Transcendental Oscillations in Popular and Classical Music Since the 1800s

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Department of
Music in the Graduate School
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ABSTRACT

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Abstract

In music both popular and classical since the nineteenth century, one finds everywhere chord progressions that alternate between two harmonies in ways that deviate from conventional “textbook” tonality. This thesis aims to answer the following questions: are there meaningful generalizations to be made about these progressions? What is their role in music history? Why have they been so popular with composers of the past two centuries? And how do they operate in specific pieces by particular composers? To answer these questions, I use methods such as Roman-numeral analysis, voice-leading diagrams showing how harmonic phenomena emerge from linear counterpoint, and multi-level readings of entire works. The study has four foci: Claude Debussy, Jean Sibelius, Stephen Sondheim, and modern pop music. I discover that modality has a symbiotic relationship with harmonic oscillation; that neighbor chords constituted important sites of innovation in nineteenth-century harmony; that transcendental oscillations can govern entire works in manifold ways; that the theatrical device known as “vamping” saturates Sondheim’s scores and produces transcendental oscillations; and that correspondences exist between styles that otherwise have little to do with one another, such as Impressionism and rap. This study explores the harmonic theory and analysis of music that is neither traditionally tonal nor atonal.
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Introduction

On the subject of his modal jazz compositions, Herbie Hancock once said, “The chords in most jazz tunes flow in a certain way. I wanted to expand the flow so that it would go in directions beyond the usual.”¹ In this study, I examine a type of harmony that “goes in directions beyond the usual,” where “the usual” refers to traditional, common-practice Western tonality. Specifically, I investigate unconventional oscillations: progressions in which the composer shuttles back and forth between two harmonies. Examples of oscillations that depart from common-practice language abound in art music of the late nineteenth and early twentieth centuries, as well as in more recent popular music.

A foreground harmonic oscillation is any surface-level alternation between two harmonies. For example, when a Classical composer alternates between I and V in a bombastic manner at the end of a fast movement, a foreground harmonic oscillation is produced. The present study focuses on a type of foreground harmonic oscillation that I call transcendental oscillation.

Figure 0.1: Conceptual diagram of foreground harmonic oscillations.

Figure 0.1 shows one way to categorize foreground harmonic oscillations. The leftmost category in Figure 0.1 consists of “traditionally tonal” oscillations. These are progressions that belong to the traditional tonal harmonic language of Western music, such as I–V–I or I–IV–I. “Traditional tonality” will be defined more precisely in Section 1.2; for now, it suffices to understand traditional tonality as the well-known set of harmonic conventions presented in introductory music-theory courses. We can consider traditional tonality to be a widespread aspect of Western music in general, not just Western art music. For instance, an “old-time” bluegrass tune that oscillates between I and V at a cadence exhibits traditionally tonal harmony. Though bluegrass is a world away from Mozart, this discrepancy does not preclude our noticing real similarities between the two styles, correspondences that reflect a common usage of certain harmonic formulas.

The middle category in Figure 0.1 comprises transcendental oscillations. These are oscillations that deviate from traditional tonality yet emerge in a cultural context that
holds traditional tonality to be the default harmonic language. For example, when Max Reger alternates between chromatic mediant-related chords in “Die Toteninsel” (1913), he transcends the traditional tonality on which he was raised. A fuller explanation of transcendental harmony appears in Sections 1.1, 1.2, and 1.3.

The rightmost category in Figure 0.1 is labeled “Other,” which indicates the present study’s occidental focus. Oscillations in this third category are created without any consideration of traditional Western tonality. For example, an oscillation between two sonorities in Hindustani classical music is not “transcendental” in this specific sense because it does not appear in a context that privileges traditional Western tonality. Conversely, it is clear that such a progression does not belong to the Western tonal tradition either. More speculatively, we can imagine an (unethical) experiment in which a person is isolated from all music starting at birth and placed in front of a piano eighteen years later. If he proceeds to hammer out a perfect authentic cadence, we cannot say that he composes in the Western tradition; rather, he has coincidentally hit upon a progression that also appears in traditional tonality. And if he decides to alternate back and forth between two chromatic clusters, we cannot consider the progression a transcendental oscillation, since the subject has undergone no traditionally tonal influence that he might transcend.
This study focuses on four topics: Claude Debussy, Jean Sibelius, Stephen Sondheim, and popular music in Anglophone North America since the 1960s. I spend Chapters 3, 4, 5, and 6 on these four focal areas respectively. The foreground harmonic oscillations that deviate from traditional tonality in the works of Debussy, Sibelius, and Sondheim are transcendental. All three composers were raised on a steady diet of common-practice music and could not help but consider traditional Western tonality the default harmonic language of their environment. Debussy and Sondheim were/are proficient classical pianists, while Sibelius received conservatory training in violin. They all consciously attempted to go beyond traditional tonal norms in their harmony. In so doing, they created music that is exceptionally rich in foreground harmonic oscillations.2

On the other hand, the foreground harmonic oscillations of the study’s final focus, American pop since the 1960s, have a less direct relation to traditional tonality. Certainly, many pop artists have minimal, if any, training in Western art music and would not consider traditional Western tonality to be their default or normative language. Should we then consider their foreground harmonic oscillations to inhabit the “Other” category of Figure 0.1? Modern pop and eighteenth-century classical music

2 And because these three composers have few qualms about local repetition, they employ clear foreground oscillations more often, by an order of magnitude, than certain modernist composers (like the members of the Second Viennese School) for whom such repetition is anathema.
seem at first to have little to say to one another. At the same time, however, there is reason to believe that traditional Western tonality, notwithstanding its remote historical origin, is still a default harmonic language (if not the default language) in the United States. Progressions inherited from this old tonal idiom continue to make themselves heard in a wide variety of vernacular or vernacular-adjacent styles, including musical theater, folk music, film and video-game soundtracks, gospel (many of whose basic harmonic structures, such as plagal cadences, come from European sacred music), soul (which derives in part from gospel), country, and rock (see, for example, the cliché I–vi–IV–V–I progression in doo-wop). The Tin Pan Alley pop songs of an earlier era were grounded in traditional tonality, and the most fundamental jazz progression is the so-called “ii–V–I.” Notated arrangements of popular songs continue to be published with key signatures. The piano is still one of the most important instruments in the production of popular music, and its construction encourages the improviser to gravitate toward the diatonic scale. Likewise, the visual interfaces of digital audio workstations such as Ableton Live replicate the layout of piano keys. Samples used in house and rap music are often taken from works that refer to traditional tonality. Our national anthem is traditionally tonal, as are innumerable songs learned in childhood. In

short, while developments over the last hundred years have broadened the range of
commonly heard sounds to a tremendous degree, the general sonic environment in
which pop music has been composed in America and elsewhere between 1960 and 2020
upholds traditional Western tonality as a normative, widely appreciated idiom of central
importance—in other words, a default language.4 There may be other default languages
as well: the aeolian VI–VII–i progression comes to mind as a ubiquitous device that does
not seem to relate to the common practice—though it may in fact relate more closely
than is immediately apparent.5 Regardless, traditional tonality is the oldest default
language we have. It also deeply influenced the old style of popular music against
which many musicians rebelled in the 1960s. Therefore, I consider non-traditionally
tonal progressions in modern pop to be “transcendental” in a loose sense, even if their
creators do not consciously seek to transcend traditional Western tonality.

Figure 0.2 presents a more detailed version of the first conceptual diagram. In
Figure 0.2, foreground harmonic oscillations are divided into two categories, diatonic
and chromatic. Within each category, we can find traditionally tonal, transcendental,
and other oscillations. In the “Other” subgroups, we might conceivably encounter
oscillations that sound like traditional progressions without having been composed in a

4 Discussion of the normative status of ionian and aeolian modes can be found in Chapter 2.
5 See Nicole Biamonte, “Triadic Modal and Pentatonic Patterns in Rock Music,” Music Theory Spectrum 32,
traditionally tonal context—for instance, the authentic cadence created by our hypothetical music-deprived test subject. These curiosities would be filed under “Coincidental duplications of traditional tonality” in Figure 0.2 and do not directly pertain to the present study. I call diatonic oscillations that do not sound like progressions from traditional tonality “modal”; all diatonic transcendental oscillations are modal according to this definition. A more thorough investigation of modal and chromatic transcendental oscillations forms the bulk of Chapter 2.

![Figure 0.2: Another conceptual diagram.](image)

Why are foreground harmonic oscillations and transcendental oscillations in particular worthy of dedicated study? Are they not merely uninteresting shuttles between two chords? In fact, these compositional devices are important for several reasons. Arising from the principle of the “neighbor chord,” transcendental oscillations played a critical role in the expansion of the Western tonal language in nineteenth-century music. Furthermore, they are ubiquitous in pop music of the last several
decades. In fact, it is difficult to find a recent film score that does not contain such an oscillation,⁶ and while the present study does not focus on film music specifically, the sheer prevalence of these harmonic devices in that genre suggests they are worth investigating as an autonomous category of harmony. In a more abstract sense, oscillations represent the least possible amount of harmonic activity (other than stasis): they involve just two distinct chords. As a result, oscillations seem to confound the common-practice ideals of teleology and dynamic motion; indeed, in texted and program music, transcendental oscillations correlate with representations of the weird or fantastical. For these reasons, transcendental oscillations are distinctive objects that merit serious investigation.

My central claim is that these progressions appeal to composers and listeners because they balance novelty with repetition, and freshness with coherence.⁷ Transcendental oscillations have appeared in a wide range of genres since the nineteenth century, including opera, chamber music, symphony, musical theater, rock, rap, and electronica. In Chapter 1, I investigate aspects of transcendental oscillations that are perhaps not obvious from the simple definition presented above. My theory intersects

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⁶ To take a random example, the soundtrack to *Gattaca* (1997) by Michael Nyman exhibits this kind of harmony in the tracks “The Morrow” and “Not the Only One.”

⁷ The idea of an “oscillating progression” is oxymoronic, but I will use the term because an oscillation does contain progressions on a local level from one chord to the next, even though on a global level an oscillation is essentially static.
with issues such as chord versus counterpoint, information density, the idea of a common harmonic practice, Romanticism, functional prolongation, minimalism, and self-similarity. In Chapter 1, I discuss each of these issues in turn.
1. Transcendence

Technically speaking, oscillations occur between “harmonies” or “harmonic areas” rather than “chords.” True, many harmonic areas are themselves chords and many examples given in this study have a chordal texture. However, a harmonic oscillation can also emerge from a linear-contrapuntal fabric in which it is hard to identify vertical, chordal sonorities. For instance, consider the oscillation in “Every Day a Little Death” from Stephen Sondheim’s 1973 musical *A Little Night Music* (Example 1.1). In this excerpt, the harmonic oscillation lies over a bass pedal on B and a persistent wobbling between D♯ and C♯ in the right hand of the piano part. It would be a stretch to speak of true chords in Example 1.1, as the pitch content is organized in a more contrapuntal way. The first harmonic area contains F♯ in the left hand and an upward whole-step move from C♯ to D♯. Both these elements are shifted up by step to create the second harmonic area; thus the F♯ is displaced by G♯ while the C♯–D♯ figure gives way to D♯–E♯. When the first harmonic area returns in mm. 5–6, we can identify the progression as an oscillation: it goes back and forth between two harmonies.

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Despite the horizontal quality of Example 1.1, we can still identify harmonic function in its pitch areas. Specifically, the first area suggests a B-major tonic thanks to its use of B, D♯, and F♯ while the second area implies the major supertonic C♯–E♯–G♯, the B tonic pedal notwithstanding. This alternation between I and II$^6_4$ deviates from conventions of the common practice. Furthermore, its sonorities constitute real harmonic events even though they arise from linear counterpoint. Example 1.1 demonstrates that
chords are not a prerequisite for harmonic content. Consequently, harmonic oscillations need not involve chordal textures.⁹

1.1 The fundamental attribute

Transcendental oscillations lie somewhere between traditional tonality and complete atonality. In nineteenth-century music, they often appear in traditional harmonic contexts. This arrangement exemplifies the late-Romantic stylistic potpourri that has long fascinated and confounded music theorists.¹⁰ Of course, a looser understanding of the concept of “tonality” can help us bring the disparate languages of traditional harmony and transcendental oscillation under the same umbrella; for example, Roy Travis states that “music is tonal when its motion unfolds through time a particular tone, interval, or chord.”¹¹ Even if we do not radically adjust our definition of tonality, however, we can often understand the harmony of the late nineteenth and early twentieth centuries as deriving from traditional tonal practice (while nevertheless being distinct from that practice). Avo Somer notes that Debussy’s style is rooted in conventional harmonic motifs and the principle of tonal centricity, though its

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⁹ Example 1.1 also introduces a notation that appears throughout this study: a square bracket over the two harmonic areas that participate in the oscillation.


transformations of such tropes are radical on the surface.12 Similarly, Daniel Kawka avers that the idiom of Debussy’s contemporary Albert Roussel is, “despite its various ‘tonal-modal’ resources, articulated according to the great laws of classical tonality.”13

As a technique that occupies the middle ground between tonality and atonality, the transcendental oscillation has been a useful option for composers who are tired of classical conventions yet reluctant to follow the trail blazed by the Second Viennese School. It must be admitted that Schoenbergian atonality repels many casual listeners, a phenomenon that was recognized early on. In 1939, the Austrian-American composer Ernst Krenek, who sympathized with Schoenberg’s project, posed the pessimistic question, “Can it be that atonality is unfit to live?”14 In the opinion of Jacques Viret, Schoenberg’s fatal mistake was to discard the principle of harmonic consonance wholesale rather than merely abandon the principle’s common-practice manifestations.15

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13 Daniel Kawka, “Une auto-analyse inédit d’Albert Roussel,” *Revue internationale de musique française* 19 (February 1986): 87. Likewise, Matthew Brown posits that “although the practices of tonal composition clearly changed between the eighteenth and nineteenth centuries, it is unclear that they exist within yet another harmonic environment”: Matthew Brown, *Explaining Tonality: Schenkerian Tonality and Beyond* (Rochester, N.Y.: University of Rochester Press, 2005), 185. Insofar as transcendental oscillations can prolong traditional tonal functions like tonic, dominant, and subdominant (Section 1.4), I agree that they inhabit the same general “harmonic environment” as traditional tonality, but on a more limited understanding of the term, transcendental progressions occupy a different harmonic environment because they are distinct from the common practice.
Along similar lines, Richard S. Hill wrote in 1936 that atonal serialism went too far in its abolition of asymmetrical pitch emphasis, depriving listeners of an important means of mentally organizing the music they heard. The issue at hand in such critiques is whether the composer is obliged to meet the audience halfway. Nineteenth-century concert culture demanded that the composer shoulder the “burden of comprehensibility,” whereas twentieth-century audiences came to expect that a new piece of serious music would be difficult to understand on first hearing.

The technique of foreground harmonic oscillation played a prominent role in the nineteenth- and early twentieth-century expansion of the tonal lexicon. It produced deviations from traditional tonality within a cultural context that upheld traditional tonality as the default language. The basic motivation for the study of transcendental oscillations is that they balance stability with instability: though they are inherently repetitive, their evasion of traditional tonal norms lends them novelty and, perhaps, ambiguity. While these progressions eschew the common practice, they are not atonal either; they are useful to the composer who wishes to create fresh-sounding music without alienating the lay listener. Oscillating harmony is ubiquitous in traditional

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tonality as well—for example, tonic is often prolonged at the start of a sentence or period by alternation with V (Beethoven, Piano Sonata in C Major, op. 2, no. 3) or IV₄ (Liszt, Les prélu des, mm. 70–71). More globally, the oscillation principle governs Heinrich Schenker’s fundamental bass arpeggiation ₁–₅–₁, creating what Schenker calls the “sacred triangle.”¹⁸ There is something inherently appealing about the idea of a departure followed by a return, and harmonic oscillations embody that psychic model.

A useful tool for conceptualizing music’s comprehensibility is the principle of uniform information density. First formulated in the field of linguistics by Levy and Jaeger in 2007, this theory has been applied to music by David Temperley.¹⁹ The idea rests on Claude Shannon’s notion that information can be quantified; for example, an event is said to convey an amount of information inversely proportional to the logarithm of the event’s probability. As Temperley puts it, “the information of something represents how surprising it is.”²⁰ Once we conceive of information as a quantity, we can also theorize a rate of information flow (also called the information density), a formulation well suited to temporal arts like music. The theory of uniform information density

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density holds that in normal human languages, information flow tends to be fairly moderate and stable over time. As an application of this principle to music, Temperley constructs the following hypothesis: “When a [musical] message (or part of a message) is low in probability in one respect, it will tend to be high in probability in other respects, and vice versa.”

Transcendental oscillations recall the principle of uniform information density. Consider an alternation, repeated indefinitely, between an E dominant seventh and a C dominant seventh. At the start of the oscillation, the move from E7 to C7 likely comes as a surprise to listeners accustomed to traditional tonality; it therefore conveys a large amount of information. The motion from C7 back to E7 is also rather surprising, but less so because we have already heard the E7 chord. In other words, this second chord change presents somewhat less information than the first. Indeed, as the oscillation continues and the two dominant sevenths return again and again, they become less surprising. Furthermore, as the oscillation continues, its rate of information flow approaches a constant level, thereby increasing the information’s “uniformity.” In sum, the average amount of information provided by the “message” (in this case, the oscillation) is moderate, for the large quantity of information produced at the start of the

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21 Ibid., 157.
22 Ibid., 158.
oscillation is balanced by the reduced amount of information caused by the repetitions. This balance is what I call the fundamental attribute of transcendental oscillations: they are both predictable and surprising, neither adhering to classical norms nor abandoning the organizing principle of repetition. I surmise that this combination of stability and relative novelty is one of the main reasons these harmonic devices have appeared with such frequency in Western music over the last 170 years.

1.2 Boundaries

As Carl Dahlhaus points out, tonality means different things to different people. For example, it can have either the generic meaning of a simple hierarchy of pitch classes or the specific meaning of the harmonic practice of the seventeenth through the nineteenth centuries.23 Between these two concepts we find Dmitri Tymoczko’s definition, which understands tonality to be a loose collection of five attributes—centricity, harmonic consistency, conjunct melodic motion, limited macroharmony (i.e. pitch collection), and consonance.24 The more these qualities are present, the more tonal the music. In this study, I assume the validity of Tymoczko’s definition, according to which all harmonic oscillations have a modicum of tonality because their repetitive

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aspect ensures a degree of centricity and harmonic consistency. In addition, most of the oscillations I discuss involve tertian harmonies, which lend them a certain amount of consonance. More directly relevant to the notion of transcendence, however, is the idea of a “common practice,” or what I call traditional tonality. As Brian K. Etter writes, traditional tonality is a “set of expectations” or a “normative system.” Daniel Harrison characterizes common-practice harmony as “a kind of treaty with the art, a voluntary restraint of trade.” Transcendental progressions deviate from this collection of restrictions.

It is difficult, if not impossible, to define traditional tonality in a way that satisfies all parties. Is the common practice a set of pieces, a set of composers, or a set of progressions? When did it start and end (if at all)? And what exactly is meant by the word “common”? Despite these and other uncertainties, the idea persists because it describes a real phenomenon. For although the styles of composers like Couperin, Rossini, and Brahms differ markedly from one another, certain harmonic devices—like the V7–I authentic cadence—are shared by all three. For the sake of clarity, I consider the common practice to be the set of harmonic progressions found in eighteenth-century

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Western art music. This practice is “common” in that it overlaps significantly with the harmonic tendencies of earlier and later eras and continues to saturate our day-to-day musical experience. My definition’s focus on the 1700s is somewhat arbitrary, but not entirely: the eighteenth century is a nexus of important developments in music history such as Viennese Classicism; the development of sonata, symphony, and concerto; and the rise of opera buffa; not to mention legendary composers like J. S. Bach, Handel, Haydn, and Mozart. All available definitions of the common-practice period include the eighteenth century, yet they often disagree on how far the practice extends on either side of the 1700s. Moreover, defining traditional tonality as progressions idiomatic to eighteenth-century music precludes what Harrison calls excessive “caviling about how and when ‘traditional tonality’ died and ‘contemporary tonality’ began.”

With this notion of the common practice in mind, we can define transcendental harmony as progressions of the nineteenth, twentieth, and twenty-first centuries that deviate from harmonic norms of the eighteenth. In the decades following Alexandre-

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29 Harrison, Pieces of Tradition, 5.
Étienne Choron’s pioneering description of “tonalité” in 1810, composers gradually added new elements to the harmonic lexicon. This departure from (or, according to some accounts, expansion of) the common practice accelerated over the course of the nineteenth century in approximately exponential fashion until the ground-breaking experiments of composers like Debussy, Stravinsky, and Schoenberg.

Of course, nineteenth-century music differs from earlier styles in more respects than just the harmonic. Writing in 1956, Peter Wishart went so far as to claim that Wagner’s chords are “no more daring or inexplicable in terms of diatonic harmony than Haydn’s.” In Wishart’s view, harmonic rhythm was a more salient difference between eighteenth- and nineteenth-century music than harmony per se: “Anything moving so slowly for so long as the Prelude to Act III of Meistersinger ... would be incredible in Mozart, no matter how the chords were simplified.” While the latter point is well taken, the nineteenth century did yield progressions that were foreign to eighteenth-century practice regardless of harmonic rhythm. Some of these progressions will be explored in detail in Chapter 2.

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32 Ibid., 110.
Example 1.2: Johannes Brahms, Piano Trio No. 2 in C Major, Op. 87 (1880), first mvt., mm. 121–28.

The Swiss theorist Ernst Kurth argued that the nineteenth-century expansion of the harmonic language served to foreground individual chord successions rather than subordinate local harmonic motion to an overarching tonal plan.\(^{33}\) He interpreted the striking progressions of Romantic music as products of an “abundance of color stimuli” in the “general artistic expressive will.”\(^{34}\) Kurth coined the term “absolute progression effect” to describe the visceral sonic impact of these colorful harmonic innovations.\(^{35}\) This adventurous style of harmony departed from the well-formed aesthetic of Classical

\(^{33}\) Ernst Kurth, *Romantische Harmonik und ihre Krise in Wagners “Tristan”* (Berlin: Hesse, 1923), 263.
\(^{34}\) Ibid., 264. The translation is from *Ernst Kurth: Selected Writings*, ed. and trans. Lee A. Rothfarb (Cambridge: Cambridge University Press, 1991), 120.
\(^{35}\) *Ernst Kurth: Selected Writings*, 264–65.
music, which, as Julian Johnson suggests, “rested on a code sufficiently formulaic that Mozart was able to construct a game for the writing of Menuets by throwing dice.”

As an example of a transcendental progression, consider an oscillation between chords related by chromatic mediant. Chromatic-mediant motion appears often in nineteenth-century music, including works by Beethoven, Rossini, Schubert, Tchaikovsky, Wagner, Brahms, and Bruckner. David Kopp argues that, in nineteenth-century music, chromatic-mediant motion is a legitimate tonal function in the same conceptual sphere as dominant or subdominant. Chromatic-mediant oscillations form a subset of chromatic-mediant progressions; we find examples in music by composers such as Tchaikovsky and Brahms (Example 1.2). However, the device is atypical of Baroque and Classical music. As a result, though it is an important ingredient of nineteenth-century practice, I would venture that this type of oscillation lies outside the category of traditional tonality. Indeed, the increased prevalence of chromatic mediants in the nineteenth century represents an early expansion of the harmonic lexicon to

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39 Chromatic-mediant relations sometimes occur across section boundaries in Baroque and Classical music, but they are extremely rare within phrases (ibid., 18).
include elements external to the common practice. Hence, harmonic oscillations between chromatic mediant-related chords are transcendental.

Transcendental oscillations exist in a particular historical context. To be considered transcendental in the way I am using the term, a progression must have been written in response to traditional tonality, or at least in a cultural milieu that accepts traditional tonality as the default musical language. In other words, a transcendental progression needs something to transcend. Of course, we can find instances of chord progressions that do not belong to the common practice in music before the seventeenth century, but such progressions were not written in reaction to traditional tonality. On the contrary: they were reflections of the harmonic language that was eventually refined and honed to create traditional tonality. Example 1.3 depicts a medieval oscillation that, while not part of the common practice, is not transcendental either. The chord labels in Example 1.3 are modern inferences; complete triads are not always present in the music. For instance, the sonority labeled “C” in m. 79 contains no G and lies over what we would call an F pedal. I use these approximate chord labels to show that Example 1.3 deviates from our concept of common-practice harmony. Historically speaking, however, it makes no sense to think of Example 1.3 as deviating from the common practice since that practice had not yet come into existence. Therefore, I do not consider Pérotin’s oscillation transcendental.
Example 1.3: Pérotin(?), *Sederunt principes* (ca. 1200).

Example 1.4: Philippe de Vitry (1291–1361), *Adesto, sancta trinitas*, end.

Example 1.4 contains another oscillation that neither belongs to the common practice nor transcends it. Like Pérotin’s *Sederunt principes*, Philippe de Vitry’s *Adesto, sancta trinitas* (14th c.) alternates between what we would consider two major chords.
whose roots are a whole step apart. (The third is absent from the last chord.) But de Vitry was not reacting to common-practice tonality; rather, he was thinking in terms of the discant harmonization of chant, which was part of his own “common practice.” Therefore, Example 1.4 is not transcendental because it does not transcend traditional tonality.

Example 1.5: Giorgio Mainerio, Saltarello (1578), mm. 1–7.

Similarly, in Giorgio Mainerio’s “Saltarello” of 1578, G minor alternates with F major before arriving on what we would consider a half cadence (Example 1.5). Yet Mainerio was not rebelling against the default harmonic language when he decided to go from Gm to F and back to Gm. Rather, he was following the precepts of well-
formed composition of his time. If Example 1.5 had been written in 1878 rather than 1578, I would call it transcendental.

In researching the history of transcendental oscillations, I have collected hundreds of distinct examples. This collection has four areas of focus: Debussy (1862–1918), Jean Sibelius (1865–1957), the musical theater composer Stephen Sondheim (b. 1930), and pop music since the 1960s. The first two composers were selected because they amply demonstrate the oscillation practice of the long nineteenth century, while the latter two foci were chosen because they exemplify the influence of minimalistic harmony in twentieth-century American vernacular musics. The œuvres of Debussy, Sibelius, and Sondheim are replete with transcendental oscillations, as is the general category of popular music since the 1960s. In the course of my research, I have encountered oscillations by dozens of composers representative of several countries: France, Finland, the United States, Russia, Italy, Germany, Canada, Bohemia, Japan, and England. Examples from many genres are included in this dissertation, such as symphony, opera, art song, tone poem, sonata, show tune, modal jazz, rap, disco, electronica, and indie rock. Most of the existing literature on harmonic oscillation

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focuses on popular music or jazz,\(^41\) and one of the motivations for the present study is to show that this harmonic technique is common to a wide range of musics.

### 1.4 Functional profiles

As a rule, transcendental oscillations prolong harmonic functions. As with “tonality,” however, different theorists understand the word “function” in different ways. Drew Nobile sorts definitions of harmonic function into three categories. Function can refer to the inner content of a chord, such that chords with similar interval and scale-degree structures serve the same function. Alternatively, it can refer to the chords to which a particular harmony tends to progress, so that two different chords that tend to move to the same harmony belong to the same function. Finally, it can denote the role that chords play in the phrase structure, so that chords that appear in the same temporal position in phrases serve the same function.\(^42\) These three categories overlap; indeed, V and vii\(^o\) would belong to the same function (“dominant”) under any of these definitions. However, they do not overlap completely. Rameau, for instance, distinguished between

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dominante as a generic description of a type of seventh chord and dominante tonique as a specific sonority that precedes tonic harmony. The utility of the idea of “harmonic function” lies in its recognition of similarities between chords that are not equivalent to one another; it therefore serves to reduce the practically infinite number of possible harmonies into a more manageable set of harmonic types.

In this study, I adopt Daniel Harrison’s suggestion that harmonic function resides in diatonic scale degrees, whether they are chromatically altered or not. In particular, 1 and 3 usually characterize tonic, 7 and 2 dominant, and 6 and 4 subdominant. For example, iii can sometimes act as tonic, VII as dominant, and vi as subdominant. Context is also important for determining function in this system: I borrow from tonal theory the normative principle that subdominant precedes dominant and not the other way around. So, when vii° goes to vi at a deceptive cadence, we can interpret the progression as moving from dominant (because vii° contains 7 and 2) to tonic (because vi contains 1 and 3, and because tonic is a more typical follower of dominant than is subdominant). This function theory understands vii°–vi to articulate a dominant–tonic succession even though neither chord is the typical Classical dominant

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43 Cited in Dahlhaus, Studies, 143.
45 Ibid., 127.
(V) or tonic (I). Moreover, the example demonstrates how a single chord (vi) can have
different functions (tonic and subdominant) in different contexts. Indeed, I would
interpret the progression vi–I as a subdominant–tonic succession with vi carrying a
distinct subdominant quality thanks to the presence of 6. My understanding of harmonic
function thus primarily refers to the content of individual chords but also recognizes
that harmonic progression plays a role in establishing function. It therefore belongs
mostly to Nobile’s first species of function theory while overlapping with the second
variety.

Although I do not treat “functional harmony” as synonymous with “common
practice,” the terms are sometimes considered approximately equal in the literature. For
one thing, Riemann’s initial concept of function theory derived from his knowledge of
the traditional tonal repertoire. The conceptual association of functional harmony with
common-practice tonality has led some scholars to posit that the presence of half-step
leading tones in a progression strengthens the progression’s functionality. For example,
Esa Lilja suggests that 7 is better able to convey dominant function than $\flat 7$, and that the
half-step motion $\flat 6 – 5$ is more communicative of subdominant–tonic than is the whole-
step motion $\flat 5 – 5$. Similarly, David Kopp states that the “presence of a linear semitone”

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is one of the indicators of a functional harmonic progression.\footnote{Kopp, \textit{Chromatic Transformations}, 7–8.} If one subscribes to this theory of gradations of functionality, then many of the modal progressions that nineteenth-century composers devised (including examples to be discussed in Chapter 2) would seem to be less functional than their traditionally tonal counterparts, for they dispense with the leading tone between $\tilde{7}$ and $\hat{1}$. In this study, however, I consider functions to inhere in particular scale degrees even when those degrees are altered from common-practice norms. Viewing function in this way uncovers the deep connections that persist between disjunct musical styles, connections that motivate the creation of the broadly applicable concept of transcendental oscillation.

In addition to the three traditional functions of tonic, dominant, and subdominant, I recognize Kopp’s chromatic-mediant function. Chromatic mediants are so common in nineteenth-century music that motion between chords related by chromatic mediant constitutes a function in the same class as tonic, subdominant, and dominant.\footnote{Ibid., 3.} Indeed, from Beethoven and Schubert onward, chromatic mediants proliferated in Western music until they reached the status of normative progressions.\footnote{Ibid., 18.} Nineteenth-century theorists, however, were stymied by this new harmonic device.\footnote{Ibid., 4.} In
what follows, I use the labels T, D, and S to stand for the three traditional functions and M to stand for chromatic-median function.

The last chapter of this study concerns popular music since 1960. When dealing with pop music, the classically trained theorist ought to beware of importing concepts that were originally designed for analysis of the classical repertoire. As Allan Moore and Remy Martin state, “the matter of functionality must be treated carefully” in rock. Nevertheless, the approach to function outlined above serves popular music just as well as art music. My approach does not privilege one type of dominant (such as V) over another (such as VII), nor does it assume that a dominant–tonic succession is more normative than subdominant–tonic. In addition, a focus on scale degrees as communicators of harmonic function fits with pop music’s use of the chromatically embellished diatonic scale. The frets on an electric guitar are tuned to twelve-tone equal temperament just like the strings of a Steinway, and the ubiquitous use of diatonic subsets of that twelve-tone pitch space constitutes a broad area of common ground between classical and popular music. This intersection belies the two styles’ obvious divergence in other musical parameters such as rhythm and timbre. By applying a single definition of harmonic function to multiple musics, I heed Charles J. Smith’s warning

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51 Allan Moore and Remy Martin, Rock: The Primary Text (Abingdon, UK: Routledge, 2019), 52.
against the “systemic over-proliferation” that can result from treating pop music as totally foreign to the art music with which it shares the contemporary sonic landscape.52

Taken as a unit, a transcendental oscillation prolongs a harmonic function. However, within the oscillation itself, the individual harmonies may fulfill harmonic functions on a more local scale. Therefore, in order to describe the functional characteristics of an oscillation, we need to deal with at least two structural levels. On a middleground level, the oscillation as a whole prolongs a function, as represented by the schematic diagram in Figure 1.6a. But on the foreground, the oscillation’s constituent chords have functions of their own within the local context defined by the oscillation. In other words, if the oscillation is heard on its own, isolated from the surrounding music, its chords often articulate a hierarchical, functional relationship that is independent of the broader context. Figure 1.6b shows this foreground scheme. The functional characterization of an oscillation is given by a functional profile with the form X:Y-Z, where X is the function of the oscillation within its phrase and Y and Z are the localized functions of the chords within the oscillation.

To see this paradigm in action, consider a passage from Franz Schubert’s “Gute Nacht” (1827), the earliest transcendental oscillation discussed in this study (Example 1.7). The oscillation between E dominant-seventh and D-major chords serves to prolong tonic function at the start of the phrase; therefore, the first letter in the oscillation’s functional profile is T. Moreover, E7 acts as subdominant since it contains scale degrees 6, 2, and (£)4 relative to the D tonic. Thus, the complete functional profile of the oscillation in Example 1.7 is T:S-T. I have not made an exhaustive survey, but it seems that T:S-T (along with T:T-S) is one of the most common profiles. In other words, when composers employ transcendental oscillations, they are often alternating between tonic and some subdominant chord.
Example 1.7: Franz Schubert, “Gute Nacht,” mm. 87–93, accompaniment.

Example 1.8: Richard Wagner, “Tarnhelm” motive

Exemplifying chromatic-mediant oscillation, Wagner’s “Tarnhelm” motive from the Ring cycle alternates between G♯ minor and E minor (Example 1.8). Kevin Swinden
hears this progression as prolonging a G♭ minor tonic established through repetition. Thus, the motive’s functional profile is T:T-M, since the oscillation as a whole expresses tonic while the individual chords in that oscillation relate to one another by chromatic mediant.

As we have seen, an oscillation’s functional profile consists of three symbols: one to describe the function prolonged by the entire oscillation and two others to describe the local functions served by chords within the oscillation. Most of the oscillations I describe have profiles that contain two distinct letters, such as T:T-S or D:T-D. However, the functional labels of some oscillations encompass three different functions, such as S:T-M. This profile occurs in the song “Two Lost Souls” from the musical Damn Yankees (Example 1.9). At the song’s outset, tonic is prolonged through an alternation between E♭6 and G♭maj7, chords related to one another by chromatic mediant. Thus, the first oscillation in Example 1.9 has the profile T:T-M. But in mm. 5–6, the tonicization of A♭ produces an oscillation whose profile has three distinct functions: S:T-M. For while the oscillation in mm. 5–6 serves to prolong subdominant function in preparation for the authentic cadence at the end of the phrase, on a local level the A♭ sounds like tonic and C♯maj7 like its chromatic mediant. Therefore, the oscillation in mm. 5–6 is best

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characterized as S:T-M, recognizing that the tonicized element in the oscillation (A₃) is
different from the tonic of the entire phrase (E₃). I call oscillations whose profiles contain
three distinct letters functionally heterogeneous.

Example 1.9: Richard Adler and Jerry Ross, “Two Lost Souls” (1955).

On the other hand, the profiles of some oscillations contain just one letter stated
three times. These are functionally homogeneous oscillations, and they arise when neither
chord in the oscillation sounds subordinate to the other. For example, a T:T-T profile
denotes an alternation between two chords, each of which has an equal claim to be
tonic.54 Though uncommon, functionally homogenous oscillations appear occasionally.
For instance, a 2018 synthwave track by Emil Rottmayer called “Sixty-Three” oscillates
between B₃ and F minor-ninth chords without definitively signaling that one or the other

54 For an overview of the idea of the “double-tonic complex,” which originated in the work of Robert Bailey,
is the true tonic. The T:T:T foreground profile may have originated with Satie’s first
\textit{Gymnopédie}, which alternates between G- and D-major sevenths. Similarly, Mark Spicer
observes that harmonic oscillations in rock and pop music sometimes invite two
different interpretations of the tonic: it is possible to to hear either the first or the second
chord as fulfilling tonic function.\textsuperscript{55} For example, ambiguous tonic function appears in the
Grateful Dead’s “Dark Star” (1969), which alternates between A-major and E-minor
triads. While A mixolydian seems to be the most plausible mode, one could also hear the
E-minor chord as tonic, articulating the mode of E dorian.\textsuperscript{56} Jerry Garcia himself
vacillated between hearing the song in E and hearing it in A.\textsuperscript{57} Ken Stephenson oberves
that “some rock pieces tend to float back and forth between two keys” due to competing
tonic-establishing signals; this tonal ambiguity occurs most often between a major key
and its relative minor.\textsuperscript{58}

\textbf{1.3 Nineteenth-century origins}

The theorist Christopher Brody once told me that in common-practice tonality,
“the dissolution of the system is inherent in the properties of the system.” As a case in

\textsuperscript{55} Spicer, “Absent Tonics,” 12.


\textsuperscript{57} Cited in ibid., 205.

point, the possibility of decorating a harmony with a neighbor chord—an option that always existed in traditional tonality—gave Romantic composers license to try all manner of unusual chord progressions that deviated from earlier conventions.

The addition of elements to the Western harmonic idiom in the nineteenth century was gradual rather than immediate. Early transcendental oscillations tended to be fleeting decorations of traditional tonal functions, wherein a standard harmony was enlivened by the interpolation of a single non-traditional harmony. While a local neighbor-chord structure might be harmonically adventurous, the broader tonal context in which it appeared was still fundamentally conventional. The opening of Wagner’s *Lohengrin* (1850), which prolongs tonic through an alternation between root-position I and vi, is a classic example. (See the discussion of this piece at the end of this chapter.)

Transcendental oscillations originated in the nineteenth century as prolongations of traditional tonal functions. This prolongation could be achieved in two ways: a non-traditional chord could be inserted in the middle of a traditional chord (the “interpolation” technique) or a non-traditional prolongational chord could be substituted for a traditional one (the “substitution” approach). We already saw an interpolation in Brahms’s piano trio (Example 1.2), where $E_{b,3}^6$ chords were inserted into

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the functional G-major harmony, thereby splitting the dominant harmony into an oscillation between G and its chromatic mediant E₆. The oscillation as a whole prolonged dominant function in the key of C.

For an instance of chordal substitution, consider the main theme from the last movement of Dvořák’s “New World” Symphony (Example 1.10). This passage features a diatonic mediant chord (III) where a dominant chord would be expected. Indeed, the consequent phrase of Example 1.10 seems to “correct” the antecedent by replacing III with V. In this way, Example 1.10 contains two analogous tonic prolongations—the first involving i and III and the second involving i and V. In the first prolongation, the unconventional III chord substitutes for a conventional dominant.

Example 1.10: Antonín Dvořák, Ninth Symphony (1893), finale, mm. 10–17.
According to Kurth, the “absolute progression effect” of nineteenth-century music derived from novel uses of the basic materials of traditional tonality.60 In other words, the novelty stemmed not so much from new harmonies but from new orderings of harmonies. Similarly, the German theorist Carl Friedrich Weitzmann sought to loosen the syntactical restrictions that other theorists had placed on the harmonic vocabulary and allow a greater variety of chord progressions than had previously been accepted.61 In his attempt to broaden the definition of tonality, Travis theorized that basic structures could be prolonged in a practically infinite number of ways,62 and the variety of transcendental oscillations we find in the late 1800s and early 1900s supports that claim. The idea that a large proportion of Romantic harmony embellished common-practice schemas is not a new one: Robert Gauldin has examined various dominant-prolonging wedge progressions in nineteenth-century music, while Jonathan D. Kramer asserts that “voice-leading prolongations of slowly moving structural harmonies became normative on local levels” in the Romantic era.63 In a study of Debussy’s songs, Avo Somer observes that chromatic-mediant relations often prolong common-practice harmonic

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60 Kurth, Romantische Harmonik, 268.
62 Travis, “Towards a New Concept of Tonality?,” 263.
functions, especially tonic. Despite their integration into traditional functional contexts, however, prolongational transcendental oscillations are still noticeably separate from eighteenth-century convention. As Kurth says, “the isolating effect of the progression [is] acknowledged, even when tonally unifying continuity embraces it.”

As an example of a harmony that appeared in traditional tonality but whose full potential was realized only in the 1800s, Deborah J. Stein cites the diatonic mediant, which had normally been restricted to the role of passing chord between tonic and dominant. In Romantic harmony, the principle of the neighbor chord increased in importance and took a prominent place in the musical practice alongside the already ubiquitous passing chords. Under the new regime, any vertical sonority could be justified theoretically as long as it represented an agglomeration of neighbor tones in different voices. We might term this precept the “neighbor-chord principle” of nineteenth-century music. To call a sonority a neighbor chord is really to make three claims: first, that the chord preceding the sonority in question is identical to the one following; second, that the voice leading between the sonority in question and its

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64 Somer, “Chromatic Third Relations,” 217.
65 Ernst Kurth: Selected Writings, 122.
67 Kurth, Romantische Harmonik, 220.
framing chord proceeds mostly by step or common tone; third, that the sonority is subordinate to its framing chord.

For example, consider again the aforementioned excerpt from Schubert’s “Gute Nacht” (Example 1.11). This song explores the polarity between the parallel minor and major keys centered on D. In the latter part of the song, Schubert recasts earlier, minor-mode material in major. During this recontextualization, we hear a transcendental oscillation that suggests lydian mode via $\sharp 4$. By alternating a D-major tonic chord with an E dominant seventh over a D pedal, Schubert transcends tonal convention. This oscillation arises from a combination of individual neighbor-note patterns: G♯ is chromatic lower neighbor to A and upper neighbor to F♯, E is upper neighbor to D, and B is upper neighbor to A. In this way, a striking harmonic (vertical) profile emerges from smooth horizontal counterpoint.

Example 1.11: Schubert, “Gute Nacht,” accompaniment, mm. 87–93.
In one sense, Example 1.11 is mundane: it is simply a repetition of two familiar chords, major triad and dominant seventh, linked by a common tone in the bass. Yet Schubert deliberately uses G♯ where G♮ would be expected. This subtle decision loosens the strictures of traditional tonality by showing that a dominant-seventh sonority need not act as V7 but can instead be a supertonic neighbor chord. Furthermore, the raised fourth scale degree G♯ intensifies the “major-ness” of the song’s latter section by implying the “super-major” Lydian mode. This tonal gambit heightens the major-mode section’s contrast with earlier D-minor material. In addition, the brief passage reproduced in Example 1.11 manifests the idea of oscillation on multiple structural levels: not only does the harmony rock back and forth between D and E chords, but within each of those harmonies we find local neighbor figures (E–F♯–E and A–B–A in the right hand).

