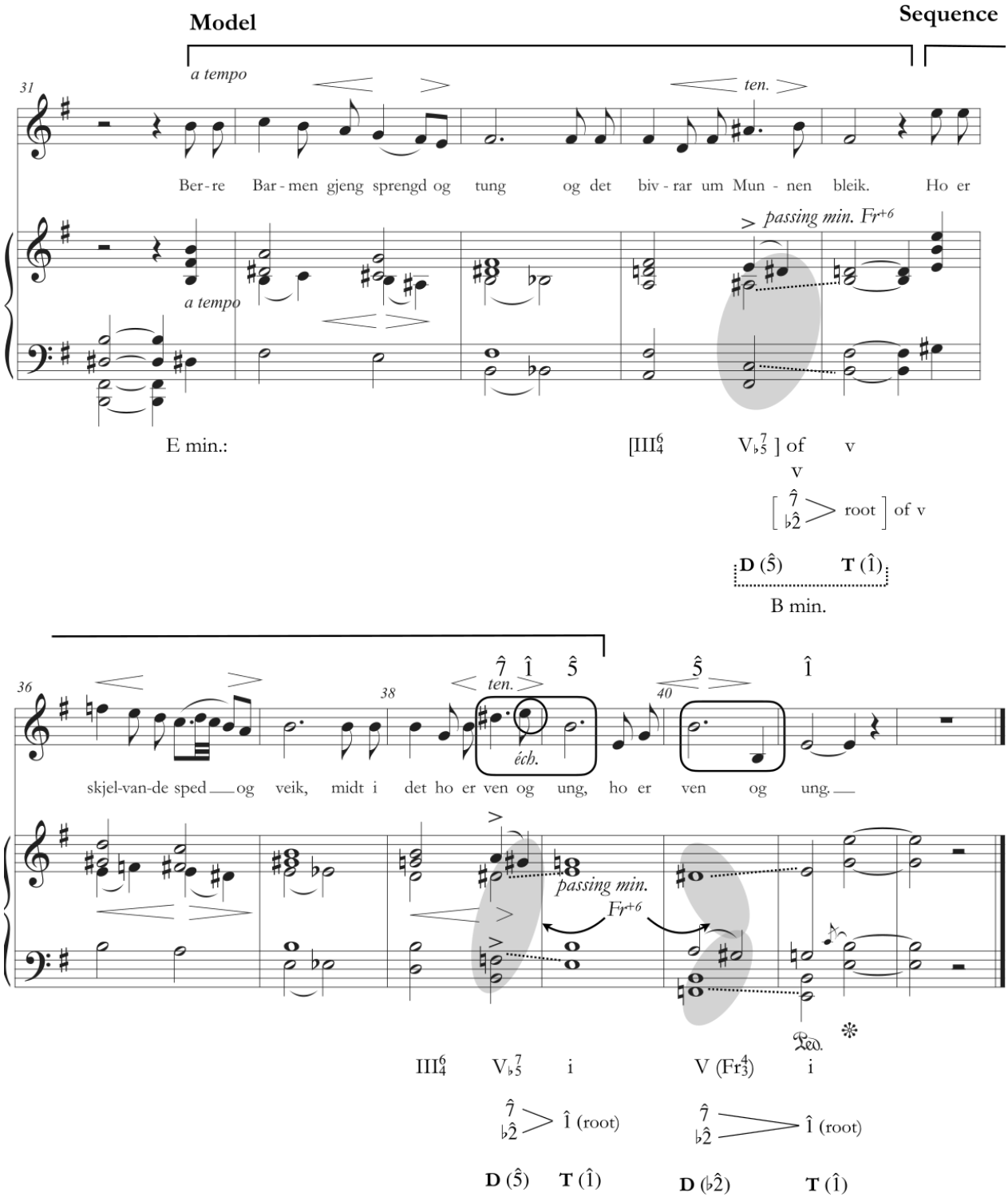
Harrison's Example 2.1 cited above implies that the leading-tone-to-tonic resolution, a voice leading usually associated with DT motions, is less critical for expressing this functional progression when $\hat{5}$–$\hat{1}$ is in the bass. Indeed, among Harrison's unconventional progressions, only one features the leading tone resolving to the tonic. Similarly, in **Figure 47** above, the leading tone does not appear in the second and third progressions, where the minorized Italian and French sixths resolve to the third of a minor tonic harmony (i.e., B♮ is missing in both progressions). While I have not found any examples of these two progressions in the repertoire I have studied for this dissertation, I suspect that the lack of a $\hat{7}$–$\hat{1}$ resolution would not hinder the potential for these progressions to express a DT discharge, albeit in a less obvious way than traditional DT progressions would.

Grieg's song "Veslemöy" from op. 67 (**Example 56**) features minorized French sixths resolving to the root of tonic that express clear dominant-to-tonic resolutions.[100] In this example, a four-bar model (mm. 31/4–35/3) tonicizes the minor dominant (B minor); it is then transposed up a fourth to land on the tonic E minor (mm. 35/4–39/3). (For the sake of concision and clarity, I describe below only the latter segment.) The dominant chord in m. 38 appears first as a V7 with a lowered fifth (i.e., B–D♯–**F♮**–A); the minorized French augmented sixth F–A♭–B–D♯ results from a passing tone (A♭, spelled as G♯ in the score) connecting $\hat{4}$ (A) and ♭$\hat{3}$ (G). The same progression returns in mm. 40–41, but with a few modifications: it is twice as slow, which makes the passing minorized French sixth last half a measure, and the bass articulates ♭$\hat{2}$–$\hat{1}$ instead of $\hat{5}$–$\hat{1}$, thus emphasizing the augmented-sixth interval by making one of the approach tones appear in an outer voice. The $\hat{5}$–$\hat{1}$ gesture that appeared in the bass in mm. 38–39 is transferred to the singer's part in mm. 40–41.[101]

[100] This example was discussed briefly in Chapter 1. See **Example 9**, p. 22.

[101] This progression resembles the one occurring in the fourth movement of Brahms's Symphony no. 4 in mm. 7–8, where a French sixth resolves directly to the tonic; the melody articulates $\hat{5}$–$\hat{1}$, while the bass moves from ♭$\hat{2}$ to $\hat{1}$.

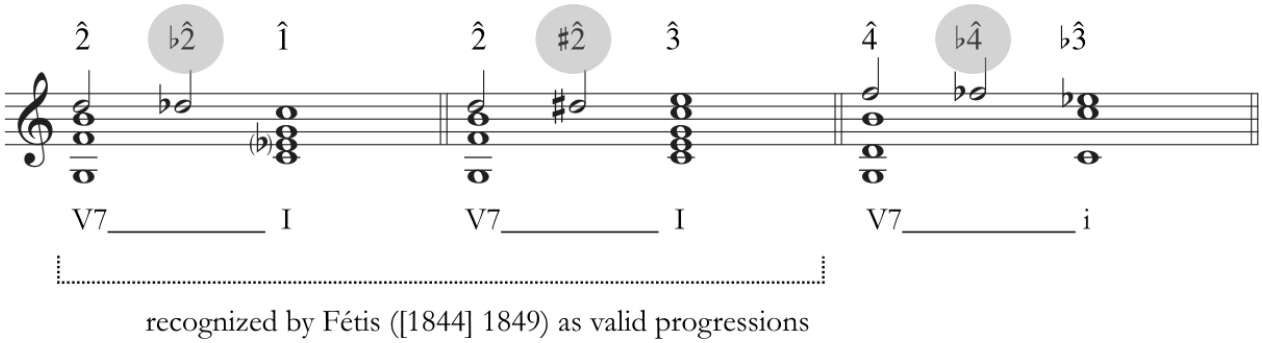
Example 56: Edvard Grieg, Songs op. 67, No. 2, "Veslemöy," mm. 31–42.



The whole-tone "gap" between $\hat{4}$ and $\flat\hat{3}$ has long been conceived of as a space that could not be filled in chromatically. For instance, while nineteenth-century theorist François-Joseph Fétis

discussed V7–I resolutions where other whole-tone motions can be altered (i.e., $\hat{2}$–$\hat{1}$ and $\hat{2}$–$\hat{3}$ become $\flat\hat{2}$–$\hat{1}$ and $\sharp\hat{2}$–$\hat{3}$ respectively, see Fétis 1849, 96–97), he never recognized the possibility of V7 with a lowered $\hat{4}$ or a chromatic passing tone between $\hat{4}$ and $\flat\hat{3}$ that would occur simultaneously with a V7–I progression (**Figure 49**). This is perhaps because it alters the characteristic augmented fourth/diminished fifth between $\hat{4}$ and $\hat{7}$ of the dominant harmony.[102] Many theorists from that era, as well as recent literature on chromatic harmony, also leave out chords with $\flat\hat{4}$, even in sections dedicated to altered chords.[103] In the harmonic practice of the nineteenth century, the insertion of chromatic passing tones between $\hat{4}$ and $\flat\hat{3}$ seems far less common than, say, between $\hat{2}$ and $\hat{3}$ or $\hat{2}$ and $\hat{1}$. It is perhaps because they are so rare that they create such unique musical effects when they appear.

Figure 49: Possible whole-tone motions filled in chromatically in dominant-to-tonic progressions.



Medtner's Novelette op. 17 No. 2, reproduced in **Example 57**, ends with a minorized French sixth resolving to the root of tonic. In this example, the C-minor tonic chord in m. 100 is prolonged with an unconventional augmented-sixth chord[104] before going back to a C minor in second inversion. From there starts a chromatic wedge progression in the upper voices, which I have transcribed in

[102] For more detail on how Fétis's theory of tonality accommodates certain minorized augmented sixths, see Chapter 5.

[103] See, for instance, the section in Aldwell and Schachter's textbook dedicated to "Altered dominant seventh chords," where they talk only about the possibility of raising or lowering the fifth of V7 (2011, 552–553). To my knowledge, Louis and Thuille's treatise is among the earliest sources to discuss dominant seventh chords with $\flat\hat{4}$ (1913, translated by Schwartz 1982, see pp. 299–300). They discuss the possibility of lowering $\hat{4}$ in V7 and vii°7. More recently, theorists such as Dmitri Tymoczko (2011, 272) and Luce Beaudet have discussed dominant-functioning harmonies with $\flat\hat{4}$ (see Beaudet's website, http://bw.musique.umontreal.ca/nm/subversion-en.htm, Figure 44 and Examples 463–66, accessed March 1st, 2023).

[104] This chord, composed of A♭, C, F♭, and F♯, corresponds to an inverted Italian sixth with an added minor sixth (F♭) above the descending approach tone (A♭). See p. 30 for a more detailed discussion of this unconventional augmented sixth.

Figure 50. While the harmonic analysis of the first two chords as well as the last one is straightforward, the third and fourth chords of this passage are ambiguous. The second chord, a clear V7 of V, suggests that the following chord will be a dominant, but neither of the two chords that follow correspond to a conventional dominant. When the non-harmonic tones of the third chord resolve, the seventh, F, moves down to F♭, resulting in a minorized French sixth (D♭–F♭–G–B). This chord has dominant function because it is preceded by a V7 of V, it features $\hat{5}$ in the bass, and it lands on tonic harmony, but its sound obfuscates beautifully this otherwise conventional harmonic progression.

Example 57: Nikolai Medtner, Novelette op. 17, No. 2, mm. 99–102.

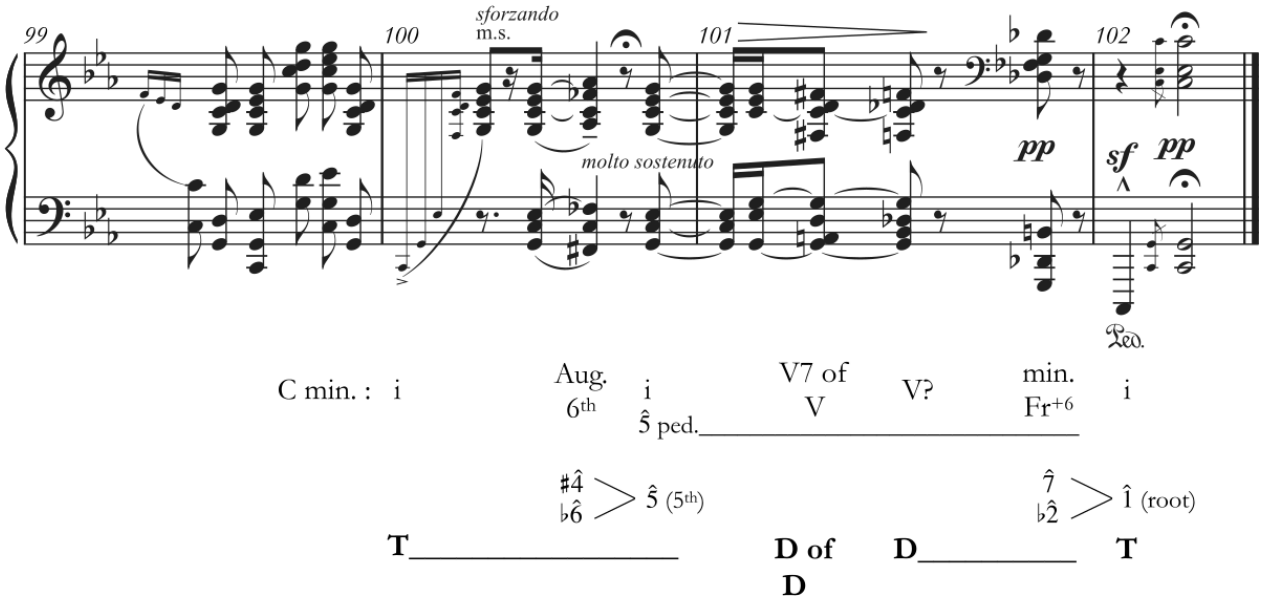


Figure 50: Reduction of Medtner op. 17 No. 2, mm. 101–102.

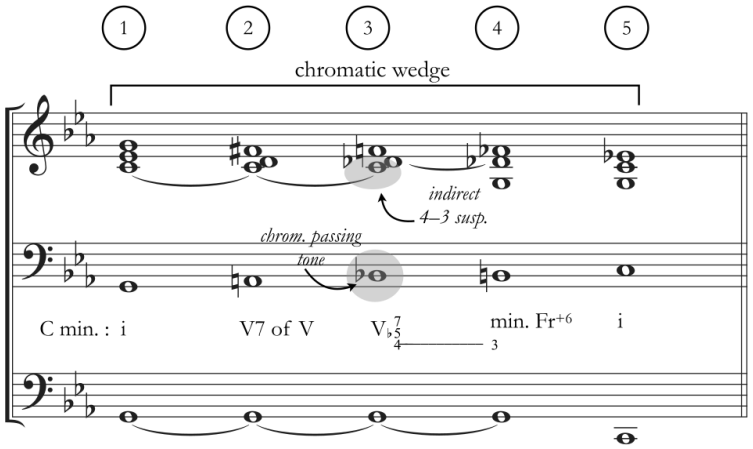
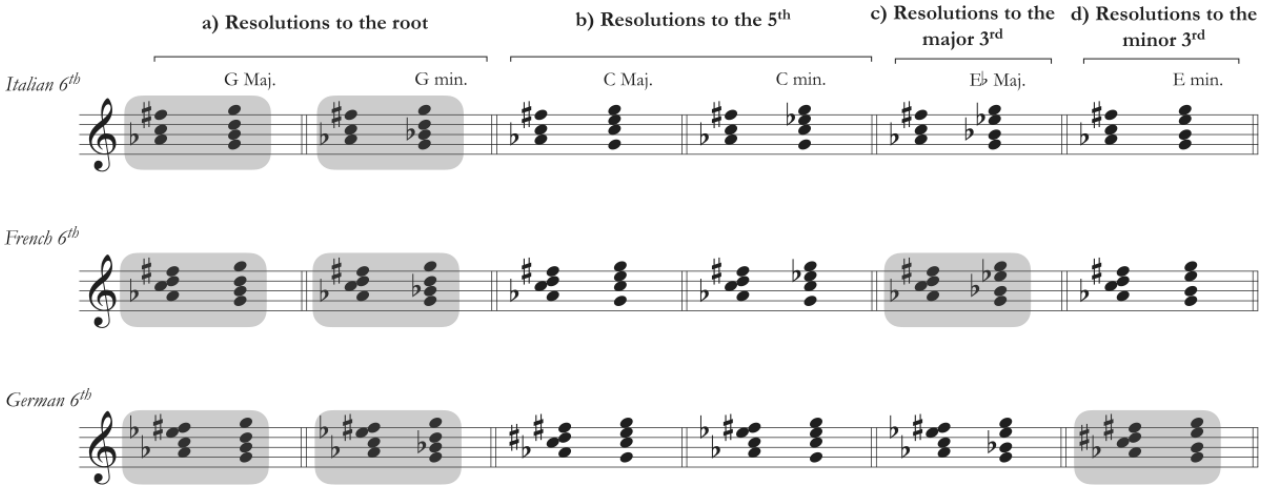


Figure 51a shows the three conventional augmented sixths (Italian, French, and German) resolving to various chord factors and highlights the eight progressions that include the leading tone

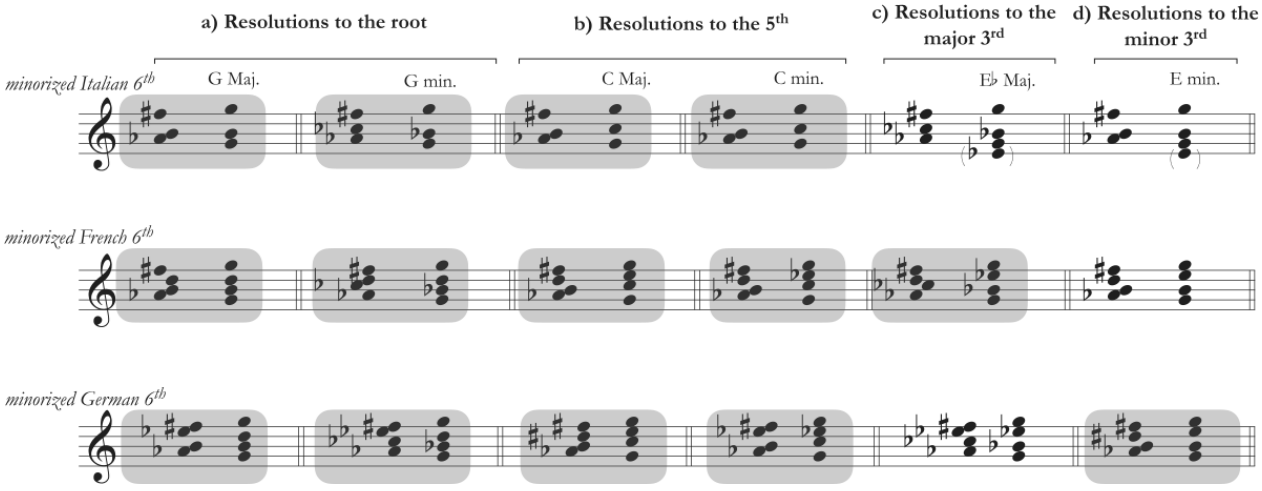
of the next harmony. By comparison, fourteen progressions with minorized sixths include the leading tone (**Figure 51b**). The six additional progressions are the ones where the target note is the fifth of a major or minor triad. This resolution type, when using conventional major-third augmented sixths, involves the tonic scale degree as a common tone, but the minorized augmented sixths can all feature a $\hat{7}$–$\hat{1}$ motion.

Figure 51: Conventional vs. minorized augmented sixths including the leading tone of the chord of resolution.

a) Conventional augmented sixths (Italian, French, and German)



b) Minorized augmented sixths



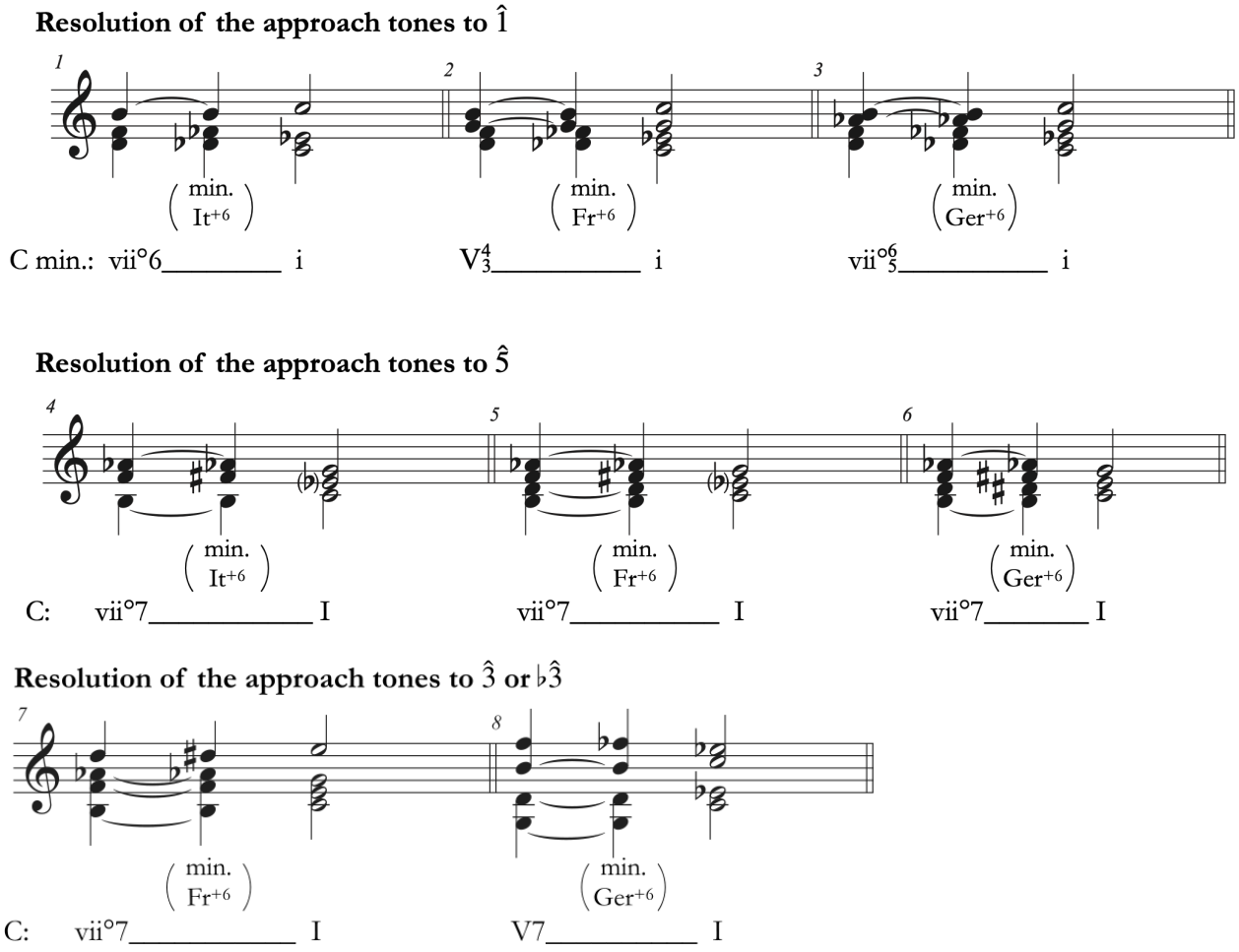
In theory, any augmented-sixth chord containing the leading tone of the next chord—supposing this target chord has tonic function—can feature a $\hat{7}$–$\hat{1}$ resolution in the bass and thus

convey a dominant-to-tonic functional discharge. In most of the examples of minorized augmented sixths I have found, the augmented-sixth chord contains the leading tone of the next harmony, imparting a local dominant-to-tonic character to the progression. The presence of the leading tone in the chord appears to be the main factor that distinguishes the minorized sixths that occur most frequently from those that seem to be only theoretical artifacts. In other words, out of the logically possible minorized sixth resolutions, fourteen resolution types include the leading tone, and these fourteen are the main types for which I have found examples.

Many minorized augmented sixths featuring the leading tone of the chord of resolution can be understood as chromaticized dominant-functioning harmonies, as shown in **Figure 52** below. While some scholars (e.g., Hutchinson 2018 and 2020) argue that the augmented-sixth label is irrelevant for these chords because the augmented-sixth interval is a side effect of chromatic voice leading, I prefer to highlight that they are both augmented-sixth sonorities *and* dominant-functioning harmonies. Since the augmented-sixth resolution is often salient in those progressions, I suggest recognizing it in the harmonic analysis, despite the fact that the chord functions as a dominant.[105]

[105] Several examples in Hutchinson's (2020) dissertation are congruent with my concept of minorized augmented sixth (see, for instance, his Examples 1.4, 1.11, 1.12, and 1.14). He analyzes these chords as dominants of the chord to which they resolve because they include one or both of the characteristic dissonance resolutions found in dominant-to-tonic progressions: the tritone between $\hat{4}$ and $\hat{7}$ as well as the diminished seventh between $\hat{7}$ and $\flat\hat{6}$. Hutchinson's Table 1 (p. 57) lists some of the possible chords that arise from altering a diminished seventh chord, including voicings of two minorized French sixths, A♭–B–D♯–F and A♭–B–D–F♯, which resolve respectively to the major third and the fifth of a C tonic. Hutchinson's perspective seeks to highlight the continuity between common-practice and late-tonal harmony. While I agree that these chords often function as dominants, from my perspective they can be interpreted as expressing various functions depending on the bass line and voicing, among other factors.

Figure 52: Minorized augmented sixths as chromaticized dominants.



The fourteen types of resolutions highlighted in **Figure 51b** all have the potential to express dominant function because they include the leading tone, but depending on the context, this may or may not be the main function perceived. As a clear case of dominant function, **Example 58** from Medtner's Piano Sonata op. 22 features inverted minorized German sixths (G♭–B♭–D♭–E♮) whose approach tones resolve to the root of the tonic F minor. As Scott Murphy (2021) notes in his analysis of this passage and similar ones from Myaskovsky's String Quartet No. 3 and Franck's *Symphonic Variations*,[106] the chord progression includes the characteristic agent discharge of both subdominant-to-tonic and dominant-to-tonic progressions, as defined in Harrison's 1994 approach (i.e., $\flat\hat{6}$–$\hat{5}$ and

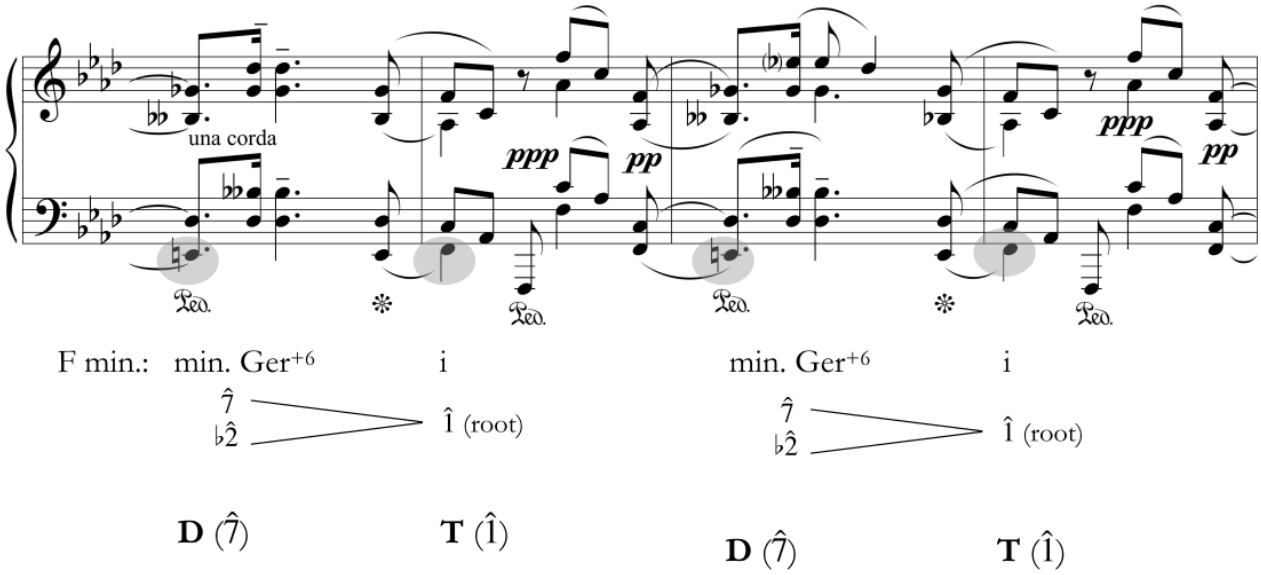
[106] See Murphy's Examples 2.1–2.3A and B (2021, 33–6).

$\hat{7}$–$\hat{1}$, respectively). Murphy observes that in Harrison's model, the $\flat\hat{2}$–$\hat{1}$ and $\flat\hat{4}$–$\flat\hat{3}$ motions behave as projections of the $\flat\hat{6}$–$\hat{5}$ discharge. Murphy argues that this approach reduces the novelty of the progression in order to frame it with standard functional labels (*ibid*, 34); to remedy this problem, Murphy identifies this progression as being part of a larger category of harmonic progressions, which he calls "antitonic events." This label refers to progressions where the tonic is prolonged with a neighbor chord:

> An undulation away from and then immediately back to the tonic triad gives the progression an air of indulgence and gratuitousness, even self-aggrandizement. With respect to a Classical teleology, the progression does not have to be there, but it is anyway, and by retreading, albeit in reverse, the same chord-relation terrain, it demands the listener's special attention to this terrain (2021, 34–5).

Thus "antitonicism" applies to the progression in Medtner's Piano Sonata below because the antitonic chord "undulates" back to the tonic harmony. While I concur with Murphy that the analytical labels should reflect, to some extent, the striking aspects of the harmonic surface, I choose here to also use a functional approach to analyze the minorized German sixths that occur in the Interludium, since they do sound related to other standard functional progressions. Because the progression is supported by a $\hat{7}$–$\hat{1}$ motion in the bass, the minorized augmented sixths function as dominants.

Example 58: Nikolai Medtner, Piano Sonata in G minor op. 22, Interludium, mm. 1–4.



As shown in **Figure 51b** (p. 137), all minorized augmented sixths resolving to the fifth of a tonic harmony contain the leading tone; when this scale degree occurs in the bass, the chord will most likely function like a dominant. This is what occurs in Rangström's Intermezzo drammatico

(**Example 59**), where a root-position D-minor tonic chord alternates with a minorized French sixth (B♭–C♯–E–G♯) harmonizing C♯ in the bass. The outer-voice counterpoint, with Î–7̂–Î in the bass and 5̂–♭6̂–5̂, recalls the more familiar i–vii°7–i progression, but with ♯4̂ (G♯) instead of 4̂ in an inner voice (**Figure 53**).

Example 59: Ture Rangström, Intermezzo drammatico, i, mm. 5–8.

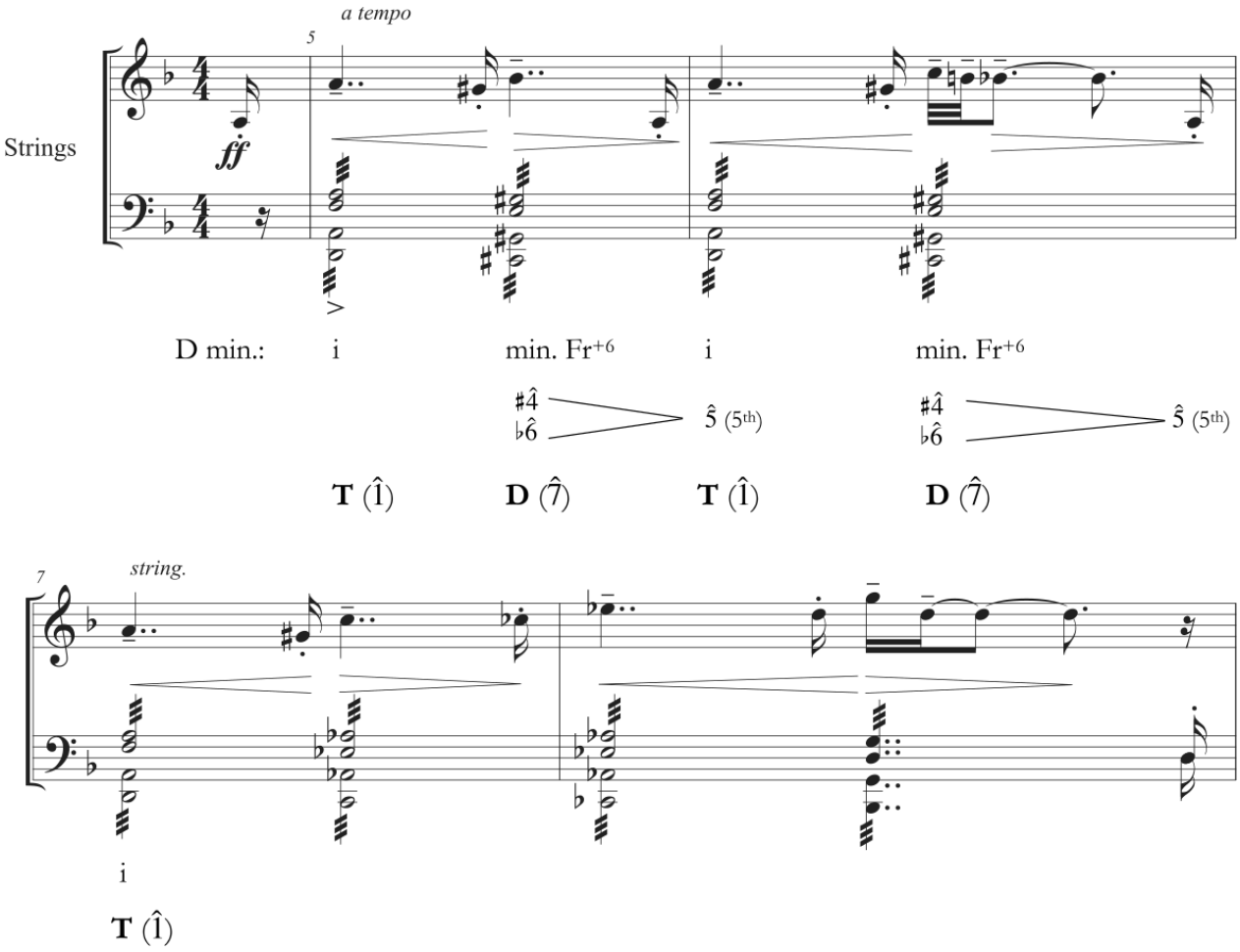
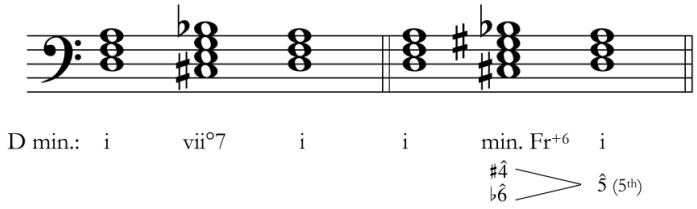


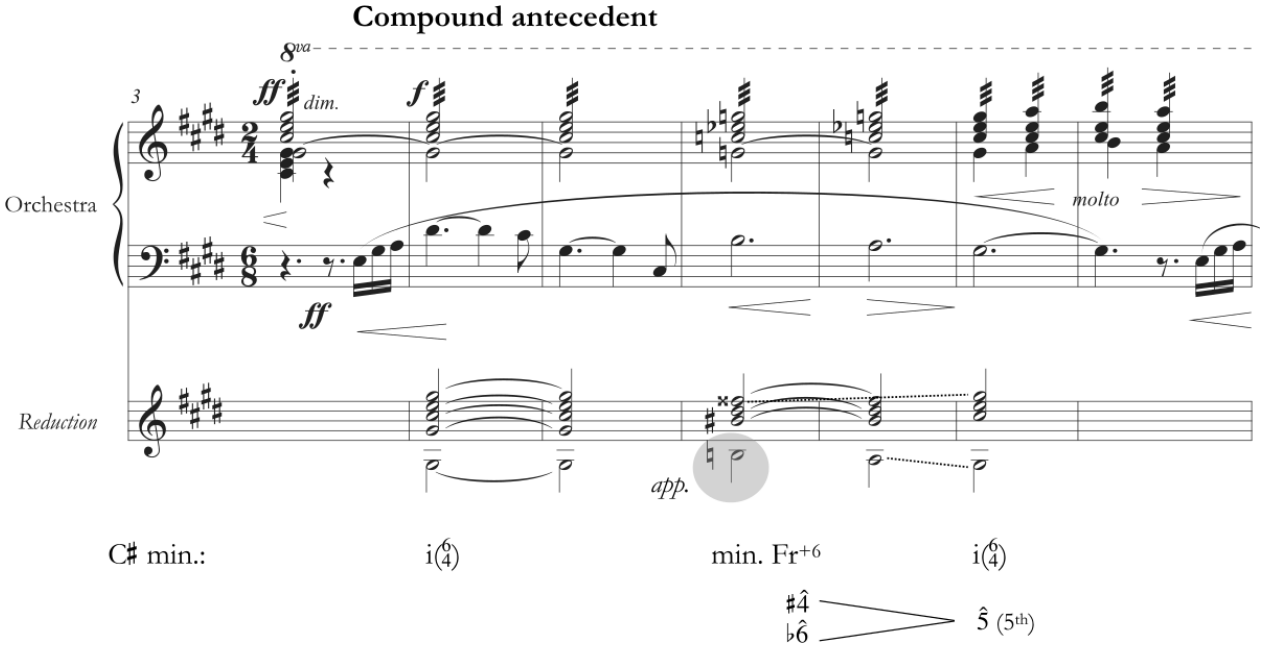
Figure 53: The minorized French sixth as a variant of vii°7.



The same harmonic progression occurs in the development of the first movement of Rangström's Symphony No. 1 (**Example 62**). At this point in the symphony, Rangström fuses the main theme and the subordinate theme: the harmony is borrowed from the beginning of the main theme, where the tonic is prolonged with a minorized augmented sixth (**Example 60**),[107] while the melody is borrowed from the subordinate theme (**Example 61**), but transformed into minor. (Aside from the shift to the minor mode, the only melodic difference between the subordinate theme and the theme that appears in the development concerns ♭$\hat{7}$ in the original theme [mm. 84 and 86], replaced by ♭$\hat{6}$ in the development [m. 218 and 220]).

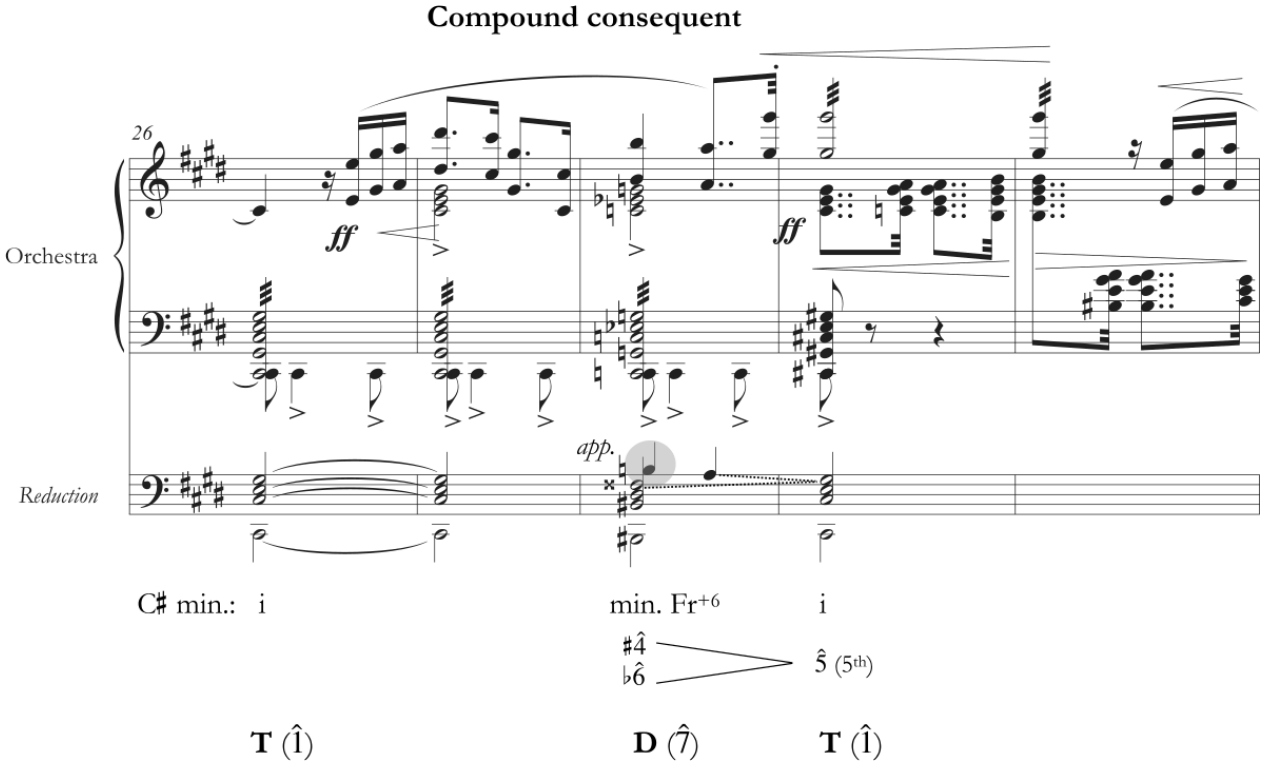
Example 60: Ture Rangström, Symphony No. 1, i (main theme).

a) mm. 3–9 (beginning of the compound antecedent).

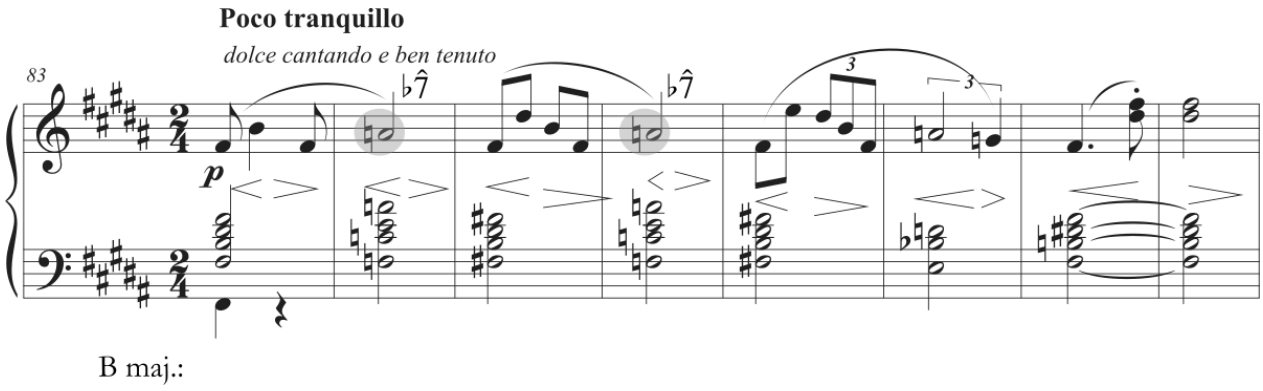


[107] The first occurrence of the minorized French sixth in mm. 6–7 is functionally ambiguous, because the melody is in the bass, which causes the tonic harmony to be in second inversion. When the progression returns in the compound consequent, the minorized French sixth is inverted and appears with the leading tone in the bass (m. 28), which clarifies its function as a dominant.

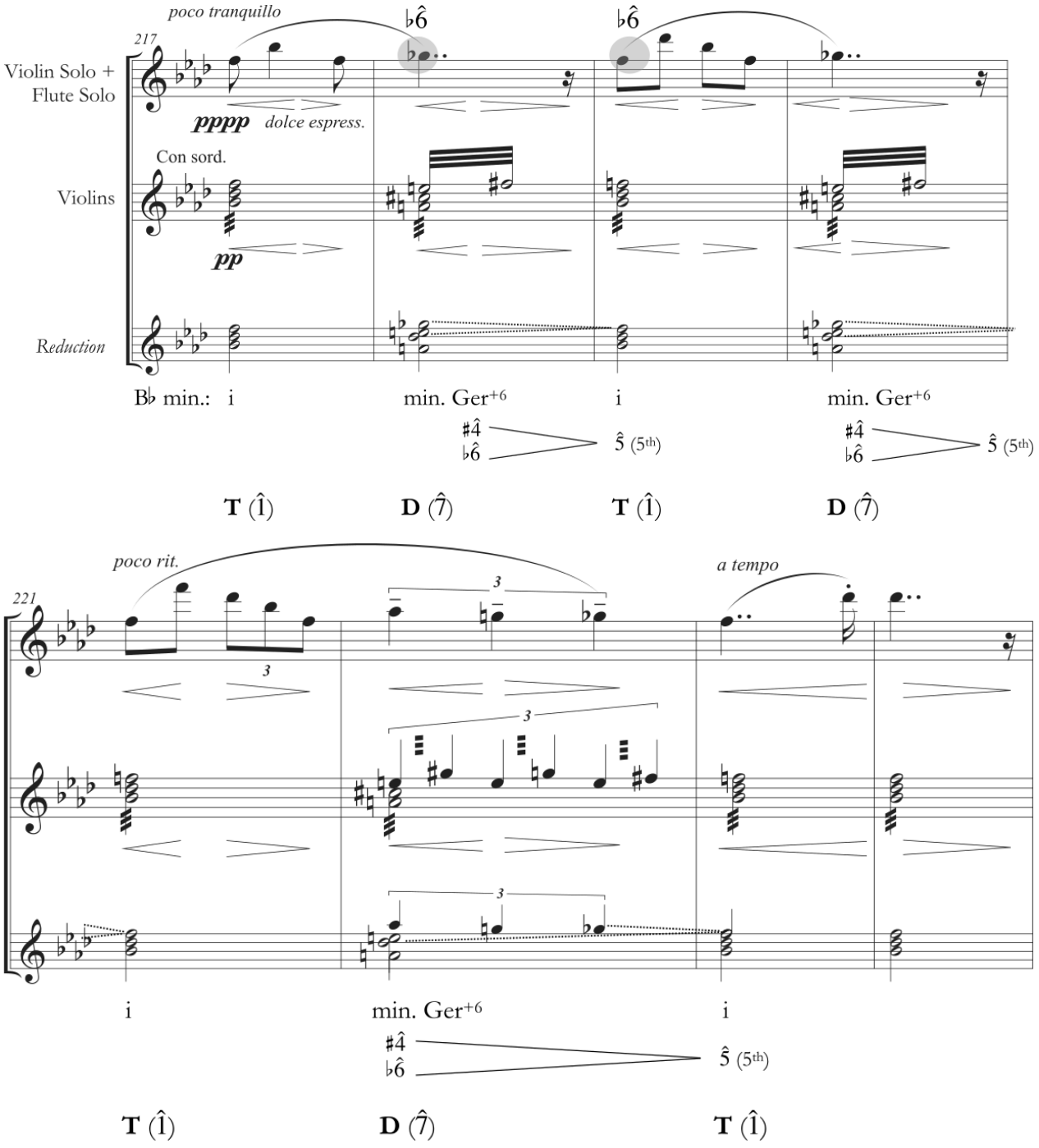
b) mm. 26–30 (beginning of the compound consequent).



Example 61: Ture Rangström, Symphony No. 1, i, mm. 83–90 (subordinate theme).



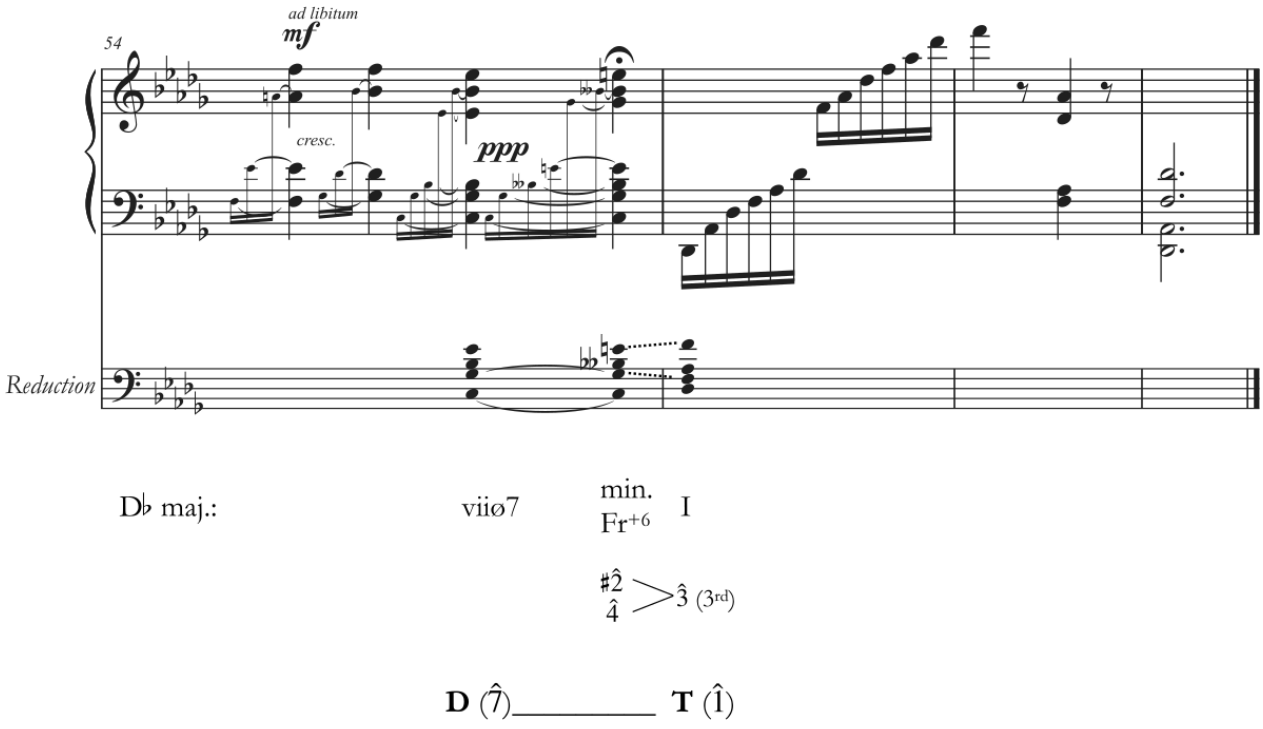
Example 62: Ture Rangström, Symphony No. 1, i, mm. 217–30 (development).



Minorized augmented sixths resolving to the third can also be associated with a $\hat{7}$–$\hat{1}$ bass line. Richard Bass (2001, 45–6) discusses an instance of this progression that occurs at the end of Scriabin's Nocturne op. 9 No. 2, reproduced in **Example 63**. Bass notes that the viiø7 that appears on the third beat of m. 54 gets chromatically altered on the last beat of the measure (i.e., $\hat{2}$ becomes $\sharp\hat{2}$ and $\hat{6}$

becomes ♭6̂), before resolving to a D♭-major tonic harmony in m. 55. The two alterations result in a sonority equivalent to a half-diminished seventh chord (i.e., C–E♮–G♭–B♭♭ is equivalent to G♭ø7 in second inversion). Since the minorized augmented sixth results from altering a conventional dominant-functioning chord, the penultimate chord of the Nocturne functions as a dominant.

Example 63: Alexander Scriabin, Nocturne op. 9 No. 2, mm. 54–57.



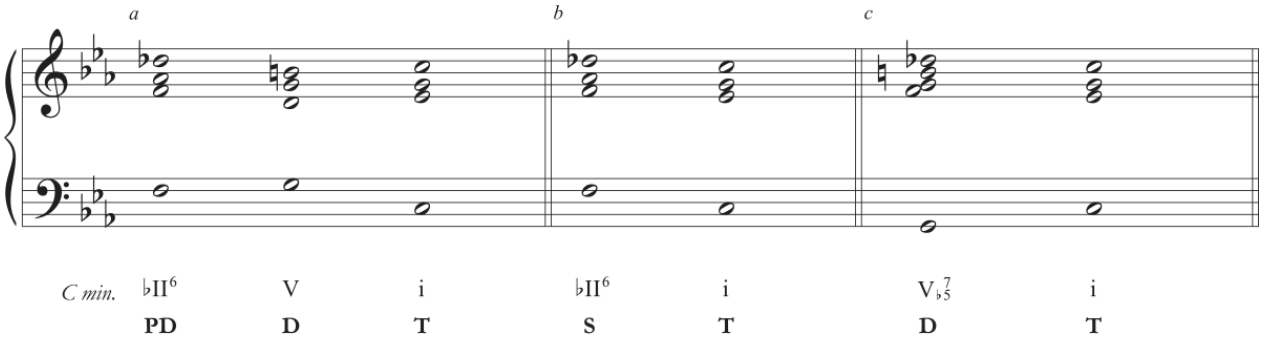
Non-characterizing bass lines

The previous sections of this chapter emphasized the importance of bass lines for functional analysis. While the functional progression conveyed by the bass can sometimes be in conflict with the upper voices, resulting in a *collision* of two functions (Swinden 2005), the functional discharge in the bass tends in general to outweigh the one in the upper voices. This perspective on harmonic function, however, applies only to examples where the bass line corresponds to characterizing bass lines of S-to-T, D-to-T, and PD-to-D progressions; it does not provide tools to analyze passages where the bass line can accommodate various functional progressions.[108] For instance, 4̂–3̂ in the bass can be

[108] For examples of diatonic bass lines that are non-characterizing, see Swinden's Example 7 (2005, 259).

