Chromatic Transformations in Nineteenth-Century Music

DAVID KOPP

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David Kopp's book develops a model of chromatic chord relations in nineteenth-century music by composers such as Schubert, Beethoven, Chopin, Schumann, and Brahms. The emphasis is on explaining chromatic third relations and the pivotal role they play in theory and practice. The book traces conceptions of harmonic system and of chromatic third relations from Rameau through nineteenth-century theorists such as Marx, Hauptmann, and Riemann, to the seminal twentieth-century theorists Schenker and Schoenberg, and on to the present day. Drawing on tenets of nineteenth-century harmonic theory, contemporary transformation theory, and the author's own approach, the book presents a clear and elegant means for characterizing commonly acknowledged but loosely defined elements of chromatic harmony, and integrates them as fully fledged elements into a chromatically based conception of harmonic system. The historical and theoretical argument is supplemented by plentiful analytic examples.

DAVID KOPP is Associate Professor of Music at Boston University and specializes in nineteenth- and early twentieth-century music theory. As a pianist, he has made recordings of twentieth-century American music.

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In memory of

LUISE VOSGERCHIAN

extraordinary teacher and mentor

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FOREWORD BY IAN BENT

Theory and analysis are in one sense reciprocals: if analysis opens up a musical structure or style to inspection, inventorying its components, identifying its connective forces, providing a description adequate to some live experience, then theory generalizes from such data, predicting what the analyst will find in other cases within a given structural or stylistic orbit, devising systems by which other works – as yet unwritten – might be generated. Conversely, if theory intuits how musical systems operate, then analysis furnishes feedback to such imaginative intuitions, rendering them more insightful. In this sense, they are like two hemispheres that fit together to form a globe (or cerebrum!), functioning deductively as investigation and abstraction, inductively as hypothesis and verification, and in practice forming a chain of alternating activities.

Professionally, on the other hand, "theory" now denotes a whole subdiscipline of the general field of musicology. Analysis often appears to be a subordinate category within the larger activity of theory. After all, there is theory that does not require analysis. Theorists may engage in building systems or formulating strategies for use by composers; and these almost by definition have no use for analysis. Others may conduct experimental research into the sound-materials of music or the cognitive processes of the human mind, to which analysis may be wholly inappropriate. And on the other hand, historians habitually use analysis as a tool for understanding the classes of compositions – repertories, "outputs," "periods," works, versions, sketches, and so forth – that they study. Professionally, then, our ideal image of twin hemispheres is replaced by an intersection: an area that exists in common between two subdisciplines. Seen from this viewpoint, analysis reciprocates in two directions: with certain kinds of theoretical enquiry, and with certain kinds of historical enquiry. In the former case, analysis has tended to be used in rather orthodox modes, in the latter in a more eclectic fashion; but that does not mean that analysis in the service of theory is necessarily more exact, more "scientific," than analysis in the service of history.

The above epistemological excursion is by no means irrelevant to the present series. Cambridge Studies in Music Theory and Analysis is intended to present the work of theorists and of analysts. It has been designed to include "pure" theory – that is, theoretical formulation with a minimum of analytical exemplification; "pure" analysis – that is, practical analysis with a minimum of theoretical underpinning; and writings that fall at points along the spectrum between the two extremes. In these capacities, it aims to illuminate music, as work and as process.

However, theory and analysis are not the exclusive preserves of the present day. As subjects in their own right, they are diachronic. The former is coeval with the very study of music itself, and extends far beyond the confines of Western culture; the latter, defined broadly, has several centuries of past practice. Moreover, they have been dynamic, not static fields throughout their histories. Consequently, studying earlier music through the eyes of its own contemporary theory helps us to escape (when we need to, not that we should make a dogma out if it) from the preconceptions of our own age. Studying earlier analyses does this too, and in a particularly sharply focused way; at the same time it gives us the opportunity to re-evaluate past analytical methods for present purposes, such as is happening currently, for example, with the long-despised methods of hermeneutic analysis of the late nineteenth century. The series thus includes editions and translations of major works of past theory, and also studies in the history of theory.

In the present volume, David Kopp brings recognition at last to a group of harmonic relationships that is of enormous importance in the music of the nineteenth century (and not unknown in music of other centuries, as well). The reader familiar with Schubert's glorious String Quintet in C major need recall only that moment about two minutes into the first movement at which all activity subsides, then the second cello slips down three notes, and we hear – as if transported into some magical new realm – the sublime second subject stated by the two cellos under *pizzicato* violins and viola. That "slip" – from local tonic G major into E-flat major – is one of a class of relationships called "chromatic third (or mediant) relationships" that is a hallmark of the music of Schubert but that arises in the works of many other Romantic composers too, providing some of the most thrilling moments.

David Kopp's illuminating discussion is really three things in one: an account of how theorists from the eighteenth to the twenty-first centuries have treated third relationships of all sorts, and in particular chromatic ones; a theoretical formulation allowing these relationships to exist in their own right rather than continuing to be thought of as derivatives of "normal" relations; and lastly, a series of analyses of passages in which chromatic third relationships are prominent, including music by Beethoven, Brahms, Chausson, Chopin, Dvořák, Liszt, Schumann, Smetana, Wagner, Wolf, and above all Schubert.

Kopp draws upon an analytical–theoretical method known as "transformational theory" pioneered by David Lewin in the early 1980s, which is itself developed from certain harmonic theories of Hugo Riemann at the end of the nineteenth century, and hence is often referred to as "neo-Riemannian theory." One of the most fruitful developments in music theory during the past fifty years, this method is now widely practiced, especially in North America. The present book contributes insights and elegant formulations to that body of work. At the same time, it offers the reader-listener novel and compelling ways to think about and hear (for they reward brain and ear alike!) the harmonic fabric of much-loved works central to the stage and concert repertory – opera, symphonic and chamber works, solo song, and solo piano works of all genres.

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So many people have been instrumental in helping me see this project through its various stages of development. Allan Keiler was deeply involved as my graduate advisor; Robert Marshall was a careful and astute reader; and Eric Chafe recommended music for analysis and gave great support. Charles Rosen was the first to read and respond to core ideas. David Schulenberg has contributed ongoing discussion and much advice. Scott Burnham advocated at an important juncture. Marshall and Jane Brown have lent their ears and offered invaluable suggestions. Other friends and colleagues too numerous to mention have responded over time to my questions and ideas, providing inspiration and leaving their imprint. I am indebted to series editor Ian Bent for his interest, encouragement, and considerable input, and to Penny Souster of Cambridge University Press for her patient guidance. My thanks also to Ann Lewis for her careful copy-editing, and to Karl Howe for production assistance. Virginia Danielson and the staff of the Eda Kuhn Loeb Music Library of the Harvard College Library were very helpful in providing historical materials, as were John Gibbs and the staff of the library of the University of Washington School of Music, whose director, Robin McCabe, arranged for research assistance. Finally, my family has been terrific throughout the long gestation of this book. My parents, Harriet and Sam Kopp, and especially my partner, Andy Bergman, may be strangers to music theory, but their understanding, involvement, and loving support have been central to the life of this project.

1

COMMON-TONE TONALITY

1.1 INTRODUCTION

As we enter the twenty-first century, the chromatic music of the nineteenth century continues to provide a fascinating and elusive subject for formal theoretical explanation. Most of our prevailing analytic models and methods, predicated on eighteenth-century practice, have traditionally explained chromatic music as the elaboration of diatonic structures. The music's frequent lack of conformity with these models has often been interpreted as a sign of weakness or inferiority in the music itself rather than due to any inappropriateness of the model. Of late, the orthodoxies of past decades have given way to freer speculation. Nineteenth-century chromatic tonality as a theoretical entity is developing an identity of its own, distinct from earlier models, and is attaining the status of a separate system or group of evolved systems.[1] A renewed interest in the theory of chord relations is fueling the speculative fires.

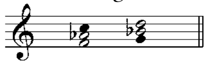
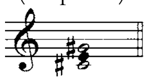
One such comprehensive idea, recently suggested, envisions a chromatic harmonic space in which all twelve triads of the tonal system are equally available as tonics within a piece.[2] This space recalls Schoenberg's theory of monotonality and intuitively invokes the image of later nineteenth-century and early twentieth-century chromatic music.[3] It also provides a conceptual framework for recent analytic approaches which posit more than one tonic in a piece and treat works which begin in one key and end in another, and allows for straightforward consideration of high-level structural relationships other than traditional diatonic ones. But there are other possible orderly chromatic harmonic spaces, containing more relationships than diatonic space but fewer than the fully saturated one. For a broad range of nineteenth-century

[1] Gregory Proctor defines chromatic tonality as distinct from diatonic tonality in a pioneering study ("Technical Bases of Nineteenth-Century Chromatic Tonality: A Study in Chromaticism," Ph.D. dissertation, Princeton University, 1978, Ann Arbor: UMI Research Press).

[2] Patrick McCrelless, "An Evolutionary Perspective on Nineteenth-Century Semitonal Relations," in *The Second Practice of Nineteenth-Century Tonality*, ed. W. Kinderman and H. Krebs (Lincoln, Nebr.: University of Nebraska Press, 1996), pp. 96–98. Harmonic space, or tonal space as defined by Fred Lerdahl, is the abstract nexus of possible normative harmonic connections in a system, as opposed to the actual series of temporal connections in a realized work, linear or otherwise. Lerdahl, "Tonal Pitch Space," *Music Perception*, 5, 3 (Spring 1988), pp. 315–349. Classical tonality inhabits diatonic space; later music, it follows, inhabits chromatic space.

[3] Arnold Schoenberg, *Structural Functions of Harmony* (1954) (New York: W. W. Norton, 1969). See below, section 6.2.

Table 1.1. *Common-tone triadic relations to a major tonic (tonic = C major; solid noteheads show all common tones)*

mode→ ↓root motion	no change	change
fifth	**D**ominant: 1 c.t. 	**F**ifth-change: 1 c.t. 
third	Chromatic **M**ediant: 1 c.t. 	**R**elative mediant: 2 c.t. 
prime	**I**dentity: 3 c.t. 	**P**arallel: 2 c.t. 
semitone		**S**lide (see p. 175): 1 c.t. 

style I will propose such a space, suggested by the music of the time as well as by its contemporary theory. Its defining aspect is the requirement of a common tone in any direct chromatic relationship. My argument will be that common-tone relationships constituted the first group of chromatic relations between triads and keys to become fully normalized in nineteenth-century harmonic practice.

Table 1.1 lists the range of possible common-tone relationships between triads, both diatonic and chromatic. There are seven of these, six principal ones and one special case. They can be classified in three ways: by interval of root motion, by the absence or presence of mode change, and by the number of common tones.

As the table shows, the three intervals of root relation which allow for common tones are the fifth, the third, and the prime. (Names for individual relationships will be discussed below in chapter 7.) Relations by each interval may occur without or with change of mode. There is an important difference, though. With the fifth and the prime, mode preservation results in a diatonic relation, mode change in a chromatic one. With the third, it is the opposite: mode preservation results in a chromatic relation while mode change is diatonic. This gives third relations a unique profile and distinctive properties within the set of common-tone relations. The extra relation by semitone, a chromatic one between major and minor triads, is the result of the asymmetry of the tonal system. While not part of the principal set of common-tone relations, it is recognized and employed in mid-nineteenth-century chromatic tonality (see section 6.4).

Five of the six principal common-tone relations are readily accepted in analysis. The diatonic relations and relative mode relations are basic to the harmonic system.

Fifth relations with mode change are either diatonic or else the result of commonplace alteration (such as V–i in minor). Chromatic third relations, on the other hand, have always proven contentious for theory. Throughout the nineteenth and twentieth centuries, theorists have disagreed on their nature, their origin, their role within the harmonic system, and their value. They have at times been demonized as threatening the coherence of the harmonic system, or theoretically neutralized as subsidiary to diatonic phenomena. Since I argue that, on the contrary, they serve as a cornerstone of common-tone tonality, my task is to provide a comprehensive case for their inclusion in a larger system.

1.2 CHROMATIC THIRD RELATIONS

The existence and prominent role of chromatic third relations in nineteenth-century music is widely recognized and well documented. Straightforward theoretical explanations for these striking elements of harmony, however, have been the exception. The preferred approach in the past century has been to treat chromatic mediants as derivative entities. They have been characterized as alterations or combinations of other, more basic progressions; as ornamental, secondary voice-leading events; or as incipiently degenerate coloristic phenomena, contributing to the eventual breakdown of the tonal system. I feel that these explanations fall short. My aim here is to clearly identify and describe the full range of mediant relations in the tonal system, and further to argue that chromatic third relations possess an identity and a quality which are independent of the fifth relations and diatonic third relations of the tonal system, displaying an independent functional identity. This requires a notion of direct relation between tonic and chromatic mediants which preserves and affirms the key and makes the elaborate explanations explaining them as versions of other things unnecessary. To facilitate this, a straightforward taxonomic system for diatonic and chromatic third relations alike will be proposed which groups those third relations together in classes which in practice act most similarly. The ease and directness with which this terminology allows for the clear discussion of succeeding topics will serve as an argument for its utility. Mediants will be considered individually, as a group, and as part of a formal representation of the tonal harmonic system.

Developing a way of thinking which allows for direct chromatic relations suggests revisiting received notions of the nature of harmonic relationships. Toward this aim, a study of principal nineteenth-century theorists is enormously instructive. Not only were these writers contemporaneous with the music in which chromatic relations became a norm of harmonic practice, but their viewpoints toward third relations and harmonic relations in general are not what we might assume them to be, and are certainly at odds with much of present conventional understanding. In many cases, theorists' ways of dealing with third relations derived in a rational way from their conceptions of the harmonic system and the ways in which chords relate. In other cases, theorists who recognized the existence of chromatic mediant relations were unable or unwilling to express them solely within the constructs of their harmonic theories. Accordingly, in order to appreciate the substance of the conflict between a comprehensive theory and an undeniable phenomenon for which it cannot easily account, we will examine notions of harmonic system and connection in general and their relation to specific ideas of third relation.[4] The discussion will begin with Jean-Philippe Rameau, who wrote in the eighteenth century but articulated the place of chromatic third relations in the harmonic system. It will continue with Anton Reicha, Gottfried Weber, A. B. Marx, and Moritz Hauptmann, all of whom advanced notions of third relations. Hugo Riemann, who created an elaborate theory of chromatic tonality, will merit a dedicated study. My argument will be that the nineteenth century saw both an increasing acceptance of chromatic third relations as a class of legitimate harmonic phenomena paralleling their increasing presence in music, and, ironically, the development of theoretical constructs which were increasingly less able to accommodate these phenomena.

After Riemann, as new theories emerged which focused less on classes of harmonic relation, and as chromatic practice broadened to the point by which third relations and other common-tone chromatic relations were no longer unusual or extreme, mediant relations ceased to be the subject of directed discussion. The preeminence of scale-step or scale-degree conceptions in twentieth-century theory led to theories as divergent as Schenker's and Schoenberg's, both of which will be seen to devalue chromatic third relations (among others) as ultimately dependent on other musical factors. Scale-degree thinking has also led to the modern textbook approach wherein chromatic mediants are presented as variants of diatonic ones, or as coloristic events with no definite harmonic meaning.

Some contemporary American theory has tackled the "problem" of third relations. Solutions range from ones which adopt a Schenkerian point of view and work from the assumption that chromatic mediants destroy the integrity of the key, to others which offer alternative explanations of chromatic mediants which presuppose their coherent participation in tonal processes. Some propose classification systems; others concentrate less on classification and more on analysis and explanation. Relevant aspects of this work will be discussed and analyses considered where appropriate. The recent development of transformation theory will be reviewed, and will provide a model for my approach, inspiring a modification to existing systems to reflect direct chromatic relations as integral processes.

An investigation of practical aspects of chromatic third relations follows this survey. The discussion will treat common types of mediant relations on different levels of musical organization. Drawing on numerous musical examples and providing some

[4] Thomas Christensen cautions against naïvely tracing the development of a single theoretical concept through history without taking account of its context. For the most part he cites musical and cultural forces external to the theoretical texts, but the larger concerns, goals, and structures communicated by the texts themselves also provide contexts for the expression of individual concepts. Christensen, "Music Theory and its Histories," in *Music Theory and the Exploration of the Past*, ed. D. Bernstein and C. Hatch (Chicago: University of Chicago Press, 1993), pp. 9–39. The present study will focus on the latter type of context.

extended analyses taken from the nineteenth-century literature, I will make the case for mediant function, and hopefully demonstrate some of the advantages inherent in thinking in its terms.

1.3 THE CONCEPT OF FUNCTION

"Function" is a term which, although it may seem to express a simple and obvious concept, has grown vague through widespread use to mean a variety of things. Loosely put, the term "function" signifies harmonic meaning. But notions of this meaning may take many forms. We commonly associate the idea of function itself with the thought of theorists ranging back to Rameau. Typical is the following comment on Gottfried Weber's work by a mid-twentieth-century historian of nineteenth-century harmonic theory: "The author believes Weber to be the first theorist to use Roman numerals as function signs."[5] According to this account, Weber, writing in the 1820s, was aware of a pre-existing if unnamed concept of function and was devising signs to denote it. However, such habitual assumptions about the idea of function are misleading. During the common practice period, a well-defined notion of function in harmony had not yet been introduced, although aspects of what we would consider to be functional theory were of course present in the work of many theorists. Not until the end of the nineteenth century was a full-fledged concept of harmonic function formulated and named *Funktion* by Hugo Riemann, following two decades of painstaking theoretical groundwork. For Riemann himself, as I will show, the concept provided a means to explain how all chords, diatonic and chromatic alike, draw their meaning in a key from their shared membership in one of three functions defined by the three principal triads. In a related conception also identified with Riemann, function inheres in the three chords themselves rather than in the categories they define. A corollary notion of ours absent from Riemann's theory locates harmonic and functional identity directly in scale degrees I, IV, and V, on which these principal triads are based. In our time, functional power and harmonic meaning of chords are often attributed instead to each of the seven diatonic scale degrees and sometimes their variants, serving as the roots of a variety of chords and identified by Roman numerals.[6] Thus we may say "A♭ major functions as III in F minor, as V in D♭ major, and as ♭VI in C major."[7]

[5] Mark Hoffman, "A Study of German Theoretical Treatises of the Nineteenth Century" (Ph.D. dissertation, Eastman School of Music, 1953), p. 65. The author means that Weber was the first to use Roman numerals to label scale degrees in a systematic way, associating chords with keys. A discussion of earlier numbering systems appears in Joel Lester, *Compositional Theory in the Eighteenth Century* (Cambridge, Mass.: Harvard University Press, 1992), pp. 207–208. For an exploration of ways in which we understand notions of function in earlier theory see my "On the Function of Function," *Music Theory Online*, 1.3 (May 1995).

[6] "Each scale degree has its part in the scheme of tonality, its tonal function." Walter Piston and Mark DeVoto, *Harmony*, 5th ed. (New York: Norton, 1987), p. 53.

[7] Scale degree is a concept inimical to Riemann, for whom, for example, a chord based on the third scale degree may function as tonic, dominant, or dominant of the relative minor, depending on context. Cf. Carl Dahlhaus, "Terminologisches zum Begriff der harmonischen Funktion," *Die Musikforschung*, 28, 2 (1975), pp. 197–202.

The term "function" may also be used to signify a concept of the intrinsic potentiality of a given chord to progress in a particular way or to a particular chord, such as the notion of the dominant's innate propensity to progress to the tonic. Or we may associate function with specific outcomes rather than with scale-degree identity.[8] The term may be applied to chords whose motivation to progress is extrinsic to their nature as triads.[9] It may be associated with individual tones rather than chords.[10] It may be correlated with syntactic, phrase-based meaning.[11] The function concept has been identified with a prolongational scale-step notion.[12] Thus many contrasting, sometimes contradictory, notions of chord identity, potentiality, and activity may all be invoked by the term "function."

More generally, we may use the term "function" to denote meaningfulness or meaningful relation within a key, as opposed to "color," which signifies a relation without meaning in the tonal system. An important traditional index of meaning within a key is diatonic pitch content, or else, in the case of chords with chromatic content, direct relation or resolution to a chord with diatonic content. The principal chords of a key satisfy the first condition; chords such as secondary dominants, diminished sevenths, and augmented sixths satisfy the second. Chromatic third relations are often dismissed through this rationale as non-functional color events pointing only to themselves or away from the tonic, or else as out of the plane of tonal relations. The presence of non-ornamental chromatic tones in these mediants and the distance between their associated keys and the tonic are attributes which for many theorists disqualify these chords from expressing harmonic function. But in fact chromatic mediants often do satisfy the second condition, relating directly to their tonic or dominant, not as applied chords, but in a coherent way which preserves the sense of tonic key. This coherence derives from smooth relations involving common tones and root connections, along with other factors. Harmonic relationships between chords are not simple, single-faceted connections but rather complex linkages whose effect results from the interrelation of a number of processes. Consider

Dahlhaus also observes that Riemann is not clear about the distinction between function as category and function as chordal archetype.

8 "The IV . . . has three common functions. In some cases, IV proceeds to a I chord . . . More frequently, IV is linked with ii . . . [it may also go] directly to V. . ." Stefan Kostka and Dorothy Payne, *Tonal Harmony*, 2nd and 4th eds. (New York: Alfred A. Knopf, 1989/1999), p. 116.

9 For example, Lester, *Compositional Theory*, p. 206, uses the term to apply to Rameau's dissonance-motivated chord types: "Rameau had proposed three chordal functions: tonic, dominant, and subdominant." For Rameau, who did not use the term "function," these are respectively represented as a triad, a seventh chord, and an added-sixth chord. Lester is careful to distinguish his use of the term from modern usage.

10 Daniel Harrison constructs a theory of harmonic function on these terms in *Harmonic Function in Chromatic Music: A Renewed Dualist Theory and an Account of its Precedents* (Chicago: University of Chicago Press, 1994).

11 "In the Kuhnau, the tonic functions first as an *opening tonic* . . . At the end it is a goal of motion, thus a *closing tonic*." Edward Aldwell and Carl Schachter, *Harmony and Voice Leading*, 2nd ed. (New York: Harcourt, Brace, and Jovanovich, 1989), p. 84. Despite free use of the term, neither this textbook nor any other cited here either defines "function" directly or contains an index entry for the concept.

12 Willi Apel, article on function, in *The Harvard Dictionary of Music*, 2nd ed. (Cambridge, Mass.: Harvard University Press, 1969).

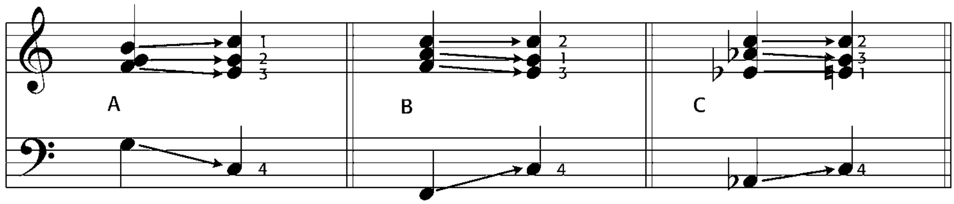


Figure 1.1 Contributing factors of identity, similarity, and difference in three common-tone progressions to the tonic

1: characteristic interval, different in each case
2: single common tone
3: descending diatonic semitone
4: root motion by consonant interval

A: from dominant seventh

1: leading-tone resolution
2: common tone $\hat{5}$
3: semitone descends to $\hat{3}$, resolving tritone
4: root descends by fifth

B: from subdominant

1: descending whole tone
2: common tone $\hat{1}$
3: semitone descends to $\hat{3}$
4: root descends by fourth (ascends by fifth)

C: from major-third mediant

1: chromatic semitone
2: common tone $\hat{1}$
3: semitone descends to $\hat{5}$
4: root ascends by third

the relationship of dominant-seventh chord to tonic triad, shown in Figure 1.1a. Several elements contribute to the overall effect of the progression. Some of the most basic are: the progression by diatonic semitone of leading tone to tonic (linear); the root relation of a perfect fifth descending to the tonic (harmonic); the resolution of the tritone created by adding a dissonant seventh to the triad (contrapuntal); and the presence of a common tone (linear/contrapuntal). The absence of any of these factors would deprive the relationship of some or much of its accustomed sense.[13] Likewise, other progressions also derive their substance from a combination of linear, harmonic, and contrapuntal factors. Figure 1.1b shows a progression from subdominant triad to tonic triad. It shares features with Figure 1.1a, although some are differently realized: the descending diatonic semitone still leads to $\hat{3}$; the root relation of a fifth now ascends; the common tone is $\hat{1}$ rather than $\hat{5}$; and the leading-tone and tritone resolutions are gone. Figure 1.1c shows a commonly encountered chromatic third relation. It, too, contains a descending diatonic semitone, although from a chromatic pitch; a root relation of a major third leading to the tonic; and a common tone, $\hat{1}$. Other details of voice leading also vary from progression to progression, but the factors traced above in combination give these progressions the bulk of their defining strength and their sense of functionality: the presence of a

[13] While the presence of the tritone may not be essential to this relationship, it contributes a fair share of its cadential and key-defining sense. Some mid-nineteenth-century theorists clearly considered the dominant seventh the fundamental chord of opposition to the tonic, far superior to the plain triad on the fifth scale degree, as related below in chapter 3.

linear semitone, root motion by a consonant interval, connection to the tonic, and the existence of a common tone. Hence my claim that mode-preserving chromatic third relations should be considered functional. Many nineteenth-century theorists recognized this property, even though their theories could not easily account for it. Twentieth-century theorists of tonality, however, have largely discounted or trivialized the functionality of chromatic mediants. To present my case, chapter 2 presents some clear-cut examples of these elements of harmony and argues for their functionality. Chapters 3 through 5 recount theorists' changing attitudes and the reasons behind them. Chapters 6 and 7 discuss formal transformation systems. Chapters 8 and 9 examine further instances of functional chromatic mediants in music, show the variety of ways in which they act in tonal contexts, and provide analytic examples. In preparation for these discussions, we must thoroughly examine the nature of the third relations possible within the tonal system.

1.4 SCHEME OF THIRD RELATIONS

We think about third relations like we think about function: while at first the idea seems simple and straightforward enough, under examination it proves complex, and our terminological usage proves correspondingly vague. Third relations are multifarious: they may be chromatic or diatonic; they may preserve or alter mode; they may involve major or minor thirds; they may or may not invoke a relative mode; they may or may not interact directly with fifth relations. Third-related chords may be seen as functional, non-functional, or altered forms of functional harmonies.[14] Given this situation, the first step toward treating third relations as meaningful elements of the harmonic system must be to bring order and clarity to their description.

Third relations are certainly more unwieldy to characterize than fifth relations. One obvious reason for this is their greater number. There are two normative types of third – major and minor – against only one normative type of fifth, the perfect fifth. Since root motion between triads occurs by both types of third, it follows that there are twice as many possible third relations as fifth relations in conjunction with any particular chord. Thus, from any given tonic chord, progressions may occur down a minor third or a major third, and up a minor third or a major third. In addition, the nature of harmonic progression by third opens up possibilities of movement between relative and parallel modes, resulting in a more fluid interaction between these modes than is the norm in fifth relations. The goal of movement by a given third relation may equally well be a major or minor chord, especially in nineteenth-century practice, with potentially quite different effects in each case.

The full range of third relations possible between major and minor tonics and their upper and lower mediants is displayed in Figure 1.2. The diagram is to be read such that harmonic relations may occur from either member of the tonic pair to either member of any other pair. Each tonic may thus relate to a minor or major triad at

[14] Thomas McKinley provides a thoughtful review of these different concepts. "Dominant-Related Chromatic Third Progressions," unpublished manuscript (Tulane University, 1994), pp. 9–26.

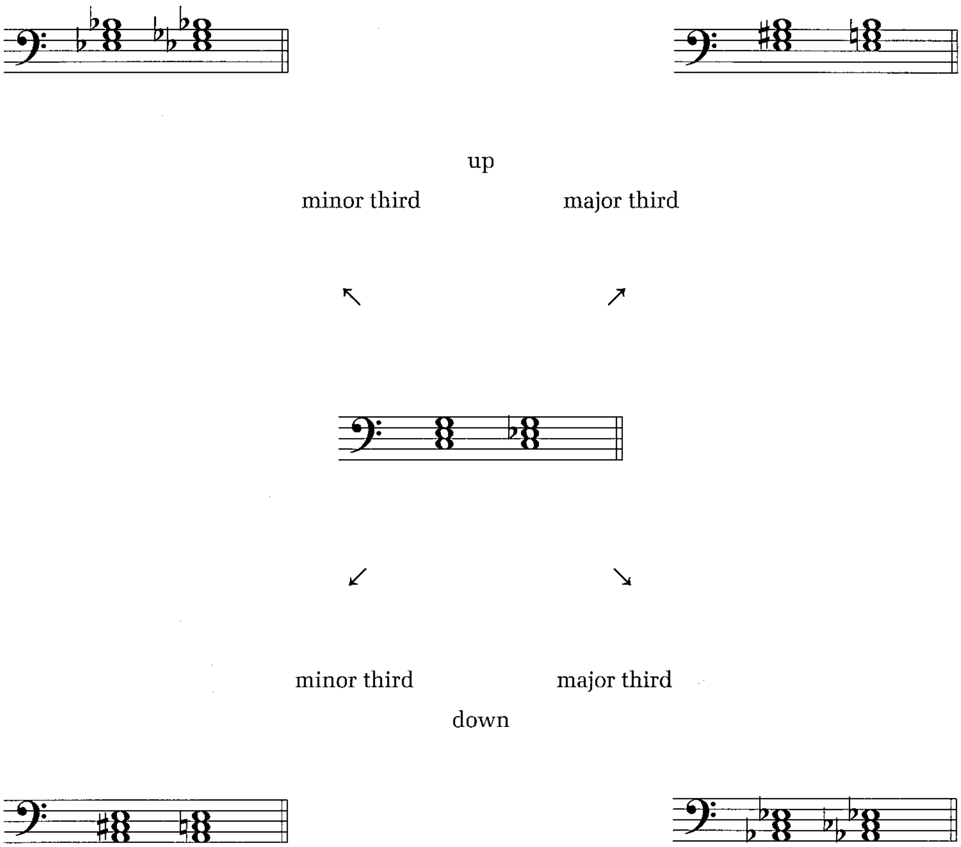


Figure 1.2 Scheme of the sixteen possible mediant relations
(eight from a major tonic, eight from a minor tonic)

each of four different intervals, yielding eight possible relations for each tonic, or sixteen in all.

The most effective way to classify mediants into related groups is to take measure of common tones with the tonic.[15] This approach yields three well-defined categories: those with two tones in common with the tonic, those with one tone in common, and those with none.[16] Mediants having two common tones are always diatonic fundamental chords of the relative mode: thus the name "relative." Mediants which have one common tone are always triads of the same mode as the tonic, containing one or two pitches outside the diatonic set: thus the name "chromatic." Mediants

[15] The classification scheme to be introduced here was originally presented in November 1988 at the national conference of the Society of Music Theory in Baltimore, Maryland.

[16] The outlines of a common-tone classification system were suggested as long ago as Rudolf Louis and Ludwig Thuille's *Harmonielehre* (Stuttgart: Carl Gruninger, 1907), pp. 343–345. However, the theorists explain away chromatic mediants as substitutes for diatonic chords. More recently, Kostka and Payne introduce common-tone classification into the third edition of their textbook *Tonal Harmony* (1995, pp. 324–325; 440; 463), although in piecemeal fashion, and are quick to brand chromatic mediant relations as coloristic.

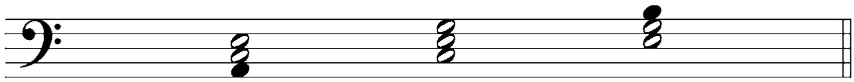


Figure 1.3 Relative mediants associated with a major tonic

with no tones in common are of the opposite mode all of whose pitches fall outside the diatonic set: thus the name "disjunct."[17] Every major and minor tonic has a complement of two relative mediants, four chromatic mediants, and two disjunct mediants. While details of voice-leading differ among members of each category, these details are secondary to the large-scale attributes of common tones and root motion.

Thus, although it is possible to describe sixteen distinct mediant relations, there are only three quantitatively different ways in which third-related chords connect with respect to common tones. These three classes of mediant are further differentiated by the relationship of their associated keys to the tonic. The keys of the relative mediants share six or all seven diatonic pitches with the tonic; the keys of the chromatic mediants share three or four diatonic pitches; the keys of the disjunct mediants share only one or no diatonic pitches at all.

The first category, relative mediants, contains diatonic chords associated with the relative modes. These relations entail two common tones and one diatonic change of either a semitone or a whole tone. For example, in the relation between C major and A minor triads, the notes C and E are held common, while G and A differ by a whole tone. In the relation between C major and E minor triads, on the other hand, the notes E and G are held common, while C and B differ by a diatonic semitone. This is shown in Figure 1.3.

The second category, chromatic mediants, contains chords which preserve mode. All of these relationships entail one common tone, one chromatic step, and one diatonic step. There are two subspecies of chromatic relations, since the diatonic step may be either a semitone or a whole tone. For example, in the relation between C major and A♭ major, the note C is common, while the notes E and E♭ differ by a chromatic semitone, and the notes G and A♭ differ by a diatonic semitone. On the other hand, in the relation between C major and A major, the note E is common, while the notes C and C♯ differ by a chromatic semitone, and the notes G and A differ by a diatonic whole tone. Thus the second class of strong mediant relation is a bit stronger – i.e. more marked, or less close – than the first, by virtue of its larger diatonic interval, as well as by the introduction of a pitch outside the tonic major/minor complex. All of the chromatic mediants are shown in Figure 1.4.

Relations of the third, disjunct category involve no common tones. They possess two chromatic steps and a diatonic one, either a semitone or a whole tone. Lacking

[17] While the term "chromatic mediants" could refer to all third relations with chromatic content, whether or not common tones are present, informal usage usually implies the common-tone relations, and this will be the sense in which the term appears here. The terms "weak," "strong," and "superstrong" also come to mind to describe the mediants according to their harmonic effect, but the words are loaded with other significant associations. Also, the term "superstrong" is used by Schoenberg to refer to something else; see below, section 5.2.1.

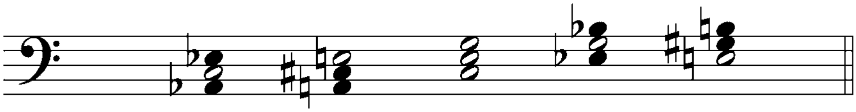


Figure 1.4 Chromatic mediants associated with a major tonic

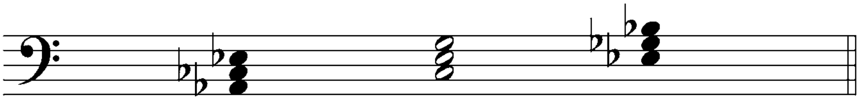


Figure 1.5 Disjunct mediants associated with a major tonic

a common tone, their effect is quite marked, although they begin to appear with some regularity in later nineteenth-century music. Just as the absence of a common tone sets off the disjunct mediants from the others, so does the distance between their associated keys and the tonic key, quite remote, to which they relate. Since the focus of this book is common-tone relations, discussion of the disjunct mediants, shown in Figure 1.5, will be slight and reserved until later chapters.

This classification scheme also incorporates some slight but important changes in the terminology customarily used in reference to mediants acting within a key, for the conventional terms convey some inherent biases which may color understanding. The first such bias derives from our way of describing scale degrees. It involves the pair of basic terms "mediant" and "submediant," which refer to chords whose roots are the third and sixth scale degrees, respectively. Here the term "mediant" conveys the impression of a more primary form, in contrast to the term "submediant," whose prefix *sub-* connotes an inferior quality, both by its inherent meaning, and by analogy with the pair dominant and subdominant, in which the dominant is indeed the "dominant" member – a more powerful element of harmony than the subdominant. By association, and in the absence of other mitigating influence, we may think similarly about the mediants, considering third-up mediants to be more primary and more powerful than the third-down mediants. However, this is not borne out in practice. Third-down mediants are at least as common as third-up mediants as harmonic elements in nineteenth-century music, if not more so. The two types of mediant are not as clearly differentiated in strength, nor in function, as are the two dominants. Therefore, to protect against generalization of the relation between the two dominants to the corresponding mediants, the more neutral epithets "upper" and "lower" to indicate these two classes of mediants will be adopted.

The second bias concerns mediants on the diatonic third and sixth scale degrees. Ordinarily, both minor and major triads on these degrees are referred to by the same term, despite the fact that, in major, the minor chords are associated with the relative modes, while the major chords lie well outside the key, having more in common with the other chromatic mediants. In respect of these differences is the distinction between the relative mediants, on one hand, and members of the class of chromatic mediants, on the other.

The third bias involves those chromatic mediants possessing roots located on different versions of the same scale degree. In tonal music, the third and sixth scale degrees are variable; mediants are associated with each variety. We ordinarily call the mediants located on the diatonic degrees of the major scale simply "mediants," while those with roots a semitone lower are called "flat mediants." This suggests a bias in favor of the first group, which, described by a single word, sound as if they are the more natural, more basic forms of the type, and against the flat mediants, which, by virtue of the identifier "flat," sound as if they are secondary, more artificial forms. This bias, based on diatonic thinking, proves unwarranted in common-tone tonality, and more neutral terminology which applies a modifying term to all four strong mediants will be adopted. On one hand are the sharp mediants, containing pitches which are sharp relative to the diatonic collection of their tonic; their roots occur on the natural third and sixth degrees of the major scale. On the other hand are the flat mediants, containing pitches which are flat relative to their diatonic collection; their roots occur on the lowered third and sixth degrees of the major scale. This terminology circumvents the implicit linguistic imbalance between these two classes of mediant, and causes us to think freshly about the implications of the terms.

To summarize: a major tonic possesses eight mediants, six of which are commonly employed in early to mid-nineteenth-century music. Of these six, two are relative mediants – the lower relative mediant (LRM), or relative minor, and the upper relative mediant (URM), the natural dominant of the relative minor. The remaining four are chromatic mediants – the lower flat mediant, lower sharp mediant, upper flat mediant, and upper sharp mediant (LFM, LSM, UFM, USM). Less used until later in the century are the two disjunct mediants (LDM, UDM). In order to more easily show the mediants with regard to traditional concepts of harmonic distance, Figure 1.6 locates them on the circle of fifths. Mode-preserving relations to the tonic are shown in Figure 1.6a, which contains the chromatic mediants. Mode-change relations are shown in Figure 1.6b, which contains the relative and disjunct mediants.