A Lied by Robert Schumann demonstrates a harmonic oscillation that emerges from a still more horizontal texture. In Example 1.12, from the first movement of Dichterliebe (1840), Schumann deploys neighbor notes in multiple voices to decorate a dominant seventh. Specifically, I hear the harmony in mm. 2 and 4 as V7 of an implied F♯-minor tonality, while the pitch collection in mm. 1 and 3 includes two neighbor tones: F♯ is neighbor to both E♯ and G♯, and D is upper neighbor to C♯. (B is common to both harmonic areas.) If we had to explain Schumann’s oscillation by roman-numeral
analysis, we might come up with an alternation between ivvi (B minor in first inversion) and V7 (C# dominant seventh) in the key of F# minor. Yet this progression is unconventional by traditional tonal standards in that V7 in minor normally resolves either to i or VI and not to iv. Furthermore, the application of roman numerals to the progression ignores the smooth voice leading that makes the progression work: the bass, for example, oscillates by half step between D and C#. In fact, the arpeggiations lie remarkably well in the pianist’s hands.

Example 1.12: Robert Schumann, “Im wunderschönen Monat Mai,” mm. 1–6.
Overall, Schumann’s oscillation prolongs dominant function in the key of F♯ minor, even though it does not resolve to the expected F♯-minor tonic. Therefore, the first letter of its functional profile is “D.” In addition, the neighbor harmony in Example 1.12 fulfills a subdominant function in relation to the dominant seventh. That is, if we hear the C♯ dominant-seventh harmony as V in an implied F♯-minor, then its neighbor sonority outlines a iv chord (B minor) in the same key. Thus, the oscillation’s complete functional profile would be D:S-D, indicating a dominant prolongation that alternates between subdominant and dominant.

As a third example of neighbor chords’ producing a foreground oscillation, consider again the “Tarnhelm” motive from Wagner’s Ring cycle (Example 1.13), a classic instance of chromatic-mediant oscillation which represents the magic helmet Mime crafts for Alberich. The motive appears when the helmet is finished and Alberich tries it on. The Tarnhelm causes the wearer to become invisible, and Example 1.13 paints Alberich’s disappearance in music. In the first five measures of the example, the uncanny oscillation between G♯-minor and E-minor triads signals that something unusual is about to happen. Sure enough, Alberich vanishes before Mime’s eyes at that moment.

The chromatic-mediant oscillation of the first five measures mirrors tonal areas of Example 1.13 in its entirety. Specifically, the chords in the oscillation are G♭m–Em–G♭m, while the local tonics of the excerpt are, in order, G♭ minor (because of the long durations of the G♭-minor chords in the first five measures), E minor (at the start of the second system), and G♭ minor again (confirmed by an authentic cadence at the end of the example). In short, the example’s tonal centers follow the pattern G♭m–Em–G♭m,
which is the same as the series of chords in the foreground oscillation. In this way, the Tarnhelm motive governs the tonal layout of the entire phrase.\footnote{The return to G♭-minor tonality at the end of the excerpt aligns with Alberich’s vanishing. If we consider E minor to represent Alberich at this moment and G♭ minor to represent the helmet—it is, after all, an unusual key—then the return to G♭ minor at the end of the excerpt symbolizes the helmet’s control over the wearer.}

In the Tarnhelm oscillation, E serves as upper neighbor to D♯ while G♯ provides a lower neighbor to G♯; B is held throughout as a common tone. However, Wagner departs from maximally efficient voice leading by dropping an E root beneath the E-minor chords. Thus, in voice-leading terms, the G♯ in the G♯-minor chords splits into two pitches—G♯ and E—in the E-minor triads. This phenomenon demonstrates that some transcendental oscillations in Romantic music are chordal rather than purely contrapuntal, for there is no contrapuntal need for Wagner to include the bass E—rather, the inclusion of that note creates disjunct voice leading. Therefore, the harmonies that alternate in Example 1.13 both seem like true chords and not just contrapuntal coincidences.

In a transcendental oscillation, sometimes it is not the neighbor chord itself that is unusual, but rather the return to the initial harmony. If we consider a basic transcendental neighbor-chord structure to have the form ABA, where A and B stand for chords, then sometimes the motion from A to B is conventional whereas the motion from B back to A takes the oscillation out of the common practice. A good example is the
opening of Wagner’s *Lohengrin*, which oscillates between root-position I and vi in the key of A major. To go from I to vi is commonplace, but to return immediately to root-position tonic was an unusual move for Wagner to make in 1850. We do find the I–vi–I6 progression in 18th-century music, where submediant serves as passing chord between two inversions of tonic; the opening of Mozart’s *Die Zauberflöte* comes to mind (Example 1.14). However, in *Lohengrin* the submediant serves not as passing chord but as neighbor, and in this respect it transcends the common practice that Wagner and other Romantic composers inherited (Example 1.15). For whereas Mozart’s use of vi to pass between different inversions of tonic is dynamic, Wagner’s employment of vi as neighbor chord is static: he returns to exactly the same chord from which he started.69

The I–vi–I6 passing figure conforms to the common-practice ideal of harmonic teleology. By contrast, the I–vi–I neighbor figure is not really a “progression” at all, but rather circular or elliptical. Indeed, although this difference is slight, it nonetheless encapsulates an important distinction between Classical and Romantic aesthetics.


Example 1.15: Wagner, *Lohengrin*, prelude to Act I, mm. 5–8.

The acceptability of extravagant neighbor-note motion inevitably weakened the rule of common-practice harmonic norms. Furthermore, neighbor chords produce oscillations by definition—if we assign the label “B” to the neighbor chord and “A” to

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70 Kurth, *Romantische Harmonik*, 185.
the chord to which it is neighbor, we uncover a progression with the form ABA, which is an oscillation. Given the proliferation of novel neighbor chords in Romantic music, it is unsurprising that transcendental oscillations played a major role in the expansion of the harmonic language in the nineteenth century.

Transcendental progressions encapsulate the adventurous spirit of Romantic music. This spirit can be found in all art forms of the nineteenth century. It appeared early in Gothic literature, whose central qualities are what Linda Bayer-Berenbaum describes as “the random, the wild, and the unbounded.” The same rule-breaking impulse had also emerged in the English garden, which increasingly sought to imitate unbridled nature. In the Aesthetics, Beethoven’s contemporary Hegel asserts that music carries the “liberation of the soul ... to the most extreme heights.” In social terms, this liberation meant the creation of a bourgeois society that placed a premium on artistic originality. Consequently, uniqueness and differentiation became driving forces of creative production.

74 Krenek, Music Here and Now, 42.
In the musical realm, these forces caused an expansion of the tonal lexicon and syntax. Krenek avers, with slight exaggeration, “Before the nineteenth century, composers were not required to write new and original themes.”76 The Italian composer Alfredo Casella wrote that between 1880 and 1920, composers were obsessed with the “feverish enrichment of harmony.”77 But the fever had been raging long before: German critic Richard Pohl viewed the decade from 1852 to 1862 as a singular period of musical innovation, exemplified by the works of Liszt.78 Lawrence Kramer casts this innovative tendency as a “continual testing of the boundaries of tonality” by means of complicated harmony.79 According to Schoenberg, one of the immediate causes of this extension of tonality was the widespread interest in music’s expressive powers, particularly its ability to describe or lend color to extramusical concepts.80 An important source of descriptive harmony was Russia, which lay on the metaphorical and geographical periphery of the European cultural universe. Starting with Glinka, Russian composers

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76 Krenek, Music Here and Now, 136.
deployed harmony with refreshing freedom, often in order to heighten drama in their operas.  

As Raymond Monelle points out, the use of music to represent external tableaux seems to contradict the Romantic emphasis on interior subjectivity. In reality, both tendencies express the same exploratory impulse: on the one hand, we have the search for untamed nature; on the other, the probing of the psyche. Wagner expressed this apparent paradox when he characterized the “innermost being of Christian harmony” as a “fathomless sea so boundlessly vast.” In that adventurous musical age, the individual composer took on the aspect of an explorer whose harmonic peregrinations were idiosyncratic and bold. Liszt wrote, “Art moves, strides on, increases and develops, obeying unknown laws ... When the hour of progress strikes for art, the genius is always found in the breach.” Likewise, Kurth saw Romantic harmony as a “technique that reaches into new realms.” With such metaphors of spatial expansion on display, it is unsurprising that nineteenth-century music effected expansions in the temporal

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86 Ernst Kurth: Selected Writings, 121.
dimension as well, from the uncommon length of the works of Bruckner and Wagner to the local repetitiveness of oscillating progressions. In describing the Romantic aesthetic, Paul Shepard writes, “Space and time and silence are metaphors of the eternal and infinite,” a feeling that Baudelaire applied to music when he stated that “la musique donne l’idée de l’espace.”

Nineteenth-century harmony seems full of energy, change, tension, and force. Although new individual harmonies do appear in the 1800s, more important are the novel harmonic progressions of the era. Truly, the focus of Romantic (and post-Romantic) innovation is on dynamics rather than statics. Weitzmann signaled as much when he claimed that “a consonant chord may be followed by any other consonant chord.” A similar idea underlies the novelty of early twentieth-century music, which deploys familiar sounds in unfamiliar arrangements. Jim Samson detects the same approach in Mussorgsky’s idiom, as does Stein in Hugo Wolf’s tonality. Many of the oscillations discussed in this study showcase the phenomenon of familiar sonic objects arranged in less familiar successions.

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89 Quoted in Wason, “Progressive Harmonic Theory,” 70.
90 Johnson, After Debussy, 17.
In addition to the figurative expansion of Romantic harmony, nineteenth-century music also underwent a more literal expansion outward from its geographical center as composers in France, Scandinavia, Russia, Bohemia and elsewhere strove to escape the Austro-Germanic hegemony symbolized by such towering figures as Beethoven and Wagner. Many of these composers found inspiration in ancient music and folk traditions, both of which featured diatonic modality. One frequent indicator of modality was the lowered seventh scale degree, appearing for instance in the opening chorus of Boris Godunov. This scalar alteration readily transforms a conventional I–vii°–I oscillation into a transcendental I–VII–I. The resurrection of modality could seem primitive, though not in a pejorative sense; the Scottish critic Cecil Gray wrote admiringly of such “primitives” as Debussy and Sibelius. At the same time, non-Germanic composers also found more avant-garde methods of distinguishing their styles from common-practice orthodoxy. For instance, in 1915, the French composer René Lenormand enumerated several examples of ninth chords in alternation with one another in contemporary French music. Parisian critic Jean Marnold apparently

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93 Ibid., 11.
considered the dominant ninth to be the quintessential Romantic sonority.\textsuperscript{96} I shall explore modal and chromatic qualities of transcendental oscillations more fully in Chapter 2.

\textbf{1.5 Minimalism}

As a temporal art, music in some sense expresses time itself.\textsuperscript{97} When it is repetitive, music may evoke cyclical time, a temporality that seems to relate more to primeval aspects of existence than to urbane civilization.\textsuperscript{98} For the sophisticated modernist Krenek, excessively repetitive music produces “hypnotic monotony ... a stupefying effect.”\textsuperscript{99} Monelle argues that most of the Western art music still known to us was created after commercialization and industrialization had made accurate, unidirectional timekeeping a foundation of civilized culture.\textsuperscript{100} Indeed, Arnold Whittall considers “goal-directed motion” to be a central component of tonality.\textsuperscript{101} As repetitive progressions, transcendental oscillations counteract this teleological tendency to a certain extent.

\textsuperscript{96} Cited in Casella, “L’Harmonie,” 30.
\textsuperscript{97} Kramer, \textit{The Time of Music}, 167.
\textsuperscript{98} Shepard, \textit{Man in the Landscape}, 61–62.
\textsuperscript{99} Krenek, \textit{Music Here and Now}, 106.
\textsuperscript{100} Monelle, \textit{The Sense of Music}, 93.
Topic theorists have pointed out that an abstract musical object, such as a chord progression, can acquire semantic meaning by virtue of its syntactic structure.\textsuperscript{102} For example, Vasili Byros applies the idea of “prelinguistic structures” to music, showing that a simple melodic contour—which on its face conveys no semantic meaning—can be understood as an embodiment of a particular physical concept.\textsuperscript{103} Similarly, transcendental oscillations embody the idea of “departure and return,” or “cyclic motion,” thanks to their repetitiveness. For Schoenberg, chord progressions that do not aim for a clear goal are well-suited to “descriptive music”; he cites several transcendental oscillations from the nineteenth-century repertoire as examples of this static harmonic style.\textsuperscript{104}

If foreground oscillations served to prolong harmonic functions in the 1800s, they achieved their consummate expression in the wake of minimalism in the late twentieth century. From a sociological perspective, Robert Fink contends that minimalism arose from the mechanization of life in the second half of the 1900s, both in the literal sense of an increased reliance on mechanical technology and in the more figurative sense of


\textsuperscript{104} Schoenberg, \textit{Structural Functions}, 1.
increased standardization, mass production, consumerism, and regimentation of industrial society. In other words, minimalism was a response to and reflection of the mechanized framework that seemed to dominate after the Second World War. The transcendental oscillations that appear with remarkable frequency and length in various kinds of popular music are minimalist in that they contain a minimal amount of harmonic variety. Minimalism gave composers both classical and popular a license to repeat that they had not previously enjoyed, Satie’s irreverent experiments notwithstanding.

It is a curious property of some minimalist works that they produce an experience of stasis despite their high level of surface activity. In fact, some amount of change is necessary to create true repetition. In a passage redolent with the aura of quantum mechanics, the philosopher Henri Bergson described how, as the unit of repetition becomes smaller and smaller, the material approaches a state of undifferentiated homogeneity. Likewise, Sylveline Bourion observes that a repeated fragment must exhibit some internal contrast; otherwise it would be impossible to detect

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where the initial statement ends and the repetition begins.\footnote{Sylveline Bourion, \textit{Le style de Claude Debussy: duplication, répétition et dualité dans les stratégies de composition} (Paris: Vrin, 2011), 43.} Because they involve just two chords, transcendental oscillations contain the least possible amount of harmonic change, an internal contrast that suffices to make the repetition salient.

Minimalism rehabilitated consonance and repetition following their rejection by modernism.\footnote{Viret, \textit{Le retour d’Orphée}, 400.} The style arose circa 1960 in the works of several composers born in the 1930s, such as Steve Reich, Philip Glass, Terry Riley, and Arvo Pärt.\footnote{Ibid., 385.} The last two chapters of this study shine a spotlight on other composers of the same generation: Stephen Sondheim was born in 1930 and Burt Bacharach, one of the pop composers discussed in Chapter 6, was born in 1928. While minimalism proper is a product of the late 1900s, adumbrations of the minimalist aesthetic may be detected much earlier.

Proust suggests that repetition is an essential component of any listening experience, for without repetition we cannot fully appreciate heard sounds.\footnote{Cited in Didier Maleuvre, \textit{Museum Memories: History, Technology, Art} (Stanford, Calif.: Stanford University Press, 1999), 76.} Gothic art conveys infinite space and time through repeated motifs.\footnote{Bayer-Berenbaum, \textit{The Gothic Imagination}, 67 and 94.} And in nineteenth-century French music, the highly repetitious works of Satie may seem like outliers, but Johnson argues that even Fauré’s song accompaniments suggest an infinitely enlarged present by means
of repeated figuration.\textsuperscript{113} Debussy in turn exploited repetitive chord progressions, as we shall see in Chapter 3.

\textbf{1.6 Larger contexts}

In a piece of music, transcendental oscillations can appear at any structural location. I borrow from William Caplin a concept of basic musical structure with five components. A musical moment can exist at a \textit{beginning}, \textit{a middle}, or an \textit{end}; in addition, we can recognize moments that serve as \textit{preface} (Caplin’s “before-the-beginning”) or \textit{epilogue} (Caplin’s “after-the-end”).\textsuperscript{114} These structural locations operate at multiple levels simultaneously.\textsuperscript{115} For example, the antecedent of the last phrase in a development section occurs at a beginning on the phrase level, an ending on the level of the development section, and a middle in the context of the whole sonata form. We find transcendental oscillations in all five of the basic structural positions. That said, I cannot apply every aspect of Caplin’s theory because the primary determinant of structural location in his system is the normative syntax of traditional tonality, and transcendental oscillations by definition eschew that syntax. Nevertheless, it is frequently possible to segment post-tonal or extended-tonal music into beginnings, middles, and ends by

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{113} Johnson, \textit{After Debussy}, 270.
\item \textsuperscript{115} Ibid., 122.
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identifying processes of departure and return or by examining parameters such as rhythm.\textsuperscript{116}

Camille Saint-Saëns deploys an oscillation as \textit{preface} at the start of his 1871 tone poem \textit{Le rouet d’Omphale}. At the opening of the work, violins and flutes exchange a spinning-wheel motive that arpeggiates $B_6^3$ and D major in alternation: with D acting as common tone between the two harmonies, $F_7$ alternates with $F_7$ and $B_6$ with A (Example 1.16). The circular repetition of the two chords mimics the motion of the wheel. This opening passage is an introduction to the first theme of the piece, which starts at m. 13. Therefore, the oscillation fulfills what Caplin calls a “before-the-beginning” function.

\textbf{Example 1.16: Oscillation as preface. Saint-Saëns, \textit{Le rouet d’Omphale} (1871), mm. 1–6.}


An oscillation as _beginning_ appears at the start of “Tuileries” from Mussorgsky’s _Pictures at an Exhibition_ (1874). In a tonic-subdominant prolongation of the B-major tonic harmony, Mussorgsky oscillates between B and E♭⁶ chords (Example 1.17). These chords accompany the opening measures of the movement’s main theme; hence, they serve a beginning function.

Mascagni uses an oscillation as _middle_ in the theme from the intermezzo of his opera _Cavalleria rusticana_ (1890). If we hear the first 11 measures as constituting a single phrase, then the dominant-prolonging Gm⁷–C⁷–Gm⁷ oscillation in mm. 6–8 (D:S-D, with Gm⁷ acting as subdominant and C⁷ as dominant) occupies the middle of the phrase (Example 1.18). Moreover, because the Intermezzo occurs in the middle of the opera as a whole, the oscillation in Example 1.18 serves “middle” functions on both the level of the phrase and the level of the entire work.

We find an oscillation as *end* at the close of the verse to Jerome Kern’s 1940 ballad “Remind Me,” when B♭7 and Fm7 alternate in preparation for the E♭-major refrain (Example 1.19). Like the Mascagni example, this progression prolongs dominant by alternating it with subdominant. Since the verse acts as introduction to the main body of the song, the oscillation in Example 1.19 has “ending” function on the level of the section (since it ends the verse), but “preface” function on level of the entire work (because it precedes the refrain).

Example 1.19: Oscillation as end. Jerome Kern/Dorothy Fields, “Remind Me” (1940), end of verse.

Liszt produces an oscillation as *epilogue* at the end of the second movement of his *Faust Symphony* of 1857. At m. 279, a common-practice authentic cadence on tonic in A♭
major signals the end of the movement’s form. Following this cadence, Liszt alternates between A♭- and E-major triads (with A♭ and G♯ articulating the enharmonic common tone) as a kind of *envoi* (Example 1.20).\(^{117}\) Having satisfied the teleological demands of the form by cadencing on tonic, Liszt is free to “spin his wheels” through cyclic harmony. The progression has the profile T:T-M, with A♭ acting as tonic and E as chromatic mediant. The oscillation plays the role of epilogue on the level of the movement, though it occurs in the middle of the symphony as a whole.

![Example 1.20: Oscillation as epilogue. Liszt, Faust Symphony (1857), 2nd movement (“Gretchen”), mm. 287–91.](image)

When exiting an oscillation, composers often employ a technique I call *deceptive oscillation*. In this scenario, the composer states an oscillation ABAB...ABA’, where A’ is a chord that shares some pitch classes with A. (The composer could also write ABAB...AB’, where B’ is a chord that shares some pitch classes with B.) I borrow the term “deceptive” from the deceptive cadence V–vi in tonal music. Just as the vi chord in

\(^{117}\) Todd, “Franz Liszt,” 168.
a deceptive cadence shares some pitches with the expected I chord, so in a deceptive oscillation does A’ (or B’) share pitches with the expected A (or B) chord. Deceptive oscillations transition smoothly out of the oscillation; it is therefore no surprise that composers raised in the Western tonal tradition, which privileges continuity and smooth voice leading, would be drawn to deceptive oscillations as the preferred means of exiting an oscillation. The deceptive oscillation is analogous to Bourion’s progression en tapinois (”stealth”), a technique in which the composer alters the start or end of a repeated idea in order to make it blend in with the surrounding material.118

A deceptive oscillation appears at the beginning of Albert Roussel’s suite of incidental music for a 1908 play by Georges Jean-Aubry (Example 1.21). Here, an E-minor chord alternates with an A minor seventh (profile T:T-S) before yielding to a G chord with added sixth in m. 3. This G chord shares several pitch classes with the expected Em9, including E. However, the G chord also provides just enough new pitch content to allow Roussel to move to a different place—namely, the C chord in the second half of m. 3. The deceptive G chord elides the oscillation with the new material that comes after it, thereby smoothing the transition.

118 Bourion, Le style de Claude Debussy, 225.
Another deceptive oscillation occurs in the “Romance” from Gerald Finzi’s Five Bagatelles for clarinet and piano (Example 1.22). After cycling between tonic and subdominant twice (mm. 1–5), Finzi moves to a C-minor triad (m. 6). Because of the preceding pattern, however, one would expect a return to A♭ major instead. Nonetheless, the Cm chord shares C and E♭ with the expected A♭ major chord. Furthermore, the chord immediately following Cm, G minor, shares the pitches G and B♭ with the chord that would have continued the pattern (E♭ major) following the hypothetical A♭ major. The chords in mm. 6–7 are triads built on the thirds of the chords in mm. 4–5. Because there are common tones between these two sets of chords, the progression in mm. 6–7 exits the oscillation in a smooth way by means of deceptive oscillation.
Example 1.22: Gerald Finzi, “Romance” (1941), mm. 1–8.

The present study emphasizes foreground oscillations, progressions that occur on the immediate surface of the music. Transcendental oscillations also appear, however, on deeper structural levels. Travis hints as much when he allows for “contrapuntal” background structures that prolong tonic by means of a sonority other than V.119 Robert P. Morgan identifies such a procedure in Brahms’s song “Klage,” which oscillates between I and vi on the background.120 And in an analysis of the second of Britten’s Seven Sonnets of Michelangelo, Whittall observes an oscillation between C

119 Travis, “Towards a New Concept of Tonality?,” 261.
minor and C major on both background and middleground levels. In his 1980 dissertation, Harald Krebs provides several examples of oscillations between third-related chords on the middleground and background of early nineteenth-century pieces. In general, it seems that transcendental oscillations were first concealed in middleground and background structures and rose to the foreground level over time. This process is analogous to the development of Liszt’s harmonic practice as described by Todd: “the background structure is pushed toward the foreground, and the structural role of the augmented triad, which now operates on the most fundamental level, is highlighted.” In similar fashion, transcendental oscillations were “pushed toward the foreground” over the course of nineteenth-century music history.

Foreground oscillations can influence large spans of music in three main ways. First, a single oscillation can persist for many cycles as a vamp or holding pattern. This technique appears most often in musical theater, pop, and jazz. For instance, Freddie Hubbard’s modal jazz composition “First Light” (1971) is grounded in a nearly incessant dorian i–ii–i oscillation while Archie Bell and the Drells’ “Tighten Up” (1968) employs an oscillation between major-seventh chords in similar fashion as a kind of sonic substrate. Second, a piece or movement may contain several transcendental oscillations

121 Whittall, “The Study of Britten,” 32.
122 Cited in Kopp, Chromatic Transformations, 129.
at various important structural points, and these oscillations may be heard to relate to
one another, thereby tying together the work’s harmonic content. For instance,
Debussy’s madelie “C’est l’extase” can be interpreted as a succession of transcendental
oscillations that explore the chromatic-median regions of the key of E major (Section
3.3).

Finally, the foreground oscillation may be “composed out” to occupy higher
levels of structure. For example, a foreground Am–D–Am oscillation in the movement
“Winter” from English composer Edward German’s The Seasons (1899) is composed out
on the background level, as the movement starts in the key of A minor, modulates to D
major, and returns to A minor. In this way, the oscillation permeates multiple levels of
structure. The composing-out of oscillations is ubiquitous in traditional tonality;
Schenkerian theory holds that tonic-dominant oscillations on the foreground are
instantiations of the deeper oscillation between 1 and 5 on the background. Thus, the
idea that harmonic oscillation can govern multiple structural levels is not new, although
the notion that transcendental oscillations can do so is less familiar.

I close this chapter with a complete analysis of transcendental oscillations in
Wagner’s 1850 opera Lohengrin, showing how this harmonic device can articulate a
dramatic plan and govern long spans of music on multiple structural levels.
Lohengrin grabs the audience’s attention from the start with an A-major chord placed in the extreme high register of the violins, a timbre that, according to Eero Tarasti, “creates the mythical.” The first harmonic progression of the piece is an oscillation between A major and F♯ minor (profile T:T-S), a progression used to symbolize both the Holy Grail and a mysterious swan (Example 1.15 above). This swan is at once a method of transport for the Knight of the Grail (a positive connotation, hence the A-major chord) and a victim of the witch Ortrud’s curse (a negative connotation, symbolized by the F♯-minor chord). Associations presented throughout the drama make it clear that A major is Lohengrin’s key and F♯ minor is Ortrud’s. The large-scale key structure alternates A major (Acts I and III) with F♯ minor (Act II). This structure symbolizes a literal conflict between Norse paganism, represented by Ortrud, and Christianity, embodied by Lohengrin. Rey M. Longyear locates in Lohengrin the start of Wagner’s penchant for associating characters with particular keys. Indeed, Wagner would employ a similar duality of keys in Tristan und Isolde, where A and C symbolize the lovers’ private world and the outer world respectively. “Tonal pairing,” or the

125 Day O’Connell would call the root progression from F♯ back to A a “plagal leading tone,” which is a phenomenon found in the “expanded 19th-century diatonic” idiom and “represents a complete departure from tonal norms” (Day O’Connell, “Pentatonicism,” 235–37.
127 Ibid., 5.
establishment of a polarity between two contrasting keys, plays a crucial role in the articulation of conflict in Wagner’s dramas. And since it lies outside the common practice, the I–vi–I succession is an apt symbol of a magical creature like the cursed swan. The first-act prelude of Lohengrin opens with a “bright static quality which gradually grows more concrete,” just as the static A–Fm–A oscillation yields to a conventional common-practice cadence at phrase’s end. For Liszt, the prelude to Act I symbolized the Holy Grail by means of “a magical formula ... a secret consecration.”

In fact, oscillations are rare in Lohengrin. Wagner’s harmony tends to avoid the kind of repetition inherent in oscillations, instead opting for constant change. This tendency makes the appearances of the A–Fm–A progression stand out as noteworthy modal moments in the midst of dynamic chromaticism. The A–Fm–A oscillation is an uncharacteristically static object that lends structure and stability to its ever-changing surroundings. This A–Fm–A motive appears on the foreground, middleground, and background of the entire opera (Figure 1.23). It thus provides a unifying tonal framework for the piece.

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129 Ibid., 90.
An important variant of the A–F♯m–A oscillation is the progression A–F♯m–D–A. This progression appears on the foreground at two key structural moments: the end of the Prelude to Act I and the end of the entire opera. The Act I Prelude thus foreshadows the opera as a whole, not just the first act. A–F♯m–D–A also appears on the background level, as the bright D major of Act II, Scene 3 dispels the F♯-minor gloominess of Scene 2.

On a global level, this shift substitutes IV in place of vi. The oscillation I–IV–I is common-practice, whereas I–vi–I is not. The presence of the foreground A–F♯m–D–A progression in the Prelude to Act I and the last scene of the opera “corrects” the
unconventional I–vi–I oscillation by interpolating a IV chord (D major). Viewed in this way, the basic trajectory of the work is from the transcendental and mysterious I–vi–I to the rehabilitated (i.e., morally upright) I–vi–IV–I progression with plagal (Christian) connotations. When the A–F♯m–D–A progression appears in Act III, Scene 3, the swan transforms back into Elsa’s brother, Gottfried. He is literally “freed by God” thanks to God’s envoy Lohengrin.

The A–F♯–A paradigm also appears in at least two places on the middleground. First, in the Prelude to Act I, Wagner starts in the key of A major, modulates to F♯ minor, and returns to A major. Later, in Act III, Scene 3 (the last scene of the opera), Wagner states the A–F♯m–A oscillation, transposes that oscillation to the key of F♯ major (F♯–D♯m–F♯), and finally returns to the variation of the basic oscillation, A–F♯m–D–A. Thus, in Act III, Scene 3, the basic oscillation A–F♯m–A is composed out: it is stated first in the key of its first chord, then is transposed so that it starts on the root of its second chord (F♯), and at last is restated (in its variant form) in the key of its third chord (A major). When we hear the transposed version (F♯–D♯m–F♯), Ortrud is explaining the curse she put on Elsa’s brother to turn him into a swan. The F♯-centricity of this version of the oscillation fits the dramatic context, since F♯ is the pitch center associated with Ortrud throughout the work.
Lohengrin’s background progression from A major to F♯ minor and back to A major (left-hand side of Figure 1.23) can be understood not just as a static elaboration of A major, but as a departure and return with a sense of dynamism and dramatic change.131 This progression is foreshadowed on the foreground at the start of the prelude to Act I, a trick that Wagner often employed.132 In conjunction with Figure 1.23, my preceding discussion shows how the deep background progression A–F♯–(D)–A signifies the fundamental polarity between sacred and sacrilegious that informs the opera’s plot. The discussion also suggests that this background structure derives from the foreground Swan motive. Between those two structural levels of background and foreground, Wagner composes out the tonal content of the Swan motive on the middleground, as exemplified by the tonal plans of Act III, Scene 3 and the Prelude to Act I. In short, the principle of transcendental oscillation governs Lohengrin on multiple levels, even though foreground transcendental oscillations themselves are relatively uncommon in the work.

2. Types of Oscillations

In this chapter, I take a close look at particular types of foreground oscillation. I begin by explaining some of the possible progression structures that oscillations inhabit. Next, I turn to an in-depth explication of modal oscillations, followed by a similar treatment of transpositional chromatic oscillations. The chapter ends with an analysis of modal and chromatic oscillations in a Strauss tone poem. Overall, I hope to lend greater precision and clarity to our understanding of music that inhabits the complex region between the common practice and atonality.

2.1 Structures of repetition

At a minimum, every oscillation contains two chord changes: a motion from the first harmony to the second and from the second back to the first. If the oscillation ends at that point, it has the form ABA, where each letter stands for some chord. I call this type a minimal oscillation. Because the temporal structure of much Western music is founded on powers of two, minimal oscillations are often embedded in four-chord progressions with the form ABAC, CABA, or ABAB, where C stands for a chord different from those that participate in the minimal oscillation.

If a minimal oscillation is part of a progression with the form ABAC, I call the progression responsorial. I use this term because in such progressions, the “C” chord seems to respond to the “B” chord as follows:
A responsorial phrase exhibits a technique of duplication that Bourion calls “camouflage,” in which the repetition of a fragment ends differently from the fragment’s initial statement.\(^1\) Taken from a pop song made famous by Michael Jackson, Example 4 demonstrates a responsorial progression: the statement E\(_\flat\)m\(^9\)–B\(_\flat\) in mm. 1–2 (not counting the anacrusis as a measure) is answered by E\(_\flat\)m\(^9\)–C\(_\flat\)/D\(_\flat\) in mm. 3–4. This statement-response structure creates a transcendental oscillation of one and a half cycles between the chords E\(_\flat\)m\(^9\) and B\(_\flat\). (I hear the A\(_\flat\)/B\(_\flat\) chords in mm. 2 and 4 as ornamental; the main chords in those measures are B\(_\flat\) and C\(_\flat\)/D\(_\flat\), respectively.) The structure of responsorial progressions resembles the parallel period familiar from Classical music. A period has the following form: basic idea 1–contrasting idea 1–basic idea 1–contrasting idea 2 or, in other terms, ABAC, the same structure as a responsorial progression. The C component responds to the B component just as the authentic cadence at the end of a parallel period answers the half cadence at the end of the antecedent. In the case of “Rock with You” (Example 2.1), the C\(_\flat\)/D\(_\flat\) sonority in m. 5 responds to the B\(_\flat\) chord in m. 3.

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\(^1\) Bourion, *Le style de Claude Debussy*, 63.
Example 2.1: Rod Temperton, “Rock with You” (1979), chorus.

When a minimal oscillation is embedded in a progression with the form CABA, the progression is an arch. We can visualize these progressions as having an arch shape:

\[
\begin{align*}
B & \quad A & \quad A \\
& \quad C
\end{align*}
\]

If such a progression is followed by a return to the “C” chord, the impression of arch-like structure is all the more apparent, for we hear the palindrome CABAC.

Example 2.2 contains two arch progressions side by side. The first arch progression has the basic form CABA, with the letters A and B standing for B, augmented and D major respectively. The second arch progression is extended to create the palindromic form CABAC (with A standing for the D₇ minor chord and B for the F₇ minor). The first
oscillation involves B♭-augmented and D-major triads while the second involves D♯ minor and F♯ minor chords.

Example 2.2: Dvořák, Vodník (1896), 9–18 measures after reh. 13.

When an arch or responsorial progression immediately repeats, the result is a double oscillation in which one harmony alternates with two other harmonies. For example, if the responsorial progression ABAC is repeated, we obtain the form ABACABAC, which contains the oscillations ABA and ACA. Thus, the “A” chord oscillates between the two distinct harmonies “B” and “C,” creating a double oscillation. Depending on which chords occur on strong hypermetric beats, it is possible to hear a double oscillation as having either an arch or a responsorial form. Example 2.3, from Jean Sibelius’s last tone poem, shows how a possible shift in placement of the hypermetric downbeats can create the impression of a responsorial progression (m. 64) as opposed to an arch (m. 51). At the start of the excerpt, the E chord occupies a hypermetric downbeat; accordingly, I interpret the ensuing four-measure progression as an arch form. However, if we hear the B-minor triad in m. 64 as a new hypermetric
downbeat, then the subsequent progression has a responsorial (ABAC) structure.

Overall, the cyclic nature of Sibelius’s double oscillation counteracts the common-practice predilection for dynamic phrases and aptly represents the titular forest god’s milieu.

Example 2.3: Sibelius, *Tapiola* (1926), mm. 51–68, reduction.

If a single oscillation contains at least two statements of each harmony such that its form is ABAB..., I call it *complete*. In a complete oscillation, each AB pair is called a *cycle*; thus, an oscillation with the structure ABAB lasts for two cycles. If a four-chord progression contains an oscillation, the progression must have one of three forms: ABAC (responsorial), CABA (arch), or ABAB (complete oscillation). Example 2.4 from Debussy’s first book of *Préludes* shows a complete oscillation with two cycles. Here, the
harmony starts with two cycles of a transcendental oscillation between two dominant (major-minor) sevenths. Tonal progress is temporarily suspended. However, the phrase proceeds to a more traditional progression from pre-dominant (vi7) to dominant (V9) to tonic (I). Borrowing Caplin’s formal-function labels, we can think of this oscillation as occupying the beginning of its phrase and the middle of the first theme group of the prelude.

Example 2.4: Claude Debussy, “La fille aux cheveux de lin” (1910), mm. 8–10.

The categories of arch and responsorial progressions and complete and double oscillations will serve to characterize most, if not all, foreground oscillations. Now that we have a sense of the structures of repetition that oscillations can exhibit, let us turn to a careful examination of the types of pitch content that these progressions can have.

2.2 Modal oscillations

My definition of “modal music” is broad, signifying music that is diatonic but not common-practice. Thus, music need not be in one of the seven diatonic modes in
order to be considered modal, for there might be no clear tonic pitch. However, some modal music is in a particular diatonic mode. In addition to the church modes of dorian, phrygian, lydian, and mixolydian, we also encounter oscillations in ionian and aeolian. I do not discuss locrian oscillations in this study because of their extreme rarity.²

As polyphonic music developed in the Middle Ages and Renaissance, the tendency to raise the seventh modal degree at cadences collapsed the eight-mode system into a tonality that involved just two modes, major and minor.³ John Vincent estimates that the eighteenth century marked “the lowest ebb in the history of the diatonic modes.”⁴ However, in the Romantic era, modality returned as an enrichment of the tonal language. While the harmonic conventions established in the eighteenth century persisted, composers also began to transcend those norms by exploring the exotic terrain of the modes. In addition to evoking specific modes such as dorian or mixolydian, this new modality also entailed the more generic practice of putting diatonic triads in non-traditional orderings.⁵ This diatonic innovation provided composers with an alternative

² I follow the style convention of the Journal of Music Theory in putting mode names in lower case.
⁵ Longyear, Nineteenth-Century Romanticism, 32.
to the rapidly developing chromatic language of the late nineteenth and early twentieth centuries.\textsuperscript{6}

2.2.1 Some historical considerations

Carl Dahlhaus argues that music of the late 1800s remained “Romantic” in character despite the technological realism and positivism that held sway over other domains of civilized life: “Music, the romantic art, had become ‘untimely’ in general terms.”\textsuperscript{7} However, it was precisely this disconnection between music and civilization that gave music its importance as a kind of balm or escape from reality: “[Music’s] very dissociation from the prevailing spirit of the age enabled it to fulfill a spiritual, cultural, and ideological function of a magnitude which can hardly be exaggerated: it stood for an alternative world.”\textsuperscript{8} In searching for an alternative world, some composers turned to modality as an evocation both of a lost past and of an authentic national tradition.

Two of the main sources of the renewed interest in the modes were folk song and Gregorian chant.\textsuperscript{9} These sources had a crucial element in common: they both seemed ancient. As Dahlhaus observes, nineteenth-century modality was at once a means of

\textsuperscript{8} Ibid., 5.
\textsuperscript{9} Viret, \textit{Le retour d’Orphée}, 370.
heightening tonal expression and an attempt to retrieve the past.¹⁰ According to Leonard Ratner, modality in Romantic music generally took the form of subtle expressive colorations of the major-minor system. For example, the lowered second scale degree borrowed from phrygian seems to communicate “tightness and contraction” or, in the case of Liszt’s B-minor sonata, “troubled questioning.”¹¹ For most nineteenth-century composers, modality remained merely an accessory to traditional tonality. Composers like Dvořák may evoke modality near the beginnings of phrases, but they tend to return to conventional syntax at cadences.¹² An opera composer like Massenet could have a monk sing in a modal idiom in Le Jongleur, but this ecclesiastical reference belongs strictly to the domain of couleur locale.¹³ It is for this reason that Dahlhaus characterizes Romantic modality as “pseudo-modal,” a “historical reminiscence” within a common-practice framework.¹⁴ In Hegelian fashion, the new modality synthesized the medieval modal system—which had been designed to categorize monophony—with the inherited polyphonic harmony of the eighteenth century.¹⁵

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¹⁰ Carl Dahlhaus, Nineteenth-Century Music, trans. J. Bradford Robinson (Berkeley: University of California Press, 1989), 29 and 310. See also R. Larry Todd, “Late Brahms, Ancient Modes,” Nineteenth-Century Music Review 15, no. 3 (December 2018): “Brahms’s use of modality was part of a large-scale musical agendum—to relate his music in different ways to the past” (438).
¹² Vincent, Diatonic Modes, 263.
¹⁴ Dahlhaus, Studies, 65.
¹⁵ Viret, Le retour d’Orphée, 372.
Taken to its logical conclusion, historicism leads to the Romantic yearning for Nature itself, unencumbered by accumulated layers of civilization. In Die Meistersinger, Wagner expresses the natural or the simple through diatonic music and uses chromaticism to denote the modern and complicated.16 The ideal of natural nationhood defined by language, as well as the primeval role of music as a kind of proto-language, found influential expression in the writings of Johann Gottfried von Herder: “Music, however rude and simple, speaks to every human heart; and this, with the dance, constitutes Nature’s general festival throughout the Earth.”17 This ideal of nature carried with it an implicit rejection of the structures (or strictures) of conventional civilized life—including the norms of eighteenth-century tonality.

One well-known avenue in the search for the “natural” was the retrieval and recording of folk songs, a pastime that took England by storm near the turn of the twentieth century. English folk songs do exhibit modality; Allan Moore notes that that repertoire’s mixolydian and dorian examples would go on to influence the harmonic language of folk rock.18 Modality was an object of great interest to the British song collectors, such that Vic Gammon was able to prove that collectors disproportionately

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favored modal tunes over traditionally tonal ones when compiling their published collections.\textsuperscript{19} Vaughan Williams was himself a collector of folk songs and his music is rich in modality. In the Third Symphony alone, Michael Vaillancourt detects passages in dorian, lydian, aeolian, and mixolydian.\textsuperscript{20}

As a counterpart to the folk-song revival, sacred music was the other primary inspiration for neo-modality in nineteenth-century Western culture. In tandem with his chromatic experimentation, Liszt also expanded tonality through his use of modes, including a I–VII–I mixolydian oscillation at the end of the cantata \textit{Die Glocken des Strassburger Münsters}.\textsuperscript{21} It seems that Liszt came to the modes via church music, since most of his modal excursions appear in religious pieces.\textsuperscript{22} The Romantic revival of the church modes may be seen as an extension of the eighteenth-century topic of the \textit{stile antico}, which was bound up (in Catholic countries at least) with Palestrina and the polyphonic mass.\textsuperscript{23} Eighteenth-century composers had already been employing chant texture in evocations of the supernatural, and now composers of the subsequent century

\textsuperscript{22} Vincent, \textit{Diatonic Modes}, 237.
were applying chant’s pitch framework to the harmonic dimension. 24 Like Liszt, Saint-Saëns probably owed his modal bent to sacred music, which he absorbed in the course of his work as a church organist and during his tenure at the École Niedermeyer. 25 Fauré’s modality derived from the very same sources. 26 Vincent considers Fauré to be a pioneer in the revival of modal harmony, for while a composer like Brahms occasionally used modality as local color to contrast with his overriding common-practice tonality, Fauré deployed the modes in a more integrated fashion. 27 In Chapter 3, we shall explore the music of another French composer for whom modality was second nature.

According to Ratner, aeolian is the most common mode in Romantic music. With its lowered seventh scale degree, it is enlisted in the service of many different extramusical topics, including an ecclesiastical procession (Tchaikovsky, Romeo and Juliet), a northern seascape (Mendelssohn, Hebrides Overture), and the exotic East (Mahler, Das Lied von der Erde). 28 Dvořák used aeolian frequently, a trait that may contribute to the common belief that his music sounds distinctly Czech. 29 It is

25 Vincent, Diatonic Modes, 217.
26 Longyear, Nineteenth-Century Romanticism, 264.
27 Vincent, Diatonic Modes, 239.
unsurprising that aeolian is the commonest nineteenth-century mode (other than ionian), since it is closely related to common-practice minor.\textsuperscript{30}

In Romantic music, the deliberately archaic use of modality acquired the status of expressive convention or “topic.” Although topic theory’s most fertile ground is music of the 1700s, Janice Dickensheets identifies several topics that were born in the nineteenth century. Some of these new tropes stem from the antiquarian impulse and involve modality. For example, the “Chivalric Style” features modal progressions that “provide an unmistakably archaic flavor,” while the related “Bardic Style” derives from the Ossian fad.\textsuperscript{31} The latter topic is particularly relevant to Sibelius, who wrote a tone poem called “The Bard.”