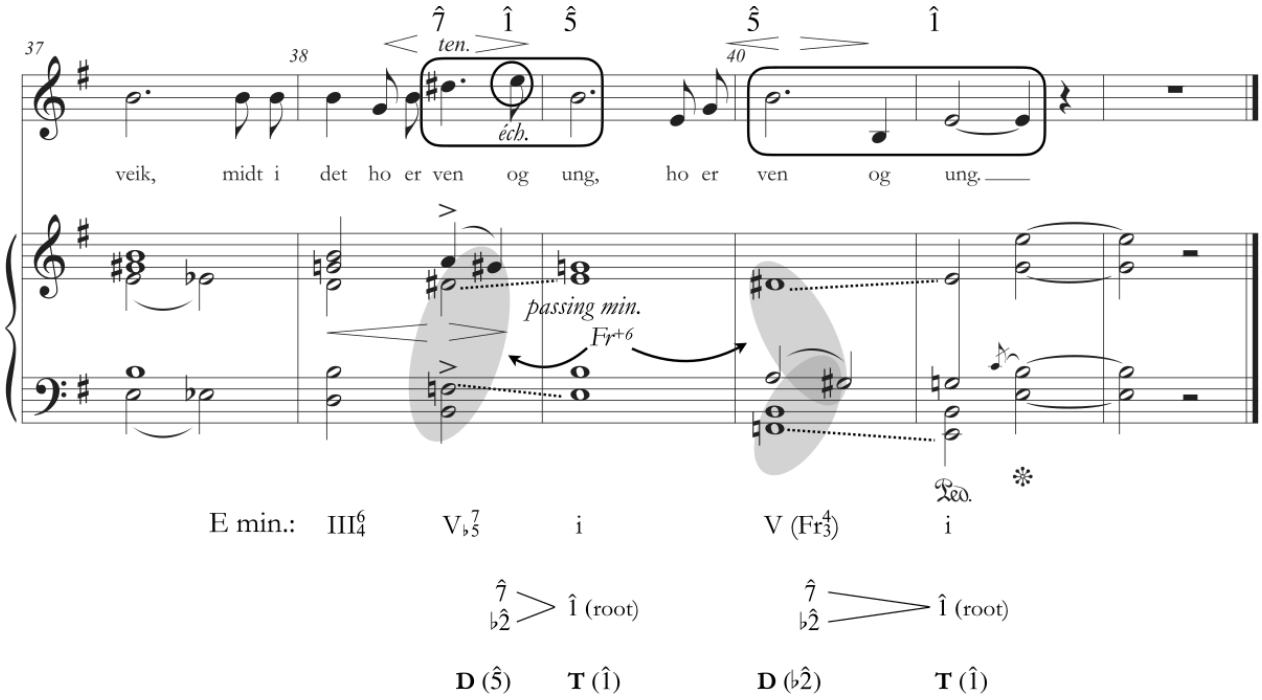
harmonized either as a dominant-to-tonic or as a subdominant-to-tonic progression (i.e., V^4_2–I^6 and IV–I^6 respectively); hence, this bass line in and of itself cannot signal which functions are involved. This issue also emerges with chromatic bass lines, such as ♭$\hat{2}$–$\hat{1}$, since ♭$\hat{2}$ is not tied to a specified harmonic function; it routinely occurs in the Neapolitan chord (which has predominant or subdominant function depending on the function of the chord of resolution, see **Figure 54a** and **b**), or as the lowered fifth of a dominant chord (**Figure 54c**). Therefore, when ♭$\hat{2}$–$\hat{1}$ appears in the bass, the harmonic functions involved could either be ST or DT. Unconventional chords like minorized augmented sixths are often supported by non-characterizing bass lines; because these chords are functionally ambiguous, the lack of a clear functional discharge in the bass can obscure their harmonic function. What criteria then should one consider for functional analysis?

Figure 54: ♭$\hat{2}$ in various functional contexts.



When the functional progression is unclear in the bass, the upper voices often "compensate" with motions that are more typically found in the bass (e.g., $\hat{5}$–$\hat{1}$). In Grieg's song "Veslemöy" analyzed above in **Example 56** (p. 134) and reproduced below (**Example 64**), the concluding chord progression in mm. 40–41 repeats the one immediately before it (mm. 38–39), but with a different bass line: instead of featuring $\hat{5}$–$\hat{1}$ in the bass, this motion is transferred to the voice part in mm. 40–41, while the bass articulates ♭$\hat{2}$–$\hat{1}$. Both progressions feature a passing minorized French sixth whose approach tones resolve to the root of the tonic E minor. Despite its non-characterizing bass line, this progression still conveys a clear dominant-to-tonic resolution that is in fact more conclusive than the previous one with $\hat{5}$–$\hat{1}$ in the bass. The voice part in mm. 38–39 features a $\hat{7}$–$\hat{1}$ motion, but the tonic scale degree here behaves as an échappée within the dominant chord. The melody lands on $\hat{5}$ on the tonic chord in m. 39, which does not provide a strong sense of closure. In contrast, the progression in mm. 40–41 sounds more conclusive because it ends with $\hat{5}$–$\hat{1}$ in the upper voice.

Example 64: Edvard Grieg, Songs op. 67, No. 2, "Veslemöy," mm. 37–42.



Dominant-to-tonic resolutions can also be conveyed by the 7̂–Î resolution in the upper voices when the bass line is non-characterizing. In the slow movement of Atterberg's Piano Concerto (**Example 65**), the tonic triad F♯ minor is prolonged by a minorized augmented sixth, enharmonically equivalent to G min7. The bass line ♭4̂–♭3̂ does not denote any particular functional discharge; using Harrison's model, this motion is either a parallel specific projection of the ST discharge ♭6̂–5̂ (i.e., D to C♯, **Figure 55a**) or a contrary specific projection of the DT discharge 7̂–Î (i.e., E♯ to F♯, **Figure 55b**). Because the leading tone occurs prominently in the horn melody, I analyze the progression as a dominant-to-tonic resolution. The suspension that delays the leading tone in this passage is also characteristic of dominant-to-tonic progressions. While this example is a less clear instance of a DT resolution than the passage from Grieg excerpted above, it nonetheless suggests the same functional analysis.

Example 65: Kurt Atterberg, Piano Concerto op. 37, ii, mm. 56–59.

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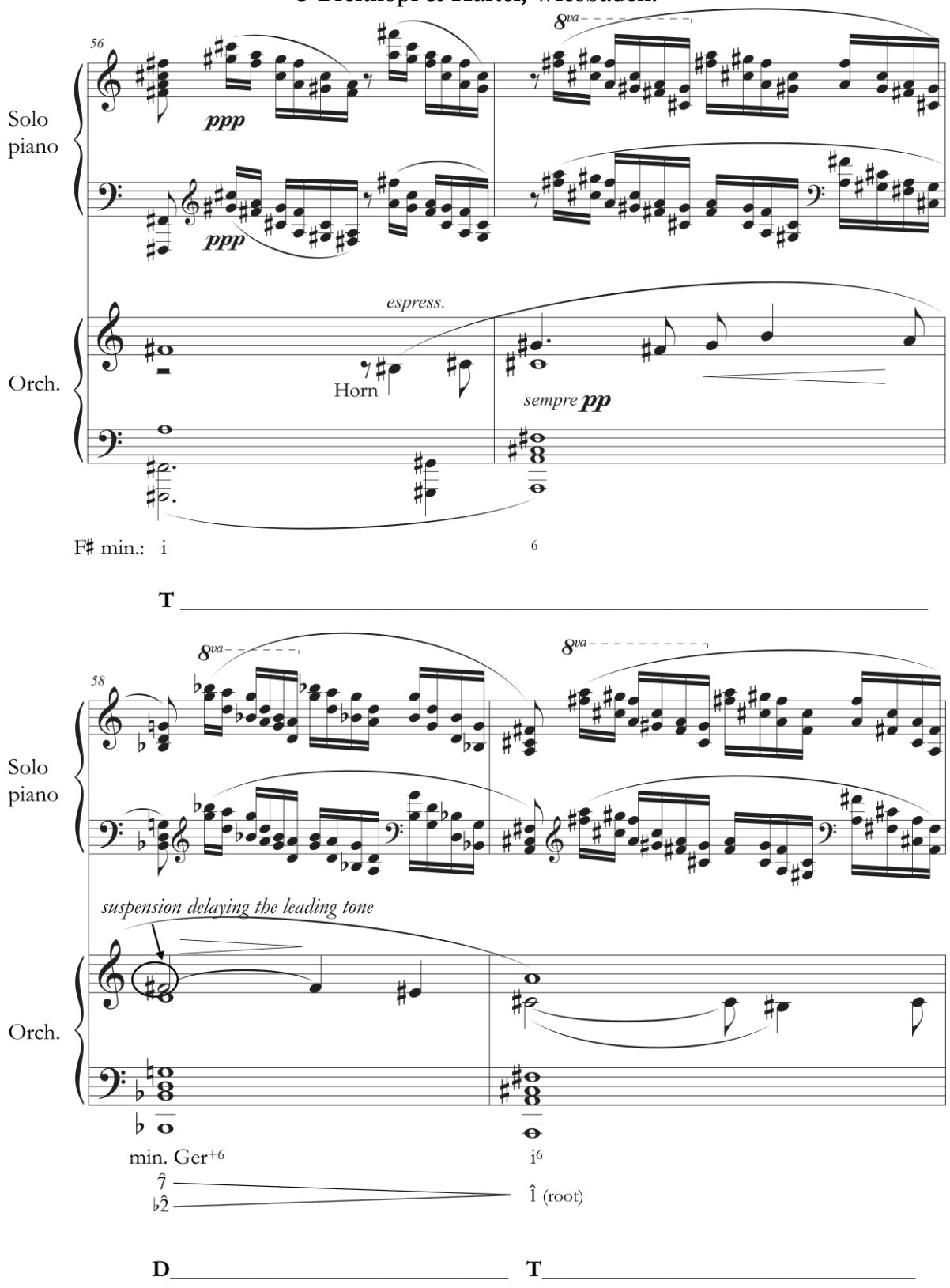
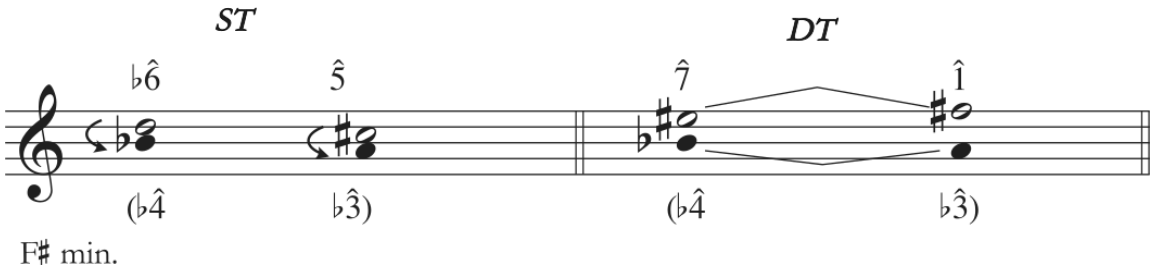


Figure 55: ♭4̂–♭3̂ analyzed as a projection.

a) Parallel projection of the ST discharge ♭6̂–5̂ b) Contrary projection of the DT discharge 7̂–1̂



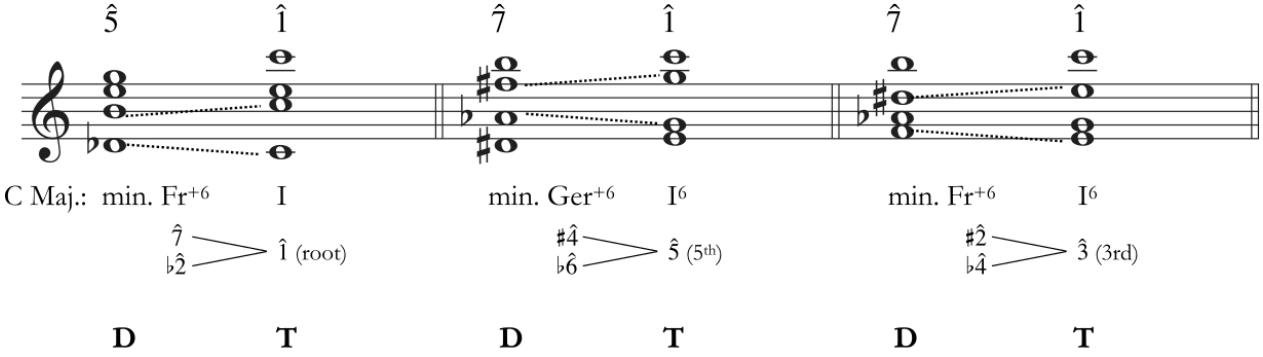
When the target chord after a minorized augmented sixth has tonic function, the augmented-sixth chord will usually be understood as either a dominant, a subdominant, or a mix of these functions. Most examples I have collected that feature a non-characterizing bass line convey a dominant-to-tonic resolution; very few convey a subdominant-to-tonic resolution. Harrison's dualistic perspective on function stipulates that the ♭6̂–5̂ semitone is the plagal counterpart to the 7̂–1̂ semitone characteristic of dominant-to-tonic progressions. In practice, though, the ♭6̂–5̂ motion in itself is often not enough to convey a plagal resolution, since ♭6̂–5̂ also occurs in dominant-to-tonic progressions such as vii°7 resolving to tonic. In this study, I ascribe subdominant function only to chords that do not include any characteristic voice leading of dominant-to-tonic progressions (i.e., 7̂–1̂, 5̂–1̂, or 5̂–[♭]3̂) prominently in the texture, or to chords that feature one of the characteristic leaps of plagal progressions (i.e., 4̂–1̂, [♭]6̂–[♭]3̂, and [♭]6̂–1̂). In other words, subdominant function can result from the lack of dominant elements. These criteria are summarized in **Figure 56** and illustrated in **Figure 57**.

Figure 56: Some criteria for analyzing the function of an augmented-sixth chord resolving to tonic.

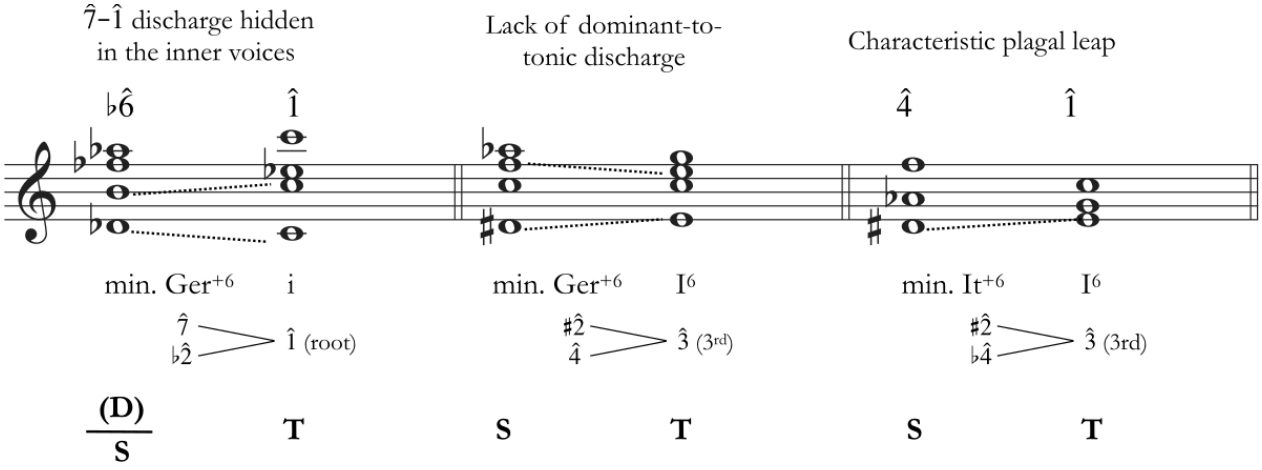
Dominant-to-tonic progressions		Subdominant-to-tonic progressions	
$\hat{7}$–$\hat{1}$ $\hat{5}$–$\hat{1}$ $\hat{5}$–(♭)$\hat{3}$	Any of these discharges featured prominently in the texture	$\hat{7}$–$\hat{1}$ $\hat{5}$–$\hat{1}$ $\hat{5}$–(♭)$\hat{3}$	*None* of these discharges featured prominently in the texture
		AND/OR	
		$\hat{4}$–$\hat{1}$ (♭)$\hat{6}$–(♭)$\hat{3}$ (♭$\hat{6}$)–$\hat{1}$	Any of these leaps featured prominently in the texture

Figure 57: Examples of dominant- vs. subdominant-functioning minorized augmented sixths associated with a non-characterizing bass line.

a) Dominant-functioning minorized augmented sixths, characterized by the $\hat{5}$–$\hat{1}$ or $\hat{7}$–$\hat{1}$ discharge featured prominently in the texture.



b) Subdominant-functioning minorized augmented sixths, characterized by the lack of $\hat{5}$–$\hat{1}$ or $\hat{7}$–$\hat{1}$ discharge featured prominently in the texture, or by characteristic plagal leaps (e.g., $\flat\hat{6}$–$\hat{1}$ and $\hat{4}$–$\hat{1}$).



The "Till Sixth" (**Example 66**), as it appears in mm. 47–48 of the eponymous work, is a famous example of a minorized augmented sixth that occurs on a non-characterizing bass line, which has yielded various functional analyses.[109] The bass line, $\hat{4}$–$\hat{3}$, does not convey a clear functional progression because it can appear in both ST and DT progressions.[110] This passage is also functionally ambiguous because it contains the agent discharges of both functional progressions ($\hat{7}$–$\hat{1}$ and $\flat\hat{6}$–$\hat{5}$). However, none of these discharges appears in a prominent voice of the texture. Harrison (1995) acknowledges the presence of subdominant and dominant elements in the Till sixth, but hears it mostly as a subdominant-functioning harmony:

> Considerable subdominant powers are transmitted by $\flat\hat{6}$ and by the placement of the prominent subdominant element $\hat{4}$ in the bass. Yet the first occurrence of the Till motive (rehearsal 2 + 14) interrupts a powerful V7 of F, which the resolution to F in Example 12 [my **Example 66**] can be heard to satisfy. Thus, dominant function can still be heard to persist in the Till chord—at least in this incarnation-transmitted by E as $\hat{7}$. To my mind at least, the subdominant elements largely subdue E, leading to a plagal interpretation (Harrison 1995, 188).

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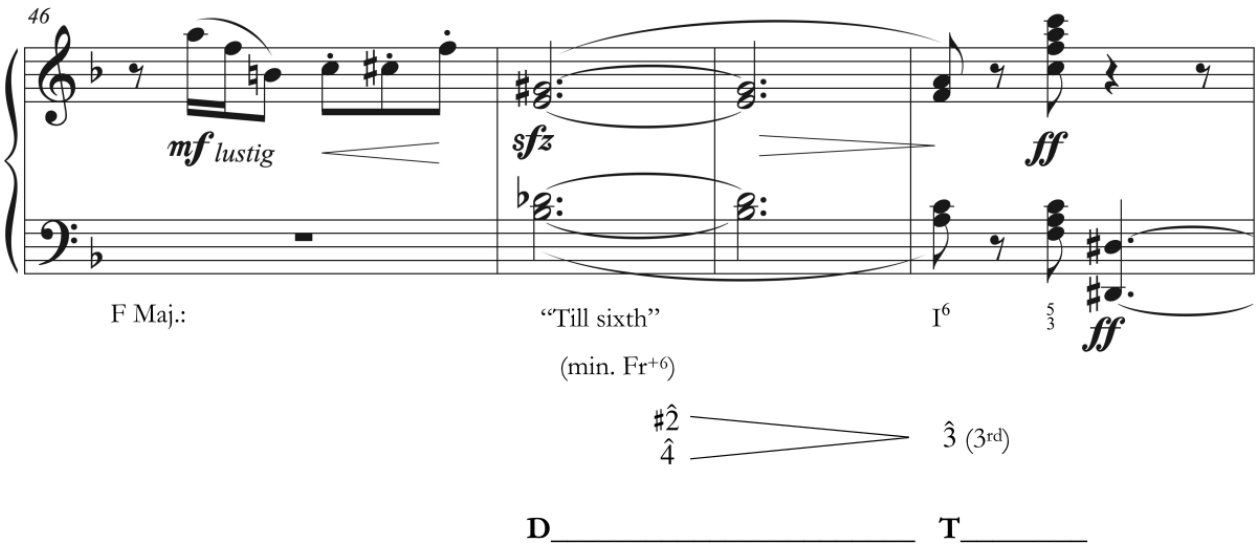
[109] For more detail on previous analyses of the Till sixth, see **Figure 42** (p. 106).

[110] The tonic chord after the Till sixth appears initially in first inversion, then in root position. Swinden, in his analysis of the chord, views it as a $\hat{4}$–$\hat{1}$ motion in the bass instead of $\hat{4}$–$\hat{3}$ (2005, 266; Example 17). The passage he analyzes occurs in the final bars of the piece, where $\hat{1}$ in the bass coincides with the downbeat; the tonic in first inversion can be analyzed in this context as an anticipation of the "real" tonic in the subsequent measure. In contrast, the I6 is emphasized in the passage I analyze in **Example 66** because it occurs on the downbeat; I therefore choose not to leave out the $\hat{3}$ in the bass in my analysis.

My analysis departs from that of Harrison. I view the Till sixth as an altered vii$^{o4}_{3}$ of F and thus ascribe dominant function to it rather than subdominant. Unlike Harrison, I do not hear the $\hat{4}$–$\hat{3}$ and $\flat\hat{6}$–$\hat{5}$ motions as necessarily expressing a ST discharge because these resolutions occur frequently in DT progressions as extensions of the dominant. Moreover, the motion $\#\hat{2}$–$\hat{3}$ that occurs in the upper voice suggests DT, since this voice leading routinely occurs in dominant-to-tonic resolution (e.g., in V$^{7}_{\#5}$–I).[111]

Example 66: Richard Strauss, *Till Eulenspiegel* (piano reduction by Otto Singer), mm. 46–49.

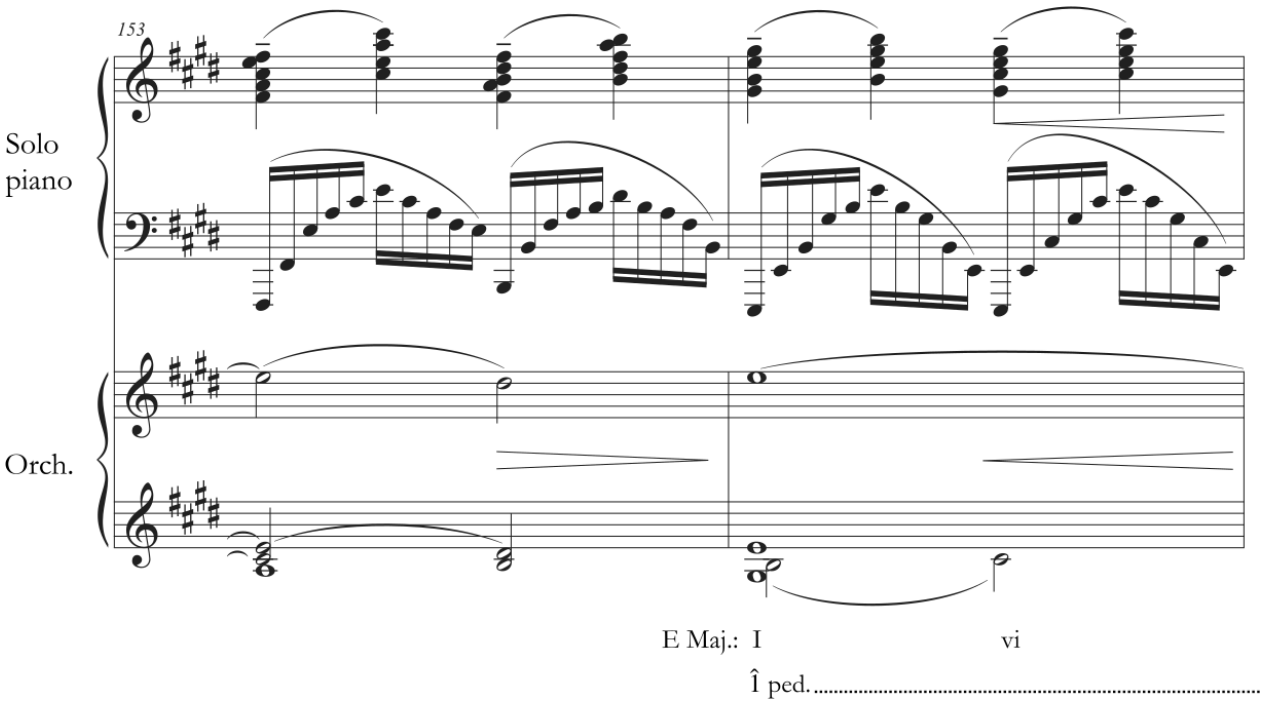


Another important aspect that influences the functional analysis of unconventional chords is the function of the surrounding harmonies. For instance, in the second movement of Rachmaninoff's Piano Concerto No. 2 (**Example 67**), a minorized French sixth resolves to an E-major tonic in mm. 155–56. The progression occurs over a tonic pedal in the bass and therefore lacks a proper bass line. The chord progression features both the authentic $\hat{7}$–$\hat{1}$ resolution and the plagal $\flat\hat{6}$–$\hat{5}$ resolution. While the presence of $\hat{7}$–$\hat{1}$ in the upper voice of the orchestra contributes to making the DT functional discharge more salient than the ST discharge, the V7 of V that occurs right before the minorized French sixth also reinforces this analysis because it suggests that the subsequent chord will have

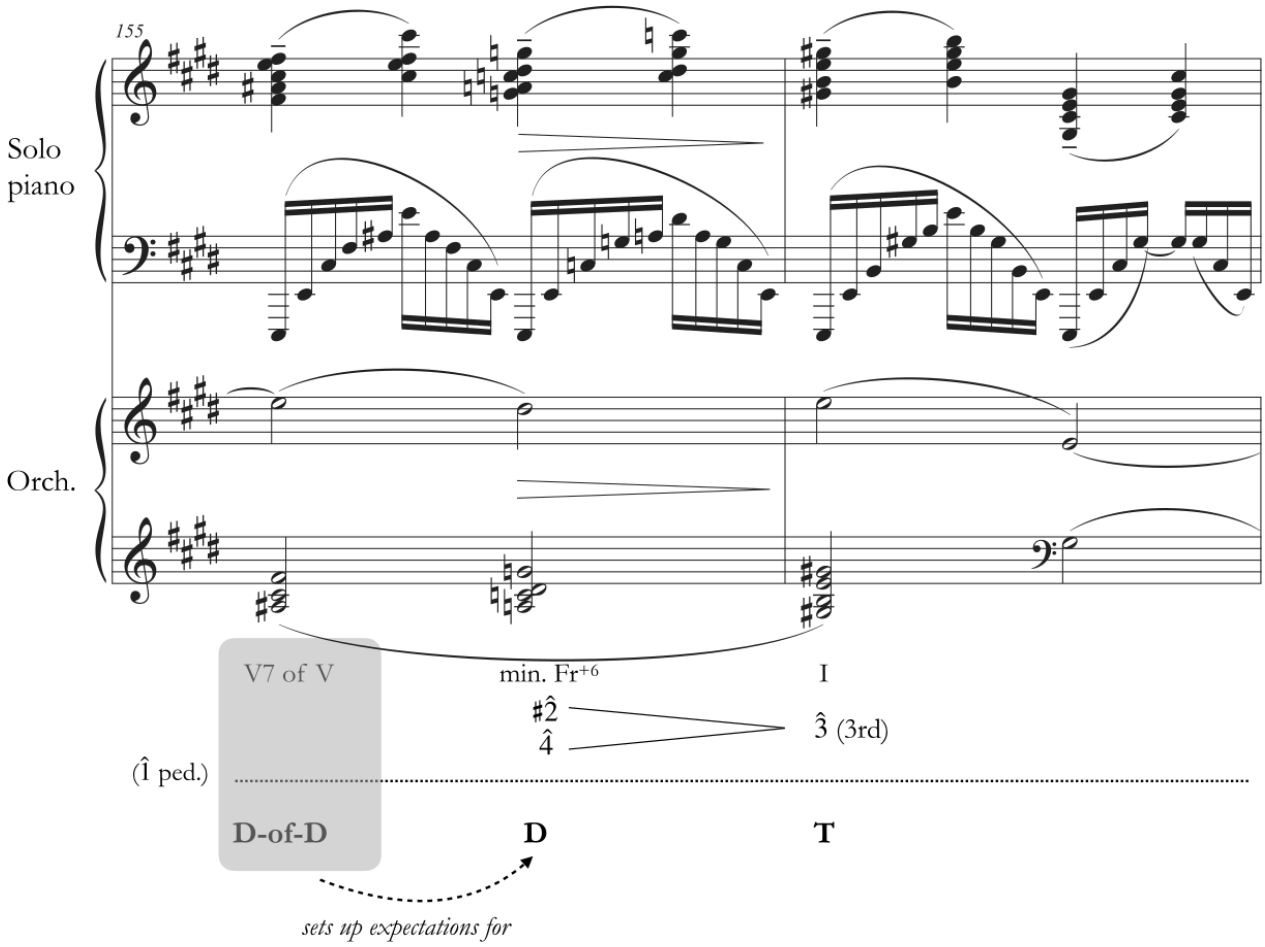
[111] My functional analysis of this passage is the same as Hutchinsons's (2020, 75), who also views the Till sixth as a dominant-functioning harmony. However, we differ on the importance of the augmented-sixth interval: while I argue it is fruitful to emphasize that part of the affect of this chord arises from the fact that it does not correspond to any of the usual types of augmented sixths, Hutchinson understands the augmented-sixth interval as a byproduct of voice leading and rejects analyses that view the chord as a new type of augmented sixth.

dominant function.[112] In other words, the dominant function of the augmented sixth in this excerpt is the result of expectations set by the previous chord.

Example 67: Sergei Rachmaninoff, Piano Concerto No. 2, ii, mm. 153–156.

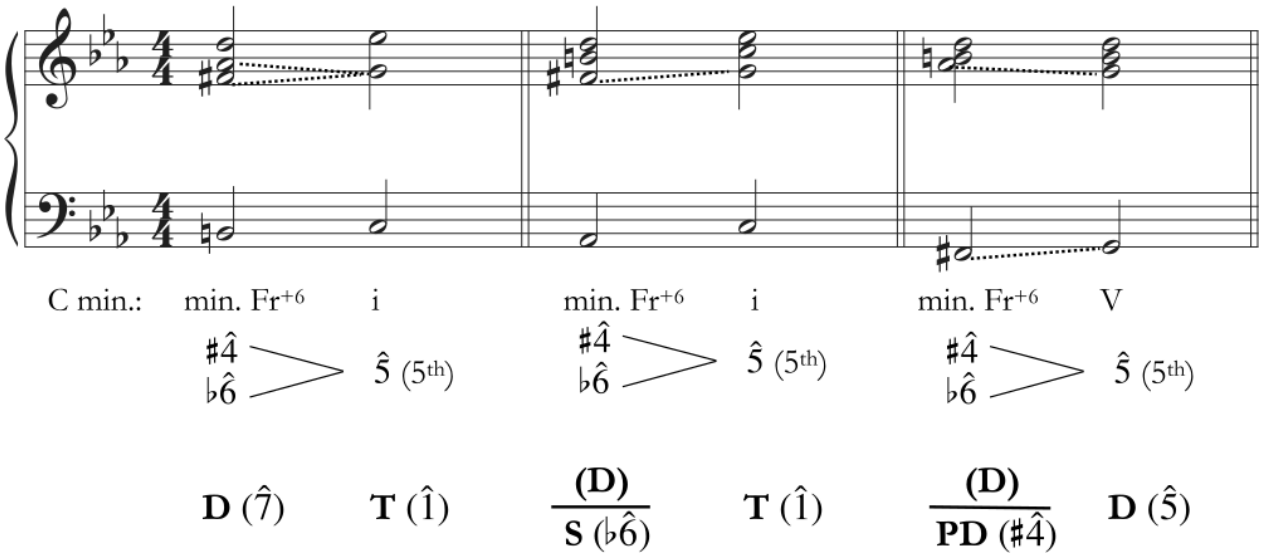


[112] Bass (2001, 44–45) uses this excerpt from Rachmaninoff's Second Piano Concerto to illustrate a usage of a half-diminished seventh chord as an augmented sixth. Bass uses the label "ø+6" for this chord; he does not indicate any Roman-numeral or functional analysis.



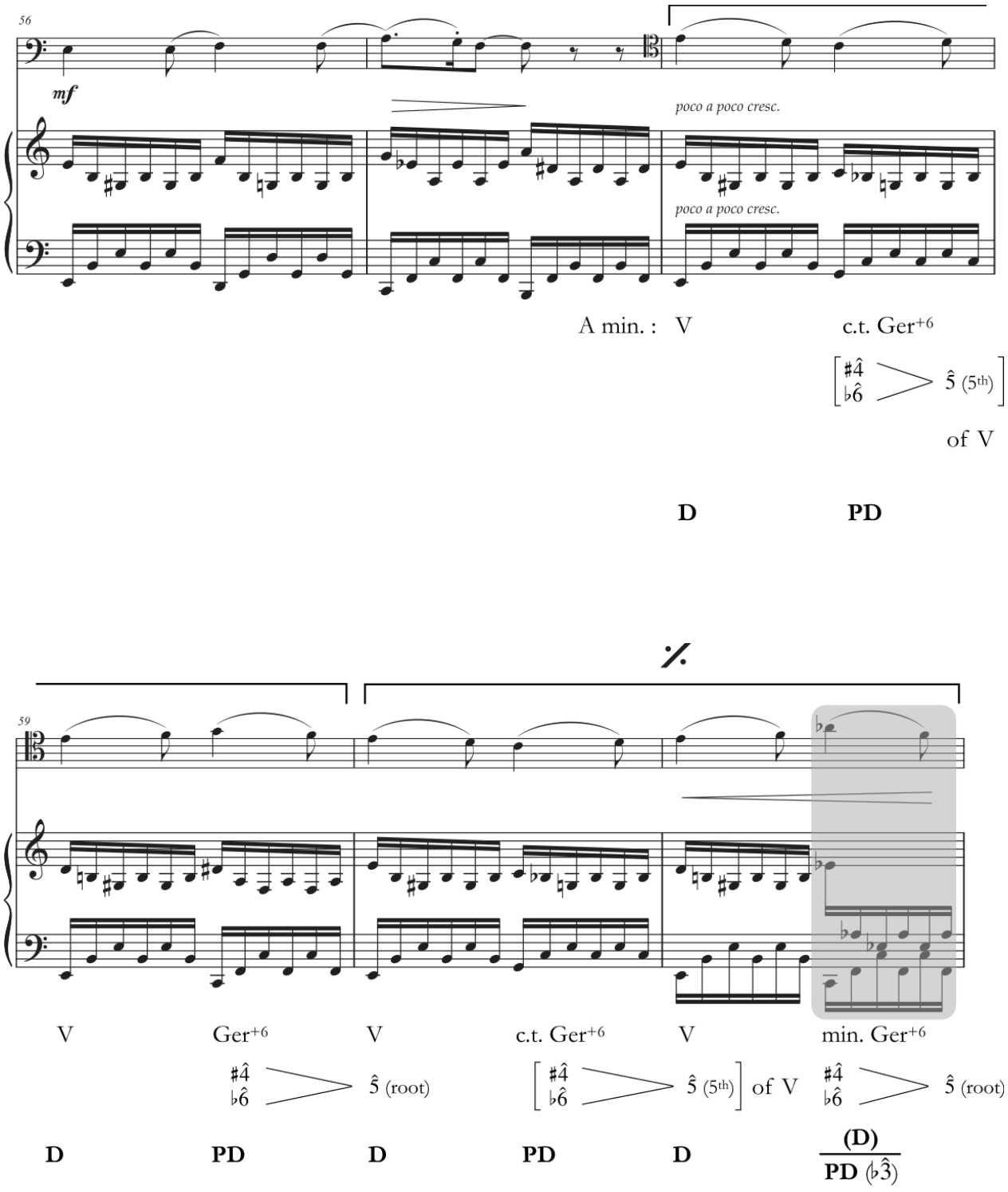
The role of the chord occurring right after an unconventional sonority is also crucial for functional analysis. Harrison's three *functional types* of augmented sixths are built on that premise (1995, 185–189). When the target chord has dominant function, the augmented sixth that leads to it generally has predominant function. This functional label embraces both the chords that arise from the subdominant (e.g., IV and ii) and the ones that are applied dominants of the dominant (e.g., V7/V, and vii°7/V). Conventional augmented sixths are sometimes explained as either subdominant chords or dominant-of-the-dominant chords, though it is more customary today to view them simply as belonging to the broader predominant category. As discussed in previous sections of this chapter, minorized augmented sixths resolving to $\hat{5}$ add a layer of complexity because they also include the leading tone, the characteristic element of dominant function. Thus, they can occur in dominant-to-tonic and subdominant-to-tonic, as well as predominant-to-dominant progressions (**Figure 58**).

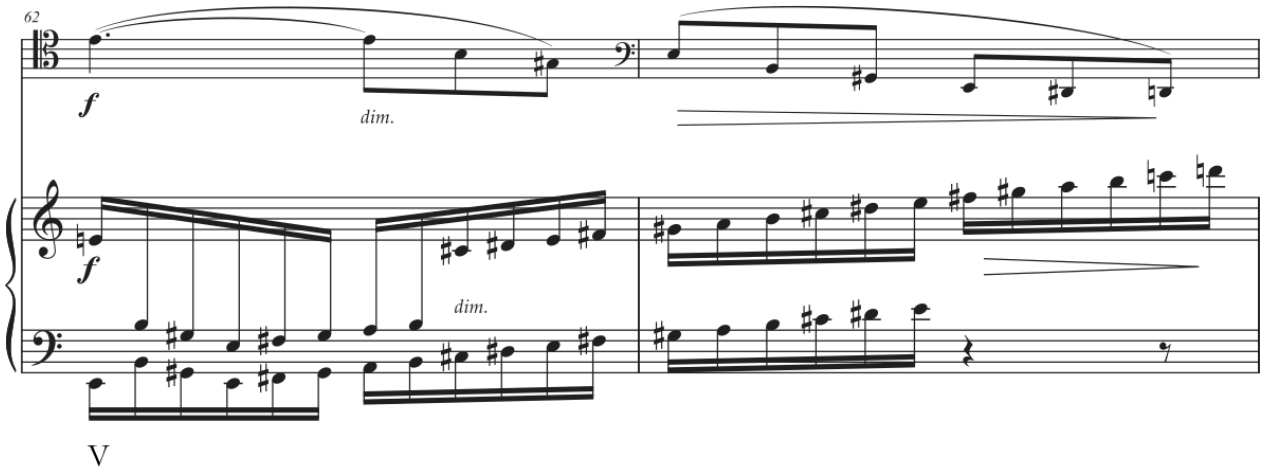
Figure 58: Various functions of minorized augmented sixths resolving to $\hat{5}$.



When the bass line of a minorized augmented sixth resolving to $\hat{5}$ is non-characterizing, the function of the surrounding chords becomes even more important for the functional analysis. For instance, in Boëllmann's Cello Sonata in A minor analyzed in Chapter 2 (p. 41) and reproduced below (**Example 68**), the standing on the dominant that concludes the transition features various augmented sixths prolonging the dominant. In m. 61, a minorized German sixth equivalent to Fm7 resolves to the dominant E with the motion $\flat\hat{3}$–$\hat{5}$ (C–E) in the bass: the minorized sixth, because it includes the leading tone G♯ (spelled A♭ in the score), can in theory convey dominant function. However, because this passage is a varied repetition of mm. 58–59, where an inverted German sixth resolves to E, I analyze both passages similarly, with PD going to D. I have nevertheless indicated the presence of dominant elements in m. 61, even though predominant function prevails.

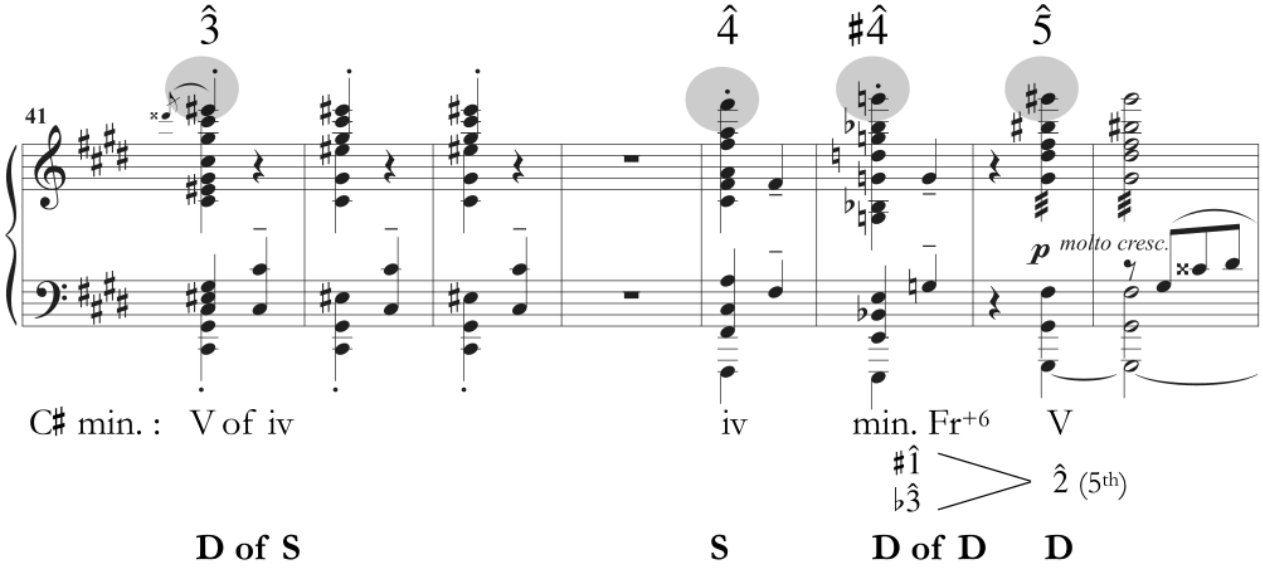
Example 68: Léon Boëllmann, Sonata for Cello and Piano in A minor, i, mm. 56–63.





Rangström's Symphony No. 1 (**Example 69**) features a passage similar to the one from Boëllmann's Cello Sonata, in that a minorized augmented sixth associated with a non-characterizing bass line resolves to the dominant. The main theme of this symphony ends with a PAC in the home key of C♯ minor in m. 51. The chromatic ascent in the soprano in mm. 41–47, $\hat{3}$–$\hat{4}$–$\hat{\sharp 4}$–$\hat{5}$, suggests V of iv–iv–V of V–V (**Figure 59**), but the expected V of V in m. 46 is replaced by a minorized French sixth whose approach tones suggest a resolution to the fifth of the dominant (i.e., E and C𝄪 resolve to D♯). The $\hat{\flat 3}$–$\hat{5}$ leap in the bass substitutes for the expected $\hat{2}$–$\hat{5}$. Because this minorized augmented sixth occurs in a sequence-like passage with applied dominants, I analyze it as a dominant of the dominant.

Example 69: Ture Rangström, Symphony No. 1, i, mm. 41–54.



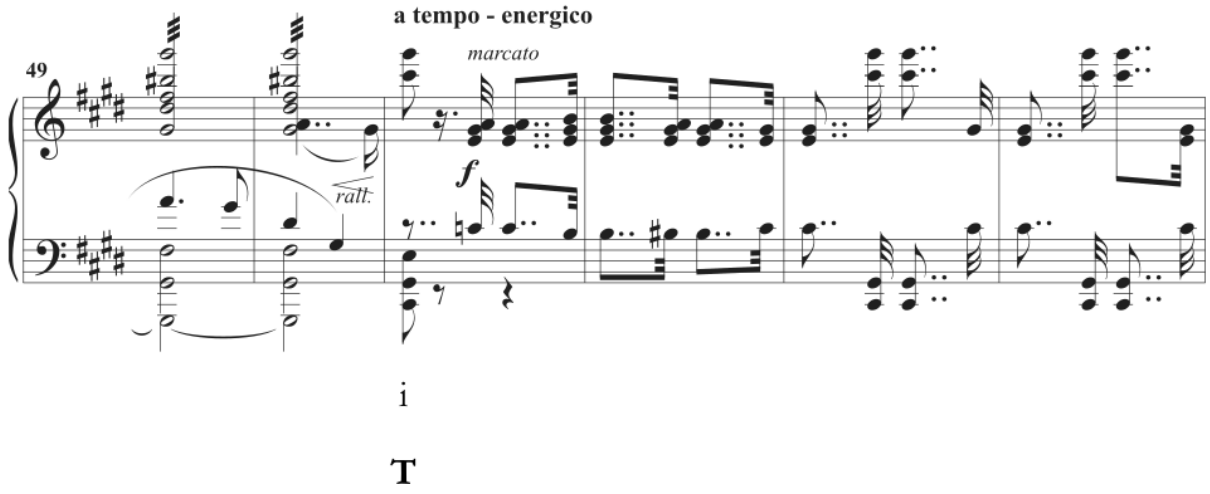
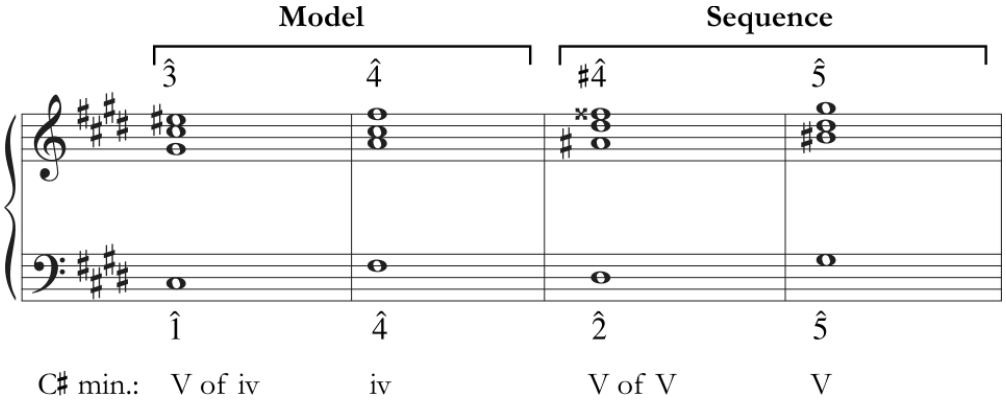
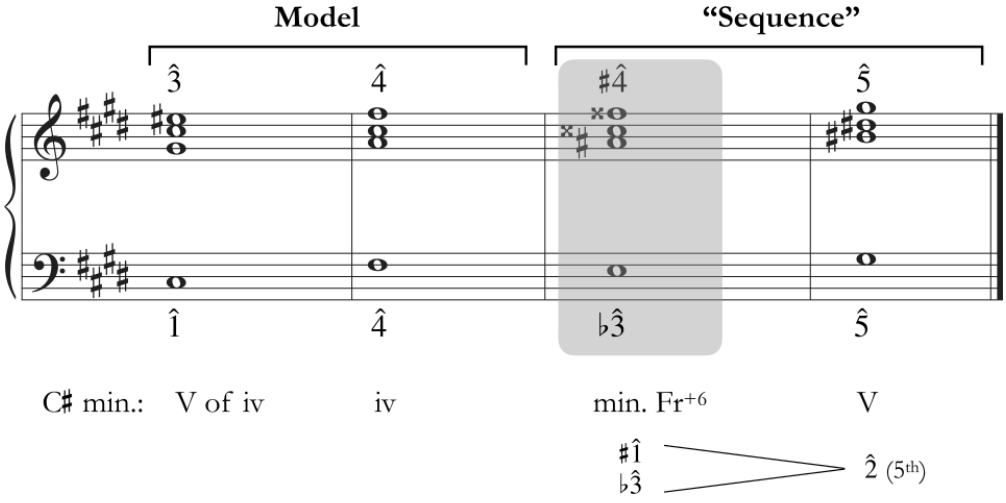


Figure 59: Reduction of Rangström, Symphony No. 1, i, mm. 41–54.

a) Standard harmonization of ~~3̂–4̂–♯4̂–5̂~~ with applied dominants.



b) Rangström's harmonization of ~~3̂–4̂–♯4̂–5̂~~.

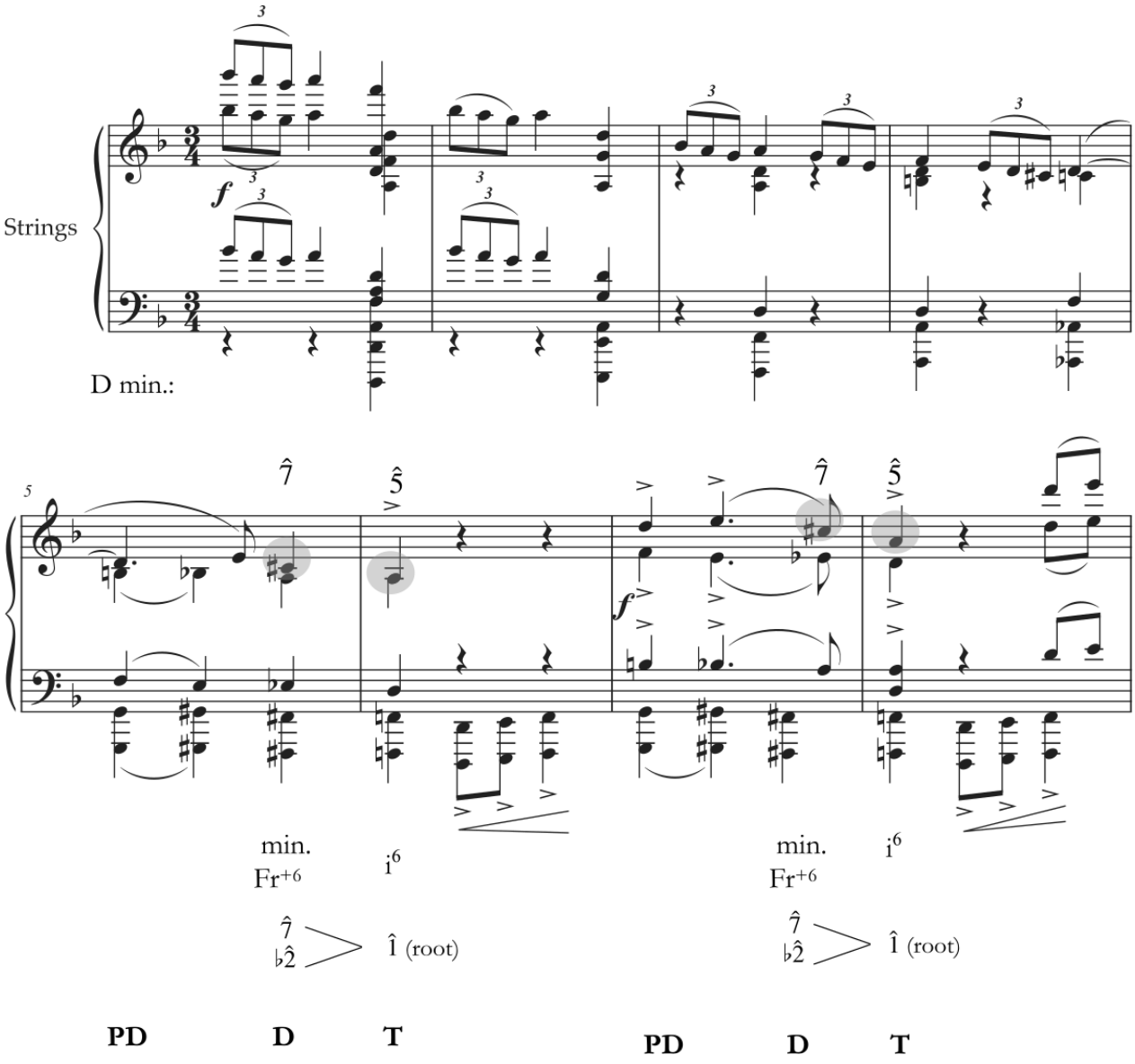


One other aspect to take into consideration when analyzing the function of minorized augmented sixths is the formal context in which they occur. For instance, minorized augmented sixths sometimes appear at the junction between two large sections. More specifically, in these circumstances, minorized augmented sixths prepare the return of tonic harmony. Since this role is usually fulfilled by a dominant chord in common-practice works, minorized augmented sixths used in this context are likely to be perceived as dominant-functioning harmonies. This phenomenon can be observed in the first movement of Myaskovsky's Violin Concerto in D minor (**Example 70**). The orchestral introduction is tonally unstable, in that it features very few standard tonal progressions. Minorized French sixths resolving to the root of the tonic are introduced as dominant-functioning chords in mm. 5 and 7: they both feature the leading tone in the soprano and occur between predominant chords and the tonic chord. Other elements, however, obscure the function of the minorized augmented sixths: the leading tone does not resolve to $\hat{1}$ but goes instead to $\hat{5}$, and the bass moves from F♯ to F♮ (enharmonically $\flat\hat{4}$–$\flat\hat{3}$ in D minor), which does not correspond to any typical functional discharge. The end of the introduction features the same minorized French sixth chord in mm. 21–26, but with $\flat\hat{2}$–$\hat{1}$ instead of $\flat\hat{4}$–$\flat\hat{3}$ in the bass. Despite its non-characterizing $\flat\hat{2}$–$\hat{1}$ bass line, this minorized French sixth conveys dominant function more clearly then the ones in mm. 5 and 7 because of the formal context in which it occurs and the characteristic scale degrees it features. Indeed, the resolution to tonic coincides with the beginning of the main theme played by the violin and marks the return of stable tonic harmony. This minorized French sixth therefore fulfills a function similar to that of the dominant that typically occurs at the end of introductions to sonata-form movements.[113] Moreover, the leading tone C♯ is heard in the top layer of the orchestra during this extended minorized French and is resolved to the tonic D by the solo violin. This $\hat{7}$–$\hat{1}$ resolution, albeit not occurring in the same layer of the texture, is suggestive of a dominant-to-tonic functional discharge.

