Twentieth-Century Music Theory and Practice

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Preface

As its title states, this book addresses twentieth-century music theory and practice. It may be surprising to learn, then, that the discussion extends to music that is over a hundred years old as well as music written by living composers. Such a broad span of musical history is included because the aesthetic ideas that emerged in the late nineteenth century are still resonating in the world today. Indeed, many of these ideas arose long before the nineteenth century; J. S. Bach, for example, subjected melodic motifs to inversion, retrogression, and retrograde inversion, important operations in Schoenberg's twelve-tone method.

What we can learn from this is that compositional practice over the last 100 years or so is not so different from that of the more distant past. To be sure, not all music is cut from the same cloth. Western music written before 1890, for example, is primarily tonal, based on functional triadic harmony and drawn from the diatonic collection. Much of the music written after 1890 is not. But this does not mean that music, whether tonal or "post-tonal," does not also incorporate deep principles of organization common to music in general. Instead, it appears that there are a number of musical constants involving motives, textures, instrumentation, and the like that pervade the music of many periods.

Twentieth-Century Music Theory and Practice introduces a number of analytical tools for analyzing a wide range of twentieth-century musical styles and genres. Admittedly, these tools have been devised primarily to provide insight into the music of the Second Viennese School and its progeny. To the extent that they express fundamental musical principles, however, they have a much richer applicability. In this text, we will capitalize on this idea by using the theoretical devices most commonly associated with atonality to explore music inclusive of a large number of schools and "isms." Hence, we will encounter composers representing an assortment of twentieth-century trends, including, but not limited to, Paul Hindemith, George Crumb, Ellen Taaffe Zwilich, Steve Reich, Michael Torke, Philip Glass, Alexander Scriabin, Ernest Bloch, Ruth Crawford, Igor Stravinsky, Béla Bartók, Sergei Prokofiev, Arnold Schoenberg, Maurice Ravel, Claude Debussy, Aaron Copland, Lukas Foss, Alfred Schnittke, Leonard Bernstein, and Witold Lutoslawski.

A Word about Tonality

Since many of the musical examples in this text are drawn from works composed in the tonal tradition and have key signatures, a word about the definition of tonality may be in order here. Tonality is sometimes

cast in very broad terms to refer to music that highlights a central tone or tonic, a definition that applies to an exceptionally wide range of musical styles. Many post-tonal works also revolve around centric tones. Such a definition of tonal parameters, then, does not allow for a very nuanced description of musical styles and periods. Unlike most tonal music written before 1890, twentieth-century tonal music often downplays goal-directed harmony based on dominant/tonic polarity. What remains are merely the trappings of tonal music: diatonic collections, triadic harmony, lyrical melodies, etc. In addition to its "tonal" features, such music often incorporates processes associated with post-tonal music such as inversional symmetry, non-tertian harmony, and twelve-tone operations. Works composed under these circumstances are just as accessible to the tools used to analyze post-tonal music as those that have a more modernistic exterior and may even be considered to be a species of post-tonal literature themselves. It is for this reason, and because they too are an integral part of the twentieth-century milieu, that these examples have been included.

Aims

Most college and university music programs now offer standalone theory courses on twentieth-century music. These courses are divided into two main camps: those devoted to stylistic and historical studies and those devoted to theory and analysis. This text fits most clearly in the latter category, although it will also include some coverage of stylistic principles; in my view, *theories need contextualization* in order to be fully understood.

The text is primarily intended for classes on post-tonal, twentieth-century, contemporary, or atonal music theory, but is also suitable for the general graduate student population. By providing comprehensive coverage of a large number of theoretical concepts, the text may introduce topics that are outside the purview of some courses. These topics can be left out at the discretion of the instructor.

Among the specific aims of the textbook are:

1) to investigate twentieth-century music theory and practice without retreating from the technical language that is fundamental to twentieth-century theories of music;
2) to show the intrinsic musical relevance of the traditional analytical tools for twentieth-century music;
3) to show how these tools can provide important analytical insight into a broad array of musical styles stretching from the late nineteenth century to the present day; and
4) to show how twentieth-century music reflects its time and place in history.

Organization

Post-tonal theories and concepts are often separated into isolated categories. The present textbook takes a more integrated approach and unfolds in a progressive manner. This allows many pertinent aspects of the musical examples to be considered in addition to the specific analytical concept under investigation. The harmonies and scales discussed in Chapter 1, for example, are referred to throughout the text and become the springboard for the study of interval cycles in Chapter 2. Similarly, the four interval types described in Chapter 2 are used to support the discussions of ordered and unordered sets in Chapters 3, 4, 5, and 6. The discussions of motive in Chapter 6 and contour and rhythm in Chapter 7 have a direct bearing on the analyses of row compositions in Chapter 8. An Introduction has been included to

provide the historical context needed to more fully understand the musical innovations of the twentieth century. The study of textural features described in Chapter 9 rounds out the discussion by establishing categories that can be used to identify links between the diverse styles encountered in the previous chapters. The discussion of "coloristic" music, silence, and conceptual music at the end of Chapter 9 brings us full circle by expanding on topics already introduced in the Introduction.

Despite the progressive unfolding of the text, the chapters may also be reordered to fit various curricular needs. Since resurrected material is generally accompanied by a brief description, such reordering of the material should not be inordinately disruptive. The same is true for material that is left out of the discussion.

As the chapter titles suggest, the text is broadly organized around sets. This is done to highlight the differences between pitch and pc constructions and to help students keep track of these differences. The various types of intervals associated with sets receive at least as much attention as the sets themselves. Other important analytical and historical topics, including atonality, set theory, and the twelve-tone method, are emphasized within this framework.

Pedagogical Features

Owing to their abstract nature and emphasis on mathematical principles, the theories described in this text can themselves easily become the focus of attention rather than the music they are meant to embellish. For the most part, however, these theories engage or build on musical ideas that have been in place for centuries. As much as possible, then, theories are presented in a way that emphasizes their fundamental musicality, while building on musical principles with which the student is already familiar. There are also a number of new pedagogical tools for analyzing pitch and rhythm. These include ordered pitch interval motives (a.k.a. shape/interval motives) and ordered and unordered duration classes.

Twentieth-century music theory incorporates an abundance of terms and concepts. In recognition of this fact, each chapter begins with a list of terms and topics to help organize class discussions. While the text may center on theoretical terms and concepts, however, these are always illustrated with examples from the literature. In addition, there are many detailed visual aids showing how theoretical tools are grounded in logical music/analytical principles. Footnotes have been included to provide additional insight as well as to help contextualize and legitimize the discussion. The endnotes and boxed material may also be used as a point of departure for deeper explorations of the topics under discussion in upper division seminars and graduate courses.

Exercises and Aural Skills Supplement

This textbook provides a number of analytical exercises in addition to compositional and written exercises. The exercises are organized by chapter and address the material in the same order as the chapter they pertain to. The chapters and exercises can therefore easily be divided into more digestible units at the discretion of the instructor.

The textbook also includes an aural skills supplement with an aural skills trainer available on the companion website: www.motivichearing.com.

The inclusion of the aural skills supplement stems from my fruitful association with John Wm. Schaffer at the University of Wisconsin, but also from the assumption that the theories we use to describe recent

music are essentially musical phenomena that can best be accessed through listening. The supplement provides brief explanations of the exercises found in the online computer program, *Motivic Hearing*, and how they relate to the material covered in the textbook. The supplement also suggests strategies that can be used to complete the exercises successfully.

The exercises themselves are divided into three streams. **Stream 1** focuses on interval identification, **Stream 2** on TTOs (P, I, R, and RI), and **Stream 3** on developing greater facility using the skills learned in Streams 1 and 2. The exercises also provide practice in identifying trichord prime forms by ear. Instructions on how to access and use the program are included.

Given the fact that among the most distinguishing characteristics of twentieth-century music is its variety and innovation, it is not possible to provide a comprehensive account of all of its diverse styles and episodes in a single text. Although there is some discussion of non-pitch-based music, most of the examples in this text come from compositions whose pitch material is drawn from the twelve tones of the equal tempered scale. Jazz, another genre that came to fruition during the twentieth century, has its own rich theoretical tradition and has largely been left out of the discussion along with other forms of commercial music. In general, music based on microtones, divisions smaller than a semitone, requires a different theoretical approach than the one taken here and is not included. Even without these exceptions, we are left with an ample amount of music to analyze, and it is this repertoire we will explore in this text.

Edward Pearsall
April 2011

Acknowledgments

The ideas in this book are rooted in so much lore and tradition that it is difficult to precisely identify their origins. I am fortunate indeed to have been able to come into contact with so many formidable scholars, both in writing and conversation, and I am deeply indebted to them all. Of the many people cited in this text, Robert Morris, John Rahn, Milton Babbitt, Allen Forte, George Perle, and Elliot Antokoletz deserve special mention. This book could not have been written without the pioneering efforts of these theorists. Among those I would like to thank personally are Guy Capuzzo, Byron Almén, Michael Berry, Matthew Santa, and Eric Drott for providing timely advice and encouragement when it was most needed. I am especially indebted to John Wm. Schaffer, whose influence is felt throughout the text. Finally, I would like to express my deep gratitude to Ludim Pedroza, not only for her patience throughout the long process of writing this book, but also for her many thoughtful comments, literal contributions, and help in editing the manuscript.