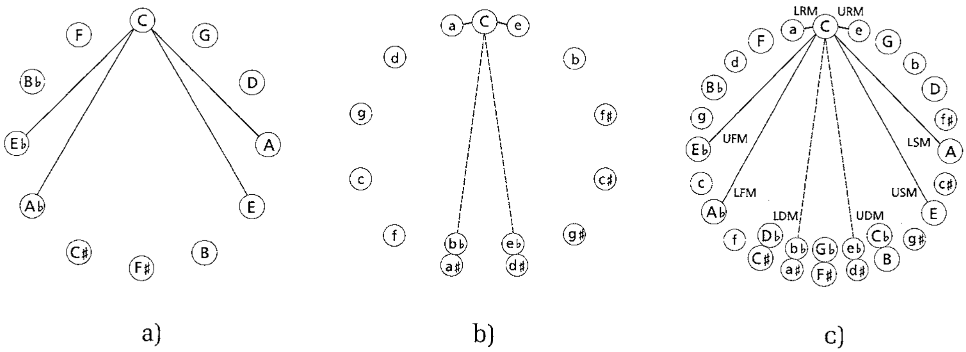


Figure 1.6 Mediant relations to a major tonic displayed on the circle of fifths: a) Mode preserved: chromatic mediants; b) Mode changed: relative and disjunct mediants; c) Combined system with mediant names

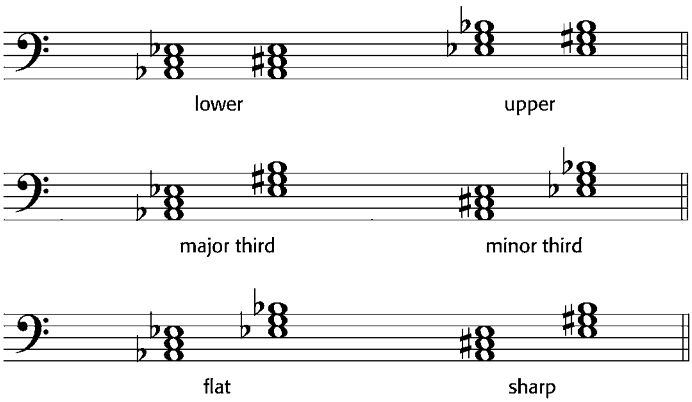


Figure 1.7 The three chromatic mediant affinity pairings in C major

The combined system of relationships is shown in Figure 1.6c, together with the names just defined.

1.5 CHROMATIC MEDIANT AFFINITY PAIRS

The complete group of four chromatic mediants contains three important classes of affinity between different pairings of its members. Each affinity type throws a different light on the properties of these chords in their relation to the tonic. The three affinity pairs are shown above in Figure 1.7. The first affinity pertains to scale step. On one hand are the two lower mediants, flat and sharp, whose roots are both forms of the sixth scale degree. On the other hand are the upper mediants, flat and sharp, whose roots are both forms of the third scale degree. This is the traditional distinction by which all of the lower mediants are called "submediants" and all of the upper mediants are called "mediants." While this grouping is the most natural from a scale-degree theory point of view, the upper and lower chromatic mediant pairs are least often associated together in music.

The second affinity pertains to interval of root relation. On one hand are the mediants which lie at a distance of a major third from the tonic: the lower flat and upper sharp mediants. On the other hand are mediants which lie at a distance of a minor third from the tonic: the lower sharp and upper flat mediants. The elements of both of these pairs stand in reciprocal relation to one another with respect to the tonic. The major-third mediants, and to a lesser extent the minor-third mediants, combine to form circle-of-thirds formations, as described below.[18]

The third affinity pertains to pitch content with relation to the tonic. On one hand are the flat mediants, upper and lower, both of whose chords and related keys contain pitches lying to the flat side of the tonic key. On the other hand are the sharp mediants, upper and lower, whose chords and related keys contain pitches sharp in

[18] Sections 5.7 and 8.6 discuss circles of thirds in detail.

Table 1.2. *Some properties of the four chromatic mediant relations*

Mediant	Common tone in tonic triad	Common tone in mediant triad	Interval between roots	Key difference	Diatonic motion
USM	$\hat{3}$	root	maj 3 ↑	4 ♯	semitone; l.t. to tonic
UFM	$\hat{5}$	third	min 3 ↑	3 ♭	whole tone
LSM	$\hat{3}$	fifth	min 3 ↓	3 ♯	whole tone
LFM	$\hat{1}$	third	maj 3 ↓	4 ♭	semitone; l.t. to LFM

relation to the tonic key. These pairs, both fifth-related, may appear together in contexts where similar chromatic mediant relations establish a distinct secondary key area. Table 1.2 illustrates a number of the diverse properties exhibited by the chromatic mediants which help serve to define these affinity pairs. For example, most obviously, the sharp mediants represent harmonic motion into sharper territory. Also and more interestingly, the sharp mediants share the same common tone with the tonic – its third – which becomes a different chord member for each mediant. This property, wherein the same pitch serves to connect the tonic to both sharp mediants, works to associate these two chromatic mediants even more closely as a pair.[19] Similarly, the two flat mediants represent harmonic motion into flatter territory. Here two different members of the tonic triad become the same chord member in each of the two flat mediants – again, the third. These thirds are two different pitches, however, and thus cannot associate this pair together as effectively as the single common pitch with the tonic does for the sharp mediants.

The two major-third mediants both accomplish moves to keys at a remove of four fifths from the tonic. Between themselves and the tonic they trisect the circle of fifths and provide for a complete circle of major thirds, a property exploited by many nineteenth-century composers. The two minor-third mediants, both moving to keys three fifths from the tonic, do not define a complete circle – a fourth element, the tritone, is required to complete the circle. Furthermore, both major-third mediant progressions contain leading-tone motion, while the minor-third progressions do not; this gives the major-third progressions superior cadential power. Historically, the major third, with its origin early in the harmonic series, has been viewed as more fundamental than the minor third. Accordingly, the distinction between major- and minor-third mediants was a critical one for nineteenth-century theorists, most importantly for Riemann, to whom scale step meant very little, but for whom intervals of root relation were an important ingredient of the identity and potency of a progression.[20]

19 Section 8.5 contains a discussion of this phenomenon.

20 The late nineteenth-century theorist Hugo Riemann nearly always saw major-third relations as stronger than minor-third relations. Throughout his career, up to his eventual definition of mediant function, he was always convinced of the direct relationship of the major-third mediants to the tonic, while he was often equivocal on the strength of the minor-third mediants. This point is discussed in much greater detail in chapter 4.

The upper and lower mediants are less frequently exploited as related pairs. As Table 1.1 shows, members of these pairs are quite different from each other harmonically; their associated keys, being a semitone apart, have little in common. What they share, of course, is a similar interval distance from the tonic. This allows them to be used in similar ways in situations in which variable interval distance may result from similar processes, such as third-dividers. As independent harmonic entities, though, the two upper mediants bear scant resemblance to each other. Similarly, the two lower mediants have little in common.

I have noted that the chromatic mediants, while functional, are not as powerful as the dominant. Rather, more like the subdominant, while they may pass directly back to the tonic, they more often are followed by a cadential progression including the dominant. But, in musical style from roughly the 1820s onward, they *need not* be followed by the dominant; as functional entities, they may return directly to the tonic, or proceed to other chords. And they often serve by their mere presence in direct relation to the tonic to define a new key area. This will be amply demonstrated in some of the following musical examples.

1.6 THE INDIVIDUAL CHROMATIC MEDIANTS

Each chromatic mediant displays characteristics of its class, along with some individual properties. All four chromatic mediants in major possess the diatonic semitone relation coupled with a common tone which also characterizes the dominant and subdominant progressions. The specifics of the common tone and of the semitone relation for each mediant, along with the actual root relation, give them distinctive profiles. I will review these for the chromatic mediants in major keys, the most commonly used in common-tone tonality. As a guide, Figure 1.8 illustrates the cadential relationship of the four chromatic mediants to the tonic, showing their frequently used distinctive sign: the common tone in the upper voice.

The lower flat mediant (e.g. A♭ major in C major) is perhaps the most frequently employed of the four chromatic mediants. It is particularly easy to achieve from a given tonic, owing to two properties of the T–LFM relation. First, the tonic triad contains the leading tone to the root of the LFM (e.g. G→A♭). Second, the

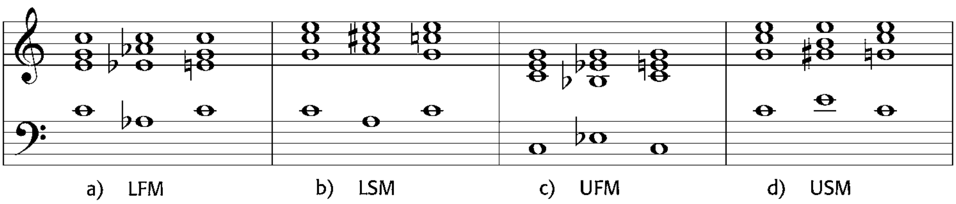


Figure 1.8 The four chromatic mediant cadences: a) Lower flat mediant (common tone $\hat{1}$); b) Lower sharp mediant (common tone $\hat{3}$); c) Upper flat mediant (common tone $\hat{5}$); d) Upper sharp mediant (common tone $\hat{3}$)

tonic pitch is the common tone between the two chords. This combination lends the progression an easy intelligibility, while the familiar leading-tone sound coupled with the unaccustomed harmonic syntax gives this progression much of its particular color. This mediant, with its root a semitone above the fifth scale degree, resolves smoothly to the dominant, and is customarily explained where possible either as auxiliary to the dominant or as the middle element of a downward third-divider spanning from I to IV.[21]

The upper flat mediant (e.g. E♭ major in C major) shows a different profile. The note which it has in common with its tonic – the fifth scale degree – is the root of neither chord; this renders moves to the UFM somewhat less close-sounding than other chromatic mediant relations. There is no leading-tone relationship strictly speaking in either the T–UFM or UFM–T successions; the rising semitone in the latter goes from the root of the UFM to the third of the tonic (e.g. E♭→E♮). Again, this gives the relation a somewhat more distant sound in comparison to the LFM. The upper flat mediant does, however, possess a natural-sounding quality, since, like the lower flat mediant, all of the chromatic tones it introduces belong to the combined tonic major/minor complex.

The sharp mediants, on the other hand, introduce chromatic pitches which are not only foreign to the diatonic collection, but also to the major/minor modal complex. Moreover, these new chromatic pitches happen to be the altered tonic and dominant degrees, which are potentially destabilizing elements. One mitigating factor: aside from their foreign tones, both sharp mediants contain two diatonic pitches, while both flat mediants contain only one. Thus the sharp mediants, while reaching farther outside the home key than the flat mediants, also possess a stronger tie to the key's diatonic collection. In this and other ways, their usage and effect show that sharp mediants, sharing many attributes with their flat-mediant cousins, exhibit similar functional quality.

The upper sharp mediant's relation to the tonic (e.g. E major in C major) is the converse of the lower flat mediant's, since both roots lie a major third from their tonic. Accordingly, two factors contribute meaning to the T–USM succession. First, the common tone in this case is the upper sharp mediant's root. Second, the upper sharp mediant contains the leading tone of the tonic key, giving it a particularly clear path back to the tonic. Progressions containing the upper sharp mediant thus have a "dominant" flavor, for both of these properties are also associated with the upper dominant: its root is also the common tone between it and the tonic, and it also, of course, contains the leading tone. However, this is not cause to equate the two relations, nor to call the upper sharp mediant unequivocally a dominant substitute, for the two functions are rendered quite distinct by three other factors. First, the root relations of the two progressions are qualitatively different: the upper sharp mediant is built on the diatonic third scale degree, while its third alters the dominant scale

[21] See for example the discussion of the opening of Schubert's piano sonata D960 below in section 2.4. In this and other chromatic mediant progressions, dominant-seventh chords as well as triads may appear; see section 8.3.

degree to $\sharp\hat{5}$ (not $\flat\hat{6}$, tending to $\natural\hat{5}$). This largely vitiates an association of a sense of root progression by fifth with the upper sharp mediant. Also, the USM's root is a chord tone of the horizontalized tonic triad which often appears in conjunction with (and in distinction to) the fifth scale degree. Finally, the common tone is the third, not the fifth of the tonic; this strongly individuates the characteristic mediant sound of the progression.[22]

Last is the lower sharp mediant (e.g. A major in C major). As with the other minor-third mediant (the UFM), there is no leading-tone relation in either direction between the lower sharp mediant and the tonic; the chromatic semitone in T–LSM moves from the tonic scale degree to the third of the new chord. Moreover, this motion introduces a chromatic tone which is the negation of the tonic scale step itself. And, similarly to the UFM, the common tone is the root of neither chord. The LSM's root, however, is an important diatonic scale degree which, among other things, divides the fifth between tonic and subdominant. Over and above all these distinctions, the lower sharp mediant shares the aural profile and effect of all the chromatic mediants.

A word on this terminology: like any new taxonomy, especially one which adds potentially cumbersome terms and supplants existing ones, these names for mediants and mediant types, along with the affinity groupings, may seem awkward to conceive and to use at first. But quickly enough the principles behind them become comfortable. The next few chapters will demonstrate that, in bits and pieces, the concepts have been with us for a long time. Over the course of this book the consistent presence of these terms will be essential in framing my arguments. I hope that the reader will also find value in them.

22 Joel Lester describes the cadential power of the USM, calling it $^{\text{maj}}$III, and tracing its pre-tonal Phrygian origins, a reminder that in other times root motion by fifth was not essential for a final cadence. He also argues that this chord is more than merely a substitute dominant, noting its root motion and the stability of its chromatic pitch. Lester, *Tonal Harmony in Theory and Practice* (New York: Alfred A. Knopf, 1982), pp. 102–108. Another approach subsumes the USM into the dominant. For example, David Beach has noted the propensity of returns from the USM to the tonic at the end of development sections in Mozart piano sonatas. He observes: "From a tonal point of view the prolongation of the structural dominant must take precedence; that is, the emphasis on III$\sharp$ must eventually be understood in relation to the tonal area of the dominant that encompasses it. However, I think it is also possible to view the A major harmony as being generated motivically." – that is, as part of a descending third-divider from dominant to tonic, and thus distinct from both on some middleground level. Beach, "A Recurring Pattern in Mozart's Music," *Journal of Music Theory*, 27, 1 (Spring 1983), p. 28. Only the (debatable) insistence on the all-encompassing structural dominant leads to the conclusion that the USM, and the other chromatic mediants, cannot be independent of the dominant. Further discussions of these matters will take place in chapters 6 and 8.

2

THREE EXAMPLES OF FUNCTIONAL CHROMATIC MEDIANT RELATIONS IN SCHUBERT

2.1 INTRODUCTION

Chromatic mediant relations are, of course, not exclusive to nineteenth-century music.[1] Their presence in Renaissance music is familiar. In Baroque style they often occur at the boundaries between large sections of pieces, as a half cadence resolving to an unexpected new tonic. Similarly in the music of Haydn and Mozart, they appear most often as major-third mediants at the boundaries between sections in a minuet or scherzo.[2] Between or within phrases, though, they are exceptional. In Beethoven's and Schubert's music, chromatic mediants began to appear with greater regularity and to find their way into more local harmonic contexts. As their presence grew and their profile became more familiar, chromatic third relations gradually became an accepted and much-exploited aspect of nineteenth-century harmonic practice. It is this normative practice which will be examined throughout the following chapters.

This chapter will present examples from three works of Schubert – two songs and the last piano sonata – which contain straightforward and compelling instances of direct chromatic mediant relations at varying levels of structure. The analyses will include consideration of alternative approaches and their limitations. Schubert was only one of many nineteenth-century composers who capitalized on the allure of chromatic mediants. However, more than anyone else, he was probably responsible for the clear, consistent, and organized use of chromatic mediant relations that brought them into the sphere of normative tonal practice. While the musical examples and analyses of later chapters are drawn from music of many other composers, it is fitting to begin with Schubert.

[1] A useful historical survey of chromatic third relations along with numerous examples from all periods appears in McKinley's taxonomic study, "Dominant-Related Chromatic Third Relations." McKinley does not argue for separate functional status for chromatic mediants but accounts for them within the language of conventional explanation (e.g. alterations, borrowings, substitutions). He does, however, consider them to be "tonality-enhancing" (p. 6).

[2] An early account of these appears in Hugo Riemann's *Große Kompositionslehre* (Berlin: W. Spemann, 1902), vol. I, pp. 75–76. Harald Krebs gives numerous Schenkerian readings of long-range third relations in Haydn and Mozart in "Third Relations and Dominant in Late 18th- and Early 19th-Century Music" (Ph.D. dissertation, Yale University, 1980). Beach, "A Recurring Pattern in Mozart's Music," considers third relations at the moment of recapitulation in first movements of Mozart sonatas.

2.2 *DER MUSENSOHN*

In the language of traditional harmonic analysis, the effortless connections between stanzas of Schubert's song *Der Musensohn* require a labored or regularizing explanation (Ex. 2.1). With a concept of mediant function, though, these links are easily characterized as straightforward.

Example 2.1 Schubert, *Der Musensohn*: direct modulations by chromatic mediant

a) between stanzas one and two

b) between stanzas two and three

The song contains five stanzas, of which the first, third and fifth are in the tonic key of G major. The second and fourth are squarely in B major, the key of the upper sharp mediant, which contains pitches outside of the G major/minor diatonic set. Despite the seeming incompatibility of these two opposing keys, Schubert glides smoothly from one to the other and back.[3] He does this without interposing a single chord between the two tonics in either direction of key change. Conventional analysis, having no expression for functional relationship between the two, would conclude that this cannot be a straightforward modulation, but rather a modification or incomplete realization of something different, or even a faulty and unsatisfactory event. The music itself, however, speaks otherwise: there is indeed a direct and effective modulation deserving equally direct explanation.

We could explain the modulation as involving a more distant goal – the upper sharp mediant could conceivably be part of a Schenkerian third-divider whose true goal would be D major, the key of the dominant. Or perhaps B major could be the dominant of the relative minor (that is, E minor), another conceivable target. However, no such goals extending beyond B major are actually involved in these modulations. The music plays out plainly in B major until the end of the inner stanzas, at which point it returns directly to tonic G major. Nevertheless, one could claim that one or the other of the above acceptable goal keys must be implicit in the sudden progression to B major: we must imagine them as future possibilities in order to make sense of the wayward mediant. But there is nothing in the music to suggest anything like this. In the inner stanzas, all there is is plenty of I, IV, and V in B, then a move directly back to G major. We simply do not need to hear past B to understand this music. Surely it is selling its aesthetic content short to assert the true nature of this progression to be the truncation of a milder process.

Taking another tack, we could define the B major chord itself as a version of a more acceptable chord, say some sort of altered dominant. An explanation along these lines would acknowledge a "dominant" with root $\sharp\hat{5}$ (D ♯), third intact (F ♯), and sixth-for-fifth substitution (B for A). While this explanation may seem plausible for a single chord, it seems less suited to fully account for the sense of long, stable stretches of music. Calling the B major of stanzas two and four a substitute dominant would deny the clear sense of underlying tonality that it projects, and would require D ♯, the third degree of the apparent tonic and a pitch wholly outside the framework of G major/minor, to carry the harmonic identity of these passages instead as a representative of D ♮. More fundamentally, this interpretation also suggests that what we hear is really just a version of something else, when in fact the modulation seems direct and clear. To my mind this argument stretches the explanatory power of scale-step alteration beyond good sense. Better to allow that the composer has produced

3 The mediant relations in *Der Musensohn*, occurring between stanzas, somewhat recall eighteenth-century practice. But the minimal contrast in texture, rhythm, and melody between the sections of the song regularizes the harmonic connection, whereas the greater contrast between sections in dance movements reflects a sense of disjunction.

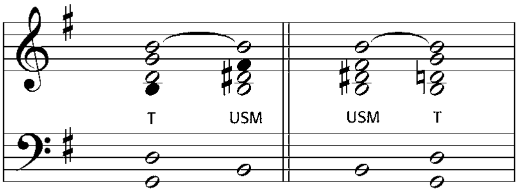


Figure 2.1 Chromatic mediant progressions between stanzas in Schubert's *Der Musensohn*

a convincing modulation brought about by two chords in immediate succession, by way of a functional T-USM chromatic mediant progression.[4]

Thus *Der Musensohn* provides two clear, straightforward examples of functional chromatic mediant relation (Fig. 2.1). For one thing, the progressions are very clean. They occur on a number of levels simultaneously, happening at very deep, unambiguous structural boundaries mediated at all levels by the same two-chord progression between tonics found at the surface. In the first progression, at m. 30, the move from tonic to USM is abetted by the appearance of the common tone B in the melody, which contributes a great deal to the perceived smoothness of the progression, both in its appearance in an important register, and by counterbalancing the chromatic shift from D ♮ to D ♯ in an inner voice. And, as the tonic note of the new key, the prominent B legitimates the progression. Rhythm provides a further impetus. The move occurs right at the beginning of the new stanza: the old tonic is played by the piano on the upbeat, and the new tonic directly thereafter. Such strong association of the two chords in a unified, forward-directed rhythmic gesture helps project the functional force binding them, echoing on a different plane a sense of progression from the first quantity to the second. The continuation of the pervasive dotted-rhythm melodic motive of the first stanza into the new key area reinforces the effect of smooth connection.

The second chromatic mediant progression, at m. 50, accomplishes a move from the USM back to the tonic. Like the progression at m. 30, its most salient aspect is the appearance of the common tone in the melody. Here the harmonic move is less potentially abrupt – it is headed back to the tonic, after all. But the common tone, while equally important this time around, serves a different purpose. It helps to distinguish this return from its normative analogue, the dominant-to-tonic cadence, which, like the progression from upper sharp mediant to tonic, contains the resolution of the leading tone to the tonic pitch. Schubert does his best to downplay the leading-tone aspect: its resolution happens in an inner voice; the notes in question are not contiguous in time; and they both occur on off-beats. On the other hand, the common tone, hallmark of the mediant progression, sails through conspicuously on

[4] This type of modulation is described by several of the nineteenth-century theorists discussed in chaps. 3–4.

Example 2.2 Schubert, *Die Sterne*, second stanza: direct chromatic mediant relations

the melody. As before, it ties the progression to a strong upbeat–downbeat gesture, reinforcing the sense of motion from the first chord to arrival on the second.

This mediant-function explanation seems to me to be the most convincing way of dealing with the harmonic connections between the stanzas of this song. In response to G major and B major coexisting in a piece to the exclusion of any other keys, it resorts neither to external justification for nor redefinition of the unusual key relationship. Instead, it treats the relationship as normative. Conventional explanations may conclude that the harmonic scheme of *Der Musensohn* is colorful, even strange, for its particulars lie outside the realm of what is expressible purely in terms of the system, giving the song the aura of something unusual. The explanation offered here, on the other hand, concludes that the harmonic scheme of the piece is expressible purely within terms of the system.

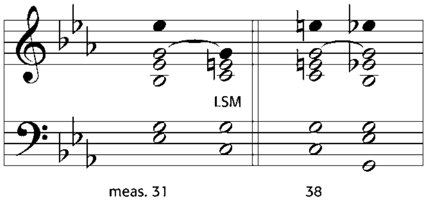
This attitude may appear to run the risk of affecting one's perception of the song and dimming its aura of special structure. But its advantages should outstrip any drawbacks. Conceiving these chromatic mediant links as functional strengthens our understanding of how this song works and deepens our aesthetic perception. To think of the modulations as straightforward, not crooked, can only help us to hear them as straightforward as well, without feeling obliged to aurally filter them through the terms of other elements of our musical experience. Their beauty is only enhanced by hearing and conceiving them directly.

2.3 *DIE STERNE*

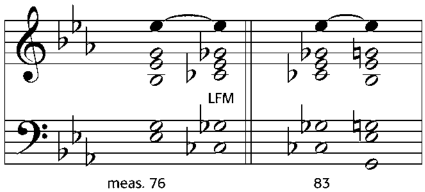
Schubert's song *Die Sterne* reads like a deliberate experiment in creating functional chromatic mediant relations at the level of the phrase. *Die Sterne* contains four stanzas of four lines each, separated by an unchanging piano refrain which also begins and ends the piece. The stanzas are identical in length and in rhythmic content; the pitch content of the third line, though, is varied in the first three stanzas, while the fourth reiterates the first. What is remarkable is the way in which the third line of each stanza, always the locus of a swift quasi-modulatory excursion, differs in each case. The excursions, which go to several remote keys, are always directed to a chromatic mediant and always lead directly back to tonic E♭ major. The third line of stanza one contains a move to and from C major, the lower sharp mediant. In stanza two the move is to C♭ major, the lower flat mediant. In stanza three the move is to G major, the upper sharp mediant. Stanza four revisits the C major of the first (Ex. 2.2).

Thus in *Die Sterne* Schubert has written a veritable manual of possible chromatic mediant moves, as shown in Figure 2.2; G♭ major is the only chromatic mediant absent from the song. The manner in which Schubert approaches and leaves these chromatic mediants is consistent throughout. In each verse, he sets the first two lines of text with a simple, strong cadential progression in tonic E♭. This is followed by the direct juxtaposition of a chromatic mediant at the entrance of the first word of the third line. The mediant endures for the length of the line, its root forming a pedal point, and its dominant surfacing twice on weak beats. At the beginning of the fourth line of text comes the direct juxtaposition of tonic E♭ in first inversion, followed by another cadential progression to the tonic, more elaborate than the previous ones.

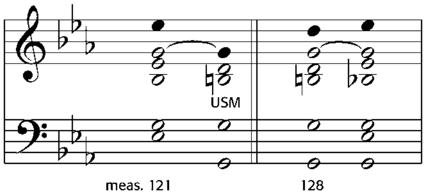
The excursion to C major in the first stanza, at m. 31, involves the direct juxtaposition of two root-position triads, the barest possible chromatic mediant move. Common tone G forms the top voice of the piano's ostinato and is doubled below in the left hand, guiding the listener into the progression; the next line of melody then picks up the G in the same register in which it was heard in the piano. C major lasts for seven measures, during which time it is never reinterpreted either as auxiliary to



a) first and fourth stanzas



b) second stanza



c) third stanza

Figure 2.2 Chromatic mediants in *Die Sterne* (black notes = vocal part; slurs = common tones)

or as an alteration of some other chord. The only pitches outside the triad appearing in the passage are the lower neighbors B and D, which imply C's dominant, serving only to strengthen the impression of C as a momentarily stable harmony. The move back to tonic E♭ at m. 38 is achieved by the direct juxtaposition of root position C major and an E♭ major triad in first inversion. The use of first inversion here instead of root position does not result from any inherent mechanical difficulty in returning to the tonic directly from a chromatic mediant. Rather, this I^6 is used for purely musical reasons: a root-position tonic triad would be far too definite an arrival so soon here at the beginning of the phrase. Schubert does not employ I in root position until the very last moment (m. 46); he deliberately avoids it not only at m. 38 but again at m. 42, preserving a measure of tension not fully resolved until the end of the phrase. This, of course, conveys the feeling of one unified musical phrase setting the fourth line of text. It also gives a sense of continuity between it and the previous phrase by keeping harmony consistently open between the C major chord of m. 38 and the E♭ major chord of m. 46. Thus the two harmonic areas are heard in direct relation to each other both before and after the chromatic mediant interpolation. C major can be understood as the principal secondary harmonic area of the stanza rather than simply a prolonged chromatic neighbor formation.

Several small-scale factors contribute to the stability of this chromatic mediant progression. In the approach to the first progression at m. 28, the vocal line arrives at the tonic by a stepwise ascent to E♭; the sense of the moment is very much that of a melodic end, a closing off (appropriate, since E♭ does not belong to the upcoming C major). At the point of juxtaposition, common tone G is given prominence as the highest note in the piano, guiding the ear smoothly through to C major. It first appears in m. 28, staying put through the mediant move into the new phrase, where it is taken up very audibly by the voice. This sung G at m. 31 consequently sounds both fresh – being a minor sixth away from the last sung note, E♭ – and stable, with strong links to the piano's G which preceded it, as well as to an earlier G, the first note of the vocal line in m. 17. The common tone in the piano also provides continuity for the move back to the tonic at m. 38 – in fact, it does not budge between mm. 28 and 44. The vocal part, on the other hand, stresses the chromatic motion inherent in the progression. It ends the third phrase with an imitation of the previous phrase – stepwise motion upward to some sort of E – but arrives, naturally, at E♮, not E♭. Schubert eases into the final line by chromatic semitone motion back to E♭, which along with the common tone produces a particularly smooth transition back to the tonic while stressing the sound of the mediant progression.

In the second stanza, which moves to C♭ major, the lower flat mediant, the harmonic mechanism is similar. M. 76 contains a juxtaposition of root-position tonic and LFM triads, while m. 83 has a juxtaposition of root-position LFM and first-inversion tonic. However, the common tone in this progression is different – tonic E♭ – which affects some compositional details. E♭ ends the second vocal phrase and begins the third one at m. 76; it also ends the third phrase and begins the fourth at m. 83. The shape of the third phrase is correspondingly changed. From the high common E♭, the melody must go down, tracing a sixth and bouncing back up (on the word *Liebe*) with an arpeggio that reaches above to G♭, the highest note in the piece so far, before settling back to E♭. Schubert was not content to leave this G♭, a chromatic pitch, unanswered. He varied the fourth phrase slightly so that the melodic shape, instead of peaking at F as it did in the first stanza, continues up to G♮, resolving the G♭ of the previous phrase up a semitone to its diatonic counterpart. The arrival at G♮ is emphasized by the piano's crescendo, extended an extra measure here in comparison with the first stanza in order to peak at the high note. The isolation of the G♭–G♮ progression in the highest register also prepares, in a way, the change from a flat mediant in this stanza to a sharp mediant in the next.

In the third stanza, which goes to G major, the upper sharp mediant, the pitch G is the common tone for the mediant progression, as it was in the first stanza. Thus even though the goal of this harmonic excursion is different here than it was at the outset, the mechanism and the voicing are much the same. At m. 121, as at m. 31, the common tone is carried in the upper voice of the piano, while the vocal line abandons E♭ for the G a minor sixth lower. However, this progression sounds the most distant of all so far, since the upper sharp mediant, as explained in section 1.6, does not preserve any form of the tonic pitch, while it introduces another pitch outside of the tonic major/minor collection. But this progression also sounds very much in place, due in part to an aural association with the first stanza sparked by the very similar voicings at the moments of juxtaposition, and also by its earlier preparation through the striking arrival at G in m. 90 just described. At m. 128, the common tone endures in the piano as before, but the way in which the vocal line regains E♭ is changed. Earlier at m. 38, E♮ gave way to E♭. Here Schubert takes advantage of the upper sharp mediant's strength: it contains the leading tone. He ends the third vocal phrase on D, laying the path for a resolution to the ensuing E♭ which is more powerful than the downward chromatic semitone at the parallel point in the first stanza.

Finally, the fourth stanza is identical to the first through its first three phrases. The fourth phrase, though, is borrowed from the second stanza, and reaches G♮ once again – emphasized this time by a *forte* marking – descending for the final cadence.[5]

Die Sterne appears so deliberately an exercise in the use of functional mediants that it seems wrongheaded to go about explaining what goes on in the third lines of each stanza as anything but chromatic third relations. Nonetheless, each of the direct juxtapositions embodies a clear case of opposition of a harmonic entity to the tonic, and as such each could be analyzed as some altered form of one of the dominants. The C major of the first and last stanzas, for example, may be interpreted as an altered subdominant. It may also be identified as the parallel mode of the relative minor, although this explanation begs the question of the nature of the particular functional process involved, and is of little help in understanding the excursions in the second and third stanzas of the song. The C♭ major of the second stanza, for example, is difficult to explain as a derivative of the relative minor. However, there is some sense in calling it another form of altered subdominant. The G major of the third stanza is a bit more difficult to characterize, but the most reasonable thing would be to call it an altered dominant, since it has nothing at all in common with the subdominant.

According to these conclusions, the first, second, and fourth lines contain harmonically similar excursions, while the third line contains a different and harmonically opposite one. While this attitude makes some logical sense, it does not accurately reflect the real effect of the song, in which it is the third stanza, not the second, which most resembles the first and fourth in sound and contour. The strict scale-degree approach would class together the lower mediants C major and C♭ major through their roots, and separate out G major, whose root is distant from the others. But it seems to me that there is a much closer relationship between the sharp mediants C major and G major. The two keys are very closely related (by fifth) and bear a similar harmonic relationship on the sharp side of tonic E♭ major. C♭, on the other

[5] The absence of the UFM, G♭ major, could be attributed to the lack of a fifth stanza in the poem. But G♭ would also be the most difficult chromatic mediant to integrate into the material. None of its pitches is close to the E♭ ending the second phrase, while there is no precedent for the common tone, B♭, to begin a line.

hand, is extremely distant from C and G, with which it has zero and one tones in common, respectively; it is also well to the flat side of the tonic. The scale-degree approach lacks proper vocabulary with which to formulate these harmonic relationships, so crucial in the explanation of the sense of the second and third stanzas of *Die Sterne*.

A Schenkerian or voice-leading approach might contribute to an understanding of the way in which these unusual harmonic excursions fit into more normative processes by providing an analytical sketch minimizing the strangeness of the mediants by showing how they arise as elaborations of regular structures existing at background levels. Each of the mediants can thus be understood as subsidiary to tonic or dominant. As I will outline in the Schenker discussion below (section 5.1), both lower mediants could be interpreted as upper neighbors to the dominant, while the upper sharp mediant could be seen to be a third-divider, a diminution of the fifth leading upward from tonic to dominant. This means, though, that Schenkerian theory treats the upper and lower mediants as quite different sorts of background event, effectively upholding the same scale-degree distinction just discussed. Moreover, both the third-divider and upper-neighbor explanations require the resolution or completion of the contrapuntal tendency of the mediant degrees. But no such followings-through occur. Instead of moving to the dominant scale degree, the lower mediants progress directly back to the tonic. Likewise, instead of achieving the composing-out of a fifth, the upper mediant moves directly back to the tonic.[6] To remain consistent with Schenkerian thought, we must conclude that these mediants are events with derivations closer to the surface, tied to the tonic as neighbor formations. An advantage to this conclusion is that it shows all of the mediant excursions to be similar in nature, which was not the case with the higher-level explanations. A disadvantage, though, is that the significance of the excursions in determining the sense and structure of the song is downplayed considerably.

What none of these approaches can show is what is apparent from the look and the sound of the song – that all of the excursions away from and back to the tonic share similar traits. Each of them involves root motion by third, colorful chromatic alteration, and dependence on a prominent common tone for smoothness of harmonic transition. This general observation, more meaningful than any particular identification of chords, captures the essence of harmony in this *Lied*. It should be clear that the shared traits do determine the meaning and structure of the song, and an explanation which treats them as secondary cannot be definitive. A clear explanation showing how such disparate progressions create an orderly harmonic pattern is possible only if functional third relations are allowed.

The prominent role of chromatic mediants at key points in this song suggests a possible relation between them and its text. Specific associations with word meaning at the exact moment of the mediant moves do not seem to occur. However, the

[6] Krebs (see below, section 5.6) analyzes this song in this manner. His analyses strive to show that the dominants which follow the chromatic mediants are structurally superior to them, although the support for $\hat{2}$ at these points is not always strong. Krebs, "Third Relations and Dominant," vol. II, fig. II.1, p. 30.

Example 2.3 Schubert, piano sonata in B♭ major, D960, I, opening

overall impression of the harmonic distance of these third-related areas, coupled with the *pianississimo* effect which Schubert requests throughout them, does communicate an otherworldly sense which complements the heavenly spaces and heavenly moods, the eerie light and transcendent love evoked by the poem.

2.4 PIANO SONATA D960, I

The beginning of Schubert's last piano sonata, D960, in B♭ major, contains a memorable instance of a chromatic mediant relation. Schubert presents the key of G♭ major, the lower flat mediant, in a way which suggests its harmonic independence. A scale-degree approach to analyzing the opening section might interpret the direct progression to G♭ in m. 19 as a move to ♭VI, borrowed from the key of the parallel minor, or perhaps as an extended anticipation of the eventual augmented-sixth chord, obviating any need to explain it as a triad in its own right. In either case, these are chromatic, dissonant chords, constrained to resolve to the dominant. A more linear-analytic view would focus on the chord's resolution by bass motion of a descending semitone to V (by way of the cadential $^6_4$, itself constrained); the interpolation of an augmented sixth merely accentuates the process. G♭ is understood as upper neighbor of the dominant, constrained and hierarchically dependent. This interpretation is bolstered by the presence of the left-hand trill on G♭ in m. 8, which is seen to anticipate and define this upper-neighbor relation (Ex. 2.3).

One of the key elements of Schubert's approach to harmony – and, more broadly speaking, of the beginning of the nineteenth-century dissolution of the norms of classical-style harmonic practice – is the redefining of constrained chords such as these as chords harmonically stable and valid in their own right. Schubert experimented constantly with the removal of constraints on the mediant chords: the direct progression I–LFM–I in his music may sound perfectly natural, meaningful, and functional.

In eighteenth-century diatonic language, the abrupt harmonic move in D960's opening is without direct sense. "I–♭VI" does not describe a meaningful succession within the tonic–dominant system. We say that there is no "real" connection between these two chords; failing to relate to its immediate neighbor, the opening tonic abides until the suitable chord comes along. The dominant of m. 38 is a satisfactory goal, although it occurs, curiously, in the middle of a restatement of the opening melody.[7] In reality, we assert, the real harmonic connection to the opening chord occurs well underneath the musical surface, which is frequently illusory. Hierarchically dependent on the chords which surround it, G♭ lacks its own identity, drawing its definition in relation to the dominant it introduces, while creating a syntactic boundary with the chord which precedes it. The chromatic content of the G♭ major triad and German augmented sixth which follows negates any direct meaning in the

[7] That is, unless one considers the preceding tonic $^6_4$ strictly as a dominant prolongation, in which case V enters at the beginning of the melody, at the upbeat to m. 36. But the important melodic $\hat{2}$ does not occur until m. 38.

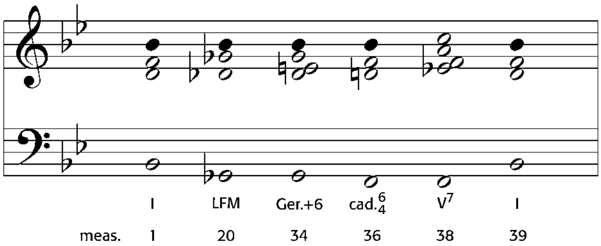


Figure 2.3 Harmonic progression and changing identity of B♭ in the opening section of Schubert D960, I

key. Rather, they gain their meaning from the proper goal chord, to which they are constrained to resolve. Furthermore, we look forward to an eventual return to the tonic, retroactively interpreting intervening harmonies as anticipatory prolongational elements in a goal-directed cadential progression, rather than as entities relating to what went before. Immediately upon its appearance, G♭ major becomes a chord anticipating the arrival of the proper dominant. We allegedly hear it strain to connect to another harmony in some future time, rather than relating to any music already heard.