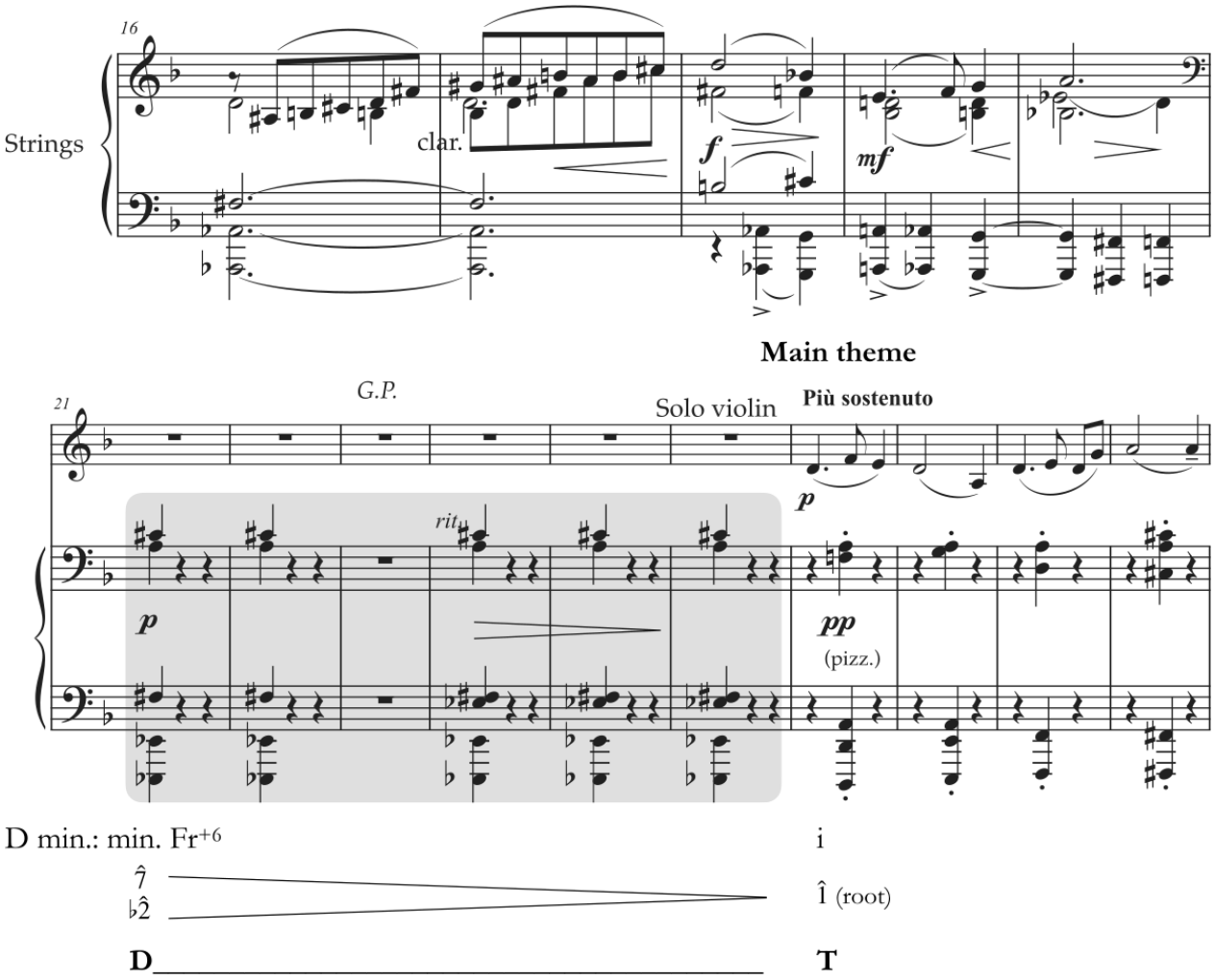
[113] Caplin observes that while most introductions to sonata-form movements end with the dominant of the home key, some end instead with a perfect authentic cadence in the home key (2013, 552).

Example 70: Nikolai Myaskovsky, Violin Concerto op. 44, i.

a) mm. 1–8.



b) mm. 16–30.


16
Strings
clar.
f
mf
Main theme
21
G.P.
Solo violin
Più sostenuto
p
rit.
p
pp
(pizz.)
D min.: min. Fr+6
i
7̂
♭2̂
1̂ (root)
D
T

CHAPTER 4 – MINORIZED AUGMENTED SIXTHS IN TONALLY UNSTABLE CONTEXTS

The previous chapter studied how minorized augmented sixths can be functional chords in stable tonal contexts, where they function as dominants, subdominants, predominants, or a combination of those functions. But these chords are also found in tonally unstable passages. I first discuss in this chapter instances of minorized augmented sixths used as enharmonic pivots in modulations. I then analyze examples of chromatic wedge progressions that include those chords.

Enharmonic modulations

Minorized augmented sixths have the potential to be enharmonically reinterpreted for modulations, a possibility that allowed composers to expand the set of chords beyond those that were traditionally used for this purpose. While enharmonic pivots involving reinterpreted diminished sevenths or dominant seventh and German-sixth chords are the most familiar from the common-practice repertoire, minor seventh and half-diminished seventh chords, reinterpretable as minorized augmented sixths, became frequent candidates for enharmonic reinterpretation in late-tonal styles. For instance, in the first movement of Myaskovsky's String Quartet No. 13 (**Example 71**), the Dm7 chord in mm. 7–9 is heard at first as a subdominant-functioning harmony in the home key of A minor. The chord is arpeggiated in the bass over those three bars, while the upper voices are entirely diatonic to A minor. In common-practice repertoires, this iv7 chord would have typically been followed by a VII7 in a descending circle-of-fifth progression (**Figure 60a**), or it would have moved directly to a dominant chord (**Figure 60b**). In fact, the upper voices in m. 11 move to E and G♯, two members of the dominant harmony in A minor, but the viola and cello move to C♯, thus forming a C♯-minor triad with the violins. From the perspective of received "common practice," this modulation within the main theme area is unexpected: not only is it a remote tonal region, but the modulation occurs through an enharmonic reinterpretation of a minor seventh chord, a device seldom used in the common practice, but that became relatively frequent in Myaskovsky's music and in the music of other late-Romantic composers. In this example, the Dm7 subdominant chord becomes a minorized German sixth built on ♭$\hat{2}$ in the new key of C♯ minor (**Figure 61**). The major second C–D, reinterpreted as a diminished

third (B♯–D), resolves by contrary semitonal motion to the root of C♯ minor, the new tonic. This modulation coincides with the return of the opening of the main theme transposed into C♯ minor.

Example 71: Nikolai Myaskovsky, String Quartet No. 13, i, mm. 1–11.

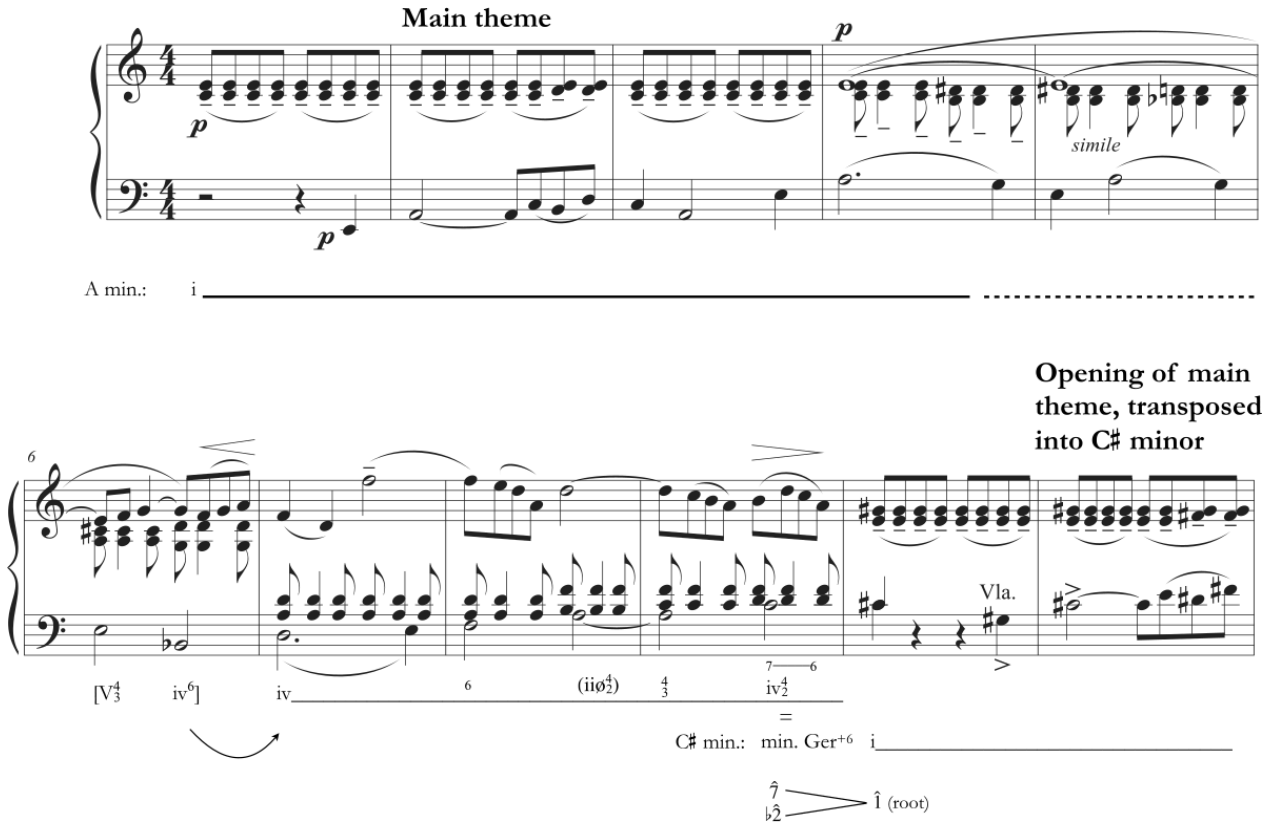
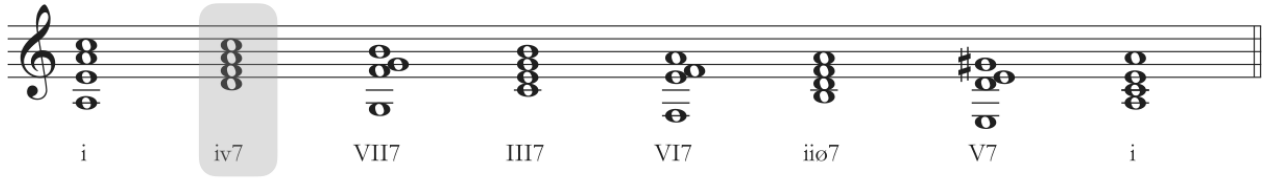


Figure 60: Conventional resolutions of iv7.

a) In a descending circle-of-fifth progression with seventh chords.



b) As a predominant harmony leading to V.

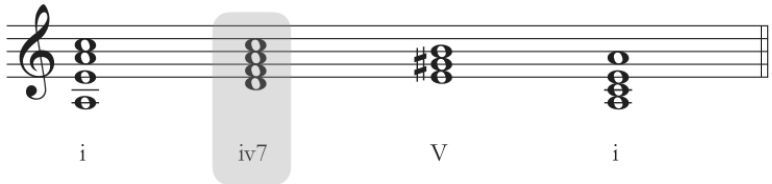
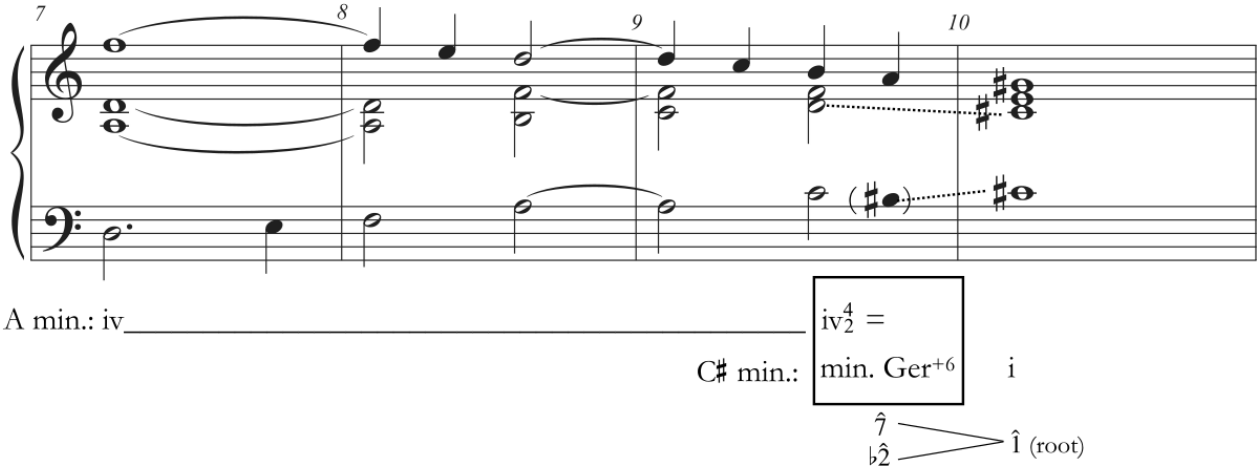


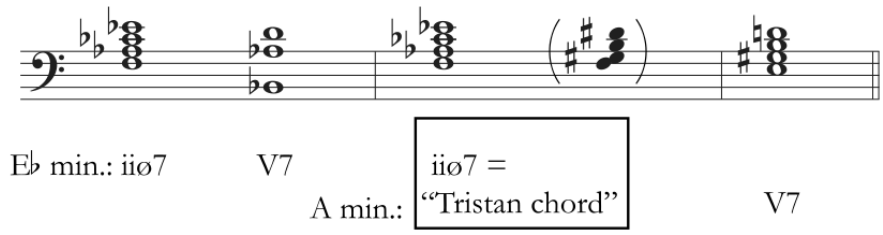
Figure 61: Reduction of Myaskovsky, String Quartet No. 13, i, mm. 7–10.



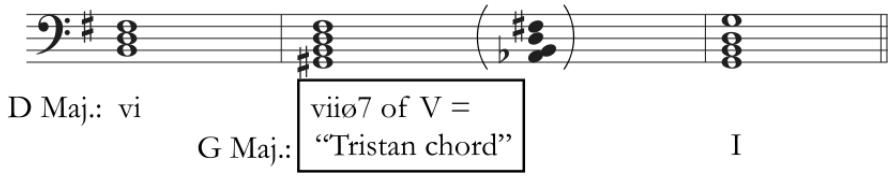
A few instances of enharmonic modulations involving minorized augmented sixths have been discussed in the recent music theoretical literature. Nathan Martin's (2008) article on the "Tristan" chord includes examples of half-diminished seventh chords reinterpreted as augmented sixths. He discusses a passage from the *Tristan* prelude where the half-diminished sonority F–A♭–C♭–E♭ functions at first as iiø7 in the key of E♭; the minor seventh F–E♭ is then reinterpreted as the augmented sixth F–D♯ resolving to E, the root of the dominant chord in A (**Figure 62a**). Martin also uncovered an enharmonic modulation with a half-diminished seventh chord in Beethoven's *Missa solemnis* (**Figure 62b**), where G♯ø7, functioning as viiø7 of V in D major, unexpectedly resolves to the new tonic G major. In this example, the root and seventh of G♯ø7, G♯ and F♯, expand to G♮ in contrary semitonal motion, thus using the voice leading that characterizes the resolution of augmented-sixth intervals.

Figure 62: Examples of modulations using half-diminished seventh chords enharmonically reinterpreted as augmented sixths in Martin (2008).

a) Reduction of Martin's Example 2 (2008, 8) taken from Wagner's *Tristan* (Prelude, mm. 82–84).



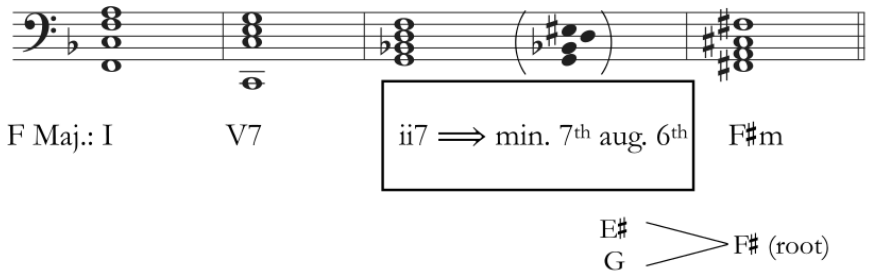
b) Reduction of Martin's Example 11 (2008, 19–20) taken from Beethoven's *Missa solemnis*.



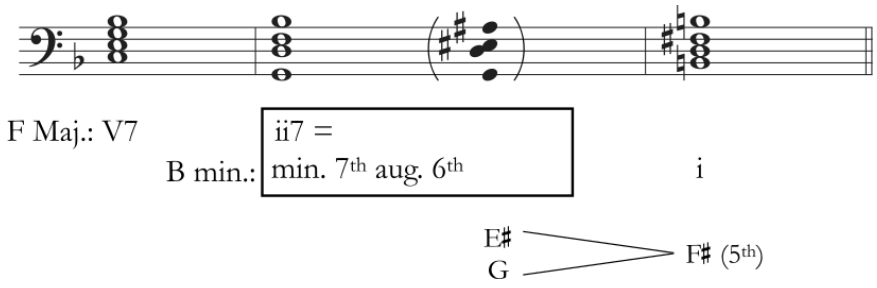
More recently, Konrad Harley's (2014) dissertation on Prokofiev's music brought attention to the composer's use of minor seventh chords resolving as augmented sixths. Harley analyzes passages from the third movement of the Violin Sonata op. 94bis (**Figure 63a**), where Gm7, initially understood as ii7 in F major, resolves as an augmented sixth to an F♯-minor triad (mm. 7–9) in the first phrase; the same chord later resolves to B minor (mm. 41–43, see **Figure 63b**). Harley shows that these modulations exemplify two of the six possible resolutions of this chord as an augmented sixth to consonant major and minor triads: in the first progression, the approach tones move to the root of the target chord, while in the second progression, they move to the fifth. The first enharmonic reinterpretation of Gm7 in mm. 7–9 does not, however, constitute a genuine modulation; rather, the F♯-minor triad is emphasized through this gesture, but the phrase ends in C major in mm. 16–17. In contrast, the move to B minor is a brief modulation to that key.

Figure 63: Examples of modulations using minor seventh chords enharmonically reinterpreted as augmented sixths in Harley (2014).

a) Reduction of Harley's Example 2.11 (2014, 37) taken from Prokofiev's Violin Sonata op. 94bis, mm. 1–9.



b) Reduction of Harley's Example 2.14 (2014, 41) taken from Prokofiev's Violin Sonata op. 94bis, mm. 39–43.



The recent literature on enharmonic reinterpretations of half-diminished seventh and minor-seventh chords, however, does not include any systematic account of the various enharmonic pivots that are possible with these chords. The most thorough discussion of enharmonic modulations with minor seventh and half-diminished seventh chords I am aware of dates back to Bernhard Ziehn's *Manual of Harmony* (1907). In it, he describes modulations using the standard seventh chords of the major-minor system that have a minor-seventh interval; this interval resolves by contrary semitonal motion to a chord factor of the tonic harmony[114] (**Figure 64**). In major, those chords are ii7, iii7, V7, vi7, and viiø7; in minor, Ziehn discusses modulations with iiø7, iv7, and V7. Ziehn does not describe these modulations as involving augmented-sixth chords, but rather as "enharmonic connections in which all parts move by half-tones" (1907, 86). Therefore, he probably did not conceive of them as genuine pivot chords that have a double function, but rather as chords connecting two keys through smooth voice leading. For the purpose of this discussion, however, I have added in **Figure 64** information about the types of augmented sixth involved as well as the chord factors to which the augmented-sixth/diminished-third intervals resolve.[115]

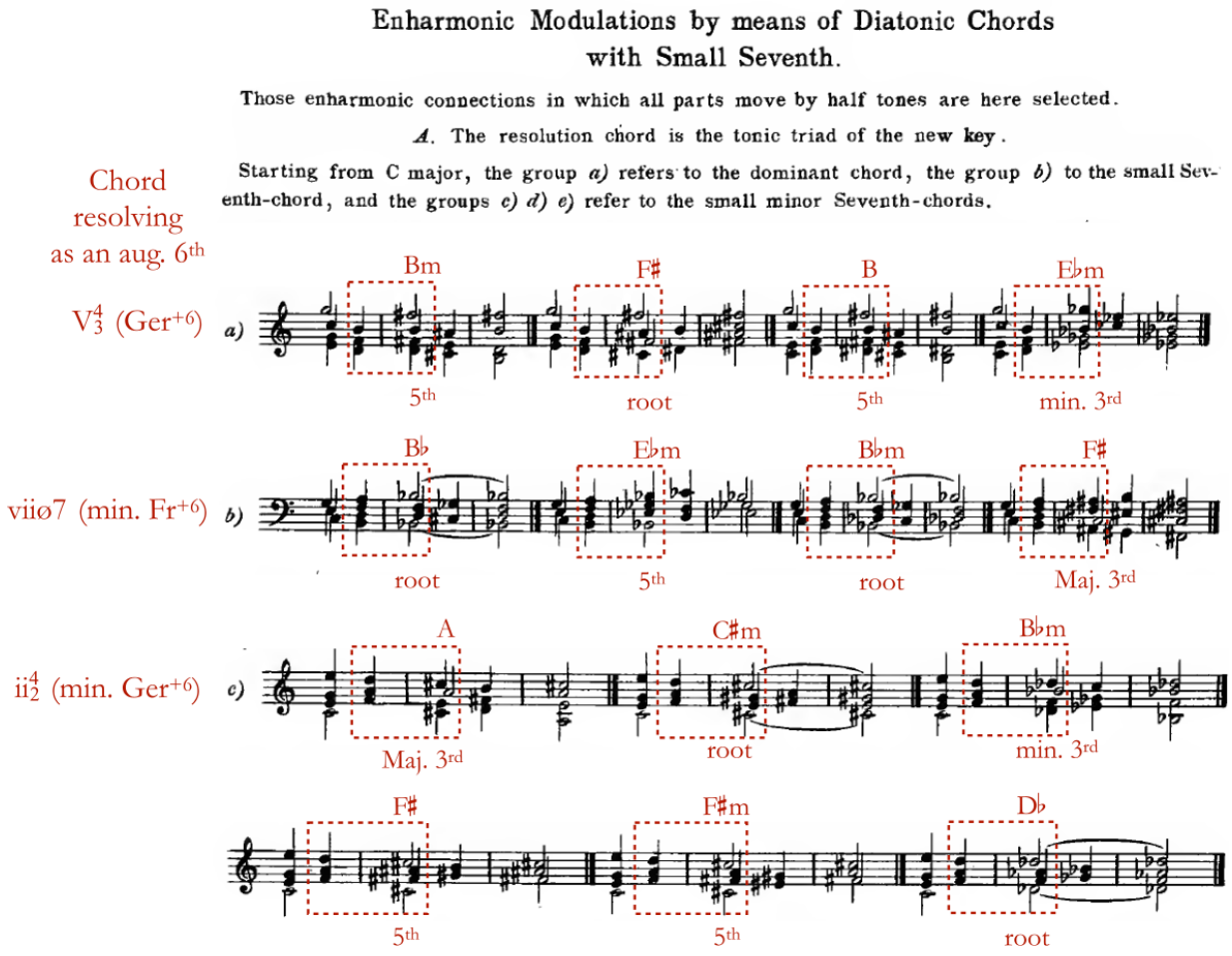
[114] In Ziehn's examples, the enharmonic resolutions of dominant seventh, minor seventh, and half-diminished seventh chords sometimes lead to what modern theorists recognize as a cadential six-four delaying the true dominant chord (see, for instance, the fifth progression in **Figure 64A–c**). For Ziehn, however, these progressions exemplifies enharmonic resolutions to tonic chords.

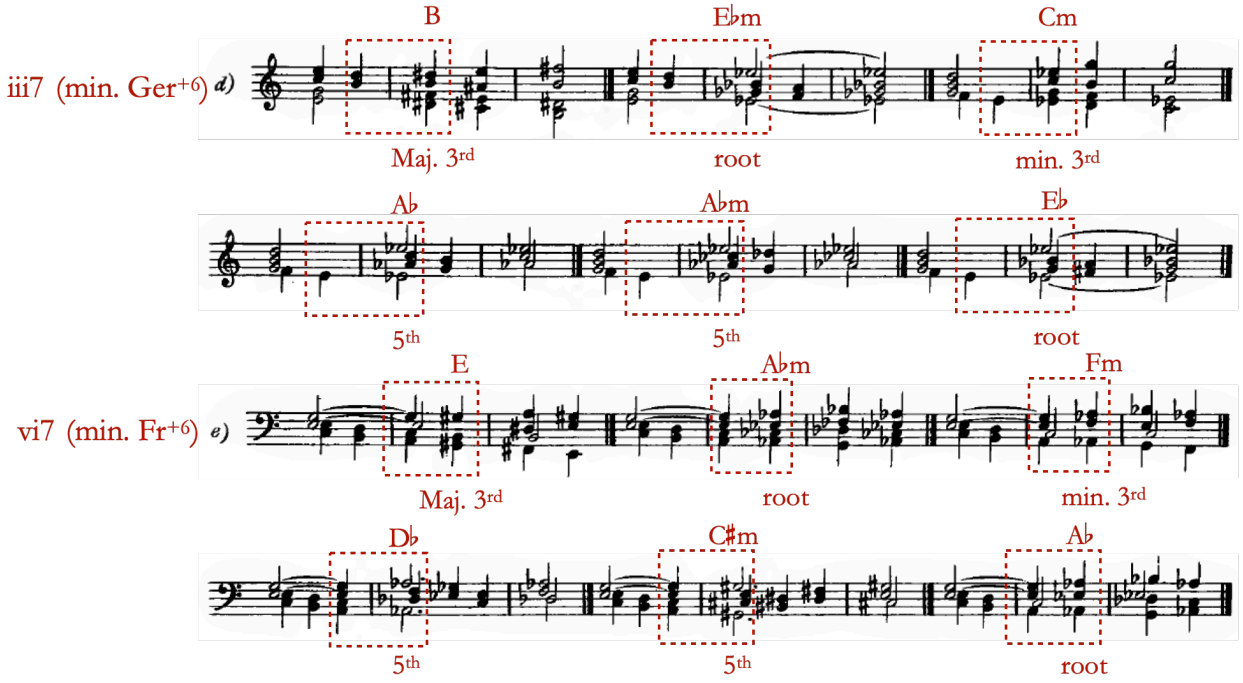
[115] **Figure 64** shows only resolutions to tonic chords, but Ziehn also developed a similar figure that illustrates resolutions to non-tonic chords (1907, 86).

Figure 64: Ziehn's enharmonic modulations leading directly to a tonic harmony (1907, 86).

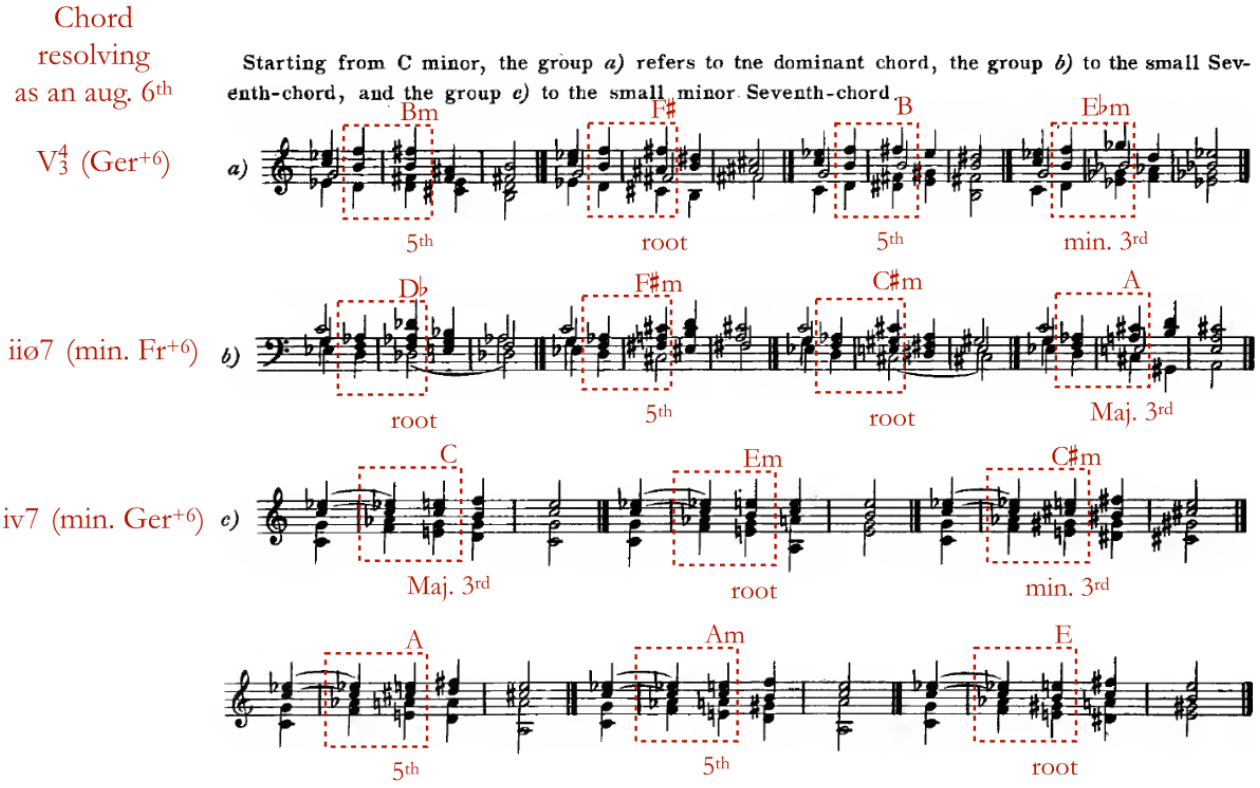
(Annotations in red, showing qualities of augmented sixths and the target chord factor, are not original to Ziehn's figures.)

A) In major.




iii7 (min. Ger+6)
d)
B
E♭m
Cm
Maj. 3rd
root
min. 3rd
A♭
A♭m
E♭
5th
5th
root
vi7 (min. Fr+6)
e)
E
A♭m
Fm
Maj. 3rd
root
min. 3rd
D♭
C♯m
A♭
5th
5th
root

B) In minor.


Chord resolving as an aug. 6th
Starting from C minor, the group a) refers to tne dominant chord, the group b) to the small Seventh-chord, and the group c) to the small minor Seventh-chord.
V43 (Ger+6)
a)
Bm
F♯
B
E♭m
5th
root
5th
min. 3rd
iiø7 (min. Fr+6)
b)
D♭
F♯m
C♯m
A
root
5th
root
Maj. 3rd
iv7 (min. Ger+6)
c)
C
Em
C♯m
Maj. 3rd
root
min. 3rd
A
Am
E
5th
5th
root

Harmonic treatises from the nineteenth century typically discuss the familiar enharmonic equivalence of the dominant seventh chord with the German augmented sixth,[116] whose augmented-sixth interval leads to the root of the dominant harmony of the new key, but they rarely illustrate other ways enharmonic modulations can occur through the enharmonic equivalence of the minor-seventh and augmented-sixth intervals.[117] In contrast, Ziehn's *Manual of Harmony* includes a wider variety of enharmonic modulations than his predecessors, which is due to his systematic approach to harmony in general. Even his discussion of the enharmonic equivalence of V7 with the German sixth is more comprehensive than previous treatises, in that he includes resolutions of the augmented-sixth chord to harmonies other than the dominant of the new key. Indeed, **Figure 64A-a** shows various enharmonic resolutions of a V7 in C major that is reinterpreted as a German sixth resolving to a new tonic harmony; Ziehn also illustrates that the German sixth can resolve to chords such as iv and ♭VI of the next key.[118] Moreover, Ziehn's progressions are innovative in that he illustrates resolutions of the augmented-sixth interval to chord factors other than the root (i.e., the major or minor third, or the fifth). Lastly, he uses all the available chords in major and minor that contain a minor-seventh interval, and therefore includes not only dominant sevenths, but also half-diminished seventh and minor-seventh chords as sonorities that can be enharmonically reinterpreted.[119]

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[116] See, for instance, Calcott (1806, 250); Fétis ([1844] 1849, 180–181).

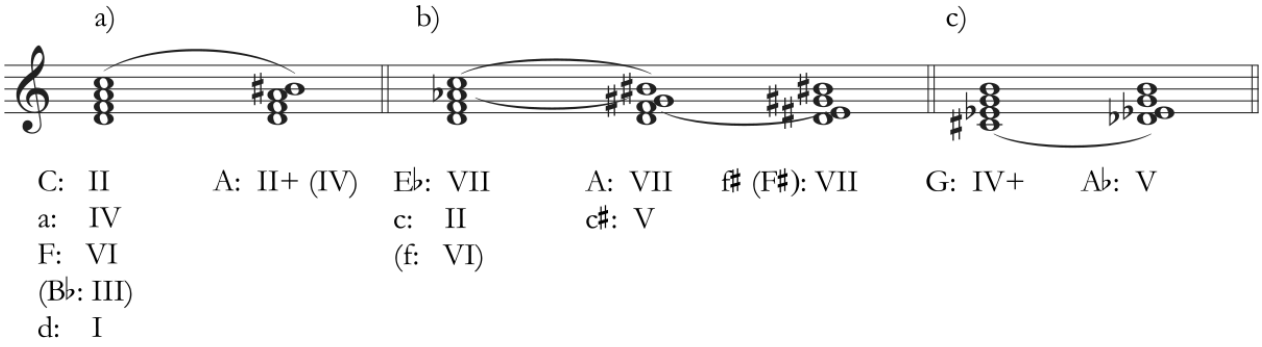
[117] One exception is Fétis's treatise, which does feature less standard modulations with augmented-sixth chords; some of those modulations are discussed in Chapter 5 of this dissertation.

[118] These progressions are not shown in **Figure 64**. See instead Ziehn (1907, 86).

[119] Even though Ziehn's approach is systematic, he does not include all the possible ways dominant seventh and half-diminished seventh can be enharmonically reinterpreted and resolve as augmented sixths. In his examples of the enharmonic resolutions of V7, Ziehn systematically leaves out the resolutions of the augmented sixth to the root of a minor triad and to the major third (**Figure 64A–a** and **B–a**). In the enharmonic resolutions of half-diminished seventh chords (**Figure 64A–b** and **B–b**), he also leaves out two resolutions: the one to the minor third and the one to the fifth of a major triad. This is perhaps because a smooth resolution of these chords would have necessarily featured a whole-tone motion in one part, indicated by an arrow in the figure below. In contrast, Ziehn's examples of enharmonic reinterpretations of

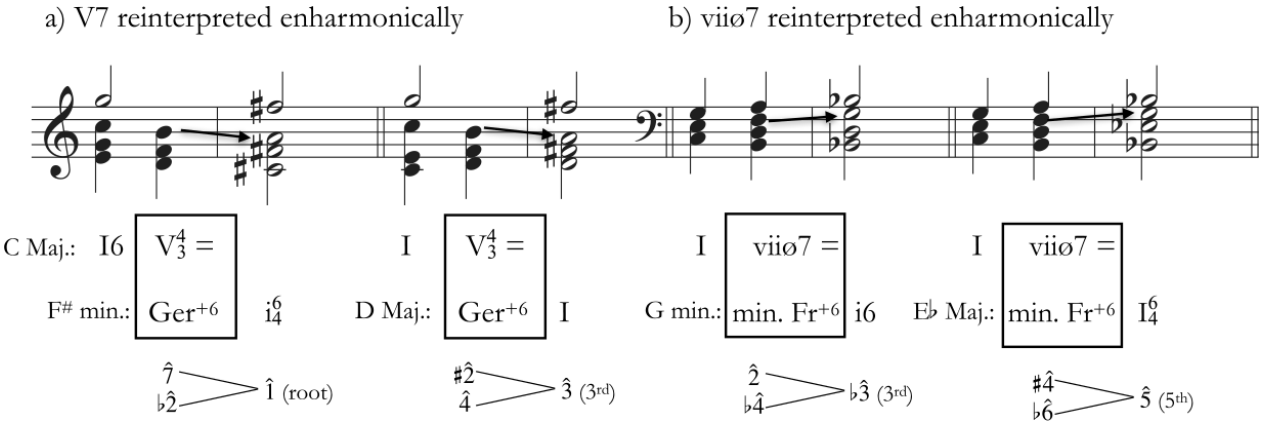
Other historical theorists have discussed modulations involving the enharmonic reinterpretation of half-diminished seventh and minor-seventh chords. For instance, Louis and Thuille's harmonic treatise,[120] whose first edition was published in 1907, coincidentally the same year as Ziehn's *Manual of Harmony*, includes a figure that illustrates how the chords Dm7, Dø7, and E♭7♯5, can be used as pivots between different keys (**Figure 65**). Contrary to Ziehn, they recognize enharmonic modulations with half-diminished seventh and minor-seventh chords not just as a way to connect two keys by using smooth voice leading, but rather, they view these chords as genuine pivots that have a function in both keys. Hence, they do not require that all individual parts move smoothly.

Figure 65: Louis and Thuille's Figure 336 (see Schwartz's [1982] translation, 396).



Louis and Thuille's figure shows that half-diminished seventh and minor-seventh chords can be reinterpreted as what I call here minorized augmented sixths. In their Figure 336a (**Figure 65**), they show the five keys where Dm7 appears diatonically—i.e., C major, A minor, F major, B♭ major, and

minor seventh chords feature all six possible resolutions, because each of them features either chromatic or oblique motion in the individual parts.



[120] I use Schwartz's (1982) translation of their treatise. See Richard Isadore Schwartz, "An Annotated English Translation of Harmonielehre of Rudolf Louis and Ludwig Thuille" (Ph.D. dissertation, Washington University, 1982).

D minor—and provide the corresponding Roman numeral in those keys. They suggest one enharmonic reinterpretation of Dm7 as an augmented sixth in A major, where C is reinterpreted as B♯ resolving as an ascending approach tone to C♯, the third of the tonic harmony. (This augmented-sixth chord corresponds to a minorized German sixth.) They analyze this chord as an altered seventh chord on $\hat{2}$, where the root B is raised to B♯, and indicate IV in parentheses next to the Roman numeral II+ to illustrate that this chord functions as a subdominant (**Figure 66**). This is, however, not the only possible enharmonic resolution of Dm7; five other resolutions to consonant triads are missing. (Those missing resolutions are listed in **Figure 67**). Even Louis and Thuille recognize elsewhere in their treatise various resolutions of this augmented-sixth chord type in non-modulating contexts, where the augmented-sixth interval results from lowering or raising scale degrees of a given diatonic seventh chord. For instance, in their Figures 251b and 253 (reproduced in **Figure 68a** and **b**), they show the resolution of a minorized German sixth to the root of a minor triad, where the chord arises from lowering $\hat{2}$ and $\hat{4}$ in vii°7. They also illustrate progressions where the approach tones of the augmented-sixth chord resolve to the minor third of the following tonic harmony (**Figure 68c**); they view the non-tonic chord as a V7 whose seventh is lowered (i.e., E–G♯–B–**D** in A minor becomes E–G♯–B–**D♭**). In summary, given that they include several types of resolutions of augmented-sixth chords enharmonically equivalent to minor-seventh chords in non-modulating progressions, it is surprising that they show only one possibility of an enharmonic pivot.

Figure 66: Harmonic analysis of D–F–A–B♯ in A major in Louis and Thuille's treatise.

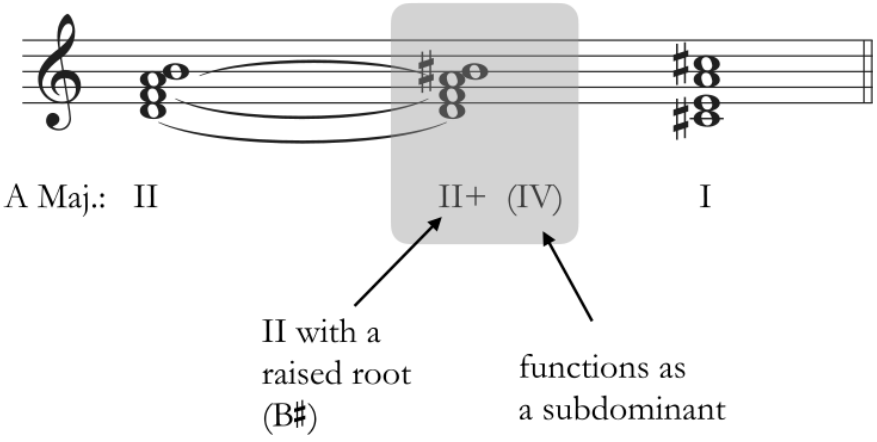


Figure 67: Resolutions of Dm7 reinterpreted enharmonically for modulation that were missing in Louis and Thuille's treatise.

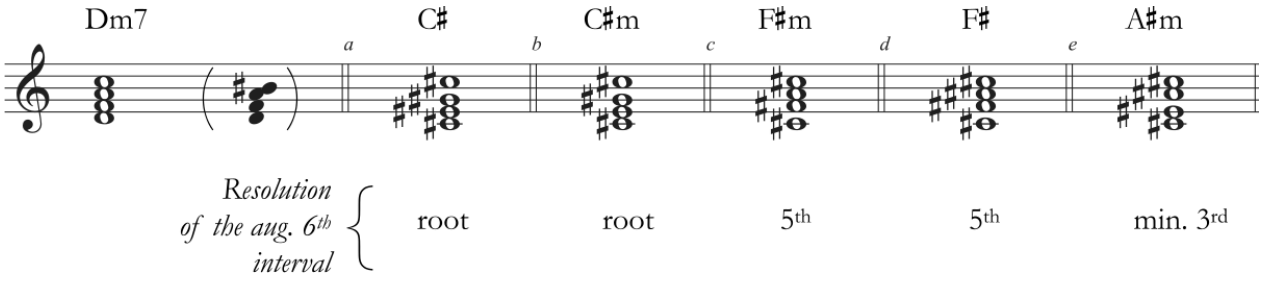
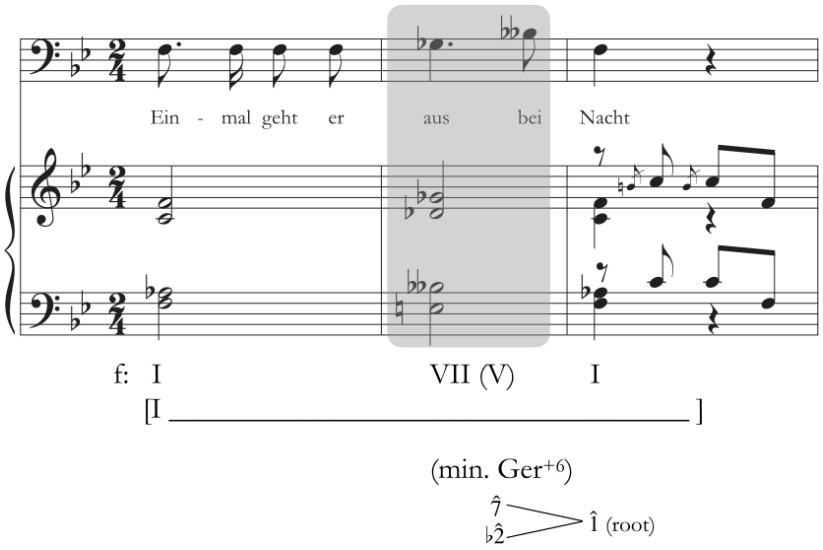


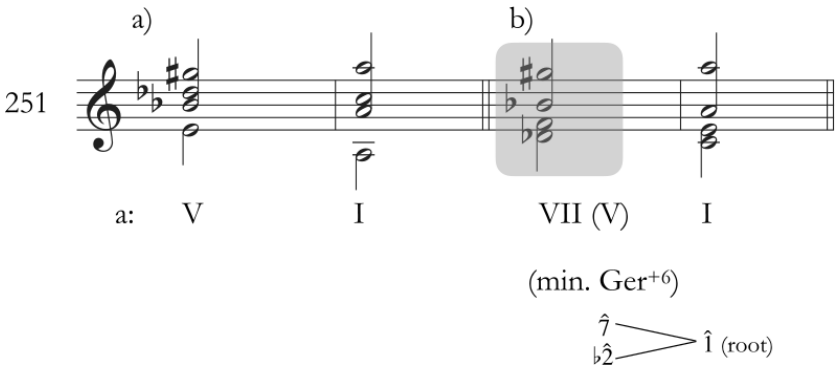
Figure 68: Examples of resolutions of the minorized German sixth that appear in non-modulating progressions in Louis and Thuille's treatise but are left out in enharmonic modulations.

(Annotations showing the type of augmented sixth and the resolution of the augmented-sixth interval are not original to Louis and Thuille's figure.)

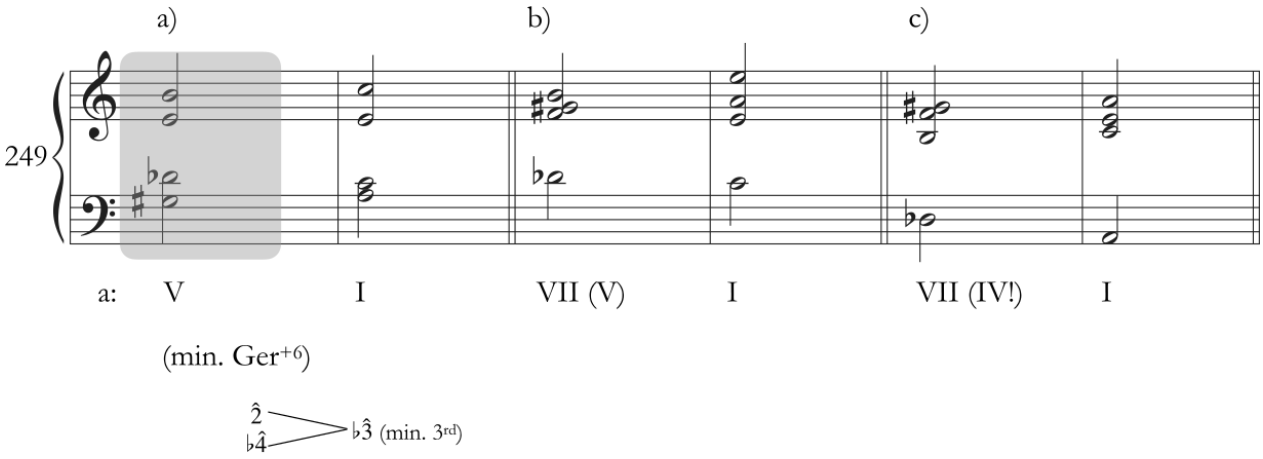
a) Louis and Thuille's Figure 253a, from Weismann's "Fingerhütchen" (Schwartz 1982, 303), showing a minorized German sixth (G♭–B♭♭–D♭–E♮) whose approach tones (G♭–E♮) resolve to the root of a minor tonic harmony.



b) Louis and Thuille's Figure 251, (*ibid.*, 302). Progression *b* corresponds to a minorized German sixth whose approach tones resolve to the root of a minor tonic harmony.

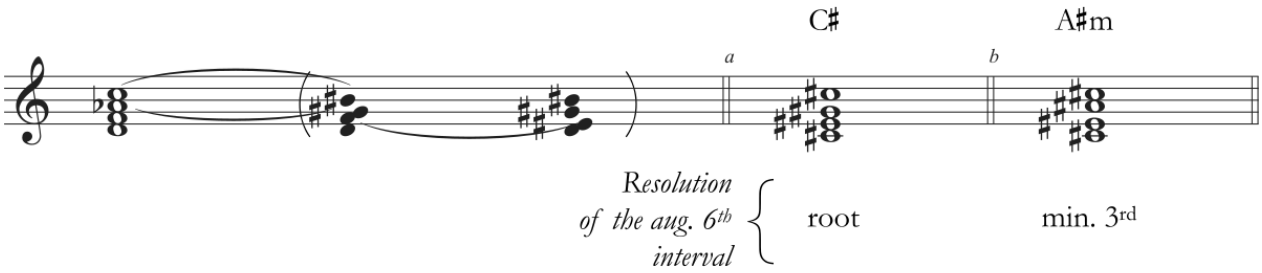


c) Louis and Thuille's Figure 249 showing various chords with a lowered $\hat{4}$ resolving to a tonic in minor (Schwartz 1982, 300). Progression *a* corresponds to a minorized German sixth whose approach tones resolve to the minor third of tonic harmony.



In contrast, the enharmonic modulations with the half-diminished seventh Louis and Thuille recognize are more exhaustive: they show four target keys, A major, F♯ major and minor, and C♯ minor, which instantiate the resolutions to the major third, to the fifth of a major or minor tonic, and to the root of a minor tonic, respectively. Contrary to the enharmonic reinterpretations of the minor seventh chord, I have not found any instance of the missing resolutions (listed in **Figure 69**) in the treatise in non-modulating contexts.

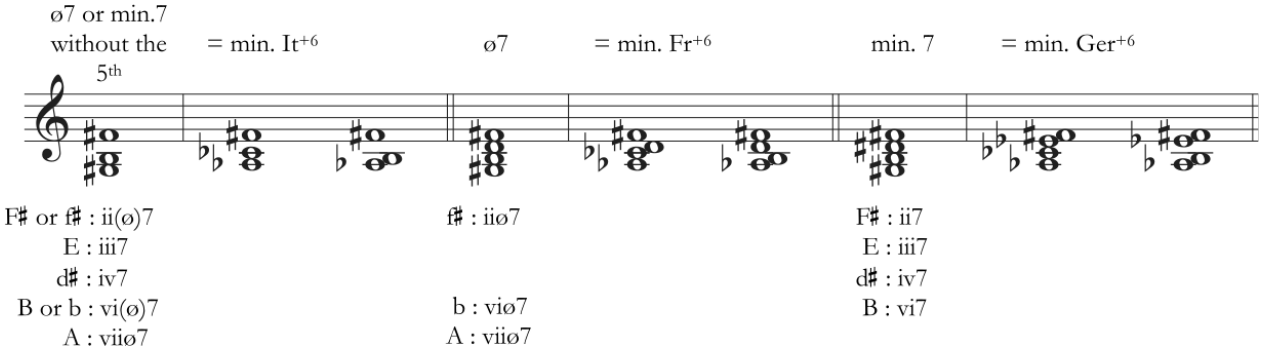
Figure 69: Resolutions of Dø7 reinterpreted enharmonically for modulation that were missing in Louis and Thuille's treatise.