Introduction

Modernism in Music

Every generation experiences its time as *modern*, up to date, contemporary. The late nineteenth and early twentieth centuries, on the other hand, witnessed the burgeoning of an unusually protracted and self-conscious interest in things new and unprecedented. This was owing in part to the global influence of industrialization, which caused many to question the relevance of traditional political, cultural, and social ideologies. As composers, artists, authors, and architects searched for a contemporary aesthetic response to their changing world, they began to reject the artistic values of the past, turning instead to more abstract forms of expression. The term most often used to identify this radical turn of the twentieth-century trend in art and literature is **modernism**. Late nineteenth- and early twentieth-century modernism is rooted in a particular kind of modern experience, one whose innovative spirit, while difficult to pin down, is exceptionally earnest and trenchant.

Modernism is often associated with a radical break from the past and the artistic values and traditions it entails. The modernist perspective is far more complex than this, however. As Paul Childs observes, "modernity is an imprecise and contested term" and involves a number of "paradoxical if not opposed trends toward revolutionary and reactionary positions, fear of the new and delight at the disappearance of the old, nihilism and fanatical enthusiasm, creativity and despair."[1] In music, these paradoxical trends eventually led to the breakdown of musical style into a plethora of styles and "isms," including atonality, serialism, aleatory composition, neo-classicism, primitivism, expressionism, and impressionism, to name just a few. Yet, despite the departure from the norms and conventions of the past, many of these trends are rooted in age-old practice. Let us, then, embark on an investigation of this exhilarating and complex episode in history in order to come to a better understanding of its richness and artistic vitality.

Arnold Schoenberg, one of early modernism's most recognizable figures and senior member of what has become known as the **Second Viennese School** of composition, was himself no enemy of the past. Indeed, Schoenberg purposefully set out to provide what he saw as the inevitable next step in the evolution of Western music. Born in 1874, Schoenberg grew up in a society that divided the cultural landscape into high and low art forms. It should come as no surprise, then, that music history for Schoenberg—as well as many others of his generation—was epitomized by a long line of master composers, primarily German, each of whom introduced innovations that, in their view, took music further down the path toward greater refinement. There is, perhaps, no better description of this view than that expressed by Schoenberg himself:

> As everybody knows, while Bach still was living a new musical style came into being out of which there later grew the style of the Viennese Classicists, the style of homophonic-melodic composition, or, as I call it, the style of Developing Variation.[2]

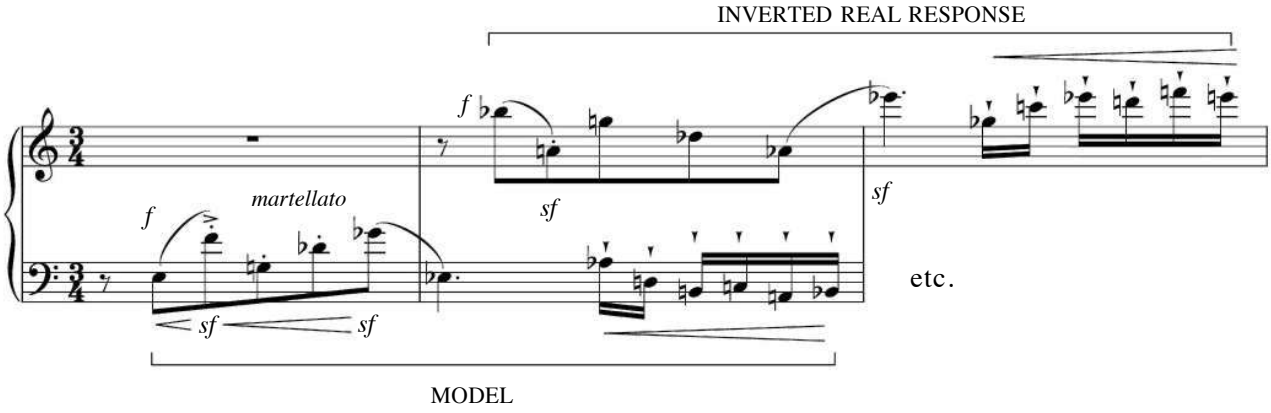
Schoenberg viewed his own efforts in a similar light, noting that "composition with twelve tones and what many erroneously call 'atonal music' is not the end of an old period, but the beginning of a new one."[3]

As these statements reveal, Schoenberg did not have his eye set on the avoidance or destruction of past conventions. On the contrary, he consistently cast his ideas in a positive light. One of his best known axioms is the "emancipation of dissonance," a principle that led him to count such traditionally dissonant intervals as seconds, sevenths, and tritones among the harmonic intervals along with thirds, fifths, sixths, and octaves.[4] Schoenberg's characterization of dissonance as an enslaved entity suggests that he did not consider the incorporation of traditionally dissonant intervals to be an act of rebellion or an *attack* on music, but rather a benevolent act of inclusion. In a similar vein, Schoenberg expressed dislike for the term **atonal** along with its negative connotations, preferring instead the term *pantonal*.[5]

To see how the materials and techniques of the past emerge in new guises in Schoenberg's music, let us briefly examine the fifth movement of his first **twelve-tone composition**, the *Suite for Piano*, Op. 25.[6] One of the first things we notice about this movement is its form, Menuett and Trio. The menuett and trio (or minuet and trio), of course, is the stock form for one of the middle movements of instrumental works written during the eighteenth and early nineteenth centuries, including sonatas, string quartets, and symphonies. Other aspects of the work that recall historical practices are the use of imitative counterpoint and the inverted response in the Trio.

While the *Suite for Piano* resembles the music of Schoenberg's predecessors in some ways, it departs significantly from them in others. Example 0.1 contains the first few measures of the Trio. Notice that the melody here is angular, full of leaps, rather than primarily smooth as in Bach's fugal themes. Notice also that the right-hand part is not a *tonal*, but a *real* response.[7] This is because the piece does not remain in a single key. Instead, each statement of the theme articulates all twelve tones in the octave, making the twelve tones of the chromatic octave the basis for the piece rather than a major or minor scale.

EX. I.1—Arnold Schoenberg, *Suite for Piano*, Op. 25, Trio, mm. 1–3 (Excerpt with Mixed Old and New Techniques)

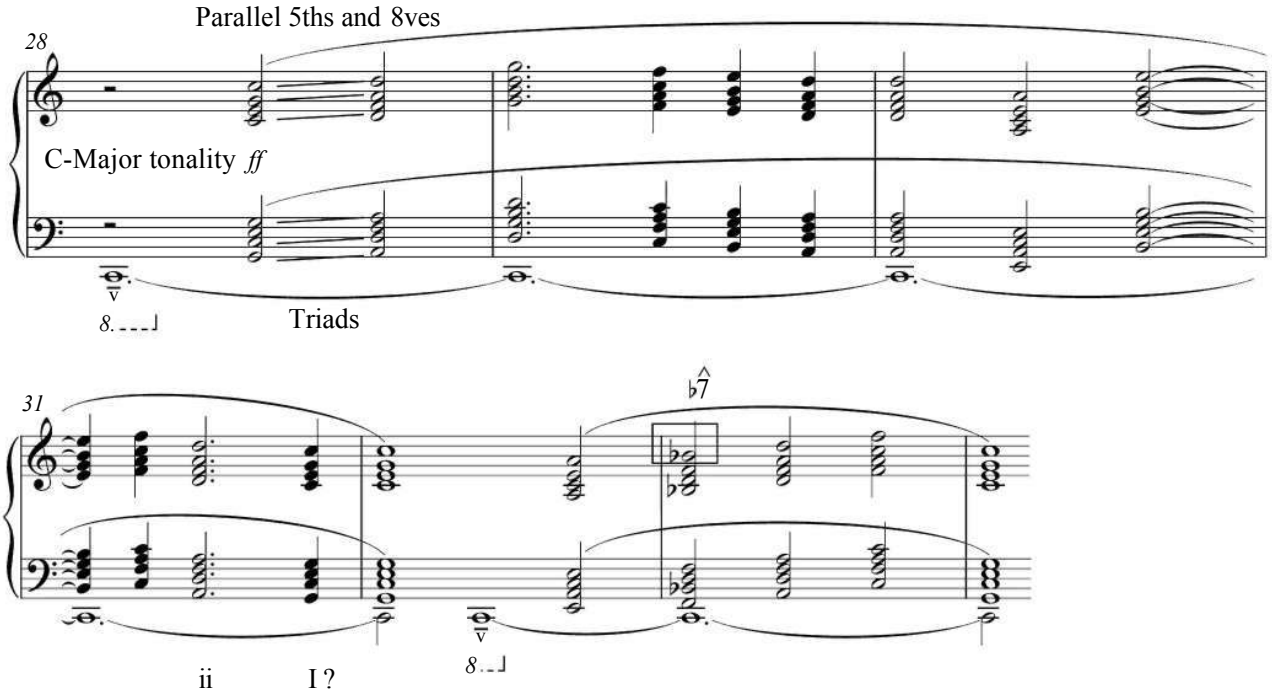


Not all European composers at the turn of the twentieth century shared Schoenberg's views. One important example is Claude Debussy. Debussy believed that the hegemony of German music overshadowed the musical traditions of his native France. As a result, he made a conscious effort to move away from compositional practices he associated with Germanic tradition.