A cynic might construe the resurrection of modality in the nineteenth century as nothing but a sentimental fashion statement. As Gammon says, the modes were “considered barbaric until a time when that which was barbaric for some people became intriguing, mysterious and beautiful for others.”\textsuperscript{32} Writing in 1906, the French composer-critic Henri Quittard observed a curious aspect of contemporary music: “It is not

\textsuperscript{30} See Todd, “Late Brahms,” 431.
satisfied that, for more than three centuries, so many masters have tirelessly worked to enlarge its domain ... [Music] sometimes prefers to remember its origins.”

Of course, the resurrection of ancient modality was itself an enlargement of music’s domain; the sheer variety of late nineteenth-century harmony comes to the fore in the work of a composer like Debussy, whose idiom includes prolific use of modes. Above all, the legacy of Romanticism in music is a questing desire for expansion and exploration, whether in the direction of purposefully archaic modality or in that of cutting-edge chromaticism. Not without reason does Longyear state, “The opposite side of musical nationalism was exoticism.” To an urbane European composer of the 1800s, local folk song was just as exotic as the Javanese gamelan.

As a rule, sophisticates tend to be awestruck by aspects of traditional life that its practitioners consider run-of-the-mill. For, as Shepard posits, “farmland is admired not by those who work it, but by those who live in the city and travel through the countryside.” In particular, collectors of folk songs were taken with the repertoire’s modality, an aspect that seemed delightfully foreign to modern life. In Sibelius’s country, for example, the hinterland of Karelia became a pilgrimage site for artists and

34 Longyear, Nineteenth-Century Romanticism, 214.
35 Shepard, Man in the Landscape, 131.
36 Onderdonk, “Vaughan Williams and the Modes,” 611.
Sibelius himself journeyed there to hear traditional modal songs. For Quittard, the conceptual overlap between traditional folk culture and the exotic was encapsulated in the idea that a single mode—aeolian—could be used to express “any musical system other than our own.” In his opinion, aeolian was the “fundamental exotic mode” in Saint-Saëns’s music, a chameleon of a scale from which other exotic tonalities, such as dorian, could be derived.

2.2.2 Modal theory

Having surveyed the cultural impetus behind the development of modality in the nineteenth century, let us investigate specific musical properties of the modes. To begin, in order to determine the mode of a passage of music, we need to know two things: the tonic pitch and the macroharmony. The tonic is the tonal center of the passage, the secure home base to which all other pitches have a tendency to return. On the other hand, the macroharmony is the total pitch collection in use. In modal music, the macroharmony is a particular diatonic collection. For example, we might say that a piece’s macroharmony is a C-major collection (or the white keys on a piano) regardless of whether C is the tonic. Once we know the tonic and the macroharmony, we can label

39 Ibid., 116.
40 Tymoczko, A Geometry of Music, 4.
the passage as being in a specific mode. For instance, if we know the tonic pitch is F and
the macroharmony is a D₇-major collection, we conclude the passage is in F phrygian.

Tonic determination depends on two types of clues: direct and auxiliary. Direct
clues are qualities of a sonority (which can be a chord or a single tone) that make the
sonority sound like tonic. These include:

- **Emphasis**
  - Occurrence on a strong beat or strong hyperbeat
  - Length
    - Placement of the sonority’s tone(s) in prominent melodic locations
  - Loudness
  - Repetition

- **Internal consonance:** if the sonority is a chord, all its pitches are consonant with
  one another

- **Lower position in frequency space relative to other sonorities**

- **Concurrence with melodic cadences**

- **Presence:** while it is possible for tonic to be implied in its absence, the actual
  presence of that sonority in the music helps confirm its tonic status.⁴¹

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⁴¹ For more on the determination of modal tonic, see Nathan L. Lam, “Relative Diatonic Modality in
Extended Common-Practice Music” (PhD diss., Indiana University, 2019), 25ff. My concept of “direct clues”
overlaps with Clement’s “extrinsic factors” and Wile’s “context-assertive indicators.” Brett Clement,
By contrast, auxiliary clues are qualities of sonorities that make another sonority sound like tonic.\textsuperscript{42} For example, it is extremely common in Western musical culture to precede the tonic with a dominant seventh whose root is a fourth below the tonic’s, as a perusal of any basic theory text will confirm. Consequently, the mere appearance of a dominant seventh encourages the listener to assume that the local tonic is a fourth above the root of the seventh chord. Because the chord’s dominant-seventh quality is an attribute that makes a different chord sound like tonic, this clue is auxiliary rather than direct.

As Stephenson observes, in order for a listener to detect a change in tonal center, there must be compelling evidence. Keys have a kind of inertia, and if it is possible to continue hearing the music in the previously established key, there is no reason to assume that modulation occurs.\textsuperscript{43} Through centuries of inculcation, common-practice cadences have become effective signals of key. When those traditional progressions are absent, however, it is sometimes difficult to determine the tonal center.\textsuperscript{44} Modal progressions fight against the gravitational pull exerted by the major-minor system,

\textsuperscript{42} Auxiliary clues correspond to “intrinsic factors” (Clement, “Diatonic and Chromatic Tonicization,” 7) and “systemic indicators” (Wile, “Collection in Neocentric Music,” 104). Clement gives several attributes of triadic “tonicizers,” which are chords that make the subsequent sonority sound like the tonal center.

\textsuperscript{43} Stephenson, \textit{What to Listen for in Rock}, 51–52.

\textsuperscript{44} Ulehla, \textit{Contemporary Harmony}, 183.
which is both more familiar to us and better equipped to establish itself through
cadential formulas. For this reason jazz theorist Ron Miller claims, “Ionian is the only
mode without desire to resolve or to relieve tension.”45 Similarly, Moore notes that
whereas in the traditional major-minor system the macroharmony determines the tonic
(for example, the macroharmony [ABCDEFG] implies a C-major tonic while
[ABCDEFG#] implies A minor), the modal system entails more ambiguity because each
diatonic collection is associated with seven different modes.46

When Western listeners try to deduce the mode of a passage of music, ionian
(major scale) and aeolian (natural minor) are the default choices since they are so deeply
ingrained in the musical environment.47 Ramon Fuller posits that ionian and aeolian
became the two most common diatonic modes because their tonic triads do not contain
notes of the diatonic tritone; therefore, these triads are unlikely to tonicize other
chords.48 Furthermore, as Daphne Tan and David Temperley show, the major scale
sounds more familiar to Western ears than any other diatonic mode.49 Therefore, ionian
is the most familiar of the modes and is generally preferred, all else being equal. Aeolian

47 Ian Bates, “Generalized Diatonic Modality and Ralph Vaughan Williams’ Compositional Practice” (PhD
diss., Yale University, 2009), 6–7. The same phenomenon is noted in Lam, “Relative Diatonic Modality,” 28.
48 Ramon Fuller, “A Structuralist Approach to the Diatonic Scale,” Journal of Music Theory 19, no. 2 (Autumn
1975), 201.
49 Daphne Tan and David Temperley, “Perception and Familiarity of Diatonic Modes,” Music Perception 34,
is a close second. Clement refers to this state of affairs as the “bias toward the default ionian/aeolian modes.”

The gravitational pull exerted by ionian and aeolian has implications for the listener’s perception of tonic. If David Butler’s intervallic rivalry theory of tonicization is correct, “any tone will suffice as a tonal center until a better candidate defeats it.”

Ionian and aeolian have an advantage over other modes from the start because they are the defaults. Therefore, in order for another mode to “defeat” them, there must be strong evidence that the tonic of the other mode is the true tonic of the passage. Because this evidence needs to be compelling, it generally includes direct clues and not just auxiliary ones. Therefore, the tonics of dorian, phrygian, lydian, and mixolydian passages are always present somewhere in the sounding music: at any rate, I have yet to encounter a single instance of one of these modes that lacks its modal tonic. In addition to the tonic’s mere presence, tonic repetition—another direct clue—can reinforce the mode and prevent the default assumption of ionian or aeolian from retaking control.

Because the modes generally lack a well-established cadential syntax and because the diatonic set has seven potential tonics, modal music often relies on what Charles J. Smith calls “presentational tonality” to establish the tonal center. In contrast to

50 Clement, “Diatonic and Chromatic Tonicization,” 27.
51 David Butler, “Describing the Perception of Tonality in Music,” Music Perception 6, no. 3 (Spring 1989), 238.
common-practice tonality, which establishes tonic through conventional chord
progressions, presentational tonality depends on “brute-force reiteration” and “registral
prominence” of the tonic note. Drawing on the work of Jonathan Kramer, Moore offers
a similar set of criteria for determining a modal tonic chord: it is likely to start or end a
progression and to last longer and be more accented than its neighbors. While it is
possible for major- and minor-key tonics to be implied in their absence thanks to the
familiarity of the major-minor system and its syntax, tonic chords in the other modes
“must always be present for that mode to assert itself,” according to Spicer.

As the modes become more familiar and their progressions more standardized, it
is possible that dorian, phrygian, lydian, or mixolydian may develop an established
syntax that can imply the modal tonic in the tonic’s absence, just as the progression Dm–
G⁷ implies a C tonic in traditional tonality. Aeolian provides an example of a non-
traditional progression acquiring this ability. Esa Lilja suggests that the aeolian
progression VI–VII–i has “gained cadential and predictive power,” while Spicer asserts
that the Spinners’ 1972 song “I’ll Be Around” implies G aeolian through a repeated

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52 Smith, “Functional Extravagance,” 129.
alternation between $E^{maj7}$ (VI) and $F^\#$ (VII).\footnote{Lilja, “Harmonic Function and Modality,” 366. Spicer, “Absent Tonics,” 14.} It is surely due to its similarity to common-practice minor that aeolian has acquired something of a predictive syntax.

Together, tonic pitch and diatonic macroharmony indicate the mode. If the tonic of a diatonic passage is known, all that remains in order to determine the passage’s mode is to figure out which diatonic collection is being used—in other words, the macroharmony. Every diatonic collection is defined by three pitches: the two notes of the diatonic tritone and one other pitch. For example, the tritone G–C$^\#$/D$^\flat$ (pitch classes 7 and 1) belongs to both the D-major and A$\flat$-major collections, but when we add A$\flat$ (pitch class 9), the only diatonic set containing all three notes is the D major collection.\footnote{Richmond Browne, “Tonal Implications of the Diatonic Set,” \textit{In Theory Only} 5, nos. 6–7 (1981), 3–21.} Therefore, any diatonic progression that contains a tritone defines a particular diatonic collection, since every harmonic progression contains at least three distinct pitch classes.\footnote{If the harmonic material contained only two pitch classes, it would be either a single sustained dyad or a monophonic alternation, neither of which is a harmonic progression.} These are collection-defining progressions. In my discussion of modes, I focus on collection-defining progressions that consist of major or minor triads, seventh chords, or ninth chords because these progressions often create the most beautiful modal oscillations. (Diminished chords, for example, do not appear often in this study.) Furthermore, since my focus is on oscillations, I concentrate on collection-defining
progressions that involve only two distinct chords: collection-defining oscillations. The identification of structures like collection-defining oscillations furthers this chapter’s aim of explaining a species of harmony that lies somewhere between the common practice and atonality. Table 2.1 gives an exhaustive list of the collection-defining oscillations that contain only major or minor triads. All examples in the rightmost column of Example 2.1 define the C-major diatonic collection.

Table 2.1: Collection-defining oscillations involving major or minor triads.

<table>
<thead>
<tr>
<th>Chord qualities</th>
<th>Distance between roots</th>
<th>UTT label(s)</th>
<th>Quality label</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>major, major</td>
<td>whole step</td>
<td>&lt;+&lt;,2,x&gt;, &lt;+&lt;,10,x&lt;</td>
<td>MM2</td>
<td>F–G–F</td>
</tr>
<tr>
<td>minor, minor</td>
<td>whole step</td>
<td>&lt;+&lt;,x,2&gt;, &lt;+&lt;,x,10&gt;</td>
<td>mm2</td>
<td>Dm–Em–Dm</td>
</tr>
<tr>
<td>major, minor</td>
<td>perfect fifth up from major root to minor root</td>
<td>&lt;-,7,5&gt;</td>
<td>Mm5</td>
<td>G–Dm–G</td>
</tr>
<tr>
<td>major, minor</td>
<td>half step down from major root to minor root</td>
<td>&lt;-,11,1&gt;</td>
<td>Mm1</td>
<td>F–Em–F</td>
</tr>
</tbody>
</table>

The abbreviation “UTT” in the middle column of Table 2.1 stands for “Uniform Triadic Transformation.” Julian Hook created the 288-member group of UTTs in 2002 in order to situate the neo-Riemannian transformations such as P, L, and R within a more comprehensive collection of chordal shifts. Julian Hook, *Uniform Triadic Transformations* (PhD diss., Indiana University, 2002).
minor triad to a different major or minor triad. Each UTT contains three pieces of information, enclosed in angled brackets as in Table 2.1. First, if the quality of the triad does not change, the UTT has a plus sign (+). If the chord quality changes, the UTT has a minus sign (-). So, the UTT label for an oscillation between two major triads has a plus sign, while the label for an oscillation between a major triad and a minor one has a minus sign. The second element of a UTT label is the interval that the root of a major chord is transposed by when it is transformed by the UTT.

A UTT is a function that takes an input (in this case, a triad) and produces an output according to a set of rules. According to these rules, the second element of the UTT label means, “When you apply this UTT to a major triad, the root of the chord shifts by this ordered pitch-class interval.” For example, the label for the oscillation between G-major and D-minor triads, <-7,5>, says that when a major chord is transformed by this UTT, we transpose its root up seven semitones (or down five) to obtain the root of the next chord. So, in our example, the motion from G major to D minor includes root motion up a perfect fifth (or down a perfect fourth). The third and final element of a UTT label describes what happens to the root when the UTT is applied to a minor triad. The UTT label <-7,5> means that when the transformation is applied to a minor chord, the root shifts up five semitones (or down seven). Accordingly, when a D-minor chord returns to G major, its root is transposed up a fourth (or down a fifth) to become the root
of the G chord. Hook’s theoretical apparatus contributes to our understanding of the compositional possibilities available to a composer who wishes to go beyond the common practice yet preserve the smooth voice leading that characterizes much tonal music.

When applied to oscillations between chords of the same quality, UTT labels are unwieldy. This is because a UTT label contains exactly one root motion away from a major chord and one root motion away from a minor chord, and by definition a UTT cannot describe two different root motions away from a particular chord quality. However, an oscillation between two major chords a whole step apart contains two different root motions from a major triad: an ascending whole step (ordered pitch-class interval 2) and a descending whole step (ordered pitch-class interval 10). For instance, the oscillation F–G–F starts with root motion by ordered pitch-class interval 2 (F to G) and continues with root motion by ordered pitch-class interval 10 (G to F). Therefore, when we use UTTs to describe an oscillation between chords of the same quality, we need two UTT labels, one to describe one of the root motions and a second to describe the other root motion. (The only exception to this rule is when the chords are separated by a tritone or pitch-class interval 6, because 12 – 6 = 6.) Another related drawback of using UTTs to characterize oscillations between triads of the same quality is that one of the terms in the UTT becomes irrelevant. For example, in an oscillation between major
triads, there is never any motion away from a minor triad, so the third element of the UTT label has no bearing on the actual harmonic progression. This ambiguity is indicated by the variable $x$ in Table 2.1. In short, UTTs are much more convenient for oscillations between chords of different qualities than for those between chords that share the same quality. Thus, the UTT labels of the latter two oscillations in Table 2.1 are simpler than those of the first two oscillations. In Riemannian terms, UTTs apply well to *Wechsel* oscillations—those that alternate between major and minor—and less well to *Schritt* oscillations, or those in which chord quality stays constant.

In addition to UTT labels, Table 2.1 introduces another set of labels to characterize collection-defining oscillations. These labels include the qualities of the triads in the oscillation followed by the unordered pitch-class interval (i.e., interval class) between the chordal roots. For instance, an oscillation between minor chords a whole step apart is denoted mm2, with lower-case “m” standing for minor and the “2” standing for two semitones of separation in pitch-class space. These labels are convenient for oscillations between triads of the same quality, but less so for those between triads of different qualities. When we apply such a label to chords of different qualities, the interval class element lacks a crucial piece of information because it does not specify from which chord the interval starts. For example, the label Mm5 denotes an oscillation between a major chord and minor chord whose roots are separated by
interval class 5, but it does not tell us whether the root of the major chord is a perfect fifth below that of the minor chord or vice versa. Thus, Mm5 by itself could characterize both Dm–GM–Dm and Gm–DM–Gm. But those are two different oscillations, one modal and the other common-practice minor. For this reason, UTT labels are more precise descriptions of oscillations between triads of different qualities. In sum, the collection-defining oscillations in the first two rows of Table 2.1 are best described with my labels, whereas those in the lower two rows of Table 2.1 are best described as UTTs. In subsequent discussions, I label instances of the four collection-defining oscillations according to this scheme.

So far we have seen that the determination of mode requires two pieces of information: the tonal center and the diatonic collection. Direct and auxiliary factors help us determine which pitch class is tonic, while collection-defining progressions indicate which diatonic macroharmony is in play. When a collection-defining progression is heard in relation to a known tonic, it is a mode-defining progression because it characterizes a specific mode. For example, if we know that the tonic is E and we hear an oscillation between E-minor and F-major triads, we interpret those chords as i and II. Then, because the progression i–II occurs only in phrygian, we understand that the mode of the passage is E phrygian. Brett Clement describes how chord progressions can help us identify tonic, and we now see that the converse is true as well: knowing where
tonic is allows us to understand the function of chord progressions. The goal of this chapter is to categorize a feature of music that is neither traditionally tonal nor completely atonal; mode-defining oscillations form one such category because they imply the presence of a tonal center yet deviate from the common practice.

Every collection-defining progression is manifested in seven mode-defining progressions, one for each possible tonic pitch. If the collection-defining progression is the “genus,” its seven mode-defining progressions are the “species.” Table 2.2 demonstrates this categorization system with respect to oscillations in non-lecian modes (and while excluding progressions that contain a diminished triad).

Within each collection-defining oscillation in Table 2.2, two mode-defining oscillations are in boldface. These are oscillations in which one of the chords is tonic. They also happen to be the most common mode-defining oscillations for the dorian, phrygian, lydian, and mixolydian modes. For example, Vincent notes the proliferation of dorian i–IV–i oscillations in late Romantic music, particularly at cadences.60 As mentioned above, the establishment of a tonic chord in one of these four modes often requires that tonic be emphasized through repetition, and oscillations are repetitive by definition. So, if a mode-defining oscillation is heard to be in the dorian, phrygian,

60 Vincent, *Diatonic Modes*, 78.
lydian, or mixolydian mode, there is a good chance that one of the chords in the oscillation is the tonic chord.

Table 2.2: Mode-defining, non-diminished, non-locrian triadic oscillations.

<table>
<thead>
<tr>
<th>Collection-defining oscillation</th>
<th>Tonic</th>
<th>Mode-defining oscillation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM2</td>
<td>Root of lower triad</td>
<td>I–II–I, lydian</td>
<td>A–B–A, A lydian</td>
</tr>
<tr>
<td>MM2</td>
<td>Root of upper triad</td>
<td>VII–I–VII, mixolydian</td>
<td>A–B–A, B mixolydian</td>
</tr>
<tr>
<td>MM2</td>
<td>Third of lower triad</td>
<td>VI–VII–VI, aeolian</td>
<td>F–G–F, A aeolian</td>
</tr>
<tr>
<td>MM2</td>
<td>Fifth of lower triad</td>
<td>IV–V–IV, ionian</td>
<td>D–E–D, G ionian</td>
</tr>
<tr>
<td>mm2</td>
<td>Root of lower triad</td>
<td>i–ii–i, dorian</td>
<td>Dm–Em–Dm, D dorian</td>
</tr>
<tr>
<td>mm2</td>
<td>Root of upper triad</td>
<td>vii–i–vii, phrygian</td>
<td>Cm–Dm–Cm, D phrygian</td>
</tr>
<tr>
<td>mm2</td>
<td>Third of lower triad</td>
<td>vi–vii–vi, lydian</td>
<td>Gm–Am–Gm, B, lydian</td>
</tr>
<tr>
<td>mm2</td>
<td>Third of upper triad</td>
<td>v–vi–v, mixolydian</td>
<td>Fm–Gm–Fm, B, mixolydian</td>
</tr>
<tr>
<td>mm2</td>
<td>Fifth of lower triad</td>
<td>iv–v–iv, aeolian</td>
<td>Cm–Dm–Cm, G aeolian</td>
</tr>
<tr>
<td>mm2</td>
<td>Whole step below root of lower triad</td>
<td>ii–iii–ii, ionian</td>
<td>Dm–Em–Dm, C ionian</td>
</tr>
<tr>
<td>&lt;,7,5&gt;</td>
<td>Root of minor triad</td>
<td>i–IV–i, dorian</td>
<td>Am–D–Am, A dorian</td>
</tr>
<tr>
<td>&lt;,7,5&gt;</td>
<td>Root of major triad</td>
<td>v–I–v, mixolydian</td>
<td>Am–D–Am, D mixolydian</td>
</tr>
<tr>
<td>&lt;,7,5&gt;</td>
<td>Third of minor triad</td>
<td>vi–II–vi, lydian</td>
<td>Gm–C–Gm, B, lydian</td>
</tr>
<tr>
<td>&lt;,7,5&gt;</td>
<td>Fifth of minor triad</td>
<td>iv–VII–iv, aeolian</td>
<td>Cm–F–Cm, G aeolian</td>
</tr>
<tr>
<td>&lt;,7,5&gt;</td>
<td>Whole step above root of minor triad</td>
<td>vii–III–vii, phrygian</td>
<td>Gm–C–Gm, A phrygian</td>
</tr>
<tr>
<td>&lt;,7,5&gt;</td>
<td>Whole step below root of minor triad</td>
<td>ii–V–ii, ionian</td>
<td>Cm–F–Cm, B, ionian</td>
</tr>
<tr>
<td>&lt;,11,1&gt;</td>
<td>Root of minor triad</td>
<td>i–II–i, phrygian</td>
<td>Em–F–Em, E phrygian</td>
</tr>
<tr>
<td>&lt;,11,1&gt;</td>
<td>Root of major triad</td>
<td>vii–I–vii, lydian</td>
<td>Am–B–Am, B, lydian</td>
</tr>
<tr>
<td>&lt;,11,1&gt;</td>
<td>Third of minor triad</td>
<td>vi–VII–vi, mixolydian</td>
<td>Em–F–Em, G mixolydian</td>
</tr>
<tr>
<td>&lt;,11,1&gt;</td>
<td>Third of major triad</td>
<td>v–VI–v, aeolian</td>
<td>Am–B–Am, D aeolian</td>
</tr>
<tr>
<td>&lt;,11,1&gt;</td>
<td>Fifth of major triad</td>
<td>iii–IV–iii, ionian</td>
<td>Em–F–Em, C ionian</td>
</tr>
<tr>
<td>&lt;,11,1&gt;</td>
<td>Whole step below root of minor triad</td>
<td>ii–III–ii, dorian</td>
<td>Am–B–Am, G dorian</td>
</tr>
</tbody>
</table>

In ionian and aeolian, by contrast, tonic can be implied in its absence. For example, Stephen Sondheim implies C ionian through the oscillation in Example 2.5
from his musical *The Frogs*. No clear C-major chord appears anywhere in Example 2.5, yet the oscillation communicates a tonic pitch of C. The F–Em–F oscillation in the right hand of the piano part (produced by transposing the upper voices back and forth by step) defines a C-major macroharmony, while the G pedal in the bass sounds like the fifth scale degree because we are used to hearing pedals on 5 in tonal music. Since Example 2.5 contains no clear indication that it is in dorian, phrygian, lydian, mixolydian, or aeolian, the B–F tritones in mm. 12 and 14 lead us to hear the passage as prolonging dominant function in C ionian by default. The placement of the pitch C on strong downbeats in the melody strengthens the perception of Example 2.5 as being in ionian despite the absence of the tonic chord. Similarly, Mark Spicer argues that what I call an MM2 oscillation can imply an absent aeolian tonic whose root is a whole step above that of the upper major chord, especially when such a tonic is emphasized in the melody.61 Because of the long history of ionian (major) and aeolian (natural minor) in Western music, it is fairly easy to imply ionian or aeolian in the absence of tonic, but more difficult to imply one of the other modes in the absence of its tonic. This phenomenon suggests that music that lies partway between traditional tonality and

atonality can easily slip back into the orbit of the conventional major-minor system if the composer is not careful.


Ionian and aeolian are also special for another reason: they are the only modes that have no mode-defining triadic oscillations involving tonic (except for oscillations between tonic and the diminished triad). This is because the tonic triads of ionian and aeolian do not contain either of the pitches of the diatonic tritone. As a result, if a triadic oscillation is to define ionian or aeolian and contain the tonic chord, the other chord in the oscillation must contain both notes of the diatonic tritone, which means it must be the diminished triad.

On the other hand, there are eight mode-defining triadic oscillations that contain tonic but not the diminished triad. These progressions, highlighted in bold in Table 2.2,
are of central importance to this chapter’s modal theory, and they often appear in music that transcends the common practice. Table 2.3 lists these eight oscillations, which I call principal mode-defining oscillations. There are two each in dorian, phrygian, lydian, and mixolydian.

Table 2.3: Principal mode-defining oscillations.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Principal oscillations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dorian</td>
<td>i–IV–i</td>
</tr>
<tr>
<td></td>
<td>i–ii–i</td>
</tr>
<tr>
<td>Phrygian</td>
<td>i–vii–i</td>
</tr>
<tr>
<td></td>
<td>i–II–i</td>
</tr>
<tr>
<td>Lydian</td>
<td>I–vii–I</td>
</tr>
<tr>
<td></td>
<td>I–II–I</td>
</tr>
<tr>
<td>Mixolydian</td>
<td>I–VII–I</td>
</tr>
<tr>
<td></td>
<td>I–v–I</td>
</tr>
</tbody>
</table>

Table 2.4: Modal labels for collection-defining oscillations.

<table>
<thead>
<tr>
<th>Collection-defining oscillation</th>
<th>Modal label</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM2</td>
<td>lydian-mixolydian</td>
</tr>
<tr>
<td>mm2</td>
<td>dorian-phrygian</td>
</tr>
<tr>
<td>&lt;-,7,5&gt;</td>
<td>dorian-mixolydian</td>
</tr>
<tr>
<td>&lt;-,11,1&gt;</td>
<td>phrygian-lydian</td>
</tr>
</tbody>
</table>

We can also present the same group of eight oscillations in a different way, labeling the four collection-defining oscillations by the modes that they define when one of their chords is tonic (Table 2.4). For example, consider an mm2 oscillation between D-minor and E-minor triads. If we hear the D-minor chord as tonic, then the oscillation
defines D dorian. On the other hand, if we hear the E-minor chord as tonic, the
oscillation defines E phrygian. Therefore, the generic modal label for the mm2 oscillation
is “dorian-phrygian.”

Each of the modes dorian, phrygian, lydian, and mixolydian appears twice in the
above list of modal labels (Table 2.4). In other words, there are two collection-defining
oscillations that yield principal mode-defining oscillations in dorian (mm2 and <-,7,5>),
two that are characteristic of phrygian (mm2 and <-,11,1>), and so on.

2.3 Examples of mode-defining oscillations

A cursory glance at the repertoire suggests that early modal oscillations tend to
be in ionian or aeolian—see, for example, the opening bars of Lohengrin (ionian) or the
theme from the last movement of the “New World” Symphony (aeolian), both presented
in Chapter 1. Unsurprisingly, the modal expansion of the tonal lexicon first occurred in
those modes that were most idiomatic to the common practice. Once the ground for
modal experimentation was broken, however, oscillations in less familiar modes ensued.

In this section, I discuss instances of mode-defining oscillations in dorian,
phrygian, lydian, and mixolydian. Although I have not made an exhaustive count, it
seems that the dorian oscillation i–IV–i is the most common non-ionian, non-aolian
modal oscillation in nineteenth- and early twentieth-century music. Vincent Rone claims
that dorian had a special status in the revival of modality—not only was it the preferred
mode of Renaissance composers, but it also took pride of place in the modality of nineteenth-century Romanticism. I suspect there was also a formal reason for the supremacy of i–IV–i in addition to the historical preference for dorian mode: namely, i–IV–i is the only principal mode-defining oscillation that can be derived from a common-practice oscillation (i–iv–i or I–IV–I) by modal mixture.

Example 2.6, from a rather obscure pop song, contains a dorian oscillation: IV7–i7–IV7–i7. The tonic pitch, C, is made clear by the incessant emphasis on C in the bass line (even when the chords change) and melody. The oscillation IV7–i7–IV7 is essentially a triadic <-,7,5> with minor sevenths added to both chords. With A in the F7 chord and E in the Cm7, the diatonic tritone is completed and we understand that the macroharmony is a B-major collection. And because C is the clear tonal center, we conclude that the mode of Example 2.6 is C dorian. The oscillation serves a “beginning” function as it establishes the modal environment at the start of the verse.

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62 Rone, “Scoring the Familiar,” 45.
63 Here, I understand “modal mixture” to mean the borrowing of notes from the common-practice parallel minor in a major key or the borrowing of notes from the common-practice parallel major in a minor key. In this case, the word “modal” refers to parallel modes and not to modes like dorian, phrygian, lydian, and mixolydian.
Example 2.6: Rod Temperton, “Thriller” (1982), start of verse.

Now for a phrygian example. The refrain of Burt Bacharach’s “Walk On By” (Example 2.7) begins in A phrygian and ends in F ionian. The start of the song is centered on A more than any other pitch class. In mm. 5–8, an oscillation between Gm7 and Am7 signals that the macroharmony is the F-major diatonic collection. Therefore, the mode of mm. 5–8 is A phrygian. However, in mm. 11–13, Bacharach employs the progression B♭–C–Fmaj7, modulating to F ionian.
Example 2.7: Burt Bacharach/Hal David, “Walk On By” (1964), melody and bass.

Moving to the lydian mode, Example 2.8 is the opening of the song “Good Morning Starshine” from the 1968 musical Hair. At the outset, we seem to be in lydian thanks to the alternation between C-major and D-major chords in a C-centered context. This alternation is an example of chordal planing: a particular chord (in this case, a major triad) is transposed back and forth by whole step. However, in mm. 6–7, we modulate to G major. In the long run, the C–D oscillation acts as a prolongation of dominant function in the key of G. But before we modulate to G major, the oscillation sounds as if it is in C lydian thanks to the mode-defining MM2 oscillation.
Mixolydian is common in rock music; Moore refers to the “widespread, orthodox rock mixolydian.”\(^{64}\) For a mixolydian-defining oscillation, we return to the Broadway stage, this time to the 1962 musical *Little Me* (score by Cy Coleman). The song “I’ve Got Your Number” (Example 2.9) contains two mixolydian \(<-7,5>\) oscillations, the first centered on G and the second on C. In each case, the upper voices move back and forth by step while the bass oscillates by perfect fourth. The song finishes in C major (not shown in Example 2.9), making the G-mixolydian oscillation sound in retrospect like a

\(^{64}\) Moore, “The So-Called ‘Flattened Seventh,’” 190.
prolongation of dominant in C major. However, as in “Good Morning Starshine,” the ultimate tonal goal of “I’ve Got Your Number” does not prevent us from hearing local modalities like G mixolydian that differ from the global key of C major. Indeed, the largest portion of the song seems to be in G mixolydian, and it is only at the very end that the “trick” is revealed and the G–Dm7–G oscillation is heard to be V–ii–V in C.

Example 2.9: Cy Coleman/Carolyn Leigh, “I’ve Got Your Number” (1962), start.

There exists a close relationship between diatonic oscillation and modality. I have argued that the establishment of tonic in dorian, phrygian, lydian, or mixolydian generally involves direct clues such as repetition of the tonic chord. An oscillation is
well-suited to this purpose because it is repetitive: one of its chords can serve as tonic, reinforced through reiteration. Furthermore, tonic triads in these four modes include one of the pitches of the diatonic tritone, and if the other chord in the oscillation contains the other tritone pitch, the diatonic macroharmony is determined. In this way, a transcendental oscillation can define the mode by itself, establishing the tonic through repetition and specifying the collection by including a tritone. Therefore, if a composer wishes to create a sense of being in a particular mode, transcendental oscillation is a convenient and effective method. Conversely, diatonic oscillation often invites modal interpretation since there are relatively few common-practice diatonic oscillations. Indeed, the only diatonic oscillations that belong unambiguously to traditional tonality are I–V(7 or 9)–I, I–IV(add6 or 7)–I, I–vii°(or ø7)–I, and i–iv–i. All other diatonic oscillations are either definitely or probably modal in nature according to the definition of modality used in this study. Therefore, a randomly selected type of diatonic oscillation is more likely to be modal than tonal, and the modes themselves invite the use of harmonic oscillations to establish a clear tonic and clear macroharmony. In short, modality and oscillation complement one another: they have a symbiotic relationship.

We have just seen several examples of modal oscillations that suggest specific modes. However, not all modal music is in a single unambiguous mode. Often, modal oscillations suggest two possible modes: that in which one of the oscillation’s chords is
tonic as well as the mode whose tonic is the other chord. For example, an oscillation between a minor triad and the major triad whose root is the third of the minor triad is often modally ambiguous. If one hears the minor triad as tonic, the oscillation is i–III–i; if the major chord is taken to be tonic, the oscillation is I–vi–I. In either case, it is an “R” oscillation, to borrow the neo-Riemannian abbreviation for the “relative” transformation. Similarly, an alternation between a major triad and the minor triad whose root is the third of the major triad often implies two modes: the mode whose tonic is the major triad, and the one whose tonic is the minor triad. In the former case, the oscillation is I–iii–I; in the latter, it is i–VI–i. Again, we can use a neo-Riemannian label to describe this progression: the “L” transformation, short for Leittonwechsel (“leading-tone alternation”). Neither the R nor the L oscillation is collection-defining, since the diatonic tritone is absent from both. For example, I–vi–I can occur in ionian, lydian, and mixolydian and i–VI–i appears in both phrygian and aeolian. Of course, the addition of sevenths or melodic non-chord tones may incorporate the diatonic tritone and thus define the macroharmony. Table 2.5 summarizes aspects of the two neo-Riemannian modal oscillations. The “P” (parallel) transformation is not included in Table 2.5 because it is chromatic rather than modal.

65 Spicer, “Absent Tonics,” notes this property.
Table 2.5: Neo-Riemannian modal transformations.

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chords</strong></td>
<td>Minor triad and the major triad whose root is the third of the</td>
<td>Major triad and the minor triad whose root is the third of the</td>
</tr>
<tr>
<td></td>
<td>minor triad</td>
<td>major triad</td>
</tr>
<tr>
<td><strong>UTT label</strong></td>
<td>&lt;-,9,3&gt;</td>
<td>&lt;-,4,8&gt;</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td>B–G♯m–B</td>
<td>Em–C–Em</td>
</tr>
<tr>
<td>**Collection-</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>defining?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sometimes a modal oscillation defines a particular diatonic collection but leaves
the tonic ambiguous. The opening of Erik Satie’s first Gymnopédie (Example 2.10)
alternates between G\(^{maj7}\) and D\(^{maj7}\), defining the D-major collection. As in “I’ve Got Your
Number,” the oscillation in the Gymnopédie operates by stepwise motion (or common
tone, in the case of F\(\)♭) in the upper voices and motion by fourth in the bass. However, it
is not entirely clear which of the two chords has tonic function. They are equally
dissonant, and although the G chord receives greater hypermetric stress, D is the ionian
tonic and hence the default choice. I hear the excerpt as hovering between two possible
tonics, one lydian and the other ionian.\(^66\)

\(^66\) Tagg, *Everyday Tonality*, 368 claims that ambiguous dorian-mixolydian and lydian-mixolydian oscillations
are common in popular music.
Example 2.10: Erik Satie, *Gymnopédie* no. 1 (1888), start of theme.

At other times, the modal oscillation has an obvious tonic but the macroharmony is unclear. In the cyclic chord pattern that underlies Kendrick Lamar’s “Feel” (2017), we know the tonic is A because the melody emphasizes it and because the only consonant chord is an A minor triad (Example 2.11). However, the chords do not present a complete diatonic collection. If there were a B♭, the mode would be A aeolian; if there were a B, the mode would be A phrygian—but neither note appears in the excerpt. Eventually the entrance of a new bass line clarifies that the mode is aeolian, but at the start of the beat the mode is ambiguous.

Example 2.11: Kendrick Lamar, “Feel” (2017), chordal and melodic aspects of the beat.
The first four measures of Debussy’s “En bateau” for piano duet also exhibit a clear tonic but an ambiguous macroharmony (Example 2.12). As mentioned above, the oscillation between triads does not define a diatonic collection. In Example 2.12, the placement of G-major triads on strong hyperbeats during mm. 1–4 suggests a tonic pitch of G. However, the oscillation between G-major and E-minor chords could belong to multiple diatonic collections. If it belonged to the C-major collection, the mode would be G mixolydian, but if it belonged to the G-major collection, the mode would be G ionian. On the other hand, if it belonged to the D-major collection, the mode would be D lydian. In short, any of the three major modes are possibilities when we first hear mm. 1–4.

However, in m. 5, the incursion of a D-minor chord creates a tritone between F♯ and B, implying that the mode of mm. 1–4 was G mixolydian. This modal sense is short-lived, for the D-minor chord is reinterpreted as pre-dominant in the key of C major at the end of Example 2.12.

Example 2.12: Debussy, “En bateau” (1889), mm. 1–9, melody and chord symbols.

Often a modal oscillation yields quickly to a conventional tonal cadence, as in the preceding example. In such situations, the modal oscillation is heard retrospectively as
prolonging a traditional harmonic function. However, the sense of modality is real when
the oscillation is first heard. The traditional cadence “tames” the modal oscillation and
allows the listener to rationalize it as part of a normative progression. For example,
consider the 1941 standard “Lover Man,” written for Billie Holliday (Example 2.13). At
the start of the song, an oscillation between Dm7 and G7 strongly suggests D dorian. In
mm. 3–4, the same oscillation is transposed up a fourth to G dorian, recalling the
traditional motion from I to IV in the middle of blues forms. In mm. 5–7, this motion
around the circle of fifths continues: from C7 we travel to F7, B7, and E7. However,
following this E7 chord, the music abruptly—almost perfunctorily—shifts to a ii–V–I
cadence in F major. The dorian modalities of mm. 1–4 are short-lived. In retrospect, the
oscillation in mm. 1–2 prolongs pre-dominant in the key of F major, while the one in
mm. 3–4 prolongs dominant. Nevertheless, there is a real sense that we are in D dorian
in mm. 1–2.

Example 2.13: Jimmy Davis, Roger Ramirez, and James Sherman, “Lover Man” (1941).
2.4 Chromatic oscillations

In contrast to modality, the profusion of new chromatic techniques in the nineteenth century reflected a desire for complexity, novelty, and inner personal expression. If modal oscillations come from a yearning for rustic simplicity, chromatic progressions bespeak a predilection for the complicated. However, these opposite and equal forces both served to expand the tonal vocabulary beyond the core eighteenth-century practice. As Viret puts it, the nineteenth century witnessed two simultaneous evolutions in harmony, one in the direction of greater chromaticism and the other in the direction of radical diatonicism in the form of modes.

The boundary between diatonic and chromatic music is not as clear-cut as it might seem. According to Ulehla, “chromatic tones may be added to a modal melody without destroying the original modal feeling.” Reflecting this fuzzy distinction, Smith’s approach to late-Romantic chromaticism is to try to incorporate it into the same system as diatonic tonality. Meanwhile, Gregory M. Proctor views the diatonic scale as

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68 Viret, Le retour d’Orphée, 366.
69 Ulehla, Contemporary Harmony, 165.
an emergent subset of the chromatic scale in nineteenth-century music, a reversal of the
more conventional view that chromaticism is an embellishment of diatonicism.71

Nevertheless, there is a real difference between a passage of music that belongs
to a single diatonic collection—like Gregorian chant—and a passage whose pitches are
not confined to a single diatonic collection, presenting in a short amount of time a
macroharmony that defies such categorization. For Krenek, chromaticism arose from a
need for heightened expression in music. He views the entire common-practice era as an
intermission between the chromaticism of the late sixteenth-century mannerists and that
of the early twentieth-century expressionists.72 According to Cohn, the triadic
chromaticism of the late nineteenth century was attractive to composers precisely
because it overturned the expectations of traditional tonality, which had treated diatony
as normative.73 Liszt, for example, habitually used augmented triads in works with a
creepy or Gothic subject; his own adjective for the chromatic oscillation in “Der traurige
Mönch” was “monstrous.”74 Liszt and Wagner’s works demonstrate a clear opposition
between the diatonic and the chromatic, similar to the fundamental dichotomy that

University, 1978), iv.
72 Krenek, Music Here and Now, 112 and 136–37.
73 Richard Cohn, Audacious Euphony: Chromaticism and the Triad’s Second Nature (Oxford and New York:
Oxford University Press, 2012), x.
Weitzmann perceived between consonance and dissonance. Etymologically, “chromaticism” is aptly named, for Romantic composers used it to create increasingly sophisticated coloristic, even fanciful, impressions.

I divide chromatic oscillations into two sub-categories: transpositional and non-transpositional. Transpositional oscillations are those whose harmonies are exact transpositions of one another in pitch-class space. Non-transpositional oscillations are those whose harmonies are not related to one another by transposition. In more intuitive terms, transpositional oscillations contain just one type of harmony stated at two different pitch levels, while non-transpositional oscillations include two distinct types of chord.

As might be expected, the number of possible non-transpositional oscillations is practically infinite, and the number of possible categorization systems for them is nearly as great. Therefore, in this section I focus on transpositional chromatic oscillations, as they prove more amenable to systematic categorization. When I encounter non-transpositional chromatic oscillations in later chapters, I will analyze them on a case-by-case basis rather than trying to fit them into a rigid framework.

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76 Dahlhaus, Nineteenth-Century Music, 242-43.
For the transpositional oscillations, on the other hand, a particular classification scheme suggests itself: we can group them by their interval of transposition. This approach yields six non-trivial categories of transpositional oscillation, one for each interval class that can appear between corresponding tones of the two harmonies. Table 2.6 lists these six categories. Also appearing in Table 2.6 is the trivial case in which there is no pitch-class difference between the “first” and “second” harmonies, but in this instance there is no harmonic progression at all but rather a single sustained harmony.