Historical treatises such as Ziehn's and Louis and Thuille's provide insight into enharmonic modulations with minor-seventh and half-diminished seventh chords, but they do not include a systematic account of the possible resolutions of these chords to consonant triads. The discussion below fills this gap and shows various ways composers have used the enharmonic equivalence of these chords to create new harmonic effects.

I show in **Figure 70** the enharmonic equivalents of the minorized Italian, French, and German sixths, and indicate the modulatory possibilities which these make available, using the enharmonic equivalence of minorized augmented sixths to half-diminished seventh and minor seventh chords found in the major-minor key system. (Since the minorized Italian sixth does not have a fifth above the descending approach tone, it can sound as either an incomplete half-diminished seventh chord or as an incomplete minor seventh chord.)

Figure 70: Modulations using the enharmonic equivalence of minorized augmented sixths to half-diminished and minor seventh chords.



Because all chords that include a minor-seventh interval can be potentially reinterpreted as augmented sixths, a given major or minor key includes several standard chords that can be enharmonically reinterpreted in this way. **Figure 71** shows the augmented-sixth types that are

equivalent to these seventh chords, along with the possible target chords. (I choose here to indicate the target *chords* instead of the target *keys*, since the consonant triad to which the augmented-sixth chord resolves can, in theory, be a non-tonic chord. In practice though, most instances of these modulations I am aware of lead to a tonic-functioning harmony.) Nine of these diatonic seventh chords are equivalent to minorized augmented sixths: i7, ii7, iii7, iv7, v7 and vi7 can be reinterpreted enharmonically as minorized German sixths, while iiø7, viø7, and viiø7 can be reinterpreted as minorized French sixths. (If any of these chords is missing the fifth, it can also be reinterpreted as minorized Italian sixth.) In comparison, only two diatonic chords, V7 and ♭VII7, can be reinterpreted as German sixths (or as Italian sixths when they do not include the fifth).[121] Minorized augmented sixths therefore offer more possibilities for enharmonic modulations than their major-third counterparts.

[121] In theory, since V7 and ♭VII7 in minor are dominant seventh sonorities, they can be reinterpreted as German sixths. In practice though, modulations using ♭VII7 reinterpreted enharmonically as an augmented sixth appear to be far less frequent than the ones with V7.

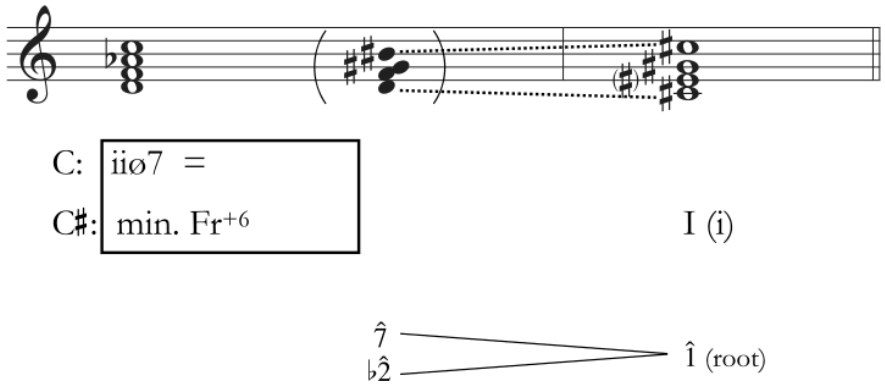
Figure 71: Enharmonic pivots using standard seventh chords from the major-minor system.

Standard seventh chord in C major and minor that include a minor-seventh interval	**Chord quality**	**Enharmonic equivalent**	**Target chords** (resolution of the augmented-sixth interval to the root, 5th, major 3rd, and minor 3rd)
i7 (C–E♭–G–B♭)	min. 7	min. Ger^{+6}	B major or minor E major or minor G major G♯ minor
iiø7 (D–F–A♭–C)	ø7	min. Fr^{+6}	C♯ major or minor F♯ major or minor A major B♭ minor
ii7 (D–F–A–C)	min. 7	min. Ger^{+6}	
iii7 (E–G–B–D)	min. 7	min. Ger^{+6}	E♭ major or minor A♭ major or minor B major C minor
iv7 (F– A♭–C–E♭)	min. 7	min. Ger^{+6}	E major or minor A major or minor C major C♯ minor
v7 (G–B♭–D–F)	min. 7	min. Ger^{+6}	F♯ major or minor B major or minor D major D♯ minor
V7 (G–B–D–F)	dom. 7	Ger^{+6}	
viø7 (A–C–E♭–G)	ø7	min. Fr^{+6}	A♭ major or minor C♯ major or minor E major F minor
vi7 (A–C–E–G)	min. 7	min. Ger^{+6}	
♭VII7 (B♭–D–F–A♭)	dom. 7	Ger^{+6}	A major or minor D major or minor F major F♯ minor
viiø7 (B–D–F–A)	ø7	min. Fr^{+6}	B♭ major or minor E♭ major or minor F♯ major G minor

I have found a few instances of enharmonic pivots featuring minorized augmented sixths in late-tonal repertoires. Although in theory, there are several half-diminished and minor seventh chords that can be enharmonic pivots, the examples I have found feature only iiø7, iv7, and viø7 reinterpreted enharmonically. Enharmonic modulations using iiø7 reinterpreted as augmented sixths appear to be the most frequent. In the examples of these progressions I have found, the augmented-sixth chord generally leads directly to the new tonic harmony, with the approach tones resolving to Î. This

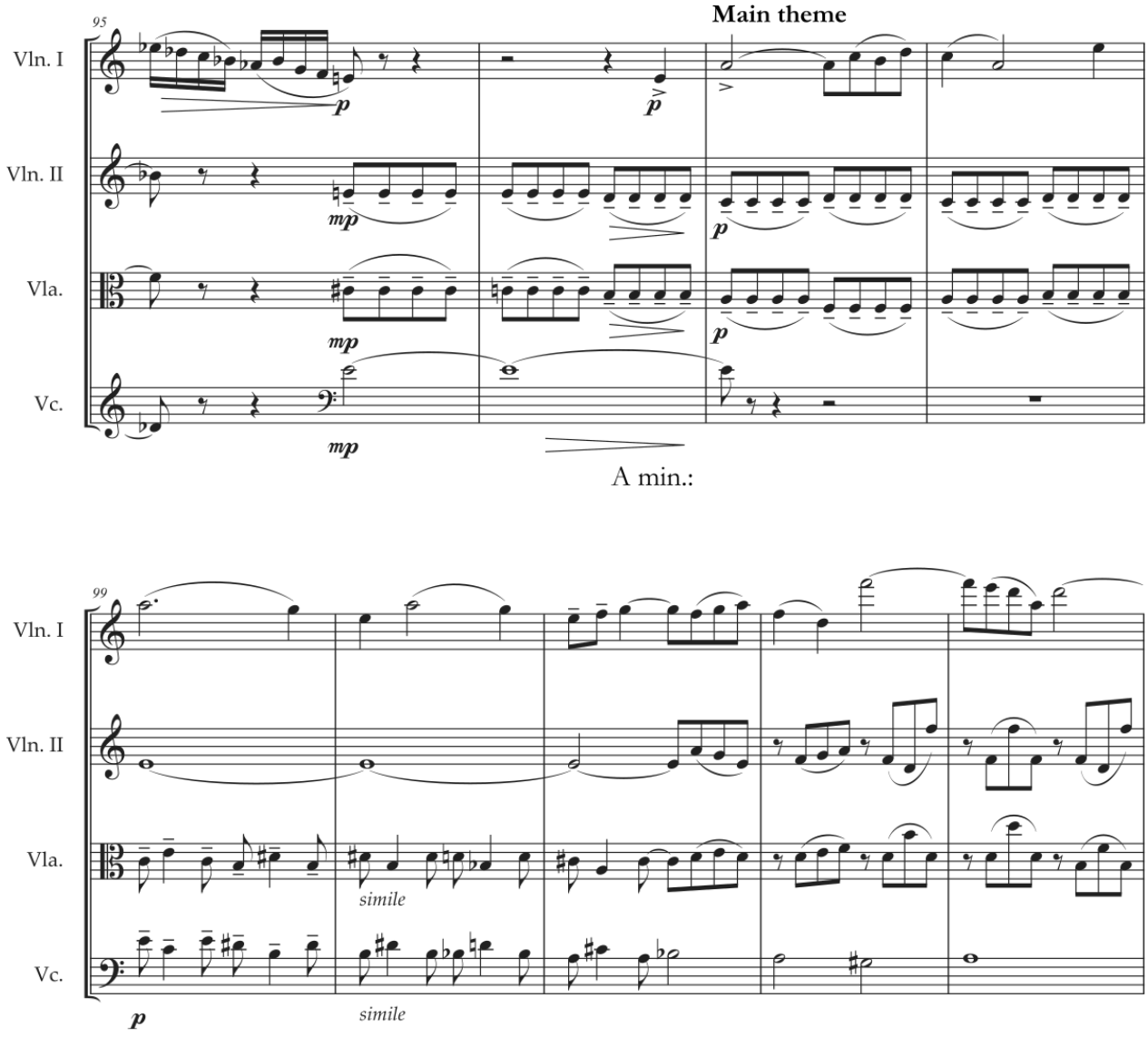
modulatory device thus leads to a key a semitone higher than the original key (**Figure 72**), since $\hat{2}$ in the first key becomes $\flat\hat{2}$ in the new tonal region.

Figure 72: Enharmonic reinterpretation of iiø7 for modulations by ascending half steps.



An example of this modulation occurs in the first movement of Myaskovsky's String Quartet No. 13, where minorized augmented sixths highlight important moments of the tonal trajectory in the exposition and recapitulation. **Example 71** (p. 163), taken from the opening of the work, showed how the modulation from A minor to C♯ minor within the main theme area is achieved through a reinterpretation of iv7 as a minorized German sixth in the new key. In the analogous spot of the recapitulation, however, the modulation is instead to B♭ minor (**Example 72**). Like in the exposition, a minorized augmented-sixth chord is involved in this modulation, but this time it is a iiø7 in A minor Bø7) that is reinterpreted enharmonically as a minorized French sixth whose approach tones resolve to the root of B♭ minor. This modulation balances the tonal trajectory of the exposition (**Figure 73**), where the main theme modulates from A minor to C♯ minor; this distant key is followed by a brief return to the home key A minor before the modulation to the subordinate key C major takes place. In the recapitulation, the main theme is in A minor, while the subordinate theme is, as expected, recast in A major. The tonal areas that precede the subordinate key are transposed down a minor third/augmented second in relationship to the exposition: the sections in C♯ minor and A minor are transposed into B♭ minor and F♯ minor respectively. The use of minorized augmented sixths to modulate away from the home key in both the exposition and recapitulation makes the two modulations sound relatively similar, even though the chord types involved and the intervals between the home key and the target keys are different.

Example 72: Nikolai Myaskovsky, String Quartet No. 13, i, Recapitulation, mm. 95–108.



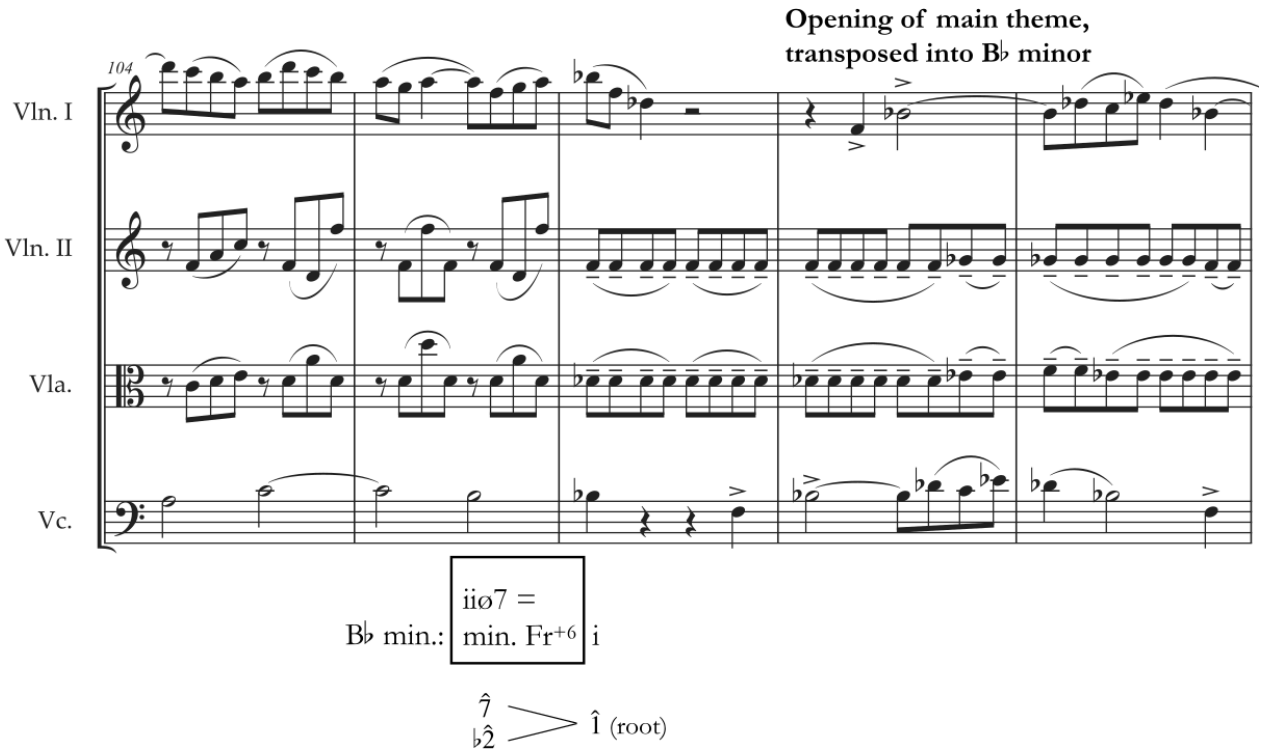
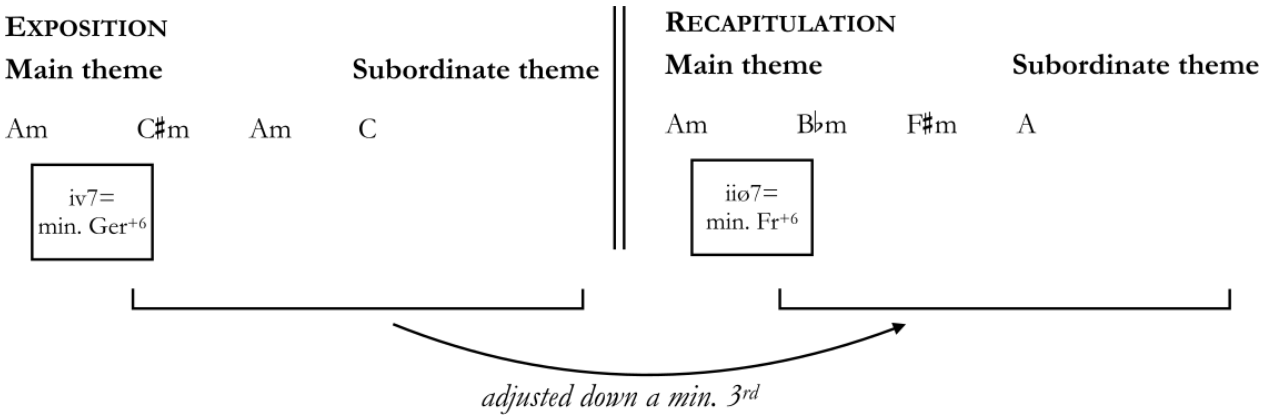
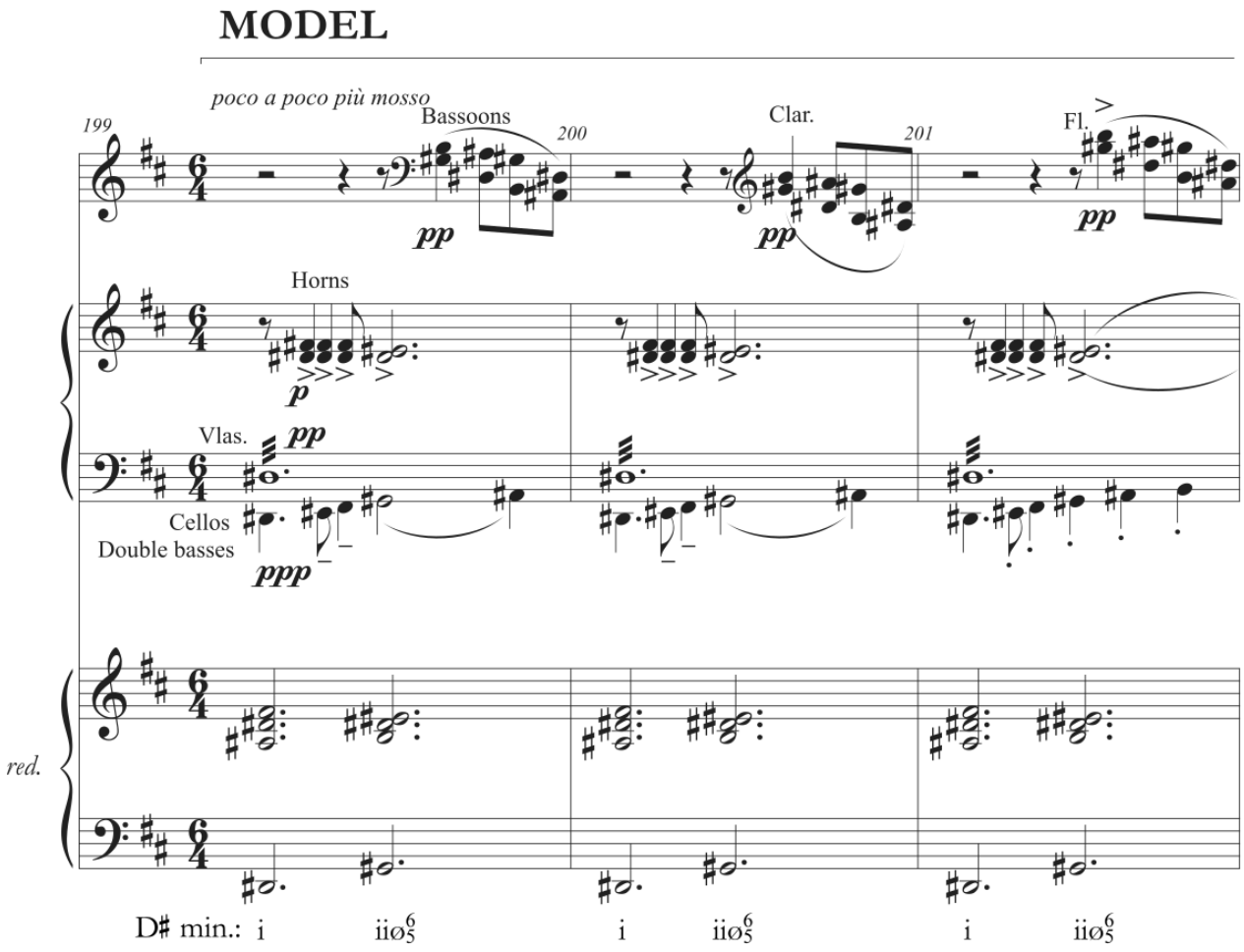


Figure 73: Tonal trajectory of the first movement of Myaskovsky's String Quartet No. 13.

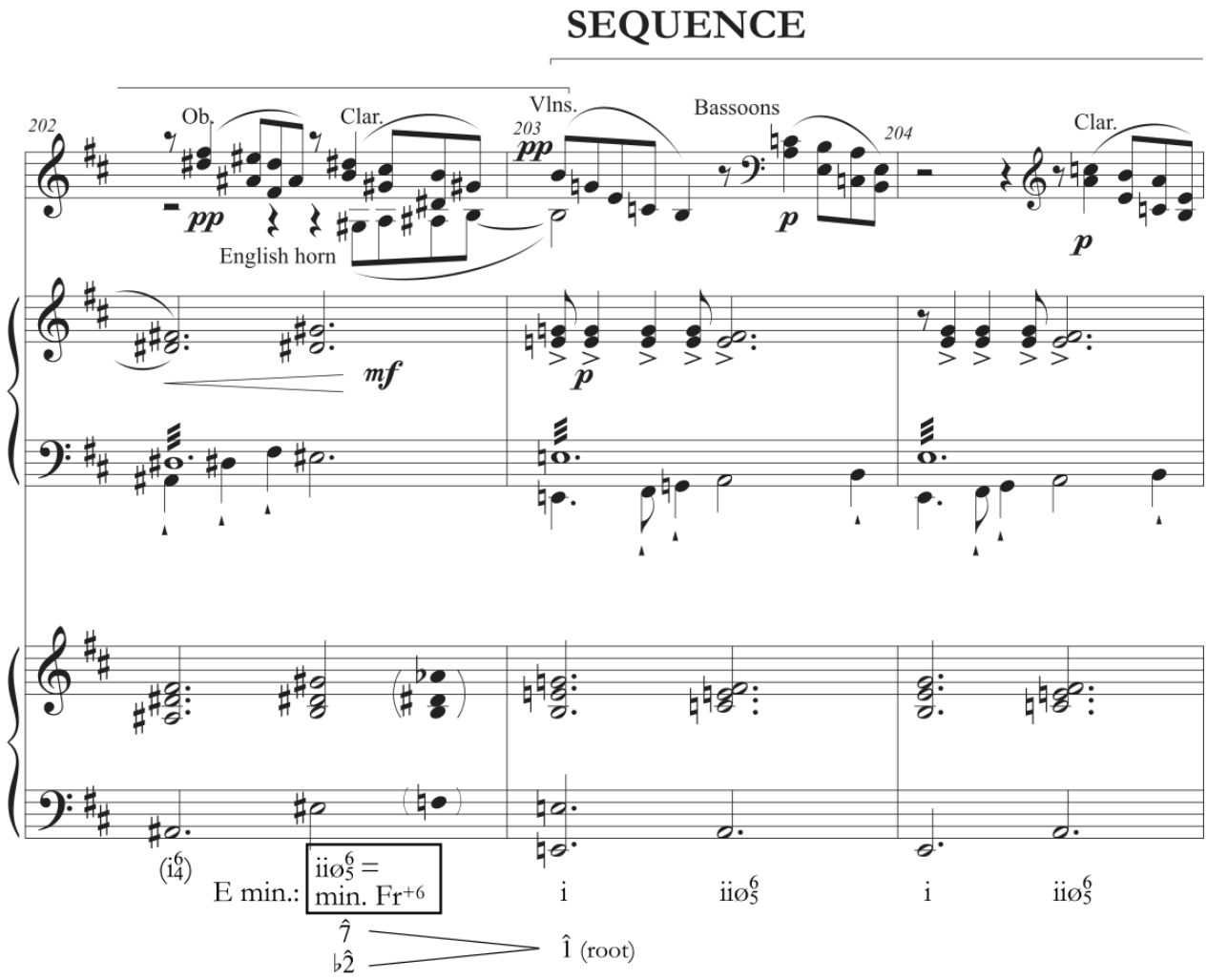


Modulations using the enharmonic reinterpretation of iiø7 can also occur in sequential passages where the model gets transposed up a semitone each time, like in the coda of the first movement of Atterberg's Symphony No. 1 (**Example 73**). The passage begins in D♯ minor, with a tonic chord prolonged by iiø6/5 (E♯ø7/G♯). In m. 202, the half-diminished chord is used to modulate to E minor: the minor seventh E♯–D♯ is reinterpreted as an augmented-sixth interval resolving to E, the root of the next harmony. The four bars from mm. 199–202 serve as a model that is then sequenced up a semitone in bars 203–206. This leads to a modulation to F minor, using again iiø7 as an enharmonic pivot chord.

Example 73: Kurt Atterberg, Symphony No. 1 op. 3, i, mm. 199–207.



Example 73 (continued): Kurt Atterberg, Symphony No. 1 op. 3, i, mm. 199–207.



Example 73 (continued): Kurt Atterberg, Symphony No. 1 op. 3, i, mm. 199–207.

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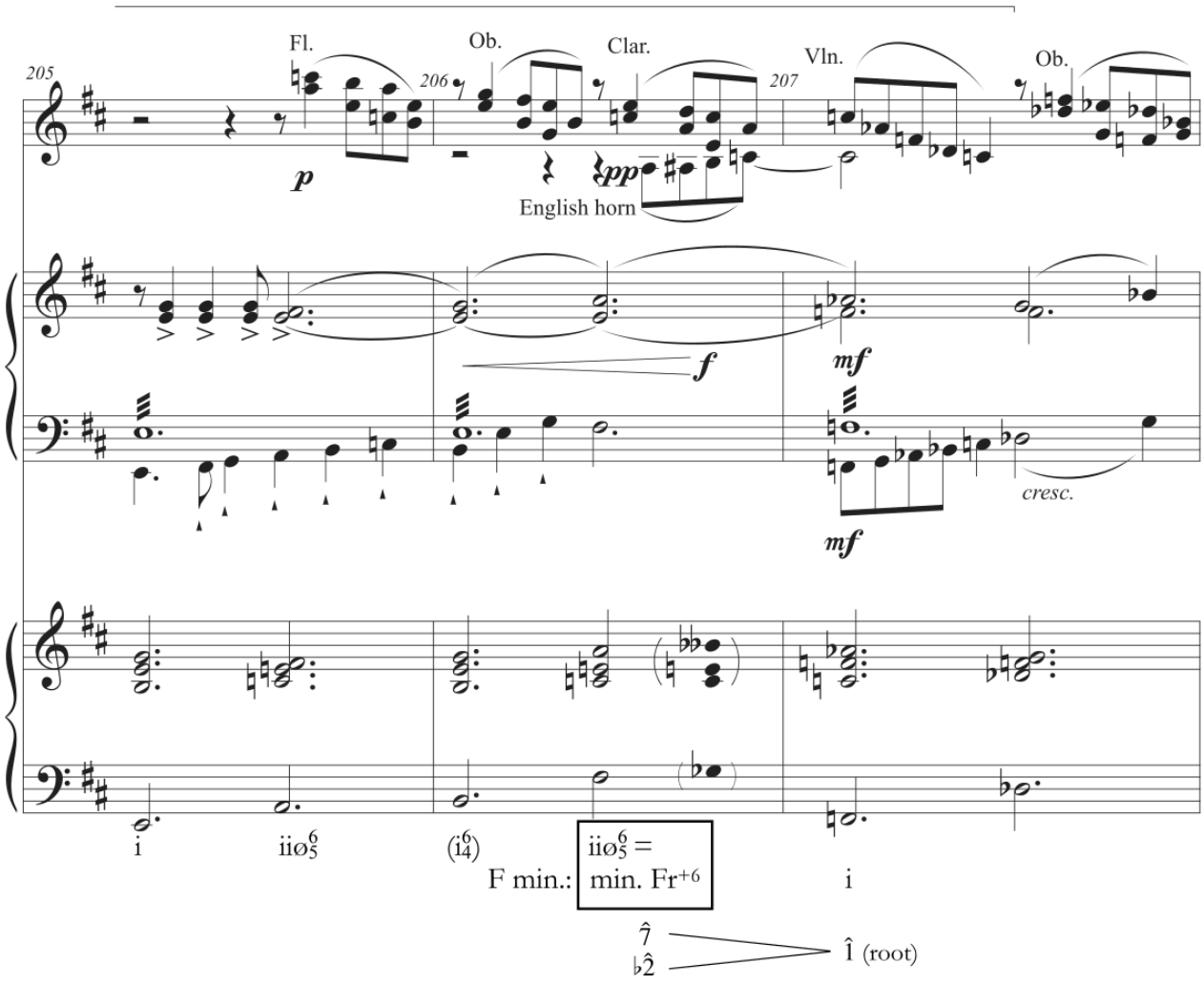
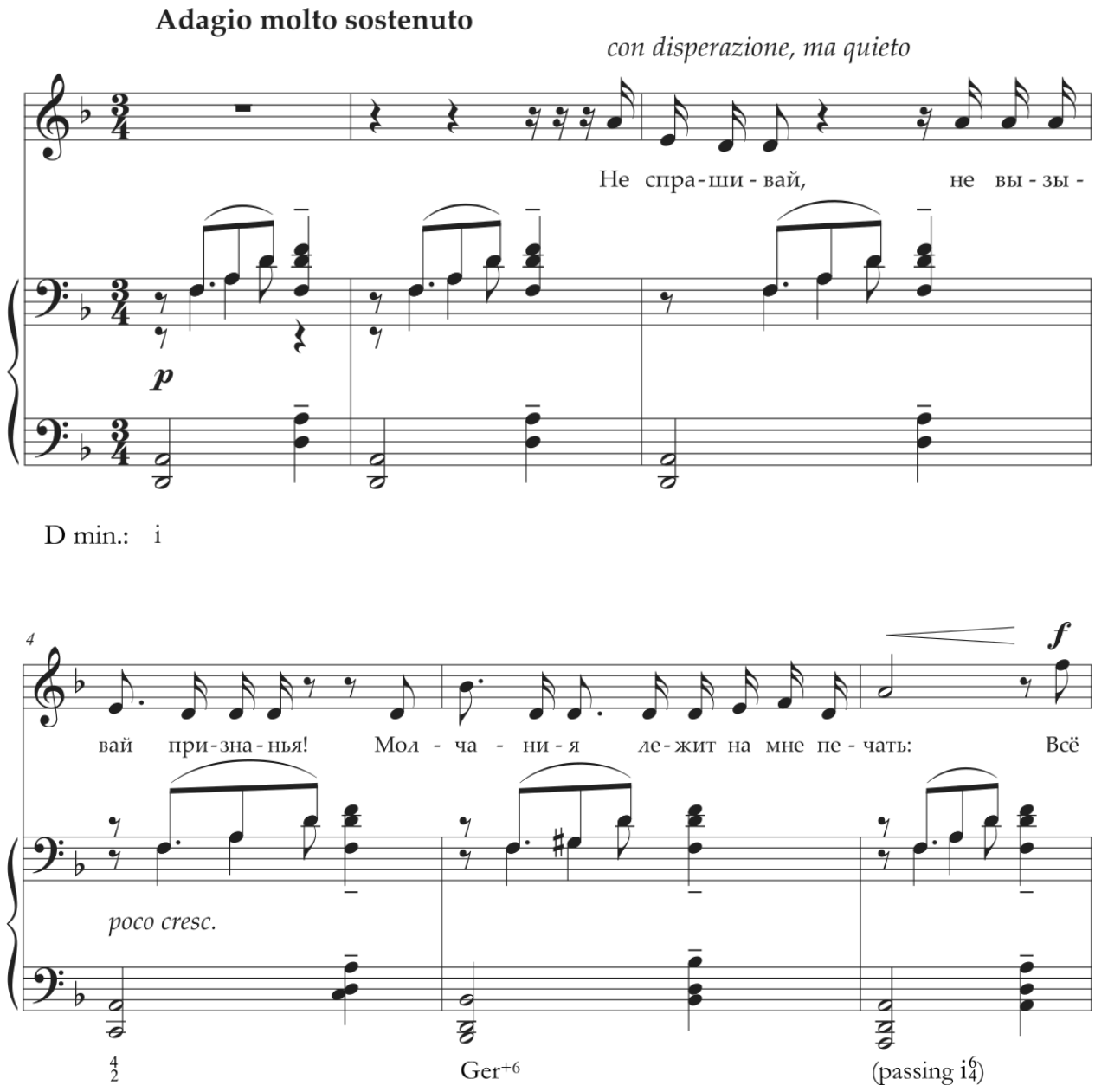
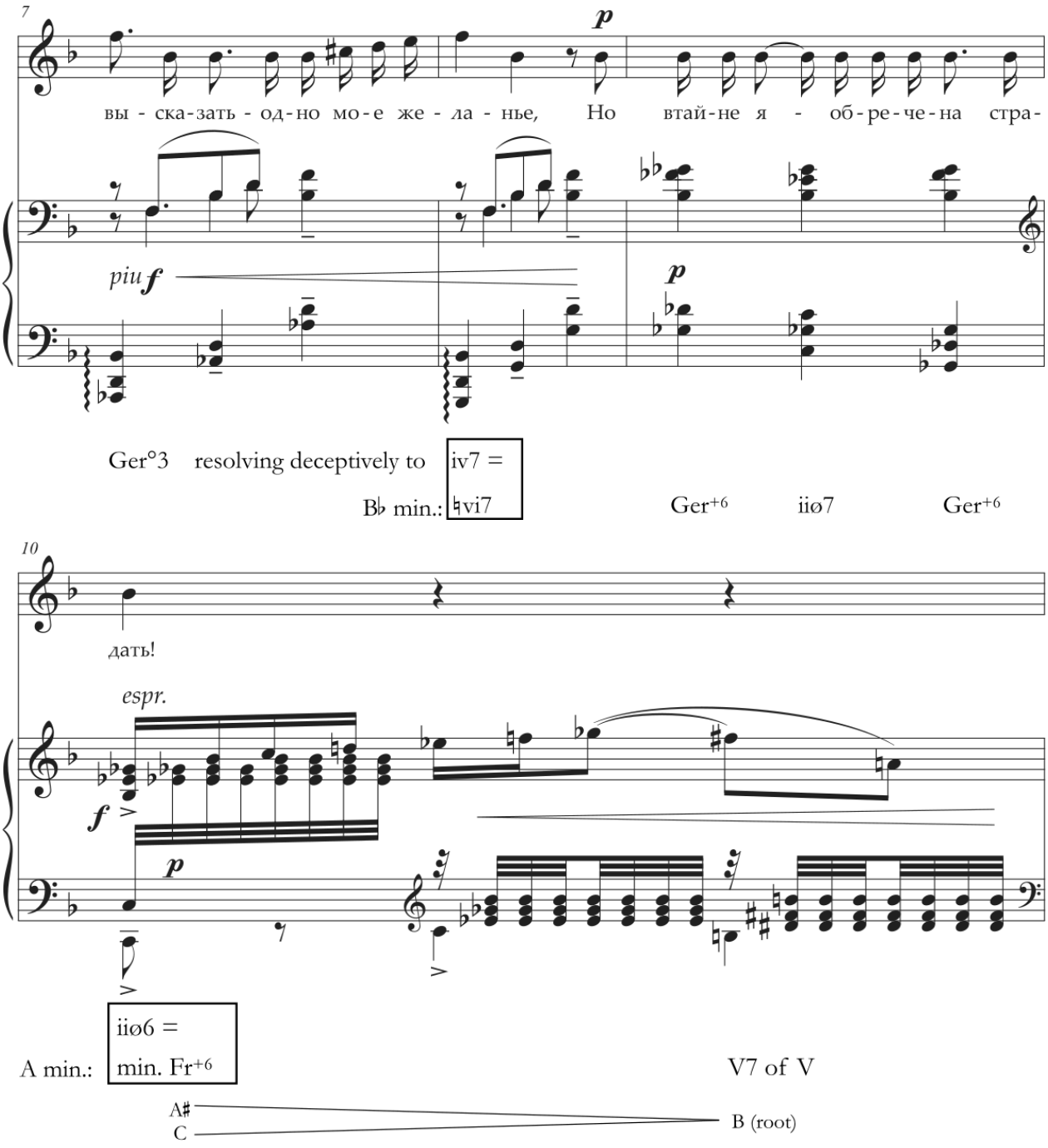
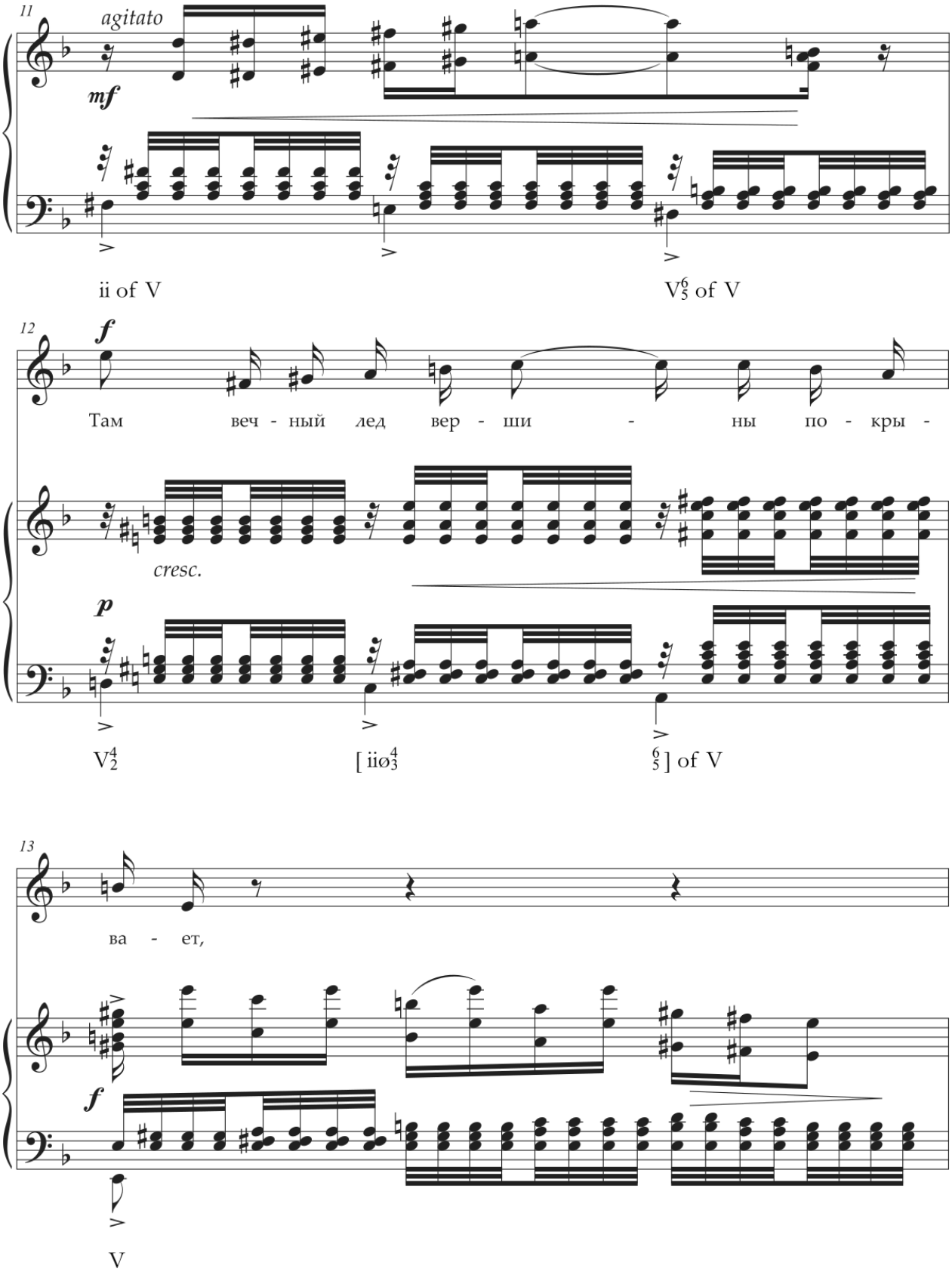


Although it is more common that an enharmonically reinterpretated iiø7 leads directly to the new tonic harmony, as exemplified in the Myaskovsky and Atterberg excerpts above, the chord to which the augmented sixth resolves can have any function. In the third song from Tchaikovsky's op. 57 (**Example 74**), iiø7 in B♭ minor (C–E♭–G♭–B♭) becomes an augmented sixth resolving to B7 (m. 10), which is V7 of V in A minor. The seventh of Cø7, B♭, is reinterpreted as an A♯, resolving upwards to the root of B7.

Example 74: Piotr Ilitch Tchaikovsky, 6 Songs op. 57, iii, mm. 1–13.

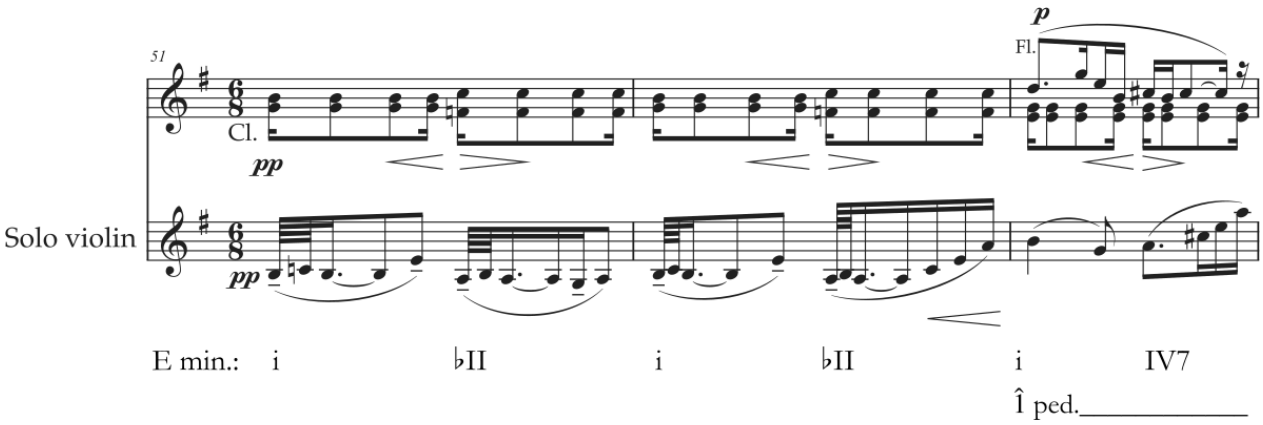


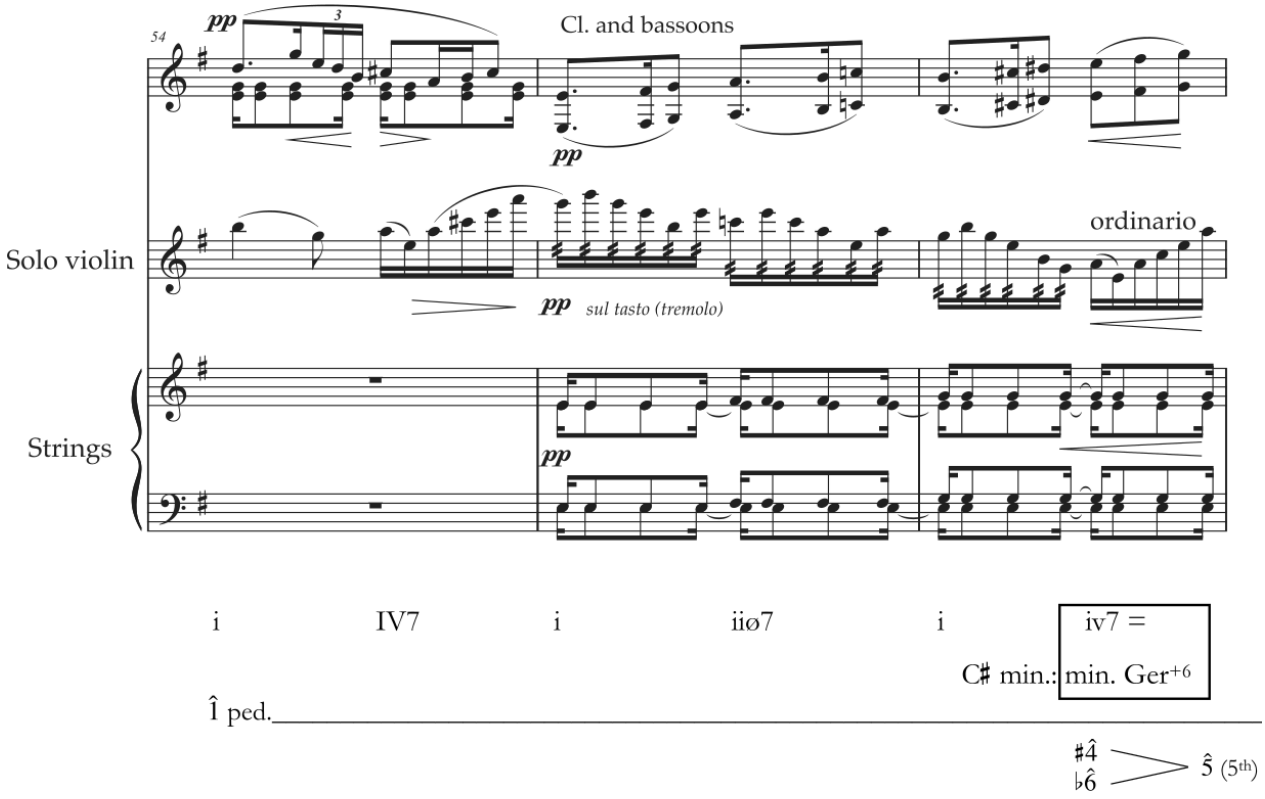

7
p
вы - ска-зать - од-но мо-е же - ла - нье, Но втай-не я - об-ре-че-на стра-
piu f
p
Ger°3 resolving deceptively to
iv7 =
B♭ min.:
♮vi7
Ger+6
iiø7
Ger+6
10
дать!
espr.
f
p
iiø6 =
A min.:
min. Fr+6
V7 of V
A♯
C
B (root)


11
agitato
mf
ii of V
V6 5 of V
12
f
Там веч - ный лед вер - ши - ны по - кры -
cresc.
p
V4 2
[iiø4 3
6 5] of V
13
ва - ет,
f
V

Modulations where iv7 is reinterpreted as a minorized augmented sixth, such as the one in the exposition of the first movement of Myaskovsky's String Quartet No. 13 (**Example 71,** p. 163), seem less frequent than those featuring iiø7. Another instance of a pivot with iv7 occurs in the second movement of Myaskovsky's Violin Concerto (**Example 75**). In this passage, the tonic chord E minor is prolonged with various subdominant-functioning chords: ♭II (mm. 51–52), IV7 (mm. 53–54), iiø7 (m. 55), and iv7 (m. 56). This last Am7 chord is reinterpreted as a minorized German sixth (A–C–E–G becomes A–B♯–E–F𝄪) whose augmented-sixth interval resolves to G♯, the fifth of the new tonic chord C♯ minor (**Figure 74**).

Example 75: Nikolai Myaskovsky, Violin Concerto op. 44, ii, mm. 51–58.




54
pp
3
Cl. and bassoons
pp
Solo violin
ordinario
pp
sul tasto (tremolo)
Strings
pp
i
IV7
i
iiø7
i
iv7 =
C♯ min.:
min. Ger+6
Î ped.
♯4̂
♭6̂
5̂ (5th)

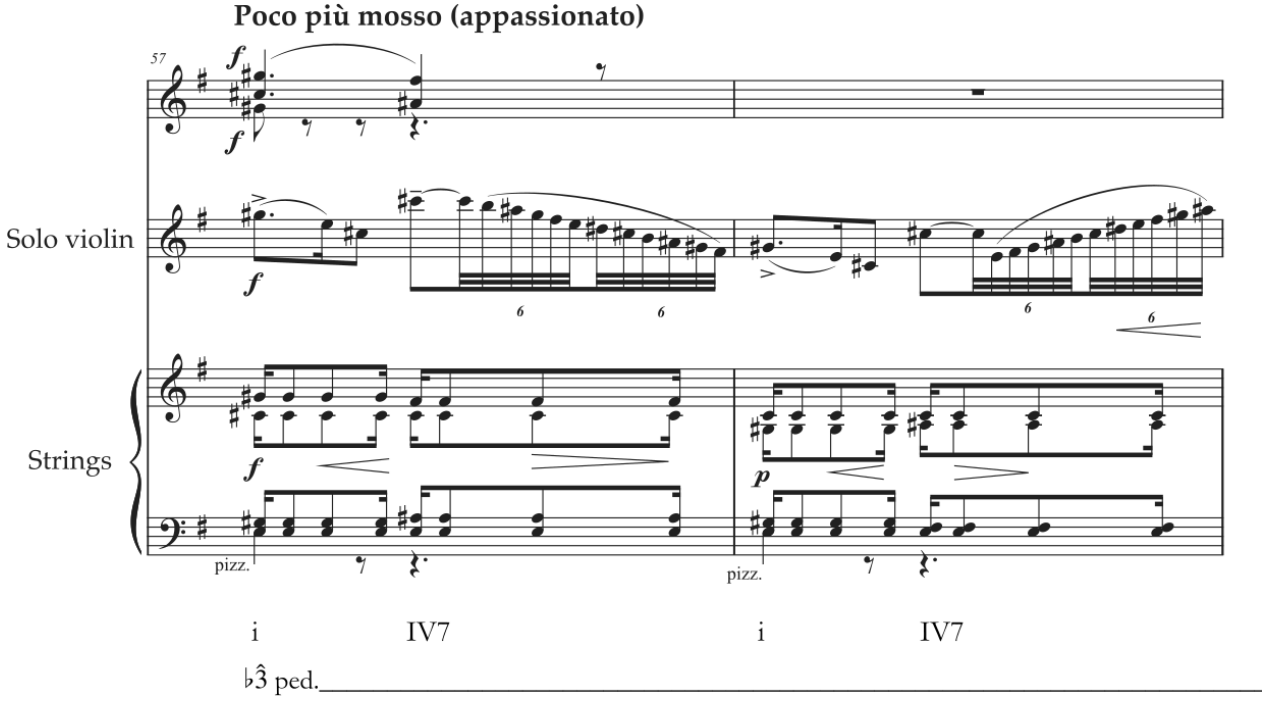
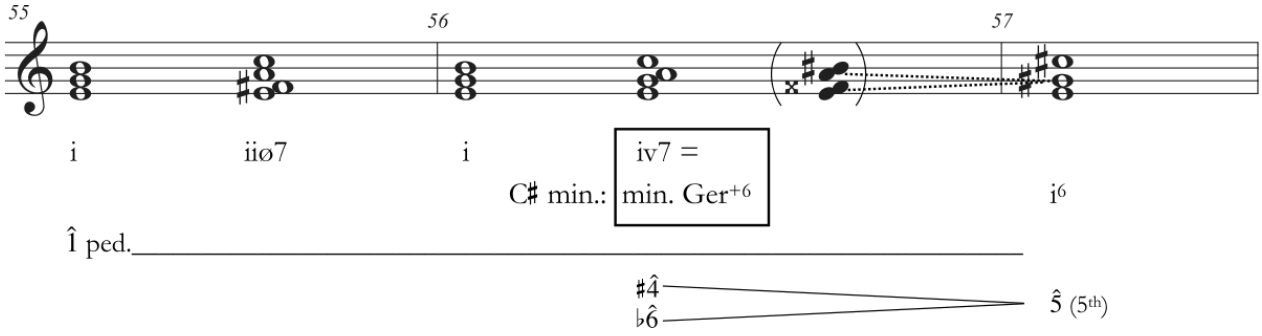

Poco più mosso (appassionato)
57
f
f
Solo violin
f
6
6
6
6
Strings
f
p
pizz.
pizz.
i
IV7
i
IV7
♭3̂ ped.