There is of course a compelling logic to this sort of interpretation of harmony. But it was just such a logic that Schubert was, I believe, aiming to transcend. In the beginning of D960, he makes it impossible to deny a very real and rather sensuous move from B♭ major directly to G♭ major. It makes sense and enhances perception to accept this as a direct move to a stable harmony – not to an anticipatory prolongation of the dominant. The move to G♭ is beautiful and affecting, precisely because of its very nature as a progression from the tonic specifically to the lower flat mediant (see Fig. 2.3). Its calm sweetness derives from functional stability, not from imagined dissonance *vis-à-vis* the key or the dominant, which eventually needs to be supplied.

By this late point in his output, Schubert had well established direct chromatic mediant relations as a stylistic norm. G♭ major may as well move back to the tonic without any dominant mediation (as happens, for example, in *Die Sterne*) as to progress otherwise. Fully consonant in Schubert's usage, the lower flat mediant allows for multiple outcomes, of which two are most likely: (1) immediate return to the tonic, and (2) a reinterpretation of the chord as auxiliary to the dominant. There are also other possibilities, one of which is exploited later in the recapitulation. Thus Schubert *chooses* to employ the mediant in a particular way. The eventual metamorphosis of G♭ major into a German augmented-sixth moving to V in this passage communicates an element of hard-won arrival, even surprise. The moment where the LFM becomes an augmented-sixth chord is a dramatic one, at least in part because the progression did not have to turn out that way.[8] The augmented-sixth

[8] The shift in meaning of the chord brings to mind an extension of the notion of Multiple Meaning (*Mehrdeutigkeit*) associated with Vogler and Weber, and most recently documented by Janna Saslaw and James Walsh: a stable

interval, in fact, sounds as if it has been introduced in order to create necessity of motion to the dominant; the LFM on its own does not communicate this.[9]

Here are four musical factors which contribute to the status of the G♭ major area as stable and functional in the Schubert example. First is tonicization: the passage is clearly to be understood in G♭ major. Although it is not reached by a traditional modulation, but rather through direct juxtaposition of tonics tempered by a chromatic bass descent by major third from one root to the other, we hear a distinct and definitive key change, and are disposed to understand it in direct relation to the key of the previous passage. Second is form: the chromatic mediant relation takes place at a clear phrase boundary. Moreover, the material of the G♭ major passage consists of a conventional, nonmodulating, regular eight-bar melody followed by six measures of tonic pedal point embroidered with neighboring $^6_4$ motion. These are stable formal structures which imply harmonic stability as well. Third is effect: in the heard texture Schubert points out the nature of the progression, lingering on the common tone in the melody, literally spelling out the major-third motion by semitones in the bass, thereby showcasing the particular beauty of its sound. Fourth is time and proportion: the G♭ major section simply lasts for quite a while, almost as long as the opening passage in tonic B♭. Were it just a passing event, we might not perceive it as very important structurally; we could not linger on it long enough to hear it emphasized in harmonic opposition to the opening passage. It does matter that fourteen full measures of G♭ major take place. Not only is there a complete statement of the opening melody which stays squarely in G♭, but several additional measures emphasize that key before the eventual transformation into an augmented-sixth chord. Sheer duration leads us to hear and accept this chromatic mediant as an independent harmonic area, and provides the space for its contextual meaning to shift from LFM to auxiliary of the dominant.

A defining characteristic of the movement's opening section is lost in the conventional approach. This is the common tone, so important for the smoothness of the chromatic mediant progression, especially for one so protracted. Even though it does not move, the upper register's B♭ not only gives a sense of coherence over this long stretch of music but also conveys a decided impression of motion. This stems from the constantly and dramatically shifting role of the B♭: beginning as root of tonic B♭ major, it changes to consonant third of G♭ major, then to member of a dissonant tritone in a German-sixth chord, next to dissonant fourth in a cadential $^6_4$, momentarily resolving to A, ultimately re-emerging as the tonic pitch at m. 39.

lower flat mediant is reinterpreted as an unstable chord on ♭VI. But the analogy is not exact, since the first meaning is associated with a triad, while the second meaning does not come fully into play until the chord is transformed into a tetrad. Saslaw and Walsh, "Musical Invariance as a Cognitive Structure," in *Music Theory in the Age of Romanticism*, ed. Ian Bent (Cambridge: Cambridge University Press, 1996), pp. 211–232.

9 An analogy with Rameau's harmonic theory presents itself. Rameau theorized that triads on their own do not carry the power to progress in a particular way; a characteristic dissonance must be added to confer a sense of harmonic direction. Thus the minor seventh added to a major triad induces dominant behavior; the major sixth added to a major triad induces subdominant behavior. Likewise, the addition of an augmented sixth here induces the G♭ major triad to behave as a dominant auxiliary.

Redefinition of the common tone is a central aspect of the distinctive color of chromatic mediant progressions. This passage from Schubert beautifully exemplifies the importance of recognizing its significance.[10]

In the corresponding passage in the recapitulation, Schubert adds an additional mediant relation which redefines the harmonic context of the G♭ major area. This time around, G♭ does not progress to an augmented-sixth chord, nor even ultimately to the dominant. Rather, Schubert introduces a two-part progression in which a parallel minor chord is interpolated into a mediant shift.[11] G♭ major is transformed into F♯ minor, whence the theme moves into A major, G♭ major's enharmonic upper flat mediant. Eventually a seventh is added on to A major, mirroring G♭'s transformation into a German-sixth chord in the exposition. This time, though, the chord is treated like a dominant seventh, which leads to a deceptive cadence reintroducing tonic B♭ major. It would be possible to analyze this progression as a tangle of altered dominants and secondary relations, but such a reading would not make much intuitive sense. Better to think of two successive mediant progressions, the first from the tonic to the lower flat mediant, and the second to that chord's upper flat mediant (resulting in a net downward motion of a semitone), subsequently resolved back up to the tonic by means of a deceptive cadence itself involving displacement by the equivalent of a chromatic mediant.[12]

Since this arrival to the tonic is not preceded by the dominant, there is no way this time to analyze the lower flat mediant as subsidiary to the dominant. Even more than in the exposition, where this interpretation was a possibility, we must take G♭ major to be a functional mediant. Likewise, the move to A major is more easily understood in terms of direct relations. Otherwise, thinking backwards, we find ourselves referring to the relative major of the parallel minor of the flat submediant, a chord which itself is only either appoggiatura or third-divider. Thinking forward, we could have in A major a lower neighbor chord to the tonic, or an altered rootless dominant-seventh chord, but the chords leading up to it have a tenuous connection at best with the tonic, and no direct functional connection to A major. A strict linear analysis might show simpler connections, but it would discount the quality of the chord changes, which are an integral component of the aesthetic content of the passage. An explanation based on functional third relations best succeeds in describing the syntax of this passage and the one from the exposition to which it refers.

[10] Redefinition of the chord memberships of common tones is a central tenet of Moritz Hauptmann's harmonic theory, discussed below in section 3.6.

[11] This type of progression is discussed in section 8.2 below.

[12] This passage contains chromatic mediant relations between chords neither of which is tonic or dominant. In this context the identifying labels LFM, etc., can fall short, since there is no immediate key reference from which to draw their meaning. Cases such as this are better analyzed using less key-dependent means like the transformational approach presented in chapters 7 through 9; an analysis of this passage is found in section 7.9.

3

KEY HARMONIC SYSTEMS AND NOTIONS OF THIRD RELATIONS FROM RAMEAU TO HAUPTMANN

3.1 MUSICAL INTUITION VS. THEORETICAL CONSISTENCY

The purpose of this chapter is not to present a history of ideas of chromatic harmony throughout the nineteenth century, which can be found elsewhere.[1] The focus will be on a few select harmonic theories, most of which contain arguments for the presence of direct chromatic third relations. These arguments generally originated from a belief in chromatic mediant relations' coherence. Once they were acknowledged as meaningful progressions, theorists had to account for them within the structures of existing theories. Ultimately, they could be formalized only to the extent that the structure of theories could express them. Thus the mechanics of theories, not the ears and hearts of theorists, determined the extent to which chromatic mediants were successfully formulated. Belief did matter to some degree: a theorist who felt that chromatic mediants destroy the integrity of the key would not be inclined to accommodate them. But even those who did recognize their legitimacy were not always able to translate this into full theoretical expression. As the nineteenth century progressed, chromatic mediants were ever more present in music. At the same time, theories of tonal relations became ever more systematic. Ironically, as the role of chromatic third relations in music became more normative, the ability of theory to bend to receive them often became more compromised.

3.2 RAMEAU AND THIRD RELATIONS

Rameau's theories well predate the nineteenth century. But some aspects are worth mentioning here as an early expression of chromatic mediants' place in the tonal

[1] Lester, *Compositional Theory in the Eighteenth Century*, pp. 214–216, discusses chromaticism and key relation in late eighteenth-century theory. Irene Levenson, "Motivic-harmonic Transfer in the Late Works of Schubert: Chromaticism in Large and Small Spans" (Ph.D. dissertation, Yale University, 1981), briefly reviews ideas of chromatic third relations in many nineteenth-century theories, including most of the ones discussed in this chapter. Krebs, "Third Relations and Dominant," also provides a brief review. General presentations of eighteenth-century theory may be found in Lester; Thomas Christensen, *Rameau and Musical Thought in the Enlightenment* (Cambridge: Cambridge University Press, 1993); and Matthew Shirlaw's *The Theory of Harmony*, 2nd ed. (DeKalb, Ill.: Dr. Birchard Coar, 1955). General presentations of nineteenth-century theory may be found in Shirlaw; Hoffman, "A Study of German Theoretical Treatises"; Peter Rummenhöller's *Musiktheoretisches Denken im 19. Jahrhundert* (Regensburg: Gustav Bolle, 1967); and Harrison, *Harmonic Function in Chromatic Music.*

system. Chromatic third relations play relatively little part in the music of Rameau and his contemporaries, and so it would seem that Rameau would have no reason to document or describe them. But to the extent that these third relations form an intrinsic part of the system of tonal relations, they were available to theoretical inquiry. Rameau, encountering direct third relations between major chords in the course of his investigations, presents them with appropriate explanations, even though he has little practical use for a concept of chromatic mediant relations.

Root relations by third are no problem in Rameau's theory: the interval of a third, major or minor, is second only to the fifth as a favorable interval in the fundamental bass. Diatonic mediants are ordinary events for Rameau, for whom any progression of diatonically third-related triads would, strictly, signify a succession of two closely related tonics.[2]

Chromatic mediants, a less common occurrence, present a different face to Rameau. He treats them in two contexts. The first, Rameau's system of proportions, is abstract; the other, the *genre chromatique*, is concrete. Discussions of these topics, absent from his first and most familiar work, the *Traité d'harmonie* of 1722, are confined to mid-career treatises from the *Nouveau système de musique théorique* of 1726 to the *Démonstration du principe de l'harmonie* of 1750.

The triple proportion 1 : 3 : 9 of the *Nouveau système*, predicated on the perfect fifth and cited by Rameau as the source of the relationships between subdominant, tonic, and dominant, is not the only generative system of chord relations which he proposed. He also offered up the quintuple proportion 1 : 5 : 25, which is predicated on the major third. The independence of this quintuple system from that of the triple proportion is manifest in Plate 3.1, taken from the *Nouveau système*, which exhibits the extensive system of pitches and their relations which arises as the product of the two proportions, each operating along its own axis.[3] Rameau did not directly apply this extensive product system to individual chord or key relations; it merely served to show the genesis of the pitches of the tonal system.

Some of the table's more distant pitches and their associated numbers are ludicrously removed from real musical application; Rameau is simply seeing a process to its farthest reaches.[4] His major-third steps themselves are progressive: three steps up from *do* is *si* # rather than *do* again, and so forth. In fact, Rameau does not associate root relations with the horizontal dimension. Instead, he uses this system strictly to account for major-triad generation: given a tonic, its fifth lies below it on the chart, while its major-third lies to its right. Nonetheless, while Rameau does not identify chromatic chord progressions in his chart, the presence of major-third relations is noteworthy, especially considering their minimal analytic value. Later theorists would use a very similar chart to trace a network of relationships between chords and keys; Rameau, coming upon it as a natural consequence of

[2] Jean-Philippe Rameau, *Traité d'harmonie reduite à ses principes naturels* (Paris: J. Ballard, 1722; repr. Slatkine, Geneva, 1986), pp. 50–51.

[3] Rameau, *Nouveau système de musique théorique* (Paris: J. Ballard, 1726), p. 24.

[4] Rameau pares down this chart to a realistic scope in the *Génération*: the first four columns, each containing pitches only up to *si* #.

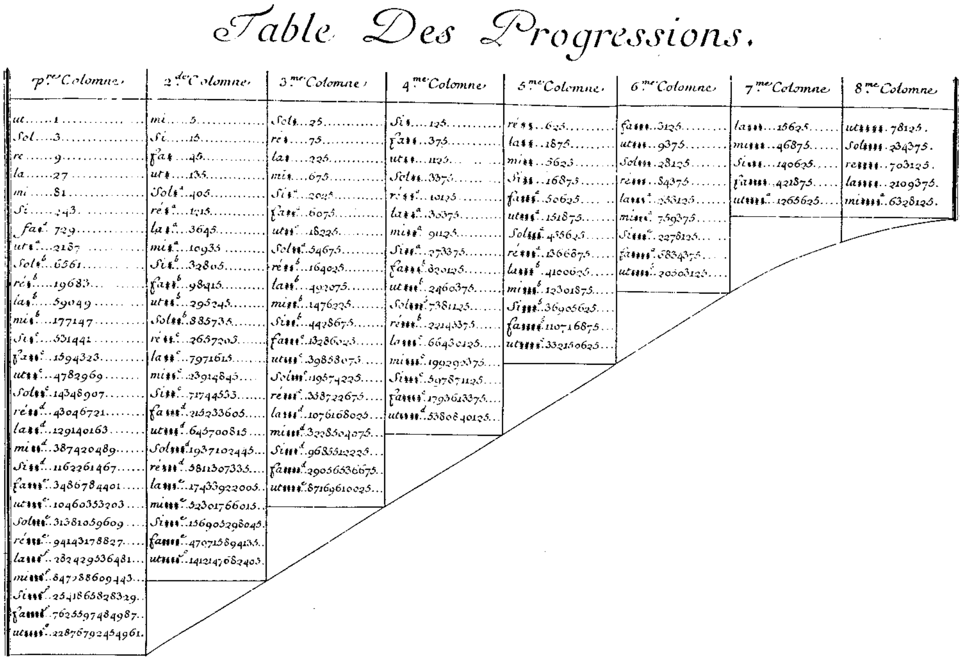


Table Des Progressions.

1.re Colomne	2.de Colomne	3.me Colomne	4.me Colomne	5.me Colomne	6.me Colomne	7.me Colomne	8.me Colomne
ut ... 1	mi ... 5	Sol♯ ... 25	Si♯ ... 125	ré♯♯ ... 625	fa♯♯♯ ... 3125	la♯♯♯ ... 15625	ut♯♯♯♯ . 78125
Sol ... 3	Si ... 15	ré♯ ... 75	fa♯♯ ... 375	la♯♯ ... 1875	ut♯♯♯ ... 9375	mi♯♯♯ ... 46875	Sol♯♯♯♯ . 234375
ré ... 9	fa♯ ... 45	la♯ ... 225	ut♯♯ ... 1125	mi♯♯ ... 5625	Sol♯♯♯ ... 28125	Si♯♯♯ ... 140625	ré♯♯♯♯ . 703125
la ... 27	ut♯ ... 135	mi♯ ... 675	Sol♯♯ ... 3375	Si♯♯ ... 16875	ré♯♯♯ ... 84375	fa♯♯♯♯ ... 421875	la♯♯♯♯ . 2109375
mi ... 81	Sol♯^{a} ... 405	Si♯^{a} ... 2025	ré♯♯^{a} ... 10125	fa♯♯♯^{a} ... 50625	la♯♯♯^{a} ... 253125	ut♯♯♯♯^{a} ... 1265625	mi♯♯♯♯^{a} . 6328125
Si ... 243	ré♯^{a} ... 1215	fa♯♯^{a} ... 6075	la♯♯^{a} ... 30375	ut♯♯♯^{a} ... 151875	mi♯♯♯^{a} ... 759375		
fa♯ 729	la♯^{a} ... 3645	ut♯♯^{a} ... 18225	mi♯♯^{a} 91125	Sol♯♯♯^{a} 455625	Si♯♯♯^{a} ... 2278125		
ut♯^{a} ... 2187	mi♯^{a} ... 10935	Sol♯♯^{a} ... 54675	Si♯♯^{a} ... 273375	ré♯♯♯^{a} ... 1366875	fa♯♯♯♯^{a} ... 6834375		
Sol♯^{b} ... 6561	Si♯^{b} ... 32805	ré♯♯^{b} ... 164025	fa♯♯♯^{b} ... 820125	la♯♯♯^{b} ... 4100625	ut♯♯♯♯^{b} ... 20503125		
ré♯^{b} ... 19683	fa♯♯^{b} ... 98415	la♯♯^{b} ... 492075	ut♯♯♯^{b} ... 2460375	mi♯♯♯^{b} ... 12301875			
la♯^{b} ... 59049	ut♯♯^{b} ... 295245	mi♯♯^{b} ... 1476225	Sol♯♯♯^{b} 7381125	Si♯♯♯^{b} . 36905625			
mi♯^{b} ... 177147	Sol♯♯^{b} . 885735	Si♯♯^{b} ... 4428675	ré♯♯♯^{b} ... 22143375	fa♯♯♯♯^{b} 110716875			
Si♯^{c} ... 531441	ré♯♯^{c} ... 2657205	fa♯♯♯^{c} . 13286025	la♯♯♯^{c} . 66430125	ut♯♯♯♯^{c} 332150625			
fa♯♯^{c} . 1594323	la♯♯^{c} ... 7971615	ut♯♯♯^{c} . 39858075	mi♯♯♯^{c} . 199290375				
ut♯♯^{c} ... 4782969	mi♯♯^{c} ... 23914845	Sol♯♯♯^{c} 119574225	Si♯♯♯^{c} . 597871125				
Sol♯♯^{c} . 14348907	Si♯♯^{c} ... 71744535	ré♯♯♯^{c} . 358722675	fa♯♯♯♯^{c} 1793613375				
ré♯♯^{d} ... 43046721	fa♯♯♯^{d} . 215233605	la♯♯♯^{d} . 1076168025	ut♯♯♯♯^{d} . 5380840125				
la♯♯^{d} . 129140163	ut♯♯♯^{d} . 645700815	mi♯♯♯^{d} 3228504075					
mi♯♯^{d} . 387420489	Sol♯♯♯^{d} 1937102445	Si♯♯♯^{d} . 9685512225					
Si♯♯^{d} ... 1162261467	ré♯♯♯^{d} . 5811307335	fa♯♯♯♯^{d} 29056536675					
fa♯♯♯^{e} . 3486784401	la♯♯♯^{e} . 17433922005	ut♯♯♯♯^{e} 87169610025					
ut♯♯♯^{e} . 10460353203	mi♯♯♯^{e} 52301766015						
Sol♯♯♯^{e} 31381059609	Si♯♯♯^{e} 156905298045						
ré♯♯♯^{e} . 94143178827	fa♯♯♯♯^{e} 470715894135						
la♯♯♯^{f} . 282429536481	ut♯♯♯♯^{e} 1412147682405						
mi♯♯♯^{f} 847288609443							
Si♯♯♯^{f} 2541865828329							
fa♯♯♯♯^{f} 7625597484987							
ut♯♯♯♯^{g} 22876792454961							

Plate 3.1 Rameau: product system of triple and quintuple proportions

investigating the tonal system, draws only those conclusions which are available to him from it.[5]

Rameau's next treatise, *Génération harmonique*, retains the presentation of this chart. In addition, later in the treatise, Rameau documents the appearance of chromatic third relations in music. He provides them with a musical *raison d'être*: they give rise to the melodic *genre chromatique*. Rameau remarks that this is, surprisingly, his first discussion devoted to fundamental bass motion by third. His presentation includes all four varieties of directed third – major and minor, ascending and descending – and notes that the most natural harmony for each triad in these successions is the major triad.[6] He shows the result of these four fundamental bass successions in Plate 3.2. The example appears to enumerate the entire class of chromatic mediant relations.[7]

[5] In the nineteenth century, Arthur von Öttingen and Hugo Riemann employed such a chart, the *Tonnetz*; their version extends from the tonic in both directions by fifth and by third. Plate 6.1 shows one version of this.

[6] ". . . only the major third is direct, as is natural; to have the minor third, we must join Art to Nature . . ." Rameau, *Génération harmonique* (Paris: Prault fils, 1737), pp. 145–149.

[7] *Ibid.*, plate XIX. Rameau's example in modern notation:

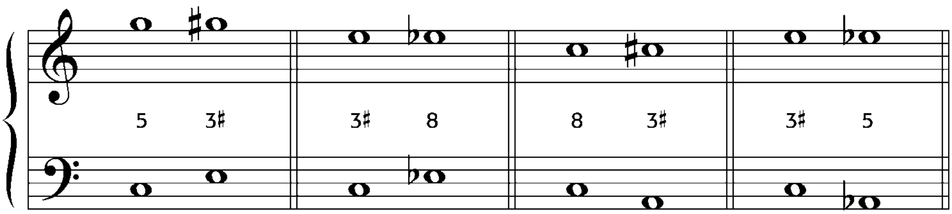


Plate 3.2 Rameau: third relations between major triads in *Génération harmonique*

Rameau's expressed purpose for this demonstration, however, is the explanation of the genesis of chromatic semitone motion in melody, which is produced by all of the chord relations in the example. The chromatic (minor) semitone, appreciably smaller and more difficult to sing than a diatonic (major) semitone, remains the sole topic of discussion for the rest of the section. Rameau does not discuss these chord relations in and of themselves, nor does he show what chord(s) should properly follow such progressions.[8] He does not even mention the quintuple proportion in relation to this example. But he does note that the minor semitone always introduces motion to another mode, and that the chromatic note in each example acts as a leading tone to the tonic of the new mode. This process "sidetracks the ear" (*changement qui déroute l'Oreille*), which must perceive the new fundamental underlying the chromatic pitch in order to orient itself.[9] Thus, despite the lack of figures indicating that the second chord of each example is a dominant, Rameau clearly conceives of them as what we would call secondary dominants, not as tonics. But the sort of hierarchical thinking which would apply the second chord in each of these progressions strictly to the chord which follows it (e.g. I—V/VI—VI) was not available to Rameau. For him, the level of chord succession is also by and large the level of chord connection.[10]

8 James Krehbiel, in "Harmonic Principles of Jean-Philippe Rameau and his Contemporaries" (Ph.D. dissertation, Indiana University, 1964), claims that Rameau is describing modulations involving third-related major tonics. Rameau's leading-tone explanation shows otherwise. Christensen, *Rameau and Musical Thought*, pp. 199–200, gives a clearer accounting of the *genre chromatique*.

9 Rameau, *Génération harmonique*, p. 148. Deborah Hayes translates *déroute* as "baffle." While this word is not technically incorrect, it conveys a sense of confusion rather than of harmony gone off in an unexpected, crooked direction, to which the listener must reorient herself. The more literal translation of *déroute* as "sidetrack" ("derail" is another possibility) better communicates Rameau's observation. Hayes, "Rameau's Theory of Harmonic Generation: an Annotated Translation and Commentary of Génération Harmonique of Jean-Philippe Rameau" (Ph.D. dissertation, Stanford University, 1968; Ann Arbor: UMI Research Press, 1983).

10 What I mean here is that, for Rameau, every chord succession is a direct relation, embodied in a fundamental bass interval. For us, a progression from a C major triad to an A major triad to a D major triad makes sense as C—^{V}/D—D. We parse the progression from C to A by relating A to D, and then retroactively relating the D to C. We do not ascribe sense and meaning, or any direct relation, to the progression C to A: these two chords are seen as occupying two different levels, C major acting on the primary level, with A major on the secondary level modifying D. C and D, both occupying the primary level, form the principal harmonic relation. For Rameau, on the other hand, each surface progression is real; his terms are C to A and A to D. Whether A is a dominant-tonic or a tonic, the C to A progression exists, has content, and requires explanation. The higher-level progression from C to D is not expressible by the fundamental bass, from which the interval of a second is prohibited.

Thus these chromatic third relations between tonic and secondary dominant are as real and direct to him as chromatic third relations between two tonics are to nineteenth-century composers and theorists.

Rameau returns to the subject of the *genre chromatique* over a decade later in the *Démonstration du principe de l'harmonie*. In this treatise he makes an overt connection between third-generated chromaticism and the quintuple proportion.[11] He emphasizes that the fundamental bass progression of a third is always responsible for the effect of the minor semitone in melody. In fact, he states that the effect of the bass progression is present even in the absence of the semitone.[12]

The limitations of Rameau's presentation of chromatic mediant relations result to some degree from the nature of his harmonic theory, whatever the contemporary harmonic practice. Rameau's motion-oriented approach leads to a focus on the interval aspect of these progressions, without addressing the topic of specific scale degrees with which third-related chords may be associated. Despite the similarities of the triple and quintuple proportions noted above, there is no corresponding analogy between Rameau's treatment of the primary fifth relations and the chromatic third relations. In Rameau's theory, fifth-related motion to a tonic is motivated by dissonance: minor seventh for a *dominante*, major sixth for a *sous-dominante*. However, Rameau's mediant-progression examples do not exhibit any dissonances at all, although his explanation would seem to require them.

Whether Rameau cites the group of chromatic mediants principally as the necessary harmonic justification for chromatic melodic motion, or whether he takes advantage of the *genre chromatique* as a real-music docking point to which to attach an intriguing set of similar harmonic relations, is hard to say. In any case, he eventually abandoned this line of investigation. As with so many other topics, Rameau changed his mind several times about the *genre chromatique* over the course of his career. Its identification with chromatic third relations is specific to the period of *Génération harmonique* and the *Démonstration*. By the *Code de musique pratique* of 1760, Rameau no longer addressed the topic of chromatic third relations, looking elsewhere for his explanation of the minor semitone in melody.[13]

3.3 ANTON REICHA

By the beginning of the nineteenth century, the range of theoretical attitudes had broadened. While Rameau's theory of chords and inversions came into general acceptance, the concept of fundamental bass, still alive in the writings of some

[11] Rameau, *Démonstration du principe de l'harmonie* (Paris: Durand, 1750), pp. 90–91.

[12] I take this to mean that Rameau believes the effect to be principally harmonic (i.e. change of key), not melodic, and thus independent of the actual melodic chromaticism, which is its "product" (*ibid.*, pp. 98–99).

[13] In the *Traité*, p. 286, Rameau simply notes that chromatic motion appears frequently in the upper degrees of the minor mode, and provides some examples. In *Génération harmonique*, he advances the third-based explanation just described. In the *Code de musique pratique* (Paris: de la Imprimerie royale, 1760), pp. 118–122, Rameau abandons this explanation, carefully presenting examples in which the chromatic semitone arises as the result of chains of dominant sevenths with intervening chords; the resulting fundamental bass, containing no thirds, moves largely by fifths.

theorists, was accepted but downplayed by others, and completely bypassed by still others. Meanwhile, concepts of key definition, chord succession, and harmonic categories became common topics and were approached in new ways.

According to the theorist François-Joseph Fétis, opinion at the Paris Conservatory at the turn of the nineteenth century was divided between those with some allegiance to fundamental bass theory and others who rejected it. An unresolved political battle over the official pedagogical approach resulted in the adoption of a treatise by Charles-Simon Catel which scrupulously avoided any conceptual links with fundamental bass.[14] Even Catel's explanation of triadic inversion is couched instead in the interval language of thoroughbass. This point of view remained in ascendancy until the appearance in 1818 of the *Cours de Composition Musicale, ou Traité Complet et Raisonné d'Harmonie Pratique* by the well-regarded composer Anton Reicha, which reinstated some of Rameau's ideas in modified and updated form, and remained popular for decades.[15]

Despite significant differences in attitude, Catel's and Reicha's treatises display some initial similarities in structure and content. For one thing, both are strictly pedagogical, dispensing for the most part with Rameau's fixation on the natural and scientific foundation of musical phenomena and forgoing all but the briefest preliminary discussion of the nature of sound and the generation of the materials of music in the harmonic series. Both treatises begin instead by presenting the basic elements of music – intervals and primary chords – and move on to the generation of more complex musical phenomena from these. Mathematical speculations of the sort which led Rameau into the realm of common-tone tonality were not of interest to these theorists, whether partisans or opponents of the fundamental bass.

The empirical outlook of the time is manifest in their differing approaches to primary chords. Rameau's primary chords – triad, dominant seventh, added sixth (in those treatises where it appears) – were as much prototypes of chord behavior as they were principal chord forms, and served to model the role of harmony in music. Catel's two primary chords, on the other hand, were the major- and minor-ninth chords. Far from being basic forms of chords or models of chord behavior, these simply served as source collections in which all important triads and seventh chords used in music could be found. Reicha, less abstract yet, gives fully thirteen primary chords: major, minor, and diminished triads, dominant-, major-, and minor-seventh chords, major- and minor-ninth chords, German and French augmented-sixth chords, and minor-seventh chord with lowered fifth; half and fully diminished sevenths along with other chords were derived from these.[16] However,

[14] François-Joseph Fétis, *Esquisse de l'histoire de l'harmonie* (1840), trans. Mary I. Arlin (Stuyvesant, NY: Pendragon Press, 1994), pp. 137–138.

[15] Fétis, a student and partisan of Catel, severely criticized Reicha, both for his reinstatement of fundamental bass, and for the empirical nature of his theory. *Esquisse*, pp. 143–145.

[16] Catel, *Traite d'harmonie . . . adopte par le Conservatoire pour servir a l'etude dans cet establissement* (Leipzig: A. Kuhnel, early 1800s), chap. 1. Reicha, *Cours de Composition Musicale, ou Traité Complet et Raisonné d'Harmonie Pratique* (Paris: Gambaro, 1818), p. 6. Catel does generate his ninth chords selectively from the harmonic series, while

Reicha classifies all his primary chords save the consonant triads as dissonant chords which are obliged to resolve by root motion, real or implied, of descending fifth. Thus on one hand he preserves Rameau's principle of fifth relation while simultaneously demonstrating the composer's expanded repertory of practical materials. On the other hand, though, he clearly relieves Rameau's dominant seventh of its near-exclusive role as primary chord of resolution to the tonic. Reicha does not cite the major scale as the source of the primary chords but introduces them as *a priori* entities. He does, however, give credence to the theory of inversions and to Rameau's fundamental bass.

Reicha states that the preferred intervals for fundamental bass motion are descending thirds, fourths, and fifths, and their inversions – ascending sixths, fifths, and fourths. He also allows ascending thirds and descending sixths, while noting that they are less common. He makes no case for the priority of any of these intervals over the others in progressions between consonant chords. In the case of dissonant chords, however, Reicha is stricter: "The fundamental bass of a dissonant chord must form a descending fifth with the fundamental bass of the following chord." This he gives the force of a law of nature, stating that every dissonant chord must resolve in this manner.[17] By doing so, Reicha abandons Rameau's notion of the dissonant added sixth animating the motion of the subdominant chord toward the tonic (and would seem to preclude any possibility of chromatic third relations). In fact, he never recites the traditional tonic–dominant–subdominant litany of key-definition.[18] He simply chronicles the chord of the dominant in its role in the perfect and half cadences; and, consistent with his devaluation of the subdominant, he does not even mention the plagal cadence as a separate class.

Reicha claims that modulation takes place, in normative cases, through the agency of intermediary chords which intervene between key areas, although modulations to very close keys may take place without them. The number of intermediary chords required for a smooth modulation corresponds directly to the quantitative difference in accidentals in the signatures of the two keys involved. Thus a chromatic-third move from G major to E major, whose signatures differ by three sharps, would necessitate three intermediary chords. By inference, the key of the relative mode, with no difference in accidentals, is the closest to the tonic in Reicha's scheme, although he usually groups this with the keys of the dominant and subdominant, in no certain order.

Tied to this theory of modulation is a notion of more or less equally weighted relative keys, five to a given tonic. In a major key, Reicha's relative keys are those

Reicha simply presents his slate of thirteen chords without justification. The divergence increases from this point, as Catel continues to avoid concepts linked to Rameau, while Reicha liberally refers to chord roots and their relations.

17 Reicha, *Cours complet*, p. 9.

18 And in fact, the only time he mentions the names of scale degrees outside the discussion of perfect and half cadences is in reference to the three degrees contained in a triad – that is, the tonic, mediant, and dominant. He does not mention the subdominant by name here or elsewhere. Instead, he refers to chords by the letter names of their roots.

whose tonic triads form the diatonic triads of the second, third, fourth, fifth, and sixth scale degrees – in other words, I, IV, and V of tonic major and relative minor, which may be linked to each other without the necessity of modulation.[19] To Reicha, this nexus of six keys forms the basis for harmonic progression and modulation, along with the possibility of movement between parallel modes.

In addition to his normative theory, though, Reicha cites exceptional cases in which modulation without intermediary chords occurs, and others in which modulation is abetted by some intervening mechanism other than intermediary chords. The former group includes modulation from a major tonic to the minor tonic a fifth below (as dominant to tonic); modulation by ascending semitone ("once in a composition for dramatic effect") and by descending major third (also once in a composition). The latter group includes fermatas, octave unisons, repeated notes, long rests, and disembodied chromatic scales, but the interesting thing is that virtually all of Reicha's examples of mechanisms in this group involve direct modulations between major tonics by descending major or minor third.[20] Thus in this class of unusual modulations Reicha documents mode-preserving direct motion between third-related keys without intervening modulatory progressions. Disruptions in the music mean disruptions in the fundamental bass; therefore the downward-fifth rule does not apply. Since his regular theory of modulation does not provide for progressions of this type, Reicha is obliged to locate the vehicle of these progressions elsewhere – in textural attributes – rather than in some intrinsic harmonic property. All the same, he affirms the validity of these chromatic mediant progressions and recommends them to composers by way of numerous examples.

3.4 GOTTFRIED WEBER

Gottfried Weber, a contemporary of Reicha's, is often thought of as a functionalist theorist. He is most familiar to us through his popularization of the usage of Roman numerals to indicate the scale degrees which are roots of chords as well as the nature of the chords built on those roots.[21] But familiar symbols do not necessarily imply familiar notions, and using Roman numerals to denote scale steps is not equivalent to proposing the idea of functional harmony. Other aspects of Weber's work make it clear that in many ways he was strongly opposed to the kinds of thinking embodied in the concept of harmonic function as defined by Hugo Riemann. Weber's *Versuch einer geordneten Theorie der Tonsetzkunst*, written in the second decade of the nineteenth century, reveals an empirically oriented theorist who spurned attempts to locate the source of musical phenomena in anything other than the elements of music as they presented themselves to the practitioner. Weber also disdained abstract, systematic

[19] Reicha presents them in this serial order, with no differentiation by strength, and no special place for any one over the other. He does require a modulation in the form of a dominant-seventh chord preceding the new tonic for the firmest establishment of these keys.

[20] Levenson, "Motivic-harmonic Transfer," p. 42, has also noticed this. However, she explains away the chromatic mediant relations as borrowings from the parallel minor mode.

[21] Roman numerals were used in more limited fashion by Abbé Georg Joseph Vogler, a teacher of Weber. Lester, *Compositional Theory*, pp. 207–208, traces the genesis of the chord-labeling idea.

explanations of musical coherence. His only concern, even more so than Reicha, was to describe and identify musical materials in the context of normative use:

an attempt to derive these facts of [musical] experience, in a logically consecutive manner, from any one leading principle, and to reduce them to the form of a philosophical *science – to a system*, has . . . been destined only to a single defeat . . . Hence I denominate my work merely an ATTEMPT TOWARDS A NATURALLY ARRANGED THEORY: the title of *system*, in the strict sense of the term, is too high sounding for me.[22]

Weber defined seven fundamental harmonies: the major, minor and diminished triads, and four common types of seventh chord.[23] From there he enumerated fourteen primary chords, the triads and seventh chords located on each degree of the diatonic major scale, which in turn is derived from the constituent pitches of these primary chords.[24] Thus in contrast to the primary chords of most other theorists, which are sets of abstract chord types, Weber simply proposed a concrete set of chords as employed in the key, with several redundant instances of particular types. Furthermore, the tracing of any more prior source of the tones of a key is a question which he regarded as unanswerable and uninteresting. The historically extensive disagreement among theorists as to the proper derivation of the major and especially the minor scale prompted Weber to conclude that this topic was largely a phantom one with no real solution or significance.[25] His plain contention that the major scale is the sum total of the contents of the common chords is a direct rejection of the conventional approach, and more specifically of Rameau's theory of fundamental bass as the origin of harmony and melody.

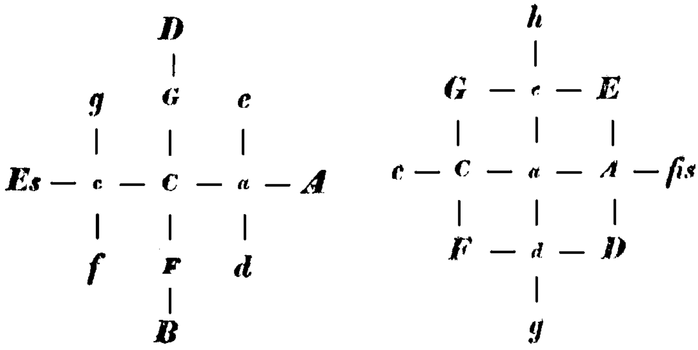
Weber did not propose some other means of chord progression in lieu of the fundamental bass. In fact, he did not speculate at all on the mechanisms linking chords, nor did he even specify a fundamental succession such as V–I. To do so would have been to practice exactly the brand of abstract theory which he deliberately avoided. Weber did state that I, IV, and V are the most important chords of a key,[26] and one gets the sense that he felt that chord relations obtained most smoothly between these three principal chords, and beyond that between the other primary chords of a key, although he never actually said so. Nor did he even require the presence of the dominant in a piece.[27] Rather, when discussing harmonic progression, Weber made a point of showing the multiplicity of different progressions possible within a

[22] Weber, *Versuch einer geordneten Theorie der Tonsetzkunst* (Mainz: B. Schott's Söhne, 1817–21), third ed., 1830, vol. I, preface, pp. xiii–xiv.