**Table 2.6: Types of transpositional oscillations.**

<table>
<thead>
<tr>
<th>Transposition interval class</th>
<th>Type of chromatic oscillation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[no oscillation]</td>
</tr>
<tr>
<td>1</td>
<td>Neapolitan</td>
</tr>
<tr>
<td>2</td>
<td>whole-step</td>
</tr>
<tr>
<td>3</td>
<td>chromatic mediant 3 (CM3)</td>
</tr>
<tr>
<td>4</td>
<td>chromatic mediant 4 (CM4)</td>
</tr>
<tr>
<td>5</td>
<td>Q</td>
</tr>
<tr>
<td>6</td>
<td>tritone</td>
</tr>
</tbody>
</table>

I give each category in Table 2.6 a descriptive name. The “whole-step” and “tritone” labels are self-explanatory. “Neapolitan” derives from the half-step distance between the root of tonic and that of the Neapolitan II chord in traditional tonality. The two “chromatic mediant” categories refer to the idea that major or minor triads that are transpositionally related by major or minor third are commonly called chromatic mediants in the analysis of nineteenth-century music. The “Q” label stands for both
“quartal” and “quintal,” since transposition by interval class 5 manifests itself in transposition by perfect fourth or fifth in pitch space.

Chromatic oscillations are well suited to neo-Riemannian interpretation when they exhibit efficient voice leading. Indeed, one of the features of the neo-Riemannian Tonnetz is that it shows close connections between chords that do not belong to the same diatonic collection. However, the constructs used in this chapter to explain chromatic oscillations are only tangentially involved with neo-Riemannian analysis. Rather than relying heavily on compound labels such as PR and LP, I categorize chromatic oscillations in terms that reflect more directly the listening experience, such as whole step, tritone, and Neapolitan.

Example 2.14: Maurice Ravel, “Surgi de la croupe et du bond” (1913), piano-vocal version by the composer, mm. 2–3.
A Neapolitan oscillation is an oscillation between two transpositionally-related chords whose roots are a half step apart. Example 2.14 contains a Neapolitan oscillation between minor chords, achieved through transposition back and forth by semitone.

If we treat pitches in Example 2.14 enharmonically, the harmony consists of an E♭-minor chord with added major seventh (plus a “blue” eleventh with the high A♭) and a D-minor chord with added major seventh. Since the roots of these chords are separated by half step, the oscillation is Neapolitan.

A whole-step chromatic oscillation occurs between two chords transpositionally related by interval class 2. Example 2.15 contains a responsorial whole-step oscillation in which the responsorial chord is itself a whole-step transposition of one of the oscillating chords. First, a G dominant seventh alternates with an F dominant seventh to create the oscillation. Then in m. 13, instead of returning to F7, Debussy turns to an A7 chord, which is the other whole-step transposition of G7 and thereby responds to the F7. The chromatic oscillation occurs in the middle of the first phrase of the prelude (“before-the-beginning”) of the second act of Le Martyre de saint Sébastien.

Example 2.15: Debussy, Le Martyre de saint Sébastien (1911), “La Chambre magique,” Prelude, mm. 8–13, chords.
Perhaps the most common type of chromatic oscillation is a *chromatic-mediant oscillation*. This is a chromatic oscillation between two transpositionally-related chords whose roots are a third apart.

It is probably thanks to the relatively small voice-leading distance between chromatic mediant-related chords that chromatic-mediant oscillations are the most common type of chromatic oscillation. We can further divide chromatic-mediant oscillations involving major or minor triads into four categories depending on the quality of the transposed chord and the interval of transposition. In this respect, I follow Erik Heine’s labeling:

- **M3** = oscillation between major chords separated by three semitones. Example: A–C.
- **M4** = oscillation between major chords separated by four semitones. Example: F#–D.
- **m3** = oscillation between minor chords separated by three semitones. Example: C#m–Em.
- **m4** = oscillation between minor chords separated by four semitones. Example: Dm–F#m.\(^77\)

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\(^77\) Erik Heine, “Chromatic Mediants and Narrative Context in Film,” *Music Analysis* 37, no. 1 (2018): 103–32. These labels can also be applied to seventh chords; for example, an oscillation between D\(^7\) and B\(^7\) is M3, while an alternation between Cm\(^7\) and Em\(^7\) is m4. As David Heetderks points out, “dissonant chords can be
Two of these labels—M3 and m3—belong to my chromatic-mediant 3 (CM3) category, while the other two types—M4 and m4—belong to chromatic-mediant 4 (CM4).

Example 2.16: Debussy, “La Soirée dans Grenade” (1903), mm. 33–36.

As an instance of a CM3 oscillation, consider the passage from Debussy’s “La Soirée dans Grenade” in Example 2.16. An M3 oscillation takes place between D-major and B-major triads at the end of the excerpt. The example occurs toward the end of the first section of the movement as the musical energy winds down. In m. 33, Debussy employs what Allen Forte calls a “doubly chromatic mediant” by alternating between A minor and F# major. If the A chord were major or the F# chord were minor, that alternation would be a CM3 oscillation since then the two chords would have the same reduced to triadic subsets, thereby showing the consonant relations embedded within the progression.”


quality. In any event, Debussy does state a true CM3 oscillation between D and B in mm. 35–36.

The M3 transformation contains a total voice leading distance of three semitones. For example, in Example 2.16, the D goes to D♯, the A goes to B, and F♯ is a common tone. (The actual pitch-space voice leading in Debussy’s excerpt, however, is less parsimonious.) In neo-Riemannian terms, the compound transformations RP and PR produce M3 relations.

Example 2.17 contains an M4 oscillation. As Brahms works his way back to the home key of C major, he prolongs the dominant G chord by alternating it with an Eb-major triad, creating an M4 relation.

Example 2.17: Johannes Brahms, Piano Trio no. 2 in C Major, op. 87 (1880), 1st mvt., piano part, mm. 121–28.
Chromatic-mediant oscillations may suggest symmetrical scales to the music theorist. As an example, triads related by M4 contain five of the six notes of a hexatonic collection. For instance, C-major and E-major triads are both found in the hexatonic scale whose pitch classes are 0, 3, 4, 7, 8, and 11. Triads related by m4 likewise share hexatonic collections: C-minor and E-minor triads are both found in the hexatonic scale whose pitch classes are 0, 3, 4, 7, 8, and 11. By contrast, triads related by M3 may be found in an octatonic collection. For example, C-major and E₇-major triads are found in the octatonic scale that contains pitch classes 0 and 1. Similarly, triads related by m3 are found in the octatonic collection. For example, the C-minor and E₇-minor triads are both in the octatonic scale that contains pitch classes 0 and 1. So, the hexatonic collection includes the relations M4 and m4 while the octatonic collection includes the relations M3 and m3. In this sense, the hexatonic and octatonic sets complement one another.

On the other hand, Matthew Bribitzer-Stull suggests that chromatic-mediant oscillations originated as coloristic variants of diatonic-mediant oscillations such as I–iii–I or I–vi–I. Indeed, chromatic mediants are symptomatic of the “Romantic delight in color” and constitute one of the primary distinctions between nineteenth- and eighteenth-century harmony. The nineteenth-century musicologist Adolf Bernhard

Marx developed a theory of chord progression that implicitly allowed chromatic-median motion, although he did not explicitly address chromatic mediants.81 The quality that makes chromatic-mediant progressions logical extensions of traditional tonality is their small voice-leading distance.82

Many scholars have interpreted chromatic-mediant progressions as strongly expressive harmonic devices that convey a sense of the extraordinary. Rone hears them as “fantastical” or even “supernatural.”83 Kurth, citing Wagner’s Tarnhelm motive, notes the “magical” quality of such progressions; in addition, the chromatic-mediant oscillations associated with the Grail in Parsifal are “ecstatic.”84 Anthony Pople traces to Rimsky-Korsakov the practice of associating the “exotic and magical” with the octatonic scale, which is rich in chromatic mediants.85 In particular, Rone detects the evocation of sorcery in the M3 and tritone progressions of Rimsky-Korsakov’s octatonicism and notes that film scores use the same progressions to depict outer space.86 For Tarasti, the M4 oscillation in the second theme of Liszt’s Prometheus evokes the “aesthetics of myth” and

82 Kopp, Chromatic Transformations, 6.
83 Rone, “Scoring the Familiar,” 49.
84 Kurth, Selected Writings, 123–24.
86 Rone, “Scoring the Familiar,” 51.
has an “archaic flavor.” Indeed, Liszt commonly employed third-cycles when constructing works based on myths. Similarly, the opening chord progression of the slow movement of Dvořák’s Ninth Symphony contains a tritone oscillation and, according to Tarasti, ushers the listener into a “world of mythical contemplation.”

Chromatic-mediant oscillations between major chords are more common than those between minor ones. For examples of m3 and m4 oscillations in film scores, see Erik Heine’s 2018 article. Also, Temperley observes an m3 oscillation in the Doors song “Light My Fire,” which alternates between i7 and vi7.

When the two chords in a chromatic oscillation are separated by interval class 5, I call it a Q oscillation. Relative to other chromatic oscillations, Q oscillations are somewhat rare because transpositional pairs of chords separated by interval class 5 are common in the diatonic collection. For example, C-major and G-major triads are found together in two diatonic collections and are ic5-transpositions of one another. Similarly, Em is a transposition of Am by ic5 and both chords belong to the C-major and G-major diatonic collections. So, when a composer oscillates between triads that are

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87 Tarasti, Myth and Music, 82.
89 Tarasti, Myth and Music, 83. The hexatonic pole, which is a type of doubly-chromatic mediant, suggests the “marvelous” in Poulenc according to Heetderks, “From Uncanny to Marvelous,” 178.
90 Heine, “Chromatic Mediants.”
transpositionally related by perfect fifth or fourth, the result is likely to be diatonic rather than chromatic. (The same applies to whole-step oscillations as well.) For this reason, many of the Q oscillations we find involve seventh chords or extended tertian harmonies. As an example, Debussy alternates between dominant-ninth chords in mm. 14–15 of his prelude “Canope” (Example 2.18). To borrow Caplin’s term, this oscillation fulfills the “end” function of the piece’s first half, occurring immediately before the score’s designation “Animez un peu.”

The final class of transpositional chromatic oscillation is the tritone oscillation. This is an alternation between two transpositionally-related chords a tritone apart. The coronation scene from Modest Mussorgsky’s Boris Godunov (Example 2.19) furnishes a prime example of a tritone oscillation.92

Example 2.18: Debussy, “Canope” (1913), mm. 13–16.

92 DeVoto, Veil of Tonality, 88, observes examples of tritone-related dominant sevenths in Debussy’s early works.

Example 2.20 presents another tritone oscillation by another Russian, Stravinsky. Example 2.20 shows the close voice-leading relationship that exists between major chords a tritone apart, with half-step motion between $F_7$ and $F_5$ in the bass. We also find contrary motion between the bass and the next-lowest voice.

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93 Tritone oscillation seems to be a specialty of Russian composers; we also find it in Scriabin. Boyd Pomeroy, “A Force of Nature: Debussy and the Chromatically Displaced Dominant,” in *Explorations in Schenkerian Analysis*, ed. David Beach and Su Yin Mak (Rochester, N.Y.: University of Rochester Press, 2016), 303.
Example 2.20: Igor Stravinsky, *The Firebird* (1910), m. 17.

A tritone oscillation may be theorized as two successive implementations of a CM3 progression, since the tritone is interval class 6 and the CM3 progression transposes a chord by interval class 3. Thus, the sound-world of tritone oscillations resembles that of CM3 oscillations. This affinity highlights a difference between CM3 and CM4. While two successive iterations of a CM4 relation produce another CM4 relation (for example, in the progression C–E–G♯, the C and G♯ chords are related by CM4), two successive iterations of a CM3 relation produce a tritone relation. For instance, in the progression Am–Cm–D♭m, the Am and D♭m chords are related by tritone, not by CM3.

### 2.5 Case study: Richard Strauss, Tod und Verklärung

I conclude this chapter by analyzing a piece in which modal and chromatic oscillations structure large spans of music. Richard Strauss’s tone poem *Tod und Verklärung* (1888–89) admits many different interpretations, from a motivic reading centered on descending melodic steps to one that emphasizes symmetrical divisions of
the octave. Harrison’s investigation of the connections between the music and its program is also fruitful.94 According to Longyear, Tod und Verklärung continues the tradition of the Lisztian symphonic poem in its transformational structure and culmination in apotheosis.95 Here, I analyze the piece in terms of its numerous transcendental oscillations. I will show that these progressions evolve over the course of the work and that this evolution communicates the piece’s programmatic teleology. Moreover, one of these foreground oscillations is a condensation of a background progression; thus, the idea of transcendental oscillation governs multiple levels of structure.

_Tod und Verklärung_ depicts a deathbed scene. After an opening that introduces the well-known “heartbeat” rhythm, the dying subject recalls passions of earthly existence, a reminiscence that ceases when the soul departs for heaven accompanied by a radiant C-major climax. The music’s overarching progression is from C minor to the parallel major. It turns out that the crucial steps of this progression are articulated by transcendental oscillations; moreover, the structure of correspondences between these oscillations lends the piece a satisfying tonal unity. As I go through the piece, I encourage the reader to refer to Figure 2.21, which summarizes the work’s significant

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oscillations. (In Figure 2.21, boldface chord symbols denote the harmonies to which the neighbor chords resolve. Unusually, several of these harmonies are more dissonant than their embellishing neighbors.)

![Figure 2.21: Richard Strauss, Tod und Verklärung, analysis based on transcendental oscillations. Each oblong signifies an oscillation between the two chords separated by an en dash.]

The first harmonic motion in Tod und Verklärung is an alternation between Cm and D⁷ that starts in m. 7. Its functional profile is T:T-S, but when another oscillation between a minor chord and a diminished seventh appears in m. 13, the function is D:S-D. That is, while the m. 7 oscillation prolongs the C-minor tonic, the one in m. 13...
prolongs dominant in that key. (This D:S-D oscillation returns in m. 365 and m. 369.) The alternation between the C and D roots in m. 7 gives rise to a similar root alternation between D$\flat\,$ and C$\flat\,$ in m. 20. This chromatic oscillation is Neapolitan. Its functional profile is difficult to discern because of the ambiguous tonality of the passage in which it appears. One possible label is the functionally homogeneous D:D-D, which means that the chords’ dominant-seventh quality makes them both “sound like dominant” to a certain extent. This dominant-heavy oscillation is transposed in m. 45. The root motion between D$\flat\,$ and C that characterizes the oscillation in m. 20 finds further expression in the Cm–D$\flat\,$m oscillation of m. 67, which retrieves the T:T-S profile. At m. 67, the soft, slow music of the first section is disrupted by fast, loud music with the marking Allegro molto agitato (signifying the death throes of the physical body). In this passage and the reminiscence section that follows, transcendental oscillations are rare. However, they return in force at the exact moment the transfiguration theme enters, in m. 321. This theme is harmonized by a lydian oscillation between A$\flat\,$ and B$\flat\,$. As shown in Example 2.22, the harmonic alternation is fairly efficient in voice-leading terms: the three upper voices and the “tenor” voice (cellos) proceed by stepwise neighbor motion and the bass sustains a tonic pedal. The progression recalls the Neapolitan oscillation of m. 20 in that it involves a dominant seventh and root motion by step. However, the oscillation at m. 321 presents an entirely different affect than its predecessor; the transfiguration
progression’s raised lydian scale degree seems to strive upward toward heaven. This lydian alternation is restated in transposed form at m. 335 and m. 356 before reaching the global tonic, C major, at m. 432.

Example 2.22: Transfiguration theme, mm. 321–24.

What follows this tonic arrival is perhaps the most fascinating episode in the piece. At m. 467, a B♭ triad is followed by A♭. This motion from one major chord to another separated by whole step reminds us of the earlier lydian oscillations; consequently, we might expect B♭ to return, thus completing an oscillation with the A♭ chord. However, in a masterstroke, Strauss thwarts our expectations by going from A♭ directly to the tonic C major at m. 471. In this way, he overshoots the anticipated harmony, a fitting accompaniment to the soul as it slips the surly bonds of earth. This moment is especially effective because it comes on the heels of an established pattern of
oscillation; therefore, its breaking of the pattern is noteworthy. In the ensuing
dénouement, Strauss employs two final transcendental oscillations: an alternation
between C and A♭ that recalls the A♭–C progression of the climax, and a diatonic variant
of that oscillation in the form of C–Am–C.

The vertical arrows in Figure 2.21 trace the large-scale structure of the piece, from
oscillations focused on minor chords and half steps to those involving major sonorities
and whole steps and finally to a deceptive oscillation that provides the ultimate
resolution in C major. This overarching harmonic narrative, in which transcendental
oscillations play pivotal roles, is well suited to a piece that is literally about
transcendence.

Figure 2.23: Strauss, Tod und Verklärung, background oscillation reduced into
foreground oscillation.

The preceding discussion explains how a series of foreground oscillations
structures the entire piece. However, at least one of these foreground progressions also
occurs on a much higher structural level. The chromatic-mediant oscillation between C and A↓, in the closing episode of the piece distills a background oscillation between C-centered and A↓-centered music (Figure 2.23). Specifically, the first foreground oscillation of the work is in C minor (m. 7), the arrival of the transfiguration theme occurs in the key of A↓ major (and is accompanied by the A↓–B↓ foreground alternation), and the transfiguration theme is itself finally transfigured into the home key of C major at m. 432. Following this tonic arrival, the three tonal centers of those episodes are condensed into the foreground oscillation C–A↓–C, which constitutes part of the *envoi* to the entire work. In this way, the tonal areas of the three crucial moments of the piece’s large-scale structure form a background oscillation that is summarized on the foreground at m. 484.

In this chapter, I have attempted to shed light on important categories of foreground oscillations, with respect both to the structure of the progressions in which they are found and to their pitch content. Most transcendental oscillations are modal in the sense that they are diatonic. Moreover, some oscillations are mode-defining because they contain the diatonic tritone and establish a clear tonic pitch through emphasis and repetition. Chromatic oscillations, while less common, are important elements of late nineteenth-century harmony, especially the “fantastical” chromatic-mediant oscillations. We find examples of both modal and chromatic oscillation throughout Richard Strauss’s
Tod und Verklärung. However, though Strauss used many transcendental oscillations, he could not match the prodigious quantity of transcendental oscillations found in the works of the subject of the next chapter.
3. Debussy

This chapter is the first of four dealing with the study’s focal repertoires: Debussy, Sibelius, Sondheim, and pop music since the 1960s. Debussy’s oscillations are typically chordal in texture,¹ whereas Sibelius’s and, especially, Sondheim’s tend to be more contrapuntal. However, in pop music, the oscillations are highly chordal, like Debussy’s. This perhaps surprising alignment between a French Impressionist and rock bands like Destroyer makes sense when one considers compositional method. Debussy composed at the piano by improvising colorful chords, while many rock musicians compose by improvising appealing chord progressions on the guitar or piano. As a result, it is only natural that both Debussy’s music and rock music would be chord-based.

That said, Debussy’s practice differs markedly from pop music in the length of oscillations used. Of the four foci of this study, Claude Debussy (1862–1918) writes the shortest transcendental oscillations. He has a consistent practice of repeating short fragments once before moving on to new material. This duplication often gives rise to ABAB chord progressions. Yet while Debussy’s oscillations tend to be short, he also uses

¹ “Debussy is normally remembered as the quintessential harmonist, who flaunted [sic] the conventional rules of voice leading.” Matthew Brown, “Follow the Leader: Debussy’s Contrapuntal Games,” in Debussy’s Resonance, ed. François de Médicis and Steven Huebner (Rochester, N.Y.: University of Rochester Press, 2018), 395.
a lot of them: most of his pieces, even the shortest mélodies, contain multiple oscillations. Debussy was one of the first composers to saturate his harmonic language with this technique.

According to Sylveline Bourion, duplication is far more common than non-duplication in Debussy’s music.² That is, when Debussy states a new musical idea, he is more likely to repeat it immediately (whether exactly or in a varied form) than to move to a different motive. Bourion speculates that Debussy’s duplications derive from the basic ternary structure ABA; the elements in this structure gradually became shorter and Debussy took to adding another B fragment to the end, creating an ABAB phrase form.³ Wishart, writing in 1956, observed a particular type of duplication: “There is a characteristic of much French music, though it also occurs elsewhere, which consists of repeating a complete two-bar phrase with an altered ending to lead to another phrase.”⁴ Here, Wishart describes an ABAC responsorial structure.

³ Ibid., 459.
⁴ Wishart, Harmony, 77.
3.1 Freedom

One of the most striking features of Debussy’s style is its evasion of the predictable or conventional. His artistic independence resonates with that of French Symbolist poets, who, according to Mark Evan Bonds, instigated a “return to a paradigm of expressive objectivity” in the arts. Certainly, the Symbolists avoided the cliché and the banal and embraced novel, opaque formulations, a project that Debussy also undertook in the musical domain. At the same time, however, there is an undeniable sensuality to much Symbolist poetry, and this trait carries over into Debussy’s music as well. His style has a winsome appeal that is generally absent from the angst-filled Expressionist works of the same era. Indeed, for Debussy, the pleasure that a sound gave the listener indicated the sound’s musical value; this criterion often led him to disregard the strict rules of Conservatoire counterpoint. At that institution, when asked what theoretical justification Debussy could provide for his extravagant harmonic improvisations, the young iconoclast answered, “Mon plaisir!” In true Symbolist fashion, Debussy sought to explore a region of sympathetic overlap between

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8 Johnson, *After Debussy*, 188–89.

the subjective self and the external natural world. Moreover, music was for Debussy a rarefied, complex art. In an 1893 letter to the composer Ernest Chausson, he wrote, “Music really ought to have been a hermetical science, enshrined in texts so hard and laborious to decipher as to discourage the herd of people who treat it as casually as they do a handkerchief!”

In delving into the mysteries of this “hermetical science,” Debussy produced a harmonic language that deviated from the established norms of traditional tonality. Its tendency to abandon common-practice progressions prompted Christopher Lewis to declare that “Debussy’s harmony often does seem to abandon logical causality.” Similarly, Krenek observed that Debussy used the traditional elements of tonality, like tertian chords, in unusual combinations. As a letter to the Italian conductor Bernardo Molinari testifies, Debussy was interested less in principles of harmonic progression and more in the emotional power that a single chord could convey. In the words of Arthur

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12 Viret, Le retour d’Orphée, 273–74. Brown, Explaining Tonality, 172, writes, “Although most of [Debussy’s] works can be classified as tonal in a general sense, they often extend or contradict the specific laws of functional monotonality ... his music is infused with non-functional progressions, extreme chromaticism, and modal/exotic inflections.”
14 Krenek, Music Here and Now, 138–39.
15 Letter to Bernardo Molinari, October 6, 1915, in Debussy, Letters, 303.
Wenk, Debussy’s unconventional harmonic syntax acts by “reducing the forward momentum of the harmonic progression and increasing the importance of the individual chord.” The impression of stasis derives also from Debussy’s use of ostinati, which Jann Pasler hears as a sign of the Other. Wenk includes “oscillation” as one of the techniques Debussy uses to create harmonic stasis, for it elaborates a single function through neighbor motion rather than progressing harmonically. The freedom of Debussy’s harmonic idiom exemplifies the flexible nineteenth-century approach that Viret traces back to Liszt. Debussy despised restrictions on the imagination as well as simple solutions to compositional challenges. As another example of this freedom of musical thought, he dispensed with the traditional dichotomous opposition between consonance and dissonance in favor of a more subtle gradation from “more consonant” to “less consonant” sonorities.

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21 Viret, *Le retour d’Orphée*, 104.
Though his harmonic language is freer than most of his contemporaries’, it is not entirely chaotic: rather, it exhibits discernible patterns of usage. For instance, chromatic mediants proliferate in Debussy’s music.22 As William H. Daly wrote in 1908, Debussy’s harmonies “prove, on a closer examination, to be not nearly so anarchic as one might suppose.”23 In fact, the very diversity of chordal forms in Debussy’s style allowed him to create directed musical structures through careful arrangement of harmonic types. For example, Simon Trezise observes that the second movement (“Jeux de vagues”) from La mer starts by emphasizing major sevenths, transitions to minor sevenths, and finally focuses on the major triad.24 In addition to this dynamic sort of expanded tonality, however, Debussy also had a predilection for cyclical, static harmony. James Hepokoski notes that Debussy often begins pieces with short, repeated, homophonic chord progressions, which can “negat[e] the presumption of the forward thrust of time itself through their emphasis on circularity and return.”25 Trezise characterizes musical repetition in the absence of development as essentially static, although, as Richard Parks theorizes, every repetition is at least mildly disruptive in the sense that it involves an

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22 Somer, “Chromatic Third Relations,” 216.
24 Trezise, La mer, 75.
abrupt return to the beginning of a previously stated idea.26 Debussy’s prolific use of harmonic oscillation is one example of his paradoxical evocation of stasis in the quintessentially temporal art form of music.27 As Jim Samson argues, however, it is possible to overemphasize the “static” aspect when it comes to Debussy. For although his style may exhibit stasis on local levels, those short motionless episodes combine to create dramatic forms that showcase a rich variety of harmonic idioms.28 While it is possible to discern, in the words of Jonathan D. Kramer, “segments of musical time that are stationary and have no implication to move ahead,” these segments contrast with one another and are arranged to create a satisfying sense of overall dynamism.29 Nevertheless, what is often missing from Debussy’s language is the conventional tonal teleology that had been established in preceding centuries by stereotyped phrase forms punctuated with authentic cadences.30 Above all, Debussy searched for novel musical effects; for example, his resurrection of the old Church modes rejuvenated the stale

27 Debussy’s oscillation practice was established early on. Almost one-fourth of Debussy’s juvenile cantata L’enfant prodigue consists of harmonic oscillations (Wenk, Claude Debussy, 23). According to Pomeroy, “harmonic inactivity” in Debussy’s music serves to foreground melodic arabesque. Boyd Pomeroy, “Toward a New Tonal Practice: Chromaticism and Form in Debussy’s Orchestral Music” (PhD diss., Cornell University, 2000), 13.
29 Kramer, The Time of Music, 44.
30 Trezise, La mer, 91–92.
tropes of common-practice harmony. As Johnson describes, “Debussy’s music makes its tonal relations ‘non-functional’ in order to foreground a different kind of sense-making.”

It is a challenge—and the goal of this chapter—to explain that “different kind of sense-making.” We may be tempted to agree with Daly that “Debussy’s music does not lend itself well to any process of analysis.” Along similar lines, Edward Lockspeiser suggests that many of Debussy harmonic progressions are deliberately imprecise: one pitch or chord could be substituted for another without any loss of coherence. This imprecision violates Hegel’s dicta that in chord progressions “there must be no ingredient of mere caprice” and that harmonic motion must arise inevitably from chord qualities and the keys those chords invoke. In *Das Kunstwerk der Zukunft*, Wagner

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31 Ulehla, *Contemporary Harmony*, 161; Daly, *Debussy*, 24–25. Mark DeVoto asserts that Debussy’s key signatures suggest that he never entirely abandoned the notion of ionian and aeolian modes as defaults: “Debussy’s modal inflections are always indicated by accidentals, precisely because they are inflections.” That is, if a piece by Debussy has a key signature of five flats (for example), then its tonic is either D♭ or B♭ and the sense of being in particular modes is effected by means of accidentals. Mark DeVoto, “Debussy’s Absolute Pitch: Motivic Harmony and Choice of Keys,” in *Debussy’s Resonance*, ed. François de Médicis and Steven Huebner (Rochester, N.Y.: University of Rochester Press, 2018), 421. Similarly, Brown holds that Schenkerian theory can explain apparent modality as generated by “mixtures and tonicizations” rather than stemming from some scale that differs from common-practice major and minor: “Schenker believed that composers experimented with modal and exotic materials, not to undermine the tonal system, but rather to reveal its flexibility and scope” (Brown, *Explaining Tonality*, 181–82).
33 Daly, *Debussy*, 29.
echoed Hegel in deriving horizontal motion from the properties of vertical sonorites; he also extolled harmony’s ability to progress endlessly, presenting an infinitude of changes through time.\(^{36}\) In contrast, Rollo Myers claims that Debussy’s harmonic attitude is basically vertical rather than horizontal.\(^{37}\) He also states that one of the paradoxes of Debussy’s harmony is its “revolutionary use of consonances to create an atmospheric and sometimes archaic effect”; in other words, the use of old materials in new ways.\(^{38}\) Likewise, Cecil Gray posited that Debussy’s innovations were less akin to the discovery of an unknown planet than to the exploration of obscure corners of the known world.\(^{39}\) Debussy’s friend Louis Laloy wrote that his major achievement was to have returned music to a freer, more primitive state unencumbered by rules; Debussy had found the “true character of these chords [and] connected them according to their particular laws, constantly contradicted by the demands of resolution.”\(^{40}\) The result was a language whose central attribute was freedom and that broke the bonds of common-practice major and minor.\(^{41}\) It involved temporal freedom as well, for Debussy partook of both ancient and avant-garde in order to fashion, in the words of Viret, a

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\(^{36}\) Wagner, “Das Kunstwerk der Zukunft,” 887.


\(^{41}\) Daly, *Debussy*, 23–24.
“transhistoric modernity.” 42 He also absorbed musical ideas from foreign cultures, exemplified by his interest in the Javanese gamelan demonstration at the 1889 Paris Exhibition.43

Broadly speaking, music-theoretical approaches to Debussy have fallen into two camps: those that treat Debussy as carrying on the tonal tradition he inherited, and those that view him as a radical instigator of musical modernism. In this study, I attempt to stake out a middle position that recognizes elements of truth in both perspectives. The traditionalist view is represented by Schenkerians like Matthew Brown; the radicalist reading finds support in the work of Marianne Wheeldon and the late, great Allen Forte, both of whom point out octatonic elements in Debussy’s scores.

However, while such octatonic phenomena are interesting, I believe the latter scholars sometimes overstate their case. For example, Forte uses the term “octatonic” to refer “not only to the octatonic scale, but also and more generally to any subset of that scale that contains from three to seven notes,” and yet it is not clear that these subsets were conceived by the composer as octatonic or that octatonicism is the best explanation for them. Indeed, triadic M3 oscillations constitute, as Forte says, a five-pitch subset of the octatonic collection, but to posit that such a progression in Debussy’s music refers to

42 Viret, Le retour d’Orphée, 360.
43 Kramer, The Time of Music, 44.
the octatonic set is to add superfluous complexity to the explanation: chromatic
mediants had a long history of usage in nineteenth-century music going back at least to
Schubert, and, moreover, three of the pitches of the octatonic collection are missing from
the triadic M3 oscillation. Therefore, it seems at least as justifiable to understand M3
oscillations as chromatic adjustments of diatonic progressions rather than intimations of
an underlying octatonicism.44

But Forte’s assertion is even bolder than that: he claims seven-note collections
that contain an octatonic hexachord refer to octatonicism even when the seventh note of
the collection does not belong to the same octatonic collection as the hexachord. He
justifies this argument by stating that these seven-note collections all belong to what he
calls “Genus 3,” which is a collection of set classes that also includes many subsets of the
octatonic scale. Yet according to Forte’s definition of “genus,” this is merely to say that
every octatonic hexachord contains a diminished triad, which is a trivial statement, and
therefore does nothing to show that the non-octatonic seven-note collections are secretly
derived from octatonicism. Nevertheless, Forte concludes that the octatonic collection
“has fundamental links with the other harmonic spheres which are so characteristic of
[Debussy’s] harmonic genus and may, indeed, be regarded as a core referential pitch

44 On the other hand, it is true that M3 progressions are less common than M4 progressions in nineteenth-
century music.
collection.” However, major and minor triads are common in Debussy and are subsets of the octatonic. Are we then to hear ordinary triads as “referring” to that “core collection”? While I do not think Forte endorses that hearing, his own reasoning points in that direction. To adopt this interpretation would be to run roughshod over the musico-historical context that molded Debussy as a composer, a context that inculcated triadic harmony as part of a nineteenth-century tonal system that was decidedly non-octatonic.45

Indeed, Debussy’s desire to escape the restrictions of traditional harmony was due in part to his intimate familiarity with the traditional system itself.46 Additionally, this system had strong Germanic connotations, which must have chafed at the patriotic French composer. As Danuta Mirka points out, the German musical style had equalled the French and the Italian in prestige by the end of the eighteenth century.47 And in the nineteenth, German music became the gold standard of Europe. Writing in 1936, the

45 Allen Forte, “Debussy and the Octatonic,” *Music Analysis* 10, no. 1/2 (March–July 1991): 126ff.; Allen Forte, “Pitch-Class Set Genera and the Origin of Modern Harmonic Species,” *Journal of Music Theory* 32, no. 2 (Autumn 1988): 187–270. See also Wheeldon, “Interpreting Discontinuity,” 102; Wheeldon, “Debussy’s ‘Soupir,’” 144. I do hear octatonicism in Debussy’s music, but I find it to be more salient in melodic contexts than harmonic. Thus, when Debussy presents a melody that moves in the alternating whole-step/half-step pattern characteristic of the octatonic scale (as in “Par les rues et par les chemins” from *Ibéria*), I can readily appreciate its octatonic nature. When the supposed octatonicism is buried in the harmony, on the other hand, I need strong evidence in order to accept an octatonic origin as the best explanation of the observed chords.


French poet Paul Claudel lamented that the “only artistic triumph of the nineteenth century ... had occurred in Germany,” evinced by the frequency with which Wagner continued to be performed.48

Debussy came of age in a musical climate dominated by Wagner’s operas and music dramas. As Thomas Grey suggests, the Symbolist poets—many of whose poems Debussy set to music—played a pivotal role in increasing knowledge and appreciation of Wagner’s works among French composers.49 Suzanne Bernard argues that Mallarmé’s works found inspiration in Wagner’s belief in the intimate relation between music and poetry.50 Meanwhile, Baudelaire wrote to Wagner directly, averring, “I owe to you the greatest musical pleasure I have ever experienced.” For Baudelaire, Wagner’s harmonies were “stimulants that quickened the imaginative pulse.” There was a cultural inferiority complex at play in Baudelaire’s interaction with the German composer, for in the same letter he disparaged France as “a country where we concern ourselves barely more with poetry and painting than with music.”51 The French literary set’s attraction to Wagner influenced Debussy: as Lockspeiser notes, Debussy’s friends were “almost exclusively literary people”; furthermore, poetry and music were undergoing a “cross-fertilization”

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50 Bernard, Mallarmé et la musique, 27.
51 February 17, 1860, in Baudelaire, L’Art romantique, 263–64. Italics in original.
at that time.\textsuperscript{52} In the early part of his career, Debussy was a dedicated Wagnerian to the point that he fell out with Gounod over \textit{Lohengrin}, which Gounod loathed and Debussy admired.\textsuperscript{53} Even in his stylistic maturity, Debussy owed a good deal to Wagner. For example, Steven Huebner interprets the alternation between C and B major in Act IV of \textit{Pelléas et Mélisande} as a moment of ambiguity between light and darkness.\textsuperscript{54} Such an interpretation brings to mind the dramatic polarity of A major and F\# minor in \textit{Lohengrin}, discussed in Chapter 1.

As the years went by, however, Debussy sought to distance himself from Wagner and from German music more generally. He was highly successful in this, if we are to credit the testimony of Xenakis, who claimed that Debussy and Ravel were the first modern composers to break with Germanic hegemony and rediscover “the world of antiquity.”\textsuperscript{55} Debussy himself disparaged Franck’s music for being excessively German in style.\textsuperscript{56} And by the time Debussy composed \textit{Pelléas et Mélisande}, Wagner’s influence was little more than what Thomas Grey calls “a dim ‘spiritual’ presence, a kind of repressed memory.”\textsuperscript{57} According to Johnson, one means by which Debussy distanced

\textsuperscript{52} Lockspeiser, “Debussy’s Concept of the Dream,” 58.
\textsuperscript{53} Lockspeiser, \textit{Debussy}, 43.
\textsuperscript{54} Steven Huebner, \textit{French Opera at the Fin de Siècle: Wagnerism, Nationalism, and Style} (New York: Oxford University Press, 1999), 474–75.
\textsuperscript{56} Samson, \textit{Music in Transition}, 34.
\textsuperscript{57} Grey, “Opera and Music Drama,” 419.
himself from Wagner was through a creative use of silence.\textsuperscript{58} Similarly, Pople contrasts the fragmentary, aphoristic character of Debussy’s phrases in \textit{Prélude à l’Après-midi d’un faune} with the “endless melody” of a work like \textit{Tristan und Isolde}, though he also notes some harmonic kinship between the two.\textsuperscript{59} In short, Debussy felt that Wagnerian style tended toward the grandiloquent. By contrast, he referred to his own late sonatas as being in the “old French style which was kind enough not to ask for tetralogical efforts from its listeners.”\textsuperscript{60} While Debussy’s anti-Wagnerism ran against the prevailing cultural current of the late nineteenth century, there had always been skeptics of Wagner in France. Baudelaire reveals that in 1860, at least, there were many journalists who made a living by lambasting Wagner in print.\textsuperscript{61}

One way in which Debussy rebelled against German music was through the diatonic modes.\textsuperscript{62} To be sure, modal passages appear in the radical efforts of the New German School; I have already mentioned modal oscillations by Wagner and Liszt. Yet Debussy differed from these predecessors in the sheer quantity of modal oscillations he used. Moreover, if common-practice tonality was construed as an Austro-German style, 

\textsuperscript{58} Johnson, \textit{After Debussy}, 56.
\textsuperscript{59} Pople, “Styles and Languages,” 608.
\textsuperscript{61} To Wagner, February 17, 1860, in Baudelaire, \textit{L’Art romantique}, 263 and 265.
\textsuperscript{62} “Debussy even in his earliest works adopted this modal vocabulary” (DeVoto, \textit{Veil of Tonality}, 81).
then to employ harmonies foreign to that practice (like modal oscillations) was an implicitly non-German act. Indeed, as Vincent tells us, “German composers were slow to adopt the modes and lagged behind the French in this respect.” Fauré had also pushed against the conventions of Austro-German tonality by deploying major- and minor-seventh chords in considerable quantities; the latter were particularly suited to modal harmonization because they could incorporate 7. According to Samson, this emphasis of the flat seventh—which Debussy likewise adopted—was a hallmark of French music as far back as Bizet and provided a point of differentiation between the French and German styles. While French composers like Fauré and Debussy sometimes evoked particular diatonic modes such as lydian or dorian, they were also known to employ a more generic kind of modality that put familiar diatonic triads in unfamiliar orders, resulting in unusual root motions up by third and down by second.

In his desire to escape the dreaded German influence, Debussy became interested in virtually every non-Germanic style he encountered. For instance, he was receptive to innovative French music. Pople suggests that Debussy’s mature harmonic technique was

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63 Vincent, *Diatonic Modes*, 236.
66 See Ulehla, *Contemporary Harmony*, 181.
influenced by Dukas, and we know that Debussy admired Satie’s oscillatory 
Gymnopédies enough to make orchestral transcriptions of them. Casella wrote in 1925 
that Debussy and Ravel had “repudiated the entire cumbersome and ridiculous 
Wagnerian musico-philosophical burden in order to return to a more Latin conception 
of music.”

Another important non-German source of inspiration was Russian music, 
especially that of the Mighty Handful. Samson conjectures that Debussy’s penchant for 
the diatonic modes and for “two-bar cellular construction”—which can produce 
transcendental oscillation when the cell is repeated—may derive from Russian music.

He admired Mussorgsky, another composer whose works are suffused with modality.

While Cecil Gray was correct to say that Mussorgsky’s influence on Debussy has been 
exaggerated by scholars, we cannot ignore the testimony of Satie, who stated, “When I 
first met Debussy [in 1891], he was full of Mussorgsky and was very deliberately seeking 
a way that wasn’t very easy to find.” Nineteenth-century Russian composers were 
frequent practitioners of transcendental oscillation; Longyear observes that Tchaikovsky

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70 Samson, Music in Transition, 12 and 36.
71 Viret, Le retour d’Orphée, 372.
72 Gray, Survey of Contemporary Music, 102. Satie quoted in Lockspeiser, Debussy, 47.
employs oscillations involving mediant or submediant. Debussy was familiar with Borodin and Rimsky-Korsakov by the early 1880s, and some of his mélodies recall the former. The proximate cause of Debussy’s early interest in Russian music was a trip to Russia under the wing of Nadezhda von Meck, who also admired Tchaikovsky deeply. The Five had expanded the harmonic language of tonality both diatonically, by means of the modes, and chromatically, by means of the whole-tone and octatonic scales. In turn, Debussy extrapolated from this Korsakovan model. His embrace of quasi-archaic modality and exotic scales lent his style a “characteristic tonal fluidity and even ambiguity,” according to Myers. In Debussy’s tonal language, pentatonic and octatonic scales, like the modes, expanded the harmonic palette and contrasted with the common practice.

3.2 The otherworldly

In the words of Cecil Gray, Debussy’s modality and pentatonics represent a “kind of musical atavism recalling a more primitive state of aesthetic consciousness.”

73 Longyear, Nineteenth-Century Romanticism, 228.
74 Lockspeiser, Debussy, 16.
75 Meyers, Modern French Music, 85.
77 Myers, Modern French Music, 89.
78 Samson, Music in Transition, 37.
79 Gray, Survey of Contemporary Music, 103.
Other commentators have likewise detected the primeval in Debussy’s style. Johnson argues that Debussy shone a spotlight on the materiality of pure sound, analogous to the linguistic distillation of a word into primitive, expressive vocalization. Along similar lines, Caroline Potter interprets Debussy’s interest in Palestrina as nostalgia for a supposedly simpler time; she also links this yearning for the past with Debussy’s great love of nature. In a review published in 1901, Debussy wrote admiringly that “the primitives—Palestrina, Vittoria, Orlando di Lasso, etc.—had this divine sense of the arabesque. They found the basis of it in Gregorian chant, whose delicate tracery they supported with twining counterpoints.”

This attraction to the archaic greatly influenced the artistic milieu of the 1880s, and Debussy’s cantata La damoiselle élue, a setting of a poem by the Pre-Raphaelite Dante Gabriel Rossetti, was no exception. Donald Francis Tovey hears the work’s opening homophonic oscillation as “serving generally to indicate the vast calm of space in which

80 Johnson, After Debussy, 38.
this vision of Heaven is seen” (Example 3.1). As Max Paddison observes, the religiosity of such artistic products of the late nineteenth century was bound up with medievalism, an attitude that contributed to the revival of the diatonic modes. An aura of sacred antiquity was found to pervade Wagner’s works; Baudelaire wrote that the prelude to Act I of Lohengrin “expressed the ardors of mysticism, the spirit’s thirst for the incommunicable God.” Like other works by Debussy, La damoiselle élue opens with a mysterious, laconic motive that seems to usher the listener into a different world.