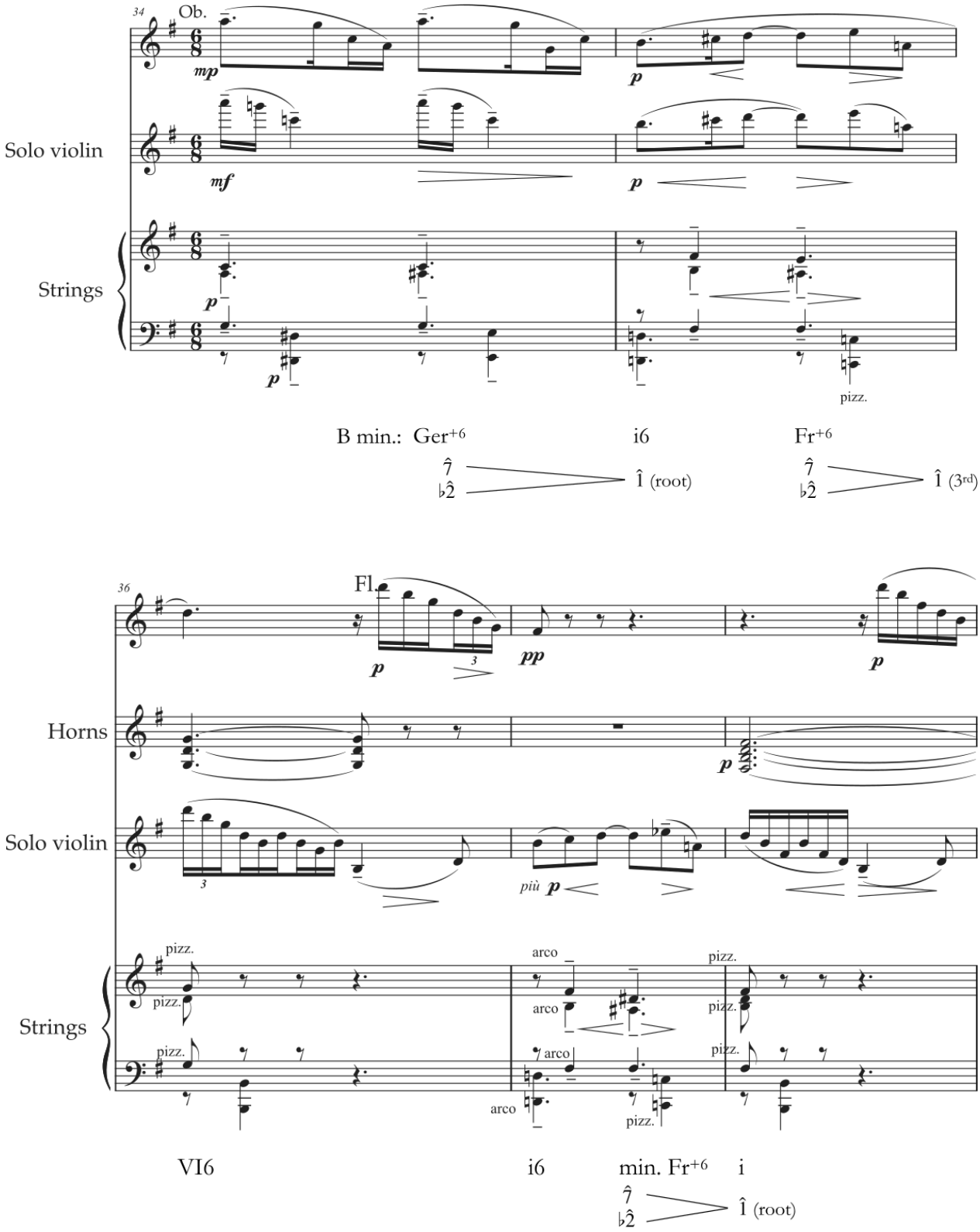
Figure 74: Reduction of Myaskovsky, Violin Concerto op. 44, ii, mm. 55–57.



The other pivot that occasionally arises in late-tonal repertoires is the half-diminished sonority on ♭6̂ in minor reinterpreted as a minorized augmented sixth. In common-practice pieces, this chord is typically found in minor-mode passages where the bass descends chromatically from 1̂ to 5̂.[122] When viø7 is used as an enharmonic pivot, the bass motion leading to it is also typically a descending scale starting on 1̂, but the descending motion is interrupted before the bass reaches 5̂. For instance, in the second movement of Myaskovsky's Violin Concerto (**Example 76**), the modulation from B minor to G minor occurs in mm. 39–40 through the enharmonic reinterpretation of G♯ø7, which corresponds to viø7 in B minor; the chord then becomes a minorized French sixth resolving to the new tonic G minor. In mm. 38–39, the violin arpeggiates the tonic chord (B minor), while the bass descends from B to A♯ and then to G♯, which results in a G♯ø7 sonority (see **Figure 75**). Instead of leading to a dominant harmony in the key of B minor, however, this half-diminished seventh chord resolves as a minorized augmented sixth to G minor, the new tonic harmony, which is confirmed as the new tonal center in the subsequent measures.

[122] See, for instance, Chopin's Prelude op. 28 no. 20 in C minor (mm. 6 and 10).

Example 76: Nikolai Myaskovsky, Violin Concerto op. 44, ii, mm. 34–41.



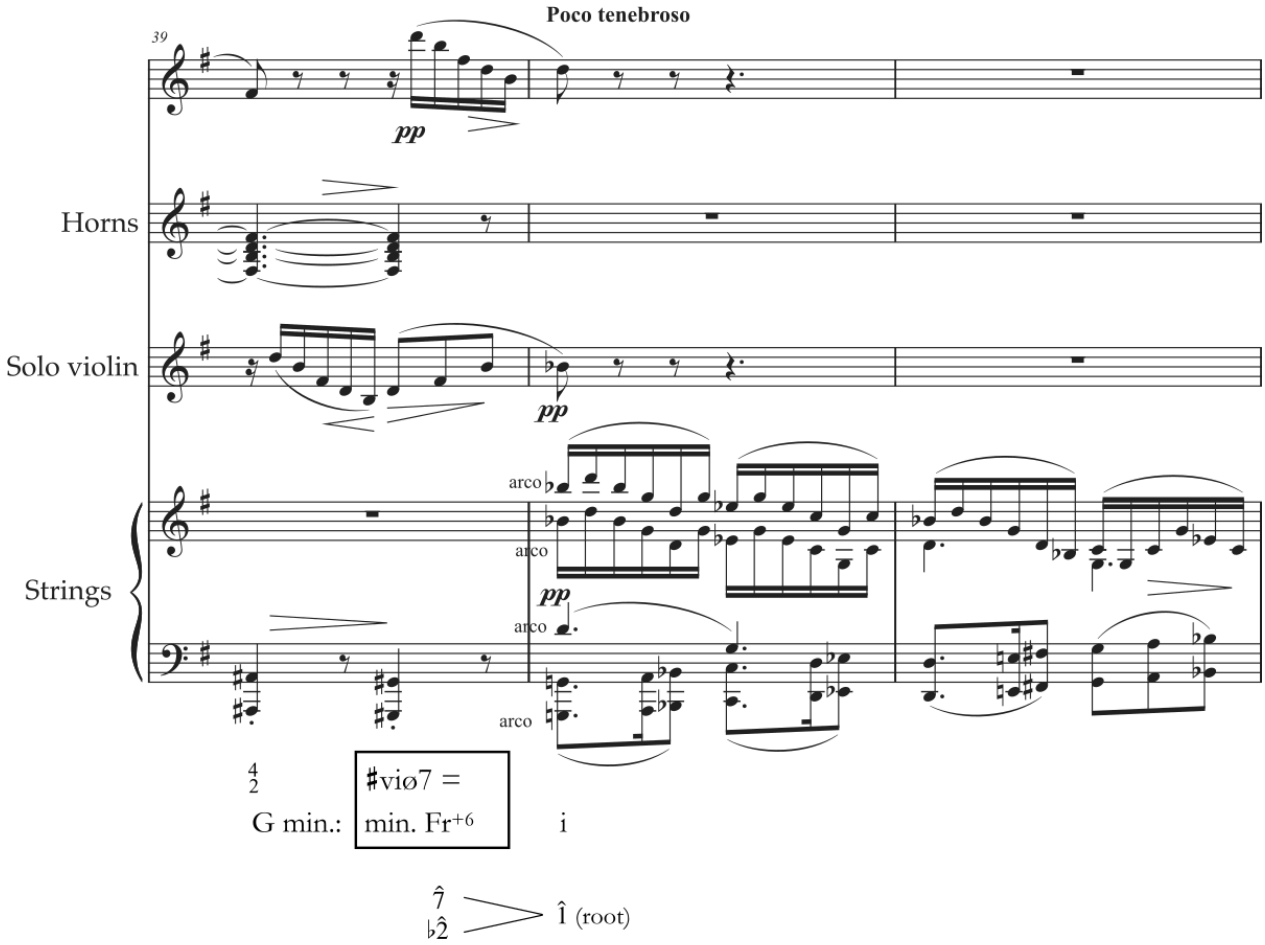
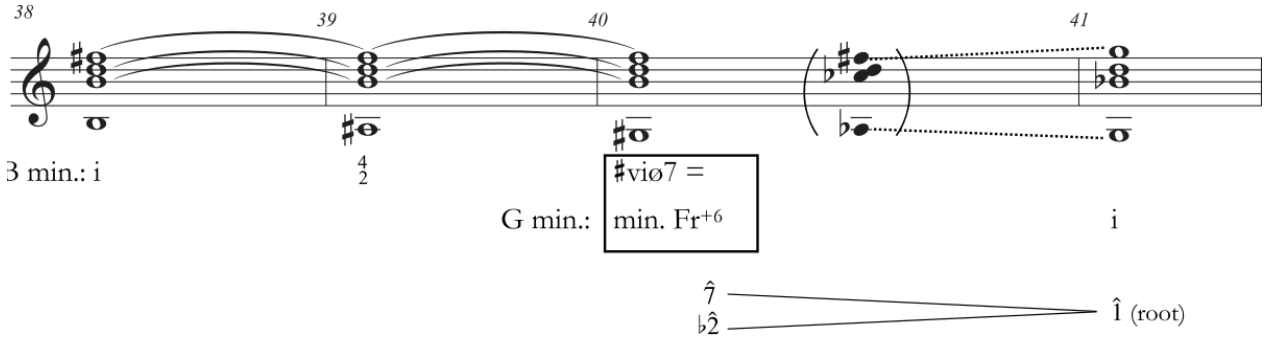


Figure 75: Reduction of Myaskovsky, Violin Concerto op. 44, ii, mm. 38–40.

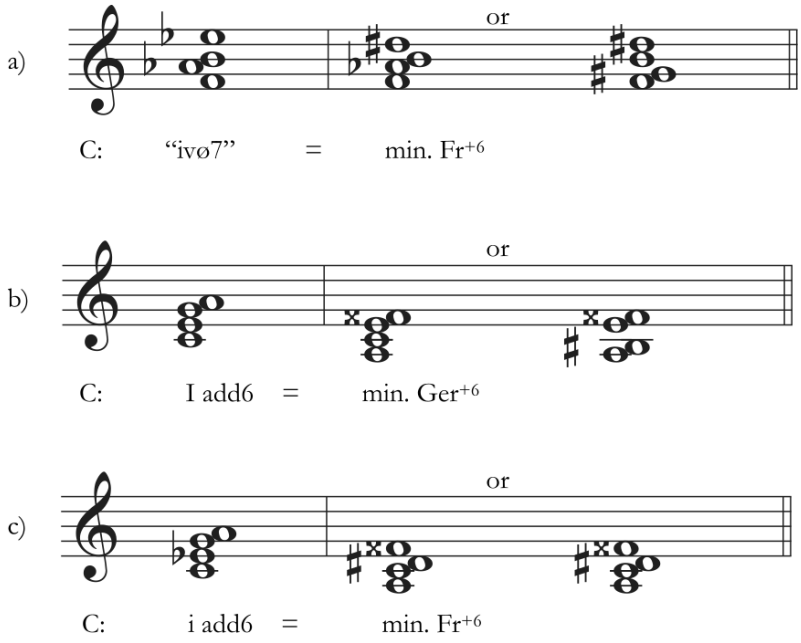


The familiar seventh chords from the major-minor system discussed above are not the only sonorities that can be reinterpreted as minorized augmented sixths: other possibilities include the half-diminished seventh chord on $\hat{4}$ in minor (**Figure 76a**),[123] as well as major and minor triads with added

[123] The half-diminished seventh on $\hat{4}$ resolving to tonic harmony frequently occurs in both major and minor keys. As Richard Bass observes, the chord contains an augmented-sixth interval in the major mode between $\hat{4}$ and $\sharp\hat{2}$, while in minor, the corresponding interval is instead understood as the minor-seventh $\hat{4}$–$\flat\hat{3}$, the latter being a common tone with

sixths **Figure 76b** and **c**), which are equivalent to minor-seventh and half-diminished seventh chords respectively. (In this discussion, I follow Smith's (1986) nomenclature for labelling chromatic chords and use "ivø7" to refer to a half-diminished seventh sonority built on $\hat{4}$; this label does not necessarily imply that the chord has subdominant function.)

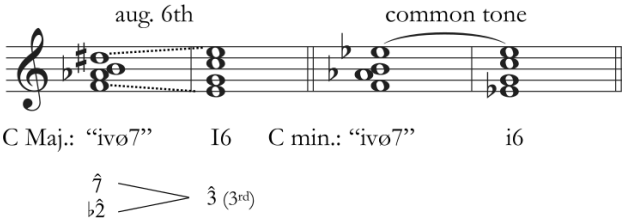
Figure 76: Extended chords and their enharmonic reinterpretations as minorized augmented sixths.



The "ivø7" chord in minor, comprising $\hat{4}$, $\flat\hat{6}$, $\hat{7}$, and $\flat\hat{3}$, is not strictly tertian (**Figure 77a**), since it includes an augmented fourth between its sounding root ($\hat{4}$) and fifth ($\hat{7}$), an augmented second between its sounding third ($\flat\hat{6}$) and its fifth ($\hat{7}$), and a diminished fourth between its sounding fifth ($\hat{7}$)

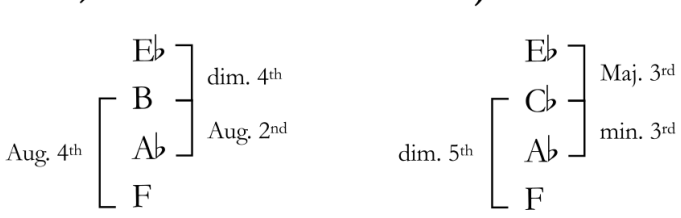
---

tonic harmony (2001, 44). Because ivø7 in major is already a minorized augmented sixth, I have not included it as a possibility for enharmonic modulations, since I aim to explore in this section chords that are at first understood as having a minor-seventh interval in the initial key, but then become reinterpreted as augmented sixths in the next key.



and seventh (♭$\hat{3}$).[124] Many theorists—such as Ellen Bakulina (2021), Jill Brasky (2010), and Richard Bass (2001)—have noted several instances of this chord in late-Romantic repertoires, where composers have played with its inherent functional ambiguity: while the chord contains the leading tone, suggesting dominant function, it often occurs over $\hat{4}$–$\hat{1}$, ♭$\hat{6}$–$\hat{1}$ or ♭$\hat{6}$–♭$\hat{3}$ bass lines, which all suggest a subdominant-to-tonic functional progression.

Figure 77: Intervals between the individual scale degrees of "ivø7" chord vs. a regular "stacked-third" half-diminished seventh chord.



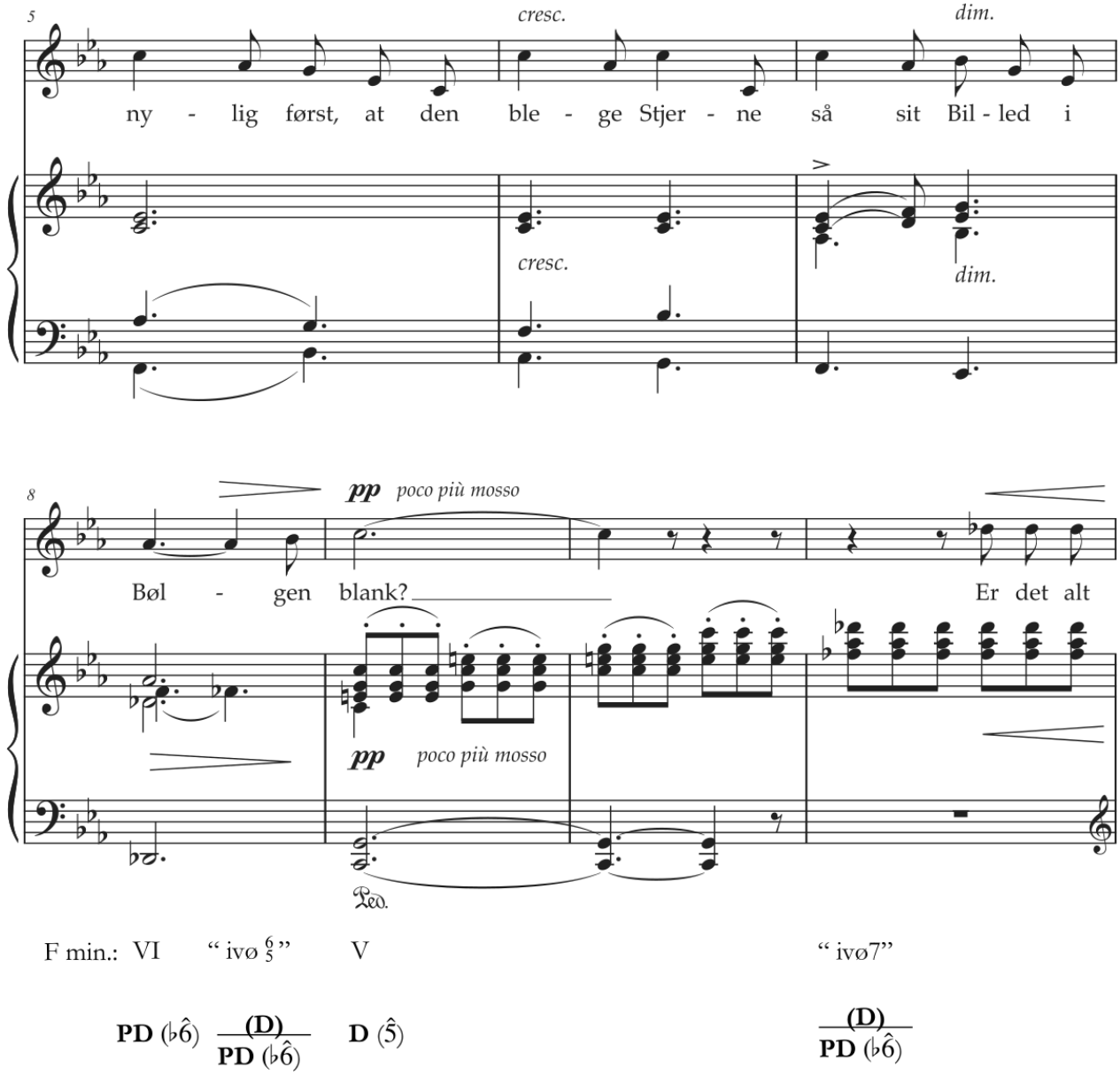
Bakulina's (2021) work on this chord, which she calls the "Rachmaninoff subdominant," discusses the possibility of enharmonically reinterpreting the ivø7 in a given minor-mode key as the modally mixed iiø7 in the relative major.[125] The pivot ivø7 = iiø7 is, however, not the only possible modulation with this chord, since any chord equivalent to a half-diminished seventh can also be reinterpreted enharmonically as a minorized French augmented sixth. Grieg's song "Lys Nat" from his Five Songs op. 70 (**Example 77**) features enharmonic resolutions of ivø7, reinterpreted as minorized French augmented sixths resolving to the root of the next harmony. Measures 8–9 bring a half cadence in F minor; the chord before the dominant corresponds to "ivø$^{6}_{5}$" (D♭–E♮–A♭–B♭, m. 8), which anticipates dominant harmony by featuring the leading tone. Following Swinden's (2005) perspective on harmonic function, I analyze this chord as a collision of predominant and dominant functions. The progression ivø$^{6}_{5}$–V is then repeated in the subsequent measures, but this time with $\hat{4}$–$\hat{5}$ in the bass instead of ♭$\hat{6}$–$\hat{5}$. In mm. 14–16, however, the B♭ø7 does not resolve as expected to the dominant of F minor, but it instead goes to an A major triad. The ivø7 in F minor thus becomes a minorized French sixth whose approach tones (B♭ and A♭[=G♯]) resolve to the root A. Measures 11–

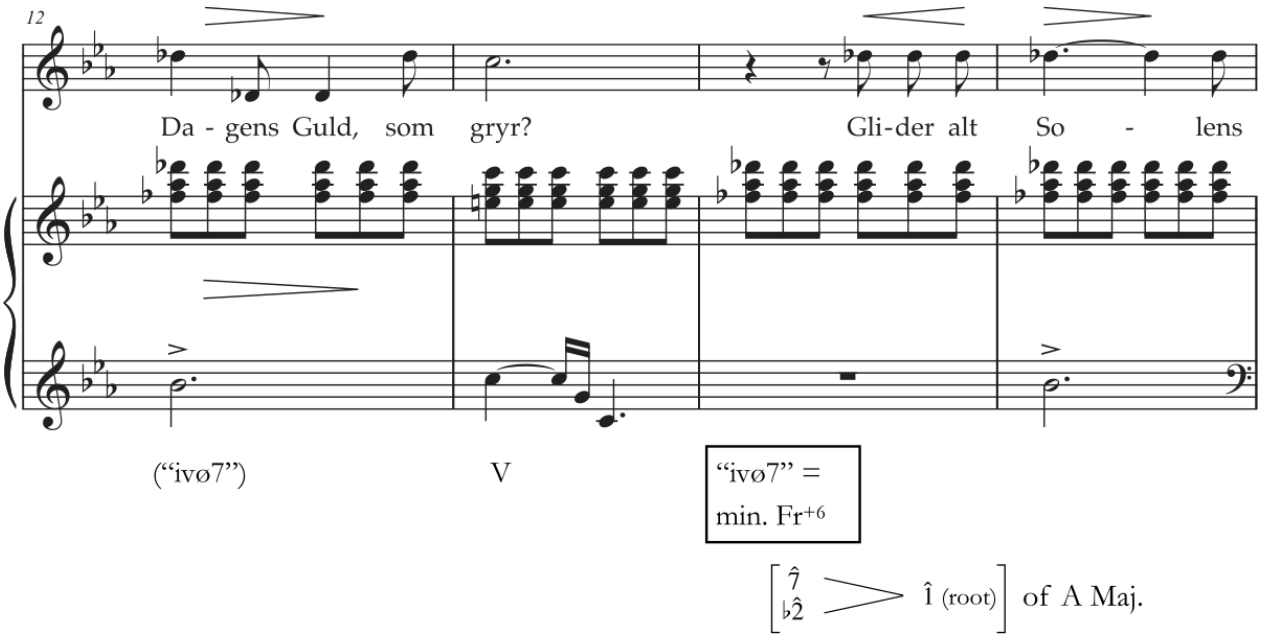
[124] Enharmonically, these intervals are equivalent to the thirds and fifths that are found in regular half-diminished seventh chords (compare **Figure 77a** and **b**), but in a tonal context, those intervals are heard as the distance between pairs of scale degrees rather than the number of semitones between individual pitch classes.

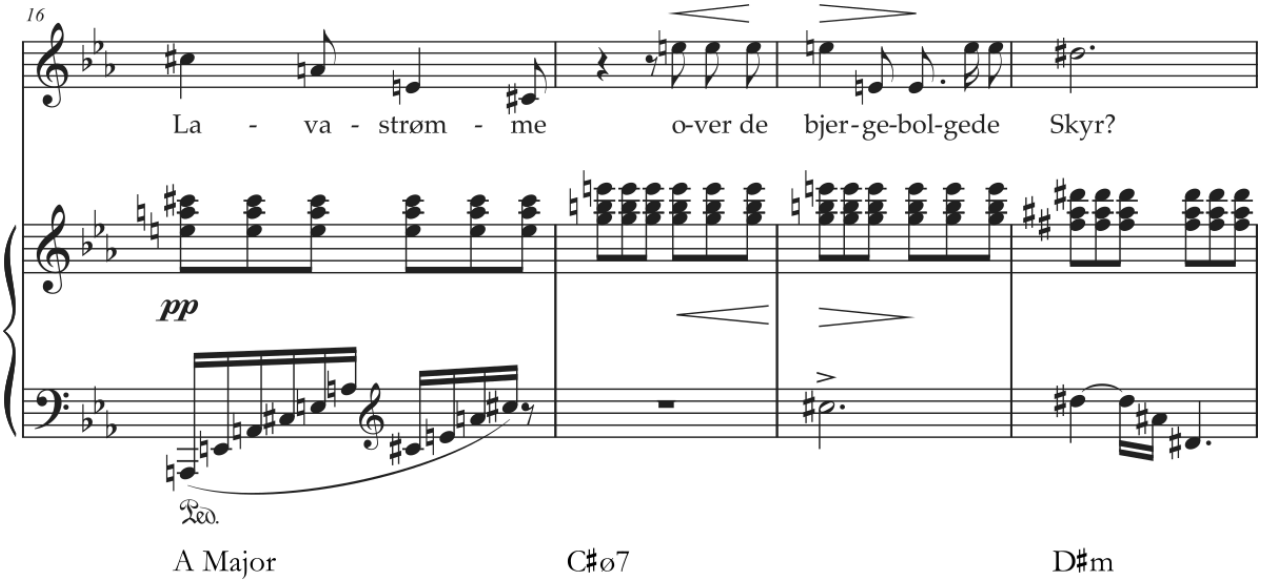
[125] I have found an instance of this modulation in the first movement of Dvorak's Cello Concerto, where the tonic B minor is prolonged by a "ivø$^{6}_{5}$" (G–A♯–D–E) in m. 129. In m. 131, this chord becomes a iiø$^{6}_{5}$ in the key of D major.

16 are then sequenced up a minor third in mm. 17–22, leading to a reinterpretation of C♯ø7 as an augmented sixth resolving to C major (see **Figure 78**).

Example 77: Edvard Grieg, 5 Songs op. 70, No. 3 "Lys Nat," mm. 5–22.




12
Da - gens Guld, som gryr?
Gli-der alt So - lens
("ivø7")
V
"ivø7" = min. Fr+6
[7̂ / ♭2̂ > Î (root)] of A Maj.


16
La - va - strøm - me
o-ver de bjer-ge-bol-gede Skyr?
pp
Ped.
A Major
C♯ø7
D♯m

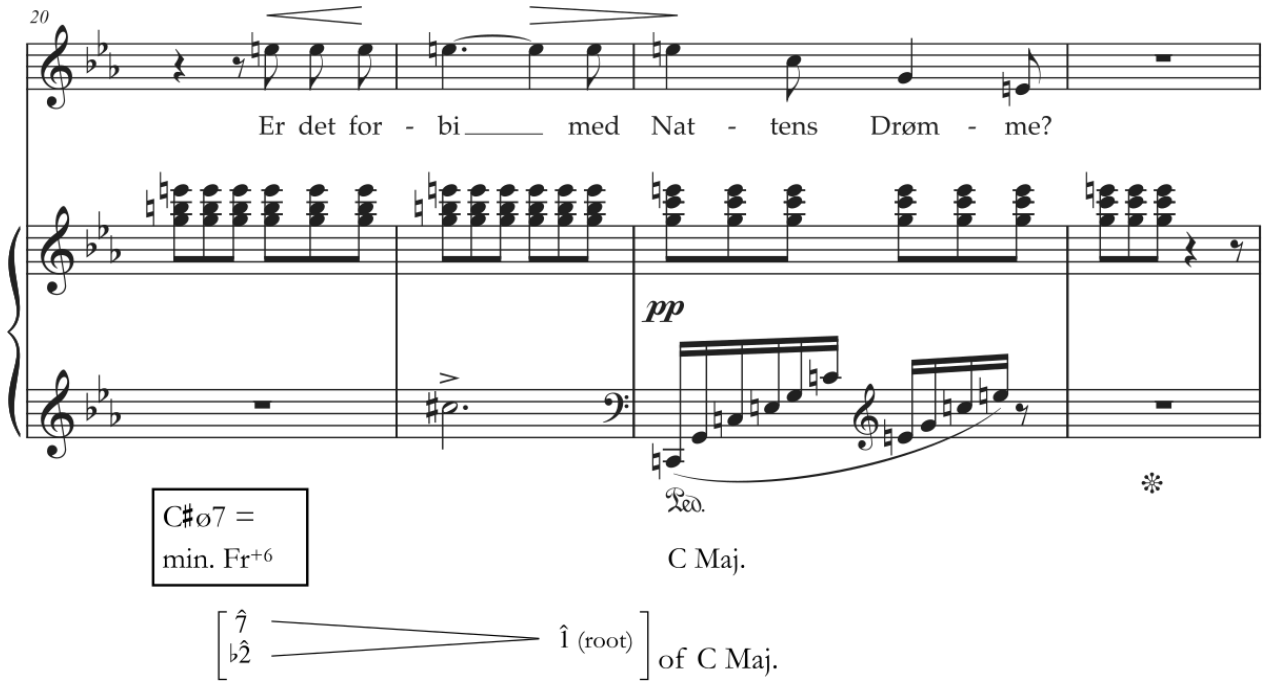
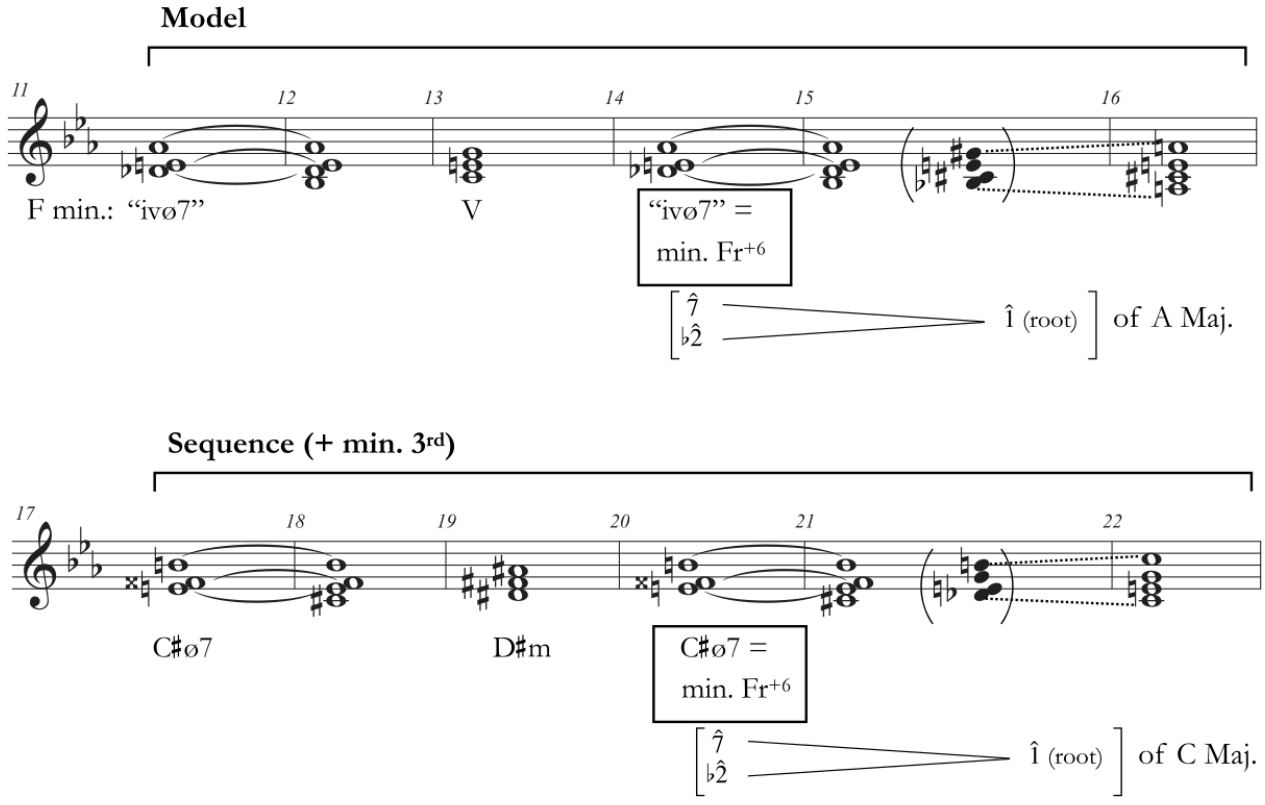
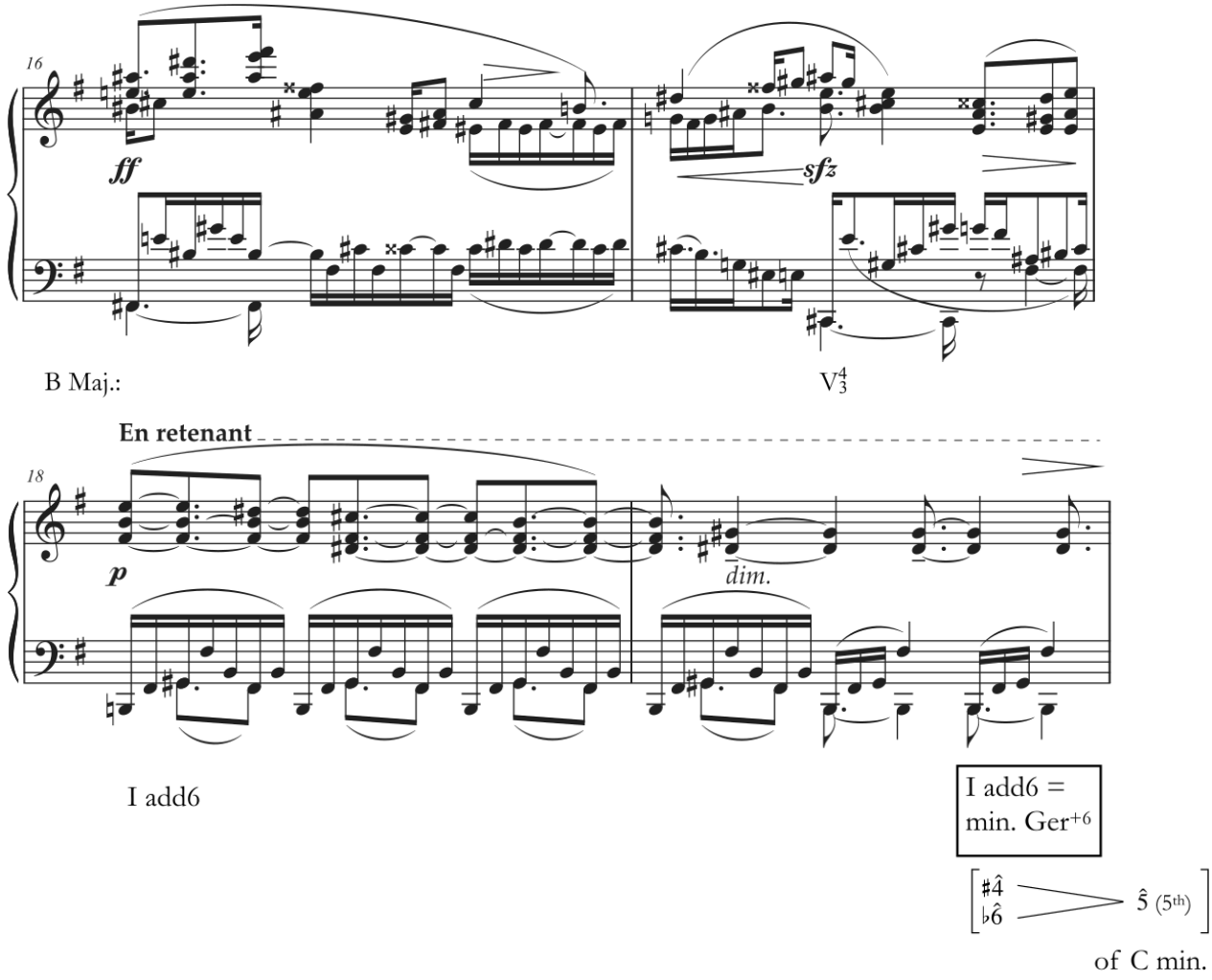


Figure 78: Reduction of Grieg, 5 Songs op. 70, No. 3 "Lys Nat," mm. 12–22.



While the diatonic seventh chord built on $\hat{1}$ in major cannot be reinterpreted as an augmented sixth because it features a major seventh instead of a minor seventh, it is possible to use other types of dissonant tonic chords, such as added sixth chords, as a means to modulate. The major-second interval between $\hat{5}$ and $\hat{6}$ in major has the potential to be reinterpreted as a diminished third or augmented sixth, as shown in **Figure 76** (p. 191). In Ropartz's Nocturne No. 3 (**Example 78**), the tonic with an added sixth in mm. 18–19 marks a cadence in the key of B major. The added sixth chord B–D♯–F♯–G♯ is followed by a C-minor triad in m. 20, which makes the B add6 chord sound, in retrospect, like an augmented sixth. The dyad G♯–F♯, reinterpreted as A♭–F♯, resolve by contrary semitonal motion to G, the fifth of C minor (**Figure 79**).

Example 78: Guy Ropartz, Nocturne No. 3, mm. 16–21.



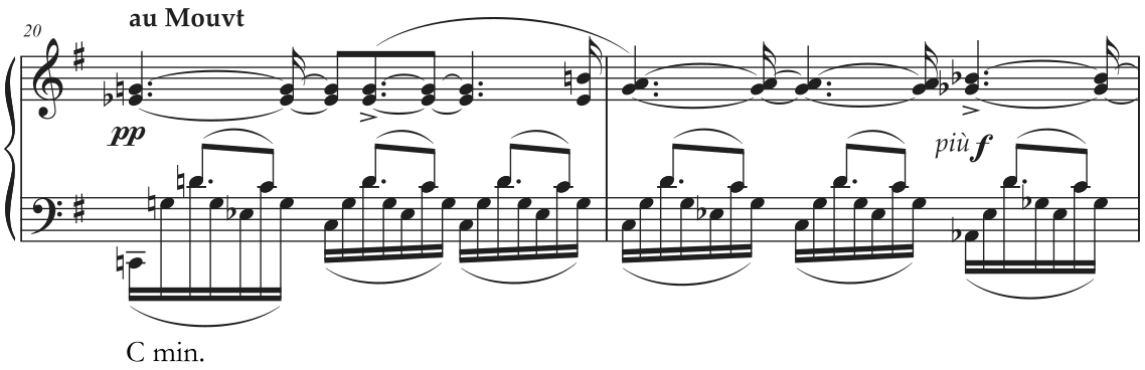
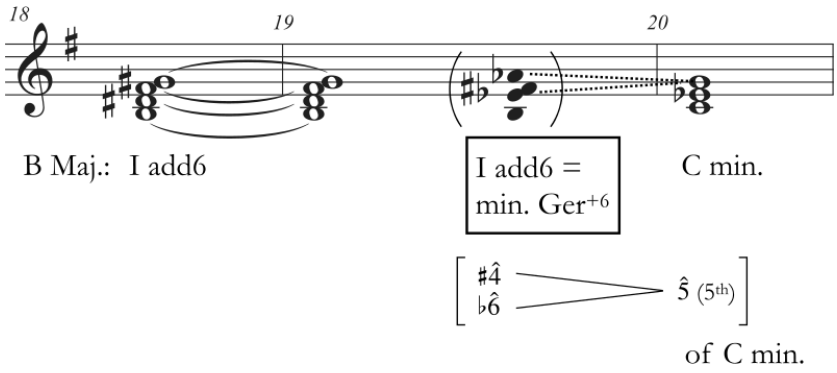


Figure 79: Reduction of Ropartz, Nocturne No. 3, mm. 18–20.



Chromatic wedge progressions with minorized augmented sixths

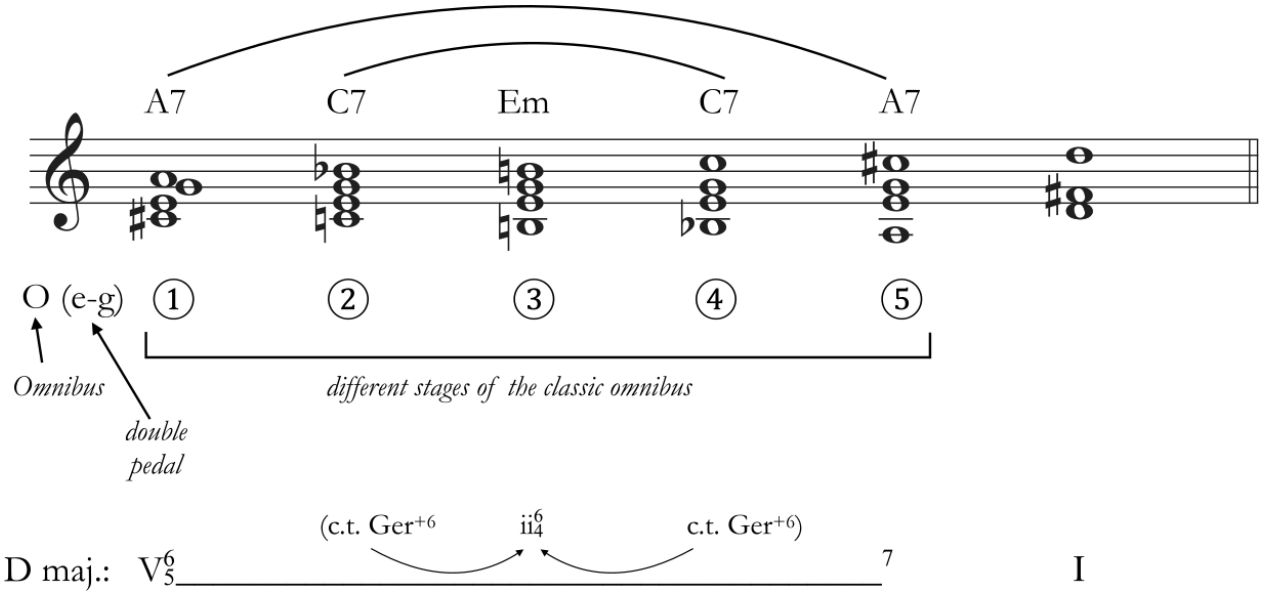
Previous literature on chromatic wedge progressions in late-Romantic music has mostly focused on the "classic omnibus" (Telesco 1998, Yellin 1998),[126] a chord succession that typically functions as a dominant prolongation.[127] The voice leading of this five-chord progression is characterized by the chromatic voice exchange between the soprano and bass (A and C♯ in **Figure 80**) and the double pedal in the inner voices (E and G in **Figure 80**). (In the figures and examples of this section, I use Victor Fell Yellin's [1998] analytical notation, which labels the five different "stages" of the omnibus

[126] A notable exception is Robert Gauldin's (2004) study of chromatic wedge progressions in late-Romantic music, which goes beyond the classic omnibus; in his paper, Gauldin provides a theoretical framework to classify a wide variety of chromatic wedges.

[127] Paula Telesco, in her article on omnibus-like progressions in eighteenth-century music (1998), has shown that it can also occur as a modulatory device connecting two remote keys, a usage that was particularly common in the eighteenth century.

progression with circled Arabic numerals[128] and identifies the notes involved in the double pedal in parentheses.) Harmonically, the classic omnibus involves two pairs of dominant seventh sonorities: chords ① and ⑤ are different inversions of the dominant seventh being prolonged, while chords ② and ④ could be interpreted locally as applied common-tone German sixths to ii^6_4 (chord ③).

Figure 80: The "classic" omnibus progression.



Theorists have also discussed inverted omnibus progressions, where the roles played by dominant seventh/German sixths (chords ①, ②, ④ and ⑤) and minor six-four chords (chord ③)

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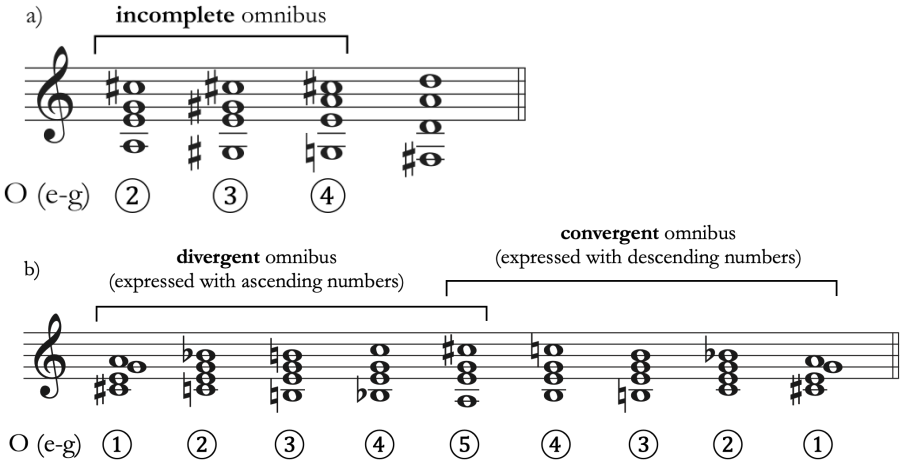
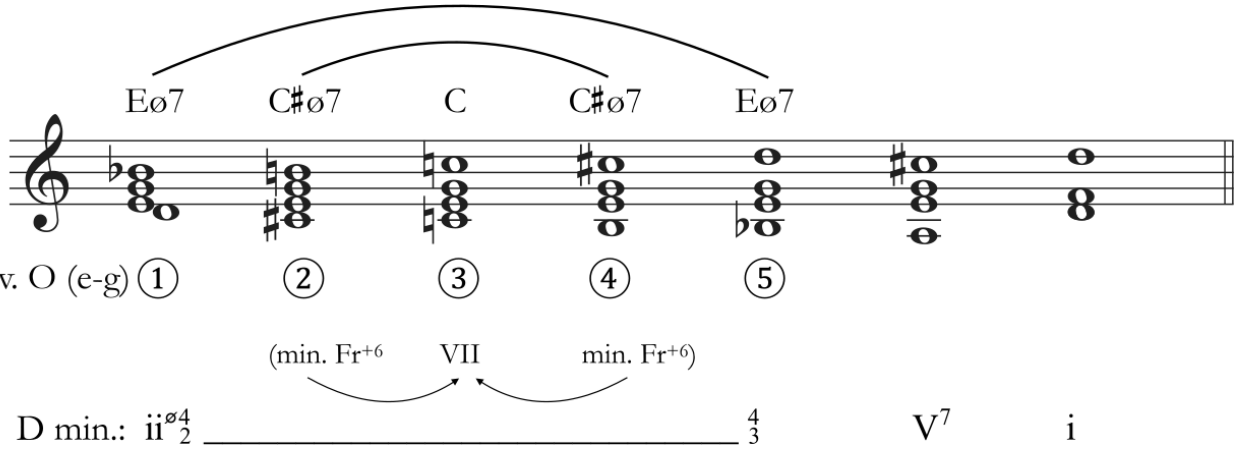
[128] These Arabic numerals are particularly useful when an example features only a segment of the omnibus progression (see progression *a* below). The ascending or descending order of the Arabic numbers also reflects whether the omnibus is divergent or convergent (progression *b*).



are instead fulfilled by their mirror inversions, the half-diminished seventh chords and root-position major triads, respectively. Given that chords ① and ⑤ are half-diminished seventh sonorities in the inverted omnibus, a chord like iiø7 can be prolonged with this device (**Figure 81**), as opposed to V7 in the classic omnibus. Prolongations of iiø7 are not, however, the only contexts where inverted omnibus progressions happen, as the examples below will demonstrate. The inversion of the classic omnibus also results in different augmented-sixth sonorities for chords ② and ④: instead of German sixths whose approach tones move to the fifth of a minor six-four chord, the inverted omnibus includes minorized French sixths whose approach tones are aimed at the root of a root-position major triad.

Figure 81: The inversion of the classic omnibus progression.



The earliest known instance of inverted omnibus progressions in theoretical sources appears to be Bernard Ziehn's *Canonical Studies*, published in 1912 (**Figure 82**). In this exercise book, Ziehn's canons for the keyboard are all presented along with their inversion, in order to develop both hands in a balanced way. Yellin observes that

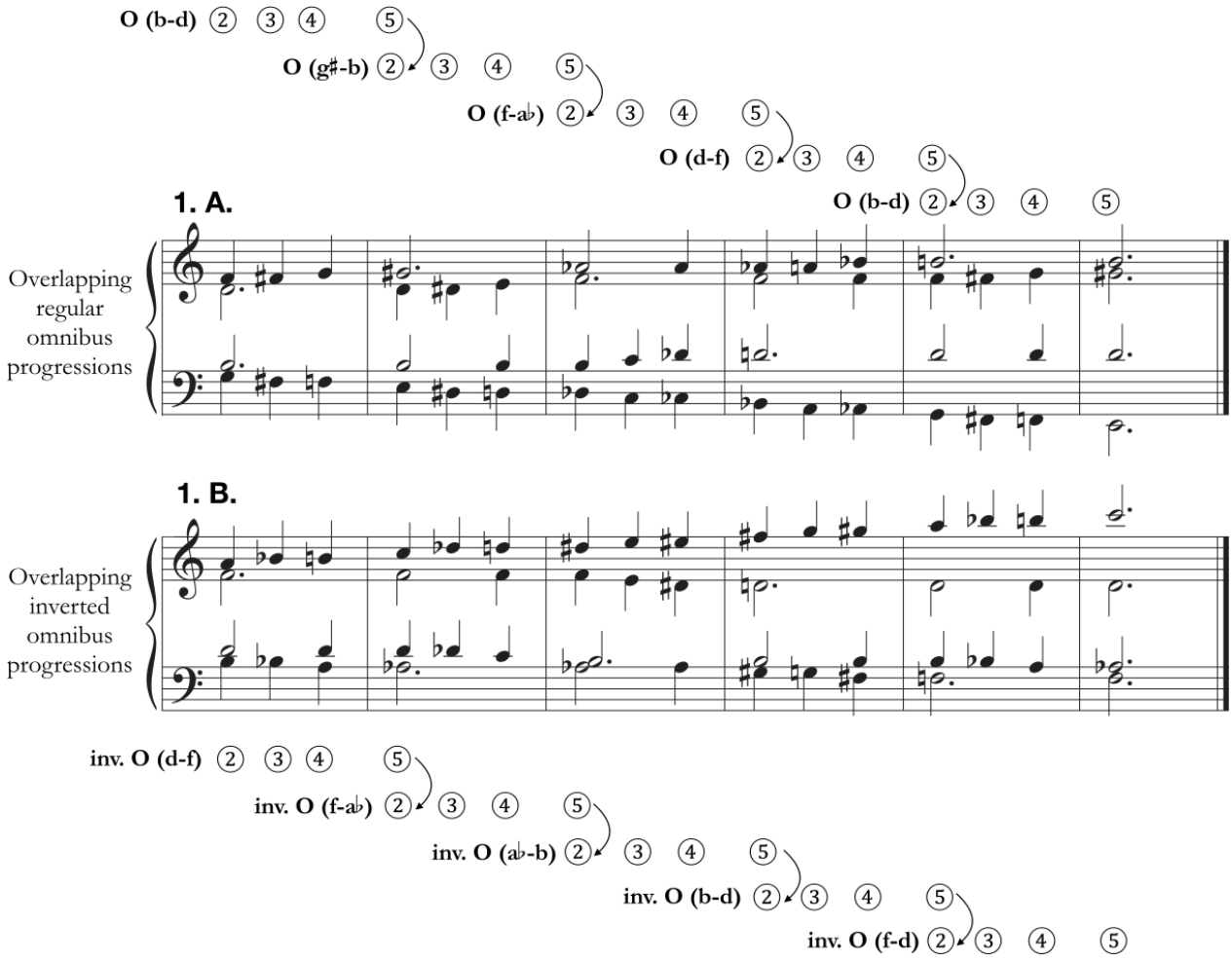
> Ziehn arrived at his theory of symmetrical inversion through practical thinking about keyboard pedagogy, published as early as his *Exercise System* of 1876. There and in later publications he advocated a practice regimen that took into consideration the anatomical realities of bilateral symmetry. Since each hand is the mirror image of the other, he reasoned, exercises for the piano should be based upon symmetrically opposed rather than the customary parallel figures. Thus, difficulties of execution would be equal for each hand, and the dominance of one over the other would be avoided (Yellin 1998, 8).

Four of Ziehn's canons at the minor third and major sixth correspond to overlapping regular omnibus progressions (see his canons 1A, 2A, 3A, and 4A). The remaining ones (i.e., canons 1B, 2B, 3B, and 4B) are mirror inversions of these omnibus cycles, thus featuring half-diminished seventh

chords and major triads instead of dominant sevenths and second-inversion minor triads. (Only Ziehn's canons 1A and 1B have been reproduced in **Figure 82** below for the sake of brevity.) I have indicated in this figure the different stages of the omnibus progression using Yellin's analytical notation. In those examples, the soprano or bass features an ascending or descending chromatic scale moving in quarter notes, while the other three voices are in canonic imitation of one another in contrary motion to the chromatic bass or soprano.

Figure 82: Ziehn's canons at the minor third and large sixth (1976 [1912], 121–122).

(Annotations showing the omnibus cycles are not original to Ziehn's figure.)



The omnibus series in **Figure 82** are connected by what Yellin calls "mutations," which refer to the "continuation of the ascending (contracting) or descending (expanding) motion of the (usually) chromatic bass voice of the omnibus beyond the normal ambit of five half-steps, by means of the perception of a new double pedal of the minor third (or major sixth) in a chord of the seventh"

(1998, 98). Mutations are analogous to pivot chords, in that they play a dual role. Using Yellin's nomenclature, this means that any of the chords ①, ②, ④, and ⑤, the dominant seventh sonorities in the classic omnibus series, can shift function and thus be understood as a different stage in the new omnibus progression (represented by a different Arabic numeral in the analysis). In the overlapping regular omnibus progressions of **Figure 82**, the double pedal b–d of the first omnibus is abandoned for a new one, g♯-b, as chord ⑤ of the first omnibus series becomes chord ② of the next one. Such mutations are possible because chords ①, ②, ④, and ⑤ of the classic omnibus all contain two pairs of notes that form a minor third or major sixth; consequently, composers can easily choose to shift the double pedal to extend the omnibus progression. Following the same principles, mutations also allow multiple inverted omnibus series to be strung together. Ziehn's inversion experiments, shown in **Figure 82** above, illustrate how such progressions work, although his discussion is not connected to specific instances in the repertoire.