[23] *Ibid.*, pp. 161–163. Janna Saslaw provides a thorough discussion in "Gottfried Weber and Multiple Meaning," *Theoria*, 5 (1990–91), pp. 74–103.

[24] Weber, *Versuch*, pp. 283–284. [25] *Ibid.*, p. 15. [26] *Ibid.*, pp. 258–259.

[27] What he does say is that the three principal chords are often sufficient for the entire harmonic content of a piece. "They are the heads of the family, they determine its character, and they most distinctly impress the key on the ear . . . We find even whole pieces of music in which no other harmonies occur than these most essential ones. Indeed, many pieces are constructed of only *two* chords – the tonic and dominant chords. And even, if need be, a piece can be made out with merely the tonic and subdominant chords alone" (*Versuch*, p. 259). The "family" Weber refers to is the set of fourteen fundamental harmonies of the key, i.e. the triads and diatonic seventh chords built on each scale degree (p. 283).



a) major tonic b) minor tonic

Plate 3.3 Weber: Closely related keys to a given tonic

key and between members of different keys.[28] He did not comment directly on the relative power or strength of any of these progressions in relation to the others. In fact, he strained to make the opposite point – that all progressions are possible.[29]

Likewise, without ever indicating how they actually come about, Weber speculated fully on relations obtaining between keys. He asserted that the closest relation between keys is the one linking parallel major and minor.[30] Not many theorists would agree with this claim, since at least in one sense parallel modes are somewhat distant keys, in that they contain only four pitches in common among seven. Here Weber reached his conclusion on the basis of the perception that parallels sound alike – sharing a tonic and similar scale steps, thus "a certain identity in the gross." That is, he drew on empirical evidence, almost common sense, rather than referring to an ideal system. Other close key relationships, for Weber, depend on similarities between scale elements. For a major tonic, his most closely related major keys are those of the dominant and subdominant, whose scales differ by only one tone from the tonic. The relative minor, also differing by a single tone, also constitutes a most close relation.[31] Weber's schematic depiction of the resulting constellations of keys surrounding a given tonic is shown above in Plate 3.3. He extended these

[28] By his count these number 272 within a key, 6616 between keys. *Versuch*, pp. 417–418.

[29] After citing several quick and distant progressions and modulations in a series of examples primarily from Mozart, Weber states:

> the merits of the different possible harmonic successions . . . can by no means be disposed of by a few general maxims; and that a concise answer to the questions, "what harmonies may follow each other? what harmonic successions are good, and what are objectionable" cannot be given. No class of harmonic successions admits of being pronounced good or bad universally . . . *there is not a single harmonic progression which we should be able absolutely and unconditionally to forbid*. It is indeed true . . . that many successions produce a very strange, unnatural, and extremely repulsive effect. But such successions may not only sometimes be softened technically . . . indeed that which is positively rough and irregular, may, when used in the *right place*, be entirely proper and of happy effect. (*Versuch*, p. 443.)

[30] "The similarity [between parallel modes] is . . . so great, that it almost ceases to be a mere identity, and well-nigh passes into an absolute identity; it is certainly far too great to admit of not regarding two keys which are as similar to each other . . . as being *at least* most nearly related to each other." *Versuch*, p. 309.

[31] This assumes harmonic minor as the basic scale form.

TABELLE

der Tonartenverwandtschaften.

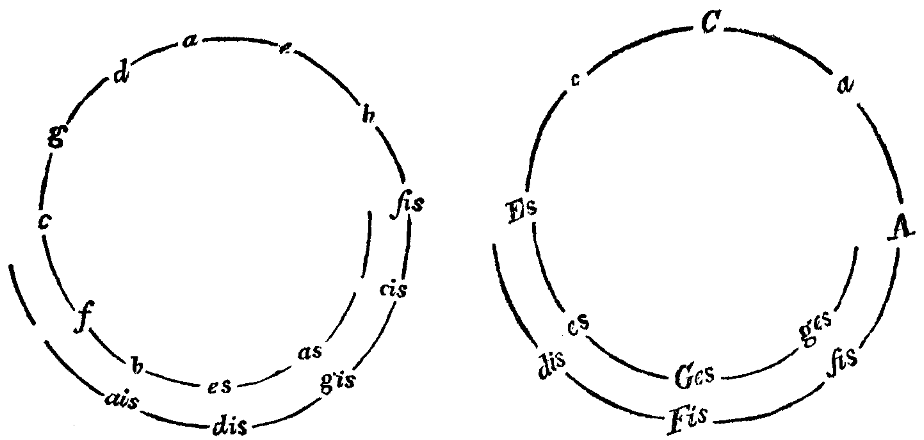
C	a	A	fis	Fis	dis	Dis	his	His	gisis
F	d	D	h	H	gis	Gis	eis	Eis	cisis
B	g	G	e	E	cis	Cis	ais	Ais	fisis
Es	c	C	a	A	fis	Fis	dis	Dis	his
As	f	F	d	D	h	H	gis	Gis	eis
Des	b	B	g	G	e	E	cis	Cis	ais
Ges	es	Es	c	C	a	A	fis	Fis	dis
Ces	as	As	f	F	d	D	h	H	gis
Fes	des	Des	b	B	g	G	e	E	cis
Bes	ges	Ges	es	Es	c	C	a	A	fis
Eses	ces	Ces	as	As	f	F	d	D	h
Ases	fes	Fes	des	Des	b	B	g	G	e
Deses	bes	Bes	ges	Ges	es	Es	c	C	a

Plate 3.4 Weber: comprehensive system of key relations

relationships to cover the entire tonal territory in a unified representation, shown above in Plate 3.4. Keys directly linked to the tonic in the diagrams (the most closely related) are related in the first degree; keys linked through an intermediary key are related in the second degree, and so on.[32]

Note that any idea that the central relationship of scale degrees I, IV, and V is directly reflected on the plane of key relations is compromised by the inclusion of the relative and parallel minors as first-degree keys. Note also that the second-degree keys include some whose tonic triads are diatonic with relation to the central tonic, and others whose tonic triads are chromatic, with common-tone connections.

[32] Weber is vague about exactly which keys are most closely related to the tonic. First (*Versuch*, p. 307) he claims that scale similarity is the criterion for closeness, and thereby cites the keys of the dominants and the relative minor. However, his argument for the parallel minor, which follows, is more developed and intense, and effectively cancels out the earlier claim of the primacy for scale similarity.



a) fifth-circle b) third-circle

Plate 3.5 Weber: circles of chord relation

Moreover, Weber's scheme of key-relations does not fully depict his idea of the relative importance of keys related to a given tonic. He mentions that some second-degree keys, namely E♭ and A major (the minor-third chromatic mediants), are in fact more distant from the tonic than are the others. He attributes this to a difference in the nature of the relation: the other second-degree keys are related to the tonic by similarity of scales, while E♭ and A are related principally through parallel and relative modes.[33] Despite this, Weber does accept these keys as second-degree, while distinguishing between horizontal, mode-predicated relationships and the stronger vertical ("ascending and descending") ones based on fifth relations. Still, Weber's generous acceptance of direct chromatic chord progression is not reflected on the level of key relation, where the closest chromatic relationships appear in the second degree.

Weber understood his vertical and horizontal harmonic relation-types as independent entities. In addition to the conventional circle of fifths, he also proposed an independently conceived circle of thirds, displayed in Plate 3.5.

Unlike previous systematic conceptions of connections between keys which included relations by third, such as Heinichen's,[34] which subsumed diatonic third relations into the circle of fifths as intermediary steps, Weber's third-circle is based on root relations of a minor third as the principal harmonic connections, mediated only by relative and parallel mode relations. Fifth relations are completely absent

[33] Weber, *Versuch*, 1851 translation, pp. 314–315. Weber overstates his case a bit, I think, when he claims that "the A-scale is at least far less like that of C than is that of D, of e, of d, or of B♭," since the difference is that of one less shared pitch (assuming the harmonic minor scale). He omits mention here that the scales of F and G minor also differ from that of C major by three pitches, according to his conception.

[34] Johann David Heinichen, *Neu erfundene und grundliche anweisung wie ein Music-liebender . . . konne zu vollkommener Erlernung des Generalbaßes* (Hamburg: B. Schillers, 1711), p. 261. This and others are discussed in Lester, *Compositional Theory*, p. 215.

from this circle; indeed, they cannot be generated by it. The separate identities of the circles of fifths and thirds bore out Weber's stance that adopting the idea that all harmonic relations must be integrated and derivable from a single kind of relation as an operating principle would place an undue restriction on the ability of the theorist to consider all the evidence for modes of musical organization on their own terms. His circle of thirds constitutes a strong statement for their independence from fifth relations, although given his distaste for systematic theorizing, he never formulated this concretely.

From the above discussion it should be very clear that, despite the similarity of Weber's analytic shorthand to our own, his understanding of the workings of harmony was quite different from ours. Judged by the extent to which it displays concepts fulfilling the criteria of a true functional theory, Weber's description of harmony falls quite short. Indeed, the idea of functional harmony could not have entered his mind. First, while he does put forward the notion that a key is defined by its tonic, dominant and subdominant chords, Weber in turn describes these three primary chords as an outgrowth of the major scale, thus characterizing them as dependent on some other musical element. Second, Weber had no concept whatsoever of a mechanism underlying chord succession, nor did he subscribe to the notion of a unitary harmonic principle. Third, he disavowed the sort of abstraction which would have led to thinking in terms of harmonic categories. Weber's Roman numerals do not signify anything other than the actual content of chords on the surface. Insofar as Roman numerals indicate the scale-degree designation of the root of a chord, they do make some statement about similarities between chords, for example that a major triad with root G in D major is "the same as" a major triad with root E♭ in B♭ major: each is a IV chord. But this is an advance over previous theory, that is to say Rameau's, only with respect to notation. Weber may have been able to express in symbols what Rameau would have had to say in words, but Rameau could make exactly the same point: these two chords are the subdominants of their respective keys. However, neither system can show how chords with different roots might generally fill similar harmonic roles.[35] This was an idea whose time had not yet come.

3.5 A. B. MARX

Adolph Bernhard Marx, who published his primary treatise, *Die Lehre von der musikalischen Komposition*, in 1841, is explicitly cited by Riemann as one theorist who recognized and gave credence to chromatic third relations.[36] Marx practiced an empirical, compositionally oriented brand of theory along the lines of Weber and

[35] There are exceptions to this – Rameau's deceptive cadence, Weber's triad on vii – but they are exceptions, not really derived from intrinsic properties of the system.

[36] Adolph Bernhard Marx, *Die Lehre von der musikalischen Komposition*, vol. I (Leipzig: Breitkopf & Härtel, 1841), pp. 207–210.

Reicha, sharing with them an avoidance of speculative, systematic thought. He was strongly opposed to the methodical presentation of the separate elements of harmony characterizing the traditional *Harmonielehre*, and produced a blistering attack on his contemporary Siegfried Dehn for perpetuating this practice.[37] As Scott Burnham has observed, Marx "felt he was effecting a revolution in music pedagogy by uniting the traditional divisions of music study, namely melody, rhythm, harmony, and form."[38]

Marx disdained the abstractly rule-oriented, grammatical approach to the teaching of theory, the traditional separation of basic topics, and the conservative, restrictive emphasis on the production of euphony. He insisted on a positive, prescriptive attitude, not a negative, proscriptive one, and he endeavored always to present the elements of music in a unified way along with their manifestation in real musical discourse.[39] From the outset of *Die Lehre* Marx immediately acquaints the reader with several aspects of music (e.g. not only scales and chords but also rhythm and the construction of simple melodies and periodic phrases). He restricts his early discussion to only the simplest harmonic materials, such as unaccompanied scales and tonic and dominant harmony. *Die Lehre* lacks both the list of essential building blocks of harmony traditionally presented early on in a musical treatise and any topical heading on the diatonic triads associated with the degrees of the major scale. Instead, Marx distributes his presentation of the seven diatonic triads of a key among several discontinuous chapters.[40] Each of these triads is introduced in the context of the consideration of some other musical issue: the dominant as a consequence of the first few partials of the overtone series; the subdominant out of necessity to harmonize the fourth and sixth degrees of the major scale, and so on. By doing so, Marx not only shifts the emphasis from traditional *Harmonielehre*, but, avoiding the distraction that the complexity of harmonic materials would produce, he is able to more carefully control the level of presentation, bringing in correspondingly simple aspects of form and rhythm. Nonetheless, despite his downplaying of harmony and eventual concentration on *Formenlehre*, Marx did have definite ideas about harmony which, while they may not always be expressed concisely and directly, are perfectly evident. Furthermore, the views which he took on certain questions of harmony allowed for the freer expression of his philosophical and pedagogical attitude.

Marx's melodic bias is apparent from the start of *Die Lehre*. He introduces the major scale nearly immediately, and proceeds through discussions of the rhythm, motive, intervals, phrase structure, sequences, and the composition of simple, scalar melodic period forms, before finally broaching the topic of tonic and dominant

[37] Marx, *Die Alte Musiklehre im Streit mit unserer Zeit* (Leipzig: Breitkopf & Härtel, 1841).

[38] Scott Burnham, *Musical Form in the Age of Beethoven* (Cambridge: Cambridge University Press, 1997), p. 17.

[39] Burnham has noted Marx's "thoroughgoing emphasis on the inseparable totality of musical structures," and observes that "Marx does not present the morphological elements of musical grammar (scales, triads, etc.) apart from syntactical utterances." In "Aesthetics, Theory and History in the Works of Adolph Bernhard Marx" (Ph.D. dissertation, Brandeis University, 1988), pp. 86–87. See also *Musical Form*, p. 17.

[40] The tonic, dominant, and subdominant each have their own introductions in separate discussions; the minor triads iii and vi are introduced together; the minor triad on ii is brought in shortly thereafter; while the diminished triad on vii is presented yet later on.

harmony.[41] When he does so, instead of defining these as triads, Marx derives tonic and dominant "masses" (*Tonmässe*) from the overtone series. These are indefinite combinations of all the chord tones available in the harmonic series up through the eleventh partial, excluding the out-of-tune seventh, resulting in a complete tonic but a thirdless dominant. Several chapters later Marx finally introduces the concept of triad in order to present the harmonization of the major scale. Here he observes that while the dominant tone mass does not provide a third for the dominant triad, the third can be found in the scale and may be therefore added to the chord.[42] This produces a spurious, hybrid melodic-harmonic derivation for the dominant, which does not seem to trouble him. As the tonic and dominant triads do not suffice to harmonize the scale, the subdominant is required, so Marx introduces it.

Marx might well call these three triads *Hauptharmonien*, but he does not. Instead, he observes that the dominant and subdominant, like the tonic, are major triads, and may therefore themselves serve as the tonics of keys. Moreover, he states that the presence of the dominant and subdominant triads brings with them a sense of their associated keys:

> We can consider these two chords as reminiscences of F and G major, or as borrowed from those two keys . . . the harmony of the major scale consists of the tonic chord of the same, and of the tonic chords of the two nearest related major scales . . . this double point of view [the dominant and subdominant being both diatonic chords and tonics of related keys] will . . . be of the greatest importance.[43]

Marx goes only so far as to say that these three triads are needed to harmonize the major scale – a much weaker statement than to say that they define the sense of tonic key. In fact, Marx asserts that the trio of tonic, dominant, and subdominant triads does not define the key but rather acts as a repository of the potential to reach outside the bounds of the key proper into the network of related keys. Marx needs no harmonic definition of key, having already assigned the property of key definition to the tonic scale. Harmony, in his mind, brings a very different quality to music, in which the interplay of keys is always present in chord relations, even in the exchange between tonic and dominant.

Although Marx does identify the root of a triad as its fundamental tone, he never discusses chord progressions in terms of root relations. He mentions common membership by two chords in a key but deems it insufficient. Chord connection for him is completely a matter of common tones joining neighboring harmonies, whether triads or seventh chords.[44] Common membership of two chords in a key is not enough:

[41] Marx, *Die Lehre*, p. 45.

[42] Marx, *Die Lehre*, trans. H. S. Saroni from 3rd ed. as *Theory and Practice of Musical Composition* (1860), p. 68.

[43] Marx, *Theory and Practice*, p. 98 (*Die Lehre*, 1st ed., p. 73).

[44] This clearly irritated some: the English translation of the third edition of Marx includes an extended commentary by Emilius Girac, a Paris Conservatory professor, which "clarifies and corrects" Marx's work. Girac's first concern is to present the theory of roots and fundamental bass:

A superficial unity exists already in the fact, that all the notes of these harmonies exist in one and the same scale. But this is not sufficient, for we know that our second and third chords [dominant and subdominant] are merely borrowed from other scales. A more distinct tie exists in the *connecting notes* which each of our chords has in common with its neighbors.[45]

Marx further claims that the dominant and subdominant "have no connection with each other," since although they coexist in the same key, they derive from keys which, as well, have no connection with each other. He manages to show some connectedness between these chords by adding the seventh to the dominant triad, which provides a common tone with the root of the subdominant. But he does not claim, as did Rameau, that this seventh is always present, whether or not it actually is sounded. No seventh: no connection. This leads to some particularly non-functional thinking: Marx claims very different status for two progressions, IV–V and IV–V^7, which might seem to us quite similar, V and V^7 naturally belonging to the same harmonic category. Yet Marx, working from a different perspective, finds an important degree of difference between the two chords. His dominant triad is a stable yet ambiguous entity, simultaneously implying the dominant of one key and the tonic of another. On the other hand, the dominant seventh, which he calls the "dominant chord," is unambiguous, implying only its associated tonic; it is the "origin of harmonic motion."[46] Thus the absence of connectedness in IV–V and its presence in IV–V^7 is not remarkable for him, for these are progressions of different quality. This chromatic differentiation between the triad and seventh chords of the dominant, though its details vary, is striking. Marx finds V^7 to be the strongest indicator of key, while his dominant triad does not share at all in this property.[47]

Despite denying the presence of connection between two triads a diatonic step apart, Marx, oriented toward practice, had to allow the viability of such progressions at some point. Without a theory of root relation, he had no recourse to concepts such as elliptical progressions or interpolated bass which had been put forth in the past to deal with this problem. In the case of IV–V, he was able to deflect some of his difficulty by introducing the dominant seventh, but with the introduction of the minor chords on iii and vi it resurfaced. He first discusses these chords' role in variants of the IV–V progression: V–vi and iii–IV. While this substitution still yields step progressions with no common-tone connection, Marx claims that, especially in the case of iii–IV, this lack,

> *Connection of chords is the mutuality of their tones.* But is there some method to follow in order to obtain this connection without mistake? Certainly there is; it consists in the motion of the fundamental tone in the base. (Girac, in Marx, *Theory and Practice*, trans. Saroni (1860), p. 3.)

Girac also restores some of the aspects of *Harmonielehre* which Marx endeavored to banish.

45 *Theory and Practice*, p. 100. 46 *Ibid.*, pp. 104 and 194.

47 The distinction was not unusual for the time. For example, the theory of Marx's nemesis, Siegfried Dehn, gave pride of place to vii^{o7} as primary chord of opposition to the tonic, since it had no tones in common with it; V^7 drew its strength from tones shared with this diminished chord. Plain V, on the other hand, was just a regular diatonic chord to him. Dehn, like Marx, also saw common tones as the principal medium of harmonic connection. Dehn, *Theoretische-Praktische Harmonielehre, mit angefugten Generalbaßbeispielen* (Berlin: W. Thome, 1840), p. 103.

may be easily borne . . . considering the otherwise excellent connection of the chords [in the descending scale harmonization] and the good progression of the voices . . .[48]

Only context, in other words, allows for the meaningful juxtaposition of unconnected chords. Marx does not state that context automatically creates a harmonic connection, nor that it even gives some sense of connection, where it does not exist. He says only that a lack of connection is acceptable in otherwise well-connected and well-behaved surroundings. He is consistent in this explanation throughout the treatise.

Modulation, to Marx and most of his contemporaries, was a wide-ranging term encompassing everything from a brief secondary dominant progression (digression or *Ausweichung*) to a definitive shift of key (transition or *Übergang*). His view of common tones alone as the medium of harmonic connection permitted him to consider possibilities of modulation free from constraints on the relationships of tonics as keys within the circle-of-fifths system; all he required is the joint possession by two tonic triads of a particular note. He begins by describing the customary mechanisms involving mediating chords, requiring common tones between all contiguous chords.[49] After a thorough discussion of these, Marx defines a new class: the abrupt modulation (*sprungweise Modulation*). Abrupt modulations simply take up in one key after a cadence in another:

when a phrase ends . . . a succeeding one, as if it were a new one, can, without transition, begin in a new key.[50]

One large class of such modulations comes about by the isolation of any single tone of a tonic triad at a full cadence and its subsequent redefinition as a member of another chord. Marx's first examples of these modulations involve the redefinition of the common tone as a member of a dominant-seventh or ninth chord.[51] His next examples range farther afield: the common tone is now redefined in as many ways as possible as a member of another triad. Marx appends a chart of the possible goal chords of such a modulation (Plate 3.6). This chart contains the parallel tonic, the fifth-related triads of both modes, and the relative and chromatic mediants. It is a defining representation of the harmonic space of common-tone tonality.

While Marx gives no special name to this particular brand of abrupt modulation, he clearly treats it as a distinct class: the direct connection of the tonic of one key to that of another, without the mediation of any other chord. He does require at this point that a single tone be isolated before the introduction of the new tonic chord. Marx goes on to allow other, more distant modulations, but these involve a transitional passage, such as a chromatic scale, which dissolves the sense of the

[48] Marx, *Theory and Practice,* p. 111.

[49] For example, in modulations involving secondary dominants, only those secondary dominants which have a tone in common with the tonic may follow it directly; otherwise, a chord having tones in common with both chords must be interpolated between them. One exception to Marx's common-tone rule is the cadential progression from the diminished-seventh chord vii$^{\circ 7}$ to the tonic; he allows this, implicitly, as an incomplete V^{9}–I progression.

[50] *Theory and Practice*, p. 207.

[51] This type of modulation was also included in his discussion of conventional modulations.

Plate 3.6 Marx: set of common tone modulation goals (from tonic G major)

previous tonic in order to settle on a new one. This brand of modulation is of a nature different from that above.[52]

Marx ends by discussing modulations which occur over a pause. Here he does allow the direct juxtaposition of quite distantly related tonic triads: euphony bows to the freshness of such combinations. For Marx, any new tonic is appropriate after a silence.[53] Furthermore, should such a tonic turn out to be used as a secondary chord of a different goal key, this comprises another modulation; the earlier one by juxtaposition still stands.[54]

The foregoing makes clear that for Marx, direct modulations which involve harmonic connectedness are possible only between parallel keys, fifth-related keys, and relative- and chromatic-mediant-related keys; the common tone is a necessary element. Modulations by harmonic progression to other keys require the customary intermediate chords. This is one aspect of Marx's thinking which I believe led Riemann to cite him as pioneering the acceptance of chromatic third relations.[55] Strictly speaking, Marx allows virtually only diatonic movement within a key. Motion among and between keys, however, is a constant property of music as he conceives it, being the result of almost any chromatic inflection, and, in Marx's estimation, nearly any chord- and key-relationship is possible, provided it is handled properly. But these relationships are not all of the same degree. Marx draws a sharp

52 " . . . it is evident that there exists no key which could not in this manner be attached to the preceding one. But all these harmonies and keys . . . have not the slightest connection with the preceding chord . . . They are justified by this very disconnection, by our *purposely* resigning the harmonic connection, and they are connected with what preceded by the mere thin thread of the melody." *Ibid.*, p. 209. This is the same type of abrupt modulation that Reicha described, but he and Marx draw the line differently. Reicha's examples are mostly chromatic third relations, which for Marx have direct connections and need not be treated in this way (but see the following note).

53 Tellingly, though, in the early editions, Marx chooses as his example of this type of modulation the key of the upper flat mediant (e.g. an abrupt modulation from C to E♭, the most distant of the chromatic mediants), a key he had already used as an example in the common-tone chart. By the seventh edition of 1868, Marx, perhaps influenced by the development of harmonic usage in the intervening years, replaced this example with others showing moves to more distant keys: B major and F♯ major.

54 So that if, over a pause, a cadence in C major is followed by an E♭ major triad, and if within the next measure or two that E♭ major triad acts as subdominant of B♭ major, Marx finds two modulations, one from C to E♭, the other from E♭ to B♭.

55 Riemann, in his Beethoven analyses, also refers to certain analyses of these pieces by Marx in which he accords strong third relations harmonic status. Riemann, *L. van Beethovens sämtliche Klavier-Solosonaten*, vols. I–III (Berlin: Max Hesse, 1920), vol. I.

distinction between chord progressions which are connected and smooth-sounding, and those which are without connection and disjunct-sounding. He clearly, if not explicitly, groups chromatic mediant progressions with the former class, substantiating them as harmonic entities which may meaningfully connect to the tonic. The flexibility of his harmonic theory and the positive, non-restrictive attitude he adopted toward harmony allowed him to find sense where more systematic, conservative theory would see nonsense.

Marx's aim is to document practice and to encourage creation and experimentation, not to produce tidy theory. Despite his theory's inadequacy (the dominant *Tonmass* having no third), he quickly acknowledges the place of the dominant in the tonal system, and appeals unabashedly to context and to taste. Marx's theory of common-tone chord connection, absolutely ungrounded in any notion of root relation, allows equally for diatonic and chromatic relations, and thus admits chromatic mediants, although he gives no explicit notice of this addition to the usual canon of allowable direct harmonic relations. Where his theory does not apply, Marx allows for exceptions and for relations which do not partake at all of the properties of harmonic connection, albeit with certain compositional restrictions. In other words, he allows for every kind of harmonic relation, and does his best to explain those aspects of this wide expanse which can be handled by the principles of his harmonic theory, without dismissing those which lie outside its scope on the grounds that the system cannot accommodate them. Along the way, he provides one of the first clear presentations of common-tone tonality at a time when it had already been a defining aspect of contemporary music for years.

3.6 MORITZ HAUPTMANN

In contrast to the practically oriented theorists of the earlier nineteenth century, Moritz Hauptmann returned to the speculative tradition.[56] Hauptmann was a direct predecessor of Hugo Riemann, influencing both the style and content of Riemann's theory, especially in its formative years, but the mature theoretical systems of the two men are highly divergent in substance and in structure. Riemann's system involves concepts of harmonic function and root relation which pervade nearly every facet of the theory. Hauptmann's system, on the other hand, employs a unifying concept which is not even essentially musical in nature: the dialectic process.[57] The

[56] Cf. Harrison, *Harmonic Function in Chromatic Music*, chap. 5.

[57] Moritz Hauptmann, *Die Natur der Harmonik und der Metrik* (Leipzig: Breitkopf & Härtel, 1853). Hauptmann's dialectic, with its three levels of unity, opposition and reconciliation of opposites, strongly resembles Hegel's dialectic process of thesis, antithesis, and synthesis, such that Hauptmann's method is often identified as patently "Hegelian." (For example, W. E. Heathcote, in the 1888 note to his English translation of *Die Natur*, flatly states that "The treatise is written in the Hegelian philosophy.") But it has been pointed out by Dale Jorgenson and Daniel Harrison that dialectic process was to a degree the common intellectual property of the era, and that Hauptmann's philosophical attitude as a whole owed more to Goethe, of whom he was openly a disciple, than to Hegel. Jorgenson, *Moritz Hauptmann of Leipzig* (Lewiston, NY: The Edwin Mellen Press, 1986); Harrison, *Harmonic Function*.

relationship between the dialectic and strictly musical aspects in Hauptmann is not fixed. At times a thick veil of dialectic jargon overlies musical insight or detailed musical description. At others, dialectic more strongly informs and directs theory, with uneven success.

Hauptmann's treatise *Die Natur der Harmonik und der Metrik* of 1853 contains his music-theoretical implementation of the three-step dialectic process. This process entails a ground-state of unity (I); a state or embodiment of opposition to unity (II); and a state of the joining together of unity and opposition (III). Hauptmann's reliance on this process as the epistemological foundation for a system of music means that certain traditional topics – fundamental chords and key definition, for example – are subsumed into the larger sweep of the dialectic model, rather than figuring prominently in the construction of theory. Hauptmann aims to explain the basics of the system metaphysically rather than to prove them physically.

Hauptmann's musical starting point, the major triad, forms the prototype of the dialectic process in music. In his view, the triad is not just a combination of tones but a complex, dynamic system. Hauptmann claims that its component intervals – octave, fifth, and third – are the only directly intelligible ones in music. Furthermore, each of the three intervals instantiates one of the three dialectic qualities. Thereupon Hauptmann always associates the concept of unity with root- or octave-quality, the concept of opposition with fifth-quality, and the concept of the resolution of opposites, or "concrete unity of a higher order," with third-quality. Hence Hauptmann's fundamental units of musical meaning are neither chords nor keys but individual pitches; his triad is not defined as a rooted, whole harmonic entity but rather as the dynamic reconciliation of opposing forces as expressed in its constituent pitches. The complete triad, as a higher level of unity, itself engenders a further level of dialectic creation: the key, a "triad of triads." Here, Hauptmann is hard pressed to find exact analogues of the root, fifth, and third directly reflected in the tonic triad and its two dominants. Rather, he identifies octave-quality and unity with the individual tonic triad, fifth-quality in the oppositional aspect of the tonic's being the subdominant of its dominant and the dominant of its subdominant, and third-quality from the synthetic aspect of the tonic triad, perceived as simultaneously having its dominants while being their dominant and subdominant. It is important to note that Hauptmann does not attribute any individual dialectic qualities to the dominant and subdominant triads, which he introduces *a priori*. Nor does he cite any scale-degree identification of these chords in his discussion.

A third dialectical level extends from the major key: the level of key relationship, a "triad of keys," depicting the close relation between the keys of the tonic, dominant, and subdominant. Here an exact analogy with the level of key definition is possible, as the dialectical relationships between these keys mirror those between the chords which are their tonics. Again, neither chords nor keys in and of themselves embody distinct dialectic qualities, which are always either resident in individual pitches alone, or in the relationships between entities. Figure 3.1 shows the complete hierarchical system.

I root — **III** third: — **II** fifth

triad

↓

Level One:
the triad as the resolution of root and fifth qualities in third quality

I tonic triad — **III** tonic has/is dom.: — **II** tonic triad as dom.

triad of triads

↓

Level Two:
The key as the resolution of the tonic's simultaneously having its dominants and being their dominant

I tonic key — **III** triad of keys — **II** tonic key as dom.

Level Three:
Relationships between keys according to the principle of Level Two

Figure 3.1 Hauptmann: dialectic system of pitch, chord, and key relation

F – a – C – e – G – b – D

Figure 3.2 Hauptmann: diatonic key-schema

At this point Hauptmann draws the line: there are no higher-order musical relationships possible. He sees relationships between keys other than the three primary ones as resulting exclusively from lateral extensions by fifths of the "triad of keys" concept, taking the dominant and subdominant as new tonics.[58] The end result is the circle of fifths, the only mechanism of key relation which can logically follow from this formulation of the harmonic system.

In order to show the relationships of the primary chords, Hauptmann presents a fundamental and memorable schema (Fig. 3.2) representing the relationships between the seven diatonic tones of the major key.[59]

Since Hauptmann does not consider the second to be a true interval, he eschews the usual scalar presentation of a key. Instead, he builds his schema from the directly intelligible intervals: major thirds (reading upward from the generating tones), represented by lower-case letters, and fifths, represented by upper-case letters. This schema has the advantage of showing the primary chords and their linkage by common tones, and of designating higher-level third-quality by the use of a different case. Hauptmann uses the schema throughout his treatise to demonstrate the relationships of pitches within a key, between related chords, and between keys. Clearly, this diagram of the diatonic set is a far cry from the major scale employed by most nineteenth-century theorists to represent the key. The scale is a concrete embodiment of the key; it is a melody, and its harmonization was the focus of considerable theoretical ingenuity.[60] Hauptmann's schema is, in contrast, a fully abstract embodiment of the key: it is in no way intended to be heard, nor to represent any particular musical utterance. It is rather an idealized representation of a particular interrelationship of qualities, the picture of a system which gives rise to the dynamic entity of key.[61] Hauptmann's key-schema displays more than the basic elements of a key: one can read in it the principal triads of the key and the nature of the relationship between any and all of these triads. (In an extended version of the schema, all seven triads and the principal seventh chords of the key are present; see below, note 64.) It is quite impossible to derive any notion of harmonic scale degree from this schema.

58 For example, by taking the dominant or subdominant of the original triad and casting it as tonic in a new triad, thus deriving the keys of $^{\mathrm{V}}/\mathrm{V}$ and $^{\mathrm{IV}}/\mathrm{IV}$, and so on.

59 Hauptmann, *Die Natur*, p. 27.

60 Hauptmann does present the scale, but not to demonstrate its fundamental role. Rather, he introduces it as a datum of musical reality and provides a theoretical account of it in terms of the octave-, fifth-, or third-qualities expressed by its individual members. His harmonization of the scale's end – degrees $\hat{6}$, $\hat{7}$, and $\hat{1}$ – features triads vi, iii, and vi, whose suitability he explains by the shared third-quality of common tone $\hat{3}$. (Earlier parts of the harmonized scale feature common tone $\hat{5}$, then $\hat{1}$.) This goes completely against the tradition of scale-as-melody and directly contradicts musical practice, both of which would assign an authentic or deceptive cadence. Either Hauptmann goes out of his way to force an abstract contemplation of the familiar, or this is a glaring example of his dialectic idealism overpowering his musical common sense.

61 Harrison, in *Harmonic Function,* points out the spatial rather than temporal nature of Hauptmann's schema.

It is, however, clear that the interval of a third is essential to its structure, and by inference to the structure of the system.

Hauptmann's theory of minor triads is doubly dualistic, for he provides two explanations. In his principal rationale, he treats the minor triad as the downward symmetrical complement of the major triad. Since he shuns physical explanations, he does not mention undertones; instead, he relies on his dialectic theory of note-quality. Hauptmann takes the upper note of the minor triad as its generating quantity. This note carries the ground-state, I, which is negative, since it acts downwards. Hauptmann indicates this by designating the generating tone with a lower-case letter. This "negative root" then generates the downward fifth, II, also expressed in lower-case. Finally, the two are reconciled through the agency of the downward major third, III, identified by an upper-case letter. Besides allowing Hauptmann to account for the differences in quality between major and minor triads, this approach allows Hauptmann to locate both sorts of triads in the same third-based key-schema.[62]

Hauptmann's view of chord progression employs dialectic to explain the nature of change in a theory whose cornerstone, like Marx's, is a common-tone conception. The genesis of harmony is the result of a three-part process: (I) the ground-state of the individual chord; (II) the opposition of two chords in succession; and (III) their synthesis in harmonic relation. Furthermore, common tones are a *sine qua non* for any coherent relation:

> The succession of two triads is again only intelligible insofar as both can be referred to a common element which changes meaning during the passage.[63]

Hauptmann differentiates between three types of progression: (1) those having two common tones; (2) those having one common tone; and (3) those having none. Although these categories could serve to classify all possible chord progressions, he limits them to the diatonic ones which can be represented graphically on the schema: the first category moves a triad one step to the left or right of the tonic, the second another step, and the third a final step. Thus in a major key, the first category contains the minor chords located a third from the tonic; the second category contains the dominants, located a fifth from the tonic; and the third category contains the two "diminished" chords located a second from the tonic.[64] Hauptmann makes an important further distinction. On one hand are the first two types of progression,

[62] In the second explanation, the minor triad is generated upward from dual roots. (Since the minor third is not directly intelligible in Hauptmann's theory, it cannot be directly generated from the root of a minor triad.) Here the upper note is simultaneously fifth of the lowest note and major third of the middle note; thus it has dual fifth- and third-quality, while the two other notes both possess root-quality. This more ungainly and less symmetric formulation dispenses with the idea of downward determination, which must have bothered Hauptmann enough that he came up with it, although it did not figure prominently in other aspects of his theory.

[63] Hauptmann/Heathcote, *The Nature of Harmony and Metre*, p. 45.

[64] In a quirk of Hauptmann's theory, the triads located on the seventh and second degrees of the scale are defined as similar diminished triads. This stems from Hauptmann's key-schema, which he extends in both directions to account for these two triads:

D/F – a – C – e – G – b – D/F

whose nature he calls self-evident, since all of these involve at least one common tone, the change in whose quality can be traced. Hauptmann finds that these are not equally potent:

> the passage into the *nearest* is the only immediately intelligible progression. The passage from C–e–G to F–a–C . . . is a compounded one, and consists of the progressions C–e–G · · · a–C–e · · · F–a–C . . . the second cannot happen before the first or without the first . . .[65]

This statement introduces a dissonance into Hauptmann's theory. In his idealized harmonic system, fifth relations are unquestionably superior and prior to third relations. Nonetheless for real-time harmonic progressions, diatonic third relations are nearer than and prior to fifth relations, in fact necessary for them, according to the quote above. This claim is all the more remarkable considering its implication that the common tone in fifth relations would change quality twice rather than undergoing the single change of the dialectic process, although this difference could perhaps be reconciled by affirming that what ultimately matters in the dialectic process are the beginning and the end, not intermediate stages. With its emphasis on diatonic third relations, Hauptmann's incremental common-tone theory of chord progression, stricter and more focused than Marx's, finds its antecedents in the harmonic circles of the eighteenth century, and interestingly enough is being resurrected in the present day, as described below in section 6.4.

On the other hand is the third, disjunct type of progression, in which there are no common tones. These require an outside agent for coherence, a mediating triad containing common-tone connections to both of the triads involved. Hauptmann does not argue that these progressions are elliptical, e.g. a third, virtual chord is understood to mediate the progression between two actual chords. Rather, he goes so far as to say that the mediating triad not only intervenes but actually stands for and essentially replaces the initiating triad.[66] Faced with the task of explaining disjunct

This one-dimensional diagram stands for a two-dimensional circle; its ends denote the same point of connection between the root of the subdominant and the fifth of the dominant. Hauptmann defends the classification of the triad D/F–a as diminished by citing its symmetrical relation to the triad b–D/F, and further by distinguishing its outer interval, d–A, which contains a note of fifth-quality and one of third-quality, from the fifth of the naturally occurring D minor triad, d–a, which contains notes of root- and fifth-quality. Hauptmann characterizes the interval d–A as dissonant, notes that in an ideal just-intonation tuning system it would sound flatter than d–a, concludes that it "is no more a fifth than b–F is" (*Die Natur*, p. 26), and thereby pronounces D/F–a identical to b–D/F: a second diminished triad.