In mm. 1–2 of Example 3.1, Debussy deploys oscillations between Dm and C and between Dm and Em. The repetition of the arch progression Em–Dm–C–Dm produces a double oscillation; in this way, Dm oscillates with two different chords (Em and C) rather than just one. On the other hand, if we hear the Dm chords as passing sonorities, the passage simplifies into a fluctuation between Em and C. The outer voices exhibit contrary motion. Lockspeiser hears echoes of Franck and Parsifal in La damoiselle élue, and suggests that the opening chordal oscillation owes something to Satie’s Rosicrucian works. For Hepokoski, the first two measures of La damoiselle élue constitute the archetypal “modal/chordal opening,” a device frequently used by Debussy involving

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84 Donald Francis Tovey, Essays in Musical Analysis (London: Oxford University Press, 1981), 2:313–14.
85 Paddison, “Music as Ideal,” 338.
87 Lockspeiser, Debussy, 206.
“chords with a ‘mysterious’ modal quality to suggest, according to the designated context, primeval times, ecclesiastical austerity, quasi-mystical reverie, or uncommon experience in general.”


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The austere triads of the first oscillation in *La damoiselle élue* give way to the lush texture of the second oscillation. If the first two measures depict the serene setting of heaven, the following measures evoke the earthly passion that colors the damsel’s experience of heaven. The dissonance of the C–B, appoggiatura on the G-minor chords in m. 3 communicates her longing, adding another dimension to the setting given by the rather expressionless oscillation of mm. 1–2.

A later work by Debussy that also deals with holy mysticism and begins with transcendental oscillations is *Le Martyre de saint Sébastien* (1911), incidental music for the play of the same name by Gabriele D’Annunzio. Debussy’s musical numbers were designed to augment the play’s transcendance and mystery.89 The work opens with incantatory chords in the same manner as *La damoiselle élue* (Example 3.2).

Example 3.2 starts with a responsorial progression embellished by an inserted chord. Specifically, the progression E₃m–Fm–E₃m–B₃m is responsorial, since the B₃m chord responds to the Fm. Within that progression, E₃m–Fm–E₃m is a modal oscillation that defines the D₇-major collection. However, another B₃m chord is inserted between the first E₃m and the Fm chord. Because of this B₃m chord’s short duration compared to the surrounding chords, we can hear it as an embellishing sonority. The second half of

the responsorial progression becomes the basis of another oscillation, this time between $E_b\text{m}$ and $B_b\text{m}$. If the passage were clearly in the key of $B_b\text{m}$, then this oscillation would not be transcendental—it would simply be i–iv–i in common-practice minor (ignoring the parallel perfect intervals). However, the mode is far from certain. Indeed, $E_b$ dorian is a plausible designation for the passage because $E_b\text{m}$ is presented as a possible tonic: the excerpt starts with an $E_b\text{m}$ chord and $E_b\text{m}$ is reiterated on strong beats in mm. 5 and 6. (The $E_b$-minor key signature may also contribute to our sense that $E_b\text{m}$ is tonic, although $C$ is foreign to $E_b$ dorian.) Because $E_b$ dorian is the most likely mode of the passage, the $E_b\text{m}$–$B_b\text{m}$ oscillation is transcendental. In contrast to the double oscillation from *La damoiselle élue*, the excerpt in Example 3.2 exhibits entirely parallel motion, as a specific chord is transposed onto various scale degrees.90

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90 Pomeroy characterizes this passage as an “organal (parallel) doubling of the modal arabesque.” Pomeroy, “Toward a New Tonal Practice,” 15.
Nature is the most frequent subject of Debussy’s programmatic pieces.91 Pasler surmises that the occult publisher Robert Bailly could have inspired Debussy to consider music as a means of mysterious communion between the self and the natural world.92 Through music, Debussy sought to depict the subject’s “emotional response to what is invisible in nature” rather than nature itself.93 At the same time, however, he mistrusted conventional forms because they imposed rules on nature’s uncorrupted state.94 In conversation with the pianist Marguerite Long, Debussy remarked, “The sea is the most musical thing there is.”95 And in 1913, he wrote that ancient peoples had learned music directly from the “eternal rhythm of the sea ... without ever looking into arbitrary treatises.”96 For Debussy, nature was the best teacher of music precisely because it had nothing to do with the conventions of music pedagogy: “People put too much stress on the methods of writing music, on formulae and on craftsmanship!”97 According to Potter, Debussy’s attraction to the natural world entailed a concomitant tendency toward misanthropy.98

91 Longyear, Nineteenth-Century Romanticism, 6.
93 Quoted in Potter, “Debussy and Nature,” 140.
94 Ibid., 138.
96 Quoted in Viret, Le retour d’Orphée, 97.
97 Quoted in Potter, “Debussy and Nature,” 137.
98 Ibid., 137.
Like many Romantics, Debussy adhered to an informal nature-religion, claiming in a 1911 interview regarding *Le Martyre de saint Sébastien* that the outdoors was his church and that observing plant life was his version of prayer. In a review from 1913, Debussy praised music’s ability to render the poetry and rhythm inherent in nature. Reinforcing this “direct depiction” theory of music, he testified in a 1911 interview that memories of sensory experiences in nature expressed themselves in his music spontaneously, without his willing them to be so expressed. However, in a 1908 interview for *Harper’s Weekly* magazine, Debussy claimed that his creative process depended more on his inner feelings than on external stimuli, which distracted him. Elsewhere, he extolled Beethoven’s “Pastoral” Symphony for presenting an emotional response to nature rather than a mere imitation of nature.

3.3 “C’est l’extase”

I now turn to two analyses of complete works by Debussy in terms of transcendental oscillations. To begin with, his early song “C’est l’extase” (1888), on a text by Paul Verlaine, features transcendental oscillations in profusion.

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100 Debussy, “Review for the S.I.M. (1 November 1913),” in *Monsieur Croche*, 246.
101 Debussy, “M. Claude Debussy et ‘Le Martyre de saint Sébastien,’” 325.
Example 3.3: Debussy, “C’est l’extase,” mm. 6–9.

After an eight-bar introduction, we arrive on the tonic E-major chord. But the preceding dominant B⁹ chord is embellished by G⁷ chords that suggest another tonal center—namely, C♯ (Example 3.3). The interpolation of the G⁷ chord in Example 3.3 resembles a tritone substitution in jazz in that one dominant chord substitutes for another. However, in this case the relation between the two chords is not by tritone but by minor third (B to G♯). So Example 3.3 contains an M3 oscillation: an alternation between two dominant chords three half steps apart. The outer voices exhibit contrary motion as the bass moves from B down to G♯ and the treble ascends from C♯ to G♯. On

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104 “E major was one of Debussy’s favorite keys from his earliest days as a composer.” DeVoto, “Debussy’s Absolute Pitch,” 426.
an extremely local level, the B dominant ninth plays a more stable role than the
decorative G♯ dominant seventh and can therefore be construed as an (ephemeral) tonic.
Accordingly, the functional profile of the oscillation would be the heterogeneous D:T-M.

Debussy had acquired several songs of Alexander Borodin during a sojourn in
Russia.\textsuperscript{105} In “The Sea Princess” (French title: “La Reine de la mer”), Borodin frequently
oscillates between chords built on F and D\textsuperscript{♭}. For instance, in mm. 4–5, an F dominant
ninth alternates with a D\textsuperscript{♭} dominant ninth, creating an M4 oscillation (Example 3.4). It is
tempting to speculate that Borodin’s chromatic-mediant oscillation between dominant
chords inspired Debussy’s adoption of the technique in “C’est l’extase.”

Example 3.4: Alexander Borodin, “La Reine de la mer,” mm. 4–5.


Just as the Symbolists in poetry offered suggestions of things rather than the things themselves, Debussy in his settings of that poetry gives allusions to functional keys rather than the keys themselves. For example, in the next transcendental oscillation in “C’est l’extase,” Debussy alternates between a suggestion of E major (the E major-seventh chord) and a hint of F major (the C dominant ninth chord) (Example 3.5). The C dominant ninth prolongs the global E-major tonic by means of chromatic neighbor motion; the sustained E pedal also emphasizes the two chords’ close contrapuntal

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connection. In Example 3.5, the addition of notes—whether the added seventh in the tonic E major-seventh chord or the altered B, in the C dominant chord—renders the tonality hazy and obscure, like the inscrutable nature imagery to which the oscillation is accompaniment.

Another chromatic-mediant alternation between dominant chords appears later in the song (Example 3.6). This progression occurs about two-thirds of the way through “C’est l’extase” during a passage of music that avoids settling on a clear tonic. Here we find another M3 oscillation between dominant sonorities, in this case D and B. The cross-relation between the C in the left hand and the Ds in the right foregrounds the chromatic nature of this oscillation and gives voice to the text’s “lamente” and “plainte.” The first chord after the oscillation ends is another major-minor (i.e., “dominant”) chord: G. In fact, G and C disrupt tonal stability throughout “C’est l’extase.” For instance, the C in m. 36 turns the temporary stable D major of the preceding bars into an unstable major-minor seventh (Example 3.6). And C is used as foil to the tonic E-major chord in m. 11 (Example 3.5). Debussy’s emphasis of these chromatic-mediant areas, chords, and pitches (relative to the overarching E tonic) is part of what separates his idiom from traditional tonal practice. Additionally, his M3 oscillations between chords other than E

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107 For Ruwet, this passage “contrasts with the preceding section in the sense that ‘static’ contrasts with ‘dynamic’” (Ruwet, “Notes sur les duplications,” 64).
major—like the one between D\(^7\) and B\(^7\) in Example 3.6—rhyme with his use of the chromatic mediants of E.

Example 3.6: Debussy, “C'est l'extase,” mm. 36–40.

The polarity between E and its chromatic mediants appears once again at the end of the song (Example 3.7). In an exact parallel to the first establishment of E major as tonic chord, this last reinforcement of E major as tonic likewise alternates between E-major and C-major sonorities. When E major was established as tonic earlier in the song, it immediately alternated with a C dominant-seventh chord (“C'est tous les frissons . . . ,” Example 3.5). At the final reinforcement of E major (Example 3.7), we again have an oscillation between E and C, though this C chord is not a major-minor seventh but a major triad. We also hear a G-major chord immediately after the transcendental oscillation, just as a G chord served as a departure from the
transcendental oscillation in mm. 36–39 (Example 3.6). Thus, the song’s last
transcendental oscillation (Example 3.7) synthesizes attributes of two earlier ones: it
alters between E and C and is ended by a G chord. In sum, “C’est l’extase” shows
how important transcendental oscillations are to Debussy’s lexicon and structural
approach. In at least four places in the song, transcendental oscillations have formal
roles that affect our interpretation of the song’s musical unity.

Example 3.7: Debussy, “C’est l’extase,” mm. 46–50.

Fundamentally, the harmony of “C’est l’extase” explores chromatic mediants, in
particular M3 and M4. According to Somer, chromatic-median progressions between
major chords are more common than those between minor chords in Debussy’s music;
the former create “a particularly luminous brilliance” while the latter are “striking” and
“somber.” Figure 3.8 contains four oscillations (mm. 7, 11, 36, and 46) that have local chromatic-mediant functions. Moreover, a chromatic-mediant oscillation occurs on the middleground in mm. 36–45: the D7–B7 foreground oscillation at m. 36 prolongs dominant on the middleground, the next foreground oscillation at m. 40 prolongs mediant function on the middleground, and dominant function returns in m. 43 with the B9 chord (Figure 3.8). In this way, the middleground oscillates between dominant and mediant in mm. 36–45, an oscillation that itself prolongs dominant on an even higher structural level. This dominant function resolves to tonic at m. 46, when we hear a final chromatic-mediant oscillation that serves as *envoi* following the structural authentic cadence in E major. In fact, transcendental oscillation governs the deep background as well: the first part tonicizes E major, the middle section modulates to D major, and E major returns at the end. This alternation between E major and D major constitutes a tonic-dominant oscillation. Figure 3.8 shows how the principle of transcendental oscillation suffuses the song’s foreground, middleground, and background.

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109 Brown, “Tonality and Form,” 134, notes the structural importance of ,VII (D major) in this song.
3.4 La mer

*La mer* (1903–5) is perhaps the quintessential Debussy composition, given the number of scholars who have used water-based imagery to describe the composer’s style. Viret argues that “Debussyan music in general is of an aquatic nature,” while Johnson speaks of “Debussy’s aquatic musical logic” and its relation to the “boundless self-sufficiency of the aquatic.”¹¹⁰ Roy Howat remarks that Debussy’s mature style features an “undulating tidal flow of dynamic intensity.”¹¹¹ Monelle hears a subjective voice in *La mer*, an artist’s personal reaction to the sea.¹¹² Lockspeiser notes that

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Debussy’s father was a sailor and posits that Debussy’s sea-sense was inspired by the works of J. M. W. Turner. Oscillations are an apt technique for such a composer to use given that ocean waves are themselves oscillatory.


In some situations, harmonic oscillation seems relaxed, shuttling hypnotically back and forth between two chords. However, as in the coronation scene from Musorgsky’s *Boris Godunov*, Debussy also knew how to use transcendental oscillations in musical climaxes. This is repetition as intensification: the music strains against the boundaries of the two-chord progression, as if seeking to shatter the confines of

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repetition. The end of the first movement of La mer demonstrates the use of alternating harmonies to deliver a climax (Example 3.9).

In Example 3.9, the horns enter at rehearsal number 14 with a chorale motive that contains two distinct minimal oscillations. The first is chromatic, alternating between G, and C, to produce a T:T-S profile (m. 1 of Example 3.9). In conventional tonality, the C, would resolve to F, major, so the return to the G, chord is transcendental. The next minimal oscillation is modal: E,–D,m–E,, with the profile M:T-D because E, is a chromatic mediant of G, (m. 2 of Example 3.9). We could consider E, to be an ephemeral tonic by virtue of that chord’s duration in m. 2; accordingly, the oscillation would be Lydian, I–vii–I, hence the profile’s “T-D” internal functions. In the third measure of the excerpt, Debussy returns to the first minimal alternation. In this way, Debussy creates a hyper-oscillation, an oscillation between oscillations. This structure serves to prolong the first minimal oscillation. Debussy then proceeds to a complete R (relative) oscillation between D, (the tonic of La mer) and B,m. At the end of the first measure of rehearsal number 15, the R oscillation’s grip on the melody seems to give way with the arrival of an E,–major sonority. But the E, chord is part of yet another oscillation, this one between B,m and E, (rehearsal number 15 in Example 3.9). Thus, Debussy elides two transcendental oscillations, with the B,–minor chord serving as the intersection between them.
As the oscillations in Example 3.9 progress, the musical tension increases. The iambic snap figure begins to occur more frequently: whereas in the D–Bm oscillation it occurred once per measure, it appears once every half measure during the Bm–E, oscillation. Moreover, the dorian nature of this latter oscillation contributes to the sense of straining upward, for 6 in dorian is raised relative to the natural minor. Finally, in the measure marked “Retenu,” the melody breaks the restrictive bounds of oscillating harmony, and we hear what is virtually the first non-oscillating progression of the excerpt. Through their repetitive quality, the transcendental oscillations provide resistance against which the melodic subject struggles before cresting in the second measure after “Retenu.”

It is instructive to compare the close of the first movement of *La mer* with the end of the third movement, which recapitulates the chorale idea (Example 3.10). The chorale theme in Example 3.10 distills the oscillations of the first movement into a more concise statement. Specifically, the first chord of Example 3.10 is B♭ minor, whereas if it were an exact transposition of the first-movement chorale (Example 3.9) it would be B♭ major. By making the first chord in Example 3.10 minor instead of major, Debussy re-creates the final oscillation from Example 3.9—namely, the dorian B♭ m–E♭ (i–IV) oscillation. This change allows Debussy to skip the latter phases of the first-movement chorale (Example 3.9) when recapitulating it in the third movement (Example 3.10). Indeed, in the ninth measure of Example 3.10, Debussy arrives on the tonic D♭ even though an exact transposition of the first-movement chorale would require an F-major chord instead. In the third movement, Debussy bypasses two of the transcendental oscillations from the first movement—those between G♭ and C♭⁹ and between D♭ and B♭ m—in favor of arriving on the D♭ tonic sooner rather than later. He accomplishes this by distilling two ideas into one: the chorale melody is combined with the dorian i–IV oscillation (Example 3.11).

Example 3.12: “De l’aube à midi sur la mer.” a. mm. 12–14. b. mm. 6–8.

La mer demonstrates that Debussy’s music is, in its own way, goal-directed. The end of the first movement synthesizes various motives that were introduced earlier in the piece. For example, the chorale’s rhythm derives from the theme presented in the twelfth measure of the movement (Example 3.12a), and the upward sixteenth-note snap
figure originates as early as the oboe’s melody in m. 6 (Example 3.12b). While the oscillating harmonies in La mer are static in that they are repetitive, their use at climactic moments turns them into the culmination of a dynamic process.

As another demonstration of Debussy’s teleological approach, the third-movement excerpt (Example 3.10) is a recapitulation of a recapitulation. It restates elements of the first-movement climax, which is itself a recapitulation of earlier ideas, before moving to a triumphant coda. La mer has clear goals and points of arrival on both the scale of the movement (such as the climax of the first movement) and on the scale of the entire piece (such as the climax of the third movement, which brings the entire piece to a satisfying end). Debussy tended to foreshadow arrival points, creating a nested structure: in La mer, the third-movement climax is adumbrated by the end of the first movement, which is in turn foreshadowed by a subsidiary arrival at the end of the first half of the first movement.114

Local tonic-subdominant (T-S) oscillations abound in the first movement, “De l’aube à midi sur la mer” (Figure 3.13). In the first part of the movement, oscillations involving half-diminished seventh chords play a prominent role. The first movement ends with an overpowering climax that Lockspeiser calls “the greatest evocation of

nature in a work for orchestra.”

To Johnson, the brass chorale signifies, rather than the emergence of some specific object, the very idea of arrival itself. In mm. 132–34, Debussy alternates between two distinct oscillations, creating a kind of hyper-oscillation between the functions T and M. Collectively, however, this hyper-oscillation expresses the global function S because it prolongs G major and the global tonic is D. This tonic arrives in force in m. 135, where it alternates with vi (Bm). The Bm-minor triad is itself prolonged through alternation with E, starting in m. 137. The intersection of two oscillations produces what Bourion calls the technique of “simultaneous offensives” (offensives concomitantes): the end of one duplication forms the beginning of another. At the end of the movement (m. 139), the D tonic returns—but the chord’s added sixth suggests the lingering influence of B minor. The progressive shortening of the repeated harmonic unit over the course of the first movement’s climactic episode is a manifestation of the technique Bourion calls variation de la taille des phalanges, in which the lengths of the duplicative sections of a musical passage vary. Howat notes the presence of arch structures in the first movement of La mer, remarking that the key scheme D–E–B–D, in that movement “forms another large-scale tidal impulse.”

115 Lockspeiser, Debussy, 196.
116 Johnson, After Debussy, 47.
117 Bourion, Le style de Claude Debussy, 303.
118 Ibid., 199.
119 Howat, Debussy in Proportion, 71–74.
Figure 3.13: Oscillation structure of La mer.
Whereas the first movement was dominated by tonic-subdominant relationships, the second movement ("Jeux de vagues") is governed by chromatic mediants. In the first half of the movement we find many transpositional chromatic oscillations, several of which are chromatic-mediant alternations. Toward the end of the movement, the chromatic-mediant function appears on a larger scale, as an oscillation that prolongs G♭ major serves as a chromatic mediant relative to the movement’s concluding key of E major (Figure 3.13). Furthermore, when the E tonal center arrives in the bass, a whole-tone collection oscillates with a C dominant-ninth chord, another chromatic mediant relative to the tonic.

The third movement ("Dialogue du vent et de la mer") synthesizes attributes of the two preceding movements. We find several transpositional chromatic oscillations in the “Dialogue,” but we also return to the chorale theme that closed the first movement. Lockspeiser refers to the chorale at the end of the third movement as a "climax of overpowering intensity." The chorale thus serves as climax not only for the first movement but also for the piece as a whole. However, Debussy changes the harmonization of the third-movement iteration: while the B♭m–E♭ oscillation had appeared only in the tonic prolongation at the end of the first movement, in the third

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120 Lockspeiser, Debussy, 194.
movement this oscillation occurs at the start of the chorale theme as well. The effect of this reharmonization is to cast the chorale in the mode of B, dorian. Perhaps because of this increased emphasis on B, in the first part of the chorale in the third movement, Debussy refrains from adding the sixth to the D, tonic chord later on, as he did at the end of the first movement. Instead, he alternates D, with E, to create a sense of D, lydian.

Figure 3.13 also reveals large-scale structures in La mer. For example, in all three movements, background functional progressions appear only toward the end of the movement. These fundamental harmonic motions are indicated by curved arrows in Figure 3.13: S–T, M–T, and S–T. Until these tonic resolutions, the earlier harmonic content of each movement is comparatively nebulous, with ambiguous tonics—a possible analogy to the fluctuations of ocean waves. In addition, the background functions of each movement collectively articulate a large scale transcendental oscillation: D–E–D, or an M3 progression. La mer shows once again that

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122 DeVoto points out the contrast between the flat-heavy outer movements and the sharp-heavy middle movement: “It is significant that parts of ‘Jeux de vagues,’ the second movement of La mer, are notated in C♯ major whereas the first and third movements are decisively in D♯.” DeVoto, “Debussy’s Absolute Pitch,” 421.
transcendental oscillations can saturate multiple structural levels of a work and give a window onto the piece’s form.

For Johnson, to characterize Debussy’s music as “static” is no more reasonable than to call the sea motionless. Although his music may lack the conventional teleology of Austro-German tonality, “Debussy dissolves the hard structures of tonal grammar and reorganises them by a different, more fluid logic.”123 In fact, Debussy’s works are often not merely full of motion, but also goal-directed. The catch is that, as Jonathan D. Kramer writes, we might be unable to predict the goal of a piece at its outset.124 In other words, the climaxes of Debussy’s works feel in retrospect to be satisfying and perhaps inevitable, yet they frequently differ from the standard forms of common-practice music. We find this phenomenon in La mer, which presents a coherent, powerful musical experience without necessarily conforming to formal conventions.

3.5 Sonatas

Near the end of his life, Debussy embarked on a project of six sonatas, three of which he completed. The turn to such a venerable, abstract instrumental genre as the sonata marked a new phase of his career. Before, Debussy had created very few works in the standard forms of instrumental music. Two examples are the early Piano Trio (1880)

123 Johnson, After Debussy, 50.
and the String Quartet (1893). The trio imitates Fauré; and while the quartet is a masterpiece, its sequential counterpoint, motivic rigor, and violent accents distance it from the typical Debussy sound. Indeed, the quartet owes a considerable debt to both Beethoven and César Franck. Debussy appears to have composed the trio and quartet while aware of the pedigree and rich tradition behind these lofty genres. In attempting to add to the already vast corpus of trios and quartets—both “serious” forms—Debussy seems to have suppressed qualities that make much of his other music instantly recognizable to us. For example, transcendental oscillations are uncommon in both works. Significantly, in both trio and quartet the movement that contains the most salient transcendental oscillations is the scherzo; it seems likely that Debussy felt least encumbered by the weight of tradition in these “joke” movements. By contrast, when he returns to serious abstract genres in the late sonatas, he is entirely confident in his own personal idiom. These late abstract works are quintessential Debussy throughout, exemplified by their reliance on oscillating harmony.

For instance, a dorian i–IV oscillation adorns the opening of the Cello Sonata (1915) (Example 3.14). The tonic E₃m alternates with A₃ major to define the D₃-major macroharmony. This oscillation occurs at the close of the rhapsodic introduction of the first movement; the last measure of Example 3.14 is the first measure of the main theme. As always, this transcendental oscillation is a plateau. In this case, the plateau creates a
calming effect or a release of tension. The oscillation is like a placid lake into which the stream of musical activity flows, and it brings the introductory section to an end. After a break, the music starts on another course at Poco animando.

Another instance of transcendental oscillation in Debussy’s late sonatas appears at the start of the Violin Sonata (1917), the composer’s last major achievement (Example 3.15). Recalling the Cello Sonata, the Violin Sonata opens with a dorian i–IV oscillation between Gm and C. Debussy presents the oscillation unadorned, as if to highlight the harmonic content. The E♭-minor chord in m. 8 recalls the opening of La Damaoselle élue (Example 3.1), which also moved from a modal oscillation (B♭–Gm) to an E♭ chord, although in La Damaoselle élue the E♭ chord is major rather than minor. Listening to the opening of the Violin Sonata, one hears the compositional process itself. In contrast to the opening of La Damaoselle élue, which quickly moves to an ornamented passage, the
opening of the violin sonata offers little ornamentation. The harmonies seem purposeful and efficient. For instance, the Gm–C progression in mm. 12–13 of Example 3.15 cleverly reverses the relationship presented by the oscillation of mm. 1–7. In the oscillation, the C chord is subservient to the Gm (it is IV in relation to i), but in the Gm–C cadence it is the Gm chord that is subservient to the C (as v in the mode of C Mixolydian). Except for m. 9, every note of the violin part in Example 3.15 is a chord tone. The oscillation’s influence is felt even at the movement’s end when the Gm–C trajectory is reversed. Forceful C major chords in the piano at the marking “au Mouvement” yield to a G minor chord at the very end of the movement. This progression ties off the movement’s form in a satisfying way because the opposite shift occurs at the beginning of the movement, creating a palindrome.

In a letter to Robert Godet, Debussy wrote that the Violin Sonata “will be interesting from a documentary point of view and as an example of what an invalid can write in time of war.”

According to Bonds, the Great War spurred the development of neo-classicism, or an “aesthetics of objectivity,” by composers such as Debussy, Schoenberg, and Stravinsky. Debussy himself was conscious of the pared-down efficiency of his late sonatas, describing the works as being in the “ancient, flexible mold

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125 June 7, 1917, in Debussy, Letters, 327.
with none of the grandiloquence of modern sonatas.”¹²⁷ If anything, the war reinforced Debussy’s antiquarian leanings; he wrote to Poulenc in 1915, “This is a time when we should be trying to regain a hold on our ancient traditions.”¹²⁸ Ten years later, the Spanish philosopher Ortega y Gasset would declare that Debussy was the first composer to “dehumanize” music, making it “possible to listen ... serenely, without swoons and tears.”¹²⁹

Example 3.15: Debussy, Violin Sonata, opening.

¹²⁷ To Bernardo Molinari, October 6, 1915, in Debussy, Letters, 303.
¹²⁹ Quoted in Bonds, The Beethoven Syndrome, 172.
Like the violin and cello sonatas, the Sonata for Flute, Viola, and Harp (1915) contains a transcendental oscillation near the start of the first movement. Following the first cadence—an arrival on an F-major tonic on the first beat of m. 9—the harp states a transcendental oscillation over an F/C pedal in the viola (Example 3.16).

Example 3.16: Debussy, Sonata for Flute, Viola, and Harp, first mvt., mm. 9–12.

In neo-Riemannian terms, the harp’s oscillation is an embellished R alternation: instead of moving between simple D-minor and F-major triads, Debussy decorates the chords with added tones to produce Dm11 and Fmaj7 chords. In fact, these decorations make it so that it is not entirely obvious that there is a chord change at all, because the two chords share so many notes. In any event, the oscillation yields in mm. 11 and 12 to chords that include E♭. The incursion of E♭ breaks the tranquilizing spell cast by the oscillation, as does the flighty entrance of the flute in m. 12. Recall that a similar process happens in the Violin Sonata and La Danoise élue: an E♭ sonority cuts off a transcendental oscillation. But the example from the Sonata for Flute, Viola, and Harp (Example 3.16) also resembles the excerpt from the Cello Sonata (Example 3.14) in that
the oscillation releases tension. In the case of the Cello Sonata, the dorian oscillation brought the rhapsodic harmonic motion of the introduction to a calm close, while in the Sonata for Flute, Viola, and Harp the R oscillation prolongs the F-major tonic on which the players have finally arrived. Thus, the oscillation from the Sonata for Flute, Viola, and Harp combines the functions of oscillations in the other two sonatas. It starts as an expansion of an arrival point and ends by leading into more active material (Figure 3.17).

Violin Sonata:
start of section: tonic Gm–C → melodic activity, roving harmony

Cello Sonata:
melodic activity, roving harmony → local tonic Eb–Ab: end of section

Sonata for Flute, Viola, and Harp:
melodic activity, roving harmony → tonic F–Dm → melodic activity, roving harmony

Figure 3.17: Local structural functions of oscillations in Debussy’s late sonatas.

Collectively, the late sonatas completed Debussy’s stylistic evolution. Whereas his earlier forays into serious Classical forms had resulted in works that sound quite different from his typical mature style, the late sonatas show that Debussy could craft abstract instrumental works that plumbed the depths of his unique musical personality.

Debussy tamed the transcendental oscillation and made it a central feature of style, though its capacity to depict the extraordinary never vanished. The climactic IV–I oscillations in Wagner’s “Liebestod” showed the power of oscillating harmony to
convey transcendent experience. Debussy took the Wagnerian example, along with that of Russian composers such as Borodin, and exploited it to a degree unseen in those models. As Debussy explained in 1908, modern music discards the old system of master and disciple in favor of one in which each individual creates a personal style. And never before Debussy had a composer relied so heavily on transcendental oscillations. The technique allowed him to balance novelty with comprehensibility and stillness with motion. Indeed, Debussy extended the applicability of this harmonic device and made it a cornerstone of his personal harmonic idiom. In so doing, he expanded the horizons of Western music.

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4. Sibelius

Like Debussy, Jean Sibelius wrote music that exemplified the late nineteenth- and early twentieth-century vogue for transcendental oscillations. And like the French composer, Sibelius was deeply inspired by nature. However, his artistry differed from Debussy’s in several ways. For instance, whereas Debussy’s oscillations are highly chordal—and in that sense pianistic—Sibelius’s are more contrapuntal and stratified, hence more orchestral. They are also longer on average, with a mean length of four cycles. This increase in length is attributable to Sibelius’s penchant for what I call “holding patterns,” or long passages of music that seem to go nowhere. The two composers also differed in their general aesthetic sensibilities: while Debussy was a stylistic chameleon interested in Ancient Greek paganism and many other exotic traditions, Sibelius honed a single, uniform style that is grounded in the folk music of Finland and evokes a mythology more Nordic than Hellenic.

In this chapter, I start by examining Sibelius’s attitude to the diatonic modes and their relation to Finnish traditional song and the Finnish landscape. I then turn to Sibelius’s penchant for seemingly excessive repetition of short motives, a practice that usually involves oscillating harmony. Following a discussion of the dorian i–IV–i in Sibelius’s music, I examine oscillations in the Fifth Symphony. An interlude concerning Sibelius’s influence in Britain is followed by an explication of the structure of Sibelius’s
tone poem *The Oceanides* in terms of transcendental oscillations. The chapter ends by exploring transcendental oscillations in Howard Shore’s twenty-first-century soundtrack to the *Lord of the Rings* film trilogy, a score redolent of Sibelian style.

### 4.1 Modality, nature, and Karelian folk music

Educated at a conservatory that held traditional tonality to be the default harmonic idiom, Sibelius forged an original style in part by drawing inspiration from the diatonic modes. Writing in 1927, Cecil Gray posited that “Sibelius’s finest work is supremely original, owing nothing to any other composer, past or present.”\(^1\) Hyperbole, perhaps: Sibelius was not the first composer to use transcendental oscillations, as Debussy proves. At the same time, however, Sibelius does not seem to have drawn inspiration from Debussy in particular. In Sibelius’s words, Debussy was “neither grand nor profound”; the French composer was “refined, but in my view, small-scale.”\(^2\) Nor did Sibelius feel much connection to German music; he called his methods “far removed from the kind of thinking of the German school.”\(^3\) Like Debussy, Sibelius had an ambivalent attitude to Wagner. In a letter to Rosa Newmarch, Sibelius complained, “Musicians are still writing in the post-Wagnerian style—with the same laughable poses

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\(^1\) Gray, *Contemporary Music*, 185.


and the still more laughable would-be profundity. But that sort of thing does not easily die out.⁴ According to Sibelius, the complex harmonic peregrinations of Wagner and Liszt were interesting but contrived; he was after a more spontaneous musical language.⁵ And for Sibelius, this spontaneity sometimes manifested itself as a curious halting of conventional musical teleology. Indeed, some of Sibelius’s most characteristic passages are those in which he suspends the forward motion of the music in favor of what Hepokoski calls a “revelatory, elemental world of sound-sheet sonority.”⁶

This “elemental world” was also a seemingly ancient one. For Krenek, Sibelius’s music was “contemporary” but not “new”; the programs of Sibelius’s tone poems indicate a preoccupation with depicting ancient folklore.⁷ As Herder had written a century before Sibelius composed his important works, the pre-Roman history of northern Europe was lost to the mists of time, and suggestions of what life was like in ancient times were only to be found “among mountains, or in nooks of land, in rude or impenetrable regions.”⁸ Sibelius’s music has often been heard as tapping into this mysterious ancient realm: Tovey echoed Herder when, in a review of Sibelius’s Violin

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⁷ Krenek, Music Here and Now, 63.
⁸ Herder, Outlines of a Philosophy, 469.
Concerto, he wrote, “If a timely glance at an atlas had not reminded me that Finland is mostly flat and water-logged with lakes, I should doubtless have said that ‘his forms are hewn out of the rocks of his native and Nordic mountains.’”9 The Sibelian style is often interpreted by listeners, not to mention by the composer himself, as an evocation of ancient Finnish landscapes.

An important facet of this depiction of a particular landscape is the use of modality. Sibelius considered himself predisposed to modal harmony.10 Having grown up in the tonal tradition, he crafted a harmonic language that blended major-minor tonality with the diatonic modes.11 In the words of Erik Tawaststjerna, “Sibelius’s archaic-nordic style is a synthesis of modal, mostly dorian elements on the one hand and major-minor tonal elements on the other.”12 In addition to this dorian predilection, Alesaro points out that Sibelius’s modality encompasses non-traditional uses of ionian and aeolian as well.13

The folk music of the region of Karelia, which occupies eastern Finland and part of Russia, influenced Sibelius’s melodies and suggested modal harmonizations.

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9 Tovey, Essays, 2:206.
Murtomäki notes Sibelius’s “penchant for substituting the traditional tonic, subdominant, and dominant functions with modal innovations.” As a case in point, Alesaro remarks on the lydian I–II–I oscillation in Sibelius’s Fourth Symphony, and Lionel Pike discerns phrygian progressions in the First. While the modes in the work of a Scandinavian composer like Sibelius took deeper root than in the style of a thoroughly Germanic composer like Brahms, Erkki Toivanen theorizes that the ultimate source of Finnish nationalism, with the interest in folk-song modality that that entailed, was the linguistic nationalism of the German philosopher Herder. Certainly, Elias Lönnrot’s publication of the epic Kalevala text was a watershed moment that ushered in a wave of interest in Finnish language and culture.

The Kalevala itself was the source of a corpus of folk melodies: Karelian runic song is a traditional music that sets sections or “runes” of the epic poem to music. As Murtomäki suggests, the pentachordal quality of many runic melodies reappears in Sibelius’s motives. While runic melodies do not suggest common-practice tonal functions, they are “tonal” in the sense that they emphasize particular pitches more than

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14 Murtomäki, “Modal-Tonal Techniques,” 73.
The repetition of specific pitches invites a repetitive harmonization, while the lack of traditional melodic cadences invites similarly non-traditional harmony. These two qualities lay the groundwork for transcendental oscillations. As a result, melodies in the style of runic songs are frequently amenable to this kind of harmonization.

When Sibelius became interested in runic songs, they had already become provincial, surviving only in the less developed regions of Finland. As such, they were exotic compared to the civilized Helsinki milieu in which Sibelius received his conservatory training. He soon sought out this exotic musical resource in situ. For example, in 1891, he heard the singer Larin Paraske perform runic songs, including an ancient recitative lament, in the city of Porvoo. While we do not know exactly which tunes Sibelius heard, none of the extant melodies that Paraske is known to have sung conforms to major-minor tonal conventions. The following year, Sibelius traveled to Karelia and collected runic songs, meeting the folk singer Petri Shemeikka and hearing the kantele played. As Sibelius recalled, “a great love overpowered me during that trip and is still strong in me.”

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18 Tawaststjerna, “Der junge Sibelius,” 642.
20 Ibid., 7; Tawaststjerna, “Der junge Sibelius,” 643.
21 Ibid., 648.
Shemeikka in the village of Korpiselkä, Sibelius embarked on a slew of compositions (Kullervo, the Karelia suite, and so on) that exhibit melodies in the style of Karelian runic song. And in 1896, Sibelius delivered a lecture at Helsinki University on modality in Finnish traditional music.

Runic songs were originally composed as monophonic entities, without particular harmonizations in mind. Therefore, we should not expect to find transcendental harmonic oscillations in any of the original Karelian sources. Still, when Sibelius harmonized his own rune-like melodies, the result tended to be modal. It turns out that many runic melodies can be harmonized with modal oscillations. Frequently, more than one modal oscillation may be used. As an example, consider the hypothetical harmonization of a Karelian lullaby in Example 4.1.


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In the harmonization in Example 4.1, the music is in some minor mode whose tonic is A. It is not common-practice minor, however, because there are G♯s instead of G♮s. Instead, the closest diatonic modes are aeolian and dorian. The harmonic oscillation between A-minor and G-major triads establishes the tonic on A. This is a modal oscillation (profile T:T-D) and it accompanies the melody convincingly.

Now consider an alternate harmonization of the same melody (Example 4.2).

Example 4.2: Karelian melody: my dorian harmonization.

To get from Example 4.1 to Example 4.2, I replaced the G chords with B-minor triads, creating the profile T:T-S. This progression leads to a definite attribution of dorian, since we now have F♯s and the tritone C–F♯ is apparent in the accompaniment. To my ears, this second harmonization of the runic melody sounds more “precise” than the first harmonization. That is, a particular diatonic mode is now specified: there are more pitch classes in the second harmonization than in the first. As with the first harmonization, the dorian harmonization—which is also accomplished with a modal
oscillation—sounds perfectly natural with the melody, even though the tune itself was not conceived with any harmonization in mind.

Some runic songs may be harmonized so as to suggest two different tonic notes. For example, Example 4.3 shows one way to harmonize an Estonian runic melody (phrygian mode, profile T:T-D). Estonia is geographically close to Karelia, and the runic songs of Estonia are similar to those of Finland.


In Example 4.3, I interpret the mode as B phrygian and harmonize the melody with a i–vii–i oscillation, which defines the phrygian mode. But we can also interpret the passage as being in a completely different mode (Example 4.4).

Example 4.4: Estonian melody: my mixolydian harmonization.
In Example 4.4, the passage sounds as if it is in G mixolydian rather than B phrygian. Not only is the tonic pitch different; we are now in a major mode instead of a minor one. Again, the mode is established via a modal oscillation. And once again, the chords seem to fit the melody. The melody would also fit with a tonal I–V–I oscillation, but such a harmonization is no more convenient than the modal harmonizations. Therefore, we can see that modal oscillation works well with this runic melody.

What these examples prove is that although the runic song repertory was created without harmonies, it can suggest particular harmonies to ears accustomed to dealing with harmonic music. Indeed, many runic melodies do not imply common-practice major or minor: for instance, there is no clear leading tone from 7 to 1 in either of the melodies quoted above. In addition, none of the recorded runic songs sung by Larin Paraske adheres to the tonic-dominant model of traditional tonality. Therefore, runic melodies are ripe to be harmonized in modal fashion, and it happens that modal oscillations work well for many of them. When harmonizing his own quasi-runic melodies, Sibelius conceived of the harmony as providing an atmosphere or setting in which the folk-like melody could naturally arise. And in order to create such an atmosphere, he often turned to modes.27

Sibelius was a nationalist composer in the sense that he drew artistic inspiration from the landscape and traditional culture of his home nation. As he said, “I could never abandon [Finland] for good; that would finish me, and mean death to my art!”28 At the same time, however, he took pride in never having quoted an actual folk song in his compositions: “so far I have never made use of any themes but those which are absolutely my own.”29 Rather, he internalized the style of runic song and created original themes in that style with accompanying modal harmonizations, as we shall see in an example from the Sixth Symphony in Section 4.3.

Sibelius’s music often seems to evoke a forbidding wilderness. Such an evocation aligns with his interest in traditional music: according to Monelle, the Romantics understood folk song to represent unfettered nature.30 Sibelius himself intuited this connection between folk song and the natural landscape. For example, during the process of composing **Kullervo**, he took walks through the forest while musing on the **Kalevala** and considering how to translate those thoughts into an orchestral score.31 In a real sense, nature was for Sibelius a sacred place—a helgedomen, as he put it in a diary entry. Indeed, Shepard has observed “extraordinary similarities between the interior of

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28 Quoted in de Törne, *Sibelius*, 70. Pun not intended.
29 Letter to Rosa Newmarch, February 8, 1906, in *Correspondence*, 55.
31 Tawaststjerna, *Sibelius*, 1:94.
virgin deciduous forest and the nave of a Gothic cathedral.”32 The same scholar also proposes that the forest has long been a symbol in northern Europe for an inscrutable, implacable wilderness that stands in opposition to civilization.33 As a symbol, such a landscape found expression in the musical style of Sibelius, whose tone poems depict forest settings through rune-like melodies, primitivist ostinatos, and forceful orchestration.34 These techniques produce a listening experience that is sublime in the technical sense of the word: the listener’s powers of comprehension are tested by the quantity of motivic repetition and the force of the orchestral sound-mass. Perhaps incomprehension is the music’s goal, for rather than painting wilderness as a “redemptive space,” Sibelius interprets nature as “oblivious to, unconcerned with, and standing apart from any human perception of it,” in the words of Hepokoski.35 Likewise, Richard Millet argues that the vision of nature that Sibelius presents is fundamentally alien to human understanding.36 In any event, Sibelius’s wild northern forest is far removed from Beethoven’s more peaceable sense of the pastoral.37 This contrast is brought home by Millet, who writes, “Sibelius knows the formidable silence of the

32 Shepard, Man in the Landscape, 172.
33 Ibid., 171.
37 Viret, Le retour d’Orphée, 273.
Nordic forest.” Subjectively speaking, the transcendental oscillations in the music of Sibelius seem to call forth this inscrutable forest world.

The connection between Sibelius’s music and natural landscapes is more than mere conjecture; we know that Sibelius drew inspiration from nature. For example, Sibelius’s brother-in-law Arvid Järnefelt said that Sibelius felt most alive when in the countryside, and the composer himself commented that the sight of swans in flight was a more powerful experience than that afforded by any work of art. In keeping with this ornithological proclivity, as a youth Sibelius imagined flocks of birds to be avian orchestras, with particular species corresponding to particular instruments. In addition, Bengt de Törne recalls that, after spending an evening watching a swan on a lake, his teacher Sibelius composed an inspired andante. Nor was this mere coincidence: Sibelius apparently considered the countryside “the best possible milieu” for composition. In fact, he was able to detect resonances between landscape and music. For example, his diary entry from August 1, 1912, contains an analogy between a symphony and a river. Specifically, Sibelius admired Mozart’s symphonic allegros for

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38 Millet, *Sibelius*, 114.
42 Quoted in ibid., 42.
43 Sibelius, *Dagbok*, 147.
their fluidity. And while conversing on the subject of the dramatic Finnish coastline, Sibelius said, “When we see those granite rocks we know why we are able to treat the orchestra as we do!” Clearly, nature played an important role in the development of Sibelius’s personal style, and it seems likely that it also influenced his use of oscillating harmonies in particular. For, in their wave-like repetition, transcendental oscillations evoke the cyclic qualities of nature; at the same time, their eschewing of tonal conventions suggests an abandonment of human constructs in favor of a freer, more “natural” approach.