> We have, however, a purely French tradition in the works of Rameau. They combine a charming and delicate tenderness with precise tones and strict declamation in the recitatives—none of the affected German pomp, nor the need to emphasize everything with extravagant gestures or out-of-breath explanations . . .[8]

The compositional ramifications of Debussy's perceived excesses in German musical practice are manifested primarily in his approach to harmony and form. Example 0.2 shows an excerpt from Debussy's Prelude, "La Cathédrale engloutie" (The Sunken Cathedral). Unlike the excerpt from Schoenberg's Op. 25, this excerpt incorporates familiar scales and triads. These are used, however, in unconventional ways; note the parallel octaves and fifths (largely forbidden in traditional tonal contexts), the subversion of the leading-tone function through the arrival of B♭ in m. 33, and the absence of functional harmony. While not apparent from this excerpt alone, the piece is also less formally conventional than Schoenberg's Op. 25 Menuett and Trio. While the main theme re-emerges at the end of the movement, for example, there is no recapitulation in the traditional sense. Instead, as Figure 0.1 illustrates, themes are recycled in an ad hoc manner, imparting an improvisational character to the piece.

EX. I.2—Claude Debussy, Preludes, Book 1, No. 10, "La Cathédrale engloutie," mm. 28–34 (Conventional and Non-Conventional Features in Debussy)



Measures:	1	7	14	28	47	72	84
Themes:	A . . .	B . . .	A + Expansion . . .	C . . .	B . . .	C . . .	A

FIGURE I.1 Themes in "La Cathédrale engloutie"

Debussy was not the only *fin de siècle* French composer to have remarked on the differences between French and German perspectives. Maurice Ravel, for example, also alluded to what he called the distinctive "national consciousness" of German and French composers.[9] **Nationalism** in general came to have broad appeal in the early twentieth century as composers on both sides of the Atlantic began to take a stronger interest in their aesthetic and cultural heritages. Manifested by the incorporation of folk tunes into concert music, this trend may be observed in the music of Béla Bartók (Hungary), Leoš Janàček (Czechoslavakia), *les six* (France), the Russian Five, and Charles Ives (United States). Their interest in national identity, on the other hand, did not prevent composers from using the indigenous music of countries other than their own as the basis for composition. Antonín Dvořák's *New World Symphony*, for example, was influenced by his exposure to Native American music and Afro-American Spirituals during his visit to the United States from 1892 to 1895, and both Ravel and Debussy were inspired by American Jazz.[10]

Although Schoenberg and Debussy engaged with the past in different ways, neither rejected it entirely and their music incorporated important elements linking it to the traditions each composer valued most. Later in the century, composers would adopt a more contentious view of the past. Where Schoenberg attempted to link dissonance with consonance, for example, Charles Seeger inverted them.[11] Seeger advocated a compositional model based on **dissonant counterpoint** rather than traditional sixteenth- and eighteenth-century countrapuntal models. In dissonant counterpoint, dissonant intervals are substituted for consonant ones; consonance, that is, "resolves" to dissonance, not the other way around. Seeger's ideas were adopted by a number of important **American experimentalists**, including Ruth Crawford, Henry Cowell, and Carl Ruggles. While the music written by American experimentalists may resemble that of Schoenberg in some ways, it has entirely different origins. As we shall see, this is a theme that resonates throughout the twentieth century.

In the post-World War II era, composers became even more resolute and outspoken in their stance against past practices. One particularly vocal proponent of a radical break with the past was Pierre Boulez. In a famous article, Boulez scolds Schoenberg for holding on too strongly to traditional forms.[12]

> What then was his [Schoenberg's] main ambition once a chromatic synthesis—or safety net—had been established by serialism? To create works of the same nature as those of the old sound-world which he had only just abandoned[?] . . . It certainly does not show much faith in serial organization to deprive it of its own modes of development in favour [sic] of others that seem safer . . .[13]

In Boulez's view, Anton Webern and Claude Debussy—despite the differences in their musical vocabularies—came closer to recognizing the potential for novelty to stand on its own merits because they reacted "against all inherited rhetoric."[14] Building on this foundation, Boulez and his associates (e.g., Luigi Nono, Luciano Berio, and Karlheinz Stockhausen) adopted an approach to composition in

which Schoenberg's practice of serializing pitch was applied to other musical parameters, including register, duration, articulation, and dynamics.

While Boulez attempted to introduce strict control over every aspect of his music, others just as vigorously shunned such control. Principal among these is **avant-garde** composer John Cage. Cage, a one-time student of Schoenberg, challenged the very definition of music by incorporating noises and environmental sounds into his compositions. Even more famous is his **aleatory music** in which chance techniques are used to make compositional decisions. It is interesting that, despite the sharp contrast in their compositional approaches, music written by both Boulez and Cage often evokes remarkably similar aural effects. Boulez himself acknowledged such a connection when he noted that, "[t]he tendency of these experiments by John Cage is too close to my own for me to fail to mention them."[15] What these pieces have in common are their **pointillistic** textures—with a profusion of wide leaps—and rhythmic complexity, and it is these modernistic characteristics that link them despite the divergent motivations of the two composers.

Whether they embrace or repudiate it, history and its traditions loom large in the consciousness of modernist composers. The past they dwell on, however, is a narrowly defined past, one whose heroes—the canonized masters of the tonal tradition—are few and far between. Given this view of history, one can easily understand how some composers may have felt the need to work as much *against* the old as *for* the new in order to carve out a space for their own creative expression and to ensure their place in history alongside their famous predecessors.[16]

Other Trends

While the Second Viennese, Darmstadt, and American Experimental schools pushed music toward greater abstraction, other early and mid twentieth-century composers continued to make use of the tonal vocabulary, albeit in ways that often departed sharply from their nineteenth-century predecessors. Prokofiev, Shostakovich, Stravinsky, Poulenc, Satie, Bloch, Copland, McDowell, all relied to some extent on the accoutrements of tonal music (e.g., triads, seventh chords, major and minor keys, etc.). Beyond the use of lyrical melodies and triadic harmony, however, much of this music has little in common with pre-modernist practices. Traditional rules regarding the treatment of dissonance, for example, rarely apply and the dominant function is mostly absent.

It is also important to recognize that composers themselves did not always adhere to one school or another. Both Copland and Stravinsky, for example, experimented with Schoenberg's twelve-tone technique. Prokofiev's early works reflect the influence of such modernist composers as Stravinsky and Schoenberg while his later works, those written following his return to Russia in 1923 after living in Paris and the United States, incorporate lyrical melodies, folk material, and lush tertian harmonies, stylistic features that are more in line with **Socialist Realism**.[17] Stravinsky was an especially versatile composer and at various times in his career wrote primitivistic, neo-classical, and even serial works.

Innovation began to take on an added demeanor in the latter half of the twentieth century. During this period, many composers and artists became less intensely reactionary toward the past and, at the same time, more interested in popular culture. As a result, the distinction between high and low art forms began to blur and the culture of *L'art pour l'art* (art for art's sake), so pervasive during the nineteenth and early twentieth centuries, grew to occupy only one niche domain among many. Soon, styles that were more inclusive of popular and non-Western music in addition to classical traditions began to emerge amidst the insular schools and "isms" of the modernist camp.

These developments bespeak a new tradition, one that operates under the rubric of **postmodernism**. Despite its apparent indifference toward the past, postmodernism is nevertheless dependent on the legacy of modernist ideals, for it is from these ideals that its disparate trends emerged.[18] One of the most prevalent features of postmodernism is, as Charles Jencks observes, its "intense commitment to pluralism."[19] **Pluralism** is manifested, among other things, through genre mixing and an interest in non-Western, popular, and folk materials. Postmodernism thus gives the impression of operating outside of modernism's narrow definitions of the world or even of being somehow beyond it. But by using, again in Charles Jencks's words, "very modernist tactics against the Modernists," postmodernists continue to engage modernism's contentious relation with the past and are essentially defined in terms of it.[20] While the term postmodern itself appears to consign modernism to the past, moreover, the influences of modernism may still be felt. Composers such as John Corigliano and George Crumb, for example, have used twelve-tone rows in their compositions, albeit without subjecting them to the twelve-tone method prescribed by Schoenberg. Hence, we can see that modernism and postmodernism continue to engage each other in an ongoing and mutually interdependent dialogue.

Pluralism in music gives rise to at least two disparate trends. The first of these is the emergence of a niche mentality, which tends to place all genres on an equal playing field rather than arranging them into a hierarchy of high and low value. Under these circumstances, the listener's preferences appear to take precedence over social and cultural demands. Even so, the niche mentality engenders its own form of rejection, for it sees as "other" that which is not of itself.

The second trend is a more "composerly" one and centers around the juxtaposition of contrasting styles. An example of this may be found in the Sting song, "Russians." Sting, a classically trained musician, places a theme borrowed from Sergei Prokofiev's classically conceived orchestral score for *Lieutenant Kijé*, a Soviet film released in 1934, in a popular music setting with guitars and synthesizers to make a statement about cold war politics.