65 Hauptmann/Heathcote, *The Nature of Harmony and Metre*, ¶ 116, p. 57. Hauptmann uses this discussion to bolster his derivation of seventh chords from the combination of neighboring triads in the schema.

66 Hauptmann states, "the progression from the first of the unconnected triads is the same as it would be from the mediating triad to the second" (*ibid.*, p. 46). His example is the progression in C major from a C major triad to a D minor triad. He requires the mediation of an A minor triad, stating that "the passage [*Übergang*] from the triad C–e–G to D/F–a must here be taken to be equivalent to the passage from a–C–e to D/F–a . . ." (p. 47). Hauptmann, who in his dialectic formulae is so sensitive to the unique combination of qualities making up each triad, strangely abandons this attitude here, equating two chords which in all other contexts he would treat as quite different, and making no mention of the juggling of note-quality which would result from the standing in for one chord by another. In this case he chooses to preserve a musical principle – common-tone intelligibility – at the expense of the dialectic model. It is also noteworthy that he chooses A minor, not F major, as the mediating chord, demonstrating the priority he assigns to nearness to the tonic.

harmonic relations, then, Hauptmann refuses to abandon the common tone, and opts instead for the more radical tack of redefining one member of the progression in order to provide a common tone with the other member. There is no mention of any particular shared harmonic quality between the first chord and the chord which replaces it, nor of the harmonic superiority of either chord over the other; Hauptmann is not defining a Riemannian functional category or archetype. He is stating simply that one chord may stand for another, in that the replacement chord acts as a bridge by which progression between disjunct chords is facilitated. While Hauptmann later admits progressions containing chromatic elements, he unfailingly adheres to the "intelligibility requirement" of at least one common tone, and thus continues to predicate meaningful harmonic progression exclusively on fifth and third relations, a defining feature of common-tone tonality.

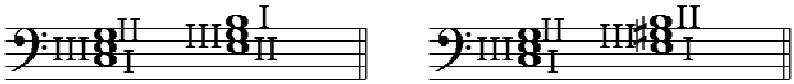
This common-tone requirement, coupled with the fact that his schema limits him to discussion of diatonic progressions, leaves Hauptmann with only two types of direct harmonic progression: fifth relations and diatonic mediant relations. He does not directly generalize the connective properties of diatonic mediants to chromatic third relations. This is not surprising, since he does not think much in terms of classes of root relations nor scale steps, nor thereby in groups such as "all third relations." Moreover, in his dualistic conception, minor chords are generated downward, so that he sees a world of difference between a major and minor triad standing on what we think of as the same scale degree. Thus diatonic and chromatic third relations which to us connect chord pairs having similar roots appear to Hauptmann to connect very different root pairs and involve two highly different harmonic successions. Figure 3.3 demonstrates this difference with a pair of ascending major-third relations, the first connecting relative modes, the second connecting chromatic mediants.

Hauptmann's modulation theory equally elevates the keys of the dominants and the two relative mediants as closely related to the tonic, more in line with his doctrine of chord succession by common tone than with his purely fifth-oriented dialectic explanation of key relation.[67] This becomes more apparent when he discusses slightly less closely related keys, namely those located at a remove of two fifths from the tonic. These, he says, contain tonic triads which have no tones in common with the original tonic, and thus "principally, they are not related," connecting only through subsidiary triads which do share tones with both chords.

Hauptmann's discussion of the next rank of key relations is striking:

> In the keys which follow next, which are more remote by a fifth, even this subordinate relationship dies out, and the mutual reference of such keys, if considered only in this series (of fifths), ceases entirely. The plan of modulation introduced above can, it is true, lead onwards to the remotest keys; only when even the third key is reached we are in a wholly strange region, out of all inner connexion with the first.

[67] Like many theorists before him, Hauptmann requires common tones between all chords in a modulatory progression to ensure coherence.



a) from root C to root B: (diatonic third relation)

b) from root C to root E: (chromatic third relation)

I = root; II = fifth; III = third

Figure 3.3 Common-tone third relations with Hauptmannian interpretation

To this plan of modulation stands opposed that other kind, which does not consist in progressing to that other key through the intermediate keys, but in taking what is common to the two keys to be united, and transposing it from the meaning which it has in the first into the meaning which belongs to it in the second. *Thus the new key springs right out of the middle of the first.*[68]

Hauptmann proceeds to outline the four remote modulations which can result from this more direct type of harmonic motion. He assumes a C major tonic and successively documents direct modulations to A♭, A, E♭, and E major. Although he never says it in so many words, these comprise all the third relations which involve a single common tone and preserve mode (major to major): in other words, they are the four common-tone chromatic mediants.[69] He discusses in an abstract way the direct relationship of the mediant-related keys, and comes tantalizingly close to giving examples of direct progressions involving nothing but the two tonics of a chromatic mediant relationship. He stops slightly short of this, displaying these modulations only in series of chords, but saying that they "might certainly be very much contracted without loss of clearness." Despite this caution, Hauptmann gives the clearest expression so far of theoretical justification and acceptance for the chromatic mediants as a discrete harmonic entity. While Marx went further in a way, prescribing direct chromatic mediant progressions, he accounted for them only informally and never as a separate and distinct harmonic class. Hauptmann does not discuss the direct progressions here, but he emphatically sets apart the chromatic

[68] Hauptmann/Heathcote, *The Nature of Harmony and Metre*, p. 152. Italics mine.

[69] Many English-language commentators on Hauptmann – Shirlaw, Jorgenson, Mark McCune ("Moritz Hauptmann: *Ein Haupt Mann* in Nineteenth-Century Music Theory," *Indiana Theory Review*, 7, 2 (Fall 1986), pp. 1–28), for example – take no notice of this aspect of Hauptmann's theory, which most likely seemed strange to them, being inconsistent both with their own ideas and what they took to be Hauptmann's. Levenson describes this section but concludes oddly that Hauptmann found these third relations unsatisfactory. Hoffman also notices this process, but calls it modulation by "chromatic alteration." By interpreting the process as alteration, Hoffman is seriously misreading Hauptmann, who is saying if anything that this is *not* a process of chromatic alteration. In the third relations Hauptmann describes, one pitch is held common, though its quality changes; the other two pitches are replaced. For example, in the progression from C major to E major, C and G disappear while e/E remains and g♯ and B appear: C–e–G becomes E–g♯–B. The G of the C major chord, which has fifth-quality, has nothing to do with the g♯ of the E major chord, which has third-quality. They are different, even distant quantities, and there is no alteration of pitch involved.

A: ***C***–e–G → F–a–***C*** **B:** ***C***–e–G → a–***C***–e **C:** ***C***-e-G → A♭–***c***–E♭

Figure 3.4 Common-tone transformations in different harmonic progressions: **A**: to the subdominant; **B**: to the lower relative mediant; **C**: to the lower flat mediant

mediants and documents a harmonic process linking their keys directly with that of the tonic:

> According to this [demonstration] there now enters a nearer mutual reference between keys of the third and fourth degrees of relationship [i.e. removed from the tonic by three or four fifths] than is afforded by those of the second degree of relationship.[70]

Note that, since his theory lacks a notion of harmonic coherence based on root relation, Hauptmann does not group these mediants on the basis of similar root motion by third, but rather by their similar locations on the circle of fifths, at a distance of three and four fifths from the tonic.

Dialectic provides Hauptmann with a way to characterize the effect of coherence, as well as motion, in progression: as change in the note-quality ("meaning") of the common tone. Thus Hauptmann distinguishes between the pure major third and the third which results from four successive perfect fifths.[71] The pure third is denoted by a lower-case letter, while the other third, derived from a series of fifths, is appropriately represented by an upper-case letter. Accordingly, in each modulation of Hauptmann's "other kind," there is a marked change in the quality of the common tone. For example, in the shift from C major to A♭ major, common tone C changes from root to third. For Hauptmann, this is a much more profound change than the one which the same common tone undergoes in the progressions I–IV or I–vi. In the case of the subdominant, the root becomes fifth, taking on the opposite meaning but remaining on the same hierarchical level. In the case of the relative minor, the minor chord itself being downwardly or negatively determined, the root becomes third, but it changes "charge" and in doing so retains the same upper-case designation. In the case of a chromatic mediant, however, the common tone changes *level* (third-meaning being higher-level than root- and fifth-meaning), and is thus transformed to a greater degree. The distinctive sound of such a progression can be taken as an indication of this more substantial change in meaning of the common tone, as shown in Figure 3.4, which employs Hauptmann's chord- and note-quality scheme.

Further along in his treatment of modulation, Hauptmann muses abstractly on key "relationships founded on change of meaning in single elements."[72] By this he means the group of six relative and chromatic third relations, even though the relative mediants involve change in two common elements, leading one to suspect that he had another reason to define this group. In fact, dialectic turns out this time

[70] Hauptmann/Heathcote, *The Nature of Harmony and Metre*, p. 153.
[71] These two intervals do differ acoustically by a comma, the ratio 80 : 81.
[72] Hauptmann/Heathcote, *The Nature of Harmony and Metre*, pp. 163–164.

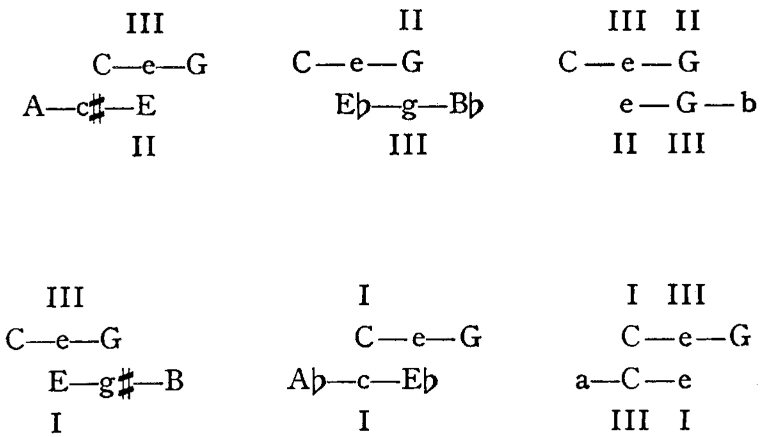


Plate 3.7 Hauptmann: Change in meaning in diatonic and chromatic third relations

to provide an apt vehicle for a sound theoretical observation. Hauptmann notes correctly that those relations in which change of identity involves only secondary elements (fifth becoming third or third becoming fifth) are less strong than those involving the primary element of one chord (root becomes third or third becomes root).[73] The first group includes the keys of the upper relative mediant and the minor-third mediants, while the second group includes the keys of the relative minor and the major-third mediants (Plate 3.7). This observation also holds at the level of chord relations, although Hauptmann does not extend it there.

Hauptmann's note-quality concept is intrinsically suited more to diatonic than to chromatic practice, and it has been noted that Hauptmann's aesthetic outlook as a whole was more suited to describing Classical style than the compositional practice of his own time.[74] Yet Hauptmann provides a clearer explanation of chromatic third relations than did his predecessors. Remarkably, since his system does not naturally accommodate them, he accounts for them by proposing a completely separate mechanism, one which explains the marked profiles of these progressions with an appealing dialectic explanation which also serves to integrate them into his system.

[73] Refer back to section 1.6.

[74] Jorgenson, *Moritz Hauptmann of Leipzig*, pp. 60–61. Harrison, *Harmonic Function in Chromatic Music*, p. 229, observes, however, that Hauptmann's system was pliable enough for other, more progressively minded theorists to adapt it to chromatic music.

4

HUGO RIEMANN

4.1 THE EARLY THEORY

The theory of harmonic function for which Hugo Riemann is best known was not an early inspiration, but rather the culmination of a long and prodigious effort. Nor was it Riemann's last say on the nature of the tonal harmonic system. Riemann's theoretical career spanned over five decades and included a series of important works on harmony. Perhaps even more than Rameau, Riemann significantly developed and outright changed his ideas over the course of these publications. In the next chapter I will present a limited review of Riemann's works, spanning several decades from the early 1870s, when Riemann embarked on the development of a complex harmonic system which came to fruition in the late 1880s, through the introduction of the function concept in the early 1890s, up to the important new ideas of the late 1910s, which will be described later in chapter 6.[1] As before, I will focus on two aspects of theory: first, Riemann's evolving conceptions of the harmonic system, and, second, his views of mediant relations and the way in which those views are able to be reflected within these changing terms.

Throughout his career, Riemann freely acknowledged the influence of other thinkers on his own ideas, particularly three immediate German predecessors, Arthur von Öttingen, Hermann von Helmholtz, and Moritz Hauptmann. He mentions his debt to them in his dissertation (1872), discusses their ideas in *Die Natur der Harmonik* (1882), and continues to do so in *Vereinfachte Harmonielehre* (1893). Hauptmann in particular introduced Riemann to many of the basic concepts he would adopt and

[1] Until fairly recently, the most detailed contemporary study in English of Riemann's harmonic thinking was by William Mickelson: *Hugo Riemann's Theory of Harmony, with a Translation of Riemann's Geschichte der Musiktheorie im IX–XIX Jahrhundert, book III (1898)* (Lincoln, Nebr.: University of Nebraska Press, 1977). Mickelson's treatment of the development of Riemann's early ideas concentrates on works from the 1870s, disregarding for the most part the practical theory treatises of the 1880s. In doing so he neglects sources of significant insight into the development of Riemann's later theory. At present, the works of the 1880s are receiving renewed attention. Harrison (*Harmonic Function*, ch. 6) ably provides a review of Riemann's harmonic-theory *œuvre*, including the publications of the 1880s, along with information about his character and worldly career. Kevin Mooney examines the early theory in "The 'Table of Relations' and Music Psychology in Hugo Riemann's Harmonic Theory" (Ph.D. dissertation, Columbia University, 1996). An article by Henry Klumpenhouwer on Riemann and transformation theory, "Some Remarks on the Use of Riemann Transformations," *Music Theory Online*, 0.9 (July 1994), draws from the *Skizze einer neuen Methode der Harmonielehre* (Leipzig: Breitkopf & Härtel) of 1880.

I	*thesis*:	original unity
IV–I^6_4	*antithesis*:	opposition to original unity
V–I	*synthesis*:	resolution of opposition and return to tonic

Figure 4.1 Riemann: the cadence as dialectic

develop. He was the originator, in Riemann's time, of the notion of harmonic dualism, the system of harmony in which major and minor are treated as independent, mirror-symmetrical entities.[2] In addition, Riemann chose Hauptmann's system of harmonic dialectic as the model on which to base his fledgling attempts at creating his own harmonic theory. In Öttingen's work, Riemann found a fully fleshed-out theory of harmonic dualism more congenial to his own ideas than Hauptmann's was. Riemann consequently adopted many of the symbols which Öttingen developed to represent harmonic quantities. From Helmholtz and Öttingen, Riemann obtained physical and acoustical explanations of musical phenomena, and thereby justifications for some of his own ideas, although, frustrated by their inadequacy, he ultimately qualified the role of the rationales of physics in musical explanation.[3]

Riemann's earliest harmonic system is put forth in his 1872 dissertation, *Über das Musikalische Hören*, and a related article, *Musikalische Logik*.[4] In these essays, Riemann adapts Hauptmann's three-stage dialectic formula by taking what was essentially an abstract process and horizontalizing it in time. Hauptmann's three-stage schemata of chord- and key-definition had said nothing about the way in which their component quantities interact in actual music. Riemann set out to do so. Using the I–IV–I^6_4–V–I cadence as the archetypal harmonic progression, he characterized its temporal progress, as shown in Figure 4.1.[5]

In resorting to conventional Hegelian terminology for steps of the dialectic process, Riemann made explicit the connection that Hauptmann had chosen to keep implicit. And in trying to apply the abstract dialectic construct to actual musical phenomena Riemann committed himself to a much stronger formulation of dialectic in music than had Hauptmann, who may wisely have wished to stay clear of the implications of so palpable an expression. Even in the abstract, Hauptmann had balked at identifying each of the three primary chords one-to-one with the three dialectic qualities, locating these qualities instead in aspects of the relationships of triads.

In cadential progressions, it is even more difficult to restrict the identification of the unfolding of the dialectic process to individual chords, since the progressions generally involve more than single instances of each chord, and the one familiar

[2] Hauptmann's dualism was not as literal as Öttingen's and Riemann's came to be.
[3] Harrison, *Harmonic Function*, section 6.1.
[4] For a thorough consideration of Riemann's early works, refer to Mooney, "The 'Table of Relations'."
[5] Riemann, "Musikalische Logik," *Neue Zeitschrift für Musik*, 28 (1872), p. 279.

cadence which does not (IV–V–I) is unsuitable as the dialectic archetype, since it does not begin with the tonic, which necessarily should be identified with thesis or initial unity. Riemann's initial answer to this problem is to identify stages of the cadence, rather than individual chords, with each dialectic element. Thus Riemann's primary dialectic level is not that of Hauptmann's triadic elements, but rather the higher one of actions and relationships of triads within the key.[6] However, Riemann immediately goes on to reduce the compound dialectic elements to the single chords which most typify them: tonic = thesis; subdominant = antithesis; dominant = synthesis. This new formulation, taken literally, is less acceptable than the first – it is hard to imagine how the dominant could represent a synthesis of the attributes of the tonic and subdominant, for example, other than that it follows them in time in the cadence. It is also hard to imagine that the dominant, which rarely represents harmonic closure, best exemplifies the qualities inherent in the dialectic concept of synthesis, while the subdominant best exemplifies the qualities of opposition to the tonic that its identification with the dialectic quality of antithesis would imply. Furthermore, Riemann contradicts Hauptmann's own scheme: Hauptmann's fifth-quality becomes Riemann's antithetic IV (not V), while Hauptmann's third-quality becomes Riemann's synthetic V. The shakiness of this revised formulation suggests that Riemann was at bottom more interested in firmly accounting for the three primary harmonies than in staying true to the principles of dialectic process.

Riemann's early thoughts on third relations appear in the dissertation. Surprisingly *sans* dialectic jargon, he discusses traditional topics of proportions and ratios at length:

> Generally, the direct intelligibility of intervals is limited to the constituents of the triads; thus in our musical system to the 2[nd], 3[rd], and 5[th overtones] and their octaves. Even 5, with 1/25 intensity in relation to the generating tone, is so weak that we can hardly be capable of perceiving its pitch sufficiently . . . Thus it is also with the uncommon 5 acting as connecting link in modulations, and a progression from the C major triad to the E major triad always [sounds] somewhat surprising.[7]

While showing these third relations to be less strong than conventional fifth relations, Riemann does not argue that they are unsuitable for use. Rather, he validates their source (albeit uncommon) and notes their characteristic surprising quality, providing justification for their naturalness by including them in the small, select group of directly intelligible intervals.

In *Musikalische Logik*, Riemann depicts the diatonic secondary triads (*Nebenharmonien*) as deriving their logical meaning from their relationship with one of the

[6] In order to talk about fifth-based chord relations, rather than third-based relations as Hauptmann does, Riemann bypasses the triad-elements level. At this level, the three basic quantities are root, third, and fifth; their graphic expression is Hauptmann's third-schema. At the next level, that of the primary triads, the three components are tonic, subdominant, and dominant; their interrelationship is unmediated by thirds. Despite the apparent similarity of three basic components, then, these two levels are essentially disjunct: no satisfactory one-to-one correspondence is possible between the three elements of the triad and the three harmonic elements of the key. The most plausible solution (tonic–tonic, fifth–dominant, third–subdominant) breaks down at the end: the third and the subdominant do not fulfill analogous roles in their respective levels.

[7] Riemann, *Über das Musikalische Hören* (Leipzig: Fr. Andrä's Nachfolger), p. 28.

principal triads.[8] Accordingly, there are thetic triads: I, vi (as cadential goal), and iii (a "very unfortunate chord"), which, also sharing two important pitches with V, is thetic only when intervening between tonic and dominant. Antithetic triads are IV, ii, and vi (when following I); synthetic triads are V, vii°, and iii (the last not as good as the others in a final cadence). Here the identification of the secondary triads with the dialectic qualities is clearly not nearly as important as the harmonic categories which Riemann is setting up, categories which are quite similar to those of his later functional theory. The dialectic language obscures his intentions, but Riemann's explicit identification of all of the secondary diatonic triads with corresponding primary triads, and his recognition of the variable affiliation of certain ones of these secondary triads, are quite meaningful for the later development of his theory. Riemann restricts the harmonic discussion of *Musikalische Logik* to diatonic chords; there is no mention of chromatic third relations, nor of classes of root relation in general.

By the 1880s Riemann abandoned dialectic language completely, basing his system on purely musical assumptions. Ten years after the first publication of the ideas of *Musikalische Logik*, he produced a short but notable work entitled *Die Natur der Harmonik* (The Nature of Harmony).[9] Despite the title, Riemann's purpose in this essay is not as much to lay out a system of harmony as to introduce the basic acoustical principles of music, to briefly sketch the history of what he considered to be the important ideas of tonal music theory, and to summarize the ideas behind his own theoretical conception of music. *Die Natur* contains a more basic treatment of the subject than the serious harmony treatises of the 1880s, and will serve well here to introduce the ideas and attitudes about the workings of harmony and chromatic third relations which Riemann develops more fully in those works.

Much space is given over to praise and some criticism of his immediate predecessors Hauptmann, Helmholtz, and Öttingen. The most reverential treatment is accorded to Hauptmann. Riemann mentions Hauptmann's assertion that "there are three directly intelligible intervals: the Octave, the Fifth, and the Major Third," saying, "This is a great and epoch-making conception, and implies everything which exact science has discovered since."[10] He agrees with Hauptmann that all other intervals are understandable only through association with these three – the major second, for example, being the combination of two fifths reduced to the octave. Riemann goes on to cite Hauptmann's key-schema.

Hauptmann represents the key as made up of the three chords, Tonic, Dominant, and Subdominant, thus:–

F – a – C – e – G – b – D

[8] Riemann, *Musikalische Logik*, p. 280.

[9] This short pamphlet is the one harmony treatise of the 1880s that Mickelson discusses in some detail.

[10] Riemann, *Die Natur der Harmonik*. In *Sammlung musikalischer Vorträge*, ed. P. G. Waldersee, vol. IV (Leipzig: Breitkopf und Härtel, 1882), trans. John C. Fillmore as *The Nature of Harmony* (Philadelphia: Theodore Presser, 1886), p. 24.

Here we have the two series of fifths, F – C – G – D and a – e – b; the one made up of tones related to C by fifths, and the other by thirds. The most important point in this treatment of the subject is the recognition of *third-relationship* in tones and in keys. Even Marx wondered that the keys of E major and A major are directly intelligible after C major, while D major and B♭ major sound foreign and unrelated after it . . . Hauptmann was the first who clearly pointed out the third-relationship of keys, and thus solved the problem once and for all. Since that time the idea of third-relationship of keys as equally valid with the fifth-relationships has got itself fairly well established in the later music; although many theorists, of the sort who hold rigidly to ancient traditions and are impervious to such discoveries of genius as this of Hauptmann's, still look on it as something abnormal, or, at best, barely allowable.[11]

Riemann somewhat oversimplifies here – the schema he refers to pertains strictly to diatonic relationships, while chromatic third relations were substantiated by Hauptmann as separate phenomena with different explanations, as discussed above. But he is correct about Hauptmann's intent, and categorical in his support. It is notable that Riemann at this time saw third relations as a defining aspect of Hauptmann's theory.

Nowhere in this part of Riemann's essay does he mention the superiority of the three primary harmonies. The only discussion of their role centers on key-definition; it comes during the commentary on Hauptmann, and is cited above. Instead, Riemann offers a different explanation of tonal relations, arguing that the meaning of the elements of harmony derives from more than their content. He asserts that any single tone can be heard as a member of six different triads (i.e. as root, fifth and third of a major or minor triad), and that intervals likewise are identified with triads (e.g. the perfect fifth with a major or minor triad). Even a complete triad may be heard differently in different keys. What gives a secure point of reference is the establishment of a tonic triad, the only one which can serve to close a piece. The tonic is the only truly consonant formation in a key, says Riemann; all others, including the dominant and subdominant, are dissonant.[12]

As he explains it, every non-tonic chord carries with it the image of the tonic to which it is related, and is heard against it; thus arises dissonance.[13] In the context of C major, then, a G major chord evokes along with itself a sense of its relation to C major: "there comes a moment of unrest, a desire for progression to the C major chord: the dissonance. So it is with the F major chord, and generally every chord of the key." While Riemann only mentions the tonic and two dominants here, he explicitly allows for the validity of the other diatonic chords. No special distinction in kind is accorded to the dominant and subdominant. In fact, he moves in the opposite direction:

[11] *Ibid.*, p. 26.

[12] Riemann's line of reasoning here is more along the lines of Rameau than of Marx. He cites as proof of the dissonance of the dominant the fact that the addition of a (dissonant) seventh to the chord does not appreciably change its nature; therefore it must have been dissonant to begin with. Similarly with the subdominant, to which a dissonant sixth can be added with little change to the effect of the chord.

[13] Again, this is a considerable departure from Marx, for whom a non-tonic triad evoked a sense of its own key, not the tonic to which it relates.

This modern notion of key . . . *Tonalität,* is not bound to the scale. There can also be chords, employing notes from outside the scale, which are understood in relation to the tonic and receive therefrom their singular meaning. This is so for all major-third chords (E major and A♭ major in C major) and minor-third chords (E♭ major and A major in C major).[14]

Here, then, Riemann unequivocally singles out and legitimizes the chromatic mediants as the group of chords outside the diatonic set which can be heard in direct relation to the tonic. Furthermore, Riemann is clearly defining a tonal space including both diatonic and direct chromatic relationships. His use of the term *Tonalität* appears here to correspond to common-tone tonality, but is eventually extended to virtually all chromatic relationships to signify a more all-encompassing chromatic tonality. The unorthodox nature of Riemann's statement has caused some disagreement among scholars as to whether Riemann is claiming that these mediants can serve as tonic substitutes. However, I think that it is clear, especially in light of his earlier statement regarding Hauptmann's treatment of third relations, as well the sense of the preceding argument concerning the relation of diatonic chords to the tonic, that Riemann is definitely grouping the chromatic mediants together with the diatonic chords as those chords able to evoke a sense of direct relation to a tonic, and the resultant dissonance characteristic of tonal progression.[15] Other works from this period corroborate this observation, as I will now show.

4.2 PRINCIPAL HARMONY TREATISES 1880–1890

The practical treatises of the 1880s are important, seminal works which usher in Riemann's mature period. In them, Riemann developed a thorough, systematic treatment of harmonic relationships predicated on an exhaustive description of types of root-motion and on the dualistic principle. These two attributes persist nearly unchanged into the fully mature work of the 1890s and beyond. All of these works were written several decades after those discussed in the previous chapter, at a time when harmonic practice had become considerably more chromatic and diverse. They addressed an expanded repertory, although Riemann maintained strong links

[14] *Die Natur der Harmonik*, p. 32.

[15] This divergence of views is apparent in two other translations of the passage, one contemporary with Riemann, the other more recent. First is one which appeared just four years after Riemann's original. Fillmore (*The Nature of Harmony,* p. 30), working in Riemann's time, reads as follows: "We can imagine chords containing tones outside of the scale as being intimately related to the tonic chord. This is especially true of the (major) chords of the major third above and below the tonic . . ." Hoffman, "A Study of German Theoretical Treatises," p. 244, translates: "chords which are composed of tones foreign to the scale may be used in a tonic function and yet keep their individual meaning, especially the chords on the large and small thirds, in C major the E major and A♭ major triads, and also the E♭ major and A major chords." He comments, "This can only mean that the E and E♭ major chords and the A and A♭ major chords may 'stand for' or *have tonic functions* in the key of C major." But Riemann's words later in the passage do make it clear that he is talking about relations to the tonic, not substitutions. Thus Hoffman is reading in something that is not present. Riemann does not talk about harmonic function in this essay, and could hardly have meant to evoke it here: he had not yet coined the term nor refined the concept.

to earlier traditions. It will be seen that Riemann aimed for a comprehensive harmonic theory to account for the manifold possibilities of *Tonalität*, while at the same time being careful to specify the place of chromaticism within the system at large.

What makes the works of the 1880s transitional in our eyes is the absence of the concept of harmonic function. What makes them important is the evidence they present: that Riemann's theoretical system did not spring originally nor principally from the idea of function, but rather was already highly developed at the time Riemann presented the functional concept, which, already present in less developed terms, was grafted onto an existing theoretical framework.

Relevant publications of this period include two treatises in which Riemann presents his new ideas, the *Skizze einer neuen Methode der Harmonielehre* of 1880 and the *Systematische Modulationslehre* of 1887, along with two publications for a more general audience in which he summarizes and develops these ideas, the *Allegmeine Musiklehre (Katechismus der Musik)* of 1888 and the *Katechismus der Harmonielehre* of 1890, the latter containing several discussions of chromatic third relations. The cornerstones of this period of activity are a system of classification for all possible harmonic progressions, first proposed in the *Skizze*, and the introduction of the concept of harmonic function in the *Katechismus*. These two concepts are separate and interdependent aspects of Riemann's harmonic theory meant to explain different things. Both remain active after the eventual introduction of the function concept.

In the *Skizze einer neuen Methode der Harmonielehre* of 1880, Riemann outlines his own harmonic system. These lengthy "sketches," however, do not yet contain the direct precursor of the functional system. At this time, Riemann's theory is based strongly on the dualistic principle; he begins the treatise, in fact, with a statement of the dual nature of major and minor. The major innovation of the *Skizze*, however, is the presentation of a system of classification of chord progression types by the directed intervals between their roots. The treatise is a pedagogical work, containing a host of practice exercises. Riemann holds up the *Skizze* as theoretical underpinning for the *Systematische Modulationslehre* of 1887, which contains a detailed investigation of the mechanics and possibilities of modulation but also significant new theoretical content. The first several chapters of the *Modulationslehre* are preparatory chapters which discuss cadences, sequences, and nonharmonic tones. Riemann's aim in these chapters is to show that diatonic triads and seventh chords on all scale degrees, as well as secondary dominants and other altered chords, can be interpreted as alterations of the three primary chords of a key. Thus, although he was yet to develop the language of functional theory, Riemann was now thinking more or less in terms prophetic of harmonic function – more so than he had in the *Skizze* of 1880. Daniel Harrison has observed that, in contrast to the other works of the 1880s, Riemann used a cadential model of harmony to frame the presentation of the *Modulationslehre*. While the archetypal progression tonic–subdominant–dominant–tonic, ineluctably associated by many with function theory, is thus present here, it is largely abandoned thereafter by Riemann. Harrison notes with insight that the mature theory does not specify functional order "so that T, D, and S could operate without inconvenient constraint."[16]

The *Allgemeine Musiklehre (Katechismus der Musik)* of 1888, part of Riemann's voluminous series of musical handbooks surveying a wide range of musical topics, is a compact, thorough introduction to the full range of musical issues. Its succinct section on harmony contains a distillation of Riemann's recently developed theory along with some fresh observations. The 1890 *Katechismus der Harmonielehre*, a dedicated harmony treatise forming part of the same series, is notable for a number of reasons. It is meant as a synthesis of Riemann's work to that point, gathering together ideas spread throughout treatises such as the *Skizze* and *Systematische Modulationslehre* into a single source. It contains the greatest concentration of deeply reasoned arguments concerning the nature and validity of third relations in any of Riemann's works. It also contains the introduction of the concept of harmonic function, although not the fully worked-out functional theory, which did not appear until 1893. The treatise is ostensibly in two parts: a theoretical section, and a token practical section of examples and exercises. In fact, this *Katechismus* is principally a pure theoretical work in three chapters, preceded by a brief introduction giving a very concise history of harmonic theory. The text takes the form of answers to a series of questions delineating the topics to be discussed. This manner of presentation, a dialogue rather than a prescription, reinforces the pure theoretical quality of the narrative.

4.3 THE ROOT-INTERVAL TERMINOLOGY: DIATONIC RELATIONS

In the *Skizze*, Riemann adopts chord symbols introduced by Öttingen. Major triads are represented by lower-case letters indicating their tonic, or by a lower-case letter followed by a small superscript plus sign – i.e. c and c^+ both signify a C major triad. Minor triads are represented by a lower-case letter identifying the dualistic root (to us, the fifth), preceded by a small superscript circle – i.e. $^\circ g$ signifies a C minor triad.[17] Riemann classifies and describes chord progressions in terms of the interval formed by the progression of their roots, and his strict adherence to the dualistic system makes for some unusual expressions.[18] Two aspects of his progression-terminology should

[16] Harrison, *Harmonic Function*, p. 278. This goes against common assumptions about Riemann's function concept; see below, section 6.1.

[17] In the *Skizze einer neuen Methode der Harmonielehre*, Riemann sidesteps the issue of the minor triad. Since he considers its top note to be the root, one might expect him to name the chord by this root, rather than by the traditional lowest note. However, he manages never to refer to a minor chord by its name, while referring to minor keys in a compromised fashion: the key with tonic chord $^\circ e$ is *E-Untertonart*, rather than *E-moll* (or traditional *A-moll*). In *Die Natur der Harmonik* two years later, he names only major chords.

[18] Gerhard Wuensch, in "Hugo Riemann's Musical Theory," *Studies in Music from the University of Western Ontario*, 2 (1977), pp. 108–124, observes that since Riemann gives functional analyses of each of his root-interval types, it is not quite right to say that Riemann was thinking in terms of root relations. This is not accurate. Although Riemann does provide these functional analyses in revisions of his treatises dating from the mid-1890s and beyond, he organizes and presents his original discussion solely in terms of root-interval; his terms express

be noted. First, Riemann classifies progressions not only by root-interval but also by direction. Progressions may be either in the principal direction (upward from a major chord, downward from a minor chord), or they may be in a direction contrary to the principal one, in which case they receive the prefix *Gegen*-. Thus a progression from a C major triad to a G major triad is an instance of a *Quintschritt*, while the progression from a G major triad to a C major triad is a *Gegenquintschritt*. Likewise, the progression from a C minor triad to a G minor triad, $^{\circ}g$–$^{\circ}d$, would be called a *Gegenquintschritt*, since its upward direction is contrary to the primary downward direction of the minor triad. Second, Riemann distinguishes between progressions between triads of the same mode, which he calls *plain* (*schlicht*), and progressions which involve triads from both modes, a process he calls *change* (-*wechsel*). A progression from a C major triad to a G major triad, or c^{+}–g^{+}, then, is properly a *schlichte Quintschritt*, or plain fifth-progression. The progression from a C major triad to a G minor triad would not simply be a *Quintwechselschritt*, however, since Riemann considers the uppermost note of a minor triad to be its root.[19] While the interval between the roots of two major triads or two minor triads is what we would expect it to be, the interval in change progressions, which link major triads to minor triads, is counted from the lowermost note of the major ones to the uppermost note of the minor ones. Thus Riemann would consider d, not g, to be the root of a G minor chord, and he would represent the progression from a C major triad to a G minor triad as c^{+}–$^{\circ}d$, a whole-tone progression, calling it a *Ganztonwechselschritt*, or whole-tone change progression. A *Quintwechselschritt* would result from the progression between a C major triad and a C minor triad, c^{+}–$^{\circ}g$, in which Riemann sees significant root motion where we would see only a change of third. Riemann does have a class of progression in which the root remains constant while only the mode changes: the *Seitenwechsel*, for example the progression from a C minor triad to a G major triad, $^{\circ}g$–g^{+}. More examples are contained in Table 4.1 below.[20]

In the *Skizze*, Riemann cites the progressions between dominant and tonic as the closest ones possible. He does not cite the subdominant by name nor does he discuss fifth-progressions to it or any other degrees. But he does describe fifth-progressions as they occur in a minor key, giving them a strict, mirror-image dualistic interpretation. He locates the dominant of the minor a fifth *below* the tonic, just as the dominant of the major is located a fifth above. Thus the minor *Dominantschritt* would be iv–i, while the primary minor *Schlichtquintschritt* would be i–iv.

with fine distinction the nature of the root-interval progression. Most tellingly, in the 1880 *Skizze*, where he formulated his ideas and produced his explanations and examples, no functional labels are attached to the chords in those examples; Riemann was years away from imposing the notion of function. The root-intervals simply came first.

[19] I will usually refer to Riemann's root-interval progression types by their original names. Although cumbersome-seeming at first, the German terms are considerably more succinct than their awkward, multi-word English translations.

[20] Mooney, "The 'Table of Relations'," pp. 260–261, presents a formalization of this system of *Schritte* and *Wechseln*. Richard Cohn refers to it as a "S/W system" in "Introduction to Neo-Riemannian Theory: A Survey and a Historical Perspective," *Journal of Music Theory*, 42, 2 (Fall 1998), pp. 167–179.

Table 4.1. *Skizze: principal root-interval relations*

Class	Root-interval relations	Examples in C major	Examples in A minor
1 Between primary chords	*Seitenwechsel*	c^+–°c: C major–F minor	°e–e^+: A minor–E major
	Quintschritt	c^+–g^+: C major–G major	°e–°a: A minor–D minor
	Gegenquintschritt	c^+–f^+: C major–F major	°e–°b: A minor–E minor
	Ganztonschritt	f^+–g^+: F major–G major	°b–°a: E minor–D minor
	Quintwechsel	f^+–°c: F major–F minor	°b–e^+: E minor–E major
	Gegenquintwechsel	g^+–°c: G major–F minor	°a–e^+: D minor–E major
2a Between primary and secondary chords	*Terzwechsel*	c^+–°e: C major–A minor	°e–c^+: A minor–C major
	Kleinterzwechsel	c^+–°a: C major–D minor	°e–g^+: A minor–G major
	Leittonwechsel	c^+–°b: C major–E minor	°e–f^+: A minor–F major
	Ganztonwechsel	°a–g^+: D minor–G major	g^+–°a: G major–D minor
	Tritonuswechsel	f^+–°b: F major–E minor	°b–f^+: E minor–F major
2b Between secondary chords	*Terzschritt*	°e–°c: A minor–F minor	c^+–e^+: C major–E major
	Kleinterzschritt	°a–°c: D minor–F minor	g^+–e^+: G major–E major
	Leittonschritt	°b–°c: E minor–F minor	f^+–e^+: F major–E major

Riemann organizes his root-interval system in two ways. First, he presents various root-interval progressions as they appear in diatonic contexts within a key; some involve the tonic, others do not. Second, he systematically lists the full range of progressions by interval size, all relating to the same tonic chord. In the first, shown in Table 4.1, the order of presentation does not depend on interval size, but rather on the importance in the key of the chords which are related. There are two main classes of connection, which I will label for purposes of clarity. The first class (1) contains intervals which connect the primary chords (*Hauptklänge*). The second class, which contains intervals associated with secondary chords (*Nebenklänge*), has two subclasses. The first (subclass 2a) contains intervals connecting a primary and a secondary chord. The second (subclass 2b) contains intervals generally connecting two secondary chords. The subclasses are unspoken – Riemann does not directly identify or distinguish them – but the *Nebenklänge* presentation is divided into two parts along their lines, and text and especially examples do implicitly point to the distinction. The intervals belonging to each class are listed in Table 4.1.[21]

Each interval is given two forms, one in relation to a major tonic, and one in relation to a minor tonic. This is a necessary concomitant of the dualistic approach, which produces directed intervals which go in opposite directions from major and minor.[22] Here and in all of Riemann's systematic presentations, mirror-image systems are generated. For the most part, the dualistic properties of the minor systems result in readings of chords and chord relations which appear inaccurate to us. In

[21] Table 4.1 is compiled from the *Skizze*, pp. 10–27. I have retained Riemann's manner of identifying chords by name of root and symbols for major ($^+$) and minor (°), in which minor triads are identified by their uppermost member. However, here and in later examples, I have changed the two German note names *b* and *h* to their English equivalents *b*♭ and *b*.