4.2 Holding pattern

One special function of transcendental oscillations in Sibelius’s works is to demarcate spans of time during which nothing seems to happen, what I call “holding patterns.” According to Daniel Grimley, tone poems, as a genre, tend to incorporate episodes of stasis that paint sonic pictures of the external world. Sibelius’s tone poems are no exception, and his symphonies exhibit the same phenomenon. Specifically, it is typical for Sibelius to place a melody atop an orchestral background or sound-sheet whose repetitive quality often invites transcendental oscillation in the harmonic domain.

44 de Törne, Sibelius, 48–49.
45 Quoted in ibid., 97.
In this texture, if the melody represents an imagined protagonist, then the harmonic backdrop represents the landscape in which that protagonist maneuvers. In *The Wood Nymph*, for example, Sibelius depicts a “magical Nordic forest” by means of an “extended proto-minimalist passage,” as Grimley remarks. Similarly, Erkki Toivanen observes that, in the middle sections of symphonic movements, Sibelius often employs passages of slow music that are nearly devoid of harmonic motion. Indeed, one important characteristic of Sibelius’s mature style, a trait that also appears in works by Anton Bruckner and Arnold Bax, is a proclivity for episodes of harmonic stasis. These passages often oscillate between two chords for long stretches of time, exemplifying a duplication technique that Bourion calls “sniper fire” (*canardage*), or extreme repetition of an idea.

The quintessential holding pattern occurs in the movement “At the Seashore” from the suite Sibelius created out of his incidental music to Maeterlinck’s *Pelléas et Mélisande*. This tritone oscillation, with shades of Mussorgsky, continues for the entirety of the movement as a constant backdrop (Example 4.5). Occurring in the middle of the

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47 Ibid., 105.
48 Ibid., 101.
suite, the movement suggests a static doldrums that lies at the piece’s heart—no violently crashing waves occupy this particular seashore.


In what is perhaps a recognition of the radical quality of the movement’s tritone progression and extreme stasis, the score contains a note saying that “At the Seashore” may be omitted from performances of the suite at the performers’ discretion. Beneath the chords, Sibelius plants a D in the bass. This pitch is common to both B♭7 and E7, as is the G♯ (enharmonically A♭) that also persists throughout the movement. Given that the key signature of the movement has one flat and the melody emphasizes notes of the D-minor triad, the use of a D pedal point perhaps reinforces the idea that the movement is in D minor, or at least has a D tonic, despite the unrelated harmonies.
4.3 Dorian i–IV–i

Listening to Sibelius’s music, one is struck by the prevalence of the dorian i–IV–i oscillation. According to Tawaststjerna, although the dorian mode is not unique to Finland, Sibelius’s use of dorian reinforces the impression that his works are distinctively Finnish, given their folk-like melodies and folkloric subject matter.52 That is, because dorian differs from the common-practice natural minor, and because the common practice is characteristic of the great Austrian and German music of the eighteenth and early nineteenth centuries, the use of dorian signals a style that is peripheral to the perceived Germanic center of Western music. One could argue that the chief expressive difference between natural minor and dorian is that the raised sixth degree in dorian seems to offer an optimistic possibility of escape, while 5 in aeolian tends inexorably back down to 5.53 This centrifugal tendency of the raised sixth may contribute to the particular affect of the start of Sibelius’s Luonnotar: the i–IV–i progression at the opening of that work conveys, in the words of Tarasti, “primal chaos” (Example 4.6).54 The i–IV–i oscillation has the profile T:T-S, which seems to be the most common tonic-prolonging profile in Sibelius’s output.

52 Tawaststjerna, Sibelius, 34.
53 Moore, “The So-Called ‘Flattened Seventh,’” 188.
54 Tarasti, Myth and Music, 87.
Unlike Debussy, Sibelius never managed to complete an opera, though he tried for many years to write one based on the Kalevala. Even so, Sibelius had a good sense of musical drama. This sense is on display in the dorian opening of Luonnotar that introduces the listener to the eponymous nature goddess. The violins’ sixteenth notes rustle like leaves in a forest, while the B-major chord breaks through like a shaft of sunlight through clouds before F♯ minor swallows it up. By means of this simple harmonic oscillation, Sibelius sets the mythic stage. Indeed, the stage is set not only for the piece, but for all time: Luonnotar’s text comes from the creation story in the Kalevala,
so this dorian oscillation represents both the beginning of the piece and the beginning of the universe.

Example 4.7: Sibelius, Sixth Symphony (1923), first movement, partial reduction.

In addition to *Luonnotar*, the Sixth Symphony (1923) is another work that prominently features the i–IV–i alternation. Lionel Pike argues that the Sixth Symphony is built on D dorian but includes forays into the closely related keys of D minor, F major,
and C major.\textsuperscript{55} In particular, C major acts as foil and counterbalance to D dorian in this symphony.\textsuperscript{56} The piece exhibits what Samson calls “Palestrinian polyphony” that serves as a “powerful symbol of Volkish cosmology.”\textsuperscript{57} Starting at m. 191 of the first movement, Murtomäki observes harmonic alternations between tonic and supertonic in F ionian and C ionian.\textsuperscript{58} Perhaps the most striking oscillation in the movement, however, occurs at Rehearsal H (Example 4.7).

At Example 4.7, the D-dorian tonal center is firmly established for the first time. The cello melody resembles a runic song in contour and mood. The oscillation between D-minor and G-major sonorities continues for the duration of the twenty measures given in Example 4.7, indicating a degree of expansiveness that was foreign to the eminently concise Debussy. (The alternation is briefly interrupted by an F-major sonority, but I hear this chord as a prolongation of the D-minor harmony that participates in the oscillation.) Beneath the harmonies, the double basses play a C pedal, which comes across in performance as a faint rumbling rather than a truly distinct pitch. The running sixteenth notes in the violins give a sense of the rustling activity of the

\textsuperscript{55} Pike, “Tonality and Modality,” 6.
\textsuperscript{58} Murtomäki, “Modal-Tonal Techniques,” 74n.10
forest. Meanwhile, the cellos’ arching melody seems to soar above the landscape despite being lower in register than the violin part. One way to interpret this effect is that Sibelius presents the microcosm—the bustling activity of small life-forms—before zooming out to the macrocosm, the bird’s-eye view of the forest vista. In other words, we see first the trees (violins), then the forest (cellos). Indeed, there is a sense of horizontal infinitude in this symphony, as if the listener were flying solo across an immense plain.59 The B♭ that falls on the downbeat in the third measure of Example 4.7 creates the oscillation’s dorian quality. If Sibelius had written this passage in D minor instead of D dorian, it would exhibit B♭ instead of B♭. Imagine how much more confined, restricted, and ordinary the first part of Example 4.7 would sound in that case.

Like the Sixth Symphony, the tone poem Tapiola focuses on the dorian sound-world. The work opens with a sonority that combines pitches from a dorian major IV chord with the first scale degree of B dorian.60 Later on, we encounter a holding pattern, shown in Example 4.8.

59 Millet, Sibelius, 107.
60 Taylor, “Monotony,” 95.
Example 4.8: Sibelius, *Tapiola* (1926), mm. 51–68, reduction.

This majesterial double oscillation continues for some time beyond the end of Example 4.8. Indeed, it goes on for so long that one almost loses the sense of the hypermetric downbeat; this creates a disorienting effect in which the listener is not sure whether the oscillation is an arch form (E–Bm–C₇m–Bm) or responsorial (Bm–E–Bm–C₇m). The oscillation is dorian, with a tonal center on B. We know B is tonic thanks in part to the rune-like melody’s emphasis of that pitch in mm. 53–55. And we know that the passage is in dorian because of the alternations between ♯6 (G♯) and ♯5 (F♯). (Although the A♯s in the top staff are foreign to B dorian, I hear them as chromatic embellishments that do not disrupt the sense of being in dorian.) The double oscillation consists of two

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mode-defining dorian oscillations: i–IV and i–ii. In both oscillations, mode-defining dorian oscillations: i–IV and i–ii. In both oscillations, # distinguishes the mode from natural minor. The holding pattern seems to defy traditional conceptions of musical development and directedness. As such, it evokes a natural world undisturbed by human interference.61 Benedict Taylor remarks on the dorian double oscillation in Tapiola, calling it a “seemingly interminable sway of ‘dorian plagal’ oscillations.”62 For Millet, Tapiola’s repetition and stasis evoke an inhospitable wilderness, a forest god testing his strength against the world.63

4.4 Fifth Symphony

Transcendental oscillations signal their importance in Sibelius’s Fifth Symphony from the start. The piece opens with a I–ii–I oscillation (profile T:T-S) over which we hear a horn call that signals entry into a magical space (Example 4.9).64 Monelle calls this device the “horn of nocturnal mystery.”65 According to Hepokoski, the I–ii–I oscillation removes us from traditional functional tonality and creates a harmonic space in which conventional teleology does not apply.66

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61 Millet, Sibelius, 113.
63 Millet, Sibelius, 112–13.
65 Monelle, The Sense of Music, 60.
66 Hepokoski, Symphony No. 5, 63.
Example 4.9: Sibelius, Fifth Symphony (1915), first movement, opening, piano reduction.
The I–ii–I oscillation returns in the key of B toward the end of the first movement (Example 4.10). Example 4.10 depicts a surprising, forceful, and disruptive musical event in the second measure that dictates the course of the ensuing recapitulation, a type of event that theorists since Paul Bekker and Theodor Adorno have called a “breakthrough” (Durchbruch).67 The return to ii at the key-signature change creates an arch oscillation between ii and V in B ionian (with the chords in the first measure of the excerpt interpreted enharmonically). The second ii chord in this arch oscillation becomes the first chord of another oscillation, this time between C♯ minor and B major in B ionian. The alternation between C♯ minor and B major continues for several measures beyond the end of the example. For Hepokoski, the I–ii–I oscillation that returns at the moment of breakthrough has the quality of an “elemental, generative current.”68 At the breakthrough, following a cadential ii–V motion, Sibelius brings back the ii–I oscillation that had opened the piece. Thus, the harmonic motion at the breakthrough is ii–V–ii–I–ii–I... Note in Example 4.10 that this motion contains two different modal oscillations: the first is between ii and V, the second between I and ii. The first-movement breakthrough signals the start of what would be the recapitulation if we were to analyze the movement as a sonata form. However, like other breakthroughs, this moment

68 Hepokoski, Symphony No. 5, 68.
arrives with such force and novelty that it precludes the possibility of a typical or standard recapitulation.\footnote{Ibid., 67.}

Example 4.10: Sibelius, Fifth Symphony, first movement, breakthrough, piano reduction.

The first movement of the Fifth Symphony is in fact a fusion of two movements: opening and scherzo. After the breakthrough, the music accelerates and transitions into the scherzo. Furthermore, the ii–I oscillation reappears in the scherzo as a link with the first section of the two-part movement (Example 4.11).
Example 4.11: Sibelius, Fifth Symphony, first movement (scherzo section), twelve measures after reh. B.

Thus, the ii–I transcendental oscillation is a calling card that ties this multi-sectional movement together, helping to unite the scherzo with the movement’s first half. As in earlier examples in this chapter, Sibelius places the chordal oscillation over a pedal point (in this case an alternation between leading tone and tonic), thereby stratifying the texture. Later in the scherzo, the modal ii–I oscillation is transformed into a chromatic, Neapolitan II–I oscillation (Example 4.12).
Example 4.12: Sibelius, Fifth Symphony, first movement (scherzo section), seven measures after reh. H.

A majestic double oscillation underlies the third movement’s famous “Swan Hymn” (Example 4.13). In Hepokoski’s view, the entire second movement of the symphony may be heard as preparation for this climactic theme. The descriptive association between the theme and swans was established by the composer himself. In a diary entry from April 21, 1915, Sibelius described a religious experience he had had when witnessing sixteen swans in flight; he wrote, “Nature’s mysticism and life’s Angst! The Fifth Symphony’s finale theme...”70 The following year, the conductor Axel

70 Sibelius, Dagbok, 225.
Carpelan described this theme as a “swan hymn beyond compare” in a letter to the composer.\textsuperscript{71} As accompaniment to the melody, which imitates the call of swans, the horns state the double oscillation (Example 4.13).

This double oscillation follows a busy opening section with quiet strings scurrying in perpetual motion. With a thwack on the timpani, Sibelius breaks through the string material to present the double oscillation and the soaring melody above it. The music is tonally floating: although the piece is in the key of E\textsubscript{b} major, this oscillation avoids stating the E\textsubscript{b} tonic chord. Instead, we seem to be swinging between two poles: C minor and A\textsubscript{b} major. If C minor is heard as a tonic substitute, then the double oscillation may be construed with the profile T:T-S, with the G-minor chords passing between the two functional harmonies. The swan hymn serves as breakthrough for the piece as a whole and not just for the third movement. Indeed, the second movement is arguably one long preparation for this catharsis, despite the break in the action between the second movement and the third.\textsuperscript{72} The swan hymn abruptly discloses a transcendent realm that colors our experience of the entire piece.

\textsuperscript{71} Quoted in Hepokoski, \textit{Symphony No. 5}, 37.
\textsuperscript{72} Hepokoski, \textit{Symphony No. 5}, 71.
Example 4.13: Sibelius, Fifth Symphony, third movement, piano reduction, 1 measure after reh. D.

4.5 Britain

Sibelius’s distinctive style, including its transcendental oscillations, proved successful in Britain and inspired composers on the Isles to take similar approaches to
folk song, the modes, and extramusical topics drawn from legend. As Philip Ross Bullock observes, Sibelius liked Britain because its audiences and critics were particularly receptive to his artistic gifts.\footnote{Correspondence, 4.} For example, Sibelius admired the music of Ralph Vaughan Williams\footnote{Ursula Vaughan Williams, R. V. W.: A Biography of Ralph Vaughan Williams (London: Oxford University Press, 1964), 139.} and vice versa: Vaughan Williams dedicated his Fifth Symphony to him. Toivanen posits that one reason the British embraced Sibelius’s music so warmly is that their national identity was not as closely connected to their own musical achievement as was, for example, German or Austrian identity.\footnote{Toivanen, “The Allure of Distant Strains,” 57.} Writing in 1939, Krenek remarked that Sibelius enjoyed his greatest renown in the “Anglo-Saxon world.”\footnote{Krenek, Music Here and Now, 42.} Specifically, it seems British audiences appreciated Sibelius’s ability to deploy familiar, consonant sonorities in unfamiliar ways: Cecil Gray noted in 1927 that Sibelius proved it was “possible to convey a profound and original thought or to embody a striking and novel conception in simple and straightforward language.”\footnote{Gray, Contemporary Music, 189.}

Like Sibelius, British composers of the late nineteenth and early twentieth centuries drew on native folk-song tradition to infuse their concert works with an appealing modal atmosphere. The last two decades of the nineteenth century saw a

\begin{footnotes}
\item[73] Correspondence, 4.
\item[74] Ursula Vaughan Williams, R. V. W.: A Biography of Ralph Vaughan Williams (London: Oxford University Press, 1964), 139.
\item[76] Krenek, Music Here and Now, 42.
\item[77] Gray, Contemporary Music, 189.
\end{footnotes}
resurgence of interest in folk songs and Tudor music, two important sources of a modality that was refreshingly different from the standard tonal practice. Much as the eastern backwater of Karelia had become a source of deep national feeling in Finland, the regions of the British Isles that were furthest removed from cosmopolitan London were also those that seemed to furnish the most authentic modal melodies. For instance, in 1911, Annie G. Gilchrist argued that music of the Scottish Lowlands incorporated the leading-tone seventh more often than tunes of the Highlands; this phenomenon was taken to imply that the music of the more rugged, far-flung extremes of Great Britain preserved an ancient style that had been lost in the Lowland repertoire. And not only were the Highlands far from London; they were also far from Germany. Regarding this point, Gammon describes the general attitude toward German music among the British musical establishment in the late 1800s as a “mixture of feelings—at once awe, wonder and delight tinged with jealousy, inadequacy and inferiority.” The use of folk modality in sophisticated compositions gave British composers a way to distinguish themselves from the dominant Germanic style. It was also a means to escape modernity. For example, Vaughan Williams’s modal language conjures up a lost world, a rural idyll

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78 Gammon, “Folk Song Collecting,” 77.
80 Gammon, “Folk Song Collecting,” 76.
untainted by heavy industry. According to Michael Vaillancourt, Vaughan Williams had a penchant for setting lyrical moments in the dorian mode; for example, the first theme of his Third Symphony ("Pastoral") evokes C dorian.

Example 4.14: Ralph Vaughan Williams, Fifth Symphony (1938–43), Romanza, mm. 1–11.

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81 Pople, “Styles and Languages,” 618.
Example 4.14 shows the transcendental oscillation that opens the slow movement (Romanza) of Vaughan Williams’s Fifth Symphony. Here, conventional phrase teleology is suspended in favor of a constant harmonic rhythm and transcendental oscillations.

Example 4.14 is dominated by the A–Gm chromatic alternation. However, two C-major chords, including the first chord of the piece, embellish this oscillation. The second C chord creates an embedded arch oscillation: A–C–A, a chromatic-mediant (M3) alternation. The passage might be characterized as a hyper-oscillation—an oscillation between the A–Gm oscillation and the A–C–A oscillation. (Previously, we saw a hyper-oscillation in the first movement of La mer.) Alternatively, it could be heard as the double oscillation C–A–Gm–A–C with added Gm and A chords. The opening of the “Romanza” also recalls the beginning of Debussy’s La damoiselle élue in that it employs contrary motion in the outer voices and features stark, steadily changing chords.

As a demonstration of modality in Vaughan Williams’s style, Example 4.15 is an excerpt from Norfolk Rhapsody No. 1 that contains a i–VII–i (T:T-D) oscillation. The neighbor-chord motion arises from the superposition of neighbor tones. This passage is clearly modal rather than tonal because its tonic chord is E minor and there are D♭s instead of D♭s. However, we cannot tell for certain whether the excerpt is in aeolian or dorian. If there were a C♯ in Example 4.15, we could call the passage E aeolian, while a C♯ would invite the label of E dorian. In fact, Vaughan Williams keeps up the ambiguity
until m. 33, where a C₃ in the violins indicates E aeolian rather than E dorian. But the
first thirty-two measures seem to be in either aeolian or dorian.

Example 4.15: Vaughan Williams, *Norfolk Rhapsody No. 1* (1906), mm. 11–16, reduction.

The *Norfolk Rhapsody* is based on folk songs Vaughan Williams collected in
Norfolk, England. Like Sibelius, Vaughan Williams had a predilection for his country’s
traditional music, a penchant on full display in such compositions as the *English Folk
Song Suite* (1923), *Fantasia on ‘Greensleeves’* (1934) and *Five Variants of ‘Dives and Lazarus’*
(1939). Like runic melodies, English folk songs admit various harmonizations: not just
standard common-practice harmonizations, but also modal and even pantriadic
settings.83 Vaughan Williams was particularly enamored with the latter two possibilities.

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83 “Pantriadic” here refers to the free use of any major or minor triads in any order.
We saw the modal approach in the _Norfolk Rhapsody_, and his pantriadic bent reveals itself in the _Fantasia on a Theme by Thomas Tallis_ (1910).


In Example 4.16, which is the build-up to the climax of the piece, Vaughan Williams deploys a series of chromatic oscillations. In this respect, the passage resembles _La mer_ (Example 3.9), in which a quick succession of transcendental oscillations heralds the climax of the first movement. Specifically, Vaughan Williams opens with an M4 oscillation between C and A♭. He then moves to an M3 in which the C-major harmony is preserved but now alternates with E♭ rather than A♭. The final oscillation in the example is another M3, this time between G and E.
However, the oscillations in the Fantasia example have a disposition that is wholly different from those in the *La mer* example. In *La mer*, the return to the first chord in the oscillating progression increases tension because we are expecting the harmony to move to a new chord instead. By contrast, in the Fantasia (Example 4.16), we are not expecting the arrival of a new chord to break the oscillating pattern. Indeed, the threefold statement of the C–A₃ progression lulls us into believing it to be the normal state of affairs. Then, when the E₅-major chord breaks the pattern, it comes as a mild shock. In the Vaughan Williams, the arrival of a chord from outside the oscillation wrenches the music away to a different place, thus increasing the level of excitement. In short, whereas the oscillations at the end of the first movement of *La mer* create tension because we expect the repetition to stop, the passage from the Fantasia creates excitement because the repetition stops unexpectedly.

Another British composer influenced by Sibelius was Granville Bantock (1868–1946), who invited Sibelius to England in 1905. Thirty-five years later, Bantock would use modal oscillations in his *Celtic Symphony*. In Example 4.17a, Bantock opens the piece with an L oscillation between I and iii in C ionian (profile T:T-D). In Example 4.17b, the same melody is reharmonized (and its intervals adjusted) to be in aeolian—now the L oscillation is replaced by an R oscillation and the mode changes from ionian to aeolian. However, the functional profile remains T:T-D.

4.6 The Oceanides

As a case study showing how Sibelius uses transcendental oscillations to structure an entire piece, consider his 1914 tone poem *The Oceanides*. This work is saturated with whole-step alternations that fall into three categories. Some of these oscillations are between major chords, others occur between minor harmonies, and still others are not, strictly speaking, harmonic oscillations at all but contrapuntal neighbor-note motions that I call “surface ripples” in recognition of the work’s watery program.
Figure 4.18 summarizes the occurrences of these three types of whole-tone alternation over the course of the piece. In an abstract sense, the circularity of oscillations can evoke ocean waves, making the device well-suited to this tone poem.

<table>
<thead>
<tr>
<th>Major</th>
<th>Minor</th>
<th>Surface ripple</th>
</tr>
</thead>
<tbody>
<tr>
<td>m. 18 E7–D–E7 (II7–I, lydian)</td>
<td>36 C#7–Bm–C#7 (ii7–i)</td>
<td>25 d/a – e/b</td>
</tr>
<tr>
<td>62 G7–F–G7</td>
<td>90 D#7–Cm–D#7</td>
<td>90 b♭ – c</td>
</tr>
<tr>
<td>94 F#7–Em–F#7</td>
<td></td>
<td>105 e♭/b♭ – d♭/a♭</td>
</tr>
<tr>
<td>113 C–B♭–Ab</td>
<td>109 c/b – f♯/c♯</td>
<td>113 e – f♯</td>
</tr>
<tr>
<td>118 D–C–B♭</td>
<td>124 C#7–Bm–C#7</td>
<td>118 f♯ – g♯</td>
</tr>
<tr>
<td>139 D–C–D (I–VII, mixolydian)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4.18: Whole-step oscillations in The Oceanides.**

On the largest scale, the musical structure of The Oceanides is articulated by means of oscillations between major chords. After the first establishment of D major as tonic, we hear a lydian II7–I oscillation with the profile T:T:S (Example 4.19). This D-lydian alternation is later transposed to F lydian at m. 62. As a build-up to the climactic cadence on D toward the piece’s end, Sibelius retrieves the idea of major chords separated by whole step to create two monumental whole-step progressions, C–B♭–A♭ and D–C–B♭, which allude to the lydian oscillations without actually oscillating. After
the storm at sea has passed, Sibelius ends the work with the mixolydian alternation D–C–D (profile T:T-D), shown in Example 4.20, which serves Caplin’s “after-the-end” function. If the raised fourth scale degree of lydian is tense (as it literally tends to resolve up by half step to 5), the lowered seventh scale degree of mixolydian is relaxed. Thus, the large-scale replacement of lydian by mixolydian signifies a release of tension and the return of calm seas.

Example 4.19: Sibelius, *The Oceanides* (1914), piano reduction, mm. 18–21.
Example 4.20: *The Oceanides*, end, reduction.

In addition to whole-step alternations between major chords, we also find in *The Oceanides* several oscillations between half-diminished sevenths and minor triads in which the chordal roots are likewise separated by whole step. This trope’s first appearance is given in Example 4.21, where an oscillation prolongs the B-aeolian tonic by alternating it with a subdominant chord. During the oscillation, the accompanimental voices exhibit voice exchange through contrary motion: while one voice states E–F♯–G–F♯, the bass articulates G–F♯–E–D.
Finally, the whole-step alternation idea appears not only on the level of harmonic progression but also within single harmonies. Example 4.22 shows how Sibelius includes a “surface ripple” between the dyads $d/_{s}$ and $c/_{b}$, a fluctuation that does not change the underlying D-major harmony. These contrapuntal manifestations of whole-step alternation also appear in concert with the true harmonic shifts already discussed, as in mm. 90 and 113. In sum, the notion of alternation by whole step gives rise to many transcendental oscillations in *The Oceanides* as well as surface-level neighbor activity and provides a framework for understanding the piece’s overall structure. Figure 4.18 summarizes these findings.
4.7 The Lord of the Rings

Like Sibelius, J. R. R. Tolkien (1892–1973) was deeply inspired by Finnish mythology.84 For an example of recent music influenced by Sibelius’s style, I end this chapter with an examination of oscillations in Howard Shore’s soundtrack to the *Lord of the Rings* film trilogy (2001–03), which adapts Tolkien’s work. This score operates under a dichotomy between the familiar, represented by diatonicism, and the strange, symbolized by chromaticism.85 In Frank Lehman’s view, voice-leading considerations create a concurrent polarity in *The Lord of the Rings*: smooth voice leading connotes peace while disjunct motion indicates strife.86

Shore’s soundtrack is indebted to Sibelius’s sense of grandeur and use of transcendental oscillations to evoke soaring space. In one instance, Shore directly quotes a melody from Sibelius’s Third Symphony. This quotation occurs as part of the “Fellowship Theme” (Example 4.23) from the first installment of the trilogy, *The Fellowship of the Ring* (2001).

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85 Rone, “Scoring the Familiar,” 38.

Example 4.24: Sibelius, Third Symphony (1907), first movement, reduction for piano four hands by the composer.

The quoted material is in mm. 3–4 of Example 4.23. The original source by Sibelius is shown in Example 4.24. Shore starts the chorale tune with the progression D–F–D. This is an M3 oscillation, and M3 motion tends to be associated with heroism in
film scores. In fact, the entire excerpt (Example 4.23) has two competing—or complementary—keys: D major and F major. F major governs mm. 3, 4, and 7 of the excerpt, while D major governs mm. 1, 2, 5, 6, and 8 (although in mm. 1 and 5 the F-major chord disrupts the D tonality temporarily). Yet despite this tonal “instability,” the passage does not sound unstable. Rather, D major and F major work together to ground the passage, sharing the labor of tonal centering. This collaboration between tonics is apt for a tune meant to symbolize fellowship. The D–F–D oscillation in Example 4.23 serves Caplin’s “beginning” function, as it prolongs tonic (D major) at the start of the phrase.

Rone describes the Lord of the Rings soundtrack’s basic tonal set-up as follows: “Shore’s score parallels an ordered triple of races (Hobbits, Men, and Elves) with an ordered triple of harmonic accompaniment (major-minor diatonic, modal diatonic, and nondiatonic).” Furthermore, each of those ordered triples starts with the most familiar element (in the context of Tolkien’s story or of diatonic tonality) and ends with the most exotic. The “Rohan Fanfare” is the leitmotif for the human kingdom of Rohan; as such, it is modal, and specifically dorian (Example 4.25). As Rone states, the modal nature of the Rohan fanfare and other themes that represent the race of Men connotes ancient heritage and heroics. Lehman contrasts these modal themes with the chromatic,

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87 Erik Heine, “Chromatic Mediants,” 114.
88 Rone, “Scoring the Familiar,” 37.
89 Ibid., 46.
pantriadic elements of the score, such as we find in the chromatic-mediant oscillation of the Fellowship theme.


The visual aesthetic of the Rohan kingdom in the film is Anglo-Saxon, with wooden longhouses and spiralled metalwork. To match this antique Scandinavian ambience, Shore orchestrates the Rohan fanfare for Hardanger fiddle, a traditional Norwegian instrument. This instrumentation provides another link between Shore and Sibelius. For although Finland’s national language is not Indo-European, it is still a Nordic country. A Hardanger fiddle may symbolize a Sibelian influence in *The Lord of the Rings* since both Sibelius and the Hardanger fiddle are broadly emblematic of Europe’s northernmost reaches.

The oscillation in the “Rohan Fanfare” is a dorian i–IV–i, the characteristic Sibelian oscillation. The major IV chord in the dorian mode is aspirational: with its raised sixth degree, it invites a rising pitch contour. In the films, one gets the sense that the small kingdom of Rohan is on the cusp of achieving greatness. Rohan is a foil to

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Gondor, the other human realm in Middle Earth. Gondor, by contrast, is ossified: an old civilization that has lost the youthful, adventurous impulse that characterizes Rohan.

Rohan is energetic; it still embraces its nomadic roots. (Witness, for example, the speed with which the citizens evacuate the capital for the refuge of Helm’s Deep when threatened by an encroaching army.) To depict Rohan’s alert, forward-looking nature, Shore employed a dorian transcendental oscillation.

![Musical notation]


Another transcendental oscillation in *The Lord of the Rings* occurs in reference to the Elves’ civilization at Rivendell. In Tolkien’s mythos, elves are characterized as exotic beings. In the film adaptation, the architecture at Rivendell is curvilinear, rather reminiscent of Art Nouveau or the architect Antoni Gaudí’s *modernisme*. The elves’
structures emerge organically from the surrounding forested hills. To depict this exotic realm in music, Shore used a chromatic-mediant oscillation (Example 4.26).

This is an M4 oscillation that acts as a counterpart to the M3 oscillation characterizing the Fellowship. The undulating cello line that spells out the harmony mirrors the curving arabesques of Elvish architecture. This particular oscillation is peaceful. It is an oasis in the middle of the score, just as Rivendell itself is an oasis for the Fellowship. Using a chromatic oscillation makes sense here, for chromatic chord relations sound more exotic than diatonic ones and Rivendell is intended as an exotic place. In particular, the M4 chromatic-mediant motion has been associated with the magical and the unfamiliar since the nineteenth century, as in mm. 14–15 of Schubert’s song “Nacht und Träume.” Frank Lehman observes that Shore’s score frequently exhibits pantriadic chromatic harmony as accompaniment to awesome visual panoramas, and “Rivendell” is no exception.

In this chapter, I have located the source of Sibelius’s transcendental oscillations in his fascination with modality, a language suggested by Karelian runic song. I have also elucidated his frequent use of the dorian i–IV–i oscillation and harmonic holding

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patterns. The Fifth Symphony and The Oceanides served as case studies to illustrate Sibelius’s employment of transcendental oscillations as recurring structural elements. Finally, I examined works inspired by Sibelius, including Howard Shore’s Lord of the Rings soundtrack and several examples by British composers. Like Debussy, Sibelius exemplifies a late nineteenth- or early twentieth-century perspective on foreground oscillations. In the next chapter, by contrast, I turn to a composer whose practice was influenced by the American minimalism of the 1960s and ’70s.
5. **Sondheim**

While in high school, I played violin in a pit orchestra for a production of Stephen Sondheim’s musical *Into the Woods*. The violin part’s first page consisted of an endlessly repeated alternation between two pitches. This was probably the first time I took notice of a transcendental oscillation. As we shall see, Sondheim uses oscillating harmony prolifically in his musicals.

In the music of Debussy and Sibelius, transcendental oscillation was developed as far as nineteenth-century musical norms would allow. The further evolution and proliferation of this harmonic technique would require an infusion of new thinking in the twentieth century, a change that arrived in the 1960s and 70s in the form of minimalism. While we can appreciate the prolonged oscillations of composers like Satie, Mussorgsky, and Sibelius as “proto-minimalist” in their own way, we have to wait until the late twentieth century to encounter a true minimalist aesthetic. This aesthetic may be summarized as an appreciation for extensive repetition as something that does not connote poverty of artistic imagination but rather is an essential tool in the composer’s kit. Satie and Mussorgsky are exceptions that prove the rule: their interminable repetitive chord progressions are striking because they are atypical in a nineteenth-century context. It was not without reason that their contemporaries considered them “weird” composers. The extreme holding pattern that one finds in Sibelius’s “By the
Seashore” (Chapter 4) is similarly bizarre. By contrast, in the popular music of the late twentieth and early twenty-first centuries, it is not the least bit unusual to cycle back and forth between two chords many times in a row. The Broadway musicals of Stephen Sondheim manifest this minimalist bent.

Like any harmonic language, Sondheim’s represents a confluence of various trends. In the first section of this chapter, I survey transcendental oscillations in the Great American Songbook idiom that Sondheim inherited, and in the following section, I discuss the importance of Maurice Ravel to Sondheim’s musical sensibility. Following an explanation of pedal points in Sondheim’s harmony, I present five general attributes that emerge from the study of his transcendental oscillations. Finally, I explore transcendental oscillations in detail in a single musical, Sunday in the Park with George, showing how Sondheim obtains dramatic and musical unity through systematic use of the technique. If one main point emerges from this chapter, it is that of the composers on whom this study concentrates, Sondheim has the most contrapuntal idiom.

5.1 Forerunners of Sondheim on Broadway

To understand fully Sondheim’s style, we must understand classic Broadway harmony. In this section, I trace the development of transcendental oscillations in show tunes leading up to the arrival of Sondheim’s mature musical language in the 1970s.
The harmonic idiom of the traditional show-tune style is derived largely from the common practice of European art music. Classic show tunes rely on functional chord motion with frequent applied dominants. However, elements foreign to traditional tonality are also found. For example, Broadway composers often embellish the chords in the circle of fifths with added sevenths, sixths, or seconds. According to Krenek, Debussy’s harmonic innovations were taken up by Tin Pan Alley composers and turned into matters of routine; big-band arrangers had “despoiled the lovely arsenal of Debussy’s harmony.”¹ Other ingredients in the harmonic lexicon of classic Broadway include blue notes: chromatically altered thirds, fourths, and sevenths of the major scale. However, these blue notes are generally restricted to the domain of embellishment and rarely disrupt the underlying common-practice progression. As a case in point, twelve-bar blues progressions, with their typical $V^7–IV^7$ motion, are rare in classic American show tunes, though they appear occasionally. In short, the Broadway tradition of the Great American Songbook was based on tonal progressions with relatively few transcendental oscillations to be found, at least compared to the works of a composer like Debussy.² A passage that exemplifies the superficial (yet nonetheless beautiful)

embellishment of functional chord progressions in classic Broadway songs appears in Example 5.1, taken from Frank Loesser’s *Guys and Dolls.*

Example 5.1: Frank Loesser, “I’ll Know” (1950).

Example 5.2: Gershwin, “Oh, Lady Be Good!” (1924), start of refrain.

The classic show-tune style is, for all intents and purposes, identical to the “Tin Pan Alley” idiom. However, Tin Pan Alley is not the same as Old Broadway. Although the two repertoires are sometimes regarded as synonymous, Tin Pan Alley is, strictly speaking, the sheet-music publishing industry in Manhattan in the late nineteenth and first half of the twentieth centuries. Broadway show tunes, on the other hand, are songs that were either first performed in Broadway musicals or became famous because they were performed in such musicals. Of course, the two categories overlap, since many show tunes were published as sheet music by Tin Pan Alley firms.
Every chord in Example 5.1 is decorated with a seventh. The progression follows common-practice conventions except for the motion from C7 to Am7 in the third measure, but even this progression is quite close to the common practice given that Am7 has two pitches in common with the more conventional F-major chord. “I’ll Know” exemplifies the tendency of classic show tunes to embellish functional harmony in a way that does not disrupt the sense of a functional progression.

Nonetheless, some transcendental oscillations do appear during what Allen Forte calls the Golden Era of American popular song, which lasted from around 1924 to 1950. For example, the refrain of the Gershwin brothers’ title song from the 1924 musical Lady, Be Good! opens with a chromatic oscillation (Example 5.2). The progression arises from a concatenation of neighbor notes: the pitches B♭, D, and another D alternate with B♭, E, and C respectively. At the same time, the common tones G and D ensure continuity between the two harmonies. Thus, the pitch class D appears at multiple pitch levels within the G-major chord in m. 1 and moves to three different pitch classes (E, C, and D) in the next measure.

In mm. 1–4 of Example 5.2, we find a chromatic oscillation between the tonic (G major) and an altered subdominant (C⁹), adhering to a T:T-S functional profile. The addition of B♭ to the C chord in m. 2 makes this oscillation chromatic rather than diatonic. Also, the B♭ is 3 in the key of G major. Since 3 is one of the three most common
blue notes, Gershwin’s C⁰ chord may echo blues practice. At the same time, the underlying I–IV–I root motion lies within common-practice syntax. So, like the early transcendental oscillations in European art music, the early transcendental oscillations in American musical theater emerged subtly from conventions of the style, extending the genre’s parameters in a gradual way. In other words, there was no abrupt shift away from standard practice but rather a steady evolution of the idiom toward more frequent inclusion of transcendental oscillations. Further evidence of the subtlety of this change can be found in the second of half of Example 5.2. Indeed, after m. 2, the phrase is quite conventional: tonic moves to dominant seventh via a chromatic passing chord, after which the dominant resolves to the tonic triad. Thus, Example 5.2 demonstrates how the classic American show tune blended influences from the blues with typical European harmonic syntax. The addition of blue notes and coloristic extensions to common-practice chords rendered the classic show-tune idiom a distinctive style in itself and invited composers like Sondheim to experiment further with its harmonic language.

One theater composer who regularly exploited transcendental oscillations was Sondheim’s mentor Leonard Bernstein (1918–90). Before West Side Story, Bernstein made his Broadway debut with the musical On the Town (1944), an adaptation of a ballet (Fancy Free) choreographed by Jerome Robbins. In “Some Other Time,” a song from On the Town, Bernstein employs a modal oscillation with the profile T:T-D (Example 5.3).

“Some Other Time” follows the typical form of show tunes and Tin Pan Alley songs: introductory verse plus AABA refrain. The excerpt shown in Example 5.3 comes from the verse. Bernstein confines the transcendental oscillation to the verse section and reverts to typical, common-practice show-tune style in the last three measures of Example 5.3. The ensuing refrain has more conventional harmony than the verse. In this way, the oscillation is used at the beginning of the work as an unsettled introduction to
be resolved by the refrain’s more conventional harmonic language. The verse’s oscillation is mixolydian, alternating between C and Gm\textsuperscript{11}. As in Example 5.2 by Gershwin, the pitch that makes the oscillation transcendental is a blue note. In the Gershwin, the B\textsuperscript{♭} in the C\textsuperscript{9} chord could be construed as ∫\textsuperscript{3} in G major. In Bernstein’s song, on the other hand, the B\textsuperscript{♭} that turns the G chord from a regular dominant into a minor eleventh may be thought of as ∫\textsuperscript{7} in C major. In both cases, the B\textsuperscript{♭} seems to have been derived from the blues. But notice how much longer Bernstein’s oscillation lasts.

Gershwin’s oscillation in “Oh, Lady Be Good!” is one and a half cycles long—the C\textsuperscript{9} can easily be “reduced out” as an ephemeral neighbor to the G tonic. In “Some Other Time,” by contrast, the oscillation continues for five complete cycles. In the Bernstein, the non-tonic chord (Gm\textsuperscript{11}) is an equal and opposite partner to tonic. “Some Other Time” exemplifies the expanding role of transcendental oscillations in show tunes over the course of the first half of the twentieth century.

In “Some Other Time,” the transcendental oscillation occurs in the introductory verse. However, we also find transcendental oscillations in refrain sections, such as Example 5.4 by Cole Porter from the same year as On the Town.
Example 5.4: Cole Porter, “Ev’ry Time We Say Goodbye” (1944), start of refrain.

In Example 5.4, the phrase starts with a threefold statement of an Eb–Cm oscillation. This harmonic alternation makes it seem as though the speaker is as reluctant to “say goodbye” to tonic as to her love. Eventually, however, the harmony is wrested away from the tonic-submediant duality and moves to a typical ii–V–I cadence at the end of the excerpt.

We find another instance of a refrain-based transcendental oscillation in Bernstein and Sondheim’s *West Side Story* (1957). Example 5.5 gives the relevant excerpt from the song “Tonight,” which exhibits a lydian I–II–I oscillation over a pedal on 1.

As in “Ev’ry Time We Say Goodbye” (Example 5.4), the transcendental oscillation in Example 5.5 accompanies the song’s title phrase, or “hook,” rather than being relegated to the less-important introductory verse.

A third instance of a transcendental oscillation used in the body of the refrain occurs in “Two Lost Souls” (Example 5.6) from the 1955 musical *Damn Yankees* with music by Richard Adler (1921–2012) and Jerry Ross (1926–1955). Had it not been for Ross’s untimely death, the pair would probably have become one of the greatest
songwriting teams of American history, rivaling the Gershwins and Rodgers & Hammerstein. As it stands, they left us with two sparkling musicals of the 1950s, The *Pajama Game* and *Damn Yankees*.

Example 5.6: Adler and Ross, “Two Lost Souls” (1955).

For nearly the entirety of the first A section of the refrain (Example 5.6), Adler and Ross employ M3 chromatic-mediant oscillations, first between $E_b^{\text{add}6}$ and $G_b^{\text{maj}7}$ and then between $A_b^{\text{add}6}$ and $C_b^{\text{maj}7}$. However, at the end of the phrase, the transcendental harmony yields to a more conventional V–I progression. This shift reflects the lyrics: when the lyrics describe “lost souls,” the harmony is similarly detached from functional moorings. But when the characters realize they’ve “got each other,” the turn to an authentic cadence produces a similarly comforting impression.

\[ T \quad M \quad T \quad M \quad T \quad M \quad Eb \quad Eb^7 \]

Two lost souls on the highway of life...

\[ V/Iv \]

\[ T \]

...We’ve got each other...

\[ T \]

4 The transposition of the first oscillation up a fourth to produce the second oscillation resembles the blues practice of moving from I to IV in the second phrase of the form, a resemblance reinforced by the status of $D_b$ and $G_b$ as blue notes in the key of $E_b$. 249
The oscillation procedure of “Ev’ry Time We Say Goodbye,” “Tonight,” and “Two Lost Souls” synthesizes those of “Oh, Lady Be Good!” (Example 5.2) and “Some Other Time” (Example 5.3). In “Oh, Lady Be Good!,” the oscillation occurs prominently at the start of the refrain, but it is short (just one and a half cycles). In “Some Other Time,” the oscillation is long, but it is confined to the less-important verse section rather than the refrain. In “Ev’ry Time We Say Goodbye,” “Tonight,” and “Two Lost Souls,” however, the oscillation is given ample space (three cycles, two and a half cycles, and three cycles, respectively) and occurs at the start of the refrain. By means of examples from 1924 (Lady, Be Good!) to 1944 (On the Town and “Ev’ry Time We Say Goodbye”) to the 1950s (Damn Yankees and West Side Story), we can trace a progression in the development of transcendental oscillations as used on the Broadway stage. From unobtrusive beginnings, transcendental oscillations grew more prominent in musical theater. Just as transcendental oscillations in European art music started out as subsidiary effects and became ubiquitous strands of the musical fabric with Debussy, so in American show tunes did these harmonic devices originate as fleeting coloristic excursions and eventually become bedrock progressions of the songs in which they appeared.