Paula Telesco (2001) and Joti Rockwell (2009) have hypothesized the existence of inverted omnibuses in nineteenth-century music, but no examples from the repertoire have thus far been reported. Telesco writes that "[w]hile I do not know if this half-diminished cycle was employed very much, I suspect that a search of the nineteenth-century literature would likely turn up at least some instances of it" (2001, 134). Joti Rockwell notes that Wagner's music would, in theory, be likely to feature inverted omnibus progressions, given Wagner's "interest in both parsimonious voice leading and the dramatic potential of the half-diminished seventh chord" (2009, para. 24); Rockwell nonetheless observes that the scholarship on chromatic wedge progressions in Wagner's oeuvre (Gauldin 2001; 2004) has not reported any examples of the inverted omnibus progression. Indeed, Gauldin observes that the half-diminished resolving as an augmented sixth is a "frequent intruder" in chromatic wedge progressions (2004, 7) and provides a few examples from Wagner's works:[129] however, none of the excerpts he refers to constitutes a strict mirror inversion of the classic omnibus progression.

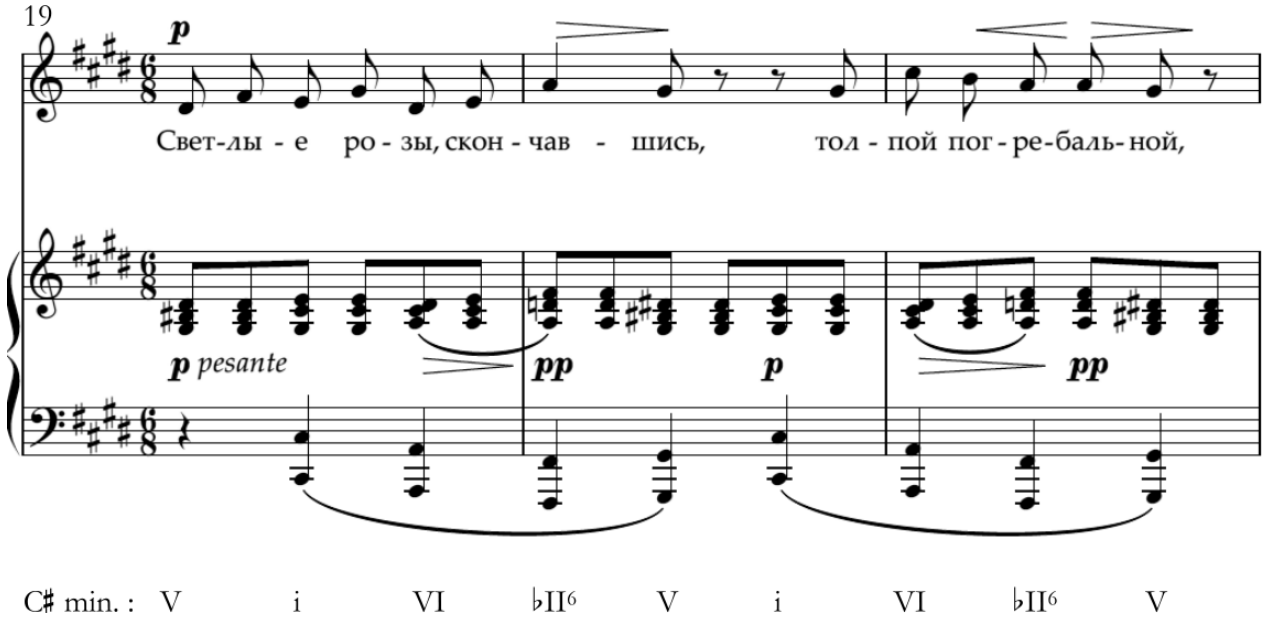
In this section, I supplement the existing literature on inverted omnibus progressions—which has been focused on its theoretical aspects—by analyzing four actual instances of such progressions I

[129] See Gauldin's Example 8 (2004, 10).

have found in late-Romantic repertoires. These examples aim to help us understand the contexts where composers have used inverted omnibus progressions.

In Sergei Taneyev's third song of his op. 17 (**Example 79**), the inverted omnibus prolongs a iiø7 chord (mm. 24–25), which contrasts with the use of the traditional omnibus as a prolongation of V7. The home key of this song is E major, but it includes a brief modulation to C♯ minor in mm. 19–22. When the home key comes back in m. 22, the outer voices of the piano part start moving by contrary stepwise motion, which is mostly diatonic at first (**Figure 83**). But when iiø$^4_2$ is reached in m. 24, the outer voices proceed only by half steps until the dominant arrival (m. 26), while the inner voices hold F♯ and A (mm. 24–25). This voice leading results in an inverted omnibus progression, where chord ③ is a root-position ♭VII chord, framed by two minorized French sixths whose approach tones are aimed at ♭$\hat{7}$. This inverted omnibus, like the other examples analyzed below, precedes the return of the A section. Although I do not have enough examples to generalize about the formal role of inverted omnibuses, it appears, from my small sample, that these progressions tend to occur at the end of a contrasting section and serve to prepare the return of the opening material.

Example 79: Sergei Taneyev, 10 Songs op. 17, No. 3, mm. 19–28.



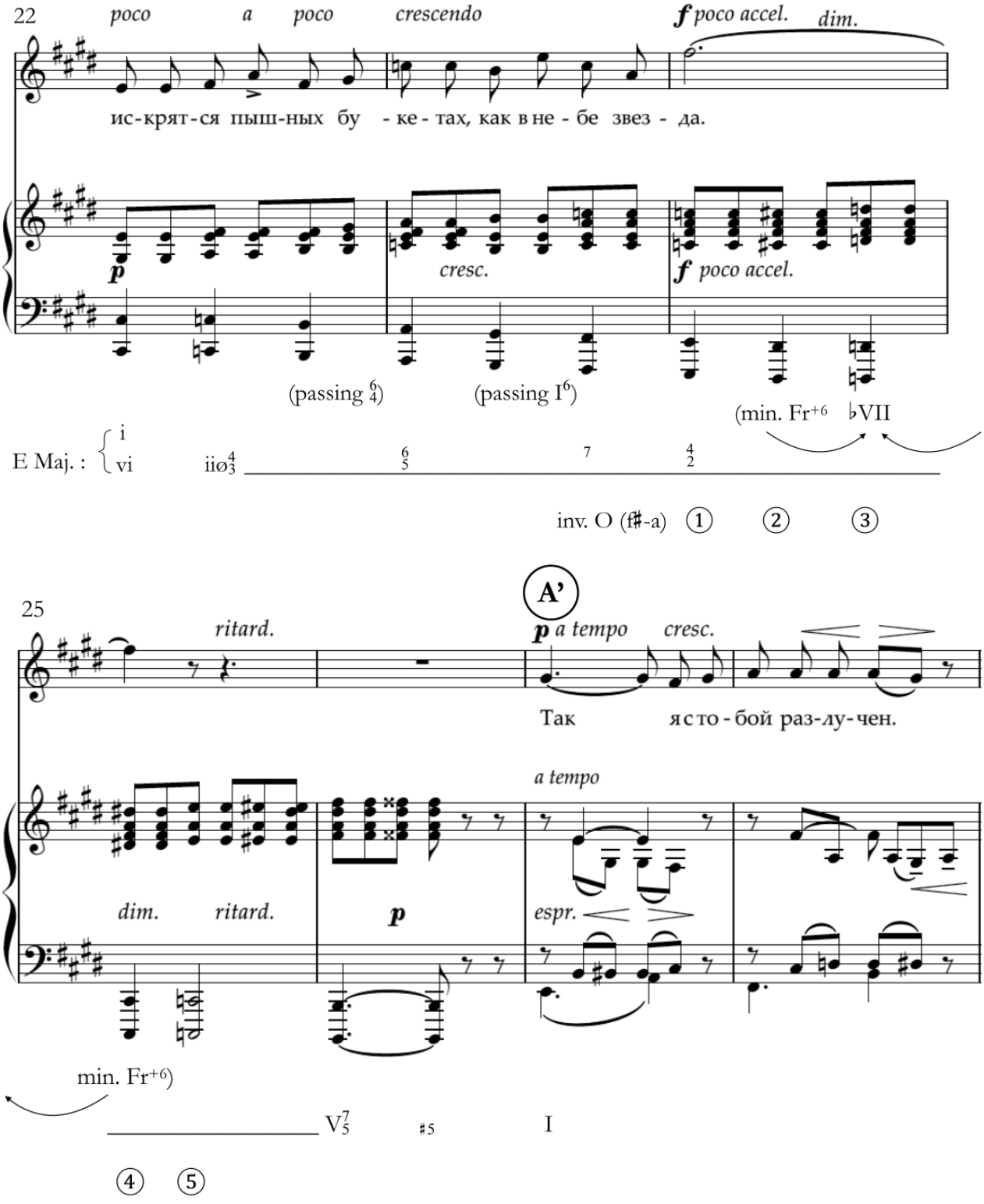
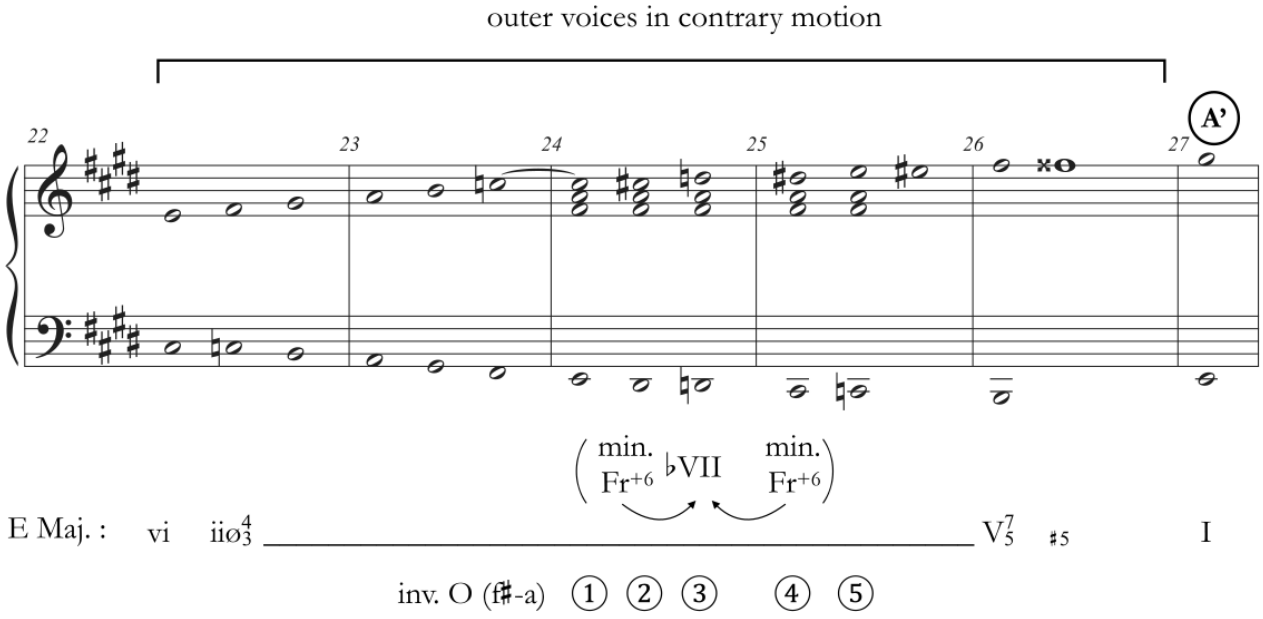

22
poco a poco crescendo
f poco accel. dim.
ис-крят-ся пыш-ных бу - ке - тах, как в не - бе звез - да.
p
cresc.
f poco accel.
(passing 6/4)
(passing I6)
(min. Fr+6 ♭VII
E Maj. : i vi
iiø4/3
6/5
7
4/2
inv. O (f♯-a)
① ② ③
25
A'
ritard.
p a tempo cresc.
Так я с то - бой раз-лу-чен.
a tempo
dim. ritard.
p
espr.
min. Fr+6)
V7/5
♯5
I
④ ⑤

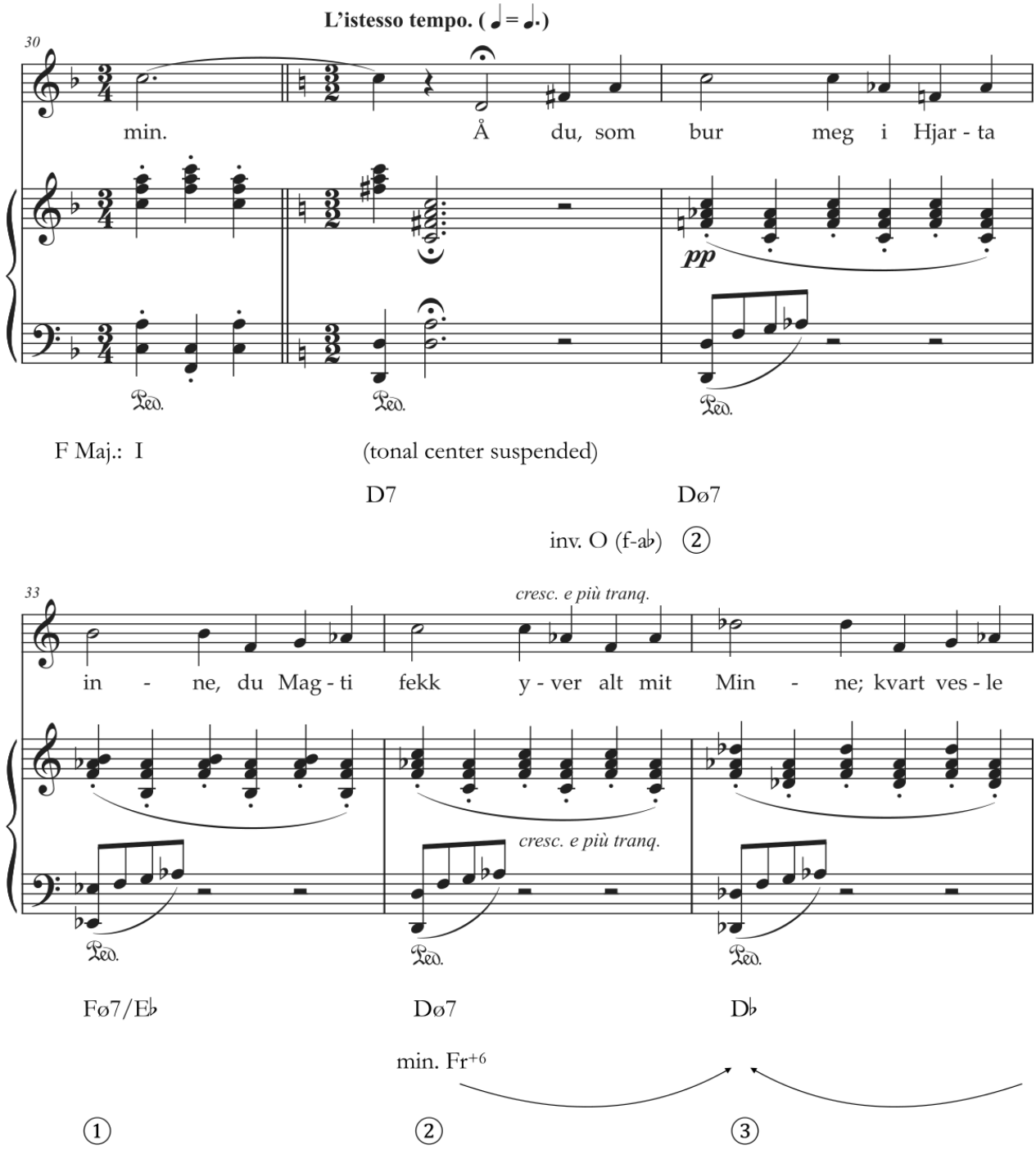
Figure 83: Reduction of Taneyev, 10 Songs op. 17, No. 3, mm. 22–27.

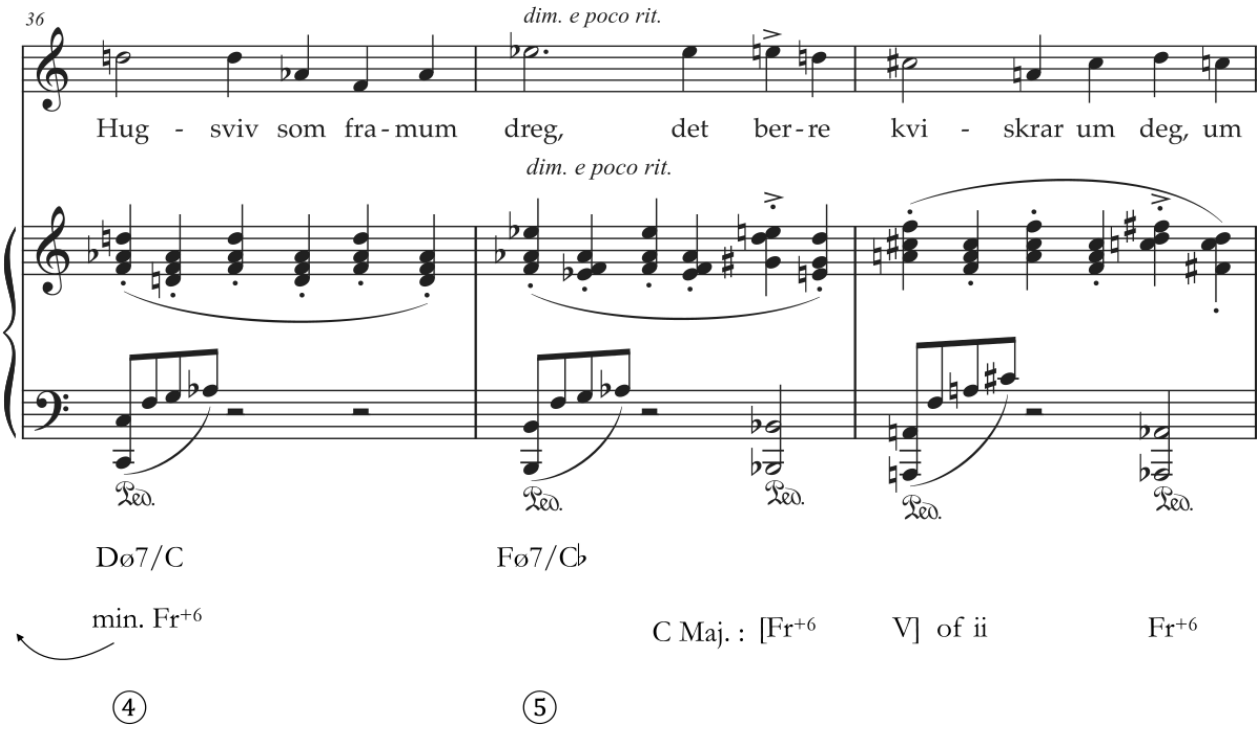


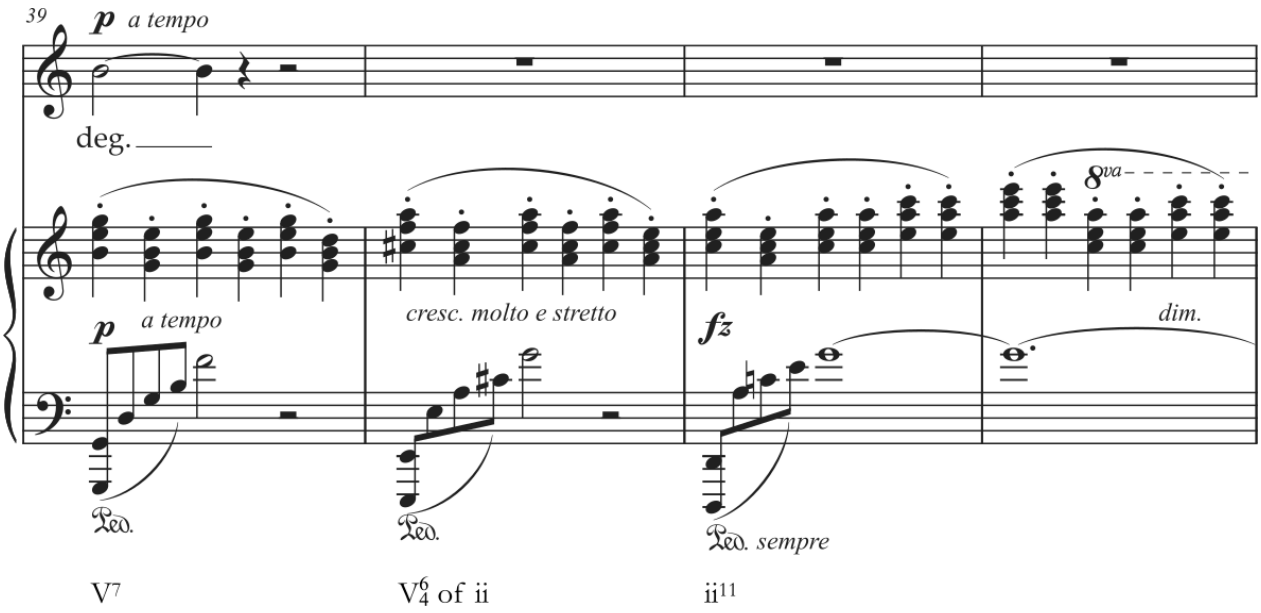
Taneyev's inverted omnibus exemplifies the progression in a non-modulating context. But inverted omnibus progressions, just like the classic omnibus, can also be used as modulatory devices to connect two tonal regions,[130] as in Grieg's song "Elsk" from his op. 67 (**Example 80**). The inverted omnibus starts in m. 33, with Fø7/E♭. The outer voices B (=C♭) and E♭ expand in contrary motion while the inner voices hold F and A♭. Unlike the Taneyev example, the framing chords (chords ① and ⑤) of this inverted omnibus are not functional, since the tonal center is suspended in mm. 31–37. Instead, the omnibus's function is to destabilize the key of F major of the previous section (not shown in the excerpt) to eventually return to the home key C major. This excerpt nonetheless shares some similarities with the Taneyev example, in that the contrary motion between the outer voices extends beyond the omnibus progression (**Figure 84**) and the omnibus precedes the return of the opening material.

[130] Telesco observes that eighteen-century omnibus progressions generally occur in unstable tonal contexts, where the keys before and after the omnibus are different and sometimes quite distant: "rather than being used to prolong a primary dominant, or even an augmented sixth, the omnibus was typically used instead as an exotically colorful, chromatic, yet utilitarian progression to take the music from one key to another, close or distant, providing a wild enharmonic ride along the way" (1998, 276).

Example 80: Edvard Grieg, 8 songs op. 67, No. 5 "Elsk," mm. 30–47.




36
dim. e poco rit.
Hug - sviv som fra - mum dreg, det ber - re kvi - skrar um deg, um
dim. e poco rit.
Ped.
Ped.
Ped.
Ped.
Dø7/C
Fø7/C♭
min. Fr+6
C Maj. : [Fr+6 V] of ii Fr+6
④
⑤


39
p a tempo
deg.
p a tempo
cresc. molto e stretto
fz
8va
dim.
Ped.
Ped.
Ped. sempre
V7
V6/4 of ii
ii11

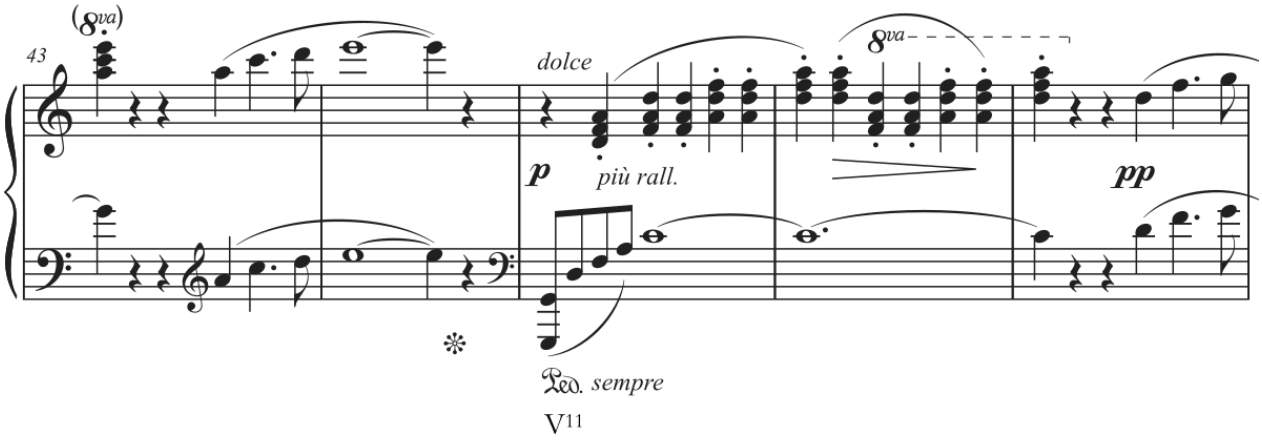
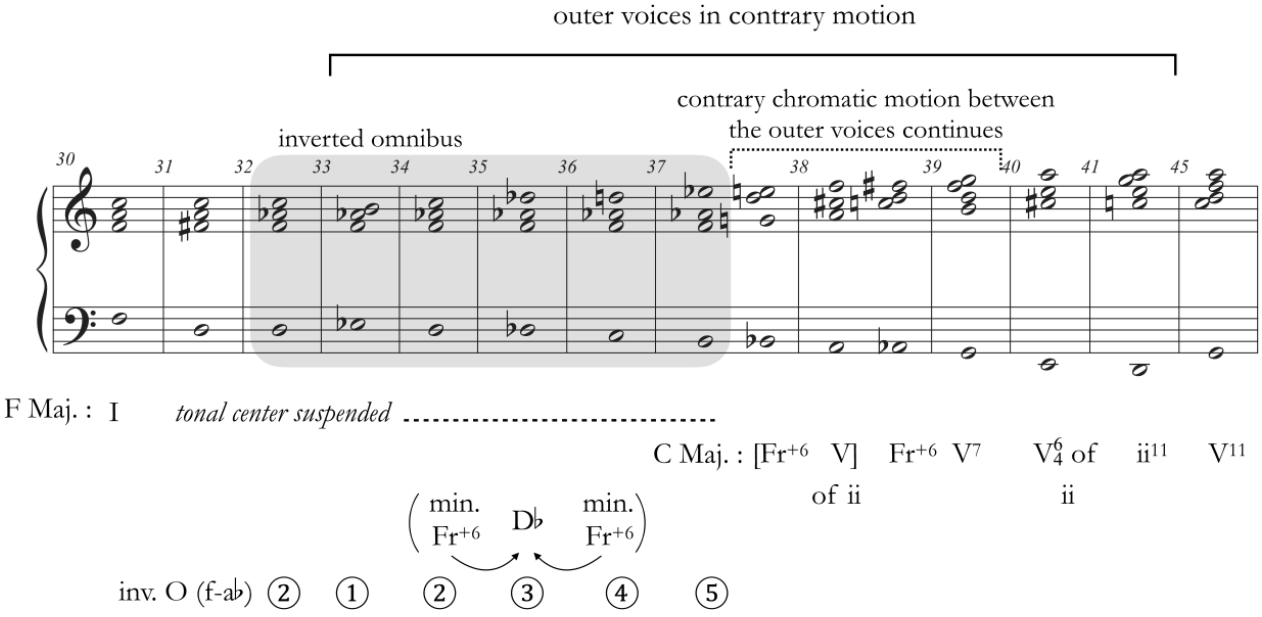


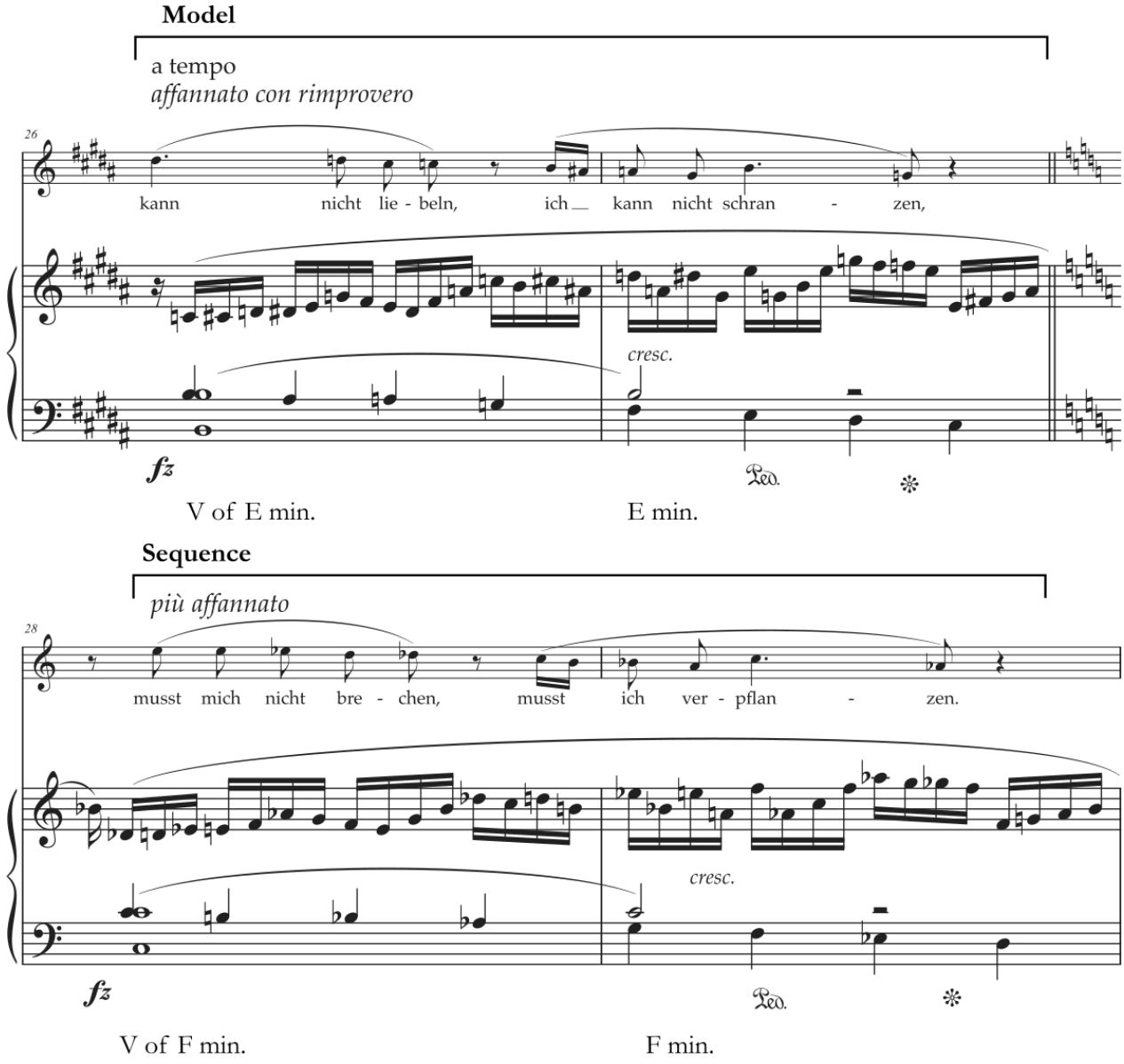
Figure 84: Reduction of Grieg, 8 songs op. 67, No. 5 "Elsk," mm. 30–45.

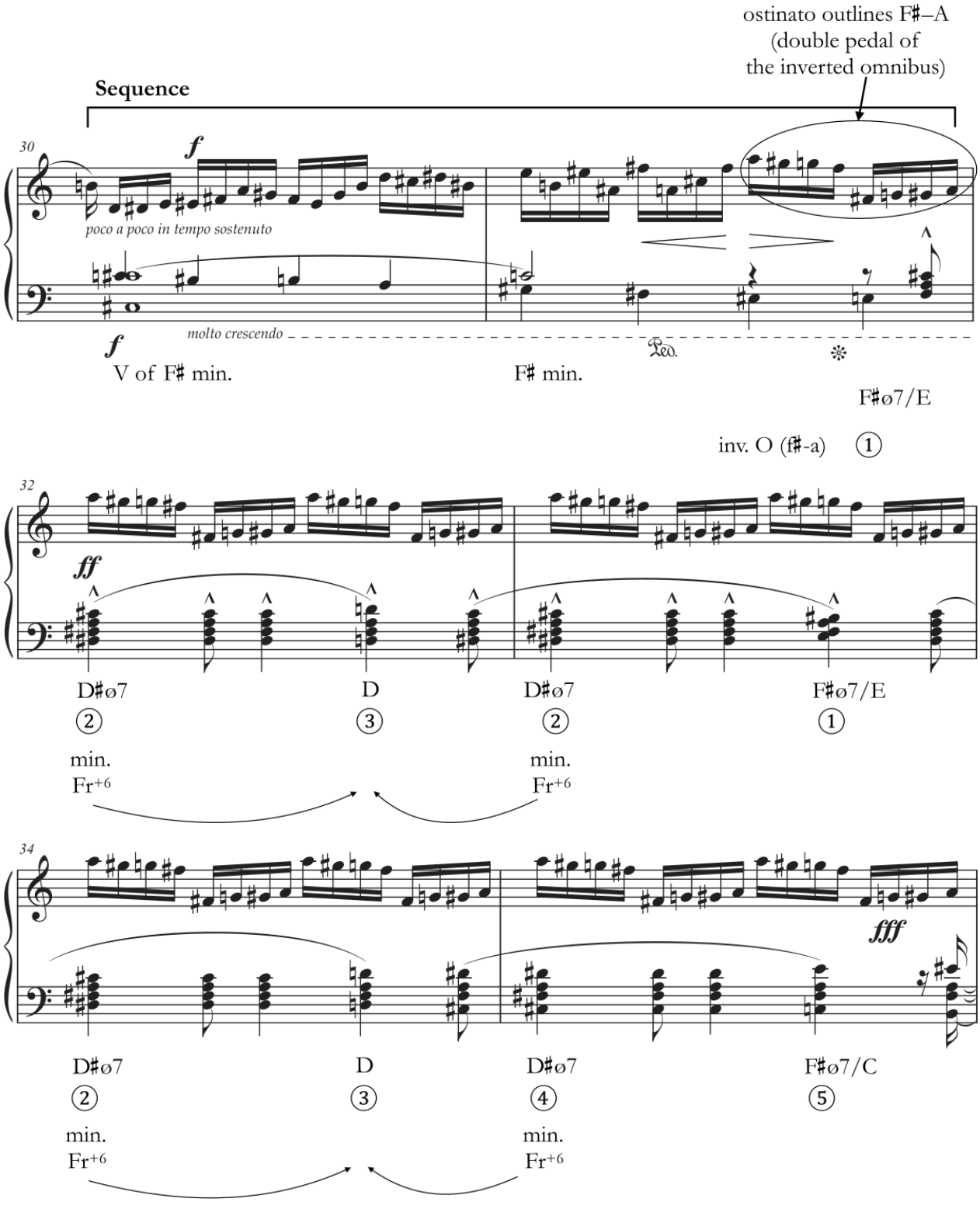


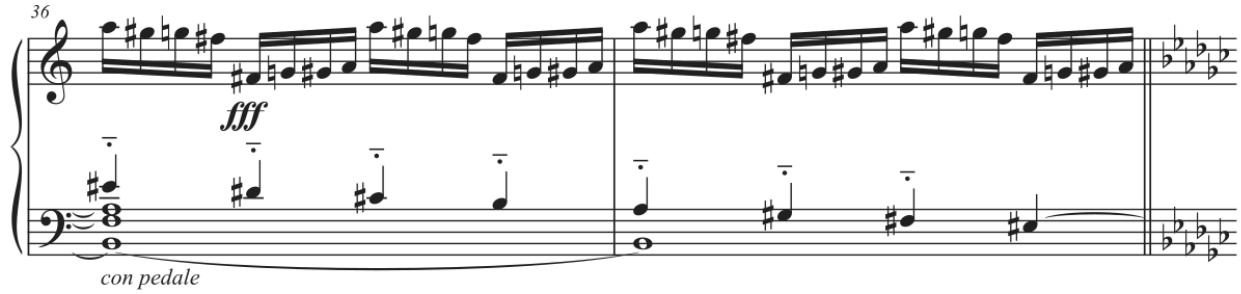
Another instance of a complete inverted omnibus appears in Medtner's song op. 6 No. 4 (**Example 81**). Similarly to the Taneyev and Grieg examples above, the inverted omnibus marks the end of the contrasting section before the return of the opening material. This ABA' song in E♭ minor modulates to B major in the middle section. In mm. 26–31, the key is destabilized by an ascending V-i sequence transposed up a semitone each time (**Figure 85**). The chromatic pattern A–G♯–G–F♯ (and its retrograde F♯–G–G♯–A) that appears on the last two beats of m. 31 are repeated throughout mm. 32–37 in the right hand, while the chords in the left hand correspond to an inverted omnibus. The motive in the right hand outlines the minor third F♯–A, the double pedal of the inverted omnibus.

Motivically, this passage combines various elements previously heard in the song: the chromatic pattern in sixteenth notes in the right hand recalls the chromaticism found in the introduction of the song (**Example 82**, mm. 1–2), while the rhythm and contour of the left hand refer to the opening vocal line of section A (**Example 82**, mm. 3–4). In this example, the inverted omnibus creates a tonally disorienting transition between the F♯ minor chord of m. 31 and the B7 chord of m. 36, which resolves as a common-tone German sixth to the home key tonic E♭ minor in m. 38. The continuity is achieved by the use of the common tones F♯–A that appear in all the chords of this passage, from the F♯ minor chord in m. 31 through the B7 chord in m. 36.

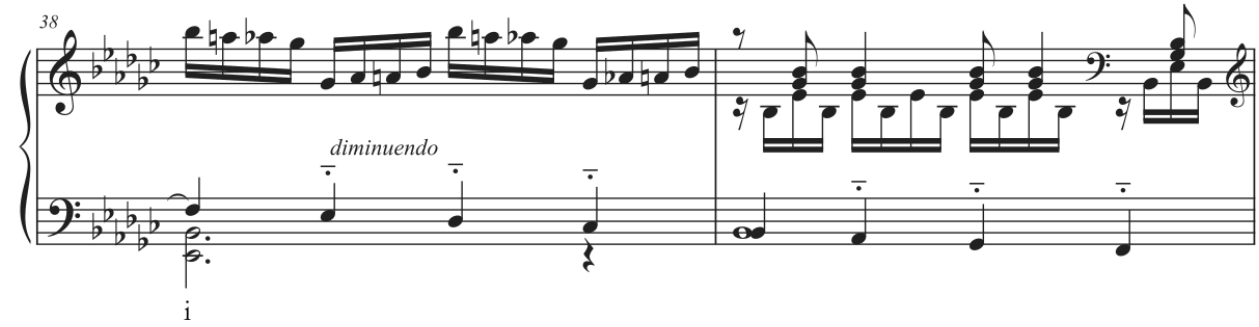
Example 81: Nikolai Medtner, 9 Songs op. 6, No. 4, mm. 26–41.




ostinato outlines F♯–A
(double pedal of
the inverted omnibus)
Sequence
30
f
poco a poco in tempo sostenuto
f
molto crescendo
Ped.
V of F♯ min.
F♯ min.
F♯ø7/E
inv. O (f♯-a) ①
32
ff
D♯ø7
D
D♯ø7
F♯ø7/E
②
③
②
①
min.
Fr+6
min.
Fr+6
34
fff
D♯ø7
D
D♯ø7
F♯ø7/C
②
③
④
⑤
min.
Fr+6
min.
Fr+6



E♭ min.: c.t. aug. 6th



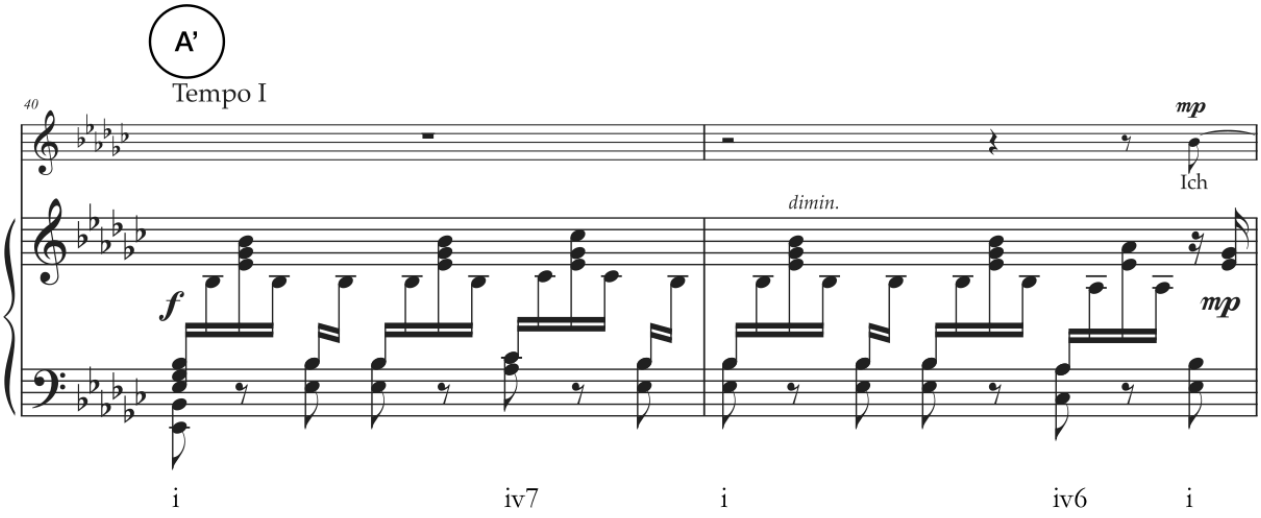
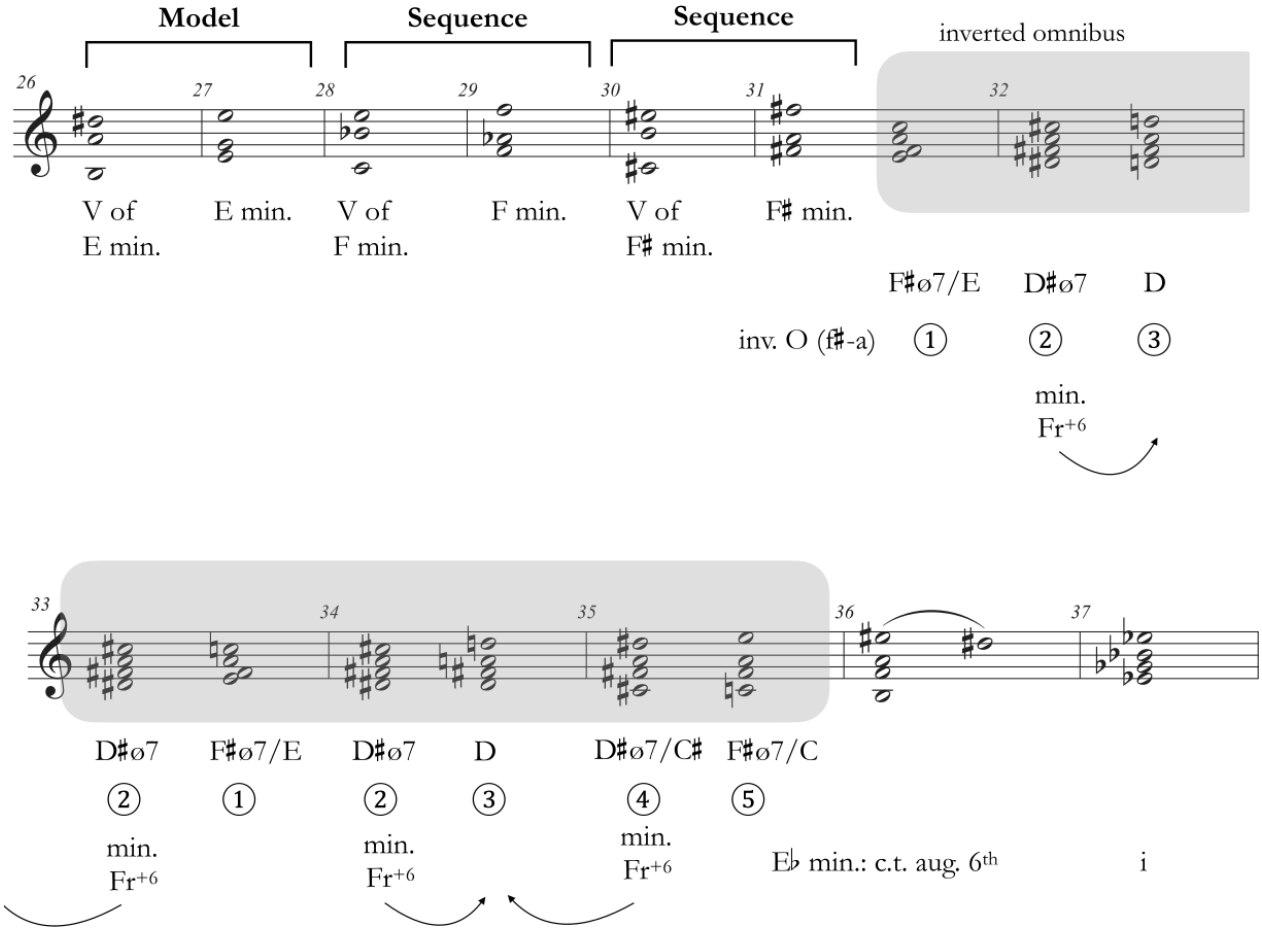
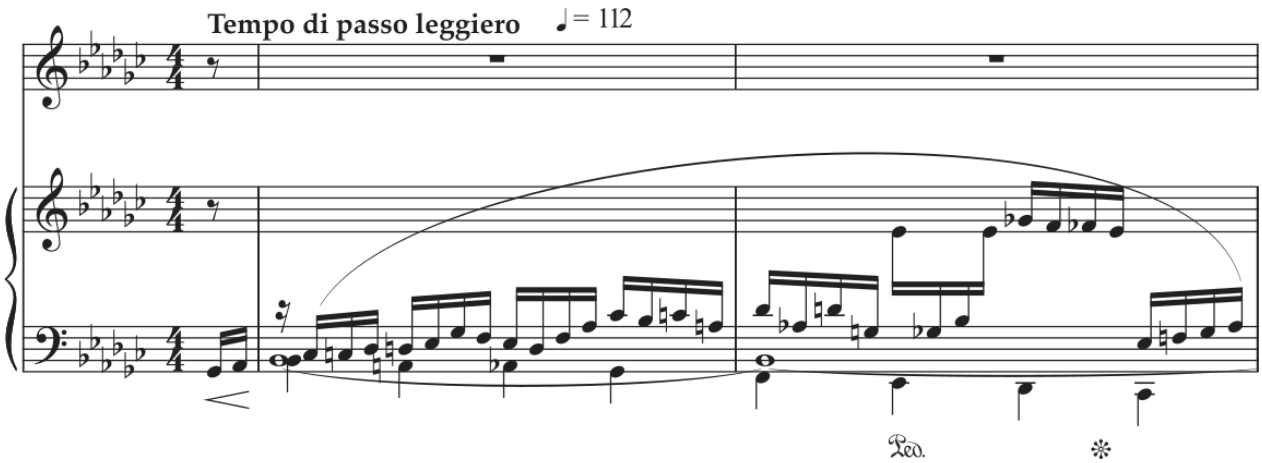
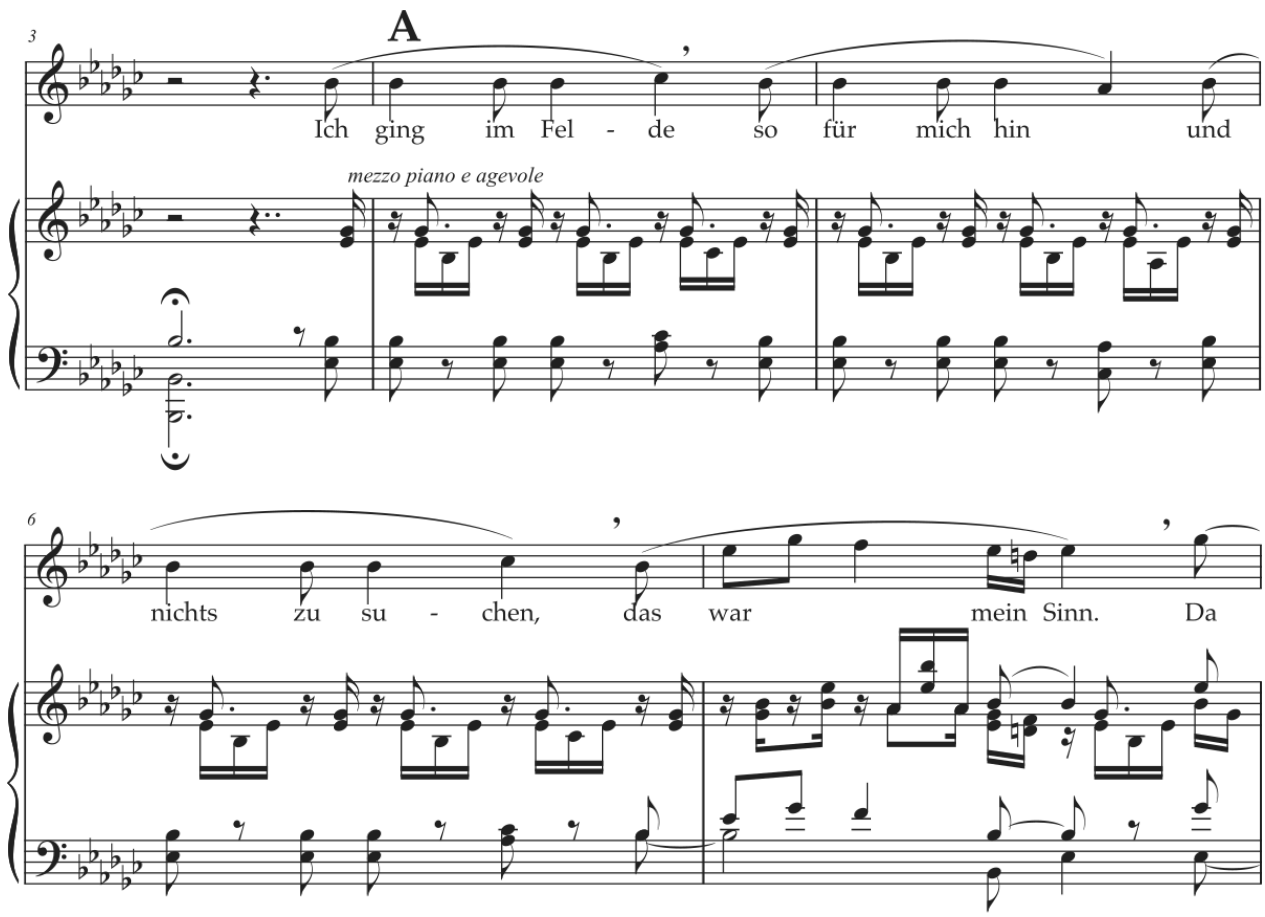


Figure 85: Reduction of Medtner, 9 Songs op. 6 No. 4, mm. 26–37.



Example 82: Nikolai Medtner, 9 Songs op. 6 No. 4, mm. 1–7.