[22] Mooney, "The 'Table of Relations'," ch. 2, provides a detailed study of dualism in Riemann's theory.

further examples drawn from Riemann in this chapter and the next, I choose for the sake of clarity to include only the major systems, referring to the minor ones only when they are relevant.[23]

The thirteen root-interval relations shown in Table 4.1 do not specify the complete range of interval relations. Riemann lists only three of the four possible types of fifth relations, and only two (the plain forms) of most other intervals. Nonetheless, the table illustrates the peculiarities resulting from the intersection of Riemann's root-interval system and his dualistic treatment of minor: the *Tritonuswechsel*, for example, joins chords which to us are linked by interval of a diatonic semitone. Not only is this terminology confusing; it also handicaps any attempt to meaningfully classify root-interval relations with relation to actual size. A Riemann class of tritone relations, for example, would group the plain tritone progression C major to F♯ major with the semitone change progression F major–E minor, even though these two progressions have little to do with each other in a practical sense. The effect of this approach becomes more pronounced in Riemann's second presentation, discussed directly below. The organizational principle of the Table 4.1 system, based on triads' status within the key as primary or secondary harmonies, also works against classifying progressions by root-interval size, even without the presence of the deforming aspects of change progressions. For example, plain whole-tone progressions occur in classes 1 and 2a; plain major- and minor-third progressions and leading-tone progressions occur in classes 2a and 2b.

Yet another marked irregularity compromises the systematic aspect of Riemann's directed intervals: both the *Kleinterzschritt* and the *Leittonschritt* have plain forms which move downward instead of upward. Riemann's reasons differ. For the minor third, he asserts that the interval is a lesser manifestation of the acoustically superior major sixth, which must serve as the exemplar. For the semitone, he asserts that its leading-tone quality gives the second chord in the relation the weight of a tonic; the progression therefore must be contrary, since the plain progressions move away from a tonic, while contrary ones move toward a tonic. These quirks further disrupt the regularity of the classification scheme and the explanatory power of the root-interval scheme. For example, it becomes woeful to envision the class of all third relations, since major and minor third relations of similar quality move in opposite directions. Table 4.2 shows how the eight mediants associated with a major tonic fare in this classification scheme.

Riemann's system makes it difficult to consider these third relations as a group. Those at (1), (2), and (6) are discussed under the heading of *Terzschritte*, while those at (3), (4), and (8) are discussed under *Kleinterzschritte* and assigned directions opposite to the actual ones. The remaining two, (5) and (7), are classified as step progressions. But the subgroup of chromatic mediant relations may nonetheless be specified: they are all

[23] Disregarding the dualistic minor systems is not an optimal solution, since minor chords in the major systems have only the status of *Scheinakkorde*. But this significantly reduces complexity of presentation, and since chromatic third relations of either mode do not involve any mode change, this narrowing of scope will be acceptable. Most importantly, Riemann's own discussions of chromatic third relations treat the major mode exclusively.

Table 4.2. *The eight third relations from a major tonic as expressed in Riemann: root-interval system*

Mediant progression		Riemann term	Actual root relation	Riemann root relation
1) USM	e.g. c^+–e^+	*schlichte Terzschritt*	M3 up; plain	M3 up; plain
2) UFM	e.g. c^+–$e\flat^+$	*Gegenkleinterzschritt*	m3 up; plain	m3 up; plain
3) LSM	e.g. c^+–a^+	*schlichte Kleinterzschritt*	m3 down; plain	m3 down; plain
4) LFM	e.g. c^+–$a\flat^+$	*Gegenterzschritt*	M3 down; plain	M3 down; plain
5) URM	e.g. c^+–°b	*Leittonwechsel*	M3 up; change	m2 down; change
6) LRM	e.g. c^+–°e	*Terzwechsel*	m3 down; change	M3 up; change
7) UDM	e.g. c^+–°b♭	*Gegenganztonwechsel*	m3 up; change	M2 down; change
8) LDM	e.g. c^+–°e♭	*Gegenkleinterzwechsel*	M3 down; change	m3 up; change

Table 4.3. *Root-intervals of a third in Riemann's system*

Plain progressions	Actual root-interval	Change progressions	Actual root-interval
Terzschritt	Major third up	*Terzwechsel*	Minor third down
Gegenterzschritt	Major third down	*Gegenterzwechsel*	Semitone up
Kleinterzschritt	Minor third down	*Kleinterzwechsel*	Whole tone up
Gegenkleinterzschritt	Minor third up	*Gegenkleinterzwechsel*	Major third down

the plain *Terz-* and *Kleinterzschritte* – progressions without mode change, expressed straightforwardly. Table 4.3, listing all of the relations in Riemann's system which do specify the interval of a third, makes this clear. Despite the opposite directions of the major-third and minor-third intervals, and despite the unusual "thirds" created by the relation of the roots of major triads to the roots of dualistic minor triads, the chromatic third relations are manifest as the plain progressions. Riemann is thus able to refer to this class informally as the *Terzschritte*. He never, however, defines a formal class including the four chromatic mediants. This may have been due in part to his perception of a difference in power between the major- and minor-third mediants.

Riemann's second *Skizze* presentation of the root-interval system becomes the norm for all succeeding harmony treatises. This time he systematically examines every possible root relation and gives examples of each in relation to the same tonic. He explains his approach by noting its difference from older conceptions of key restricted to the scale, and reasserts his notion of chromatic tonality:

> its realm is wider and its boundaries are sharply drawn anew. In a word: Key is nothing greater than the meaning of a chord in relation to its tonic. The key is left as soon as this meaning changes, which can happen without the introduction of a chromatic tone. The modern name for this notion of key is: *Tonalität*. We are in C major so long as the C major triad . . . appears as the sole cadence-worthy chord, and all other chords get their specific effect and meaning through their connection with this tonic . . .[24]

[24] Riemann, *Skizze*, p. 70.

Table 4.4. *Skizze: systematic root-interval system*

	Root-interval progressions	In major		Root-interval progressions	In major
I	*Seitenwechsel*	c^+–°c			
II	*schlichte Quintschritt*	c^+–g^+	V	*schlichte Ganztonschritt*	c^+–d^+
	Gegenquintschritt	c^+–f^+		*Gegenganztonschritt*	c^+–b♭$^+$
	Quintwechsel	c^+–°g		*Ganztonwechsel*	c^+–°d
	Gegenquintwechsel	c^+–°f		*Gegenganztonwechsel*	c^+–°b♭
III	*schlichte Terzschritt*	c^+–e^+	VI	*schlichte Leittonschritt*	c^+–b^+
	Gegenterzschritt	c^+–a♭$^+$		*Gegenleittonschritt*	c^+–d♭$^+$
	Terzwechsel	c^+–°e		*Leittonwechsel*	c^+–°b
	Gegenterzwechsel	c^+–°a♭		*Gegenleittonwechsel*	c^+–°d♭
IV	*schlichte Kleinterzschritt*	c^+–a^+	VII	*schlichte Tritonusschritt*	c^+–f♯$^+$
	Gegenkleinterzschritt	c^+–e♭$^+$		*Gegentritonusschritt*	c^+–g♭$^+$
	Kleinterzwechsel	c^+–°a		*Tritonuswechsel*	c^+–°f♯
	Gegenkleinterzwechsel	c^+–°e♭		*Doppelterzwechsel*	c^+–°g

Thus chromatic as well as diatonic chords may relate directly to a tonic, as long as they reinforce its supremacy. Riemann lists them all and considers the varying strength of their relations to the tonic. As in the earlier presentation, the sequence of intervals is organized not by increasing size (e.g. minor second, major second, minor third, etc.) but by strength and primacy of progression. The complete root-interval classification system outlines a range of twenty-five possible harmonic progressions (Table 4.4).[25] In Riemann's scheme there can be only one form of progression with stationary root: mode change. The other six interval sizes involve four progressions each: plain, contrary, plain change, and contrary change. This format yields a considerable improvement over the first presentation, although it retains the effects of dualism.

Succeeding presentations of harmonic progressions in the *Musiklehre* and the *Katechismus* follow the systematic root-interval format of this *Systematik der Harmonieschritte*, with the exception that Riemann elevates the *Seitenwechsel*, calling it the most "easily understood of all progressions" on account of the stationary root it exhibits in his system.[26] This peculiar claim is at variance with the *Skizze*, which more sensibly, if less dogmatically, identifies the plain fifth progressions (*schlichte Quintschritt*, I–V, and *Dominantschritt*, V–I) as the most easily understood.

In the *Skizze*, Riemann makes clear that not all root-interval progressions are equal in power and clarity. He outlines a more limited range of chord progressions which he feels are directly intelligible without the mediation of a more closely related chord. These progressions, he explains, are the ones which may involve direct opposition to the tonic "without any endangerment of the key," despite the chromatic content

[25] Table 4.4 is compiled from the *Skizze*, pp. 70–81.

[26] *Musiklehre,* p. 115. Riemann's deadpan example of this "most easily understood progression" is the one leading from a C major triad to an F minor triad.

which some of them display.[27] Only sixteen of the twenty-five chord relations of the *Systematik* survive in this list: all of the fifth relations, all of the third relations, and some step progressions. Chord relations such as those by tritone are excluded, without justification.

One must look to the *Musiklehre* for Riemann's explanation of the greater closeness and intelligibility of this subset of all possible root-interval relations:

Common tones are, of course, of particular significance for the easy understanding of harmonic progressions.[28]

He enumerates all progressions containing two common tones and those containing only one.[29] These form the full range of common-tone progressions possible from a tonic: parallel and relative modes, major and minor dominants and subdominants, and all four chromatic mediants.[30] With this presentation, Riemann identifies himself with the common-tone tradition of Marx and Hauptmann, whom he clearly admired.[31] Like Marx, Riemann's theory reached beyond, also allowing for direct progressions without common tones, which he simply considered less intelligible.[32] But his basic model at this point is one of common-tone tonality.

4.4 *TERZSCHRITTE* IN KEY RELATIONS AND MODULATION

In the *Skizze*, key relations and modulation prompt a further winnowing of the list of intelligible direct relationships:

The relationship of keys is to be judged by the relationship of tonics. Closely related keys are hence those whose tonics are directly intelligible in relation to the principal tonic . . .

Here Riemann provides another, shorter list of only ten keys: the parallel mode and *Seitenwechsel*, the dominant and subdominant, the two relative mediants, and all four chromatic mediants. He continues:

The old teaching of key-relations took only the nearness to the harmonic center as criterion for the degree of relation, and came thereby to the result, contradictory to compositional

[27] *Ibid.*, pp. 83–84.

[28] Riemann, *Allgemeine Musiklehre* [*Katechismus der Musik*] (Berlin: Max Hesse, 1888), p. 68.

[29] Two common tones: *Quintwechsel*, *Terzwechsel*, and *Leittonwechsel*. One common tone: *Seitenwechsel*, *Gegenquintschritt*, *schlichten-* and *Gegenterzschritte*, *schlichten-* and *Gegenkleinterzschritte*, *Ganztonwechsel*, and *Doppelterzwechsel*. In what is clearly an oversight, the *schlichte Quintschritt* is missing from the list.

[30] Riemann also includes the peculiar semitone change relation, the *Doppelterzwechsel*, included in Table 1.1, noticed by Marx, and named SLIDE by David Lewin in *Generalized Musical Intervals and Transformations* (New Haven: Yale University Press, 1987); see below chap. 6. However, it figures in none of his many other lists of close harmonic relationships.

[31] Riemann's admiration of Marx extended to revising Marx's *Die Lehre von der musikalischen Komposition* during this period, between 1887 and 1890; c.f. Ian Bent, *Analysis* (New York: W. W. Norton, 1987), p. 30.

[32] Marx (see above, section 3.5) attributed the intelligibility of unconnected chords to context.

practice and the feelings of musicians, that, for example, the keys of the second fifth (whole-tone relations) must be more closely related [to the tonic] than the homogeneous group of keys of the thirds. This was the necessary consequence of the derivation of the notion of keys from scales. Today this erroneous view has been definitively overturned, since our composers, in defiance of foot-dragging theory, have again and again placed the third-related keys directly in opposition to the tonic.[33]

Riemann makes no attempt here to characterize the mediants as tonic or dominant substitutes. Rather, he states in no uncertain terms that, like the dominants, chromatic mediants are a separate type of progression which may support direct and meaningful key relation to the tonic. Within his system of root-interval relations, Riemann has found a way of formulating ideas concerning the mediants expressed more generally in *Die Natur der Harmonik*.

A more directed and detailed discussion of modulation occurs in the *Systematische Modulationslehre*. Riemann's first subject is *Tonalitätssprünge*, or key-leaps:

The simplest form of change of key is the key-leap, that is, a cadence in the first key followed, unmediated, by a beginning in the new key.[34]

By starting with a treatment of this sort of abrupt modulation and dealing with traditional modulations afterward, Riemann departs significantly from the usual practice of theorists who preceded him. The more common presentation of modulation began with the *smoothest* form, i.e. progressive modulation to closely related keys, followed by similar modulations to more distant keys, and finally, in some treatises, modulations unmediated by intervening chords. These last, generally considered the roughest type, were frequently accompanied by admonitions warning against their too liberal use. The criterion ordering these presentations is one of musical taste: the most felicitous modulations come first, with the rest presented in decreasing order of smoothness.

Riemann's discussion of modulation, in contrast, begins with the *simplest* form: one tonic following another. His treatment is exhaustive: rather than restricting himself to the keys closest to the tonic, or to those associated with the degrees of the diatonic scale, Riemann details direct modulation to every possible key, characterizing each key-leap by the directed intervals separating its tonics.[35] Riemann provided examples from the standard literature for many of these modulations. For several of the remoter relationships, however, Riemann was unable to find examples extant in the literature. Undeterred, he composed his own musical examples to represent well-formed instances of direct modulations.[36] His overall approach is taxonomic

33 Riemann, *Skizze*, pp. 85–86.

34 Riemann, *Systematische Modulationslehre als Grundlage der Musikalischen Formenlehre* (Hamburg: J. F. Richter, 1887), p. 67.

35 Thus, for example, Riemann's examples of the key-leap involving a *Gegenquintwechsel* or contrary fifth progression connect the keys of F major and B♭ major (down a fifth), and G minor and D minor (up a fifth). *Ibid.*, p. 70.

36 Out of the twenty-seven key-leaps Riemann details, fully fifteen are labeled *Beispiele fehlen*. These include some fairly close relationships (such as A minor to D minor and E major) as well as relations by step, third, and tritone.

yet idealistic, concerned less with reflecting musical practice than with systematically outlining technical aspects of key change. The criterion ordering his presentation is scientific and objective, examining phenomena from the simplest to the most complex, with lesser regard to characteristically musical attributes such as smoothness and plausibility. Oddly, the category of directly intelligible progressions which he describes in the *Skizze* does not come into play here. Riemann does not treat third relations as a separate group of key-leaps, but rather individually by the root-interval rubrics discussed above. In any case, since he allows any and all key-leaps, regardless of their presence or absence in actual music, Riemann can say nothing at this point about the particular harmonic behavior of any class of harmonic relation.

Riemann's 1890 *Katechismus* discussion of modulation recalls the *Modulationslehre*, in that he begins with direct, unmediated key-leaps. This newer discussion is, however, much refined. In the *Katechismus* Riemann restricts allowable key-leaps to a short list of ten root-interval relations joining those keys which can be directly related in modulation by the immediate, unmediated succession of their tonic triads. This distilled list contains only fifth relations, parallel and relative mode change, and all four chromatic third relations.[37] This exactly follows the list of first-order key relations which Riemann introduced back in the *Skizze*, and the list of common-tone relations of the *Musiklehre*, but which he ignored in the bloated key-leaps discussion of the *Modulationslehre*. The correspondence between the *Skizze* list and the concept of key-leaps is an obvious and logical one, and it is good to see Riemann in the *Katechismus* rectifying the taxonomic excesses of the *Modulationslehre*.

Finally, in the *Musiklehre*, Riemann considerably tightens his criteria for close relation of chords and keys. For the closest *chord* relations, Riemann presents the *Skizze* list which had originally specified ten closely related *keys*. For *key* relation, Riemann repeats his *Skizze* assertion that the quality of key relations derives from the quality of the relation between tonics. He goes on to specify an even shorter list of only seven keys having the very closest relation to a tonic. For C major, Riemann lists C, A, and E minor, and G, F, E, and A♭ major: in other words, the parallel and relative minors, the plain fifth-related keys, and the plain major-third-related keys.[38] This brings the chromatic major-third mediants into the innermost circle of direct harmonic relations, closer than the minor-third mediants and even the fifth-change keys.

[37] Riemann, *Katechismus der Harmonielehre* (Berlin: Max Hesse, 1890), p. 116. Riemann does not, however, draw on the common-tone explanation of chord progression introduced in the *Musiklehre*, perhaps because this would oblige him to include the distant *Doppelterzwechsel* relation.

[38] Curiously, although Riemann mentions the *Seitenwechsel* in his discussion of these relations, the list of the names of closely related keys which immediately follows does not include it. (In C major, the *Seitenwechsel* key is F minor.) This omission survives at least into the second (1897) and third (1902) editions of the book. The *Katechismus* of 1890 lists the *Seitenwechsel* relation as the closest of all. In practice, though, the key of the minor subdominant is not as common as the ones which Riemann does list. The omission thus seems to have practical substantiation, although it is questionable, given Riemann's propensity for systematic completeness over empirical concerns, that it was deliberate.

his	fisis	cisis	gisis	disis	aisis	aisis	hisis	f♯♯♯
gis	dis	ais	eis	his	fisis	cisis	gisis	disis
e	h	fis	cis	gis	dis	ais	eis	his
c	g	d	a	e	h	fis	cis	gis
as	es	b	f	c	g	d	a	e
fes	ces	ges	des	as	es	b	f	c
deses	asas	eses	heses	fes	ces	ges	des	as
♭♭♭h	feses	ceses	geses	deses	asas	eses	heses	fes

Plate 4.1 Riemann's early *Tonnetz*

The *Musiklehre* also contains a grid-like diagram or *Tonnetz*, borrowed directly from Öttingen.[39] Riemann states that it "serves as an easy orientation to the relationships between pitches, chords, and keys. Every horizontal progression is a *Quintschritt*; every vertical progression is a *Terzschritt*."[40] Unlike some of Riemann's more detailed theoretical explanations, this image projects a literal analogy between harmonic relations at all levels. The resulting hierarchical system (Plate 4.1) is more straightforward than Hauptmann's (Fig. 3.1); Riemann's single diagram can be read at all levels. Needless to say, the fact that the grid relies solely on fifth and major-third relations is a significant gesture toward affirming the identity of the latter and their important role in the workings of the tonal system.

4.5 *TERZSCHRITTE* WITHIN THE KEY

While Riemann is often unequivocal in recognizing the clarity and directness of chromatic mediant relations which join keys, he is more reserved about those which occur within a key. In the *Skizze*, Riemann first discusses this type of *Terzschritt* during the initial root-interval presentation. He notes that *Terzschritte* first arose between secondary harmonies within a key (as in Table 4.1), and thus were not pure, but that eventually they came to involve the tonic. In such cases,

> when we move away from the tonic itself by plain and contrary third-progressions, do we come to know their meaning as fully in accordance with that of the plain and contrary fifth relations.[41]

[39] Öttingen's diagram (entitled *Buchstaben–Tonschrift*) and harmonic theory are considered in detail by David Bernstein, "Symmetry and Symmetrical Inversion in Turn-of-the-Century Theory and Practice," in *Music Theory and the Exploration of the Past*, ed. D. Bernstein and C. Hatch (Chicago: University of Chicago Press, 1993), pp. 382–388. See also Harrison, *Harmonic Function*, pp. 242–251. Richard Cohn, in "Neo-Riemannian Operations, Parsimonious Trichords, and their *Tonnetz* Representations," *Journal of Music Theory*, 42, 1 (Spring 1997), p. 7, discusses the origins of the *Tonnetz*. Compare this version with Weber's (Plate 3.4, which combines fifth and third relations but does not integrate them), and Rameau's (Plate 3.1, which it more closely resembles, although Rameau's is purely abstract).

[40] Riemann, *Allgemeine Musiklehre*, p. 69. [41] Riemann, *Skizze*, p. 26.

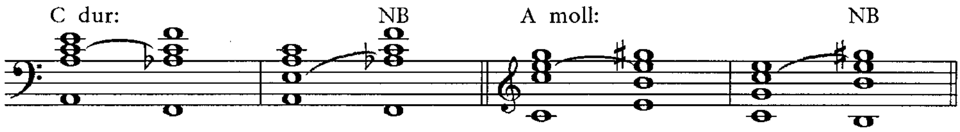


Plate 4.2 *Skizze*: good and bad chromatic third relations

I take Riemann to mean that the third relations he describes relate to the tonic in a manner similar to that by which fifth relations relate to the tonic.[42] He makes a very clear analogy, explicitly equating the direct, integral nature of chromatic mediant progressions with that of the dominant progressions.

Riemann goes on to note the importance of conjunct voice motion in these progressions. He reminds the reader that cross relations are avoided by introducing the altered tone into the same voice which contains its diatonic precursor, and provides the example shown in Plate 4.2 giving two possible voice-leading scenarios.

Riemann's comments neatly characterize the prime features of chromatic mediants:

A voice-leading as at NB would be chosen only very exceptionally, for it employs none of the natural means of connection (common tone, leading-tone progression, chromatic succession), but rather it leaps in all voices.[43]

Following the presentation of the *Systematik*, Riemann goes on to introduce the kernel of the idea central to his theory of function, claiming that altered chords must be considered not as borrowings from other related keys, as other theorists had done, but as chords which draw meaning from *Tonalität*, through which their chromatic elements are interpreted as variants or members of, for the most part, the three primary diatonic triads.[44] He gives an example containing a *Terzschritt* joining a tonic C major triad to an A♭ major triad, followed by a cadential return to C major (Plate 4.3). Riemann first shows a conventional analysis which requires calling on four keys to make sense of the progression as a series of diatonic chords. He then provides an alternate analysis (the bottom line of the figure) which interprets the progression within the context of a single key, avoiding the customary resort to modulation to explain chromaticism.

He notes that his approach requires a stiff demand:

to understand the *Gegenterzklang* of the tonic as a tonic with lowered third and suspended minor sixth. The very closely linked concept, that third relations of chords exist alongside fifth relations, is quite new, although it has already begun to appear in the common consciousness . . .[45]

[42] This passage could, I suppose, also be taken to mean that the chromatic major-third relations are acting as substitutes for the principal fifth relations. However, this interpretation is erroneous: it is substantiated nowhere else in the *Skizze*, nor does it figure in the functional theory of the 1890s.

[43] *Skizze,* p. 26. [44] *Ibid.*, pp. 67–69. [45] *Ibid.*, p. 68.

C:	I	—	—	V^7	I
f:	V	III	—		
c:		VI	—	V^7	
g:			V^7		
C:	c^+	$\begin{smallmatrix}6>\\3>\end{smallmatrix}$	$f^{1<}_{6}$	g^7	c^+

Plate 4.3 *Skizze*: progression with *Terzschritt*

In this manner Riemann accomplishes the integration of key-preserving chromatic third relations into formal harmonic analysis. However, the exact harmonic status he accords them is not perfectly clear. Judging by the analysis alone, we might well conclude that Riemann considers the A♭ major chord (and by analogy, every chromatic mediant) to be a variety of tonic, and therefore not an independent harmonic entity.[46] But every other statement that Riemann makes in the *Skizze* concerning third relations indicates the contrary – that third relations oppose chords to the tonic. This is even true of the explanation accompanying this very analysis, in which Riemann draws attention to the fact that his interpretation leads to the acceptance of mediant relations as a class of direct relations to the tonic, along with the class of fifth relations. That is, although he *explains* the A♭ major chord as a variant of C major (not the same as calling it Tonic), he *understands* the A♭ major chord to be in relation to the C major chord in much the same way as the G major chord relates to it later in the example.[47] His earlier statements regarding the similarity of effect of third relations and fifth relations bolster this interpretation. As early as *Musikalische Logik,* Riemann had expressed the earnest belief that the chromatic mediant relations possessed the attribute of direct relation to the tonic. That he defines A♭ major here as a version of C major may not have been so much to demonstrate that chromatic mediants are really just "tonics" as to underscore their identity within the key. His text demonstrates that he was more concerned to justify chromatic mediants as meaningful in and of themselves than he was to rationalize them as derivative entities. Accordingly, he interpreted his own altered-tonic explanation as accomplishing this aim, despite what it may seem to represent.[48]

[46] Riemann ultimately calls this chord a subdominant variant in his functional theory; see below, Figure 4.2.

[47] Harrison, *Harmonic Function*, p. 276, discusses this example and concludes that Riemann interprets the A♭ major chord to be essentially a C major chord; therefore "the harmonic progression thus basically boils down to a traditional C–F–G–C cadence . . ." But Riemann's text makes it quite clear that the A♭ major chord is a focal point of interest in the progression, and that he interprets A♭ major to be in third relation to C major, not in substitution for it. The analytic symbols inadequately reflect Riemann's emphatic point.

[48] At another point in the *Skizze*, during the *Systematik der Harmonieschritte*, Riemann discusses each root-interval type separately, with a directed discussion treating each individual chromatic third relation in depth, and comments

Plate 4.4 *Musik-Lexicon*: progression with two chromatic mediant relations

Another work from the prodigious theorist, the *Musik-Lexicon* of 1882, contains an even stronger statement of the validity of major-third mediants within the key. Riemann presents a simple cadential progression of five chords reminiscent of Plate 4.4.[49] But where the *Skizze* progression, after going from tonic C major to A♭ major, returned back to C by a cadential progression (cadential $^6_4$–V–I), the *Musik-Lexicon* progression goes on to trace two bare chromatic mediant moves with no intervening chords: C major–A♭ major–C major–E major–C major (Plate 4.4). This progression forms the sole example in the *Lexicon* which Riemann uses to represent his concept of *Tonalität*. He asserts the integrity of the key throughout the progression, and hence the direct intelligibility of these chords:

> Thus the C major tonality is in control as long as the harmonies are understood in their relation to the C major chord . . . the old harmonic practice is incapable of defining this progression in terms of a single key; in terms of C major tonality it is Tonic–*Gegenterzklang*–Tonic–*schlichter Terzklang*–Tonic.[50]

The *Musik-Lexicon* explanation, couched in the terms of the root-interval theory rather than the nascent functional idea behind the *Skizze*'s explanation of a less exotic progression, allows for the straightforward and unequivocal expression of the chromatic mediants' identity. This disparity between the two approaches continued to affect Riemann's arguments over time: the root-interval theory would always be the more amenable to characterizing chromatic mediants. As I will show in section 4.9 below, Riemann's difficulty in accounting for direct chromatic mediants within functional theory caused him to moderate his advocacy of them.

The *Katechismus* of 1890 contains several sections wholly dedicated to the subject of chromatic third relations (*Terzschritte*). The first of these discussions concerns *Terzschritte* taking place within a key. It is worth quoting much of this lengthy

on the strength of each variety. Here Riemann concludes that all four chromatic third relations are easily intelligible and that all possess cadential power in direct relation to a tonic.

49 The *Musik-Lexicon* progression is also cited by Avo Somer, "Chromatic Third-Relations and Tonal Structure in the Songs of Debussy," *Music Theory Spectrum*, 17, 2 (Fall 1995), p. 215.

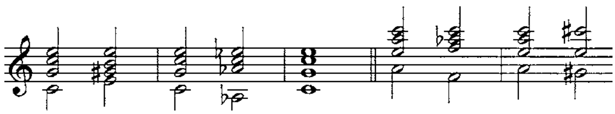
50 Riemann, *Musik-Lexicon* (Mainz: B. Schott's Söhne, first ed., 1882), p. 923. This passage is discussed by Carl Dahlhaus, *Studies on the Origin of Harmonic Tonality*, trans. Robert Gjerdingen (Princeton: Princeton University Press, 1990), p. 8. The example survived into the eleventh, 1929 edition of the *Musik-Lexicon*. The twelfth edition of 1967 substitutes an article by (ironically) Dahlhaus which completely eliminates the reference to chromatic mediants.

passage, which forms Riemann's principal discussion of their underlying mechanism. He begins by noting that the principal chord form, the major triad, contains the interval of a major third along with the perfect fifth, which is the principal interval of root relation. Addressing the question of whether the major third can also sustain direct harmonic motion, Riemann replies:

This question is to be answered with an unconditional yes . . . The principal meaning of third relations at its clearest and most indisputable stands out when, in cyclic forms (sonatas, symphonies), a free-standing middle section in a third-related key is set against [the tonic], or also when a second theme of a movement enters in such a key. If E or A♭ major are understandable and in excellent relation to (or rather in between) C major, then there is only a single explanation, that a connection by third relation is to be understood between the two tonics. Marx also puzzled over why it is that E major and A♭ major seem less foreign than D major and B♭ major; earlier theorists simply judged key relations only through fifth-intervals!

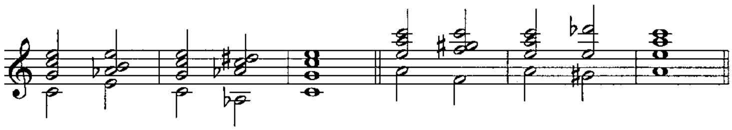
Hereupon one must also think that within the same key, i.e. as long as one and the same tonic is regnant, third-related chords can be introduced alongside fifth-related chords and must be easily understood; but this is only under certain conditions of succession. In the following progression, written as:

(a)



one will more or less always feel the inclination to hear it as:

(b)



and indeed with good reason, as we will prove. For the chromatic progression always appears to us as an alteration, a coloring of the same tone: the scale step remains, only the tendency of the tone to rise or fall changes or heightens. Now, consequently one can inspect the examples:

(c)

In each case the same tone colors itself twice, appearing to wish to rise or fall, changing its mind and bringing itself back again. It could certainly be due to an inadequacy of our tonal system, to be constrained in this way by our notation; yet this is doubtful for several reasons. In the first place the chromatic progression is really more harmonically complicated and more difficult to understand than the diatonic semitone; for the latter it is the relation of a tone to the third of its fifth (above or below).

(d)

In contrast, the chromatic progression is the relation of the fifth to the third of the third (above or below) or the third to the underthird of the fifth.

(e)

It is therefore not remarkable that in simple melody the ear always inclines to understand diatonic progression in the place of chromatic progression. In settings involving more voices, the melodic principle, when possible, also asserts itself; then – and this is the main point – the chromatic progression yields to the line of the plain melody; it has no place in the simple scale which has underlain melody since primeval times. Certainly both reasons are at bottom the same, namely that the chromatic progression is just not simple enough. For this reason it is quite logical that the progressive development of musical culture through different times has evolved from the plain diatonic to the chromatic; that is, it has learned to make use of the chromatic semitone along with the diatonic one, as, in primitive times, the whole tone gave way to the semitone as the smallest melodic interval.[51]

In this discussion, Riemann asserts that the chromatic semitone motion implicit in the *Terzschritte* is the element which renders these progressions difficult to understand within a single key. His solution is to propose that the chromatic semitone is actually perceived as a diatonic step. Nonetheless, he takes great pains to insist on the harmonic integrity of the third relation, noting that while the chromatic semitone may be heard to some extent as a diatonic one, the scale step of the corresponding chord is not affected.[52] Thus the *Terzschritt* operates directly as a chromatic third relation, while the strain of chromaticism is mollified by the ear's more linear interpretation. By this explanation Riemann does not redefine the meaning of either of the harmonic elements of the progression. Nor does he cite the necessity of understanding any intervening chord or tone in order to make sense of the progression. Instead, he builds on the idea that melodic considerations are heightened in the absence of the strongest harmonic connections. There is something potentially troubling about a notion of a direct harmonic relationship between triads which requires the enharmonic respelling of the third of one of the triads. This would appear to negate the harmonic identity of the altered triad, and disturbs Riemann somewhat. By another token, though, he is perhaps constrained by notational norms and concepts of pitch identity. In his examples, harmony and counterpoint would seem to be at odds – e.g. harmonic G♯ vs. linear A♭ in the E major triad related to C major. But, since the progressions are intelligible, harmony and counterpoint must be in balance at a higher level – neither G♯ nor A♭ but a synthesis of the two, a true chromatic pitch with an identity superseding the details of diatonic alteration. There is no ready name for a super-pitch like this, but its quality is described by Hauptmann.[53]

[51] Riemann, *Katechismus der Harmonielehre*, chap. 2, p. 38. Riemann's mention of Marx with regard to third relations harks back to the *Natur der Harmonik* of 1882. But where the earlier treatise cites chromatic major- and minor-third relations alike, the *Katechismus* at this point only mentions major-third relations.

[52] Thus in the case of the progression from a C major triad to an E major triad, the G♯ may be heard in some way by the ear as an A♭, but this does not mean that the *Stufe* (by which I take Riemann to mean the root of the chord) is correspondingly reinterpreted as an F♭ (which would yield a diminished-fourth progression). The root remains E, against which, along with the chord tone B, the A♭ appears to some extent as a coloration.

[53] Gregory Proctor, in "Technical Bases of Nineteenth-Century Chromatic Tonality," proposes the idea of such a super-pitch; see below, section 5.6.

In subsequent discussion, he qualifies his position, saying that the chromatic mediants more readily resolve to other chords than directly back to their tonics. These are idealized mediating chords which regularize the chromatic tones by preserving them or by continuation through passing motion. They are not meant to be taken as examples of the regular, properly notated behavior of *Terzschritte* in music.[54] Riemann concludes that these third relations are of uneven value at different levels:

harmonically they are fully comprehensible and extremely effective; melodically, though, they act as an impediment . . . thence *Terzschritte* and *Kleinterzschritte* are very important agents for modulation, while for motion within the same key they only become partly understood.[55]

Thus in contexts within a key, Riemann now shies away from giving the *Terzschritt* full-fledged harmonic status: the ability to relate directly to the tonic, both coming from and going to. He is happy with the coming from; the going to, however, is not the most direct route leading from the *Terzklang*, and a direct return to the tonic is not effortlessly understood. This is partly the result, he says, of the effect of the doctrine of *Scheinkonsonanzen* (see p. 85): chords may have harmonic identity but still tend to be heard as manifestations of more primary harmonies. The case shown in the *Skizze*, in which an A♭ major triad is interpreted as an altered C major tonic (Plate 4.3 above), is relevant here: the lower flat mediant, indubitably a *Terzklang*, partakes of tonic quality, yet there is clearly considerable harmonic change in the progression. This conflict between the discreteness of harmonic identity and the generality of functional quality becomes most apparent in the case of the chromatic third relations, and bedevils Riemann in subsequent discussions of the topic:

This attempt to reduce the essence of harmonic movement to a few primary progressions is of the greatest importance; without it, an integrated summary of larger musical structures is hardly possible; but on the contrary, a constant [harmonic] swinging back and forth must be allowed.[56]

A brief discussion of minor-third chromatic mediants follows, with a similar conclusion:

as pure harmonic effects they are possible and good; melodically they are not greatly worthwhile . . .[57]

Although he treats them separately here, Riemann makes no distinction between the relative strength and worthiness of the major-third and minor-third mediants; all of the chromatic mediants are harmonically pure and direct, but problematic as melodic entities thanks to their implicit chromatic semitone motion.

[54] Riemann, *Katechismus der Harmonielehre*, p. 40. [55] *Ibid.* [56] *Ibid.*, p. 41. [57] *Ibid.*

Table 4.5. *Riemann: modulatory third progressions, showing degrees of modulation (combined for sets of three modulations beginning from tonic, dominant, and subdominant)*

Riemann Example	Basic *Terzschritt* from tonic	Mediant Prog.	Degrees of Modulation[1]	Vehicle of Coherence	Cadence Type
①	$c^+ - e^+ - {}^\circ e$	USM	$1\flat - 1\sharp$; change	*Terzschritt* itself	Authentic
②	$c^+ - e^+ - a^+$	USM	$2\sharp - 4\sharp$	$III^+ - I^+ - V^+$	Authentic
③	$c^+ - a\flat^+ - e\flat^+$	LFM	$4\flat - 2\flat$	$3^+ - 1^+ - 5^+$	Plagal
④	$c^+ - a\flat^+ - d\flat^+$	LFM	$6\flat - 4\flat$	Leading tone prog.	Authentic
⑤	$c^+ - e\flat^+ - a\flat^+$	UFM	$5\flat - 3\flat$	$3^+ - 5^+ - 1^+$	Authentic
⑥	$c^+ - a^+ - e^+$	LSM	$3\sharp - 5\sharp$	$III^+ - V^+ - I^+$	Plagal
⑦	$c^+ - a^+ - f^+$	LSM	$2\flat - 0$	$5^+ - 3^+ - 1^+$	3rd divider
⑧	$c^+ - e\flat^+ - g^+$	UFM	$0 - 2\sharp$	$V^+ - III^+ - I^+$	3rd divider

4.6 *TERZSCHRITTE* INITIATING MODULATIONS: THE PROLONGATIONAL EXPLANATION

Riemann devotes yet one more *Katechismus* discussion to *Terzschritte*. This final discussion occurs in a section which focuses on longer modulatory progressions involving three or more chords, in which a *Terzschritt* initiates the move to the new key. It contains yet one more set of explanations for the coherence of chromatic third relations. These differ from all of the previous ones, being based neither on individual root-interval relations, nor on principles of function or *Scheinakkorde*. Curious and suggestive, they hinge on a surprising if short-range idea of prolongational process.