Self-proclaimed postmodernist George Crumb also incorporates material from multiple sources.[21] Crumb acknowledges influences ranging from Debussy, Bartók, and Mahler to the folk music of his native West Virginia. Hence, one finds folk instruments such as the banjo and musical saw alongside traditional classical instruments in his scores in addition to a variety of source material. This blending of popular, folk, and classical archetypes is an important and pervasive aspect of postmodern music and art.

While the novelty of postmodern music is sometimes downplayed, most likely in reaction to what has often been viewed as the excesses of modernism, the creative spirit prevails and there is a freshness to postmodern music that is, in many ways, as inventive as that of many modernist composers. Modernism and postmodernism alike are steeped in contradiction and paradox; a deep reverence for monolithic figures of the past vs. the renunciation of past practice, the emancipation of dissonance vs. the exclusion of consonance, novelty vs. tradition, greater structural control vs. through-composed forms and chance procedures, the individualistic imperative vs. absolutism, abstraction vs. expression, high art vs. low art . . . More important for the purposes of this text is the fact that much pitch-based music written since 1890—whether modern or postmodern, abstract or folkloristic, tonal or atonal—is grounded in common musical principals with deep historical roots.[22] Focusing on such principles allows us to view pieces that incorporate widely varying strategies, compositional philosophies, and content from a similar vantage point. Keeping this idea in mind, let us now proceed to the theories themselves . . .

Chapter 1

Scales, Harmony, and Referential Collections

Tertian harmony	Modal scales
Added note chords	Synthetic (a.k.a. exotic or artificial) scales
Polymodal chord	Referential collections
Polytriads	Diatonic modes
PLR transformations	Pitch centricity
Parsimonious voice leading	Lydian-Mixolydian scale (a.k.a. acoustic scale)
Secundal harmony	Tertiary heptatonic scale
Quartal harmony	Melodic-minor ascending scale
Quintal harmony	Pentatonic scale
Tone clusters	Whole-tone scale
Tristan chord	Hexatonic scale
Mystic chord	Octatonic scale
Petrushka chord	Modes of limited transposition

Tertian Harmony

In a series of lectures he delivered to a small group of dilettantes at a private Vienna residence in 1932–33, Anton Webern expressed the view that harmony is derived primarily from the *harmonic series*.[1] This line of reasoning gave him the foundation he needed on which to build a theory of contemporary harmony:

> we must understand that consonance and dissonance are not essentially different—that there is no essential difference between them, only one of degree. Dissonance is only another step up the scale [harmonic series], which goes on developing further.[2]

Whether or not harmony is grounded in the acoustical properties of the harmonic series, as Webern suggests, it is true that the definition of consonance and dissonance has changed over time, and in a way

that for the most part has moved progressively up the harmonic series. Early Christian church music, for example, was saturated by perfect consonances (fifths, fourths, and octaves), intervals that occur at the bottom of the harmonic series.[3] (See Figure 1.1.) In Western music written during the seventeenth to nineteenth centuries, thirds, along with the dominant seventh chord, played a central role in the harmonic texture. These occur higher up in the series. Chords in music written since 1890 are often more complex and can incorporate a wide variety of intervals, including traditionally dissonant intervals such as seconds and tritones. In this chapter we will focus on two types of chords, those built up from a single diatonic interval (seconds, thirds, fourths, and fifths) and those identified with a particular composer or work. Chords containing a mix of consonant and dissonant intervals will be discussed in Chapters 4 and 5.

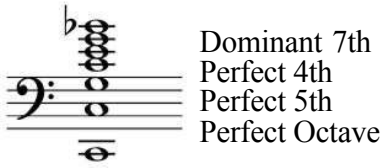
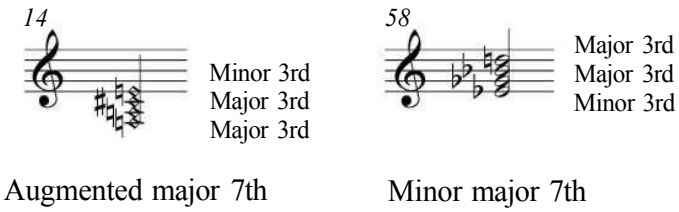


FIGURE 1.1 Harmonic Series

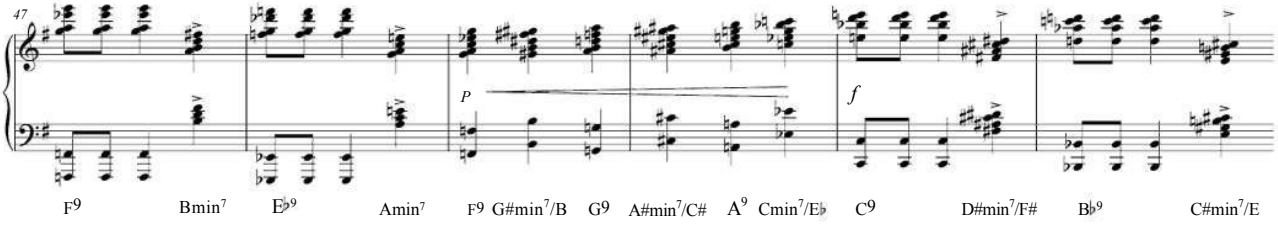
Although music written since 1890 may contain a variety of harmonic intervals, **tertian harmony** (harmony consisting of thirds) continues to play an important role. Tertian chords include triads and sevenths but do not always function according to tonal protocol and may appear in the company of non-tertian chords. Neither one of the seventh chords in Example 1.1, for instance, commonly occurs in eighteenth- and nineteenth-century tonal music.[4] Yet, both are made up of thirds. Notice too that the two chords are inversions of each other; that is, the major and minor thirds in the first chord are projected in the opposite direction in the second.[5]

EX. 1.1—Schoenberg, *Three Piano Pieces*, Op. 11, No. 1, mm. 14 and 58 (Nontraditional Seventh Chords)



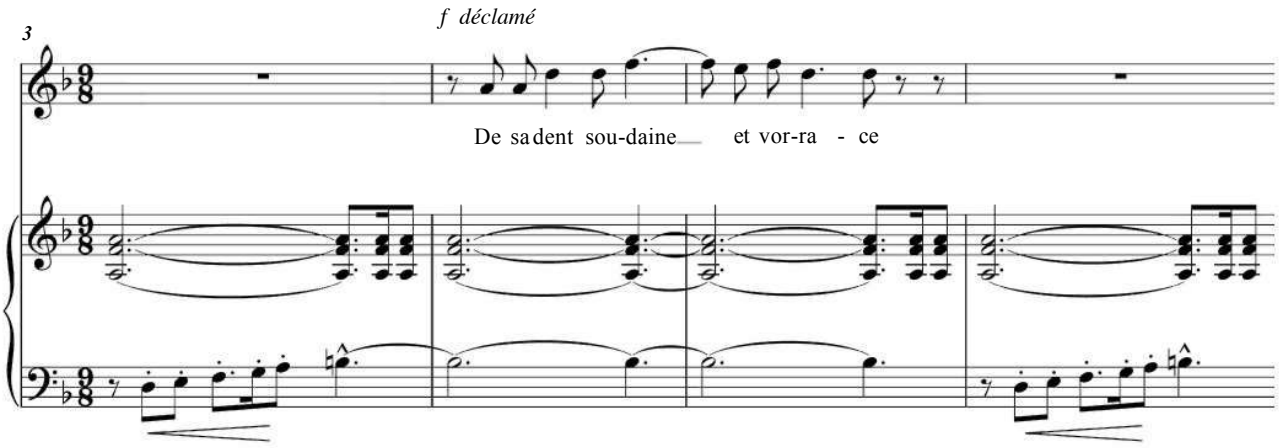
The passage in Example 1.2 contains a succession of tertian chords. These chords are mostly seventh and ninth chords, but do not adhere to conventional voice leading principles or tonal function.