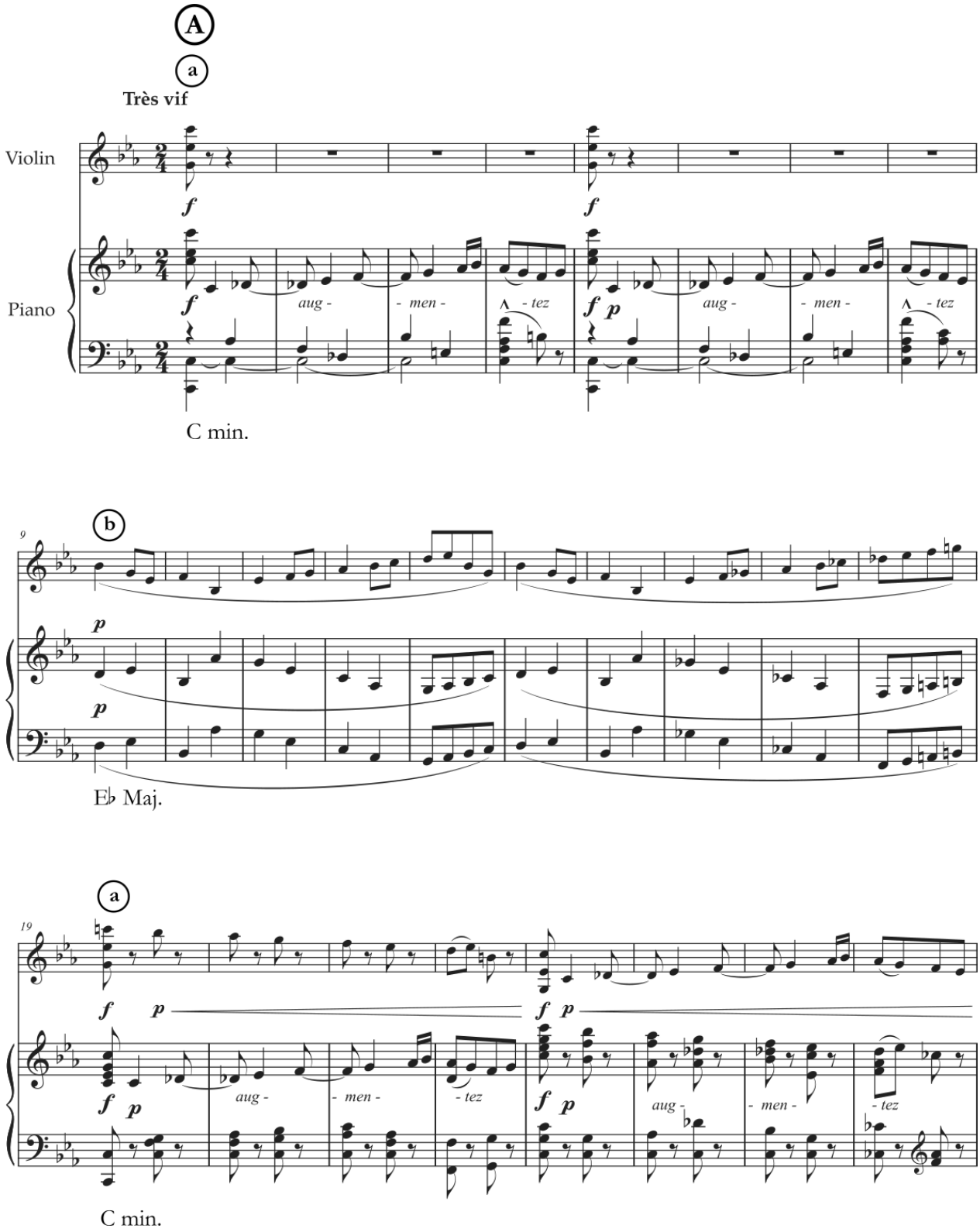


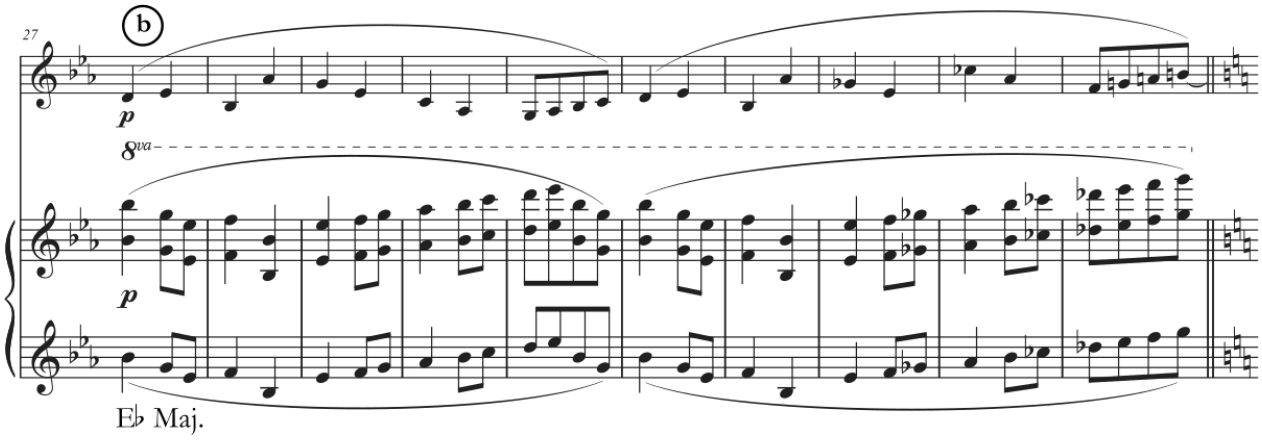


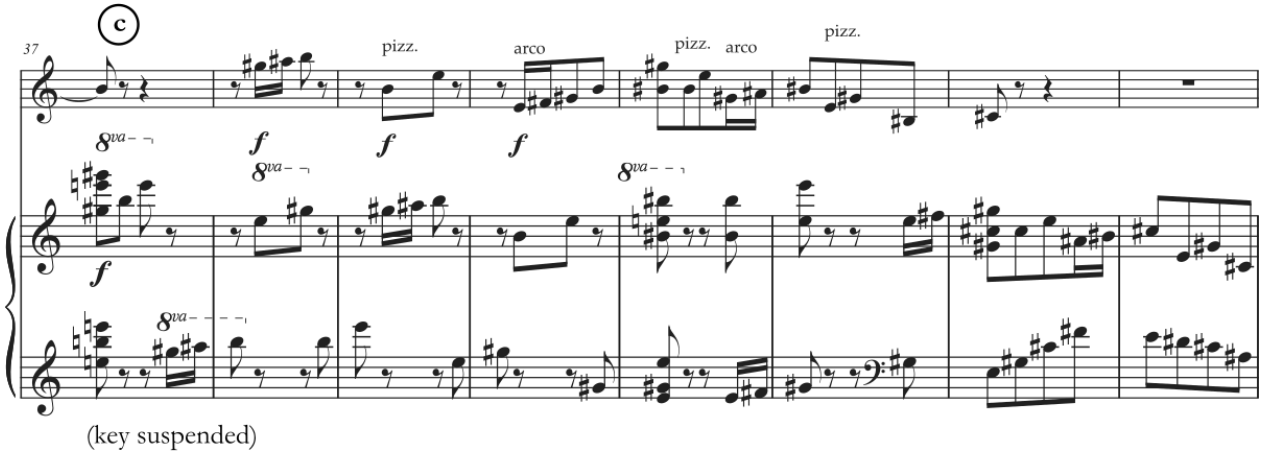
My last example of an inverted omnibus progression occurs in the third movement of Magnard's Violin Sonata op. 13 (**Example 83** and **Figure 86**). This excerpt illustrates a set of overlapping inverted omnibus series connected by mutations, similar to the ones described by Ziehn in his *Canonical Studies* from 1912 (see **Figure 82**, p. 200). Like the other examples studied in this section, the inverted omnibus in Magnard occurs at the end of a tonally unstable formal area, before the return of the opening theme of the movement. This movement is a large ternary form; within the large A section (mm. 1–104), the thematic units are organized as follows: ***ab ab cd ab***. The opening syncopated theme (***a***, mm. 1–8) in C minor is immediately contrasted with a lyrical theme (***b***, mm. 9–18) in the relative major; these two themes are then repeated in mm. 19–36. The following sections ***c*** and ***d*** are considerably less tonally stable than ***a*** and ***b***; the key is suspended and the chord successions do not follow conventions for tonal syntax, but arise instead from smooth voice leading. The overlapping inverted omnibus cycles occur in section ***d***; the first series in mm. 46–51 features the double pedal b–g♯; the second one in mm. 53–59 transposes the double pedal up a minor third to b–

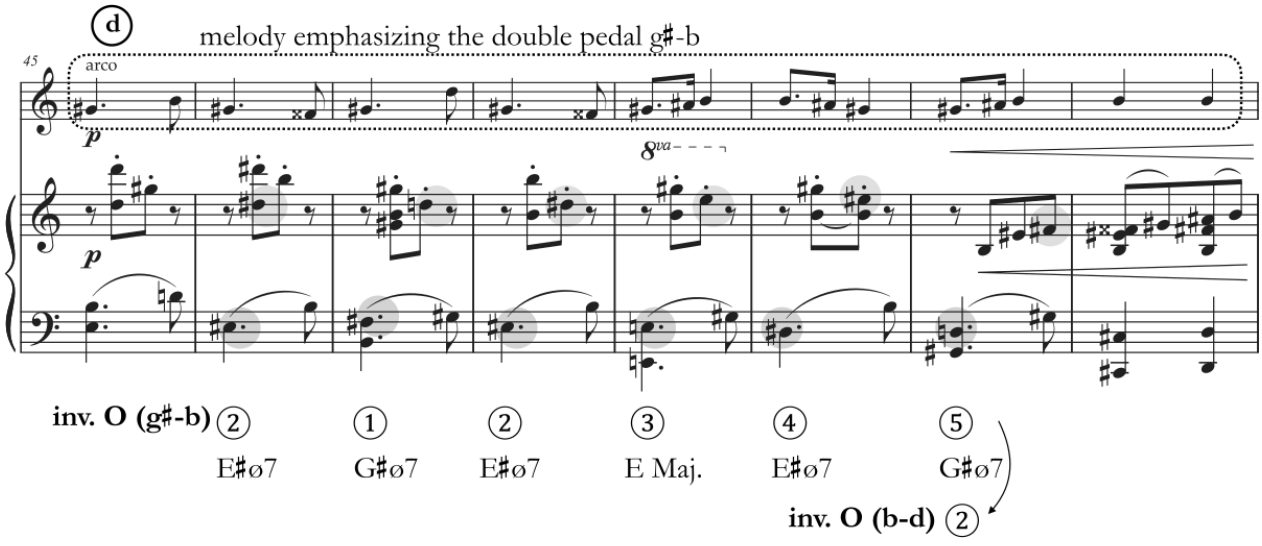
d; finally, the last inverted omnibus, which occurs in mm. 59–61, uses d and f as the double pedal. Each of the inverted omnibus series in this passage is elaborated in a slightly different way. The first one (m. 46–51) unfolds as ②①②③④⑤ = ②, while the second one in mm. 51–59 features the complete convergent and divergent forms of the inverted omnibus (②①②③④⑤④③②①=④). (Since chords ① and ⑤ are the same in omnibus progressions, a mutation of either one results in the same transposition.) The last omnibus in mm. 59–61 is incomplete; it includes only the segment ④③②①. The double pedal of the first omnibus progression is emphasized in the violin part in mm. 45–52, then the melodic material is transferred to the right hand of the piano for the second omnibus cycle in mm. 53–59. Because the third omnibus (mm. 59–61) is relatively short compared to the previous two series, the melodic pattern associated with the double pedal does not return simultaneously with the onset of the third omnibus; it is instead restated in m. 61, coinciding with the last chord of the series. The chord successions and voice leading from that moment on are not governed by the omnibus logic anymore, but the melodic material retains the rhythms and contours found in the earlier omnibus cycles, thus ensuring a certain motivic coherence in this section. Similarly to the other omnibus progressions studied here, the contrary chromatic motion between the outer voices in mm. 61–67—D–E♭–E–F in the violin against C–B–B♭ in the left hand—persists beyond the omnibus progression. If the omnibus series had been transposed a fourth time, the double pedal would have been f–a♭; while the harmonic successions in mm. 66–73 do not correspond to an inverted omnibus, the violin melody outlines the double pedal of the hypothetical fourth inverted omnibus. It actually corresponds to the very melody that was identified in the previous omnibus series as emphasizing the notes of the double pedal. Globally, the ***d*** section prolongs Fø7, which first appears in m. 46 as chord ② of the initial inverted omnibus series. When the chord returns in mm. 67–73, it sounds at first like a neighbor chord embellishing V in E♭, but it is retrospectively understood as the functionally mixed chord "ivø7" in C minor, which resolves plagally in the bass in mm. 74–75, while also exhibiting a dominant-to-tonic resolution with the $\hat{7}$–$\hat{1}$ motion in the violin part.

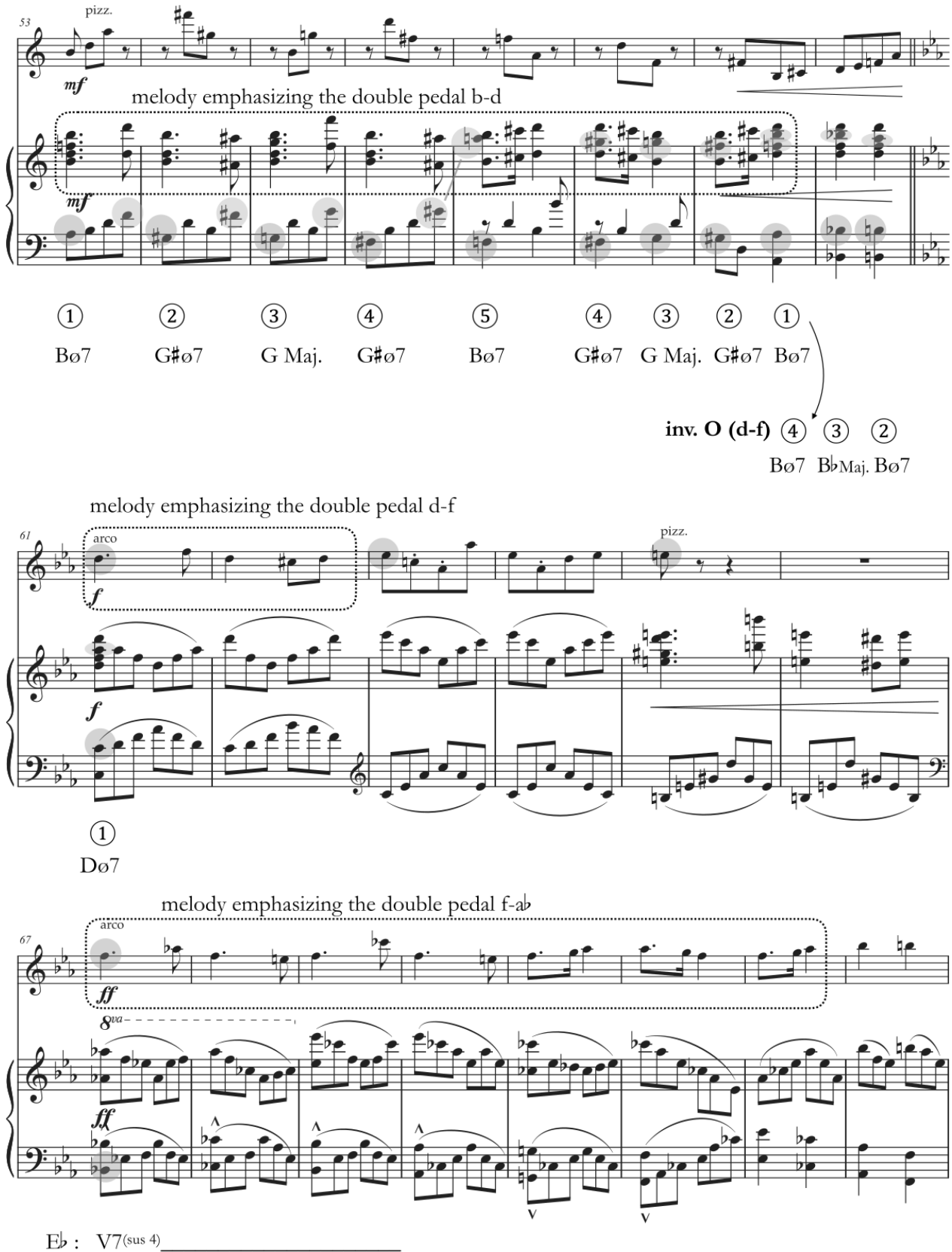
Example 83: Albéric Magnard, Violin Sonata op. 13, iii, mm. 1–103.

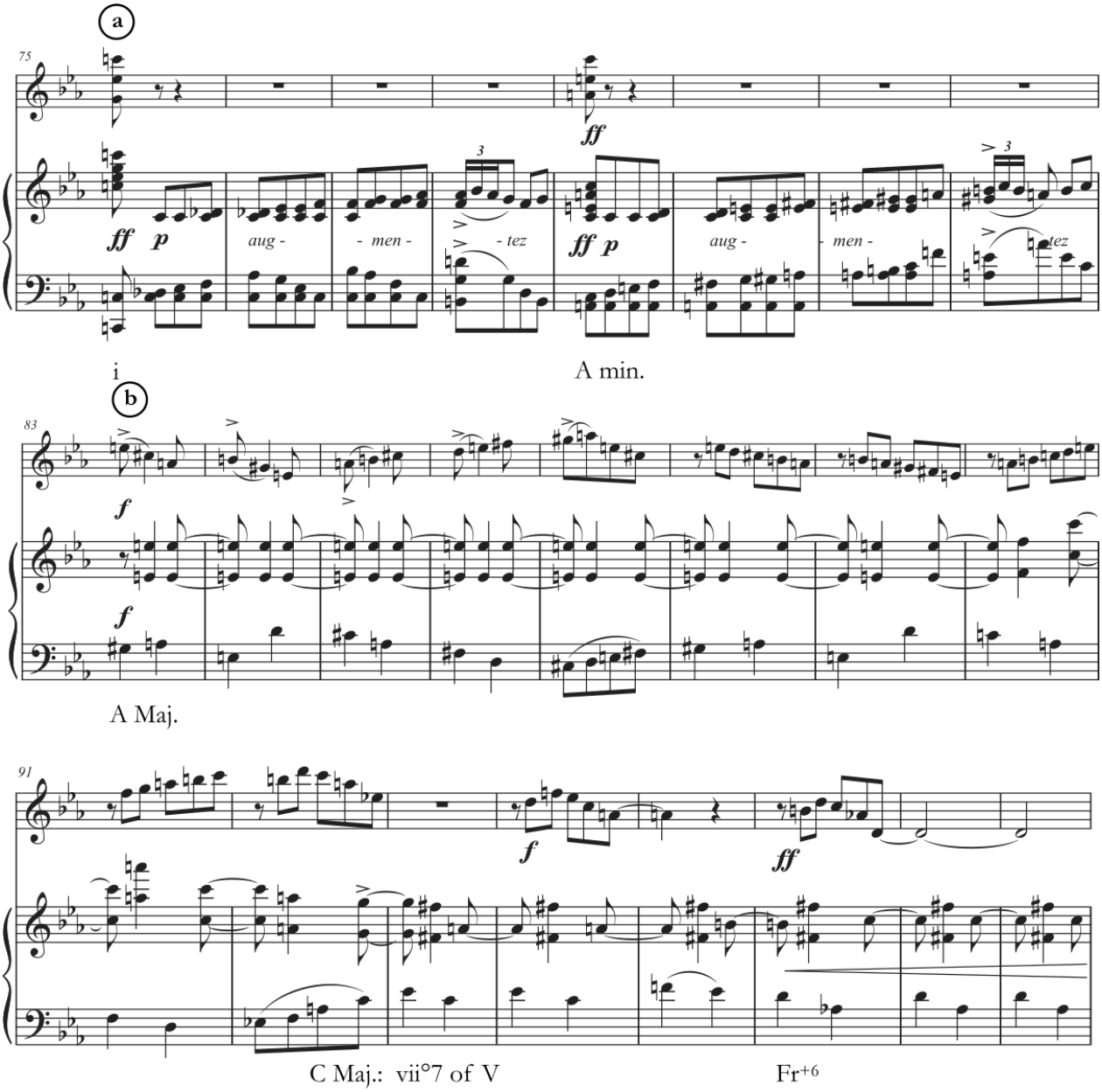



b
27
p
8va
p
E♭ Maj.


c
37
pizz.
arco
pizz.
arco
pizz.
f
f
f
f
8va
(key suspended)


d
melody emphasizing the double pedal g♯-b
45
arco
p
p
8va
inv. O (g♯-b) ② ① ② ③ ④ ⑤
E♯ø7 G♯ø7 E♯ø7 E Maj. E♯ø7 G♯ø7
inv. O (b-d) ②


53
pizz.
mf
melody emphasizing the double pedal b-d
mf
① ② ③ ④ ⑤ ④ ③ ② ①
Bø7 G♯ø7 G Maj. G♯ø7 Bø7 G♯ø7 G Maj. G♯ø7 Bø7
inv. O (d-f) ④ ③ ②
Bø7 B♭Maj. Bø7
melody emphasizing the double pedal d-f
61
arco
f
pizz.
f
①
Dø7
melody emphasizing the double pedal f-a♭
67
arco
ff
8va
ff
v
v
E♭ : V7(sus 4)
Cm : "ivø7"


a
75
ff
ff p
aug -
- men -
- tez
ff p
aug -
- men -
- tez
i
A min.
b
83
f
f
A Maj.
91
f
ff
C Maj.: vii°7 of V
Fr+6

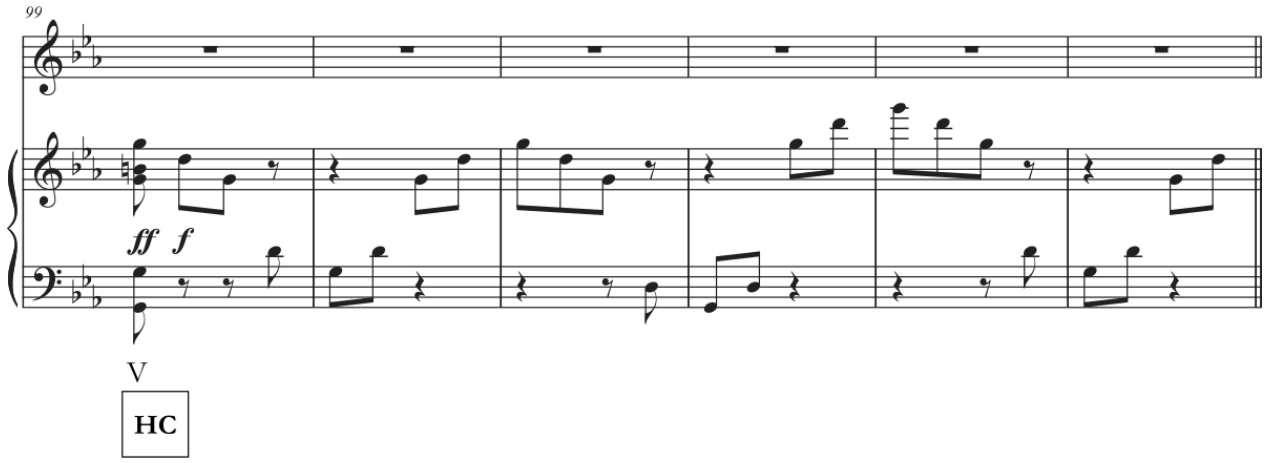
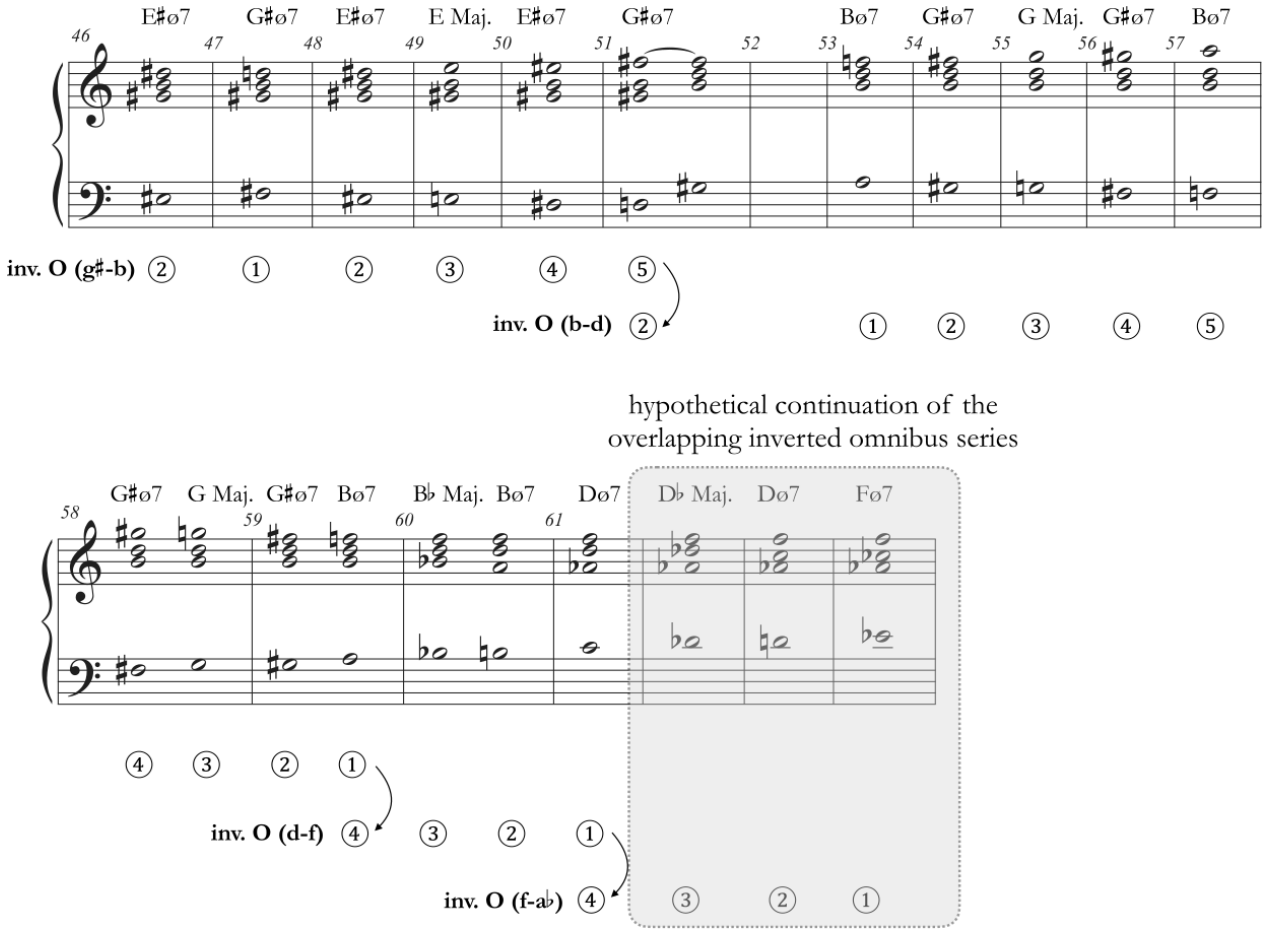


Figure 86: Reduction of Magnard, Violin Sonata op. 13, iii, mm. 46–61.



CHAPTER 5 – MINORIZED AUGMENTED SIXTHS IN HISTORICAL TREATISES

Theoretical discussions of minorized augmented sixths predate the widespread use of these chords by composers. For example, Nathan Martin (2008) has shown that, over a decade before the premiere of Wagner's *Tristan und Isolde* (1865)—a work widely known for its augmented sixths enharmonically equivalent to half-diminished sevenths—Moritz Hauptmann (1853) discussed modulations involving reinterpreted "Tristan" chords. Hauptmann showed in his treatise various ways in which seventh chords can resolve; one of them involves holding the third and fifth of a seventh chord and resolving the minor-seventh interval outwards (**Figure 87**). As Martin observes, Hauptmann exemplifies these resolutions with what we would call today a German augmented sixth going to a major triad in six-four position (**Figure 87**, G7–Bm/F♯) and a half-diminished seventh going to a root-position major triad a half-step below (**Figure 87**, Gø7–G♭). The latter corresponds to a minorized French sixth whose approach tones (G[=A𝄫]–F) lead to the root of the target chord. Hauptmann only accepted this progression in modulations, and observed that "[i]t should also be noted that the resolution here leads to another key, since this resolution is possible only through a chromatic progression in one of the two parts, and chromatically differentiated notes never lie in the same key" (Hauptmann 1853, translated by Martin 2008, 18).

Figure 87: Resolutions of minor-seventh intervals as augmented sixths in Hauptmann (1853, cited in Martin 2008, 18).

G–b–D–F ➔ f♯–b–D–f♯

G–b♭–D♭–F ➔ G♭–b♭–D♭–G♭

Discussions of augmented sixths similar to the Tristan chord and other minorized augmented sixths can, however, be traced back to before Hauptmann's treatise. I have found in François-Joseph Fétis's *Traité complet* (1849)[131] several progressions with minorized augmented-sixth chords, some of them closely resembling Wagner's Tristan chord and Strauss's Till sixth. Fétis's treatise was in fact

[131] Although Fétis's *Traité complet* was originally published in 1844, I have consulted the fourth edition (1849). The English language quotations in this chapter are taken from Peter Landey's (2008) translation.

more audacious than Hauptmann's in two ways. First, in Fétis, minorized augmented sixths appear in non-modulating as well as modulating progressions, while in Hauptmann, these chords are limited to modulating contexts. Second, Fétis shows that the augmented-sixth interval can resolve to various chord factors (root, third, fifth), while Hauptmann's treatise features only the resolution to the root.

This chapter focuses on the minorized augmented sixths that appear in Fétis and compares them to instances of these chords in later treatises (e.g., Schenker [1906], Louis and Thuille [1913]). I examine how these chords emerged as valid harmonic entities in these harmonic theories, and posit that the inclusion or exclusion of certain types of minorized augmented sixths in these historical treatises reflects implicit principles of their understanding of tonality.

François-Joseph Fétis's (1784–1871) *Traité complet de la théorie et de la pratique de l'harmonie* (1849) occupies a significant place in the history of Western music theory for popularizing the concept of tonality and for developing a theory of its historical evolution. He famously claimed in his treatise that his theory could predict how future composers would expand tonality:

> In some of the combinations that I have just analyzed, I go beyond the point where composers until now have stopped, and these harmonies may seem strange, because they are not customary, and because they are still in the domain of ***future art***; but with the continuous practice of developing tonal feeling, and the analysis of the normal formation of chords coming to its aid, not only will one no longer feel repugnance on hearing these harmonies, but they will become necessary" (*Treatise*, 108, emphasis not in the original).[132]

He effectively envisioned harmonic techniques that eventually became common in the late nineteenth century; Thomas Christensen observes that Fétis's "omnitonic order" (i.e., his last stage of tonal development), "turned out to be a surprisingly prescient description of harmonic and modulatory practices that would be heard a half century later" (2019, 274). While Christensen focuses on Fétis's anticipation of later general compositional techniques—e.g., incessant and unpredictable modulations, postponement of the resolution of dissonances, and rampant chromaticism—I draw attention in this chapter to specific harmonic progressions in the *Traité complet* that anticipated some of the most iconic

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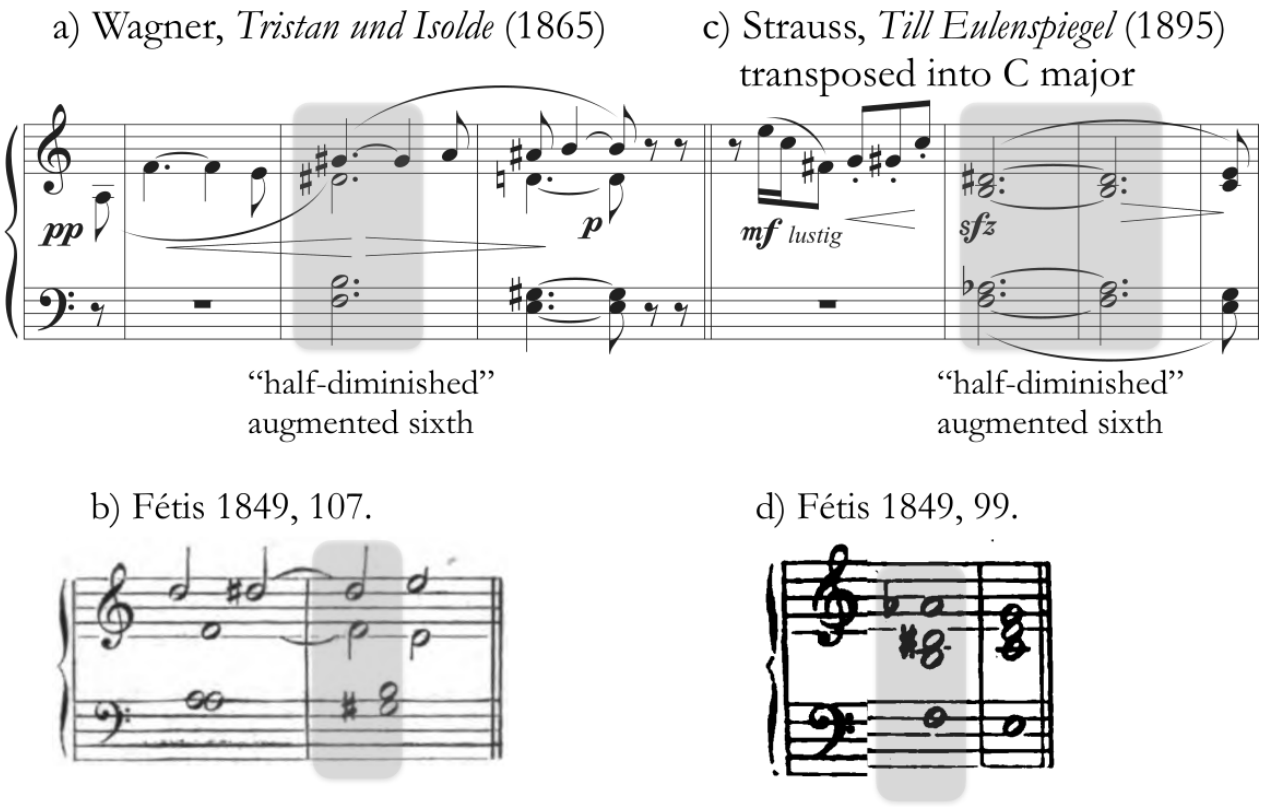
[132] "Dans quelques-unes des combinaisons que je viens d'analyser, je vais au-delà du point où se sont arrêtés les compositeurs jusqu'à l'époque actuelle, et ces harmonies pourront sembler étranges, parce qu'on n'en a pas l'habitude et parce qu'elles sont encore du domaine de l'***art futur*** ; mais l'exercice continuant le développement du sentiment tonal, et l'analyse de la formation normale des accords venant au secours de celui-ci, non-seulement on n'éprouvera plus de répugnance à l'audition de ces harmonies, mais elles deviendront même un besoin" (Fétis 1849, 111).

sonorities of the late nineteenth century. Namely, I examine passages that closely resemble Wagner's "Tristan Chord" (1865, **Figure 88a–b**) and Strauss's "Till Sixth" (1895, **Figure 88c–d**). Although these famous instances of augmented sixths enharmonically equivalent to half-diminished sevenths have been the object of theoretical debate for more than a century,[133] the examples from the *Traité complet* have not, to my knowledge, been cited as precedents for Tristan and Till, and have also gone largely unremarked in the literature on Fétis (e.g., Christensen 2019, Campos 2013, Kosar 1984).

Figure 88: Resolutions in Fétis's treatise that prefigure that of the Tristan chord and the Till sixth.



Fétis acknowledged that some of the extensions of tonality he illustrated "generate a large number of new chords not yet employed by composers."[134] The minorized French augmented sixth is perhaps one of these "new chords," since it is not commonly featured in repertoires predating the

[133] Both Nattiez (1987, 255–263) and Martin (2008) offer literature reviews of the various harmonic analyses of the Tristan chord.

[134] "[Ces formules harmoniques] engendrent aussi un grand nombre d'accords nouveaux non encore employés par les compositeurs" (Fétis 1849, 253).

Traité complet.[135] Why did Fétis theorize this chord that did not start to appear frequently in the repertoire until decades later? And, conversely, what in his theory prevented him from anticipating other late-nineteenth-century uses of minorized augmented sixths? I argue that it is precisely because Fétis based most of his tonal theory on abstract principles rather than contemporaneous practices that he managed to predict certain extensions of tonality that became commonplace in the late-Romantic era; these same principles also prevented him from envisioning other contexts where minorized augmented sixths would be employed. I start by outlining these principles; then, I examine three passages in Fétis's *Traité complet* where minorized augmented sixths appear.

Fétis's tonal principles

Fétis's theoretical tenets have been discussed in detail in previous publications;[136] I summarize here only the aspects of his theory that are relevant to the present discussion. Fétis argues that "tonalité moderne," which arose around the beginning of the seventeenth century and was still ongoing in Fétis's time, is characterized mainly by the use of the dominant seventh chord without preparation. Fétis posits that the progression from V7 to tonic harmony is the main way of establishing a key center because the dissonance between $\hat{5}$, $\hat{7}$, and $\hat{4}$ urges a resolution to tonic:

> [Natural dissonant chords], by placing in harmonic relation the fourth degree, the dominant and the seventh degree, have characterized the leading tone, have imparted to it the necessity of the ascending resolution, and have in this way founded modern tonality, and have substituted it for the old tonality of plainchant" (*Treatise*, 172).[137]

This progression features the two fundamental chord types that Fétis recognizes—the dominant seventh chord on $\hat{5}$ as well as root-position major and minor triads[138]—whose modifications generate all the other chord types that can arise in tonal music. These harmonies can be modified through **inversion** (**Figure 89a**); **substitution**, which arises when the root of V7 is replaced by $\hat{6}$ or

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[135] Though rare, such examples do exist. For instance, Nathan Martin (2008) uncovered a half-diminished augmented sixth in the Benedictus from Beethoven's *Missa solemnis* (see his Example 11, reproduced in Chapter 4, **Figure 62**, p. 164).

[136] See Christensen (2019, Chapters 1 and 6) and Kosar (1984).

[137] "[Les accords dissonants naturels], en mettant en relation harmonique le quatrième degré, la dominante et le septième degré, ont caractérisé la note sensible, lui ont imprimé la nécessité de résolution ascendante, et par là ont fondé la tonalité moderne, et l'ont substituée à la tonalité ancienne du plain-chant" (Fétis 1849, 174).

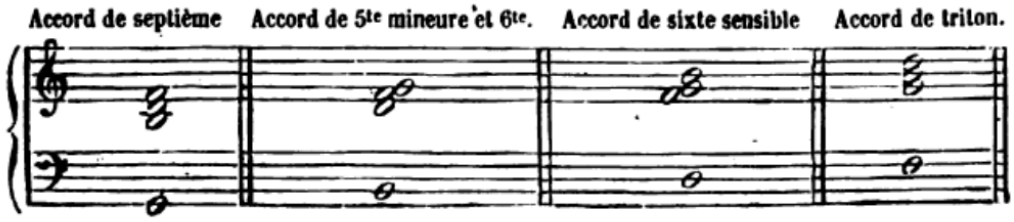
[138] Fétis accepts root-position triads in non-sequential passages only on $\hat{1}$, $\hat{4}$, and $\hat{5}$, and occasionally on $\hat{6}$ in deceptive progressions.

♭$\hat{6}$ (**Figure 89b** and **c**); **prolongation** (i.e., equivalent to our notions of "suspension" or "retardation," **Figure 89d**); **alteration**, which introduces semitonal voice leading in parts moving by whole steps (**Figure 89e**); or a combination of these modifications.

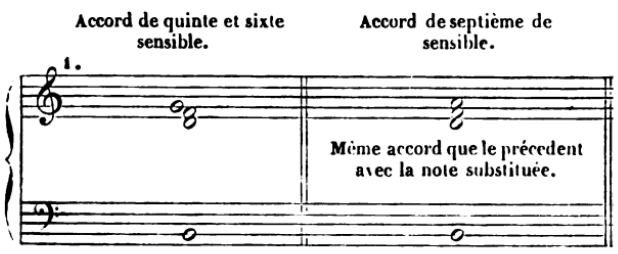
Figure 89: Modifications of natural chords in Fétis's *Traité complet* (1849).

(Annotations showing harmonic analysis are not original to Fétis's figures.)

a) Inversion (Fétis 1849, 43)

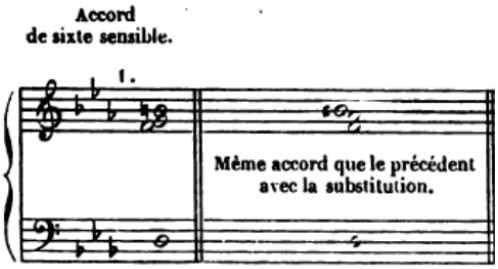


b) Substitution in major (Fétis 1849, 48)



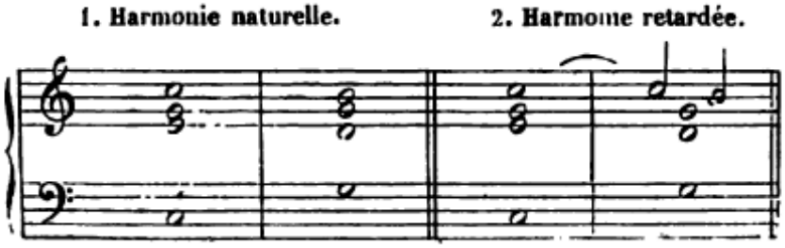
modern notation V^6_5 becomes $vii^{ø7}$

c) Substitution in minor (Fétis 1849, 56)



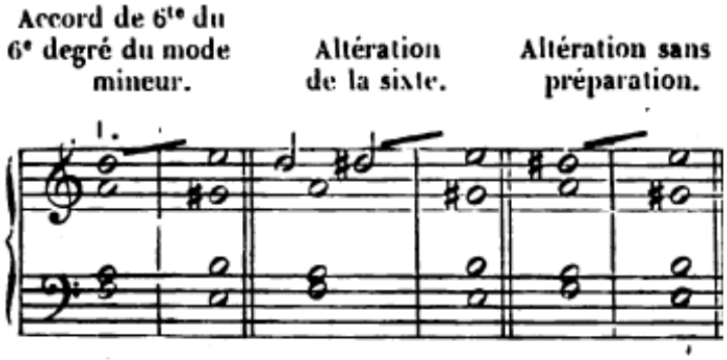
V^4_3 becomes vii^{o6}_5

d) prolongation (i.e., our modern notions of suspension or retardation)



(Fétis 1849, 59)

e) alteration (introduces semitonal voice leading in parts moving by whole steps)



(Fétis 1849, 90)

These principles, along with a chord hierarchy inherited from the *règle de l'octave* (Christensen 2019, 222), form the basis through which Fétis evaluates chord successions and imagines possibilities for enhancing them (1849, 111). I now turn to how these principles operate in chromatic progressions featuring minorized augmented sixths.

Fétis's "Tristan" resolution

Christensen, in his recent monograph on Fétis, points out the following paradox: Richard Wagner's harmonic language in his mature operas validates some of Fétis's predictions about the future of tonality, and yet, Fétis's later writings on the composer did not discuss harmony and modulations in technical detail (2019, 259). As a result, Fétis has left no hint of what he thought of Wagner's harmonic techniques and whether or not he considered them to exemplify his theory of the evolution of tonality. The Tristan-like progression in the *Traité complet* (reproduced in **Figure 88**, p. 221) nevertheless gives insight into how Wagner's most famous passage can be accommodated within Fétis's tonal theory. In

this section, I use the label "Tristan resolution" to refer to progressions that include the augmented-sixth chord ♭$\hat{6}$–$\hat{7}$–$\hat{2}$–♯$\hat{4}$ going to a dominant harmony.

The relevant example appears in the second book of the *Traité complet*, where Fétis discusses the natural chords of the tonal system along with the different modifications they can undergo (i.e., the aforementioned inversion, substitution, prolongation, and alteration). Fétis's Tristan-like chord results from the intervention of both prolongation and alteration in the progression from iv to V in A minor (**Figure 90**).[139] At this point, Fétis considers modifications systematically instead of responding to contemporaneous compositional practices. First, Fétis shows that the first chord (iv) can be altered because the progression involves a whole-step upward motion in the bass voice (D–E); D can therefore be raised to D♯, giving rise to what we today recognize as an inverted "Italian" augmented sixth, a harmony that rarely appeared in this position at the time of Fétis's writing and that he would have construed as a theoretical, abstract possibility rather than a standard practice (**Figure 90a**). Subsequent examples in the *Traité complet* illustrate that this altered chord can enter without preparation and be inverted (**Figure 90b**). Fétis then explains that the altered note (D♯) can be prolonged over V (**Figure 90c** and **e**) and may be combined with other chord tones from the previous "Italian" sixth: he tries first with D♯–A delaying E and G♯ respectively (**Figure 90d**), then with F–D♯ delaying E, the root of V^6 (**Figure 90f**). This last resolution gives rise to an inverted Tristan sonority (G♯–B–F–D♯), which for Fétis did not constitute a genuine harmony in and of itself since it results from two simultaneous "prolongations" (i.e., suspensions or retardations). Nonetheless, it is a startling anticipation of the Tristan resolution. It is precisely because he did not limit himself to

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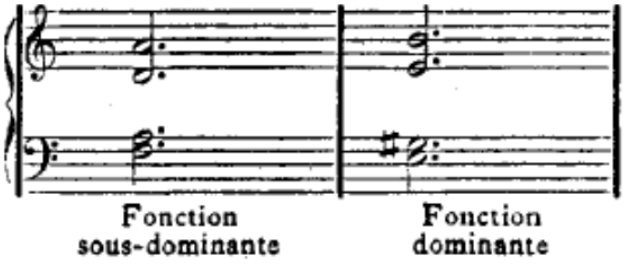
[139] Fetis's underlying chord progression is similar to Vincent d'Indy's understanding of the Tristan chord (1912, vol. 1, 117), in that both theorists derive the progression as an embellishment of iv–V. However, whereas in Fétis's view the Tristan sonority arises as an embellishment of the second harmony (the dominant), d'Indy's reduction (below) shows that he understood the Tristan chord to arise as an embellishment of the first harmony (the subdominant).

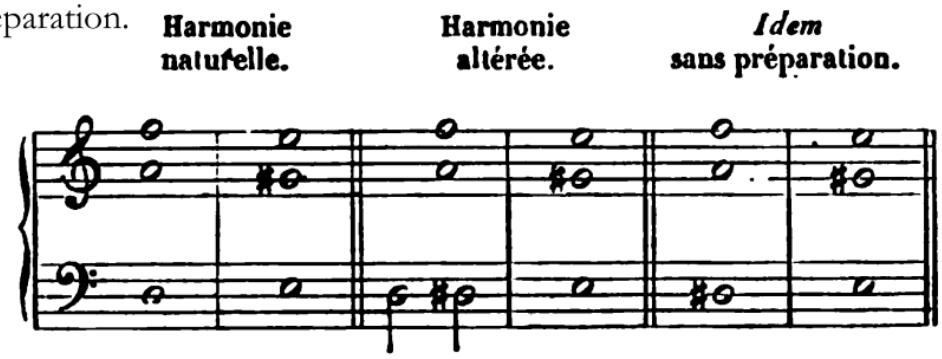


describing what was common in the music of his time, but rather, sought to vary a common tonal progression that he was able to anticipate this chord.

Figure 90: Combined modifications of the iv–V progression in Fétis (1849), giving rise to a "Tristan" resolution.

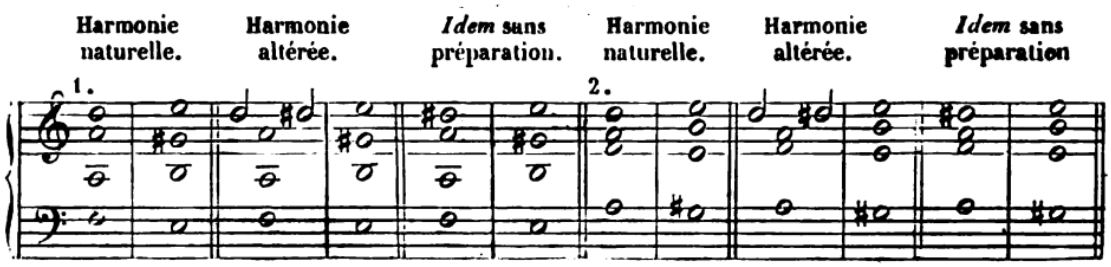
(Annotations showing harmonic analysis and non-harmonic tones are not original to Fétis's figures.)

a) iv–V (Fétis 1849, 93).
Whole-tone motion D–E in the bass replaced by D♯–E. D♯ can be prepared or enter without preparation.



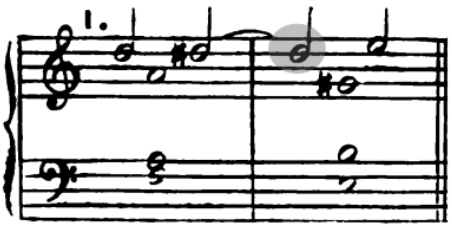
A minor: iv V iv (It°3) V It°3 V

b) inversions of iv–V with alteration (Fétis 1849, 94).



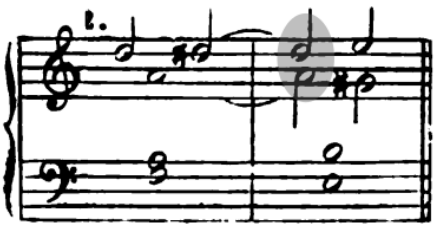
A minor: iv⁶ V iv⁶ (It⁶) V It⁶ V iv_4^6 V⁶ iv_4^6 ($It_{\sharp 4}^6$) V⁶ $It_{\sharp 4}^6$ V⁶

c) iv⁶–V with prolongation of D♯ (Fétis 1849, 106).



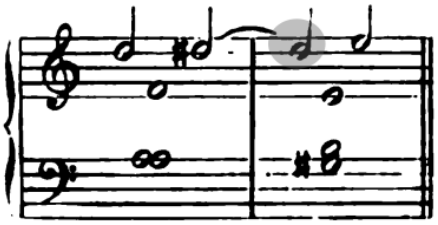
A minor: iv⁶ (It⁶) V

d) iv⁶–V with prolongation of D♯ and A (Fétis 1849, 106).



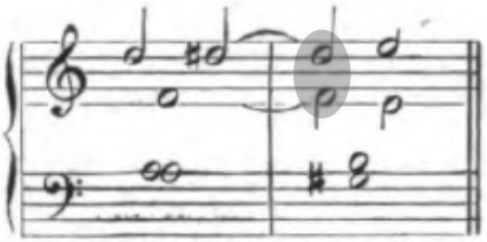
A minor: iv⁶ (It⁶) V

e) iv_4^6–V^6 with prolongation of D♯
(Fétis 1849, 107)



A minor: iv_4^6 $(It_{\sharp 4}^6)$ V^6

f) iv_4^6–V^6 with prolongation of D♯ and F
(Fétis 1849, 107)



A minor: iv_4^6 $(It_{\sharp 4}^6)$ V^6

Tristan sonority

Fétis's chord contains the same scale degrees as the Tristan chord and it leads to a dominant. Both examples also feature the chord in non-modulating contexts. The two progressions, however, are not exactly congruent for the following reasons. First, the bass lines differ: the Tristan chord and its resolution occur over the leading tone G♯ in Fétis, while the bass line is $\flat\hat{6}$–$\hat{5}$ in Wagner. Second, the characteristic voice exchange between B and G♯ found in Wagner's Tristan resolution is absent from Fétis's progression. Third, the augmented-sixth dissonance is prepared in Fétis while the chord enters without preparation in *Tristan*. Lastly, Fétis's chord goes to V while Wagner's goes to V7. Like most examples that are cited as precursors or quotations of the Tristan chord, this example is not *exactly* like Tristan, but it is in my view similar enough because of the scale degrees involved and the resolution to a dominant harmony.[140] Paradoxically then, the chord commonly viewed as causing a crisis in both tonal music and in harmonic theories[141] appears in the very treatise that first developed a comprehensive theory of tonality.

Louis and Thuille included various "Tristan" resolutions in their *Harmonielehre*, whose first edition was published in 1907,[142] more than 60 years after Fétis's *Traité complet* and four decades after

[140] For examples that predate *Tristan*, see Golab's (1990) paper on Tristan-like progressions in Chopin's music. For instances of the Tristan chord composed after the eponymous work, see Martin's (2008) examples from Ernest Chausson's and Richard Strauss's music.

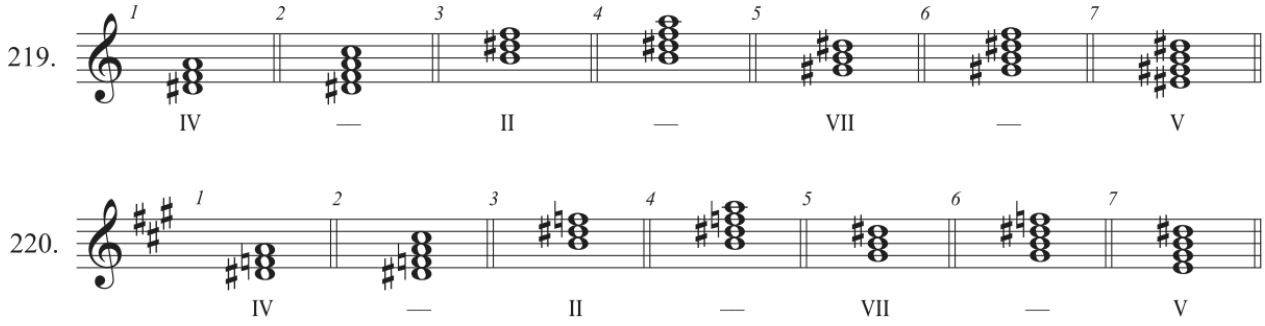
[141] See Ernst Kurth's and Martin Vogler's respective titles *Romantische Harmonik und ihre Krise in Wagners "Tristan"* (1920) and *Der Tristan-Akkord und die Krise der modernen Harmonielehre* (1962).