Riemann outlines eight types of progressive modulations involving *Terzschritte*. For each progression type, he presents six modulations: sets of three modulations initiated through tonic, dominant, and subdominant triads, for both major and minor keys. For clarity's sake, I have gathered just the modulations from a major tonic and their salient characteristics in Table 4.5.[58] As each modulatory progression contains a chromatic mediant relation, Riemann feels the need to provide a stronger justification for the coherence of the whole, even though the chords ending the *Terzschritte* are not tonics but rather subsidiary triads of the new key. In six of the eight progressions, the series of three roots traces a triad. For the first of these, ② in the chart, Riemann gives this commentary:

One observes that here the root of the chord to which the *Terzschritt* leads is the fifth (5 or V) of the chord which is produced by the three roots. This is not accidental and unimportant; rather it also shows us the way to view the *Kleinterzschritte* . . . Let us indicate the tonic notes with 1, 3, and 5, or I, III, and V, depending on whether they comprise together a major or a minor triad, and indicate with $^+$ or $^\circ$ the kind of triad standing on each tonic, as major or minor. Thus the case [above] is formulated as . . . $III^+–I^+–V^+$ (over-chord of the minor-third, over-chord of the minor tonic, over-chord of the minor fifth).

[58] Collected from the *Katechismus der Harmonielehre*, pp. 123–127.

This remarkable explanation is quite unlike anything else in Riemann to this point. Quite clearly he is claiming that the coherence of these progressions derives not only from the direct harmonic relationships of each component chord to its neighbor(s), but also in a fundamental way from the membership of each root in another triad which, not representing either key involved in the modulation nor even appearing on the surface, nonetheless provides the harmonic glue necessary for the coherence of a progression which very quickly passes between relatively distantly related keys.[59] This concept of the horizontalization of a triad in the bass serving as the framework for a progression of chords built atop each chord member is unquestionably a type of composing-out, even though none of the chords actually present in this progression is itself prolonged.

Table 4.5 shows that, out of eight groups of modulations, there are two groups for each of the four chromatic mediant types. As the column showing degrees of modulation indicates, these modulations, taken together, range to every possible goal key. Only four of the eight groups contain modulations terminating in authentic cadences; two others contain plagal cadences, and two contain third-dividers. Thus, although some of the *Terzschritte* in this section are progressions in which the second chord is nothing more than an auxiliary dominant of the chord that follows, other *Terzschritte* lead elsewhere; their constituent chords are less clearly subsidiary members of higher-level progressions. For Riemann these chromatic third relations are undeniably direct harmonic relations in the context of other relations. Although they do not always have the power to effect modulations on their own, they not only exist, but act as the defining elements of the modulatory processes outlined in this thought-provoking section of the *Katechismus*.

4.7 *SCHEINKONSONANZEN* AND *FUNKTION*

In the second chapter of the *Katechismus*, having described and named the tonic, upper-dominant and lower-dominant chords, Riemann introduces the concept of *Scheinkonsonanz*, or feigning consonance. He characterizes the minor diatonic triads occurring in the major key as elaborations of the principal three triads, brought about by the addition of a note to one of the triads and the concomitant suppression of one of the original notes. For example, he defines the A minor triad as either a tonic triad with added lower third and suppressed fifth [i.e. in his example, a | c e (g)], or as a lower-dominant triad with added upper third and suppressed root [i.e. (f) a c | e]. Which of these is the appropriate explanation depends on the chord to which the A minor triad progresses: if it goes to either of the dominants, then it derives from the tonic; if it goes to the tonic, then it is derived from the lower dominant.[60] The added

[59] For example, the succession of roots in the first progression spells out an A minor triad, a chord not otherwise implicated in the progression.

[60] The E minor triad may derive either from the tonic [(c) e g | b] or from the upper dominant [e | g b (d)]. The D minor triad derives only from the lower dominant [d | f a (c)]. Riemann defines the chord of the seventh degree as a completely different class: a *Scheineinheit*, or feigning unity, an incomplete, dissonant expression of the upper dominant with added seventh [(g) b d f].

note, which seems to produce a minor triad, is actually foreign, thereby dissonant to the underlying chord; it only seems to be consonant – a feigning consonance. Accordingly, a minor triad created through this process is not a genuine one, which is generated downward from its uppermost tone, but rather an artificial one, derived from one of the principal triads of the major key.[61]

In this way Riemann goes beyond simply distinguishing between the primary and secondary triads of a key, as did theorists before him. He delineates a precise mechanism whereby the secondary triads, completely derived from the primary ones, are shown not to be integral triads, but intermediary, composite forms.[62] His conclusion:

> There are only three functions of chords: those of the tonic, upper dominant, and lower dominant.[63]

While Riemann introduces the concept of harmonic function here by name for the first time, he does not yet provide the particulars of the fully worked-out functional theory. There are, for example, no function symbols here, and although Riemann gives a lengthy discussion of the particular ways in which the primary chords may be changed (addition of a dissonance; change of a diatonic step; chromatic alteration), this takes the form of a list of possibilities, rather than the systematic framework involving relative and leading-tone change chords which characterize the mature theory.[64] Riemann does provide the insight of a synonym for *Funktion – Bedeutung*, or meaning – which conveys the sense of a static property of a chord's abstract place in a key rather than that of a harmonic process involving a chord's role in music taking place within a key. The concept pervades the rest of the treatise mainly by the systematic presentation of progression types in threes – in relation to tonic, overdominant, and underdominant.[65]

4.8 *VEREINFACHTE HARMONIELEHRE*

Riemann's mature harmonic theory was unveiled in 1893 with the publication of *Vereinfachte Harmonielehre*, his best-known treatise. At this point his harmonic system displays two principal aspects. First, it remains dualistic: major and minor keys are

[61] *Katechismus*, pp. 22–23.

[62] Riemann goes so far as to locate these composite forms temporally in the ideal syntax of the archetypal cadential progression I–IV–V–I, or in the shorthand introduced in the *Modulationslehre*, *T–UD–OD–T* (*UD* = *Unterdominant*; *OD* = *Oberdominant*). With the addition of the chords containing *Scheinkonsonanzen*, this becomes:
T – c e g | h – c e g | a – *UD* – f a c | d – *OD* – *T*.
Or, in Roman numeral terms, I–iii–vi–IV–ii–V–I.

[63] *Katechismus*, p. 27. [64] See below, section 4.8.

[65] In a later work, Riemann mentions another writer, a Dr. Marschner, who claimed to be the first to introduce the reduction of all possible chords in a key to the three functions tonic, dominant, and subdominant. Riemann counters that he himself had used the terms in his teaching for several years prior to the publication of the functional theory in *Vereinfachte Harmonielehre* in 1893, and that it is fine with him if others think along similar lines. See Riemann, *Handbuch der Harmonielehre* (the *Skizze*, renamed), preface to the third edition of 1897.

understood as springing from separate, mirror-image mechanisms. Second, in this and later works Riemann propounds his doctrine of the three functions or pillars of harmony: tonic, dominant, and subdominant. He now maintains that these three are the only true, pure, directly meaningful chords in a given key, considerably reformulating the notion of secondary triads he held previously.

It will be useful here to summarize the principal aspects of Riemann's functional theory, which is considerably developed from the version presented in the *Katechismus*. According to *Vereinfachte Harmonielehre*, each of the three pillars of harmony embodies a primary meaning, or "function," which is associated not only with the chord as a whole but also with its component notes. These chords are defined by their root and the relation of the upper notes to that root; they are not stacks of intervals. Following Rameau, Riemann notes that the two dominants "are never perfectly consonant, in so far as they are always conceived and judged from the tonic," and therefore often "appear with additional notes which make their meaning still clearer . . ."[66] These notes are the familiar characteristic dissonances: the seventh above the dominant and the sixth above the subdominant. Riemann observes that each of these characteristic dissonances is a member of the opposite dominant function, thus rendering these chords entirely dissonant, although not affecting their primary functional identities.

All other chords, says Riemann, contain mixtures of notes belonging to more than one of the primary triads. A triad of this mixed variety, containing elements of two functional entities, nonetheless carries a single functional identity. In the greater part of cases it is the majority element – the one which contains two tones of its referent function – which determines the function of a mixed chord, although context may dictate otherwise.

Riemann defines two principal classes of mixed chord or *Nebenklang*, both of whose functions are determined by the majority element. These are the *Parallelklang*, or relative chord, and the *Leittonwechselklang*, or leading-tone change chord. Their functional designations involve an extra symbol indicating an impure status. Tp and °Tp indicate the relative chords associated with a major and minor tonic, respectively. $\mathrm{T}\!\!\!\!<$ and $\mathrm{T}\!\!\!\!>$ indicate the leading-tone change chords associated with a major and minor tonic, respectively. Similar symbols are associated with the secondary chords of the other functions, D and S.

The relative chord is a triad which contains the root and third of its functional archetype, but whose other tone is a substitution of the sixth for the fifth.[67] Relative chords are associated with each of the three functions. To distinguish between the

[66] Riemann, *Vereinfachte Harmonielehre, oder die Lehre von der tonalen Funktionen der Akkorde*, trans. anonymous as *Harmony Simplified* (London: Augener Ltd., 1896), p. 55.

[67] For example, a functional C major triad would have as its relative chord a triad containing the notes C and E, with A substituting for G. The resulting A minor triad is the tonic of the relative minor – thus *Parallelklang,* or "relative chord." For a functional C minor triad, which in the dualistic system is generated downward, and whose root is therefore its upper note, the relative chord would contain G and E♭, with a substitution of B♭ for C. In other words, it is an E♭ major chord, which is the tonic of the relative major. This is one elegant aspect of an otherwise cumbersome theory: by the concept of *Parallelklang*, each of the tonics of two relative modes is

functional natures of the three pillars and the relative chords, Riemann calls on the concept of *Scheinkonsonanz* (feigning consonance), first put forth in the *Katechismus*. He asserts that the sixth of the relative chord, in the case of both major and minor, is its characteristic dissonance. This characteristic note remains dissonant with the suppression of the fifth, so that while the *Parallelklang* is a seemingly consonant triad, it in fact contains a dissonance masquerading as a consonance: a feigning consonance. In major, the relative chord adds the sixth above and suppresses the fifth. For example, *S* in C major is [F A C]; adding a sixth gives [F A C D]; suppressing the fifth gives [F A D], the relative chord. In minor, Riemann explains, the relative chord of the dominant includes the note a sixth below the prime, or fifth of the chord; this note is also the seventh of the dominant in traditional terms. For example, *D* in A minor is [E G B]; adding the under-sixth yields [D E G B], D as well being the seventh of E; suppressing the under-fifth yields [D G B], or a "seeming" G major chord. Thus Riemann clearly does not say, as is often stated, that the *Parallelklänge* assume the functions of their archetypes simply *because* they are their relative minors.[68] Furthermore, this definition shows that Riemann sees the functional variants, laden with *Scheinkonsonanz*, as less pure than their archetypes.[69]

The leading-tone change chord is similarly derived from the functional archetype, but involves a different substitution. In this case the third and the fifth of the archetype are present, while the root is replaced by the semitone below it (in minor, the semitone above it), which is the leading tone.[70] The change involved is the familiar change of mode.[71] The *Leittonwechselklang* for a functional C major triad would contain the notes E and G, but the third note would substitute B for C. This is an E minor triad, which is the dominant of the relative minor, or rather the relative-mode minor triad on the other side of the major tonic. For a functional C minor triad, the *Leittonwechselklang* would contain the notes E♭ and C, the third note being A♭ instead of G. As a result of the mirror-symmetry of the dualistic system, this chord is the subdominant of the relative major, or rather the relative-mode major triad on the other side of the minor tonic. Leading-tone change chords are initially limited to two of the three functions. In major, only the tonic and subdominant have them,

linked with the other by the same mechanism. Our conventional theory has only an empirical explanation for the relative-mode relation.

68 An example of this simplification: "Scale degrees II, III, and VI are often interpreted (in Riemann's theory) as the relative minors of IV, V, and I, respectively, and thus as having the functions S, D, and T." Don Michael Randel, ed., *The New Harvard Dictionary of Music* (Cambridge, Mass.: Harvard University Press, 1986), p. 330. This type of relative-mode explanation is characteristic of American harmonic theory as far back as Percy Goetschius, although clearly derived from German theory. Goetschius calls these chords parallel chords; they may substitute for the principal chords as their subordinate representatives "chiefly for the sake of variety." Goetschius, *The Theory and Practice of Tone-Relations* (1896), 28th ed. (New York: G. Schirmer, 1931), p. 36; see also David M. Thompson, *A History of Harmonic Theory in the United States* (Kent, Ohio: The Kent State University Press, 1980), ch. 2.

69 This observation is at odds with Mooney's ("The 'Table of Relations'," p. 103): that all occurrences of a functional class are of equal value for Riemann.

70 Riemann, *Vereinfachte Harmonielehre*, p. 71.

71 Riemann does not specify change in the name of the *Parallelklang*, which also involves change of mode, since this process is implicit in the term *Parallel*.

since the leading tone of the dominant is chromatic (e.g. F♯ in C major). In minor, only the tonic and dominant have them, since the leading tone of the subdominant is likewise chromatic (e.g. D♭ in C minor).[72] Eventually Riemann allows these chromatic pitches, justifying them as alterations ostensibly derived from the church modes, and clearing the way for the two remaining leading-tone change chords: D̸ and S̸.[73]

All of these impure functional *Klänge* share two tones with their archetype and involve root relation by third. By including these chords within the functional rubrics, Riemann seems to have effectively canceled out the class of relative mediant relations, since the *Nebenklänge* are grouped with the tonic itself. Passage between them and the tonic would occur within the same function; thereby, by implication, it would incur minimal harmonic change. But *Nebenklänge* may also be associated with other chords. The minor triad on the third degree can be T̸, the tonic leading-tone change chord, but it may also be Dp, the dominant relative chord. Similarly, the minor triad on the sixth degree may be Tp, the tonic relative chord, but it may also be S̸, the subdominant leading-tone change chord, depending on context. Thus a functional analysis of the progression C major–E minor–F major might be T–Dp–S, indicating a significant harmonic change occurring between the first two chords. It could also be T–T̸–S, implying a less pronounced change. Riemann favors the latter analysis, in line with his statement that leading-tone change chords normally follow the archetypes from which they are derived.[74] This is also in line with the tonic-variant explanation of the lower flat mediant in the *Skizze* discussed above in section 4.5.[75]

Between the three primary functions and their secondary versions, Riemann is more than able to account for and assign function to chords based on every scale degree. He further allows alteration and suppression of any chord member, borrowings from parallel modes, and the addition of sevenths, ninths, and nonharmonic tones. In this way virtually any chord can be labeled and shown to participate meaningfully in the functional system, no matter how far removed it may be from the archetype to which it is referred.[76]

[72] Riemann specifies a semitone rather than a diatonic tone (whether semitone or whole tone) for the substitution producing the *Leittonwechselklang*. This permits him to sidestep the diminished triads which would otherwise occur with respect to the dominant of a major tonic (B D F in C major) and the subdominant of a minor tonic (D F A♭ in C minor). He rejects the notion of diminished triad, defining them as seventh chords with root omitted – in C major, G, the dominant root; in C minor, C, the subdominant root.

[73] D̸ is an obscure chord (B D F♯ in C major), but S̸ is the Neapolitan triad.

[74] *Vereinfachte Harmonielehre*, p. 80.

[75] Harrison (*Harmonic Function*, p. 292) notes the benefits of this flexibility of functional designation for analysis. Alternate possible labels for the same chord constitute a virtue of the system, not a drawback.

[76] Scott Burnham, in "Method and Motivation in Hugo Riemann's History of Harmonic Theory," *Music Theory Spectrum*, 14, 1 (Spring 1992), pp. 1–14, has carefully considered the nature of Riemann's function concept and its relation to Rameau's dissonance-motivated chord-action concept. Harrison shows some extreme examples of chords which seem to have no reasonable connection with the function with which they are identified.

4.9 THIRD RELATIONS IN FUNCTIONAL THEORY

In *Vereinfachte Harmonielehre*, Riemann identifies the agent of modulation as change in the harmonic function of a chord, which brings about a change of key. This definition is different from the one in the *Systematische Modulationslehre* and elsewhere, where he states that modulation is simply change of key. Accordingly, the topic of abrupt, direct modulation (key-leaps), with which he initiated his discussions of modulation in the earlier treatises, is entirely absent from the later work. There is no easy way for Riemann to account for abrupt modulations, in which one tonic directly displaces another tonic, under his new definition, since in these cases there is no chord which would undergo a change of function. Thus he chooses to ignore the key-leaps.[77] These abrupt modulations, we have seen, were the context in which Riemann was most comfortable affirming the harmonic directness of chromatic third relations. Without key-leaps, it is unsurprising to discover that Riemann's theory becomes less congenial to this notion.

Despite his new theory, the concept ordering Riemann's presentation of modulations by functional change is not harmonic function. Rather, Riemann looks back to root relation to organize an exhaustive presentation of lists of possible modulatory moves from a given tonic: thirteen modulations by means of leading-tone changes, eleven by means of minor-third changes, twelve by means of whole-tone changes, and so forth. Chromatic third relations receive considerable, if indirect discussion: there is no longer a section devoted specifically to *Terzschritte* in this treatise. In a considerable departure from his treatment of third-progressions in past treatises, in which *Terzschritte* occur at the beginning or in the middle of progressions, Riemann now shows them only at the end, in the context of cadences arriving to the tonic. He is equivocal about the power of these progressions, noting that major-third progressions always involve chromatic motion, which works against the strongest cadential effect. Nonetheless, he emphatically states,

> *But there can be no doubt that the third-clang is capable of closing directly to the tonic*, without the sense of an elision being felt; e^+–c^+ does not close as if $^\circ e$ had been skipped . . . nor does a $\flat^+$–c^+ need the mediation of $^\circ c$ . . .[78]

Predictably, Riemann systematically provides a functional designation for each possible chord in a key. Nearly all of these require only a single symbol. However, as shown in Figure 4.2, the sharp mediants receive compound symbols. The functional designation for the upper sharp mediant is striking: instead of describing the chord directly as a version of one of the three principal functions, Riemann calls it (D)[Tp] – the dominant of the relative minor, subsequently unrealized.[79] This

[77] There may also have been an aesthetic angle to this: although Riemann had given pride of place to the key-leaps in the *Modulationslehre*, he also commented on their roughness and suddenness.

[78] Riemann, *Vereinfachte Harmonielehre*, p. 165.

[79] Considering the quote just cited, the formula (D)[Tp] seems inadequate, since Riemann makes it very clear that the close from upper sharp mediant to tonic does not implicate an elided sixth-degree chord, which is what Tp indicates.

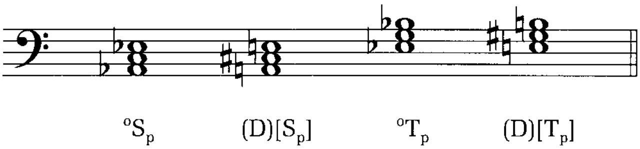


Figure 4.2 Function designations for the four chromatic mediants according to Riemann's *Vereinfachte Harmonielehre*

designation of indirect function for a chord in a relation to the tonic is highly unusual. The alternative symbol, $Dp^{III<}$, would, however, show the USM to be the result of alteration rather than a diatonic process, and would define it as exhibiting dominant function in the prevailing key. Riemann may have wished to avoid even suggesting that the hypothetical elided chord between E major and C major might be the dominant, G major.[80]

The lower flat mediant proceeding to the tonic receives the designation °Sp.[81] This is an imprecise functional label, as is (D)[Tp] for the upper sharp mediant, for neither shows Riemann's feeling for the mediants' true relationship to the tonic. He makes clear in the above quote that E does not act as the dominant of the relative minor, nor does A♭ act through the subdominant, when moving to tonic C; rather, they pass directly to it.

As a whole, chromatic mediants are subsumed awkwardly into the functional theory. Riemann's functional labels for the four chromatic mediants in no way invoke the chromatic mediants as a class. Each chromatic mediant has an essentially different functional designation. The symbols imply two different groupings by pairs:

(1) the lower mediants, with types of S function, vs. the upper mediants, with types of T function – not the symmetrical interpretation one might expect from Riemann given his earlier pronouncements.
(2) the flat mediants, both simple relatives of minor chords, vs. the sharp mediants, an extraordinary case for which Riemann can find no single functional expression, defining them as dominants of other relative functions.

Strikingly, the grouping of third relations historically most meaningful to Riemann – major-third vs. minor-third mediants – is not even evident. The grouping of lower mediants as S and the upper mediants as T in particular shows how little Riemann's own prior beliefs about chromatic mediants are reflected in the functional theory. Note, by the way, that the A♭ major chord, which Riemann ambiguously identified with the tonic in the *Skizze* (Plate 4.3), is given subdominant function here. Clearly, these function designations are less than satisfactory, especially considering Riemann's belief in the independent nature of chromatic third relations.

[80] He does call this chord $Dp^{III<}$ when it acts as a pivot chord, a dead end whose function is subsequently changed.

[81] It is Ŧ when the goal of a deceptive cadence in major. Both of these functional interpretations are different from the one Riemann gives in the *Skizze*, where he identifies the chord as an altered tonic (shown in Plate 4.3).

Accordingly, he gives them considerable discussion. The question now becomes greater than mere intelligibility of direct chromatic mediant progressions. For these chords to be functional, he says, they must be able to convincingly precede the tonic in a final cadence. He asserts that major-third mediants unquestionably can do so, and that minor-third mediants probably can. He concludes,

> if their cadential power be beyond doubt, we cannot do otherwise than make room for the major-third chords and minor-third chords within tonality, besides fifth-chords and their relative chords; but we shall not require new signs for them, particularly as on account of the chromatic steps their direct power of making a cadence appears problematical.[82]

Here Riemann attempts to have it both ways: he seriously considers the result of accepting all the chromatic mediants, but stops short at making them independent components of the functional system, justifying this attitude with the logic of diatonic thinking. He admits the sensed cadential power of these progressions, but cannot find a way to reconcile this with the presence of chromatic motion. Echoing the *Katechismus*, Riemann cites the chromatic semitone motion contained in these progressions as the element which works against their definiteness:

> The scale recognises *chromatic progression* only as *passing through an intermediate degree*, never as a cadential member of a melodic formation . . .[83]

As before, he proposes redefining the chromatic steps as diatonic ones, resulting in non-triadic formations, which he rejects again. He concludes here that "we can prove the cadential power of third-steps only conditionally,"[84] suggesting that he would welcome a stronger proof. Lacking one, he will not completely discount the power of the progressions.[85]

4.10 *GROßE KOMPOSITIONSLEHRE*

In 1902, Riemann published a voluminous new work, the *Große Kompositionslehre*. As its name suggests, the *Kompositionslehre* is a practical treatise aimed at communicating and fostering compositional craft rather than speculating on musical coherence. Only a small portion of the treatise is devoted to considerations of relatively pure harmonic theory. The rest deals with melody, form, motive, figuration, counterpoint, polyphonic composition, genre writing, and similar topics. As always, though, Riemann graced oft-visited topics with fresh writing containing noteworthy variations on significant ideas expressed in earlier works.[86] The simplification and condensation

[82] *Vereinfachte Harmonielehre*, p. 169. [83] *Ibid*. [84] *Ibid*., p. 166.

[85] He goes on to cite instances of these mediants following the tonic in the roles of (what we would call) third-divider and secondary dominant/subdominant. Here, he says, the chromatic motion is acceptable, made subsidiary to the force of the progression. This represents a shift from the *Katechismus*, in which Riemann was unequivocal about the self-sufficiency of direct chromatic mediant relations but required an additional explanation for the same progressions occurring in secondary and third-divider contexts.

[86] This is perhaps charitably put. As Harrison documents, Riemann frequently abandons old explanations, presenting new arguments and changing his mind from treatise to treatise (*Harmonic Function*, pp. 252–292).

to which he subjects his harmonic theory results in interesting twists and in generalizations which would have had no place in the more reasoned and comprehensive harmony treatises which preceded the *Kompositionslehre*.

The striking aspect of harmonic theory in the *Kompositionslehre* is the presence of only rudiments of the functional theory and the complete absence of the root-interval theory. If not for Riemann's continual revision and republication of the *Skizze* and *Katechismus* up until the 1920s, one might conclude that he had abandoned the root-interval theory in favor of a strictly functional outlook. More likely, he felt its inclusion to be inappropriate in a work of such practical and directed nature. Accordingly, discussions of harmonic theory are spare, refreshingly non-tortured, and always keyed to musical examples or compositional challenges. Key relations come up first in a presentation of *Tonalitätssprünge*, the key-leaps, which had been absent from *Vereinfachte Harmonielehre*. Riemann observes that these happen most frequently between sections in minuet and related forms, and further that chromatic-third key-leaps occur in the literature as early as Haydn. In yet one more new account of chromatic mediants' coherence, Riemann resurrects Hauptmann's explanation: the change of the nature of the common tone. He notes that in the descending major-third key-leap, the root of the first chord becomes the third of the second chord.[87]

Riemann also provides the list of ten keys most closely related to the tonic from the *Musiklehre* and *Katechismus*, giving the chromatic mediants functional interpretations consistent with the labels in *Vereinfachte Harmonielehre* (Fig. 4.2). Reflecting the practical tone of the treatise, he discusses them in the context of the literature:

> Since Beethoven, Schubert, and Liszt, the third-relation of keys has attained unqualified recognition . . . in a C major piece, a theme in E major (see Beethoven's sonata op. 53) or a trio in A♭ major is allowed.[88]

The point which he reaches from this observation is simply that E major and A♭ major must also be enharmonically capable of third relation; thus, in modulations from A♭ major to E major and back, F♭ major is understood but E major is written.

4.11 LATER WORKS ON HARMONY

During the decades following the introduction of the functional theory, Riemann's efforts in harmonic theory were directed toward the revision of existing treatises, concentrating on refining and reorganizing the ideas he had come up with in the previous decades. In the mid-1910s, though, he published some bold new ideas.

Interestingly, Riemann revised *Harmony Simplified* only once, in 1902. However, the two general harmony treatises which predated the functional theory received numerous revisions and renamings. The *Skizze*, first published in 1880, went through seven editions, the last issued in 1920. Beginning with the second edition of 1887, the name changed to *Handbuch der Harmonielehre*. The *Katechismus*, finished in 1889 and

[87] *Große Kompositionslehre*, p. 76. [88] *Ibid.*, p. 481.

first published in 1890, went through ten editions, the last issued in 1925, with a post-function name change to *Handbuch der Harmonie- und Modulationslehre* beginning with the third edition of 1906. The way in which Riemann adapts these works to reflect the mature functional system is illuminating. For the older root-interval theory was hardly superseded by thoroughgoing revisions reflecting the new functional ideas. Rather, Riemann preserved most of his earlier notions and their jargon, overlaying them with functional concepts, and appending new explanations. An examination of the revisions of these treatises produced after the introduction of function helps greatly in understanding the true nature and scope of the functional concept, and additionally in tracking Riemann's ever-changing views of third relations. Below, I will consider the *Handbuch der Harmonielehre*, seventh edition of 1920, the end result of his revisions to the *Skizze*; and the *Handbuch der Harmonie- und Modulationslehre* (*HHM*), sixth edition of 1918, a moderate revision of the *Katechismus*. Along with the predictable changes, the former *Handbuch* contains a dramatic revision of the functional theory to include signs to specifically denote relations involving chromatic mediants.

The *Skizze* went through several editions appearing up through 1920. From its second edition, apparently having surpassed the sketch stage, it carried the name *Handbuch der Harmonielehre*. The 1920 *Handbuch* retains both presentations of the old root-interval classification system contained in the original *Skizze*, despite the revelation of functional theory. To bring this system into conformity with later developments, Riemann imposes a functional interpretation.[89] Thus the first section no longer recounts the intervals by organizing the presentation around interval quality or size, as in Table 4.1, but rather by virtue of the functional nature of the chords which the intervals connect. As shown in Table 4.6, categories remain the same: the first main class (1) contains intervals which connect the primary chords (in *Skizze* terms) or primary functions (in *Handbuch* terms); the second main class, which contains intervals associated with secondary functions, has two subclasses: class 2a, containing intervals connecting a primary and a secondary function, and class 2b containing intervals connecting two secondary functions. It is worth observing that even though function plays more of an organizing role in this presentation than it did in *Vereinfachte Harmonielehre*, Riemann still does not directly treat classes of individual function (i.e. all tonics, all dominants, all subdominants). The only distinction he makes here is between the group of all primary functions and the group of all secondary functions. Furthermore, although the organizational factor of this section is ostensibly functional categories, all of the actual theoretical discussions still concern varieties of root-interval relation, of which groups of functional pairs are instances. In sum, while it makes some sense to present root relations according to the distinction between primary and secondary function, it remains just as difficult

[89] The seventh edition of the *Handbuch* reprints the forewords to several of the earlier editions, including the first. Riemann documents the "radical" changeover to functional terminology in the foreword to the sixth edition. Riemann, *Handbuch der Harmonielehre*, 7th ed. (1920), pp. viii–xi.

Table 4.6. *Handbuch: root-interval relations in the key, with function pairs and (author's addition) Roman numeral equivalents*

Class	Root-interval relations	Examples in major	Examples in minor
1 Hauptklänge	*Quintschritt*	T–D (I–V)	°T–°S (i–iv)
	Seitenwechsel	T–°S (I–iv)	°T–D (i–V)
	Gegenquintschritt	T–S (I–IV)	°T–°D (i–v)
	Ganztonschritt	S–D (IV–V)	°D–°S (v–iv)
	Quintwechsel	S–°S (IV–iv)	°D–D^+ (v–V)
	Gegenquintwechsel	°S–D^+ (iv–V)	D^+–S (V–iv)
2a Nebenklänge (diatonic relations)	*Terzwechsel*	T–Tp, D–Dp, S–Sp (I–vi, V–iii, IV–ii)	°T–°Tp, °D–°Dp, °S–°Sp (i–III, v–VII, iv–VI)
	Kleinterzwechsel	T–Sp, D–Tp (I–ii; V–vi)	°T–°Dp, °S–°Tp (i–VII, iv–III)
	Leittonwechsel	T-$\cancel{T}$, S-$\cancel{S}$ (I–iii, IV–vi)	°T–°$\cancel{T}$, °D–°$\cancel{D}$ (i–VI, v–III)
	Ganztonwechsel	Sp–D (ii–V)	°Dp–°S (VII–iv)
	Tritonuswechsel	S–Dp (IV–iii)	°D–°Sp (v–VI)
2b Nebenklänge (chromatic relations)	*Terzschritt*	Tp–°S (vi–iv)	°Tp–D^+ (III–V)
	Gegenterzschritt	T–°Sp (I–LFM)	°T–Dp (i–USM)
	Kleinterzschritt	Sp–°S (ii–iv)	°Dp–D^+ (VII–V)
	(Gegenkleinterzschritt)	no example	no example
	Leittonschritt	Dp (or $\cancel{T}$)–°S (iii–iv)	°Sp (or $\cancel{T}$)–D (VI–V)
	Tritonusschritt	$\cancel{D}$–°S (vii–iv)	$\cancel{S}$–D^+ (N–D)

to grasp the details of the overview of all the possible interval relations between chords, which is the expressed purpose of the section.[90] Later in this treatise, Riemann again appends the summarizing section first presented in the *Skizze*, the *Systematik der Harmonieschritte*, with its discussions of each individual root-interval. While functional terms are imposed on the original descriptions, this iteration of the *Systematik* remains relatively unchanged from the original.

The sixth edition (1918) of the former *Katechismus*, now the *HHM*, contains significant changes from the original. Whole sections are shifted to different parts of the treatise, some topics are dropped, and a considerable amount of new text is added. The question-and-answer format is dropped in favor of a more conventional

[90] This conclusion is somewhat different from Harrison's observation that the post-function *Skizze* revisions were successfully reorganized from the functional perspective, simplifying the presentation for pedagogical purposes. (*Harmonic Function*, p. 282.) Harrison also considers the easily learned function system of *Harmony Simplified* to be "a kind of capitulation to classroom exigencies," teaching students merely to label harmonies rather than to investigate their relationships, a shrewd move by Riemann to promote his work by making it simpler and information-oriented. But if this were completely so, why was *Harmony Simplified* abandoned? Instead, Riemann continued to revise and market the *Handbuch* and *HHM*, both of which presented a merged functional-root interval system in which chord labels and relationships are presented together. Perhaps Riemann was being particularly shrewd: using the function labels as Harrison suggests, for initial understanding, but beyond that as a means to draw the student into the more complex and insightful relational system which Riemann clearly still stood for. As Harrison observes, it can be difficult to determine the extent to which Riemann was motivated by the urge for popular acclaim and classroom hegemony on the one hand or the purer goals of theoretical invention on the other (*Harmonic Function*, p. 284).

presentation by section heading. The most striking change, though, is the presence throughout the treatise of functional symbols. Far from replacing the older discussions and the examples accompanying them, however, the functional expressions are grafted on, a new layer of interpretation overlaying and permeating the original text. For example, a progression represented as c^+–g^+ in the *Katechismus* would now appear as c^+–g^+ [T–D]. Chord and progression terms often change while their essential meaning remains the same: the *Terzwechselklang* becomes the *Parallelklang*; the *Seitenwechselklang* becomes the *Gegenklang.* Thus the old root-interval system is preserved and merely translated into functional terms.

In the *Handbuch der Harmonielehre*, as before in the *Skizze*, Riemann affirms that all four chromatic third relations possess cadential power in direct relation to their tonic. But he appears to have tempered his longtime instincts, perhaps due to their incompatibility with the functional system. The major-third mediants receive this description:

> [The] plain major-third progression [is] the relation of the major tonic to the dominant of the relative chord, as well as the minor tonic to the minor subdominant of its relative chord. This progression is also, however, directly intelligible without the mediation of the relative chord, but infrequently, for it contradicts the diatonic scale. In reverse the progression has cadential power similar to that of the dominant . . . This progression is likewise directly intelligible and in reverse has a true cadential power . . .[91]

But his discussion of the minor-third mediants is qualified:

> the intelligibility of the minor-third (major-sixth) progression is, to be sure, not completely direct, since neither of the two tones is the overtone or undertone of the other; however, understood as representatives of the same triad, e.g. . . . the C major or E minor triads, the two blend into the same line.[92]

This seems regressive in comparison with the *Skizze.* Despite this somewhat prolongational explanation, he goes on to say without qualification that both plain and contrary minor-third progressions are directly intelligible and possess cadential power.

Riemann no longer restricts these third relations to ones involving the tonic. Although tonic-oriented progressions are the model for each of his categories, he goes on to list all of the possible places in the key, diatonic and chromatic, where such root-interval progressions may occur. These lists contain numerous functional pairs, with no particular common functional profile or succession.[93] The functional attributions have the effect of mere description rather than of explanation or justification. They tell us nothing about the harmonic nature of progressions, only about the tonal identities of the chords they connect.

[91] Riemann, *Handbuch der Harmonielehre*, 7th ed. (1920), pp. 125–126. [92] *Ibid.*, p. 127.

[93] For example, here is the list Riemann provides for the *schlichte Kleinterzschritt* in major: S–D/D, T–(D)Sp, D–D(Tp), D/D–D(Dp), °Sp–S$^+$, Sp–°S, Tp–(°S)D.

Table 4.7. *Functional translations of modulations employing Terzschritte*

Riemann Example	Basic progression	Mediant type	Vehicle of coherence	Functional interpretation
①	$\mathbf{c^+ - e^+} - {}^\circ e$	USM	*Terzschritt itself*	$T = {}^\circ T_p - D - {}^\circ T$
②	$\mathbf{c^+ - e^+} - a^+$	USM	$III^+ - I^+ - V^+$	$T = {}^\circ T_p - D - T^+$
③	$\mathbf{c^+ - a\flat^+} - e\flat^+$	LFM	$3^+ - 1^+ - 5^+$	$D^+ - {}^\circ T_p = S - T$
④	$\mathbf{c^+ - a\flat^+} - d\flat^+$	LFM	Leading tone progression	$T - {}^\circ S_p = D - T$
⑤	$\mathbf{c^+ - e\flat^+} - a\flat^+$	UFM	$3^+ - 5^+ - 1^+$	$T - {}^\circ T_p = D - T$
⑥	$\mathbf{c^+ - a^+} - e^+$	LSM	$III^+ - V^+ - I^+$	none
⑦	$\mathbf{c^+ - a^+} - f^+$	LSM	$5^+ - 3^+ - 1^+$	none
⑧	$\mathbf{c^+ - e\flat^+} - g^+$	UFM	$V^+ - III^+ - I^+$	none

The treatment of chromatic third relations in the *Handbuch der Harmonie- und Modulationslehre* is essentially the same as in the *Katechismus*. Riemann does append a new summarizing comment to his discussion:

> It is therefore quite consistent that the advancing development of musical culture into different times has evolved from the plain diatonic to the chromatic; never, however, will chromaticism be able to claim full equality of rights with diatonicism as fundamental elements.[94]

This argument also seems like backpedaling. Riemann's unwillingness to grant chromatic relations equal rights with diatonic ones, reflected as well in the diatonic basis of the functional theory, is at odds with the assertions from his younger days about the equality of the chromatic third relations with the fifth relations, and of an expanded notion of *Tonalität* reaching beyond the diatonic set.[95] This comment must have appeared in editions well before 1916, when further changes to both branches of Riemann's harmonic theory turned the tables for a final time.

The *HHM* preserves the *Katechismus'* long section concerning *Terzschritte*. Riemann appends a functional interpretation to many of these progressions. These are summarized in Table 4.7, adapted from Table 4.5. As in the *Katechismus*, each one of the examples in the table represents a group of at least six progressions (three

[94] Riemann, *Handbuch der Harmonie- und Modulationslehre*, 6th ed. (1918), p. 192.