EX. 1.2—Maurice Ravel, *Valses Nobles et Sentimentales*, I, mm. 47–52 (Non-functional Tertian Texture)



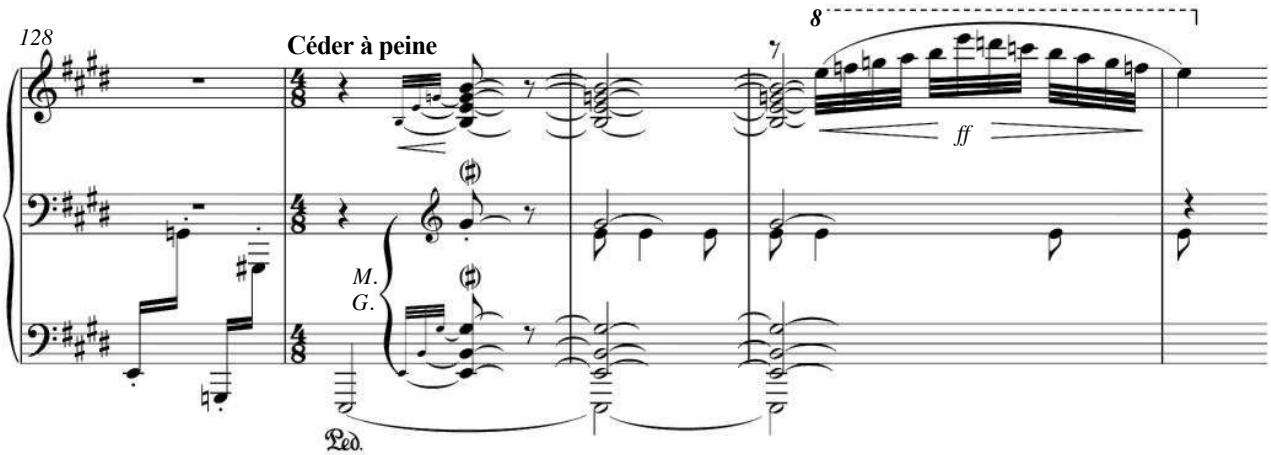
In some cases, chords that are otherwise tertian may contain non-chord tones. The non-triadic tone in these **added note chords** imparts richness to the chord without detracting from its triadic origins.[6] The B♮ in the left-hand part of Henri Duparc's *Le manoir de Rosemonde* shown in Example 1.3 could be treated as the root of a half-diminished chord. The sustained D minor chord in the right-hand part along with the key signature and left-hand ascending scale pattern, however, suggest that D minor is the prevailing harmony here. Understood in this way, B takes on the guise of an added sixth.[7]

EX. 1.3—Henri Duparc, *Le manoir de Rosemonde*, mm. 3–6 (Added Note Chord)



A **polymodal chord** is a particularly interesting kind of added note chord in which the major and minor forms of a triad are combined. In Example 1.4, E major is combined with E minor.

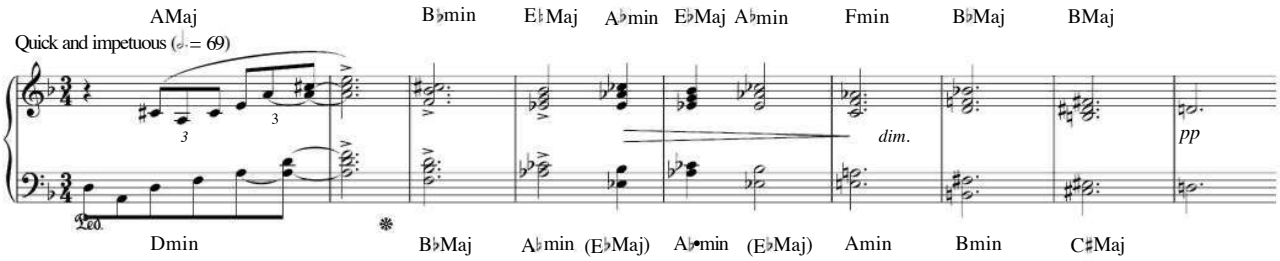
EX. 1.4—Francis Poulenc, *Napoli suite pour le piano*, "Caprice Italien," mm. 128–32 (Polymodal EMaj/min Chord)



EMaj/min Polymodal Triad

Composers have also made use of **polytriads**, harmonies consisting of more than one triad. Polytriads can sometimes be analyzed as a single extended chord. The chord in m. 8 of Example 1.5, for instance, could be analyzed as a C♯^{11} chord. This analysis, while technically correct, does not take into account the independence of the left- and right-hand parts. Notice too the enharmonically spelled polymodal triad in m. 3.

EX. 1.5—Benjamin Britten, *Winter Words*, 1, "At Day-Close in November," mm. 1–9 (Polytriads)



PLR Transformations and Voice Leading Parsimony

In the absence of functional harmony, triads may form successions based on other criteria. Chief among these are the **PLR transformations** in Figure 1.2.[8] Two of these transformations, P (parallel) and R (relative), will already be familiar. P and R relations are traditionally associated with keys, but can also be used to identify relations between triads; P changes the mode of the chord while R replaces it with the tonic of its relative major or minor. In both instances, the chords share two common tones; P-related chords share a fifth, R-related chords share a major third. The only other relation that produces triads with two common tones is the leading-tone exchange or L.[9] L replaces the root of a major triad with its leading-tone, the note a semitone below it. When the chord is minor, L replaces the fifth of the chord with the note a semitone above it, producing a major chord. L-related chords share a minor third.

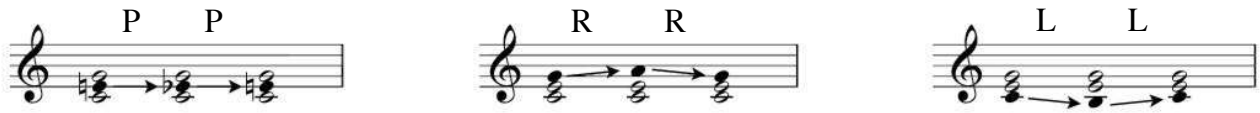


FIGURE 1.2 PLR Transformations

PLR transformations may be combined to produce triadic streams with **parsimonious voice leading**. In parsimonious voice leading, voices move as efficiently (or as smoothly) as possible.[10] In each of the parsimonious PLR cycles shown in Figure 1.3, for example, each pair of chords share two common tones while the remaining tone moves by step. Each cycle, moreover, eventually leads back to the starting point. The LR cycle requires twenty-four chords to complete itself while the PL (six), and PR (eight) cycles are much shorter. Notice that each cycle produces a series of alternating major and minor triads with root movement by third. The cycles may begin with either member of the pairing. (Be sure to play the cycles both forward and backward to familiarize yourself with their unique non-functional characteristics.)

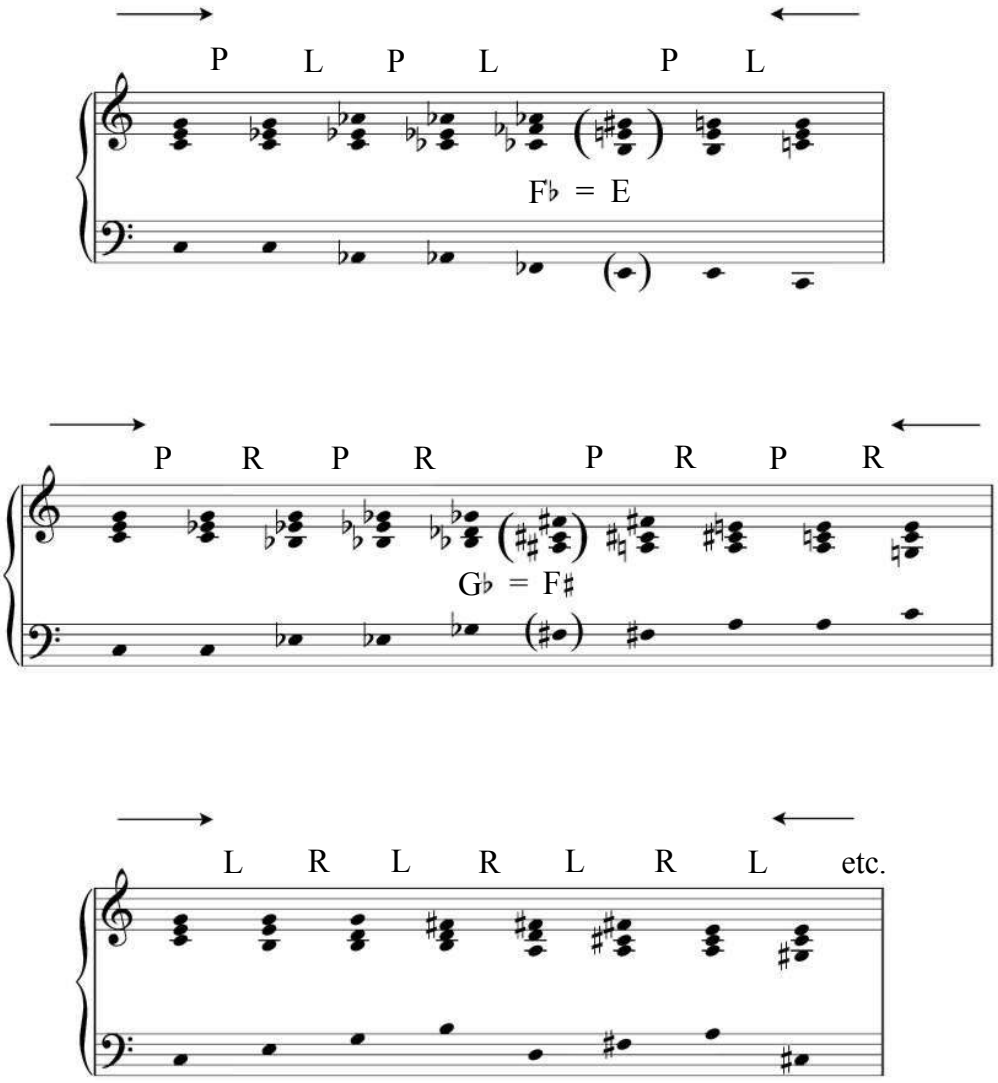
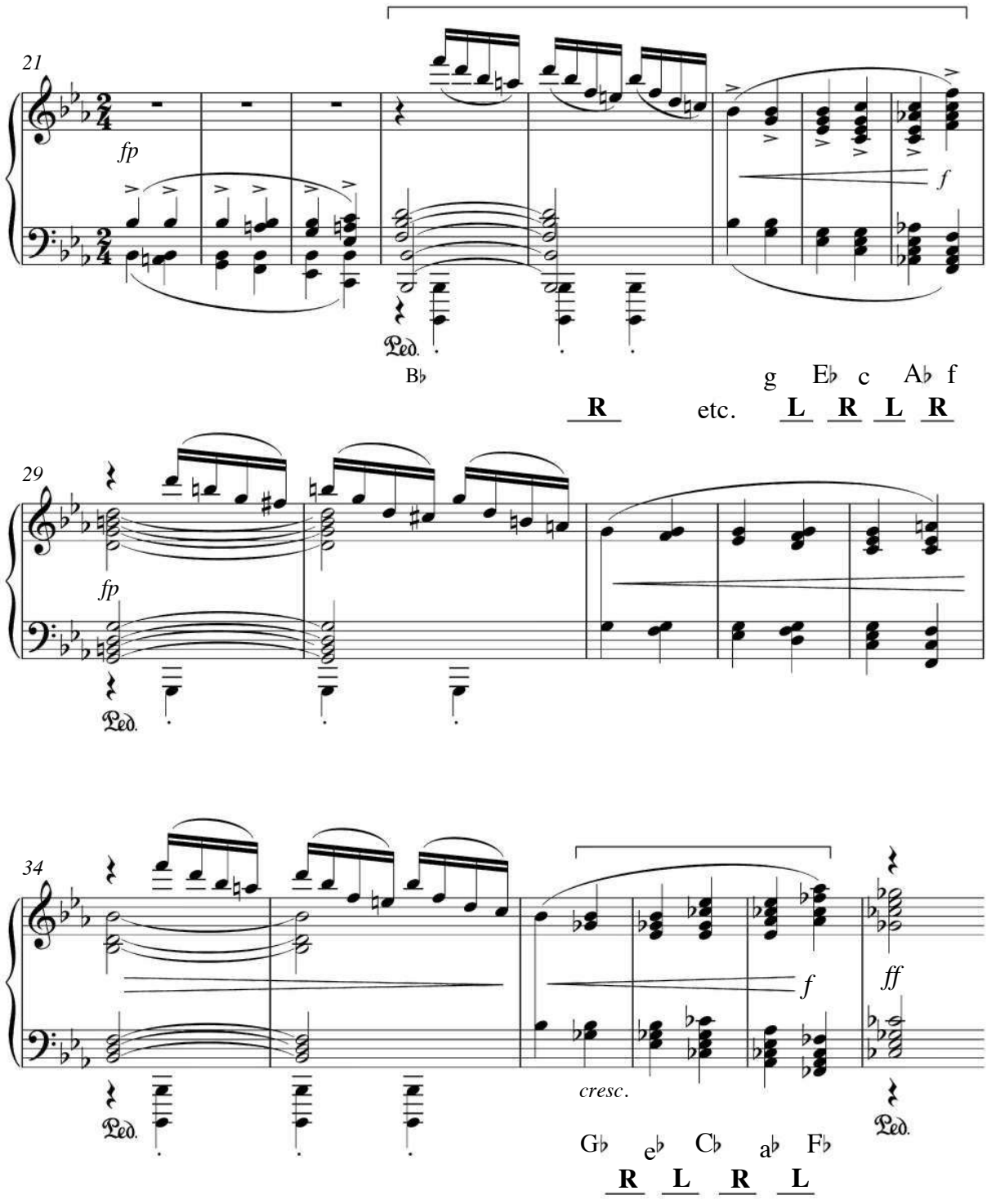