What caused transcendental oscillations to go from fleeting embellishments to integral components of style in the American musical? The answer lies with the
proliferation of *vamps*, or accompanimental ostinatos in a work of musical theater. Originally, vamps were used as underscoring to accompany spoken dialogue. A vamp is designed to admit repetition *ad libitum*, since the spoken dialogue may take a variable amount of time from performance to performance. Once the dialogue is finished, the conductor signals to the orchestra that the vamp is over and they proceed to the next segment of music, which is usually an accompaniment to singing.

Early vamps were meant to mark time, to be unobtrusive, to provide a particular atmosphere to the dialogue, and to smooth the unnatural transition from speech to song. However, theater composers used vamps more prolifically over time, with vamps becoming part of the substance of the song itself rather than mere introduction to the song. This process reached its peak in show tunes of the 1960s and 70s. Sondheim was a prominent figure in this new approach to vamps, but he was not the first to recognize the potential for short, repeating musical figures to underlie songs effectively. It was the creative team of John Kander (b. 1927) and Fred Ebb (1928–2004) and their cohorts who brought the vamp to new heights of dramatic power.\(^5\)

In 1966, the epochal musical *Cabaret* hit the Broadway stage and galvanized the medium in terms of subject, dramatic form, and musical style. This musical inaugurated

a new era on Broadway in which the profound influence of the titans Rodgers and Hammerstein began to wane. With music by Kander and lyrics by Ebb, *Cabaret* was based on novels by Christopher John Isherwood about Weimar-era Berlin. Director Harold Prince envisioned that the musical’s songs would fall into two categories. One set of songs consisted of diegetic music performed at the Kit Kat Klub, the titular cabaret. The others were traditional book numbers that advanced the stories of the cabaret’s patrons. This innovative structure lent *Cabaret* the distinction of being the first of many “concept musicals” in Broadway history. The musical language of *Cabaret* is a pastiche of Kurt Weill numbers such as those found in *Die Dreigroschenoper* (1928). Weill’s music tends to be economical, repeating a single melodic figure over slowly changing chords. Consider, for instance, the famous song “Die Moritat von Mackie Messer” (Example 5.7).

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7 In a striking connection, Weill’s wife Lotte Lenya, who played Jenny in the original production of *Die Dreigroschenoper*, also played Fräulein Schneider in the original production of *Cabaret*. 

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Example 5.7: Kurt Weill/Bertolt Brecht, “Die Moritat von Mackie Messer” (1928), English version (“Mack the Knife”).

In Example 5.7 the pitch A takes up most of the vocal melody. However, the chords beneath it change, moving to functions that in traditional tonal music would not include A: namely, V and I in the key of C. Because the A persists in spite of these chord changes, we can characterize the melody as divorced from the harmony.\(^8\) The harmonic

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rhythm is fairly slow, with each chord lasting two full measures. Weill’s repetitive, motivic approach would resonate with later music by Kander as well as Sondheim.

Kander took Weill’s model and ran with it. In the opening number of *Cabaret*, a vamp repeats insistently beneath the welcome to the audience delivered by the Master of Ceremonies (Example 5.8).

![Example 5.8: John Kander/Fred Ebb, “Willkommen” (1966).](image)

In Example 5.8, we can hardly speak of a chordal oscillation—it is more of a one-chord riff than a two-chord alternation. Kander repeats a B♭-major triad with added sixth in a two-measure vamp that is stated four times before the M.C. enters. At the start of the vocal line, Kander does alter the pitch content of the accompaniment slightly: A replaces G for a moment before returning to G. We have a *pitch* oscillation in mm. 3–4, as A alternates with G. However, it seems a stretch to call this motion a chordal oscillation. Rather, there seems to be just one chord that governs the entire passage, and the chordal seventh of A is a neighbor tone to the true chord tone of G.

Melodically, Kander’s song resembles Weill’s. Following Example 5.8, Kander reiterates the vocal melody, but this time over a ii chord instead of tonic. Once again, the
melody seems divorced from the harmony. By refusing to conform to our expectations of how a melody should behave in relation to a tonal chord progression, the vocal lines in “Mack the Knife” and “Willkommen” provide a melodic counterpart to the idea of transcendental chordal oscillation. For while a transcendental oscillation refuses to resolve complacently in a conventional tonal fashion, so too does a divorced melody refuse to align conventionally with the harmony. In short, both transcendental oscillation and divorced melody lend the music instability, and hence interest. In addition, “Willkommen” demonstrates the growing ubiquity of oscillating vamp figures in show tunes over the course of the twentieth century.

Kander and Ebb were the vamp kings of show business in the 1960s and 70s. Many of their memorable hits open with a distinctive vamp. These include not only “Willkommen” but also the theme from the Martin Scorsese film *New York, New York* (not to be confused with Bernstein’s “New York, New York” from *On the Town*). The song has received two canonical recordings. The first was made by Liza Minnelli for the film’s soundtrack. Minnelli’s recording was later eclipsed in popularity by Frank Sinatra’s, with a swaggering, brass-heavy arrangement by Don Costa. There is no apter expression of big-city dreams in music (Example 5.9).

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9 The song’s potent symbolism was not lost on New York City institutions, including the Yankees baseball team. It became tradition at the old Yankee Stadium for Sinatra’s version to be played after home wins and

Because the unit of repetition in a vamp is short, it usually contains just one or two chords. As a result, vamps are conducive to transcendental oscillations. The theme from New York, New York (Example 5.9) exemplifies this tendency. The first chord in the oscillation is tonic: F major with added sixth. (The E♮ in the first measure is an appoggiatura that resolves to D.) The second chord (mm. 3–4) is more complicated. Looking at the bass line, one might assume the chord above were a dominant V, since C and G outline the fifth of the dominant in the key of F. However, the upper voices of the
piano reduction contain a prominent F, which is scale degree 1 and not part of V.

Indeed, if you omitted the low Cs in the left hand, the chord would seem to be Gm7, or ii7 in F major. One possible label for the harmony expressed in mm. 3–4, with all parts taken into account, is Gm7/C. This is a “sus” chord, short for suspended, because 1 is suspended over 5 in the bass. In practice, it is convenient to think of such a chord as ii7 over a pedal point on 5. (Later in this chapter, we shall see 5 used as a pedal in examples by Sondheim.) The chord in mm. 3–4 thus combines the harmonic functions of pre-dominant and dominant. The Gm7/C chord has pre-dominant characteristics because it emphasizes 2 and 4, but it also serves a dominant function insofar as it alternates with tonic to establish the tonal center and contains 5 in the bass. At any rate, the alternation between F major with added sixth and Gm7/C is not part of the common practice and is therefore a modal oscillation.

An extremely similar vamp occurs at the start and end of another show-stopping tune of the 1970s: “One” from the musical A Chorus Line with music by Marvin Hamlisch and lyrics by Edward Kleban. The song is diegetic, a number from the fictional show for which the characters in A Chorus Line are auditioning. It is a pastiche of the classic show tune style along the lines of a Jerry Herman number like the title songs of Hello, Dolly! or Mame. The strutting groove, the stride-bass accompaniment, the sinuous chromaticism of the melody and the faintly bluesy overtones—all these contribute to the impression of
an old-fashioned Broadway showstopper. However, the transcendental oscillation that pervades the song is pure 1970s in its use of the major-seventh chord (Example 5.10).


For director-choreographer Michael Bennett, the reprise of “One” was a simple barn-storming eleven-o’clock number designed to send the audience out of the theater with a smile.¹⁰ *A Chorus Line* is surely the most famous musical to end with a fade-out: the vamp repeats several times and fades away as the audience’s applause grows. (We

have therefore a quintessential example of Caplin’s “after-the-end” function.) The extreme repetition of the vamp figure resonates with the repetitiveness of the visual spectacle, which presents identically-clothed dancers performing the same routine in lockstep unity. Adding to the sense of immense uniformity is the mirror placed at the back of the stage, which reflects the image of the dancers and makes it seem as though there are twice as many performers as there really are, especially when viewed from a theater balcony. In terms of subject matter, “One” deals with the difficulty facing an individual who wants to stand out from the crowd. “One singular sensation, every little step she takes,” goes the lyric, but the characters who sing it are not singular whatsoever. Rather, they are interchangeable parts in the machinery of the chorus line. By its very staging as well as its musical content, the song depicts the anonymous throngs of the modern megalopolis, a depiction reinforced by the machine-like repetition of the vamp.

Sondheim commonly generates songs from a vamp, or what he calls a “musical atmosphere ... anything from a running figure to a chord change.” He builds the melody atop this repetitive foundation. In Sondheim’s songs, a device that had previously been restricted to underscoring for dialogue passages now saturates the entire accompaniment, making the songs truly vamp-based. A similar process occurs in the

history of French piano music: Johnson observes that “what had been merely the figuration of accompaniment figures in Fauré’s songs becomes the material itself in the piano music of Ravel and Debussy.” Thus, in both French piano music and American musical theater, a subordinate accompaniment technique acquired greater musical importance over time. Certainly, vamps are central to Sondheim’s compositional method. In conversation with Stephen Schiff, Sondheim says, “If I had to pick the single most important element that can allow me to go forward in a song, it would be neither the melody nor the refrain line ... It’s the accompaniment.” It seems that Sondheim’s process entails finding a satisfactory accompaniment pattern first, with bass and chords, and then layering the vocal part on top of that structure.

5.2 Ravel

Although Sondheim’s musical language, as we shall see in a moment, demonstrates unmistakable continuity with the show-tune style of his Broadway forerunners, he prefers to listen to classical music. Freedman cites Ravel, Rachmaninoff, Prokofiev, Copland, and Britten as Sondheim’s main influences. Furthermore, Sondheim specifies, “I’m not particularly fond of atonal music. I’m very tonally...

14 Freedman, “Words and Music.”
oriented. I’m very old-fashioned—I’m about 1890. I’m still early Ravel—that’s my idea of terrific.” 15 The era to which he alludes was rich in transcendental harmony, for though composers were still being educated in the tonal tradition, they were also blazing new harmonic trails in their own compositions, as Chapters 3 and 4 showed.

One way in which Sondheim evokes Ravel is in his feel for tight, economical construction. Casella remarked that whereas Debussy was influenced by the “soft and voluptuous muse of Massenet,” Ravel was more taken with the “neo-classical spirit” exemplified by Fauré. 16 Ravel also showed Sondheim a means of enriching tonal harmony through unresolved dissonances. 17 Sondheim’s senior paper at Williams College was on Ravel’s Piano Concerto for the Left Hand; of that work, Sondheim wrote, “The harmony is what I would call ‘typically Ravelian.’ Lots of ninths and sevenths... open and parallel fifths and sevenths, modulation by enharmonics, etc.” 18 The same paper refers to Ravel’s repeating accompaniment patterns as “vamps,” suggesting a connection between the French concert composer and American theater music.

15 Quoted in Mark Eden Horowitz, Sondheim on Music: Minor Details and Major Decisions (Lanham, MD: Scarecrow Press, 2003), 117.
17 Ibid., 32.
In conversation with Mark Eden Horowitz, Sondheim declared, “I live on seventh chords,” and attributed that predilection to Ravel’s influence. The Ravelian interpolation of unresolved dissonances in Sondheim’s music has evoked less-than-positive reactions from some quarters. For example, when confronted with the score to *A Funny Thing Happened on the Way to the Forum*, Leonard Bernstein told his protégé, “You’ve got a lot of wrong notes in there.” Meanwhile, the critic Stanley Kauffmann eviscerated Sondheim for musical imprecision: “Sondheim just spins series of notes, which could just as easily be other notes.” However, the general consensus regarding Sondheim’s Ravel-inspired idiom is much more complimentary. For example, Joseph Swain praises the “enlarged harmonic vocabulary and wealth of fresh harmonic progressions so familiar from Debussy and Ravel” that one finds in Sondheim’s music.

The similarities between Ravel and Sondheim go deeper than the moment-to-moment sonic vocabulary; the two composers also have comparable approaches to tonal structure. As Myers points out, the complicated, dissonant chords of Ravel often disguise an underlying harmonic framework that is quite traditional. And Casella observes that Ravel is a master of the pedal point, a repetitive device that can help a

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20 Quoted in Freedman, “Words and Music.”
span of music cohere. For instance, the repetition of 1 and 5 in the bass line of the Musette from *Le Tombeau de Couperin* establishes the modal tonic. We shall see that

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25 Ulehla, *Contemporary Harmony*, 164.
Sondheim uses the same technique.

Example 5.11: Ravel, “Placet futile,” mm. 19–21 and reduction of oscillation.
Example 5.12: Ravel, “Surgi de la croupe et du bond,” mm. 9–13, reduction of piano part.

Example 5.11 presents a dorian oscillation from Ravel’s “Placet futile,” the second of the Trois Poèmes de Mallarmé (1913). In the left hand of the piano part, Ravel reinforces the fifth and first scale degrees in the mode of C♯ dorian. Meanwhile, the right hand alternates between E♭maj7 and D♭maj7, creating a <-,11,1> oscillation that defines the C♯-dorian collection with the functional profile T:T-S (the E♭maj7 mediant chord serves as tonic substitute). Sondheim often employs an identical harmonic structure: pedals on 1 and 5 in the bass with a separate chordal oscillation in the upper parts. In the vocal scores of Sondheim’s musicals, we frequently encounter textures that resemble “Placet futile.”

A similar episode occurs in Ravel’s third Mallarmé setting, “Surgi de la croupe et du bond.” Example 5.12 is a reduction of the piano part in mm. 9–13. On top of a 1–5 bass oscillation (this one involving E♭ and B♭), the right hand alternates between D-major and A-major chords, creating an impression of bitonality.
5.3 Pedal points

Debussy’s transcendental oscillations tended to be chordally homophonic, but with Sibelius, we saw a greater use of pedal points to undergird chordal oscillations. Continuing the trend, Sondheim’s harmonic oscillations are sometimes more contrapuntal (“horizontal”) than chordal (“vertical”). In addition, pedal points abound in Sondheim’s oeuvre, and his transcendental oscillations may be categorized according to what kind of pedal point supports them.

The prominence of pedals in Sondheim’s style is well known. Joseph P. Swain argues that Sondheim deploys pedal points in order to create harmonic coherence in the absence of common-practice syntactic cues.26 By making the tonal organization of his works partly a textural affair through pedals, Sondheim recalls the musical language of Britten (a composer he admires), for whom texture and tonality were closely linked.27 A comment Sondheim made regarding his pedal points deserves quoting at length for its close connection to the concept of transcendental oscillation:

I tend to go I-V-I-V-I-V-I-V, but over it things are changing. Things are becoming liquid and there are little dissonances. You can get away with a lot of murder when you’re over a pedal tone. You can put in a lot of dissonance because the audience’s ear—the listener’s ear—is firmly anchored in that basic first step of the scale, so they don’t feel lost—they don’t feel Schoenberged into anything.28

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Indeed, Sondheim’s bass lines frequently oscillate between pitches a perfect fourth or fifth apart, while the upper accompanimental parts alternate between more complex pitch collections. Through repetition of the tonic—“that basic first step of the scale”—the complicated transcendental harmonies are rendered comprehensible, an application of the principle of uniform information density. The technique of grounding the harmony on tonic-dominant alternation was not new in Sondheim’s day; the French composer René Lenormand remarked on its prevalence in 1912. While Sondheim’s harmonic oscillations often defy easy classification by roman numeral or chord symbol, they can usually be reduced to a core voice leading like the I–♭V–I motion to which Sondheim refers. This potential for reduction recalls the composer Albert Roussel’s description of his own style: “the chord progression always rests on a perfectly defined harmonic base and, notwithstanding very rare exceptions, relates to a clearly defined tonality.”

Sondheim’s description of his harmony resonates with the present study in several ways. On the most basic level, he agrees that his music contains many chordal oscillations, such as “I-V-I-V.” However, he also mentions “little dissonances” that make those oscillations transcend the common practice. In addition, the phrase “becoming

“liquid” evokes the pandiatonic wash of sound that characterizes much of Sondheim’s music. Moreover, Sondheim says that the oscillations, despite containing dissonances, are adjustments of common-practice progressions—namely, tonic-dominant alternations. All this information is included in the first sentence of the inset quotation above. Sondheim goes on to affirm one of this study’s contentions: the repetition (“pedal tone”) of an oscillating progression allows the composer to be adventurous (“get away with murder”). That is, repetition of the progression lets the listener grow comfortable with the harmonic idiom even if it is far removed from traditional tonality, thus striking a balance between repetition and variety. In Sondheim’s last sentence, he draws a contrast with Schoenberg’s music, which he implies is too varied to allow the average listener to appreciate it. In this sentence, Sondheim opposes his approach to the modernist aesthetic that characterizes, ironically, the works of his teacher Milton Babbitt. For Sondheim, transcendental oscillation is a means to deliver interesting sounds to the listener without overwhelming the listener’s powers of comprehension. Such a technique is crucial for dramatic music that aims to draw the spectator into an intriguing plot.

Sondheim’s pedals fall into two basic categories: simple pedal and pedal alternation. The former denotes the sustaining of a single note (or a single vertical dyad) beneath changing chords that are divorced from it. A simple pedal occurs in the
contrasting middle phrase (B phrase) of “Green Finch and Linnet Bird” from Sweeney Todd. The tritone oscillation’s chords (Am7 and E♭) are supported by a dissonant pedal point on D (Example 5.13). The crucial voice leading is neighbor motion between E♭ and E♭. This oscillation’s functional profile is difficult to pin down, but if we hear the D pedal as an overarching tonic pitch, then Am7 would be a middleground dominant and foreground tonic while E♭m may fulfill chromatic-mediant function relative to Am7. (Recall from Chapter 2 that a tritone oscillation can be construed as a compound CM3 oscillation.) Thus, we would obtain the heterogeneous profile D:T-M.


The other type of pedal, alternating, occurs when Sondheim alternates between two different pitches in a bass line that is divorced from the chords above. For example, at the start of “Soon” from *A Little Night Music*, the left hand of the piano part rocks back and forth between Š and 5, creating a pedal alternation between tonic and dominant.
(Example 5.14). Above this tonic-dominant pedal, the right hand oscillates between tertian tonic and supertonic chords (profile T:T-S). The rate of harmonic change in the right hand differs from that in the left: the pedal alternation moves from $\hat{1}$ to $\hat{5}$ and back again at a rate of one note per measure, but the right hand’s chords change once every two measures. This discrepancy in harmonic rhythm between the two hands strengthens the impression that the bass line is divorced from the chords above.

5.4 General trends

In this section, I present five general characteristics of Sondheim’s use of transcendental oscillations, relying mostly but not entirely on examples from his adventurous 1976 musical Pacific Overtures.

First, Sondheim uses Bernstein’s characteristic I–II–I progression in multiple songs. In “Every Day a Little Death” from *A Little Night Music*, the vamp consists of an oscillation between embellished I and II harmonies in B lydian. Similarly, the accompaniment to Bobby’s phrase in “Someone is Waiting” from *Company* alternates between major I and major II (Example 5.15).

![Example 5.15](image)

**Example 5.16:** a. Sondheim, “Dinner Table Scene.” b. Satie, *Gymnopédie No. 1*.

Second, Sondheim often employs a *gymnopédie* groove, which, like the eponymous works by Satie, entails transcendental oscillations. As Steve Swayne notes, a
gymnopédie is based on a vamp accompaniment, which makes it well-suited to oscillating harmony. In Company, two songs, “Someone is Waiting” and “Barcelona,” sound like gymnopédies: they have a harmonic oscillation and a regular 3/4 accompaniment pattern with a bass note on the first beat and a chord on the second. The gymnopédie archetype also appears in other Sondheim works, including “Prologue” from Follies, “Last Midnight” from Into the Woods, and “The Miller’s Son” from A Little Night Music. In fact, in a note Sondheim wrote for himself regarding stylistic influences on A Little Night Music, the name “Satie” is listed. In A Little Night Music, the oscillation in the “Dinner Table Scene” also alludes to Satie. In fact, its oscillation between major ninth chords built on I and IV is specifically reminiscent of the oscillation in the first Gymnopédie, which alternates between major sevenths built on G and D (Example 5.16).

A third general attribute of Sondheim’s transcendental oscillations is economy of pitch-class differentiation between chords. In other words, the two harmonies in an oscillation often differ only slightly from one another in terms of pitch content. In “The Advantages of Floating in the Middle of the Sea” from Pacific Overtures, just one note differentiates the two chords in the oscillation. Namely, the F♯ in the Gmaj7 chord is

31 Swayne, How Sondheim Found His Sound, 21.
33 Ibid., 205, 400, and 232.
34 Ibid., 215.
replaced by an E in the Em\(^7\) chord (Example 5.17). Both chords are stated over a pedal alternation between A and E in the left hand. And yet the two sonorities are clearly two separate harmonies—one would allot each its own chord symbol on a lead sheet for the song. Also, Sondheim smoothly exits the oscillation through efficient voice leading and a metric shift. First, in m. 15, he increases the rate of harmonic movement: what had formerly been a one-chord-per-measure rhythm is now one in which the second chord arrives on the third beat of the measure. Thus, in m. 15, both chords of the oscillation appear in a single measure. Next, Sondheim substitutes one note for another in the Em\(^9\) chord. Specifically, he removes D and replaces it with C, creating the Am\(^9\) in m. 16. The cycle of the oscillation is broken by the new chord, Am\(^9\), in deceptive fashion.

Example 5.17: Sondheim, “The Advantages of Floating in the Middle of the Sea,” chords.

A fourth observation that applies to Sondheim’s transcendental oscillations in general is that they are often embellishments or disguisings of more familiar progressions. In “Chrysanthemum Tea” from Pacific Overtures (Example 5.18), Sondheim disguises a tonic-dominant alternation. The chord above the A in the bass is not an A
triad (which would be a clear dominant in the mode of D dorian) but an E-minor one, hence the placement of “V” in quotation marks. In fact, at the start of the oscillation, we have no way of knowing that the Em11 chords are really disguised dominants, since they do not occur over A. It is only when the bass changes to A in m. 26 that we can perceive those Em chords as serving a dominant function. In sum, Example 5.18 demonstrates Sondheim’s own characterization of his harmony as quoted above: “I tend to go I-V-I-V-I-V-I-V.” Sondheim’s oscillations distill tonal functions into essential voice leadings. For example, dominant and tonic functions in Example 5.18 are crystallized into the single-voice motion between î and 5.


Finally, Sondheim tends to use transcendental oscillations in the contrasting middle sections of his song forms. In particular, several instances from Pacific Overtures come to mind: an oscillation in “The Advantages of Floating in the Middle of the Sea” starts at m. 10, one in “Four Black Dragons” begins at m. 23, and one in “Chrysanthemum Tea” at m. 22. All these examples occur midway through their
respective songs. Furthermore, these repetitive progressions represent, surprisingly, an increase in harmonic activity rather than a decrease. Indeed, the default harmonic texture of *Pacific Overtures* is a single broken chord or wash of sound with many different pitch classes participating in it. So, when Sondheim deploys an oscillating progression partway through the song, it represents an acceleration of harmonic motion rather than a shift to more static harmony. In this regard, Sondheim’s practice recalls George Gershwin’s, for Gershwin also tended to increase the level of activity in the B sections of his songs. Indeed, as Freedman claims, “Sondheim resembles no one in the history of American music or theater more than Gershwin.”³⁵ The difference is that Gershwin achieved his increase in musical activity by means of melodic sequence,³⁶ whereas Sondheim does it in an even more economical, repetitive way through foreground harmonic oscillation. Sondheim explains the high degree of repetitiveness in *Pacific Overtures* as follows:

*Pacific Overtures* had static songs, harmonically. They don’t go anywhere. “Someone in a Tree” is an example of a song that’s built almost entirely on two chords and an endless rhythmic vamp that bored the audience to death in some cases. But I found that since Japanese music is relentless, you’ve got to have some relentless songs.³⁷

³⁵ Freedman, “Words and Music.”  
Given the high degree of repetition in the songs in Pacific Overtures and, indeed, all of Sondheim’s shows, it is perhaps surprising to learn that Sondheim is loath to include reprises of songs in his musicals. Traditionally, Broadway scores reprise songs to show how characters have changed (and to plant the hit tunes more firmly in the audience’s memory). Sondheim avoids reprises because he feels they disrupt the flow of the drama. And yet his scores are peppered with smaller-scale repetition, which includes immediate duplications of chord progressions as well as reprises of short fragments rather than songs in their entirety. Sondheim compares this collage-like approach to composition to “modular furniture.”38 Like any other segmenting clue, a transcendental oscillation helps to demarcate a passage of music as a coherent module.

“Someone in a Tree” from Pacific Overtures demonstrates this use of harmonic oscillation to contrast with harmonic stasis. The song’s first six measures are characterized by an unchanging, pandiatonic wash of sound. But in m. 7, Sondheim initiates a two-chord oscillation on the word “trees” (Example 5.19). Over a constant C–G pedal alternation (again, the interval class between the two notes of the pedal is ic5), the right hand oscillates between B♭- and A♯-major triads.

Example 5.19: Sondheim, *Pacific Overtures,* “Someone in a Tree,” mm. 6–12.

In its repetition and economy, Sondheim’s style is influenced by minimalism. We know he was familiar with Steve Reich’s *Music for a Large Ensemble* by 1984, the year he composed *Sunday in the Park with George.* Sondheim does not engage in the same

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Freedman, “Words and Music.”
amount of repetition as canonical minimalist composers like Reich or Philip Glass—or, for that matter, Satie. These composers repeat motives so many times that they cross what Jonathan D. Kramer refers to as the “threshold of static perception” beyond which the listener stops expecting the sounds to change.40 Nevertheless, Sondheim’s scores from 1970 onward exhibit remarkable amounts of motivic repetition and ostinato, at least by Broadway standards. Sondheim says that Company is “the first full-blown score I wrote that’s really me and nobody else.”41 Truly, Company is the first Sondheim score that merits the label “minimalist,” with its driving, repetitive vamp figures suggestive of the hustle and bustle of its New York City setting. Robert L. McLaughlin comments on strophic repetition in the song “Another Hundred People” from Company, claiming that this quality fits the lyrics’ description of the cyclic nature of urban life.42 That song and the title number are the two best representatives of the show’s mechanistic, repetitive style.

By virtue of being continuous, foreground oscillations lend dramatic meaning to discontinuity. In other words, through the repetition of a minimal harmonic progression, Sondheim makes the moment when the repetition stops noteworthy, as on

41 Quoted in Horowitz, Sondheim on Music, 51.
42 Robert L. McLaughlin, Stephen Sondheim and the Reinvention of the American Musical (Jackson, Miss.: University of Mississippi Press, 2018), 70.
the pivotal phrase “I was there” in “Someone in a Tree” (Example 5.19). This use of discontinuity is an efficient means of generating drama in music. The repetition of a transcendental oscillation helps the oscillation cohere. But at the same time, its transcendental aspect keeps the music in motion, as it resists conventional cadences. Horowitz sums up this delicate balance between satisfying coherence and variety in Sondheim’s music: “it’s the tension between something that sounds inevitable but unexpected.” The end result is that Sondheim’s harmony is “unlike that of anyone else,” at least in the mainstream musical theater.43

5.5 Sunday in the Park with George

I close this chapter with an in-depth look at transcendental oscillations in one Sondheim musical, the much-decorated Sunday in the Park with George (1984). Its first act dramatizes the life and work of French painter Georges Seurat, focusing on his most famous painting, Un dimanche après-midi à l’Île de la Grande Jatte (1884–86). The second act fast-forwards to 1984, when a contemporary artist (named George) exhibits an installation inspired by Seurat’s masterpiece and converses with Seurat’s daughter Marie. Although none of the characters is particularly likable, Sondheim’s score for this musical is one of his most sublime. Freedman remarks that Sunday in the Park with George

is something of an autobiographical work for Sondheim as it deals with artistry and the creative process.44

With most Broadway show tunes, it is easy to convert the song into a lead sheet containing chord symbols (Cmaj7, D7, Fm7, etc.). By contrast, Sondheim’s harmonies often resist simple classification by standard chord symbols. For one thing, Sondheim blurs the distinction between chord tone and embellishment by sustaining unresolved dissonances over the bass, using arpeggios rather than block chords, and stratifying the pitch content with pedal points and, occasionally, divorced melody. The ensuing ambiguity between chord tone and non-chord tone makes it difficult to choose a chord symbol that encompasses the entire harmonic material of a particular moment. Moreover, Sondheim renders the boundaries between harmonies uncertain through prolific use of common tones. When Sondheim confronts us with an oscillation between two harmonies that differ only by very slight voice leading—perhaps a single half step in one voice—we may be unsure whether the voice leading represents true harmonic change or merely neighbor-note figuration within a single harmony. These two factors—the blurred distinction between chord tone and embellishment and the ambiguity

44 Freedman, “Words and Music.”
between harmonic change and contrapuntal motion—combine to make many of Sondheim’s works resistant to normal chord-symbol analysis.

Even in such cases, however, we can frequently reduce Sondheim’s harmonies to core voice leadings or core tertian chords. In the discussion that follows, I take this approach, which aims not to describe every detail of pitch content but to illuminate a particular facet thereof. The reductive technique seeks to understand complex phenomena through simplification.

Specifically, many of the oscillations in *Sunday in the Park with George* exhibit prominent neighbor motion by half step in at least one voice. Indeed, alternation by semitone is a fundamental motive that undergirds the play as a whole. We can demonstrate the importance of half-step alternation by cataloguing the specific ways in which this generic motive is manifested. At least nine prominent transcendental oscillations in *Sunday in the Park with George* can be reduced to half-step alternations; furthermore, some of these oscillations are leitmotifs that signify important dramatic elements at locations throughout the work. By focusing on progressions that derive from half-step alternation, we perceive a musically unified and dramatically cogent picture of the entire show.

Sondheim observes that Seurat would paint dots of similar colors close to one another on a canvas in order to create the impression of a single fused color. The
composer initially planned to replicate this color-wheel manipulation through juxtapositions of particular pitch classes, but gave up once he realized that doing so “would make all the score minor seconds.” Yet an emphasis on minor seconds remains a prominent feature of the score’s transcendental oscillations. Sondheim avers, “Sunday in the Park with George is a Britten score,” and the focus on half-step alternation or polarity is a common trait of Britten’s music. Regarding a passage in the song “Color and Light,” Sondheim remarks, “The alternation between a major third and a minor third, if you juxtapose them, is exactly like juxtaposing yellow with yellow-orange ... And that juxtaposition is the point of the score.”

The show opens with a tonic-subdominant oscillation between arpeggiated pandiatonic chords in E major. As Sondheim puts it, “That became the basic idea—to go from [E₃] to [A₃] to [E₃], but juxtapose them.” However, “the trick in the opening arpeggios of Sunday is that the [root] is never stated [in the bass]. The first chord goes [G-F-B₁-E₁-B₁]; the bass [E₃] is never stated.” Alternations between fifth-related chordal roots strike Sondheim as analogous to Seurat’s use of color: Seurat “used

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45 Quoted in Horowitz, Sondheim on Music, 92.
47 Quoted in Horowitz, Sondheim on Music, 93.
48 Quoted in ibid., 113.
complementary color exactly the way one uses dominant and tonic harmony.” I call the musical’s opening motive the Art oscillation because it accompanies George’s listing of the attributes of art (“order,” “design,” “harmony,” and so forth). Example 5.20 shows the Art oscillation and its reduction to a core voice leading between G and A♭.

Example 5.20: Art oscillation (top staff) and two reductions (“Prelude,” mm. 1–4).

The second oscillation based on half-step alternation is the Dot oscillation (Example 5.21). This progression appears whenever Dot, George’s girlfriend, thinks about George—or vice versa. The core tertian harmonies in the Dot oscillation are a G♭-major seventh and an F-minor seventh in the mode of B♭ aeolian. These harmonies may in turn be reduced to an alternation between the pitches G♭ and F. This oscillation appears nineteen times over the course of the musical at various transpositions; it is the leitmotif of the drama’s central romance. In its first appearance, it fulfills Caplin’s “middle” structural function on multiple levels. For one thing, it occurs during the

49 Quoted in Freedman, “Words and Music.”
contrasting middle section of the title song; in this section, Dot’s lofty reflections on love and art counterbalance her complaints about the mundane annoyances of having to stand still for a portrait, complaints that dominate the song’s outer sections. Moreover, the Dot oscillation shown in Example 5.21 occupies the central portion of the tripartite contrasting middle section. In this way, Example 5.21 serves a “middle” function on two levels.

Example 5.21: Dot oscillation (top three staves) and reduction (“Sunday in the Park with George,” mm. 77–80).

The third oscillation based on half-step alternation appears in the first-act song “Color and Light,” whose staccato ostinati symbolize Seurat’s pointillist painting technique. I call this progression the Kaleidoscope oscillation both for the subject of the song it which it appears and for its sonic character (Example 5.22). The basic harmonic progression at the heart of the passage is an oscillation between a C-minor triad and an
A♭-major chord (or, possibly, Fm7). The functional profile is T:T-S, with Cm (vi) standing in for tonic. The vocal line emphasizes the half-step voice leading between G and A♭.

Like the Dot oscillation, the Kaleidoscope oscillation occurs in the middle of the song.

Example 5.22: Kaleidoscope oscillation (top three staves) and reductions (“Color and Light,” mm. 64–68).

The next half-step oscillation appears first and most often in the song “The Day Off”; hence, I call it the Leisure oscillation (Example 5.23). The excerpt demonstrates Sondheim’s aforementioned “I-V-I-V” procedure, as İ (F♯) alternates with Ş (C♯) in the bass. However, we also hear an oscillation between harmonies built on F♯ and G♯, and the Leisure motive may be reduced to this half-step neighbor motion.
Example 5.23: Leisure oscillation (top two staves) and reduction (“The Day Off,” mm. 53–56).

Example 5.24: Window oscillation (top three staves) and reduction (“Finishing the Hat,” mm. 31–34).

The fifth oscillation centered on semitonal alternation appears uniquely in George’s song “Finishing the Hat,” a description of the creative process and one of the musical’s more famous numbers. This is the Window oscillation, so called because it accompanies the word “window” in the lyrics (Example 5.24). In the key of G, major, the top voice of the accompaniment alternates between B♭ and C♭, a half step.
The sixth oscillation derived from half-step motion occurs in “We do not Belong Together,” in which Dot breaks up with George; accordingly, it is called the Breakup oscillation (Example 5.25). The progression exemplifies the uncertainty that the listener sometimes experiences when trying to determine whether Sondheim changes harmony or not. Is the D, in m. 51 indicative of true harmonic change, or is it merely a chromatic neighbor within a single sustained harmony in mm. 51–53? The pedal point on C muddles the issue further. This harmonic ambiguity, however, does not prevent us from hearing an oscillation between two “sonorities,” whether or not they constitute independent harmonies. These sonorities can be reduced to two pitches separated by half step: D and D♭.

Example 5.25: Breakup oscillation (top three staves) and reduction (“We do not Belong Together,” mm. 50–52).
The seventh half-step alternation in *Sunday in the Park with George* suffuses the final song of Act I, “Sunday.” Sondheim classifies “Sunday” as an anthem, or “one of those choral things.”⁵⁰ During this ensemble number, characters move into position for a *tableau vivant* that recreates Seurat’s painting in a stunning *coup de théâtre*. The song returns as a reprise at the end of Act II; thus, “Sunday” is the climax both of Act I and of the entire show. The Sunday oscillation is basically a plagal I–IV alternation in G major (Example 5.26). It is foreshadowed in D major in the preceding song, “Beautiful” (mm. 25–32 and 43–54), but it is in “Sunday” that this plagal oscillation assumes its redemptive, sublime character. The progression can be reduced to the half-step motion between B and C. The simple, one-sharp key of G major seems to wash away the stress associated with the more complex G♭ major of the Window oscillations and the prominent G♭ in the Dot oscillation—Dot herself being a primary source of stress for George (not to mention the audience). In “Sunday,” life is good.

As one would expect, the bulk of the musical’s motivic content is front-loaded in Act I. The remaining two half-step oscillations are introduced in Act II. I label the eighth oscillation “Heat” because it accompanies the ensemble’s complaint that it is very hot standing for eternity on the island in George’s painting (Example 5.27). Signaling its

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derivation from the immediately preceding Sunday oscillation, the Heat oscillation
likewise alternates between C and B in the key of G major. And like the Leisure
oscillation, which also depicts the characters’ time on the island, the Heat oscillation
occurs over a bass alternation between 1 and 5—Sondheim’s default harmonic technique
once again.

Example 5.26: Sunday oscillation (top three staves) and reduction (“Sunday,” mm. 24–
26).
Example 5.27: Heat oscillation (top three staves) and reduction (“It’s Hot up Here,” mm. 15–18).

The ninth and last transcendental oscillation grounded in half-step motion is the Family oscillation, which accompanies Marie’s present-day description of her ancestor Dot (Example 5.28). Like many other examples by Sondheim (and, for that matter, Sibelius), its functional profile is T:T-S. And once again, the oscillation occurs midway through its song. In addition, the Family oscillation’s flat-heavy key signature is reminiscent of the Dot and Window oscillations. Like those progressions, the Family oscillation reduces to half-step alternation, indeed the same alternation between F and G, that we found in Dot’s motive. This shared pitch content reinforces the dramatic connection between the two scenes: both Dot and Marie are members of Seurat’s family.
Example 5.28: Family oscillation (top three staves) and reductions (“Children and Art,” mm. 37–40).

_Sunday in the Park with George_ includes other transcendental oscillations that do not derive from half-step voice leading, several of which evoke late nineteenth-century French music: a _gymnopédie_ in “No Life,” a French waltz in “The Day Off,” and a pastiche of the Folies Bergère in “Color and Light, Part II.” Another important oscillation in the musical is the whole-step alternation between major-ninth chords that appears in the diegetic cocktail-piano pastiche in “Putting It Together.” That this oscillation is based on whole steps rather than half steps signals that it exists separately from the rest of the score; indeed, the number in which it occurs is meant to sound like the work of a
different composer, probably the bossa nova musician Antônio Carlos Jobim. Despite these colorful scene-setting examples, however, a decisive majority of the musical’s transcendental oscillations invoke the half-step alternation paradigm. In particular, the Dot oscillation recurs at more or less regular intervals throughout the play, creating musical unity, while the Sunday oscillation delivers a dramatic climax in both acts. In addition, portions of the arpeggiated Art motive return on several occasions, though not always in oscillating form.

In addition to the nine foreground oscillations already discussed, we can also find half-step alternations on the middleground, most notably in the penultimate song, “Move On.” According to Sondheim, “‘Move On’ is a compilation of all the themes in the show in one song,” including the idea of half-step oscillation. This number starts in B major, tonicizes C major (m. 126), and returns to B, creating a middleground oscillation. In fact, the return to B major occurs at the most intense moment of the song, a moment that provides the dramatic crux of the play. The precise location of this middleground oscillation indicates the importance of half-step alternation to the musical as a whole. And on the foreground, the nine motives presented above also reveal the special status of this voice-leading trope through their names alone, which collectively

51 Sondheim’s proclivity for bossa nova is well known; most of his scores include at least one number in that style.
embody the drama’s crucial ingredients: Art, Dot, Kaleidoscope, Leisure, Window, Breakup, Sunday, Heat, and Family.

In moving from Chapter 4 to Chapter 5, we crossed the Atlantic and jumped from pre-war art music to post-war musical theater. Coming of age in a minimalist world, Sondheim employs vamps and transcendental oscillations with gusto. In this chapter, we have traced the development of transcendental oscillations in classic American show tunes, described the close connection between Sondheim and Ravel, and discovered how Sondheim uses voice-leading oscillations as recurring motives in *Sunday in the Park with George*. The next chapter delves into another by-product of the minimalist aesthetic of the 1960s and 70s: the foreground harmonic oscillation in pop music.
6. Pop Music Since the 1960s

In this final chapter, I survey foreground oscillations in popular music of the Anglosphere since the 1960s. My examples are not intended to be representative of all such music; rather, I focus on a limited selection of songs that contain intriguing oscillations. In particular, I examine works by pop composer Burt Bacharach and the Canadian indie-rock songwriter Dan Bejar, with glances at other artists along the way.

Harmony in rock and pop tends to be highly chordal. In fact, Moore considers rock harmonies to be “discrete entities not subject to voice-leading processes.”¹ In Chapter 3, we saw that Debussy’s transcendental oscillations are quite chordal. Subsequently, we saw that Sibelius’s and Sondheim’s are more contrapuntal and stratified. Pop-music oscillations are once again “vertical,” like Debussy’s. However, pop oscillations tend to be longer than two cycles, unlike the French composer’s. Popular music since the 1960s embraces the minimalist technique of building a song on an incessantly repeated vamp.

Mark Spicer has given several examples of transcendental oscillations in popular songs. For instance, Hall and Oates’s “She’s Gone” (1973) starts by alternating between A major and B major, suggesting an oscillation between IV and V in E major. (E is confirmed as the global tonic later in the song).² Because A major is a local lydian tonic

¹ Moore, “The So-Called ‘Flattened Seventh,’” 190.
² Spicer, “Absent Tonics,” 2.
and because the overarching function of the progression is to prolong subdominant in the key of E, we can give the oscillation the profile S:T-S. Similarly, the Four Tops’ “Reach Out I’ll Be There” (1966) cycles between A₄m⁷ and D₅, articulating a ii⁷–V progression in the key of G₃.³ As another instance of foreground oscillation in rock, Frank Zappa called the Gm–C–Gm (i–IV–i) oscillation the “Carlos Santana Secret Chord Progression.”⁴ The examples presented in this chapter show that although modern pop music is worlds away from the art music of composers like Debussy and Sibelius, its reliance on modal oscillations nevertheless evokes their harmonic style. This correspondence suggests that foreground oscillation is an essential weapon in the extended-tonal composer’s arsenal, whether or not that composer was classically trained.

6.1 Language

While popular music is undeniably different from “art” music, the two modes of expression are more similar than is sometimes assumed. As Esa Lilja points out, the musicological divide between studies of classical music and those of popular music belies the two art forms’ inherent similarities.⁵ To take just one example of overlap between these styles, the rounded binary forms audible in some rock songs links rock

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³ Ibid., 5.
⁴ Quoted in ibid., 12.
⁵ Lilja, “Harmonic Function and Modality,” 356.
music to earlier Tin Pan Alley popular songs and to classical forms like the minuet.⁶ More pertinently, “rock borrows its basic harmonies from earlier tonal music (major and minor triads, seventh chords, etc.), but it combines these harmonies in a novel way,” in Stephenson’s words.⁷ Temperley agrees, remarking that rock music often arranges familiar triads in ways that evoke modes like mixolydian or dorian.⁸ Indeed, the expanded tonal language of late nineteenth- and early twentieth-century art music influenced the Tin Pan Alley or classic show-tune style, which influenced later popular music insofar as early rock was a reaction against the classic show-tune aesthetic.⁹ In the previous chapter, we saw that the popular music of the first half of the twentieth century was grounded in progressions familiar from nineteenth-century art song. Because it rebels against this old formula, the harmony of 1960s pop—and the later styles that it influenced—may be considered transcendental.