[142] Louis and Thuille's treatise was first published in 1907. I have consulted the second edition (1913). All quotations are from Schwartz's (1982) translation of the second edition.

Wagner's *Tristan*. Thus, the harmonic progression was already well known and had been widely discussed by the time they wrote their treatise. Moreover, as the harmonic idiom changed in the late nineteenth century, instances of Tristan-like resolutions became far more common than in Fétis's time. Unsurprisingly, Louis and Thuille accepted freer treatments of the Tristan chord than Fétis.

For Louis and Thuille, the chord arises from raising $\hat{4}$ in vii°7 (i.e., in A minor, G♯–B–D–F becomes G♯–B–D♯–F).[143] In their Examples 219 and 220 (reproduced below in **Figure 91**), they show various chords in major and minor that normally include $\hat{4}$ but are altered to include $\sharp\hat{4}$ instead. Unlike Fétis's Tristan resolution, Louis and Thuille's Tristan augmented sixth can enter without preparation; it can thus function as an independent chord, proceeding either to the dominant or to the tonic. Louis and Thuille's understanding of the Tristan chord highlights an important difference between their tonal theory and that of Fétis; one limitation of Fétis's perspective is that $\hat{4}$ and $\hat{7}$ in dominant harmonies cannot be altered in non-modulating progressions. Whereas Fétis had argued that the tritone (and its inversion, the diminished fifth) is essential for establishing a key, Louis and Thuille recognize the possibility of altering $\hat{4}$ in dominant chords, which gives rise to the Tristan chord as an independent dominant harmony.

Figure 91: Louis and Thuille's Examples 219 and 220 (Schwartz 1982, 271). Chord 6 in each example corresponds to Tristan sonorities.



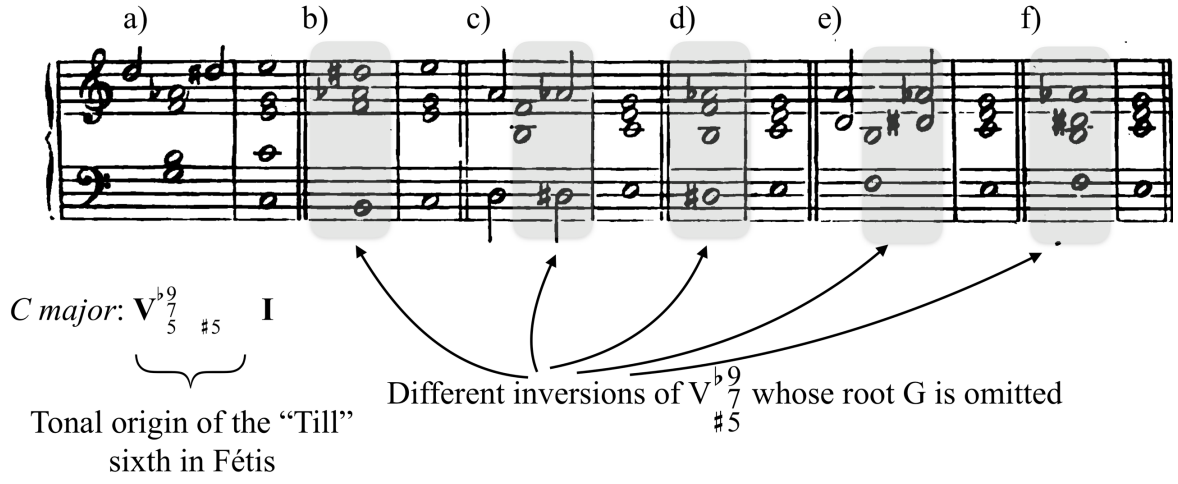
[143] This is not, however, how Louis and Thuille analyze Wagner's Tristan chord (Louis and Thuille 1907 [1913], translated by Schwartz 1982, 282). As Harrison observes, they view the G♯ in Wagner's Tristan chord as an appoggiatura rather than a chord tone, resulting in a French augmented sixth (Harrison 1995, 183).

The "Till sixth"

Fétis's "Till sixth" (**Figure 92**), like his Tristan chord, appears in Book 2 of the *Traité complet*. The characteristic half-diminished augmented-sixth chord of Strauss's tone poem consists of the scale degrees $\hat{4}, \flat\hat{6}, \hat{7}$ and $\sharp\hat{2}$, where the augmented-sixth interval between $\hat{4}$ and $\sharp\hat{2}$ resolves to the third of a major tonic harmony. While this chord progression became relatively frequent in the late-tonal repertoires,[144] I am not aware of any examples featuring these exact scale degrees that predate Fétis's *Traité complet*. It is therefore surprising that it appears so early in the theoretical literature, since Fétis probably did not have any actual examples in mind when he wrote his treatise. Similarly to the Tristan-like resolution, Fétis likely came up with this chord progression because he was interested in exploring various modifications of the "natural" chords of a key.

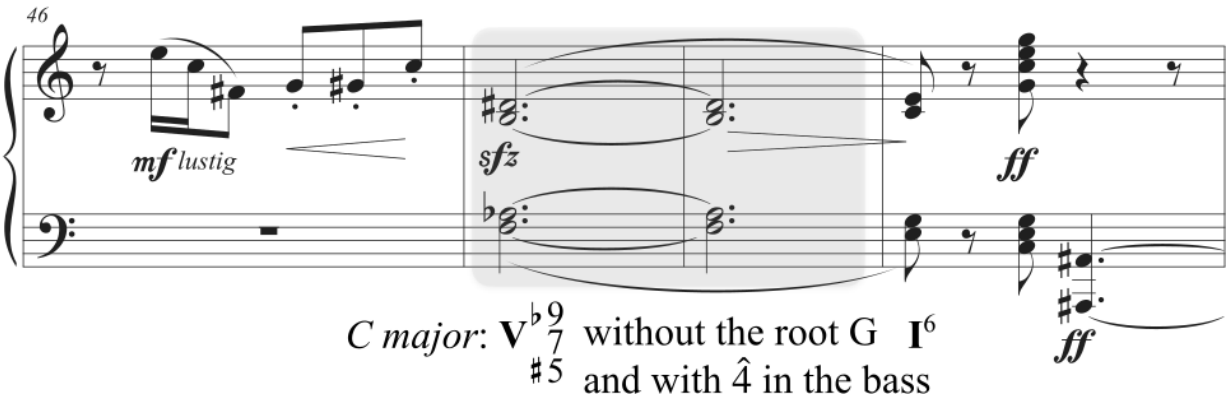
Figure 92: The "Till sixth."

a) Fétis 1849, 99. (Annotations are not original to Fétis's figure.)



[144] See, for instance, Richard Bass's (2001) examples from Rachmaninoff and Scriabin (Examples 5, 7, and 20); Richard Bass's (2007) Example 14 from Strauss's *Träumerei*; and Jill Brasky's (2010) Example 3a from Wagner's *Parsifal*.

b) Strauss, *Till Eulenspiegel* (1894–1895), mm. 46–49 (transposed into C major). Piano reduction by Otto Singer.



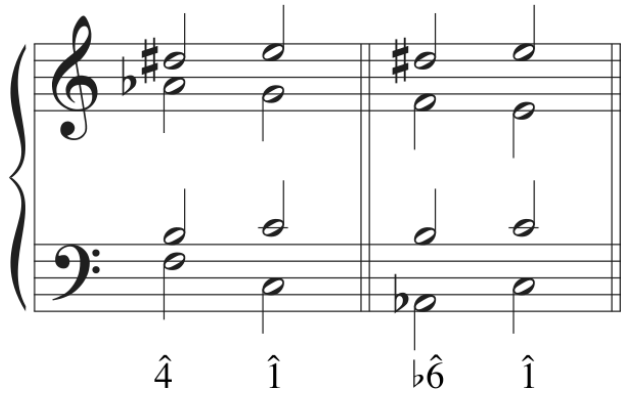
Fétis analyzes his Till-like sixth as a modified dominant seventh harmony (**Figure 92a**). He stipulates that $\hat{4}$ and $\hat{7}$, which form the characteristic tritone, cannot be altered because their resolution to $\hat{3}$ and $\hat{1}$ in major already involves semitonal motion (1849, 95–96). Thus, only $\hat{2}$ and $\hat{5}$ are subject to modification. As seen above, substitution allows $\hat{5}$ in V7 to be replaced by either $\hat{6}$ or $\flat\hat{6}$. In Fétis's first progression (**Figure 92a**), the $\flat\hat{6}$ substitution appears in an upper voice, simultaneously with the root of V7 in the bass, which results in a dominant seventh with a minor ninth. In the subsequent progressions (**Figure 92b–f**), Fétis omits the root G and shows that the chord can be presented with $\flat\hat{6}$ directly or that this scale degree may be preceded by $\hat{6}$ from the major mode. Fétis explains that chords with substitution may also alter $\hat{2}$, either upwards or downwards. The dominant seventh that combines the $\flat\hat{6}$ substitution with $\sharp\hat{2}$ results in a half-diminished augmented sixth that behaves exactly like Strauss's "Till sixth." In contrast to the Tristan chord, which can only delay the dominant's "true" appearance, the "Till sixth" can substitute for it and resolve directly to a tonic.

The two ways of modifying V7 described above occur in earlier treatises. Rameau, in his *Traité de l'harmonie* (1722), observes that the root of V7 can be replaced by $\flat\hat{6}$, giving rise to what we call today vii°7 (Christensen 1993, 100; Rameau 1722, 43). Simon Catel (1802, 16 and 60) and Fétis's own *Méthode élémentaire* (1823, 13 and 19) both discuss vii°7 chords (albeit from different angles), and V7 with $\sharp\hat{2}$. Fétis's *Traité complet*, however, appears to be the first treatise where these two modifications are combined into a single harmony.

It is important to note that for Fétis, the tonal tendencies of the individual scale degrees in modified chords are not affected by modifications; hence, $\hat{4}$ and $\hat{7}$ still have to resolve to $\hat{3}$ and $\hat{1}$

respectively. The motion of the modified notes is equally constrained: ♯$\hat{2}$ has to resolve to $\hat{3}$, and since Fétis views ♭$\hat{6}$ as a melodic accent that displaces the root of V7, it must resolve to $\hat{5}$ either within dominant harmony or on the following tonic chord (1849, 56–57). Fétis thus only accepts parsimonious resolutions of the "Till sixth," where all the voices proceed by semitonal motion ($\hat{4}$–$\hat{3}$, ♭$\hat{6}$–$\hat{5}$, $\hat{7}$–$\hat{1}$, and ♯$\hat{2}$–$\hat{3}$). Later composers, however, used this progression with plagal bass motions such as $\hat{4}$–$\hat{1}$ and ♭$\hat{6}$–$\hat{1}$, thereby hindering the resolution of $\hat{4}$ to $\hat{3}$ and ♭$\hat{6}$ to $\hat{5}$. These voice leadings give rise to a "collision" of subdominant and dominant functions, as defined by Swinden 2005 (see **Figure 93**), because the presence of a $\hat{7}$–$\hat{1}$ motion in the upper voices conveys a dominant-to-tonic resolution, while the bass conveys subdominant-to-tonic. **Examples 44–49** and **53–54** from Chapter 3 illustrate instances of the plagal resolution of these chords in works by Edvard Grieg and Franz Liszt, among others.

Figure 93: Functional collision in plagal resolutions of the "Till sixth," with $\hat{4}$–$\hat{1}$ or ♭$\hat{6}$–$\hat{1}$ in the bass and $\hat{7}$–$\hat{1}$ in an upper voice (as theorized by Swinden 2005).



Some theorists before Fétis accepted plagal bass lines in the progression of dominant seventh or diminished seventh chords to tonic,[145] but Fétis explicitly rejected such voice leadings because he viewed voice leading in dominant-to-tonic progressions as the bedrock of tonal syntax. Even though he does not explicitly reject plagal resolutions of the "Till sixth," his discussion of V^4_2 going to tonic (1849, 44) suggests that he would not have admitted these progressions. Fétis admits only resolutions of this chord where $\hat{4}$ and $\hat{7}$ go to $\hat{3}$ and $\hat{1}$, respectively (**Figure 94a**). In fact, he draws attention to

[145] Patrice Nicolas (2019, par. 3.5) draws attention to treatises by Monsieur de Saint-Lambert (1707), Campion (1716), and Rameau (1722) which feature V^4_2–I and vii^{o4}_3–i progressions. I have also found this progression in Callcott (1806, 176).

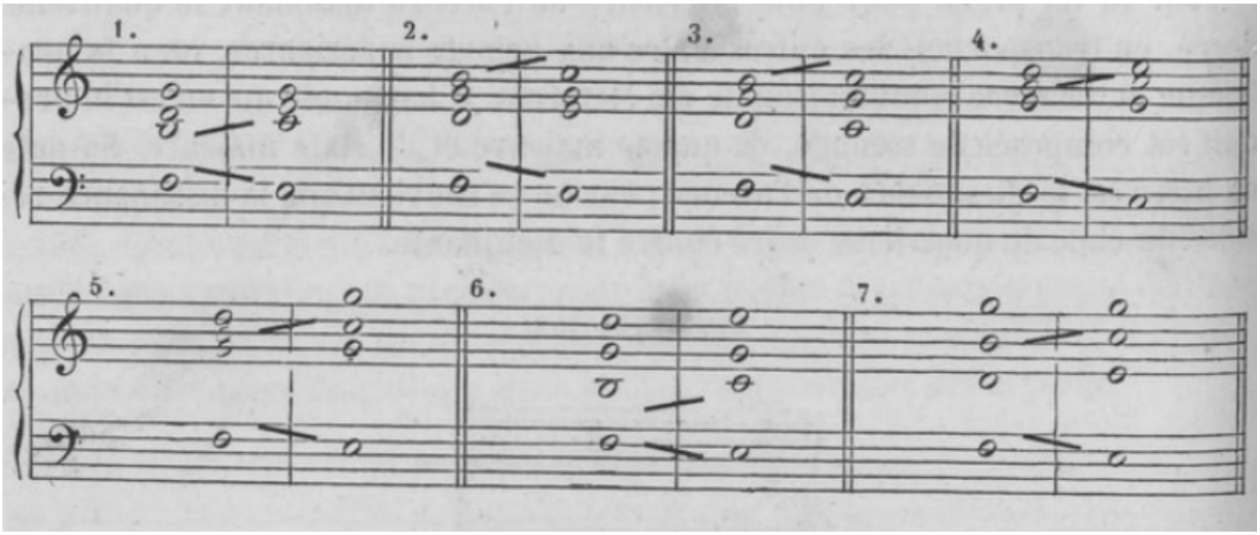
these linear motions in his examples of acceptable voice leading of V^4_2 by using thick lines connecting the $\hat{4}$–$\hat{3}$ and $\hat{7}$–$\hat{1}$ resolutions. Fétis observes that

> Any other use of the chord of the tritone would violate the feeling of tonality, even though the consonant harmony of the tonic would follow it, for the reasons explained above: the leap from the lowest note of this chord onto the tonic is therefore a serious error, or its ascent to the dominant, of which one finds examples in many compositions, otherwise meritorious, and even in the works of some distinguished musicians (*Treatise*, 45).[146]

Fétis gives examples of those "improper" resolutions of V^4_2, where $\hat{4}$ in the bass goes to $\hat{1}$ or $\hat{5}$ instead of going to $\hat{3}$ (**Figure 94b**). Because Fétis understands the Till sixth as a modified dominant seventh harmony, it follows that he would not have accepted unparsimonious resolutions of the chord. In summary, Fétis's definition of tonality, rooted in authentic progressions, allowed him to envision altered dominants like the "Till sixth," but it also prevented him from anticipating the plagal resolution of such chords employed by later composers.

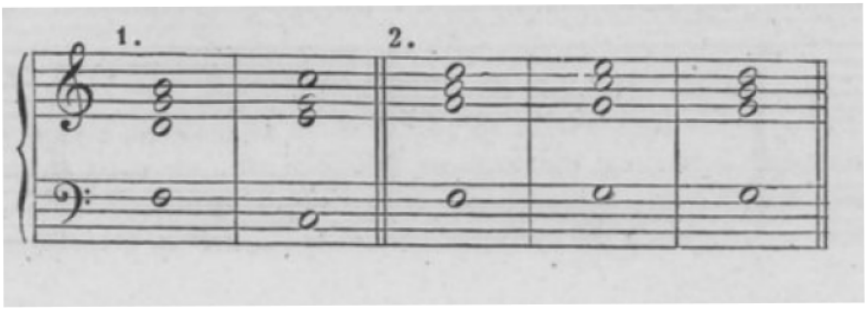
Figure 94: Correct and incorrect resolutions of V^4_2 to tonic, according to Fétis.

a) Correct resolutions (Fétis 1849, 44).



[146] "Tout autre emploi de l'accord de triton blesserait le sentiment de la tonalité, bien que l'harmonie consonnante de la tonique lui succédât, par les motifs exposés ci-dessus : c'est donc une erreur grave que le saut de la note inférieure de cet accord sur la tonique, ou son ascension sur la dominante, dont on trouve des exemples dans plusieurs compositions, d'ailleurs estimables, et même dans les œuvres de quelques musiciens célèbres" (Fétis 1849, 44).

b) Incorrect resolutions (Fétis 1849, 44).



The "Till sixth" is perhaps the type of minorized augmented-sixth chord that is easiest to rationalize within the constraints of tonal principles, since the chromatic scale degrees of the chord, ♯$\hat{2}$ and ♭$\hat{6}$, are widely understood as standard modifications of the dominant seventh. This probably explains why several harmonic treatises published decades after Fétis's *Traité complet* also include the "Till sixth" as an acceptable sonority (e.g., Rimsky-Korsakov 2005 [1885], Gevaert 1905, Ziehn 1907, Louis and Thuille 1907 [1913]). Like Fétis, Rimsky-Korsakov understands Till-like sixths as arising from dominant-functioning harmonies: for instance, he recognizes the sonority A♭–C♭–D–F♯ as a chord rooted on $\hat{7}$ in the key of E♭ (see **Figure 95**, m. 2).[147] But unlike Fétis, he accepts plagal resolutions of these chords. In the last progression of the example reproduced in **Figure 96**, Rimsky-Korsakov shows that the plagal motion from vii$^{o4}_{3}$ to I can be embellished with the augmented-sixth interval $\hat{4}$–♯$\hat{2}$, the latter arising as a chromatic passing tone between $\hat{2}$ and $\hat{3}$. Rimsky-Korsakov is therefore less strict than Fétis about the resolution of tendency tones in chords that originate from the dominant.

[147] **Figure 95**, m. 1, is also a minorized French sixth, but it resolves to the root of V. Rimsky-Korsavov observes that these two chords are enharmonically equivalent to half-diminished sevenths (Rimsky-Korsakov 2005, 95).

Figure 95: A Till-like sixth with a plagal bass line in Rimsky-Korsavov's *Practical Manual of Harmony* (2005, 95).

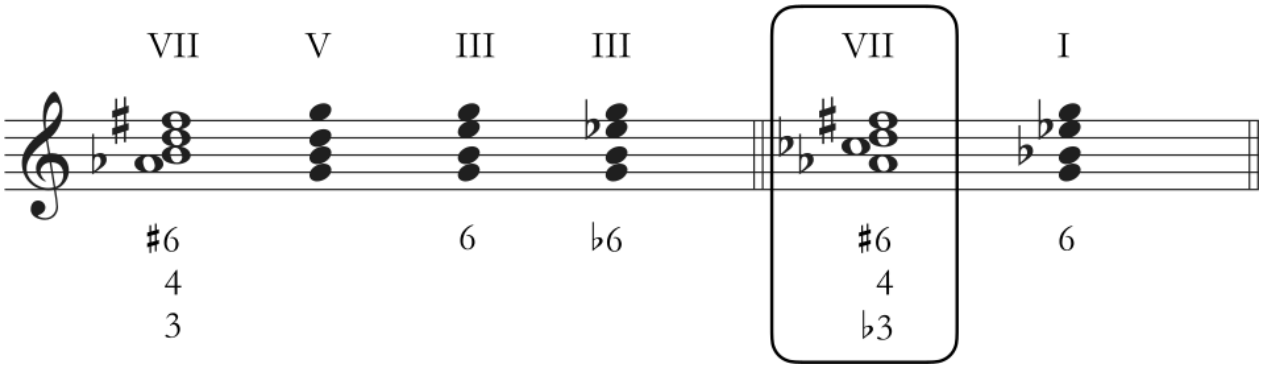
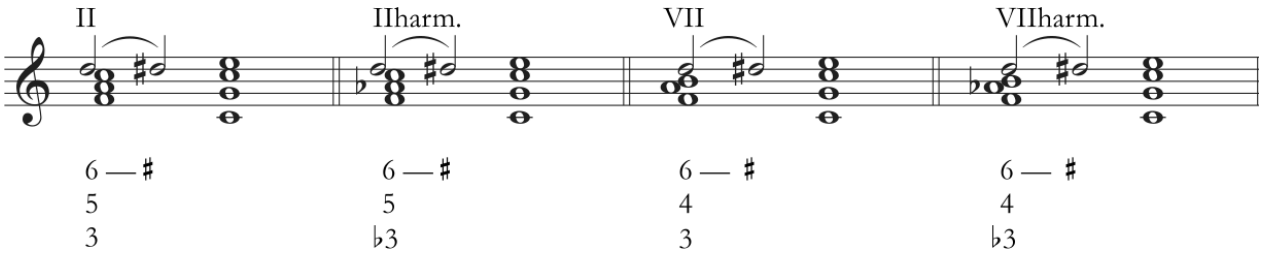


Figure 96: Rimsky-Korsakov's plagal cadences with augmented-sixth chords (2005, 95).



Enharmonically reinterpreted "Till sixths"

In the *Traité complet*, "Till sixths" are not limited to non-modulatory contexts; Fétis illustrates how these chords also occur in complex modulations. He discusses these modulations in Book 3, where he expounds his theory of the historical evolution of tonality in four different "orders"—*unitonique*, *transitonique*, *pluritonique*, and *omnitonique*—which are mainly differentiated by the ways modulations are accomplished.[148] The "omnitonic" stage, Fétis describes, started roughly a half-century before the publication of his treatise[149] and is characterized by the unprecedented use of chromatically altered chords and their enharmonic reinterpretations to connect all keys. Fétis observes that these unpredictable modulations are most suited to contexts where composers want to express intense

[148] For detailed accounts of Fétis's four orders, see Kosar (1984, 248–349) and Christensen (2019, 248–253).

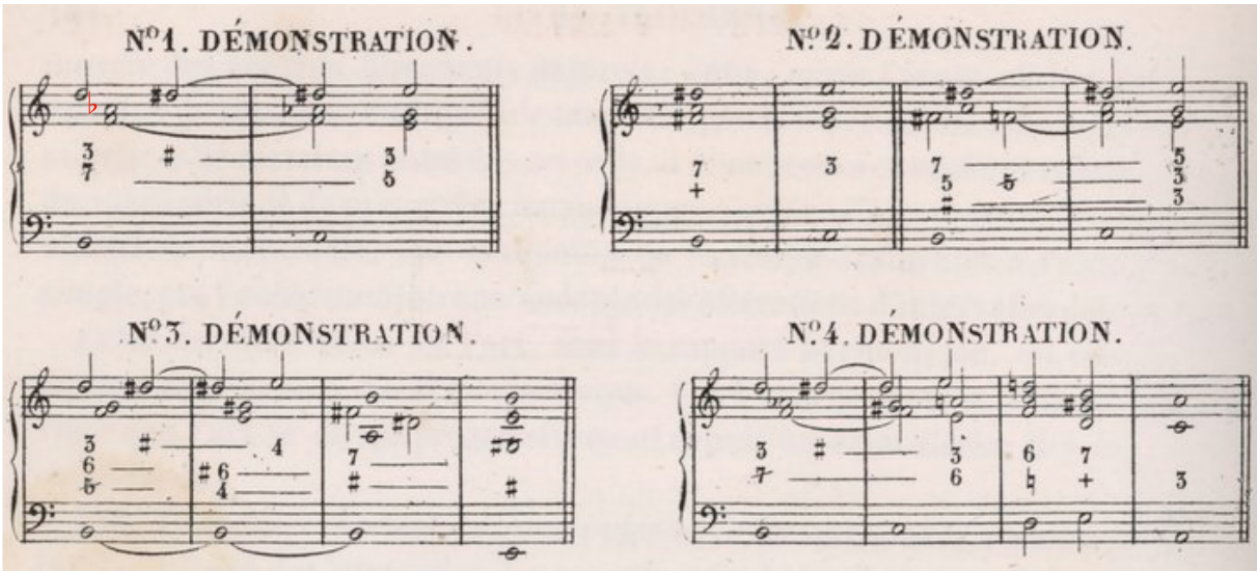
[149] "This final phase of the art, with respect to harmony, is the one I call the *omnitonic order*. It is toward this last term of its career that art has progressively directed itself for half a century; it is now arriving at its goal." (*Treatise*, 181) "Cette dernière phase de l'art, sous le rapport harmonique, est celle que je désigne sous le nom d'*ordre omnitonique*. C'est vers ce dernier terme que l'art se dirige depuis un demi-siècle ; il y touche en ce moment." (*Traité complet*, 184).

emotions,[150] but he was alarmed by the overuse of these techniques by the composers of his time, because they could lead to the downfall of tonality (Christensen 2019, 254).

Most of Fétis's omnitonic modulations start with altered dominant seventh chords in C major (V7 with ♯$\hat{2}$; viiø7 with ♯$\hat{2}$; and the "Till sixth" B–D♯–F–A♭) that then lead to other keys (**Figure 97**). He explains that modified V^7 chords that involve chromatic alterations introduce endless possibilities of enharmonic reinterpretation. Since these altered chords combine notes that belong to different keys (e.g., A♭ and D♯ in the "Till sixth"), the tonal tendencies of the individual scale degrees only become apparent when the chord resolves.[151] In practice, this suggests that "any note of a chord or its alteration has the potential of becoming a leading tone to a new key or its dominant" (Christensen 2019, 252).

Figure 97: Fétis's omnitonic modulations (1849, 186).

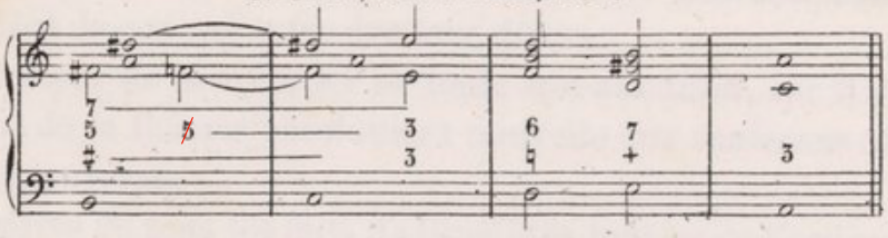
(Inconsistencies between Fétis's verbal descriptions of omnitonic modulations, his figured bass, and accidentals, obfuscate the techniques he discusses. I have chosen here to privilege Fétis's text and/or figured bass and have indicated all the changes in red.)



[150] See the preface to the fourth edition of the *Traité complet* (1849, xlix–l).

[151] See the preface to the fourth edition of the *Traité complet* (1849, xlix).

N°5. DÉMONSTRATION.



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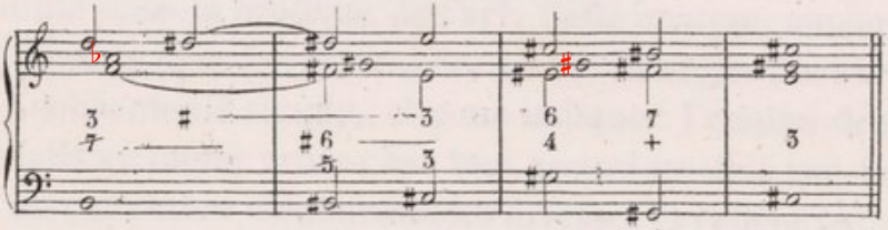
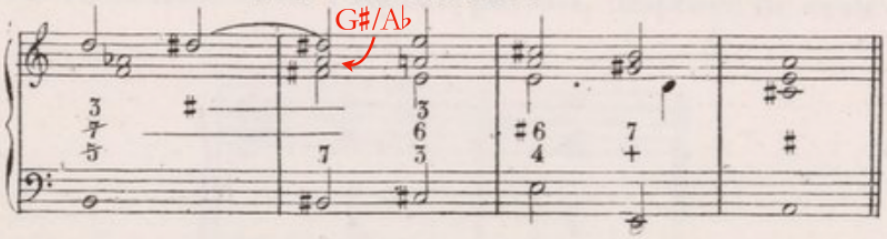


N°7. EXEMPLE.



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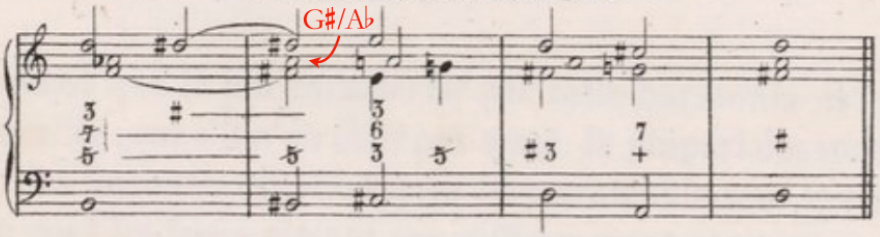

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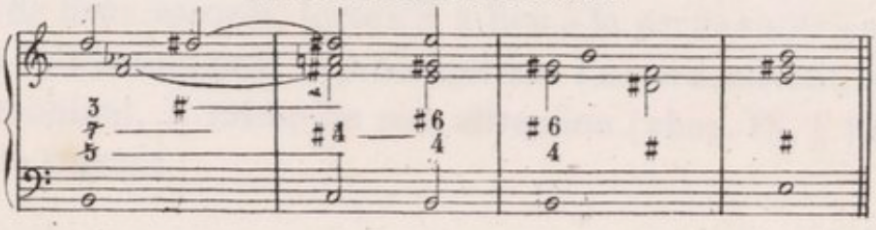
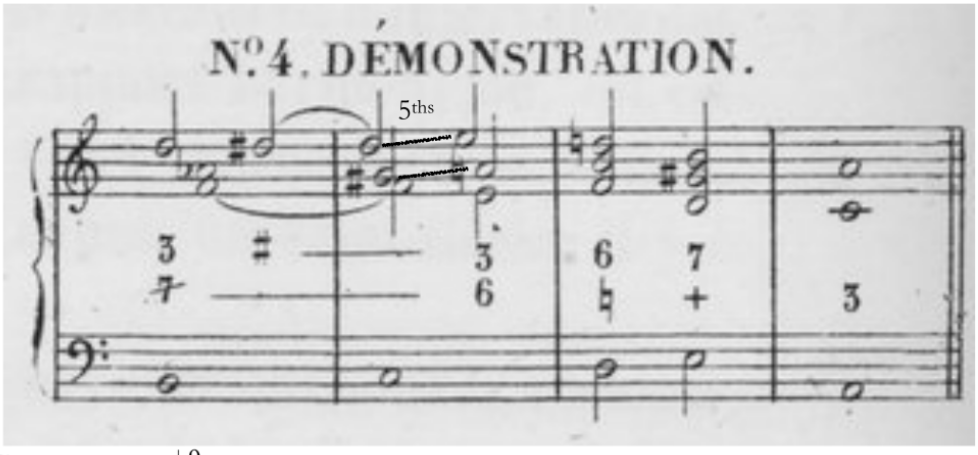


Five of Fétis's omnitonic modulations start with "Till sixths" (No. 4, 6, 7, 8, and 9);[152] I focus in this section on the fourth example because it is the only progression that preserves the augmented-sixth interval as a suspension when the bass resolves (**Figure 98**). The chord B–D♯–F–A♭ enters at first as a modified V7 in C major, but instead of resolving to the tonic, it goes to an A minor in first inversion. Because the bass moves from B to C ($\hat{7}$–$\hat{1}$ in C major), the progression can initially deceive listeners into thinking that the chord of resolution will be the tonic C major, which is postponed in the upper voices by three simultaneous prolongations (F, A♭ and D♯, as shown in Fétis's first example, **Figure 97**). This resolution, however, is diverted by the enharmonic reinterpretation of A♭ as G♯, leading instead to A minor, which is quickly confirmed as tonic by a cadential progression.

Figure 98: Enharmonically reinterpreted "Till sixth" (Fétis 1849, 186, No. 4).

(Annotations are not original to Fétis's figure.)



C major: $\mathbf{V}^{\flat 9}_{5\ \ \sharp 5}$

without the root G
and with $\hat{7}$ in the bass $\left(\begin{smallmatrix}\sharp 2 & 3\\ \sharp 5 & 6\\ 4 & 3\end{smallmatrix}\right)$

A minor: $\mathbf{i}^6$ $\mathbf{ii}^{\circ 6}$ $\mathbf{V}^7$ $\mathbf{i}$

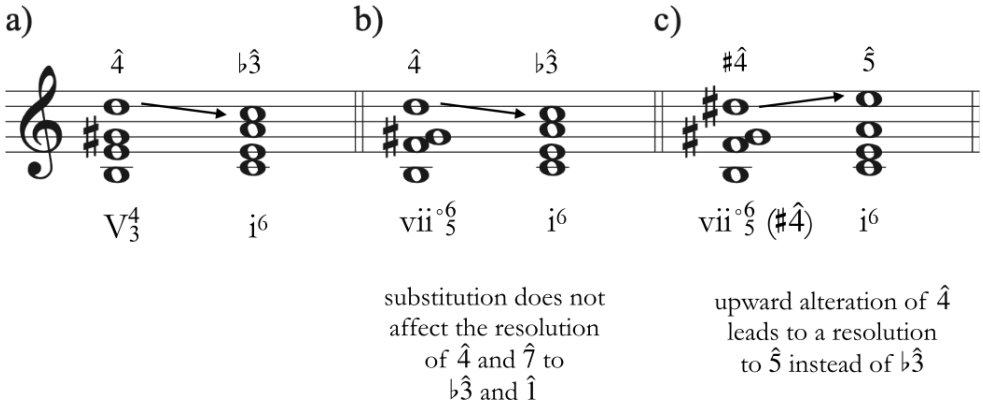
This example reveals that omnitonic modulations can suspend Fétis's rules for chord succession and voice leading. In non-modulating progressions, the simultaneity B–D♯–F–G♯ in A minor can only resolve to the dominant of that key (see the section of this chapter on the Tristan

[152] The first progression on this figure also starts with a "Till sixth," but it does not modulate.

chord). Although Fétis does not explicitly reject the resolution of this chord to tonic harmony, I imagine that he does not include it because this progression contradicts his rules for tonal syntax. Since Fétis derives all chromatically altered chords from the "natural" chords of a key, B–D♯–F–G♯ would have to be explained as a modified V7 where the root $\hat{5}$ is replaced by $\flat\hat{6}$ and $\hat{4}$ raised to $\sharp\hat{4}$ (**Figure 99**). This latter alteration is nonsensical in Fétis's theory of non-modulating progressions because it modifies the quintessential tritone of the V7 harmony. Moreover, the ascending alteration of $\hat{4}$ to $\sharp\hat{4}$, which leads to a resolution to $\hat{5}$, inhibits the normal tendency of this scale degree to go down to $\hat{3}$.[153] The resolution also causes parallel fifths that he would not have admitted otherwise. How then does this chord progression fit into his theory of tonality? Fétis's examples suggest that altered chords in enharmonic modulations lose their tonal meaning and become disassembled into their scale-degree components, which can each become tendency tones towards the next harmony. The identity of the chord of resolution is therefore less critical than the smooth voice leading of the individual parts.

Figure 99: G♯–B–D♯–F as a modified V7.

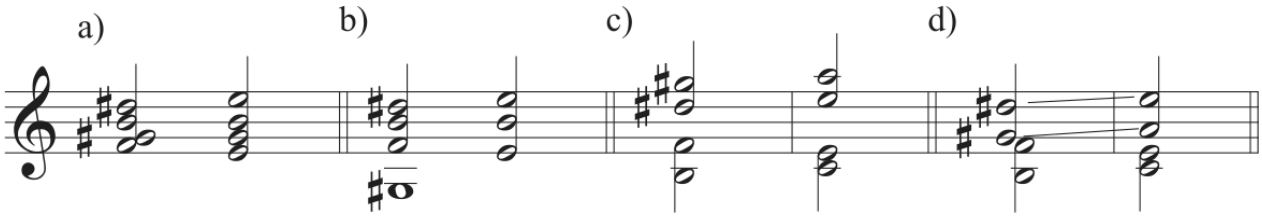
a) V^4_3– i^6; b) V^4_3 with substitution ($\flat\hat{6}$ instead of $\hat{5}$); c) V^4_3 with substitution and alteration ($\flat\hat{6}$ and $\sharp\hat{4}$ instead of $\hat{5}$ and $\hat{4}$).



[153] In Fétis's *Traité complet*, alterations intensify melodic motions in the individual parts, but they do not change their direction. Gevaert's 1905 treatise explicitly rejects this simultaneity as an independent dominant chord because of the ascending alteration of $\hat{4}$ (227). He instead recognizes only the resolutions of this chord to the dominant, where $\flat\hat{6}$ and $\sharp\hat{4}$ are non-harmonic tones (225).

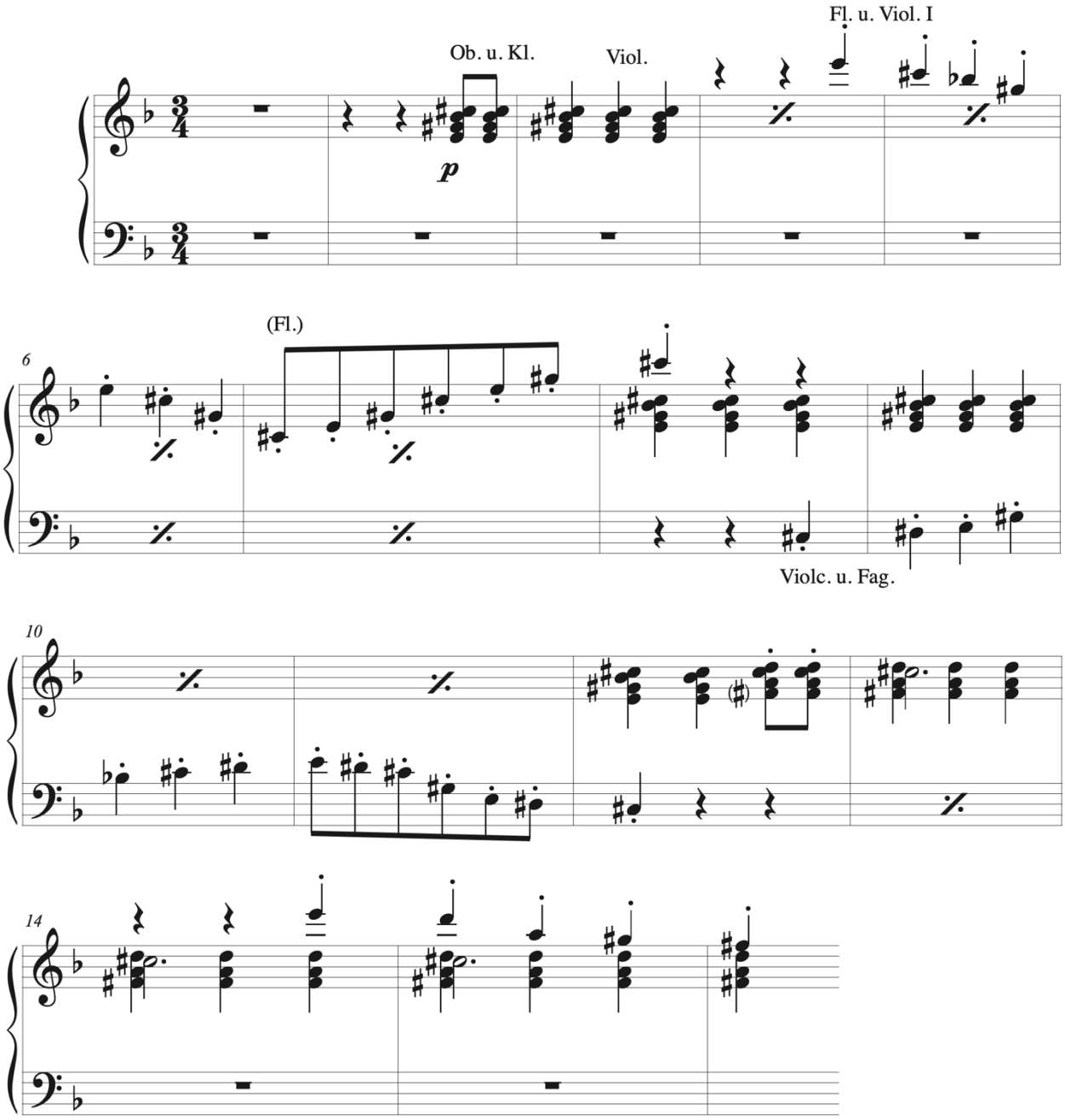
Later theorists, such as Louis and Thuille (1913), accepted the progression in non-modulatory contexts and explained the first chord as a vii°7 with ♯$\hat{4}$ instead of $\hat{4}$ (**Figure 100**).[154] Schenker, in his analysis of a passage in Bruckner that features the progression (**Example 84**), viewed the chord as a "diminished seventh-chord on the VII step in D major/minor (related, by its univalence, to the V step of this same key), whose character is in no way interfered with by the chromatic change raising the fifth, G, to G-sharp" ([1906] 1954, 286). This resolution also appeared more recently in Charles Smith (1986, 125), where he proposed that all dominant-seventh and half-diminished chords containing the leading tone may function as dominants. This contrast between Fétis and later theorists suggests that they view the leading tone rather than the tritone in V7 as the main ingredient of dominant harmony, resulting in more possibilities of altered dominant chords. Fétis's example nevertheless anticipated later uses of the progression in non-modulating contexts.

Figure 100: Louis and Thuille's altered vii°7 resolving to V (a and b) and to tonic (c and d) in non-modulating progressions (see Schwartz's [1982] translation, 281).



[154] The voice leading in **Figure 99d** is similar to Fétis's progression. While he did not comment on the parallel fifths that his progression involves, Louis and Thuille explicitly warned readers to avoid parallels in such resolutions (Schwartz 1982, 281).

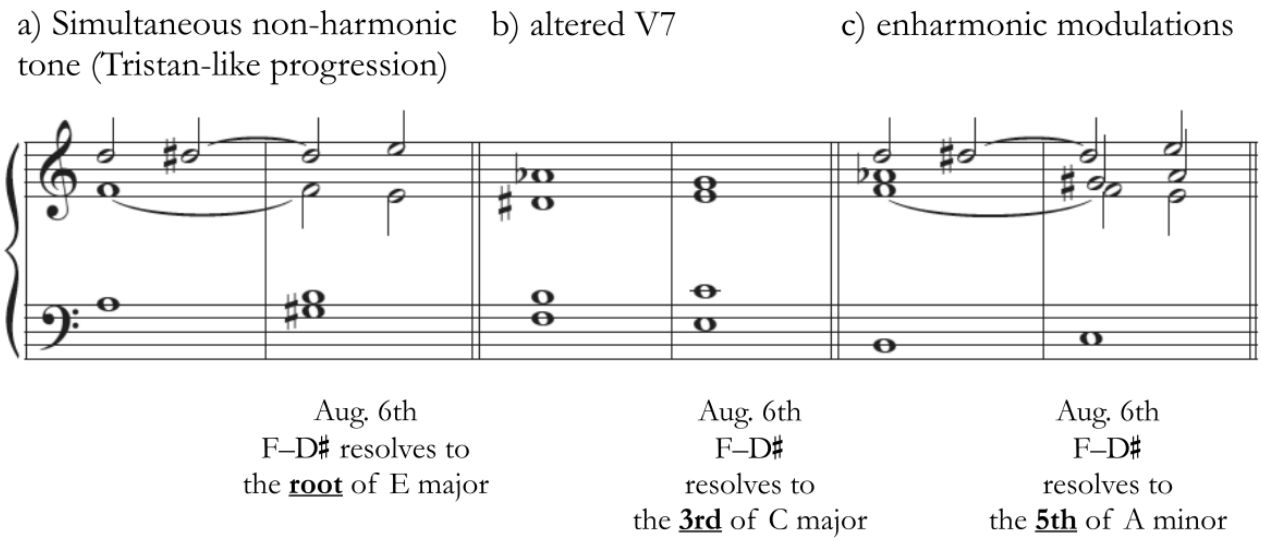
Example 84: Anton Bruckner, Symphony No. 9, Scherzo, cited in Schenker ([1906] 1954, 286). Schenker analyzes the chord C♯–E–G♯–B♭ in D as a modified vii°7, with ♯$\hat{4}$ instead of $\hat{4}$.



In this chapter, I have drawn attention to harmonic progressions in Fétis's *Traité complet* that feature minorized augmented-sixth chords. The examples I have examined illustrate three tonal contexts in which Fétis recognized that these chords could occur (**Figure 101**): as sonorities resulting from simultaneous non-harmonic tones (e.g., the "Tristan resolution"), as altered V7 chords (e.g., the

"Till sixth"), and in enharmonic modulations. These progressions also exemplify resolutions of the augmented-sixth interval to various chord factors (to the root, third, and fifth, respectively),[155] which all became increasingly common in late-Romantic music. While treatises that predate Fétis typically reflect contemporaneous practices by mentioning only the conventional types of augmented sixths (Italian, French, and German) where the augmented sixth resolves to the root of V,[156] Fétis's examples expand both the chord types that include an augmented-sixth interval and the resolutions of these chords.

Figure 101: Summary of the minorized augmented sixths in Fétis's *Traité complet*.



Early twentieth-century theorists became increasingly interested in explaining new, nonstandard augmented-sixth chords that were in use in late nineteenth-century music; unsurprisingly, they recognized a wider range of contexts where half-diminished augmented sixths could occur than Fétis did in his treatise. Although Fétis did not anticipate all the possible tonal contexts, resolutions, and voice leading of half-diminished augmented sixths, it is remarkable that any examples appear at all in as early a work as the *Traité*. In attempting to answer the question, "What is the real foundation of harmony?" he developed a theory of tonality that sought to explain the fundamental principles of tonal syntax. Fétis then explored more or less systematically different ways of diversifying harmony within

[155] These resolutions of the half-diminished seventh chord are theorized in Richard Bass (2007).

[156] See David Damschroder (2008, Chapter 7) for a detailed account of augmented-sixth chords in eighteenth- and nineteenth-century treatises.

these principles. In so doing, he came up with numerous chord progressions that were infrequent in the mid-nineteenth century, but became commonplace in the late-Romantic era.

CONCLUSION

This dissertation focuses on minorized augmented-sixth chords, a category of augmented sixth characterized by a minor third or augmented second above the lower note of the augmented-sixth interval. In Chapter 1, I provided definitions of concepts that are relevant for the study of augmented-sixth chords and explained the analytical notation I developed for the analysis of these chords. This notation highlighted the various possible behaviors that these chords can have by drawing attention to the scale degrees involved in the augmented-sixth interval and the chord factor (i.e., root, third, or fifth) of the note of resolution. The goal of this approach was to deemphasize the traditional behaviors—namely, the resolution of ♭$\hat{6}$ and ♯$\hat{4}$ to the root of dominant or to the fifth of tonic—and to reflect in the analysis the other treatments frequently encountered in late-tonal repertoires.

Chapter 2 defined the main types of minorized augmented-sixth chords. While the basic structure with a minor third (or augmented second) and augmented sixth above the descending approach tone can, in theory, be supplemented by different added notes to form various augmented-sixth sonority types, only three sonority types turned out to be common in my corpus; these chords correspond to what I have called the minorized Italian, French, and German sixths, which are all enharmonically equivalent to diatonic seventh chords. I also studied in this chapter the voice leading of these chords when they resolve to consonant and dissonant harmonies.

In Chapter 3, I analyzed the function of minorized augmented sixths in tonally stable contexts, which did not involve modulations and had a clearly established key. I categorized my examples of minorized augmented sixths according to the bass lines that Swinden (2005) identified as characteristic of predominant-to-dominant, subdominant-to-tonic, and dominant-to-tonic progressions. My analyses showed that minorized augmented sixths often feature functional collision because they include characteristic voice leading of two distinct functional progressions. I also studied in this chapter examples of minorized augmented sixths that occur with bass lines associated with several functional progressions; for those examples, I developed, based on Harrison (1994 and 1995), a set of criteria for assessing their function.

Chapter 4 studied minorized augmented sixths occurring in tonally unstable contexts, such as enharmonic modulations and chromatic wedge progressions. I demonstrated that several standard

seventh chords from a given major or minor key can be reinterpreted enharmonically as minorized augmented sixths because these chords are equivalent to half-diminished and minor-seventh chords. I also showed precedents for these enharmonic modulations in treatises by Ziehn (1907) and Louis and Thuille ([1907] 1913), as well as recent scholarly publications, including Martin (2008) and Harley (2014). The examples of minorized augmented sixths in chromatic wedge progressions presented in Chapter 4 are all mirror inversions of the traditional omnibus progression, where the roles played by dominant seventh/German sixths and minor six-four chords are instead fulfilled by their inversions, half-diminished seventh chords and root-position major triads, respectively. While the previous literature mentioning the theoretical possibility did not discuss any actual instance of the complete inverted omnibus progression in the repertoire (Ziehn 1912, Telesco 2001, Rockwell 2009), I analyzed in this chapter four examples of this progression that I have found in works by Grieg, Taneyev, Medtner, and Magnard.

In Chapter 5, I studied minorized augmented sixths in historical treatises from the nineteenth and twentieth centuries. The earliest source I have found for these chords was Fétis's *Traité complet*, first published in 1844, where various resolutions of what I have called the minorized French sixth appear. I have also found examples in later treatises, such as Louis and Thuille's *Harmonielehre* ([1907], 1913). I used the concept of minorized augmented sixths as a tool to better understand Fétis's and Louis and Thuille's tonal theories, and showed that the inclusion or exclusion of certain augmented-sixth types or resolutions of these chords reflected to a certain degree what they each thought was admissible and inadmissible within the constraints of tonality as they conceived of it.

Forthcoming work continuing these avenues of inquiry will include a more in-depth look at the possibilities of the inverted omnibus and a broader account of portions of historical treatises adjacent to these practices.

When I started the doctoral program at McGill a few years ago, I initially thought that I would focus on the music of two late-tonal Swedish composers, Ture Rangström and Kurt Atterberg, whose works are fascinating but seldom discussed in North American publications. I did not anticipate at that time that I would write my dissertation on a subfamily of augmented-sixth chords. But when studying the music of these two composers, I kept finding examples of augmented sixths that did not correspond to the well-known types, and I went on to realize that these chords were also common in

the works of other late-tonal composers. It then seemed that this topic was worth investigating further, especially since these minorized augmented sixths appeared in a broad range of harmonic contexts. Over the course of my investigations, I came to appreciate how the project not only supplements the existing literature on augmented-sixth chords, but also illuminates certain practices of of late-tonal harmony in general. Indeed, minorized augmented sixths epitomize characteristic elements of late-tonal practices: smooth voice leading, chromaticism, enharmonic reinterpretation, functional mixture, and the use of familiar objects of common-practice tonality (i.e., half-diminished and minor-seventh chords) in unfamiliar ways.

Regular augmented sixths have been characterized as "quintessentially chromatic chords" (Harrison 1994, 115) and as being "on the frontiers of tonality" (Schoenberg [1911] 1983);[157] I, however, submit that minorized augmented sixths are even more fascinating and intriguing, because they have enabled composers to explore uncharted landscapes of tonality and create new harmonic possibilities, by combining scale degrees that seldom appeared simultaneously in previous styles or by resolving these chords in novel ways. Even after years spent working on these chords and theorizing their behaviors, I still find remarkable the effect of these multifarious chords whenever I encounter them in the repertoire, and I hope that after this dissertation, readers might experience some measure of this effect for themselves.

[157] Schoenberg discusses regular augmented-sixth chords in the chapter titled "At the Frontiers of Tonality" in his *Theory of Harmony* ([1911] 1983, 238–267). This chapter also includes discussions of augmented triads and what he calls "vagrant" chords.

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