FIGURE 1.3 PL, PR, and LR Cycles

PLR transformations may be invoked without parsimony. Each of the RL cycles in Example 1.6, for instance, contains some voice leading parsimony, but also includes leaps and a gradual thickening of the texture. Notice that PLR transformations have to do with how we get from one chord to the next. Hence, the labels are placed between chords rather than beneath the chords themselves.

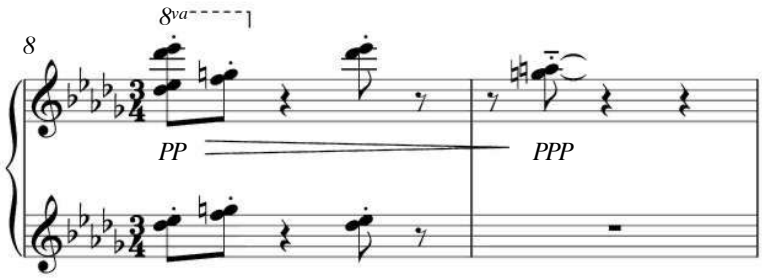
EX. 1.6—Johannes Brahms, *Rhapsody*, Op. 119, No. 4, mm. 21–39 (RL Cycles)



Non-Tertian Harmony

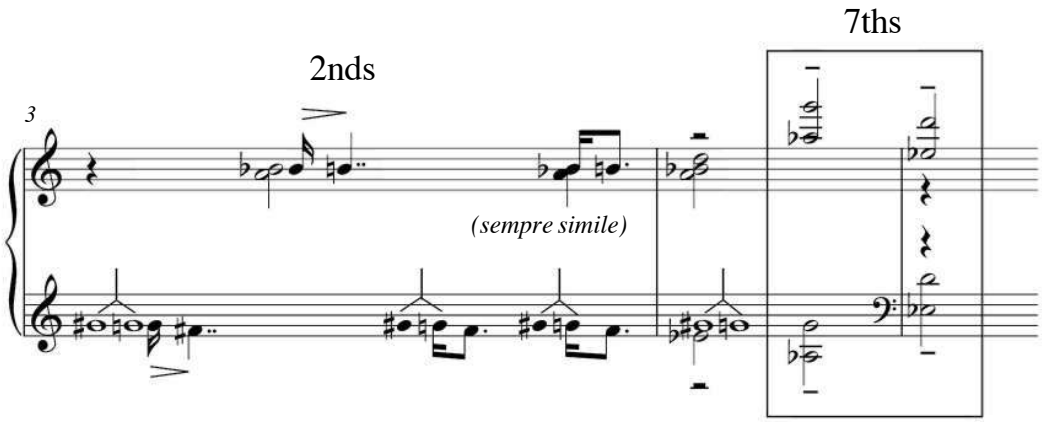
Other chords routinely derived from stacked intervals include those consisting of major and minor seconds (**secundal harmony**), perfect fourths (**quartal harmony**), and perfect fifths (**quintal harmony**). Example 1.7 contains an excerpt with secundal harmony doubled at the octave.

EX. 1.7—Maurice Ravel, *Miroirs*, I, "Noctuelles," mm. 8–9 (Secundal Harmony consisting only of Major and Minor Seconds)



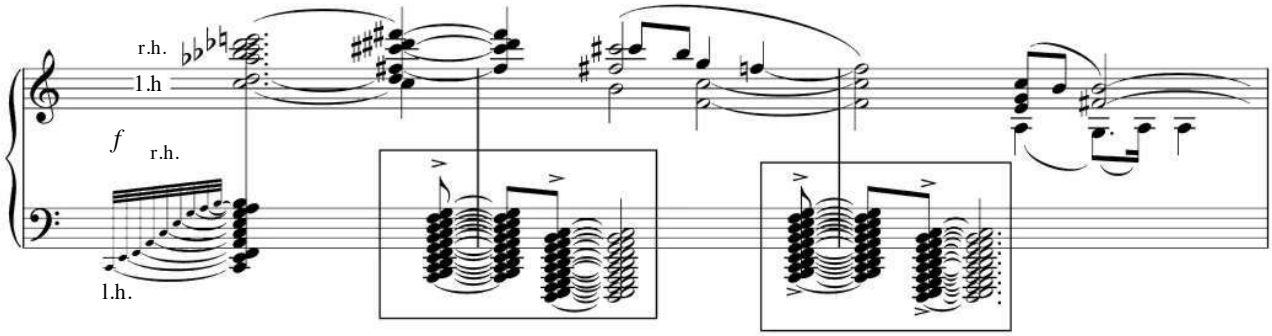
Chords in which seconds are inverted and/or transposed, as in Example 1.8, may also be analyzed as secundal chords.