Despite its use of major and minor triads, the harmonic language of popular music since the 1960s exhibits marked differences with the common practice of classical music, differences that lend the language of modern pop music similarities to late-Romantic harmony. For example, circle-of-fifths motion is much rarer in rock and pop than in the common practice or Tin Pan Alley.¹⁰ Along similar lines, Trevor de Clercq

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⁷ Ibid., 73–74.
and David Temperley argue that rock harmony includes facets that have nothing to do with the common practice: these “other kinds of logic” are “best understood neither as expressions or rejections of common-practice norms, but simply on their own terms.”

For Stephenson, in fact, the normative root motions in rock—“down a second, up a third, or down a fourth”—are the exact opposites of those in traditional tonality. De Clercq and Temperley soften this argument by stating that the ascending and descending forms of diatonic root intervals occur in more-or-less equal quantities in rock harmony. And this symmetry contrasts with the asymmetric quality of common-practice syntax, in which, for example, IV is much more likely to progress to V than vice versa. The idea that motion from chord A to chord B is just as idiomatic as the reverse implies that harmonic oscillations are natural occurrences in popular harmony—and, sure enough, we find in this repertoire copious examples of two-chord alternations that are foreign to the common practice precisely because they do not privilege one direction of harmonic motion over another. To take one example selected almost at random, in the Bee Gees’ “Stayin’ Alive” (1977) the motion from Fm7 to B♭7, which sounds like a conventional ii7–V7 progression, is immediately followed by a return to Fm7, thus reversing the common-practice ii7–V7 motion.

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12 Stephenson, What to Listen for in Rock, 104.
14 Temperley, The Musical Language of Rock, 47.
According to Moore, another feature that distinguishes rock harmony from traditional tonality is the prevalence of $\flat 7$; Moore holds that the mixolydian seventh does not derive from precepts of common-practice tonality.\textsuperscript{15} This propensity for the lowered seventh scale degree means that I–VII–I oscillations occur frequently in rock, as in Deep Purple’s 1970 song “Child in Time.”\textsuperscript{16} While motion from major subtonic (VII) to tonic (I) seems to derive from the ease of playing that succession on guitar, Moore observes that we also find the VII–I progression in piano parts in 1960s rock even when the voice leading is not entirely parallel.\textsuperscript{17} Nor is the I–VII–I oscillation the only example of modality in rock. Indeed, John Covach characterizes dorian as a “harmonic environment that is typical within rock music.”\textsuperscript{18} And the $\langle -7, 5 \rangle$ oscillation that sometimes implies dorian also appears in its mixolydian guise in rock songs. For example, the Grateful Dead’s “Dark Star” (1968) is founded on an oscillation between A major and E minor that suggests A mixolydian.\textsuperscript{19} In short, diatonic modality is pervasive in rock and pop. Moore and Martin note that a modal approach to rock-music analysis can explain many harmonic features that would seem bizarre in a common-practice framework.\textsuperscript{20}

\textsuperscript{15} Moore, “The So-Called ‘Flattened Seventh,’” 199.
\textsuperscript{16} Allan Moore and Remy Martin, \textit{Rock: The Primary Text} (Abingdon, UK: Routledge, 2019), 54.
\textsuperscript{17} Moore, “The So-Called ‘Flattened Seventh,’” 191.
\textsuperscript{19} Boone, “Tonal and Expressive Ambiguity,” 175–76.
\textsuperscript{20} Moore and Martin, \textit{Rock: The Primary Text}, 53.
According to de Clercq and Temperley, the harmonic language of rock was already fully developed by the end of the 1960s.\(^2\) This language included a propensity for harmonic oscillation. However, these oscillations did not necessarily arise *ex nihilo.* In the opinion of James Perone, the I–vi–I oscillations of new-wave rock derive ultimately from the I–vi–IV–V doo-wop progression of the 1950s.\(^2\) Moreover, some of the oscillations in pop music are also found in the common practice. According to Christopher Doll, the four most common oscillations in popular music are I–IV, I–VII, I–V, and i–III, in that order: two common-practice and two transcendental.\(^2\) Similarly, Stephenson points out that many rock songs involve extended passages that oscillate between I and IV.\(^2\) Doll’s list shows that while certain features of pop music differ from traditional tonality, pop music nevertheless has significant elements in common with traditional “classical” tonality. Pop music of the past six decades was not created in a vacuum, but rather arose in a cultural space in which the basic tools of common-practice harmony dominated the sonic environment.

Example 6.1, an excerpt from a new-wave song by the Cars, demonstrates how pop music takes the materials of traditional tonality and arranges them in non-traditional ways to create modal oscillations. The bridge in “Heartbeat City,” from the

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album of the same name, features a modal oscillation between minor chords built on D and E. The tonic of the entire song is A, established through repeated i–iv–v–i progressions in the verses (not shown in Example 6.1). Therefore, we hear the Dm–Em oscillation at the 1-minute mark as iv–v in A aeolian. In the second cycle of the oscillation, the E-minor chord is held an extra measure, intensifying the release into the chorus in the following system. The chorus itself consists of another modal oscillation, this one between F\textsuperscript{maj7} and G\textsuperscript{7} chords. However, the pitch class F is a pedal throughout, so we can label the second chord in the chorus G/F. If the chorus were heard in isolation, F would be a plausible candidate for tonic pitch, since it persists in the bass. Yet the influence of the global A-aeolian tonic is inescapable; accordingly, the F–G oscillation sounds more like VI–VII than I–II. In a sense, the VI–VII oscillation prolongs tonic—not only is the tonic chord “implied” by the oscillation, but the tonic pitch A is present in the VI chords. Ultimately, the G chord moves up to i at the start of the next verse, creating a typical VI–VII–i aeolian progression. As lead singer Ric Ocasek asks Jacki “what took her so long” to return, we might well ask what took the A-minor tonic so long to break up the F–G oscillation.

6.2 Bacharach and the Brill Building

I mentioned near the start of this study that the connection between modern pop music and traditional Western tonality is sometimes more tenuous and less noticeable than the link between the common-practice tradition and composers like Debussy, Sibelius, and Sondheim. However, while it is improper to assume that every pop composer considers traditional tonality to be the default harmonic language, it is equally absurd to argue that the common practice has had no influence on these composers and their tools of songwriting. The music of Burt Bacharach (b. 1928), who has created hit songs for both the pop and R&B charts, exemplifies the complex relationship between
the inherited tonal tradition of European art music and the new sounds of American popular song in the 1960s.

As showtunes and other songs in the Tin Pan Alley style began to be eclipsed in popularity by rock and roll in the 1950s and 60s, the Tin Pan Alley model of sophisticated songwriting persisted with a group of composers and lyricists working in publishing offices in the Brill Building (1619 Broadway in New York) and its environs.25 One of these Brill Building songwriters was Bacharach, who collaborated with lyricist Hal David (1921–2012) on many pop and R&B hits, including several famous tracks recorded by singer Dionne Warwick (b. 1940). Bacharach’s harmonic sensibility was hardly unlearned: he had been trained as a classical pianist, was well-versed in jazz (he accompanied Marlene Dietrich in cabaret concerts), studied music at McGill University, and took composition lessons from Darius Milhaud. In his songs, Bacharach uses many transcendental oscillations.

In the early part of his career, Bacharach relied heavily on ionian oscillations, particularly the R alternation (I–vi–I). In addition to the I–vi–I progression, it was natural for Bacharach to embrace other ionian oscillations such as I–iii7–I. “Are You There” (Example 6.2) begins with a modal oscillation between I and iii7 in D ionian with the profile T:T-D. However, the lowest voice of the texture alternates between the

pitches G (4, under the D-major chords) and F#. In this way, the vocal line, which outlines a D-major triad in the first three measures, is temporarily divorced from the bass line.


Bacharach also uses modes besides ionian. For instance, consider the mode-defining dorian oscillation in Example 6.3 from the same year as “Are You There.” This dorian oscillation (profile T:T-S) continues for almost the entire bridge section past the end of Example 6.3. The turn to modality at the bridge section coincides with lyrics that refer to “another part of the world,” a fitting alignment given that the dorian mode occupies a world distinct from the F-ionian mode that governs the rest of the song.

Bacharach also employs chromatic oscillations, though less often than modal ones. Example 6.4 shows a chromatic-mediant oscillation from the song “Anyone Who Had a Heart.” Bacharach alternates the global tonic chord (F major) with a chromatic-mediant A, major, producing an M3 oscillation. Example 6.4 occurs at the coda and accompanies the singer’s most impassioned declamation. In this respect, Bacharach acts in the tradition of Gabriel Fauré, who uses a chromatic-mediant oscillation in the “after-the-end” position to close his setting of Verlaine’s poem “Green.” The transcendental oscillation as *envoi* finds expression in twentieth-century American pop just as readily as in late-nineteenth century *mélodie*.

![Example 6.4: Bacharach/David, “Anyone Who Had a Heart” (1963), start of coda](image)

Some Brill Building songwriters wrote music that sounded more like rock and roll than did Bacharach. For example, Jerry Leiber and Mike Stoller wrote Elvis Presley’s major hit “Hound Dog” in 1952. Ten years later, the duo collaborated with another songwriting team, Barry Mann and Cynthia Weil, on a song appropriately titled “On Broadway,” whose harmony consists almost entirely of transcendental oscillations (Example 6.5).
Example 6.5: Barry Mann, Cynthia Weil, Mike Stoller, and Jerry Leiber, “On Broadway” (1962) as performed by the Drifters, first verse.

“On Broadway” comprises three verses, each a half-step higher than the last. The first verse is given in Example 6.5. Transcendental oscillations dominate the song, in particular mixolydian I–VII–I oscillations. For the first eight measures of the verse, the oscillation defines an F♯-mixolydian tonic by means of a T:T:D functional profile.

However, in the contrasting B phrase of the AABA form, the mixolydian mode built on the fourth scale of the home key is tonicized: in other words, we have a tonicization of B mixolydian. To get from this new tonal area back to the home of F♯ mixolydian, there is a single measure of common-practice harmony (m. 12), with B (IV) going to C♯ (V) and
finally back to F♯ (I). The F♯-mixolydian vamp closes the verse just as it opened it. The shift to IV in the middle of the verse is strongly reminiscent of the move to IV in bar 5 of a twelve-bar blues, and the mixolydian mode itself may be interpreted in this instance as a “codified” version of the flat seventh scale degree often found in blues melodies. In the context of the song as a whole, the oscillation in mm. 9–11 prolongs subdominant (B major). In this respect, “On Broadway” exhibits the same oscillation structure as “Two Lost Souls” from Damn Yankees, discussed earlier in Example 1.9.

6.3 Modal jazz

Modal jazz resembles modern pop in that it frequently exhibits harmonic oscillations that form a repetitious background layer. While it is dubious to draw a direct line of influence from modal jazz to later pop musicians, we can view modal jazz as an important accomplice to pop in the drive toward minimalist harmonic structures that pervade vernacular musics of the past several decades. In addition, jazz and rock have a common ancestor in the blues. Therefore, it is worth taking a brief detour to the world of jazz before returning to “pop music” in the usual sense of the term.

Modal jazz is characterized by slow harmonic rhythm and habitation of tonal regions outside traditional major-minor tonality. The sense of modality is often conveyed by means of an oscillating progression.26 For example, Peter Bouffard has

26 Bouffard, Foundations, 16–18.
shown that the five sections of “Flamenco Sketches,” a 1959 track by Miles Davis and Bill Evans, are each governed by a modal or chromatic oscillation in the piano part.²⁷

As another example of transcendental oscillations in modal jazz, consider an excerpt from “First Light” by Freddie Hubbard (1938–2008), shown in Example 6.6. On the recording of “First Light” from Hubbard’s album of the same name, this mode-defining dorian oscillation (profile T:T-S) continues for almost the entirety of the eleven-minute track except for a 75-second introduction and a 24-second interlude starting at the 8:27 mark. Yet it never grows stale, in part thanks to the varied melodic figures above it, but also because it is a dorian oscillation rather than a garden-variety major or minor one.

Example 6.6: Freddie Hubbard, “First Light” (1971), start of form.

Despite its name, modal jazz does not restrict itself entirely to diatonic modes; we find chromatic oscillations in the repertoire as well. Example 6.7 alternates between

²⁷ Ibid., 12. Bouffard considers all these oscillations “modal” and does not use the term “chromatic oscillation.”
D and F suspended chords, an M3 relation with the profile T:T-M. Ron Miller observes that “Maiden Voyage” is a “plateau modal composition”; indeed, the chromatic mediant-related chords in Example 6.7 seem to occupy separate planes, and the repetitive aspect of the oscillation creates a plateau in the sense of a halt of forward motion.

Example 6.7: Herbie Hancock, “Maiden Voyage” (1965), start of form.

Examples from modal jazz reinforce the sense that transcendental oscillations were in the air in the 1960s and 70s. Their ubiquity is reinforced by the profusion of other genres and styles in which one finds transcendental oscillations at roughly the same time: disco, musical theater, minimalism, hi-fi pop, funk, and soul. The transcendental oscillation exploded in popularity in the 1960s and 70s and has maintained a central place in the practice of popular music up to the present.

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28 Miller, Modal Jazz Composition, 79.
6.4 Repetition

The harmonic structure of modern pop songs encourages harmonic looping by its very nature. Specifically, Stephenson observes that the four-bar phrases of many rock songs are open rather than closed, meaning that each phrase demands a continuation.²⁹ This phenomenon invites repetitive chord progressions, as the harmonic phrase can loop over and over without ever reaching a point of closure. Likewise, Richard Middleton observes that the repetition of open progressions is characteristic of pop music derived from disco.³⁰ Trevor de Clercq and Elizabeth Hellmuth Margulis argue that the four-chord loop pattern exemplifies Middleton’s concept of the “museme,” or short repeated fragment.³¹ This invitation to repetitive chord progression encourages oscillations, which are the most repetitive progressions possible.

Harmonic oscillations abound in sample-based music. Joseph G. Schloss remarks that when a sample is looped, “the end of the second chord will lead directly back into the beginning of the first, creating a harmonic relationship—a new chord change—that was never intended by the original composer.”³² And when the sample consists of just two chords, the loop will create a new harmonic oscillation, taking the original

²⁹ Stephenson, What to Listen for in Rock, 21–22.
progression and then reversing it. As Kyle Adams observes, most hip-hop tracks are based on a harmonic oscillation. Borrowing a functional framework proposed by Christopher Doll, Adams argues that a harmonic oscillation in hip-hop defines both a tonic chord and a “pre-tonic,” and that “in general, the first harmony will take on tonic status.” Adams also claims that the “sense of functional relationship” between the two chords in an oscillation is greatest when the interval between their roots is a fourth, a perception that presumably arises thanks to the prevalence of root motion by fourth and fifth in traditional tonality.

The lengthy repetition of chord loops in popular music often gives rise to a melodic-harmonic divorce. Drawing on Drew Nobile’s work, de Clercq and Margulis point out that a repeated harmonic loop in popular songs can support a melody that is divorced from the harmony, as in the 1988 song “Jane Says” by Jane’s Addiction, which alternates between G- and A-major triads. A prolonged harmonic oscillation thus serves as a “background coloring agent” whose job is to avoid distracting the listener from the melody. The melodic-harmonic divorce has also been found in works by Sondheim; Swain argues that in the opening number of Sweeney Todd, “the notes of the melody are

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33 Adams, “Harmonic, Syntactic, and Motivic Parameters,” 2.11n.21.
34 Ibid., 2.12.
35 Ibid., 2.11.
simply ignored by the harmony." As early as 1978, Peter K. Winkler observed that some blues songs exhibit such a divorce: “the melodic line often hovers around the fifth or the tonic regardless of whether it is supported by the harmonies.” Theo Cateforis notes a similar phenomenon during the oscillation between A major and G major in the coda of Gary Numan’s “Cars” (1979): a drone synthesizer line moves to C♭ on the G chords. This sonority evokes a sense of stratification or layering of voices because C is foreign to the G-major triad. In Rod Temperton’s “Rock With You” from the same year, the melody is unmoored from its harmonic underpinnings (Example 6.8): the prominent C♭s clash with the E♭m⁹, while the strong-beat F is alien to the A♭ chord over a B♭ pedal.

Example 6.8: Rod Temperton, “Rock With You” (1979), verse.

Anthony Pople suggests that the difference between music of the late nineteenth century and that of the early twentieth is less clear than the difference between early and

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38 Swain, The Broadway Musical, 351.
39 Winkler, "Toward a Theory," 16.
late twentieth-century music. Indeed, “it seems more reasonable to see as most characteristic of the twentieth century those musical products and practices that were centred on mid-century developments in society and technology.”

In particular, minimalism seems to be a defining aspect of late twentieth-century culture broadly, in popular as well as art music. For example, Geert Lovink views techno as a manifestation of minimalism, its repetitiveness inducing a trance-like state: “Moving away from the arrow, the goal-oriented approach of progression, we experience a periodical return of elements that slowly mutate and assist us to transform into otherness.” Minimalist music seems to resonate with modern forms of transportation: Jonathan D. Kramer detects a conceptual link between the “internally static” experience of airplane travel and the experience of listening to a minimalist work. The sort of perpetually open phrase structure that Stephenson observes in pop creates what Kramer calls “temporally undifferentiated” music. According to Adams, however, the repetition of a harmonic oscillation can cause the repeated progression to develop a “greater sense of directionality,” or functionality, over time. Along similar lines, Tilman Baumgärtel quotes Gilles Deleuze quoting David Hume: “repetition does not change the subject of

44 Ibid., 55.
45 Adams, “Harmonic, Syntactic, and Motivic Parameters,” 2.20.
repetition, but the mind of the observer.”46 The proliferation of chord loops in pop songs exemplifies this minimalist tendency. If we adopt Pople’s framework for understanding twentieth-century music history, then two of this study’s foci (Debussy and Sibelius) belong to the long nineteenth century while the other two (Sondheim and modern pop music) belong to the twentieth.

6.5 Disco and related happenings

In the 1960s, soul music differentiated itself from the more general category of rhythm and blues.47 Eventually, two subgenres of soul emerged: a southern style exemplified by Stax Records and a northern style associated with the Motown label. The southern style developed further into funk, while northern soul adopted a sweet sound palette and hi-fi production style that included string accompaniments. The northern style gave rise first to Philadelphial soul and then to up-tempo disco.

46 Quoted in Lovink, “Dancing to the Loop.”
47 The information in this paragraph comes from the Grove Music Online entry on soul music by David Brackett.
Example 6.9: Archie Bell and the Drells, “Tighten Up” (1968), start of spoken vocal

Example 6.9 provides an example from soul music of the late 1960s with a funk edge. In Example 6.9, the chords are played by the rhythm guitar while Archie Bell declaims. The chords form an ionian oscillation between the tonic major seventh and a dominant chord with suspended 1.

Another tonic-prolonging oscillation, this one in phrygian rather than ionian, appears in the middle section of the theme to the film Shaft with words and music by Isaac Hayes (1942–2008). This song, like “Tighten Up,” exemplifies the funk side of soul with its active bass guitar and brisk tempo (Example 6.10).
Example 6.10: Isaac Hayes, “Theme from Shaft” (1971), instrumental melody, vocal line, and chord symbols

The rest of the theme from Shaft—that is, the beginning and the end—is instrumental, without vocals. The modal oscillation in Example 6.10 marks the start of the song’s central, vocal section and continues for as long as the vocals do. In this way, the use of transcendental oscillation clarifies the song’s structure, as it aligns exactly with the vocal section. The \( F_{\text{maj9}}-\text{Em} \) oscillation goes through seven cycles in all, of which the first three are given in Example 6.10. I hear the oscillation as being in E phrygian, though F lydian is another possibility given the strong hypermetric placement of the F chords. A couple factors tilt the balance in favor of an E tonic as opposed to F. First, the
E chords are consonant, being minor triads, whereas the chords on F are more dissonant and hence more unstable. This greater sense of consonance and stability makes the E chords seem more like tonic than the Fmaj9. Also, much more melodic activity occurs over the F chords than over the E chords. There are no pitch changes in the melodic lines over the E chords, while the F chords support quarter-note triplet figures in the melody. And the vocal line has more rhythmic activity during the F harmonies than during the E chords. As a result of the Em chord’s relative calm from a melodic standpoint, the Em chord is more stable and restful than the Fmaj9.

In the late 1960s, Philadelphia became one of the pre-eminent centers of soul music production. The most famous of the “Philly soul” production teams comprised Kenneth Gamble and Leon Huff, who produced hit records for the O’Jays and other groups. What came to be known as the “Philly sound” entailed lush string arrangements and a driving four-on-the-floor beat. Disco is traditionally seen as deriving from Philadelphia soul. Another Philadelphia producer of the early 1970s was Stan Watson, who signed the vocal group Armed and Extremely Dangerous.48 Example 6.11 presents a transcendental oscillation from that ensemble’s debut album:

Example 6.11: Allan Felder/Norman Harris, “Armed and Extremely Dangerous” (1973), first verse

The verse in Example 6.11 starts with a modally ambiguous lydian–phrygian oscillation: if one hears the A♭maj7 as tonic, then it sounds like A♭ lydian; if one hears Gm7 as tonic, then it sounds like phrygian. However, there is no requirement that we hear the passage as being in one or the other. The overall tonic chord of the entire song is C minor. The G7 chord at the end of Example 6.11 does as much as any other chord to establish C minor as the song’s principal tonic.

In the second half of the verse, the harmonic rhythm accelerates with the entrance of a local dorian oscillation that serves the “middle” function in the verse.
this second oscillation, Cm7 acts as a local dorian tonic in alternation with F9, the IV chord in C dorian. This Cm7 smoothly links the first oscillation with the second because it shares three pitch classes with the expected chord, Aมาตรฐาน. Each chord of the dorian oscillation lasts one measure, whereas the chords in the first oscillation lasted two measures each. The use of successive transcendental oscillations to increase the rate of harmonic change and thereby increase the musical tension or excitement echoes the climax of the first movement of Debussy’s *La mer*, discussed in Chapter 3. This tension finds release in the chorus that occurs immediately following the example.

In disco and the styles that it spawned, such as electronic dance music, transcendental oscillations foment an erotic trance, appropriate for the club setting where they are often heard. Both soul and “new-wave” rock eventually converged on the four-on-the-floor beat, brisk tempos, and high production value of disco. This convergence shrunk the perceptible aesthetic distance between soul music and new wave.
Illustrating disco’s malleability, Example 6.12 is from a 1978 track by the new-wave band Blondie. “Heart of Glass” bridges the gap between the raw aesthetic of punk rock and the glimmering hi-fi aesthetic of disco. As such, it is pure new wave. Each couplet of the verse (Example 6.12) is stated over a tonic-prolonging arch oscillation between E major and C♯ minor. In the first couplet, the oscillation is obvious: E–C♯m–E. (The C♯–B motion in the melody is a 6–5 appoggiatura over the E chord.) In the second couplet, however, the C♯m chord is preceded a C♯-major triad (“...only to find”). This sequence of chords produces three non-functional chord motions in a row: M3, parallel, and relative. Significantly, the unexpected C♯-major chord occurs on the word “find,” when the singer discovers that what she thought was true love was false. The deceptive

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chord motion to C♭ major mirrors the deception the singer experienced. The R oscillation that governs Example 6.12 is not an innovation of the 1970s, but the four-on-the-floor groove behind this oscillation is characteristic of pop music composed after 1970. James Perone makes note of the I–vi–I oscillation in “Heart of Glass,” considering it symptomatic of “a number of new wave songs” that “focused more squarely on the motion between tonic and submediant.” This cadre of songs is itself emblematic of the more general new-wave “fascination” with motion from I to vi.50


If Philly soul gave birth to disco, then soul and disco, in an incestuous relation, gave birth to Michael Jackson (1958–2009). British songwriter Rod Temperton’s pop hit “Rock With You,” memorably recorded by Jackson for his 1979 album Off the Wall, contains a clear transcendental oscillation in the verse (Example 6.8) and another progression in the chorus that can be heard as an embellished or camouflaged oscillation.

50 Ibid., 4–5.
(Example 6.13). Like the verse, the chorus of “Rock With You” alternates between E₃m⁹ and other chords, but the oscillating nature of the chorus progression is less obvious than in the verse (Example 6.13).

Through the downbeat of the second full measure of Example 6.13, the harmony gives the impression of being a faster version of the progression in the verse, since we go from E₃m⁹ to A₅/B₅. However, the second half of the second measure brings a new chord: B₇ major. The arrival of this chord makes the A₅/B₅ sound like an accented neighbor chord that resolves to B₇ major, since the A₇ chord is dissonant with the bass whereas the B₇ major chord is entirely consonant. Moreover, the two chords have the same bass note. If we hear the second measure in this way, then the first three full measures of the chorus constitute an oscillation from E₃m⁹ to B₇ and back to E₃m⁹. Following this model, the next measure would perhaps be expected to land on a B₇-major triad as well, but instead we arrive at C₇/D₇. If this fourth measure were taken on its own, it would be hard to justify hearing the A₅/B₅ in the first half of the measure as a mere ornamentation of the C₇/D₇ in the second half, for the C₇/D₇ chord is just as dissonant as the A₅/B₅ and has a different bass note. But when we listen to the entire four-measure phrase, our innate feeling for analogous constructions encourages us to hear the C₇/D₇ chord as emphasized just as B₇ major was emphasized in the second measure. And in measures five and six, the E₃m⁹–B₇ motion returns. Thus, the first six full measures of the chorus collectively articulate a double oscillation, with B₇ major and C₇/D₇ both alternating with
E₃m⁹. (In Example 6.13, the chords that participate in this double oscillation are symbolized in a larger font.)

6.6 Synthwave

In recent examples of synthwave, a genre inspired by nostalgia for new-wave rock and synthesizer-based pop, the use of transcendental oscillations evokes a supposedly more innocent time, often the composer’s childhood in the 1980s. While the synthpop style of the 1980s was intended to sound futuristic and cutting-edge at the time of its creation, today it sounds deliciously old-fashioned and quaint. Hence, recent examples of synthpop engage in retrofuturism, and their nostalgic oscillating chord progressions contribute to that aim. Synthwave and its associated subgenres vaporwave, chillwave, and retrowave are quasi-parodic genres of electronic music, often wordless, that rely heavily on synthesizers and are meant to evoke the pop music of the 1980s and 90s. Synthwave can be found on various online streaming platforms, often by anonymous composers and with each track usually accompanied by some sort of retrofuturist image or design. These images emphasize the colors pink and purple and are often distorted to evoke archaic technologies like cassette tapes. Analogously, the sounding music itself is also sometimes distorted in order to sound like a worn-out cassette, especially in vaporwave. Transcendental oscillations abound in this sort of

music, whose explicit objective—as indicated by YouTube comments as well as the images that accompany the online tracks—is to induce a dreamlike, nostalgic state of mind and a yearning for a supposedly cozier time, that is, the 1980s.

By shining a spotlight on harmonic oscillation, synthwave takes what had been a background to vocals and makes it the foreground in an instrumental context. This process resembles the development of landscape painting by Claude Lorrain in the seventeenth century, transforming what Leonardo had treated as a *sfumato* background into the subject of the painting itself. On a Claude canvas, the people—who would be the conventional subjects of a traditional Renaissance painting—are tiny, while the landscape is disproportionately massive. Similarly, in a synthwave track, the synthesizer oscillation—which would serve as background to the vocal line in typical synthpop songs—takes center stage.

Kamicom Sound System’s “Beyond” is a synthwave composition whose harmony consists almost entirely of a single oscillation looped over and over (Example 6.14). In “Beyond,” an oscillation between Fmaj7 and Em persists throughout with the profile T:S-T, occupying Caplin’s “beginning,” “middle,” and “end” positions. Although the Fmaj7 chords are hypermetrically stronger than the Em chords, I hear Em as the tonic because it is consonant (whereas the major-seventh chord is dissonant) and because the melody is more stable and restful above the Em chords than above the Fmaj7 chords. Also, the bass of the Em chords is lower than that of the Fmaj7, so Em releases some of the Fmaj7’s tension simply by virtue of the lowering of pitch.

Another synthwave track that is almost entirely based on a single modal oscillation is “Sixty-Three” by Emil Rottmayer (Example 6.15). We know that if Example 6.15 is in a particular mode, it must be either F aeolian or B♭ dorian. This is because the only two chords for much of the song are B♭m9 and Fm9, and the macroharmony is an F natural-minor pitch collection. There are reasons to justify hearing either of these chords as the tonic. For example, the B♭ chords occur on stronger hyperbeats than the Fm9 chords. However, I tend to hear the song as being in F aeolian rather than B♭ dorian. For
one thing, aeolian is more familiar to our ears than dorian, given the history of the common-practice use of natural minor. The i–iv oscillation in minor is quite common, and the fact that the triads are turned into minor ninth chords in this excerpt does not obscure this underlying, familiar iv–i–iv–i motion. Also, the pitch content of the Fm⁹ chords is lower than that of the Bbars chords in the recording. This registral difference lends the Fm⁹ chords the character of resolutions in contrast to the more tense (because higher-pitched) Bbars chords. So, just like “Beyond,” “Sixty-Three” presents a modal oscillation in which the hypermetrically weaker chord still manages to sound more stable than the chord that occurs on the strong hyperbeats.

6.7 Kaputt

I end this chapter with a closer look at oscillations in the 2011 rock album Kaputt by Destroyer. This band records songs written by Dan Bejar (b. 1972). Despite its name, Destroyer specializes in a smooth sound that recalls 1980s pop music, especially new wave and synthpop. Kaputt is Bejar’s most successful work to date, having been labeled the second-best album of 2011 by Pitchfork magazine. It is also the one that evokes synthpop most explicitly. In addition to synthesizers, the album’s instrumentation includes trumpets and saxophones that improvise plaintive lines over oscillating chords. Kaputt is not a dance album, yet its four-on-the-floor beats evoke disco, as do its transcendental oscillations. Example 6.16 contains a transcendental oscillation from “Chinatown,” the first track on the album.

Example 6.16 contains two transcendental oscillations that overlap. The first is \( G\text{maj}^7 – F\text{m}^7 \). I hear G as the tonic pitch in Example 6.16, which makes the \( G\text{maj}^7 – F\text{m}^7 \) oscillation \( I\text{maj}^7 – vii^7 \). Since \( I\text{maj}^7 – vii^7 \) is characteristic of lydian, the passage is in G lydian. One could conceivably hear the passage as being in \( F\sharp \) phrygian instead, given the prominence of \( F\sharp \) in the vocal line. And even B aeolian with an absent tonic is not outside the realm of possibility. After all, the melody outlines a B–F\# fifth in mm. 7–9, and as Spicer and Everett point out, the progression G–A is common in music that is in B aeolian.\(^{52}\) Nevertheless, I view G lydian as the most likely mode because the \( G\text{maj}^7 \) chord has a longer total duration than any other — two thirds of the passage, in fact — and occurs at the start and end of the verse. In any case, the second oscillation in the passage is \( G\text{maj}^7 – A^7 – G\text{maj}^7 \), an arch form. The \( G\text{maj}^7 \) in mm. 5–7 serves as the end of the first

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oscillation and the beginning of the second. Above this second oscillation, the melody is static: its B–F♯–D motive appears over the A7 chord as well as over the Gmaj7. Hence, melody divorces from harmony. Bejar’s emphasis of Gmaj7 in Example 6.16 relates to the lyrics: just as he “can’t walk away” from Chinatown, he can’t leave Gmaj7 either. In this way, the modal oscillations of Example 6.16 connote stasis.

_kaputt_’s title track has an elaborate structure based on modal oscillation. Like Satie’s first Gymnopédie, Example 6.17 alternates between major seventh chords whose roots are a fourth apart. It is not clear which of the two is more stable, so two different modal interpretations are possible: A lydian and E ionian. However, the listener gravitates toward E ionian because of that mode’s familiarity. Moreover, the melody outlines an E major-seventh chord, with particular emphasis on the third (G♮).


The contrasting middle section of “Kaputt” is likewise grounded in oscillations involving A major. Example 6.18 features two oscillations elided with one another. The
first is between A major and G♯ minor, prolonging pre-dominant (IV) in E ionian. At first, the phrase sounds responsorial due to the B-major chord in the fourth measure, creating the progression A–G♯m–A–B. However, the repetition of the A–B motion in the subsequent two measures (second system of the example) turns the A–B progression into a transcendental oscillation in its own right, prolonging dominant (B major). The third measure of the excerpt can be retroactively interpreted as a hypermetric strong beat since it inaugurates an oscillation. On the other hand, if we hear the first four bars as a responsorial progression rather than the elision of two oscillations, the third measure of the excerpt seems subordinate to the first. In other words, the simple fact that the progression A–B is repeated makes the third measure (i.e. the start of the A–B oscillation) take on the character of an important hypermetric beginning.

If we consider the chord progression in the verse of “Kaputt” to be A and Example 6.18 (the contrasting material) to be the B section, then the song has the form A B A C A D. Following an instrumental introduction based on the A oscillation, the verse begins at 0:39. We return to an instrumental passage over A at 1:15, followed by the onset of B at 1:32. After this contrasting material, the instruments again take the A progression starting at 2:06. The C progression derives from the B progression; it is simply the minimal oscillation A–Gm–A and enters on the lyric “step out of your toga” at the 2:41 mark. At 3:16, one more instrumental statement of the A oscillation appears, and at 4:26 we hear a new progression that I call D. This idea is built on the bass line a–g♯–f–e–a–g♯–a; each of these bass notes acts as a chordal root in E ionian. The descent from a to e recalls the Amaj7–Emaj7 oscillation from the A section, while the subsequent a–g♯–a bass motion derives from the contrasting B material. In this way, D synthesizes aspects of earlier parts of the song. At 5:18, the bass guitar drops out, leaving the piano to continue the D chord progression. The song dwindles to near nothingness, leaving only a sustained, shadowy c♯ that begins to be heard at 5:52 and continues until the end (6:17). The structure I have just outlined relies heavily on transcendental oscillations and seems particularly to emphasize the a–g♯ alternation, just as Sondheim emphasizes 4–3 motion in Sunday in the Park with George. “Kaputt” exemplifies Stephenson’s concept of the “compound-binary song,” a form that is divided into two parts and whose second part is “generally structured around several repetitions of a single melodic line or chord.
progression.”53 In “Kaputt,” the section from 4:26 to the end, based on the a–g♯–f♯–e–a–
g♯–a bass line, is the second part of the binary form. Another example of this structure
appears in Supertramp’s “Crime of the Century,” whose second part is built on a i–VI–i
submediant oscillation.54


A third song from Kaputt, “Downtown,” also exhibits oscillations that
incorporate A-major chords. The progression in Example 6.19, including the four-fold
statement of the Gmaj7–Aadd6 alternation, recurs throughout the entire song. The
oscillation between Gmaj7 and Aadd6 at first suggests G lydian. However, the arrival of the
B-minor chord at the start of the third system encourages us to reinterpret the Gmaj7–Aadd6
oscillation as VI–VII in B aeolian. This revised understanding recalls Spicer’s

53 Stephenson, What to Listen for in Rock, 141–42.
interpretation of the E–F♯ oscillation in the Spinners’ “I’ll Be Around” as VI–VII in the mode of G♯ aeolian. The difference is that whereas, according to Spicer, the G♯-aeolian tonic is absent from the Spinners’ song, the B aeolian tonic does appear in Destroyer’s “Downtown.” This tonic arrival completes what Biamonte calls the aeolian progression: VI–VII–i. If we understand the Gmaj7–A6 oscillation as VI–VII in aeolian, then it prolongs dominant function, a function fulfilled by the seventh scale degree present as the root of A6. The chord that interrupts the oscillation—the B-minor triad—occurs on the phrase “I woke up,” as if the arrival of a new chord breaks the dreamlike spell cast by the hypnotizing modal oscillation that governs the first part of the example. But the B-minor chord appears only on the second statement of “I woke up”—the first statement is harmonized as part of the Gmaj7–A6 oscillation. This difference suggests the process of awaking: when we first “wake up,” we are often groggy or half-asleep, and it is only later that we completely enter consciousness. In the same way, the first declaration that the speaker awoke is set in the dream world of the harmonic oscillation, and it is only the second time the speaker declares he woke up that the harmony shifts to a new chord. Moreover, this new chord (B minor) is not only a potential aeolian tonic; it is also a pure triad with no added notes, unlike the two chords in the preceding oscillation. These two qualities—tonic stability and the consonance of the chord’s interval content—are fitting

for a chord that represents reality, away from the nebulous world of dreams. And the inverse is true as well: as with “Chinatown” and “Kaputt,” the modal oscillation in “Downtown” evokes a static dreamscape that reinforces the vaguely hallucinatory lyrics. Ultimately, the dream world comes back with the return of the transcendental oscillation at the end of Example 6.19.

In the harmonic idiom of pop music since the 1960s, foreground oscillations have played an outsized role. Like modal jazz compositions, modern pop songs frequently employ an incessant oscillation as a background layer on top of which the melody and lyrics unfold. Yet in other instances, like Destroyer’s “Kaputt,” the harmony consists of an interaction between different oscillations. In this respect, we find that the gulf between nineteenth-century art music and twenty-first-century indie rock, while undeniable, is perhaps narrower than previously assumed. By their cyclic repetition and non-traditional syntax, transcendental oscillations abjure the forward directionality of common-practice phrases, whether in the music of Debussy or Destroyer.
Conclusion

In this study, I have surveyed the forms and uses of transcendental oscillations in a wide range of musical contexts from the nineteenth century to the twenty-first. In Chapter 1, I described how the “neighbor-chord principle” and functional prolongation in Romantic music gave rise to foreground oscillations that deviated from eighteenth-century norms. Chapter 2 dealt in detail with issues of progression structure, modality, and chromaticism. And in Chapters 3 through 6, I examined transcendental oscillations in the works of Claude Debussy, Jean Sibelius, Stephen Sondheim, and several modern pop composers. In numerous close readings of individual pieces, we saw how these progressions can saturate the musical structure on multiple levels. Overall, transcendental oscillations balance repetition with variety: while they are repetitive, they are also unconventional. For their sheer ubiquity as well as for their particular properties—including their symbiosis with diatonic modes, their minimalistic quality, and their evocation of mysterious or otherworldly states—transcendental oscillations are worthy of the dedicated attention this study has given them.

It is a truth almost universally acknowledged that the harmonic practice of Western music expanded and diversified over the course of the “long nineteenth century.” One of the ways in which this expansion was accomplished was through the creative use of neighbor-chord structures. The theorist Ernst Kurth suggested that any chord can be musically justified as long as it arises from a concatenation of simultaneous
neighbor notes; this is the neighbor-chord principle of Romantic and post-Romantic music. The presence of a (complete) neighbor-chord structure implies the presence of at least a minimal (ABA) oscillation; thus, the neighbor-chord principle yielded many examples of what I call transcendental oscillation, as in the works of Debussy and Sibelius.

In the late twentieth century, the neighbor-chord principle was augmented by what we might call the “vamp principle”: any two-chord succession is musically justified if it repeats many times in a row. We see the vamp principle in action in modern pop songs and, especially, Sondheim’s musicals. These two notions—the neighbor-chord principle and the vamp principle—go a long way toward explaining why we encounter so many examples of transcendental oscillations in extended-tonal and popular repertoires. In addition, the idea of uniform information density gives a clue as to the reason this device has been a standby for many composers: it balances the unpredictability of an unconventional chord progression with the stability inherent in repetition. As a repetitive progression (even in the minimal form ABA), a foreground oscillation typically prolongs some harmonic function—that is, tonic, dominant, subdominant, or chromatic mediant. Finally, foreground oscillation has a close relation to modality: in order to convey the dorian, phrygian, lydian, or mixolydian mode, the composer must strongly establish the modal tonic through direct clues, and the
repetition of the modal tonic chord via oscillation is a convenient way to provide such clues.

Areas for future research on this topic include the connections—if they exist—between the kind of transcendental oscillation found in Debussy and Sibelius’s music and nineteenth-century Conservatory pedagogy, “proto-minimalism” in the works of composers like Satie and Mussorgsky, and the dramatic and practical uses of transcendental oscillations in film and television soundtracks. This last area seems particularly rich in possibilities. For example, the soundtrack for a television series generally consists of a set of short themes that are recycled in every episode, with each theme corresponding to some emotion. In recent series, these themes are often built on chordal oscillations. Perhaps oscillating harmony is useful to the television editor for the same reason that it is useful to the Broadway conductor—namely, it allows for a particular vamp (and a particular emotional affect) to be prolonged for as long or as short a time required by the drama. By contrast, if the chord progression of a television theme is long and complicated, then it might be less convenient for the film editor to cut off in the middle of the theme when the scene’s emotional content changes.

Because of the device’s constant presence in film and pop music, most of us encounter transcendental oscillation on a regular basis. As a compositional trend, it is thus of signal importance for the understanding of our sonic environment.
Glossary

<-11,1>: a collection-defining oscillation between a minor triad and the major triad whose root is a semitone above.

<-7,5>: a collection-defining oscillation between a minor triad and the major triad whose root is a fourth above.

*Aeolian*: refers to music in the natural minor but outside the common practice. In this study, “minor” is shorthand for “common-practice minor.”

*Arch progression*: a chord progression with the abstract form ABCB.

*Collection-defining oscillation*: a diatonic oscillation that contains a tritone.

*Common practice*: As used in this study, the common practice refers to the set of harmonic progressions found in eighteenth-century Western art music.

*Complete oscillation*: an oscillation lasting at least two cycles.

*Cycle*: If the two chords in an oscillation are A and B, one cycle of the oscillation is the progression AB.

*Deceptive oscillation*: a technique of exiting an oscillation in which a new chord appears that shares some pitches with the chord that would be expected to occur if the oscillation were to continue.

*Double oscillation*: a progression in which one chord alternates with two different chords in alternation. It has the basic form ABACABAC... (A alternates with B and C) or ABCBABC... (B alternates with A and C).
Hyper-oscillation: an oscillation between two different oscillations. For example, a composer might state a <-,7,5>, proceed to a chromatic-mediant oscillation, and then return to the <-,7,5>.

Ionian: refers to music in a major key but outside the common practice. In this study, “major” is shorthand for “common-practice major.”

Minimal oscillation: a chord progression with the abstract form ABA.

MM2: a collection-defining oscillation between two major triads a whole step apart.

mm2: a collection-defining oscillation between two minor triads a whole step apart.


Neapolitan oscillation: a chromatic oscillation whose chords are transpositions of one another by interval class 1.

Q oscillation: a chromatic oscillation whose chords are transpositions of one another by interval class 5.

Responsorial progression: a chord progression with the abstract form ABAC.

Traditional tonality: another name for the common practice.

Transcendental: an adjective applied to harmonic progressions that (1) appear in a cultural context that considers traditional tonality to be the default idiom but (2) deviate from traditional tonality.
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