EX. 1.8—Bartók, *Mikrokosmos* Vol. 6, No. 144, "Minor Seconds, Major Sevenths," mm. 3–4 (Inverted Secundal Chords)



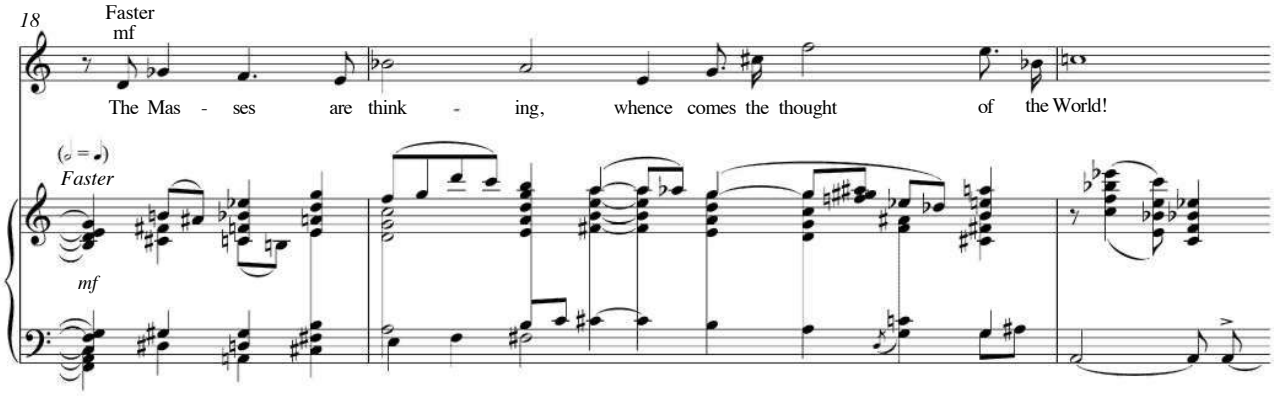
Very dense secundal chords are sometimes referred to as **tone clusters**. Tone clusters constitute a type of musical effect rather than a harmonic sonority per se. The excerpt in Example 1.9 provides a particularly dramatic illustration of this idea.

EX. 1.9—Charles Ives, *Majority*, mm. 1–3 (Tone Clusters)



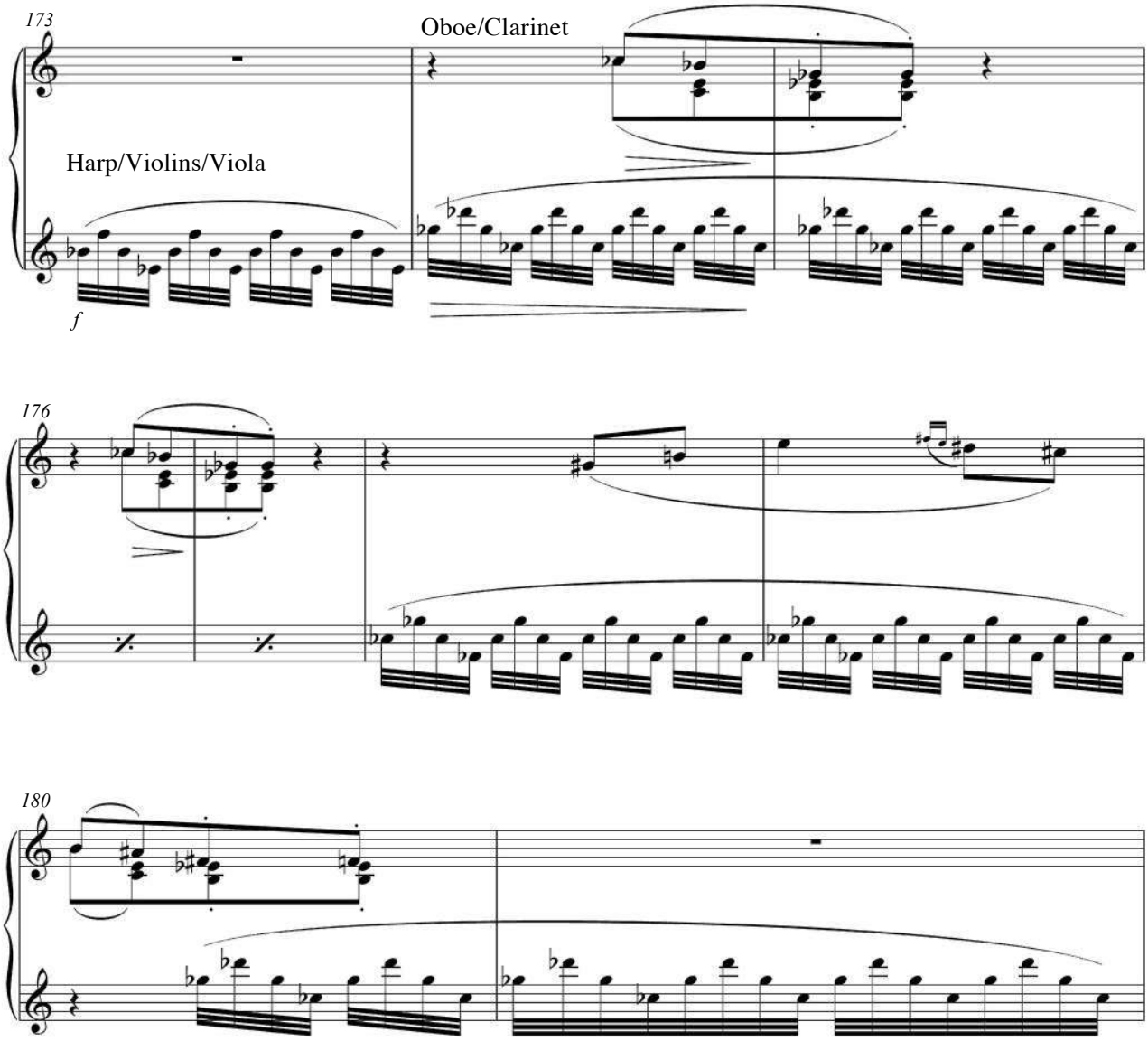
The accompaniment to the vocal part in Example 1.10 consists primarily of *quartal* chords. In some cases the vocal part either extends the chord or doubles a chord tone. Notice that there are also a number of non-chord tones in both the vocal and piano parts.

EX. 1.10—Charles Ives, *Majority*, mm. 18–20 (Quartal Chords)



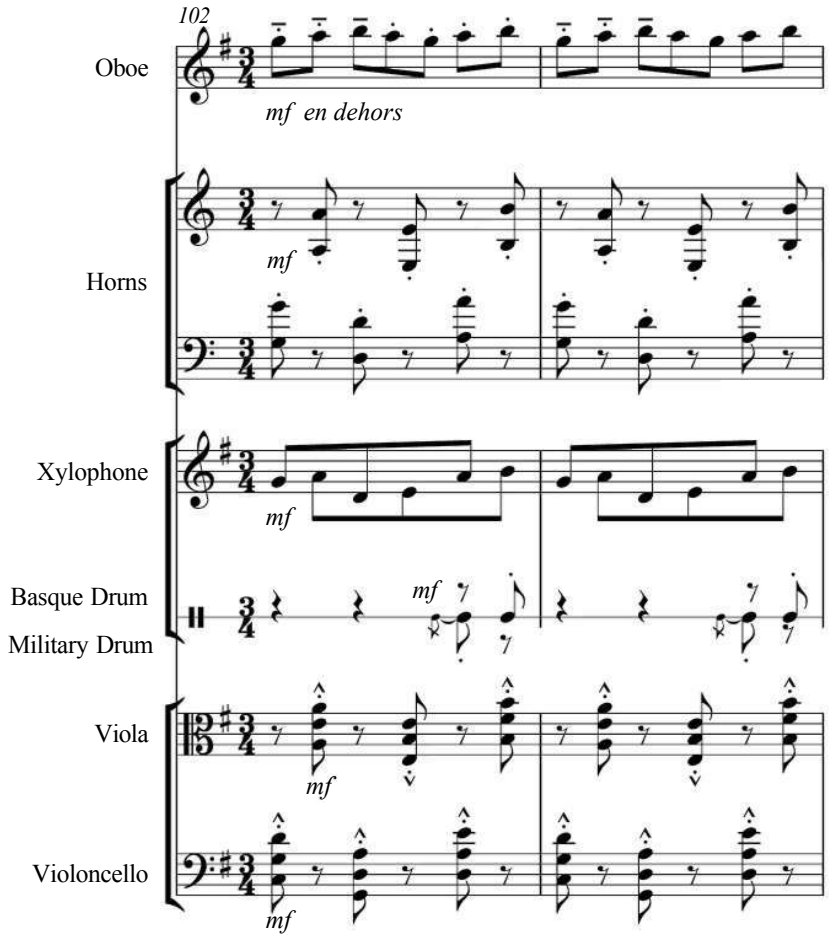
Example 1.11 contains a series of three-note arpeggiated *quintal chords*. These chords serve as an accompaniment for the non-quintal oboe and clarinet parts.

EX. 1.11—Leoš Janàček, *Sinfonietta*, II, mm. 173–81 (Quintal Chords)



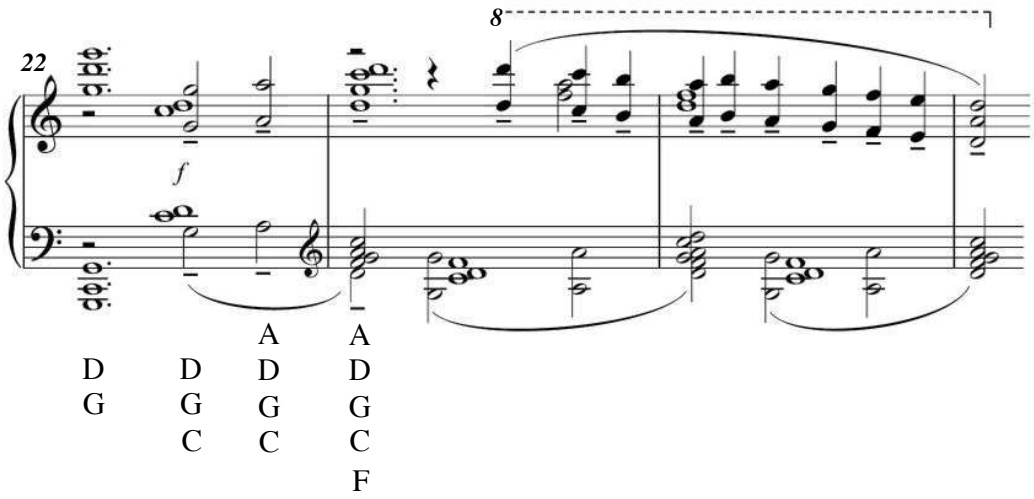
Because fifths and fourths are inversions of each other, it can sometimes be difficult to distinguish between *quintal* and *quartal* harmony. The chords in Example 1.12, for instance, contain both fifths and fourths. In such cases, the initiating events may provide insight into the harmonic organization of the passage. The intervals at the bottom of the texture are perfect fifths. It would probably be best, then, to think of all the chords as fundamentally quintal in character with the perfect fourths in the passage arising from octave doublings in the horn and viola parts.

EX. 1.12—Claude Debussy, *"Images" pour orchestre*, No. 2, "Iberia," III, mm. 102–3 (Quintal Harmony with Octave Doubling)



The passage in Example 1.13 contains what might at first glance appear to be a loosely organized collection of quintal, secundal, and added-note tertian chords. Although technically correct, this assessment does not express the overall coherence of the passage. Once again, the initiating event, in this case a quintal chord, provides a clue for analyzing the passage more efficiently. Notice that the initial chord continues to sound throughout mm. 22–23 and that its two pitches occur in every chord that follows it. The added notes in each chord, moreover, gradually build up in a circle of fifths fashion. Although the chords incorporate seconds and thirds, then, all appear to have quintal origins.

EX. 1.13—Claude Debussy, Preludes, Book 1, No. 10, "La Cathédrale engloutie," mm. 22–25 (Inverted and Transposed Quintal Chords)



Other Well-Known Chords

There are a few chords that have come to be associated with a particular composer or work. These include the Tristan chord, the mystic chord, and the Petrushka chord. Each of these chords has ties to one of the types of harmonies we have already discussed. The Tristan chord, for example, may be described as a tertian chord, the mystic chord a quartal chord, and the Petrushka chord a polytriad. These particular chords have been singled out because of their idiosyncratic features and settings.

The **Tristan chord**, so named because of its numerous appearances in the prelude to the first act of Richard Wagner's music drama *Tristan und Isolde*, is one of the first enigmatic chords to have become associated with a particular work. Marked with arrows in Example 1.14, the Tristan chord appears on the downbeats of mm. 2, 6, 10, 12, and 19. Of these, the chord in m. 19 is the easiest to explain because it is spelled, and behaves, like a $vii^{\circ 7}$, moving to D^7, which arrives on the second eighth note of the measure, before resolving as expected to G.

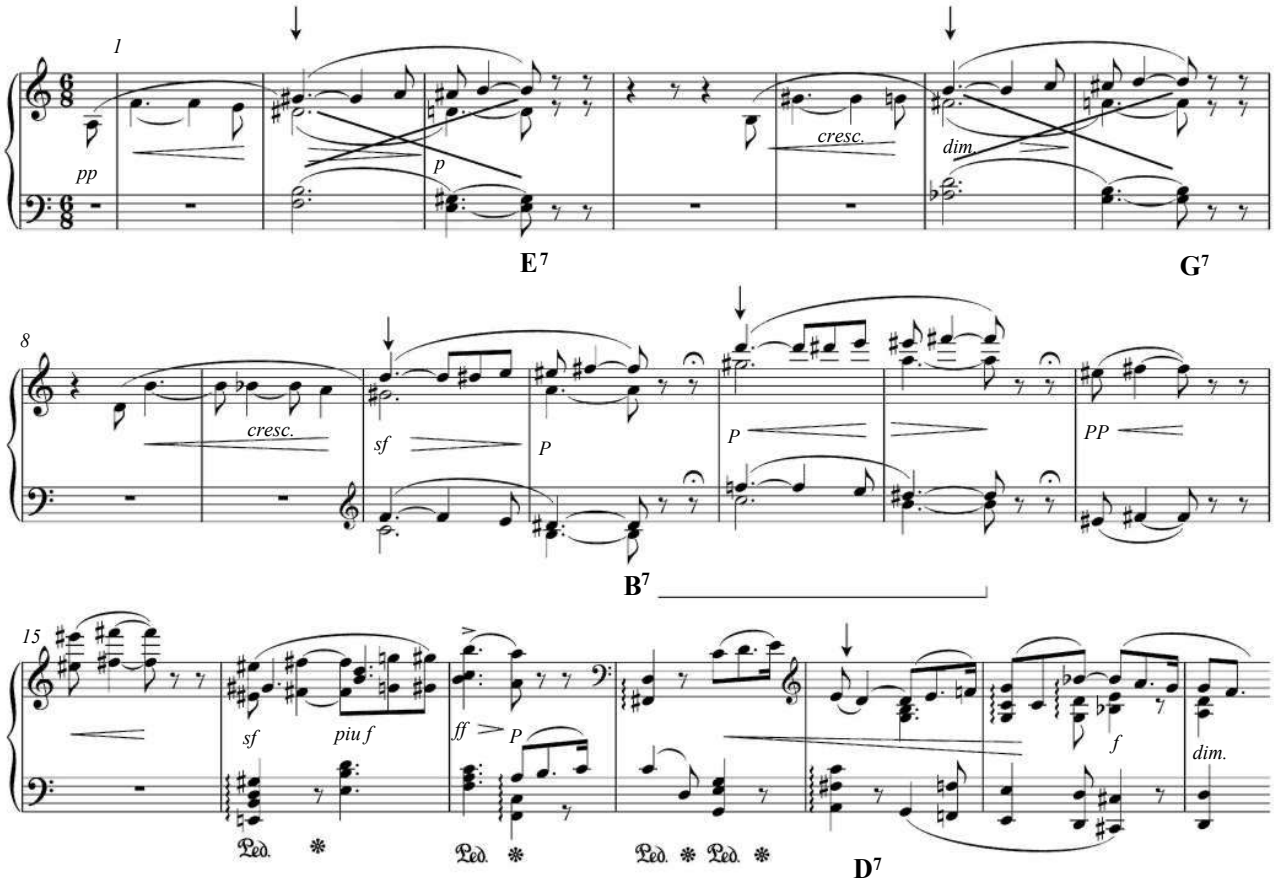
The chords in mm. 2 and 6 are not hard to account for if we take into consideration the augmented sixths that occur in each chord. In both cases, the augmented sixth follows tonal protocol; the bass note descends by step and the upper note slips down to the seventh of the ensuing dominant seventh chord.[11] Just as important in these cautious first steps of the prelude are the voice exchanges that occur in mm. 2–3 and 6–7.

In m. 10 the augmented sixth is inverted and respelled as a major second or inverted "minor seventh" (C/D), breaking the pattern of the first seven measures. The "seventh" in the bass ultimately descends by semitone to the root of the B^7 chord, which arrives in m. 11. Meanwhile, both D and F move to E, forming an augmented triad with the as yet unresolved C in the bass. The linear motions in mm. 10–11, while different than those that precede them, make sense in light of the goal of the passage, a root position B^7 whose notes occur in precisely the same order bottom-to-top as the dominant sevenths in mm. 3 and 7 (root–third–seventh–fifth).

Overall, the first eleven measures of the prelude outline a root progression of thirds; the gesture in mm. 1–3 comes to rest on E^7, the one in mm. 4–7 on G^7, and the final gesture in mm. 10–11 (repeated in mm. 12–13) on B^7. The arrival of D^7 in m. 19 continues the ascending root progression by thirds and pushes the music forward toward the less restrained section that follows it.

Although this music tests the limits of tonality, dissonant intervals retain their voice-leading tendencies. The tonic of the work, however, is less certain. If it is not wholly non-tonal, then, Wagner's *Tristan* does explore the fringes of tonality and in the process glimpses, however briefly, into the not too distant future of music.

EX. 1.14—Richard Wagner, *Tristan und Isolde*, Prelude to Act 1, mm. 1–21 (Tristan Chords)



The **mystic chord** is the invention of Alexander Scriabin who used it both as a chord and as a scale. Sometimes called the "Prometheus chord," owing to its important role in Scriabin's symphonic tone poem *Prometheus*, the mystic chord is traditionally spelled in fourths as illustrated in Figure 1.4. Unlike the quartal chords we have already discussed, however, the mystic chord includes not only perfect fourths, but also two augmented fourths and a diminished fourth.

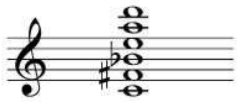


FIGURE 1.4 The Mystic Chord

Most theorists agree that, functionally, the mystic chord has dominant origins, although it generally does not incorporate strong voice leading tendencies. Indeed, it is frequently sustained over several measures, as in Example 1.15, producing a sense of arrested motion. Incomplete versions of the chord, like those in mm. 122–25, are also common.

EX. 1.15—Alexander Scriabin, Piano Sonata No. 5, Op. 53, mm. 122–27 (Transposed Mystic Chords)