[95] One of the most interesting pages in the *HHM* is its back page, which contains an advertisement for the first volume of Riemann's Beethoven sonata analyses. This advertisement is certainly not aimed toward the community of scholars. It reads more like the marketing instrument of a bestseller: it touts several laudatory excerpts, taken from "more than a hundred reviews," which come not from journals but from the daily newspapers of major cities; it trumpets a second printing within three months of publication. Hyperbole aside, this advertisement shows that Riemann was read not just by his peers but by the educated general public, for whom he was commenting not on rarefied aesthetic issues but on the prevailing contemporary native culture. His comments on chromatic relations, and his stance with regard to the question of system-vs.-perception, must be viewed in this light. They are not just the quiet musings of a thoughtful scholar, but the potential public pronouncements of an influential figure. Hugo Riemann the systematic theorist always maintained a belief in the integrity and directness of chromatic third relations, no matter what the state of his theoretical system; Dr. Riemann the authoritative popular author could perhaps not be so demanding of the ears and minds of his audience. This may be an instance of Riemann's tailoring presentations to his readers, of the sort Harrison describes (*Harmonic Function*, pp. 282–283).

in major, three in minor, with *Terzschritte* emanating from tonic, dominant, and subdominant), each of which Riemann translates into functional notation. The first five groups receive functional interpretations. As the table shows, these are of two kinds. Progressions ① and ②, to the sharp side, involve change of function in the initiating chord of the *Terzschritt*, while progressions ③, ④, and ⑤, to the flat side, involve change of function in the culminating chord.

The last three groups of modulations receive no functional interpretations. Riemann gives no reason for this; however, functional symbols would be more difficult to determine. Example ⑥ contains a plagal cadence which cannot be easily reconciled with the *Terzschritt* that precedes it.[96] Examples ⑦ and ⑧ are even more difficult to translate into functional symbols, since they contain nothing but *Terzschritte*. There are already so many functional formulas in the first five groups, tediously recounted, and the benefits of doing this for the last three groups are so questionable, that it appears that in part Riemann, quite uncharacteristically, simply lets himself run out of steam, stopping short at group ⑥. But it is also clear that there are limitations in the functional system which preclude Riemann from successfully accounting for meaningful *Terzschritte* in the absence of a context of fifth relations.

4.12 INTERRELATION OF THE FUNCTION AND ROOT-INTERVAL CONCEPTS

Over twenty years after the formal introduction of the functional theory, it is surprising to discover the root-interval theory in all its complexity still very much alive and operative in Riemann's work. The presentation and relationship of these two concepts in the *HHM* is changed from *Vereinfachte Harmonielehre*, the functional theory being presented gradually, but in its entirety, before the introduction of the root-interval theory. This makes sense, for the functional theory is simpler and pedagogically more appropriate, especially in the diatonic context to which the first two parts of the treatise is restricted. When it is introduced, the root-interval theory is in no way adapted to or influenced by functional theory, which serves primarily to interpret and anchor the abstract root-interval relationships to locations within the key. In the process, the simplicity which characterized the functional approach in earlier sections is substantially diminished.

One must conclude that function alone is not, for Riemann, a sufficient explanation of the workings of harmony. Both the function and root-interval concepts are necessary ingredients to the mix, each having its own role to play in making musical language comprehensible.

[96] The cadence is similar to Example ③'s, whose functional translation reaches out for an original key (F minor) only shakily established, but it cannot be interpreted similarly, since Example ⑥ involves movement to a key on the sharp side, whose diatonic set cannot accommodate the original chord in the way that the flat key of Example ③ can. A sharp-mediant solution along the lines of Example ②, in which the initiating chord changes function, might be more appropriate. This would yield the formula $T = {}^{\circ}S_p$–S–T, a weak modulation lacking any form of dominant, but marginally plausible.

(1) *Root-interval progressions* are the medium of musical *coherence*. The sense and quality of a progression are determined by the relationship of the roots of its component chords. On top of this, the character of a progression is determined largely by the strength of root-interval relation: one of Riemann's chief criteria for characterizing a progression is intelligibility, which is dependent on root-interval size and direction along with clarity of content. The more basic the root-interval, the greater the potential for intelligibility.[97]

(2) *Function* pertains to individual chords rather than to progressions. It defines the tonal context of chords with regard to their keys by specifying their *meaning*. It signifies more than sheer identity (i.e. pitch content or scale degree), but rather identity in relation to the tonic within chromatic tonality. Alterations of the functional symbols show how chords which derive from the primary functions are able to express this meaning. The function concept does not address issues of motivation from chord to chord, nor does it in and of itself provide a means for judging the validity or desirability of particular progressions. Function is more of a normalizing concept, providing a way to explain musical progressions in chromatic tonality as making sense in the context of relationships between the three pillars of harmony. It has little or nothing to do with scale step. The three principal functions are defined solely in terms of key (tonic) and root-interval (dominant and subdominant). Even chord location within a key is expressed as root-interval distance from the tonic, not in terms of scale step, nor for that matter in terms of function. Scale step as such does not figure in Riemann's system past the primary functions.[98]

In short, understanding Riemann's theory of harmony requires both concepts (along with dualism, glossed over here). The process of harmonic progression is a matter of root-interval relation; function fixes the meaning of the progression in a tonal context. Considering function on its own may lead one to conclude that its symbols merely translate the pitch content of chords in a literal way. But seen as a companion concept to the root-interval system, function becomes its necessary concomitant, rendering it possible to discriminate between similar root-interval progressions occurring in different places in the key. Likewise, the root-interval theory enhances the function theory by quantifying variant linkages of similar functions. Thus the two concepts are separate yet interdependent.

4.13 MEDIANT FUNCTION

Riemann still had not had his last say. A highly important, positive treatment of chromatic third relations appears in the last editions of the *Handbuch der Harmonielehre*.

[97] This assertion, applied strictly, accounts for the necessity for Riemann to claim that the *Seitenwechsel* is the most intelligible of all progressions.

[98] This last point may be made clear by a series of questions. The answer to the question "Where is the E major chord in C major?" is that it is a *Terzschritt* from the tonic. The answer to the question "What is the E major triad in C major?" is that it is a *Terzklang*. The answer to the question "How does the E major triad make sense in C major?" is that it functions either as III^{+} (see below) or as [D](Sp).

It is presented in the foreword to the sixth edition of the work, dated 1917, in which Riemann's lifelong predilection toward chromatic tonality appears to finally triumph over his will to keep the diatonic basis of his functional system intact. He simply makes room for these progressions, whose direct expression was impossible within function theory. Proposing a remarkable breach of diatonic limits, he defines two new independent functions solely associated with major-third chromatic mediant relations, in direct contradiction to his earlier insistence, in *Vereinfachte Harmonielehre*, that these chords not be given their own function signs.[99] He introduces this change as:

> . . . the direct designation of major-third chords (*Terzklänge*) with 3^+ and III^+ instead of (D)[Tp] and °S (3 is upper third, III is lower third), for example c^+–e^+–g^+–c^+ = T –3^+–D–T and c^+–$a\flat^+$–f^+–c^+ = T–III^+–S–T.[100]
>
> I caution against admitting replacement of the function symbols D and S with 5 and V, to which I am opening up the way. For in using the symbols 3 and III exceptionally, I wish to denote the problematic scale-denying nature of the major-third chords. Therefore I warn the friends of my method from a too hasty expansion of the use of these symbols [5 and V] instead of the function letters. At most one could think that, in cases in which a third-chord returns to the tonic by way of a fifth-chord, the 5 and V may also be employed, in order to make evident the progression's immanent logic.[101]

This accommodation is highly significant and unequivocal: *Terzklänge* are so distinct and *Terzschritte* so direct that in a theory in which even relative-mode chords are defined in terms of other chords (e.g. Tp), they can only be properly explained as primary entities: 3^+ and III^+. But even now, judging from his comments, Riemann cannot fully reconcile the functional nature of chromatic mediants with their content. The symbols he uses for them represent special-case functional locations predicated on individual chords, not functional categories. Riemann's examples of cadences containing the new functions are shown in Plate 4.5.

Although these mediant functions are a very late addition to the functional theory, Riemann does manage to display them in a practical application: a complete series of functional analyses of Beethoven piano sonatas published in 1918–20. Direct chromatic mediant relations are not common in this music, so the mediant functions are infrequently invoked, but they do appear. Plate 4.6a shows an excerpt from his analysis of the first movement of op. 10, no 2. It contains an instance of one of the

[99] The Riemann *Musik-Lexikon*, 12th ed. (1967), cites Riemann's series of Beethoven piano sonata analyses (*L. van Beethovens sämtliche Klavier-Solosonaten*, vols. 1-3, Berlin: Max Hesse, 1920), published beginning in 1918, as the source of these mediant functions. But the sixth edition of the *Handbuch* predates these.

[100] In Riemann's dualistic system, Arabic numerals correspond to major or the natural direction of a mode, while Roman numerals correspond to minor or the contrary direction of a mode. Thus 3^+ for upward mediant function in major, III^+ for downward mediant function.

[101] Riemann, *Handbuch der Harmonielehre*, foreword to 6th ed., p. xvii. These signs are not new: Riemann had been using them to denote direct chromatic third progressions, both by major third and minor third, since the first edition of his *Katechismus der Harmonielehre* of 1890. They had remained in use throughout several revisions of the treatise. But it took until 1917 for Riemann to elevate the chords indicated by the signs to the status of functional harmonies.

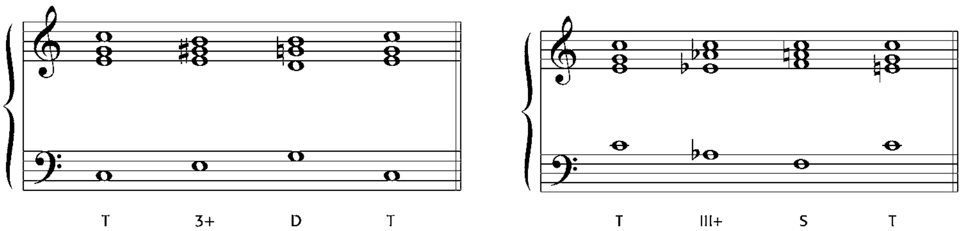
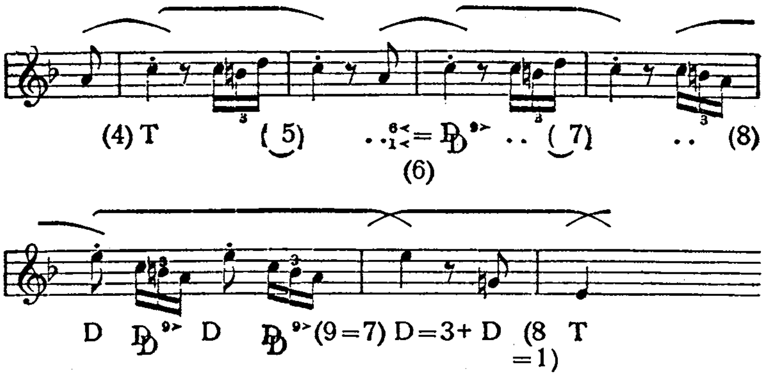
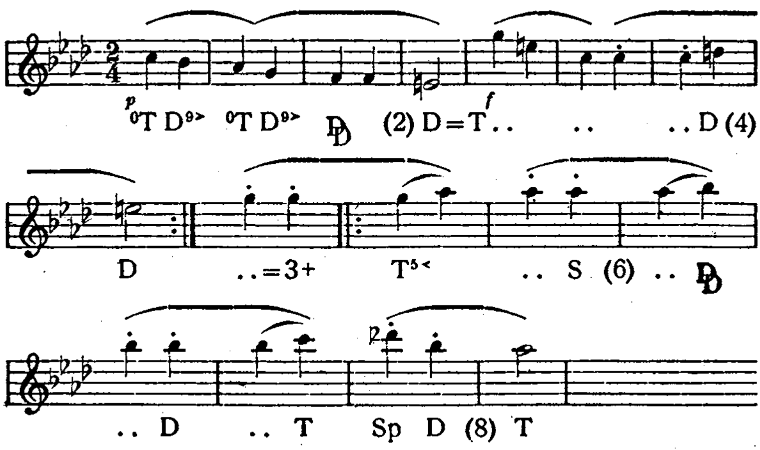


Plate 4.5 1917 *Handbuch* examples of cadences containing mediant function



a) op. 10 no. 2, I



b) op. 110, II

Plate 4.6 Riemann: mediant function in two Beethoven analyses new mediant functions participating in a cadential phrase like the first one in Plate 4.5: 3^+ moving to D and then T. Plate 4.6b shows an excerpt from his analysis of the second movement of op. 110, in which a chromatic mediant with function 3^+ is directly transformed into the tonic of the next phrase.[102]

While Riemann dramatically transforms his system with the mediant functions 3^+ and III^+, he does not include the complete set of four chromatic mediants which, earlier in his career, he had treated as a class of harmonic relations. Over time, Riemann had framed many distinctions between major- and minor-third mediants: the very different places of the two varieties of third in the overtone series; their different directions in the root-interval system, due to the minor third's inferior status *vis-à-vis* its inversion, the major sixth; their difference in functions; their difference in cadences. The discussion cited above in the sixth edition of the *Handbuch*, in which Riemann newly asserts that the minor-third chromatic mediants are less than directly intelligible, shows how unlikely it was that Riemann would now include them in a functional class alongside the hardier major-third variety.

Toward the end of his career, Riemann introduced a completely new harmonic theory based on mathematical principles derived from a revision of the *Tonnetz*. This theory, which Riemann presented in only a formative stage, constituted an important adjunct to the existing theories. It also provided Riemann's strongest formal affirmation of chromatic mediant relations. Discussion of this theory will occur at the beginning of Chapter 6, as an introduction to some recent harmonic theory which it has inspired.

[102] Riemann, *L. van Beethovens sämtliche Klavier-Solosonaten*, vol. I, pp. 304–305; vol. III, p. 434.

5

TWENTIETH-CENTURY THEORY AND CHROMATIC THIRD RELATIONS

5.1 HEINRICH SCHENKER

Given the linear, diatonically oriented nature of his analytic method, one might expect that Heinrich Schenker was less than accepting of chromatic mediant relations. His later theory, after all, downplays the importance of local harmonic phenomena, assigning harmonic status sparingly to *Stufen* which by and large are fundamental diatonic steps of the key. It is of significant interest, then, to find chromatic mediants figuring at middleground and even background levels in many of the analytic diagrams of *Der freie Satz*. It is of further interest to ascertain how it can be that these chromatic harmonies, with their potentially key-denying contents, are integrated into Schenker's tonic-preserving analytic vocabulary. The seeds of this acceptance were sown well before, in Schenker's earlier work on harmony. Thus before examining the relevant material from *Der freie Satz*, it is worth examining Schenker's thought at that time.

5.1.1 *Harmonielehre*

Published in 1906, twenty-seven years before the appearance of *Der freie Satz*, Schenker's *Harmonielehre* lacks the theory of long-range voice-leading and fundamental structure integral to the mature work, while containing strong indications in that direction (documented throughout by Oswald Jonas in the current English translation).[1] *Harmonielehre*, far from being a thorough, textbook-style investigation of the complete materials of tonal harmony, works more as a polemic for a particular conception of the mechanics of musical language. The basic thrust of Schenker's

[1] Heinrich Schenker, *Harmony* [*Harmonielehre*] (1906), trans. Elizabeth Borghese, ed. Oswald Jonas (Cambridge, Mass.: MIT Press, 1978). Numerous studies treat the development of Schenker's theory from *Harmonielehre* to *Der freie Satz*. Allan Keiler, in "The Syntax of Prolongation," *In Theory Only*, 3, 5 (Aug. 1977), pp. 3–27, considers the nature and status of harmonic concepts such as *Stufen* within prolongational theory. William Pastille's "The Development of the *Ursatz* in Schenker's Published Work," in *Trends in Schenkerian Research*, ed. Allan Cadwallader (New York: Schirmer, 1990), traces the development of the *Ursatz* concept. Joseph Lubben, in "Schenker the Progressive: Analytic Practice in *Der Tonwille*," *Music Theory Spectrum*, 15, 1 (Spring 1993), pp. 59–75, discusses the relationship of *Stufen* to the *Ursatz*. Directed treatments of chromatic harmony in Schenker appear in Matthew Brown's "The Diatonic and the Chromatic in Schenker's Theory of Harmonic Relations," *Journal of Music Theory*, 30, 1 (Spring 1986), pp. 1–33, and Patrick McCreless's "Schenker and Chromatic Tonicization: A Reappraisal," in *Schenker Studies*, ed. Hedi Siegel (Cambridge: Cambridge University Press, 1990), pp. 125–145.

argument is not untypical for the turn of the century, and is surprisingly reminiscent of Riemann: chromatic practice must not be interpreted as spawning a proliferation of keys and key changes, nor as compromising the basic tonal premise of a tonic key which endures for the length of a piece. Riemann's solution was to postulate that every chromatic harmony is associated with a diatonic model through which it participates in the key. Thus for Riemann harmonic activity within the key is at bottom mediated by a completely diatonic process. Schenker finds a different method for accommodating chromatic events, grounded in his concept of *Stufen* or scale-steps. Schenker's *Stufen* are not simply glorified scale-degree bass notes, as the term scale-step might imply, but complete triads, defined by their roots, which represent areas of harmonic activity controlled by the totality of the *Stufe* – not just the root – in its ultimate relation, as a harmonic entity, to the tonic.[2] The modal quality of the chord, while a factor, is not the determining one: both major and minor chords may serve for most *Stufen*, especially ones located on secondary degrees, since Schenker more or less freely allows mixture of pitches belonging to parallel modes. He does not define *Stufen* containing chromatically altered pitches as versions of the diatonic models. Rather, he presents each version for what it is, each partaking in the quality of the scale-step, and representing only itself. There are diatonic and chromatic *Stufen*, and the chromatic ones are not compromised in any way:

> Even where chromatic changes are applied to it, the scale-step reveals itself as the spiritual and superior unit as we defined it in its diatonic form . . .; i.e., the obligation to return to the diatonic system does not imply any restriction as far as the duration of the chromatic scale-step is concerned.[3]

When it comes to harmonic progression, Schenker allows progressions by root-intervals of fifths and thirds only, both ascending and descending. The third causes him no problem: "Progression by thirds may be considered no less natural than progression by fifths."[4] He does note that fifth relations will always have a stronger effect than similar third relations. Along with pure third relations, Schenker observes that scale-step progression by third often arises from the division of the fifth, in either direction. The lone example he gives of this latter process is uncharacteristic of his later use of the concept; it traces the division of the descending fifth A–D through a modulation from A minor to C major (A: I – C: IV – II). More interesting examples of these third-dividers, as he was to come to call them, appear later in the *Harmonielehre*. Here, while discussing forms emphasizing secondary harmonic areas other than V in major and III in minor, Schenker provides examples of more long-range descending third-dividers in which the *Stufen* I–VI–IV, representing key areas,

[2] "Granted that the triad must be considered as one particular aspect of the scale-step . . .; yet a triad of this kind, if it appears *as such*, is subject to the whim of fancy, whereas that other kind of triad, which has been lifted to the rank of a scale-step, guides the artist with the force and compulsion of Nature . . ." Schenker, *Harmony*, pp. 152–153.

[3] Schenker, *Harmony*, p. 294.

[4] *Ibid.*, p. 235. Jonas notes that Schenker abandoned this belief by *Der freie Satz*, retaining only the third-divider explanation as primary.

are either all major (B♭–G–E♭) or minor (F–D♭–B♭).[5] These must, therefore, describe series of chromatic mediant relations.

Schenker's *Harmonielehre* does not address chromatic mediant relations as a separate topic, as Hauptmann and Riemann did. This may be in part because chromatic mediants cannot form a separate class of harmonic relation in a theory ruled by *Stufen*: the scale-step takes precedence, and the individual upper mediants have accordingly much more in common with each other, being all manifestations of the III *Stufe*, than they would with corresponding lower mediants, all of which are manifestations of the VI *Stufe*. In fact, since the theory is in principle so dependent on scale-step, and since the quality of the third above the scale-step is variable, chromatic mediant relations *per se* require no special justification. Schenker does not see the chromatic elements of chords as necessarily key-denying. Quite the opposite:

> Chromatic change is an element which does not destroy the diatonic system but which rather emphasizes and confirms it.[6]

The closest Schenker comes to an outright discussion of chromatic mediant relations is as a subtopic of his discussion of tonicization ("tonicalization"). The bulk of this discussion is given over to what we call secondary or applied dominants. Schenker recognizes that these chords tonicize those chords they modify, but, short of modulation, he chooses to identify them as *Stufen* defined by their own roots. Thus he would represent a V/v–V–I progression as $\text{II}^{\#3}$–V–I. This interpretation shows how Schenker already conceives chromatic content as functioning integrally in the process of the tonic key: his $\text{II}^{\#3}$ is defined through its relation to the tonic (as a chord of a plain scale degree participating in a strong bass progression) rather than through its acknowledged relation to another chord. Next, Schenker considers tonicizations by descending third rather than fifth. These tonicizations, which are principally chromatic mediant relations, lead Schenker to conclude:

> it is true that the usefulness of chromatic changes is inferior in the case of tonicalization through progression by thirds as compared to progression by fifths. It does not follow, however, that the process of tonicalization avoids or should avoid progression by thirds.[7]

Thus while noting that tonicizations by third are less versatile than fifth relations, he understands that they are sound and allows them. His example of this type of tonicization (Schubert sonata D850, I) traverses a number of chromatic third relations: D major– . . . F major–C♯ major–A major–D major.[8] Schenker analyzes this as all taking place in the tonic: I– . . . $\text{III}^{\natural}$–$\text{VII}^{\#5}_{\#3}$–V–I. His literal identification of roots slightly obscures the two descending major-third relations in a row by showing the first as a diminished fourth, although he certainly recognizes them both. Clearly, his attitude toward these and similar progressions is: even though they surpass the

[5] Examples are from Beethoven's sonata op. 106, I, and Brahms' piano quintet op. 34, I. Schenker, *Harmony*, pp. 248–249.

[6] Schenker, *Harmony*, p. 288. [7] *Ibid.*, pp. 266–267.

[8] This passage is analyzed closely below in section 8.3.2.

usual diatonic relations, they do not threaten or break down the perception of tonic key. Rather, since they are not part of legitimate, directed modulations, they remain within the tonic purview, and, by operating at its limits, actually enhance the sense of key by the even stronger sense of arrival to the tonic they evoke in comparison to it when it comes.

5.1.2 *Der freie Satz*: Theoretical aspects

The concept of *Stufen* and of the key-affirming properties of chromatic elements carries over into the later works, including *Der freie Satz*. A fundamental tenet of the mature Schenkerian concept of musical structure is that surface harmonies do not inhere as single, whole entities, but rather are brought to being by the simultaneous occurrence of notes belonging to individual linear strands operating at various degrees of structural importance. This means that among the notes comprising any particular chord, some may be of considerable structural prominence – generally it is the bass note and/or the principal upper register note – while others may be of only local significance.[9] As a rule, lines of great structural prominence, operating at the far middleground and background levels, contain only diatonic pitches, corresponding to their function as a large-scale tonic-key framework upon which surface elaborations, including modulations, are erected through the agency of various diminution procedures.

Thus aspects of a chord of considerable chromatic content may participate in high-level structural processes if it contains a diatonic pitch important to those processes.[10] All of the chromatic mediants, to a greater or lesser extent, are capable of this sort of participation, since they all contain at least a single diatonic pitch. The nature of these diatonic pitches – their scale degree and position in the chord – determines the nature of the structural role each chord is able to play in the Schenkerian system. Generally, the theory suggests that chromatic mediants may figure in Schenkerian analysis to the extent that their diatonic members participate in processes integral to fundamental structure.

Table 5.1 shows the common-tone and diatonic content of the six principal third relations. In all cases, the elements which the six mediants have in common with the tonic triad (and by extension with the tonic key) are diatonic pitches. Some chromatic mediants also contain other diatonic pitches not in the tonic triad; the relative mediants are, of course, fully diatonic. There are two ways in which pitches

9 Allan Keiler, in "The Syntax of Prolongation," p. 4, states in summary: "The triad, then, is for Schenker, again apart from the notion of *Stufe* . . . a derived unit without its own irreducible analytic integrity."

10 Brown, in "The Diatonic and Chromatic," has shown that chromatic elements do indeed figure in fundamental structural roles in some of Schenker's analyses, and further that Schenker's theory allows that any chromatic scale degree except $\sharp\hat{4}$ may relate directly to the tonic. Patrick McCreless, acknowledging Brown's insights in "Schenker and Chromatic Tonicization," argues the value of thinking in terms of purely harmonic concepts when dealing with Schenker's mature theory in order to better understand the place of significant chromatic tonicizations within large-scale linear structures.

Table 5.1. *Common tone and diatonic characteristics of relative and chromatic mediants*

Mediant type (chord in C major)	Common tone(s) as scale degree	Common tone(s) as chord member	Diatonic chord members
LFM (A♭ major)	$\hat{1}$	third	third
LRM (A minor)	$\hat{1}$, $\hat{3}$	third, fifth	root, third, fifth
LSM (A major)	$\hat{3}$	fifth	root, fifth
UFM (E♭ major)	$\hat{5}$	third	third
URM (E minor)	$\hat{3}$, $\hat{5}$	root, third	root, third, fifth
USM (E major)	$\hat{3}$	root	root, fifth

from these chords may participate in a high-level Schenkerian structure: as part of a long-range bass arpeggiation, or as an element of the *Urlinie*. The potential for inclusion in these two processes is determined differently in each case.

In the first case, the pitches participating in a fundamental bass arpeggiation are generally the roots of chords; thus, those mediants whose roots are diatonic pitches are most likely to be involved in this process. In the second, while scale degrees $\hat{1}$, $\hat{3}$, and $\hat{5}$ are all basic *Urlinie* elements, degree $\hat{1}$ characteristically occurs at the end of a piece, supported by the final cadential tonic. Thus it is an unlikely candidate to anchor either a chromatic or diatonic mediant occurring, doubtless, in the middle of a piece. Scale degree $\hat{5}$, on the other hand, usually begins a piece; if prolonged, it could be associated with a chromatic mediant. Scale degree $\hat{3}$ may occur either at the beginning or in the middle of a piece, depending on *Kopfton*; this versatility renders it the most likely to be associated with a non-diatonic chord.

Since the principal bass tones determine *Stufen*, those mediants which can figure in a high-level bass arpeggiation through their diatonic elements will have the capability of acting at the deepest levels of structure. Only two chromatic mediants, the upper and lower sharp mediants, have diatonic roots. The USM, with its root on III, is by far the more amenable to Schenkerian background processes, since this pitch, a common tone with the tonic triad, forms part of its arpeggiation, one of the most common of all Schenkerian bass diminutions. The root of the LSM, VI, is a less common *Stufe* in Schenkerian analysis. This point is clearly illustrated in Schenker's compendium of prototypal first-level middleground sketches, shown in Figures 14–16 of *Der freie Satz*. One might expect Schenker to prefer a diatonic (relative) chord to be associated with *Stufe* on III and VI. The point is moot with regard to VI, since of the fifty diagrams shown, not a single one contains VI.[11] On the other hand, fully eleven of them involve III. In every case, the chord is signified as III$^{\natural\sharp}$, indicating that the chord may equally be minor (the relative mediant) or

[11] There is a technical reason for this. The only diatonic pitch of the LSM which could appear in the *Urlinie* is $\hat{3}$. Normally in the *Ursatz*, the following *Urlinie* pitch, $\hat{2}$, is supported by V in the bass. However, the progression $\hat{3}$–$\hat{2}$ over VI–V would yield parallel fifths, thereby restricting its suitability.

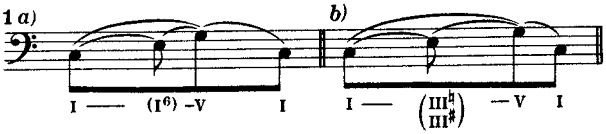


Plate 5.1 *Der freie Satz*, figure 14/1a-b

major (the chromatic mediant). As many of Schenker's analytic drawings throughout the treatise attest, the III♯ form occurs frequently. Schenker's commentary to Figure 14/1a-b proves particularly enlightening. Both diagrams show a bass line of only four notes, C–E–G–C, in which E divides the fifth between C and G. In 14/1a, the E is provided with the legend I^6; in 14/1b, with III♮ and III♯ (Plate 5.1).

Schenker's comments:

> The paths in (a) and (b) represent an arpeggiation of the fifth through the third. This gives rise to the concept of *third-divider*. The meaning of this third-divider changes according to whether it remains within the first harmonic degree, as at (a), or whether it achieves the value of an independent root, especially when the third is raised (III♯), as at (b). However, in both instances the essential unity of the fifth arpeggiation prevails over the third-divider.[12]

Not only does Schenker not elevate III♮, at the expense of III♯, as the strongest harmonic incarnation of an independent III *Stufe*; he does just the opposite, saying that III♯ is most suited to achieve the value of an independent root. By saying this Schenker most likely means that III♯ defines a harmonic area which is more at variance with its harmonic context, and thus freer of it than III♮, whose tonic is a secondary chord of both tonic and dominant keys. Yet III♯ is nonetheless strongly bound to its context through the power of the third-divider. Thus Schenker does not deny the legitimacy of III♯ as an independent harmonic entity. On the contrary, he affirms it.

Of all the chromatic mediants, the two sharp mediants are also most likely to accompany an *Urlinie* pitch, since they both contain $\hat{3}$. The UFM, containing $\hat{5}$, is also possible. But the LFM, the most common of the chromatic mediants, contains only $\hat{1}$ as a diatonic pitch. This factor, coupled with its chromatic root, acts to virtually shut the chord out as an agent of structural significance in strict Schenkerian theory. This is in contrast to the USM, whose root serves equally well as $\hat{3}$ in the *Urlinie* and III in a bass arpeggiation, is thereby eminently suitable, and plays a surprisingly active role in basic Schenkerian structures.

The numerous examples from *Der freie Satz* which follow will validate the claims I am advancing. I will discuss those analytic diagrams which feature chromatic mediant *Stufen* in two groups. The first group contains those arising principally from bass motion, usually arpeggiation of the tonic triad. The second group contains those arising from neighbor motion around a common *Urlinie* pitch.

12 Schenker, *Der freie Satz* [*Free Composition*, 1935], trans. Ernst Oster (New York: Longman, 1979), pp. 29–30.

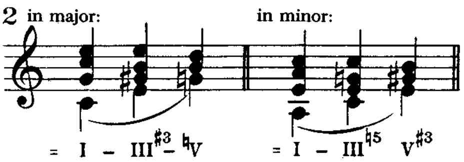


Plate 5.2 *Der freie Satz*, figure 113/2

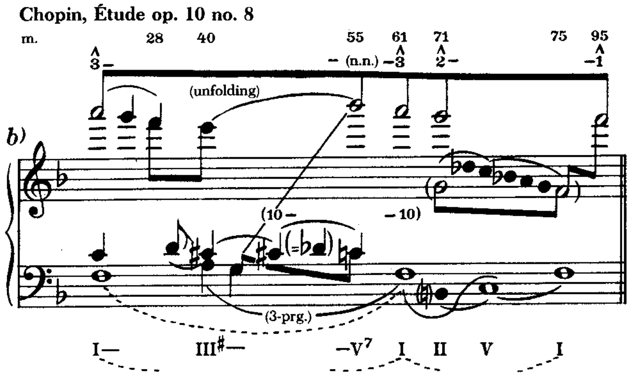


Plate 5.3 *Der freie Satz*, figure 7b

5.1.3 *Der freie Satz*: Chromatic mediant *Stufen*

The classic case of a chromatic mediant arising from bass motion is the ascending third-divider in major, an arpeggiation of the tonic triad whose middle member may equally support a major or minor chord. When major, this *Stufe* is usually indicated as III$^\sharp$.[13] Schenker demonstrates his conviction of the possibility of a structural III$^\sharp$ *Stufe* through an abstract discussion and illustration of the third-divider, Figure 113/2, which he describes as a basic process (Plate 5.2).

However, not all of the relevant analyses in *Der freie Satz* bear out this structural possibility in so straightforward a manner. Some of these diagrams, for instance, assign more independence to III♯ than is implicit in the concept of a third-divider. In Figure 7b of *Der freie Satz* (Chopin, Etude op. 10/8), for example, what appears to be a middleground third-divider occurs under a prolonged $\hat{3}$ in the *Urlinie* (Plate 5.3).

Rather than interpreting the III♯ as a subsidiary division-note of the fifth connecting I to V, though, Schenker details a principal bass line in which, following the initial move to III♯, there is a third-progression directly back to I. The bass note of the intervening V is merely attached by unfolding to the passing tone in the third-progression. Thus in this case Schenker deliberately chooses an analysis

[13] Schenker's *Stufe*-alteration indications are literal, not symbolic. Thus, in C major, F major, B♭ major, and all the sharp keys, the third of III is natural, so that raising it to create a major triad results in a sharp – giving III♯. In the other flat keys, the third of III is a flat; raising it to create a major triad results in a natural – giving III♮. For simplicity's sake, and in order to be able to use a single symbol when discussing this chord acting as *Stufe*, I will assume C major and speak of III♯ when referring to the chord in the abstract.

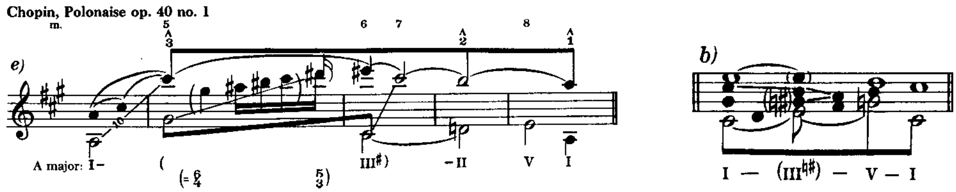


Plate 5.4 a) *Der freie Satz*, figure 56/2e b) *Der freie Satz*, figure 15/2b

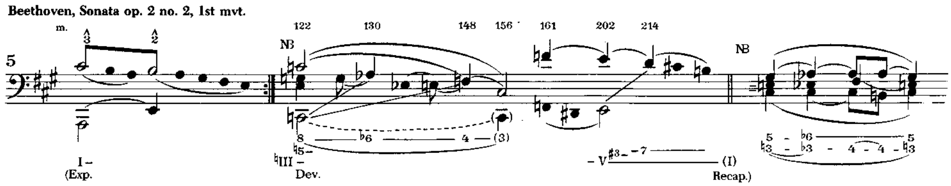


Plate 5.5 *Der freie Satz*, figure 100/5

in which III♯ relates directly to I as the principal *Stufe* of prolongation, with the root of V in a subsidiary role in an inner voice. This configuration departs from all of the possibilities outlined in Figures 14–16. Schenker's expanded analysis of this piece in *Five Graphic Music Analyses* corroborates this reading, giving III♯ a strong middleground role in the initial tonic prolongation, independent of V.[14]

An example more closely resembling one of Schenker's first-level middleground sketches exists in Figure 56/2e (Chopin, Polonaise op. 40/1), in which a third-divider incorporating III♯ progresses to V with an intervening II^6 introducing an anticipatory prolongation of $\hat{2}$. This configuration most closely resembles the schema of Figure 15/2b, save the anticipatory $\hat{2}$. However, the III♯ has *Stufe* status in this analysis, while it does not in the schematic diagram (Plate 5.4).

Another diagram, Figure 100/5 (Beethoven, piano sonata op. 2/2, I), depicts a purer third-divider encompassing an entire sonata form. But this one diverges in a significant way: the prolonged third degree in the bass is not diatonic C♯, but lowered C♮, and the chord associated with its *Stufe* is accordingly the UFM rather than the URM or USM. Thus Schenker allows a chromatic pitch in the fundamental bass arpeggiation (albeit one "borrowed" from the parallel minor) to support a large stretch of material (Plate 5.5).

As is not infrequently the case, Schenker seems quite willing to adapt his precepts in order to better reflect the structural exigencies of individual pieces.

A more spectacular display of Schenker's adaptability comes with his discussion of the exposition of the first movement of Beethoven's *Waldstein* sonata, op. 53. Although he does not furnish an analytic diagram, he discusses the structure of the

[14] Schenker, *Fünf Urlinie-Tafeln* [New York: Mannes School of Music, *c.* 1933], repr. as *Five Graphic Music Analyses* (New York: Dover Publications, 1969), p. 47.

$\hat{5}$————$\sharp\hat{5}$—$\sharp\hat{4}$—$\hat{3}$

g^2—(a^2)—$g\sharp^2$—$f\sharp^2$—e^2

I —( )—III————

Plate 5.6 *Der freie Satz*, *Waldstein* analysis

section in the text itself and provides the schematic background diagram shown in Plate 5.6. The difficulty that this piece presents to Schenker is not simply that the second theme takes place in E major, the key of the upper sharp mediant: as we have seen, many of Schenker's prototypal *Ursätze* can accommodate this harmonic structure. Beyond this, Schenker notes that the passage contains the unusual attribute of a $\hat{5}$ *Kopfton* (G♮) prolonged through the third-progression and moving on to $\hat{4}$ and $\hat{3}$ over III♯, instead of the more commonplace third-divider involving only $\hat{3}$. Since III♯ contains chromatic G♯, not diatonic G♮, one might expect Schenker to steer the *Urlinie* clear of this chord. But here is Schenker's analysis and commentary:

> When, in *major*, $\hat{5}$ is the primary tone, a progression to $\overset{\hat{3}}{\text{III}}\,\sharp 3$ creates difficulties; such a progression also requires a raising of the primary tone, and it must be approached logically through auxiliary harmonies, as in Beethoven's op. 53, first movement, measures 35–42.[15]

That this circumstance "requires a raising of the primary tone" does not appear to perturb Schenker, though it represents what would seem to be a violation of a central principle. Most of the middleground chromatic mediants Schenker identifies interact with the fundamental structure through their diatonic elements. Here, however, a chromatic element determines a significant span of fundamental structure – and it is the *Kopfton* itself, not an intermediary *Urlinie* member, that is altered to become a pitch outside the key.[16] Schenker makes no attempt to regularize or apologize for this pitch: it is the content of the music. He only requires that it be properly approached. This nondogmatic approach is noteworthy given the fervor with which Schenker normally advances his ideas. This example, along with the others cited here, goes to show that his adherence to the ideas of a single-key background structure and the superficial quality of surface harmonic progressions did not require, and did not in fact result in, a rigidly dogmatic conception of background and deep middleground structure. He seems quite willing to acknowledge important prolongations of chromatic harmonic areas and to accord them commensurate status in his analyses.[17]

15 *Ibid.*, p. 135.

16 The analysis of the movement is partial, and so one cannot be certain how Schenker saw the *Urlinie* progress later on in the movement. But he explicitly cites the $\hat{5}$ alteration as affecting the *Kopfton*.

17 Ernst Oster was compelled to write his most extensive commentary in *Der freie Satz* (pp. 139–141) on the subject of chromatic third-dividers. Upon listing several examples in Beethoven and Brahms, he does insist that ". . . the III♯ is not just a 'mediant' as it is usually described; its true significance is as a third-divider, a tone of arpeggiation

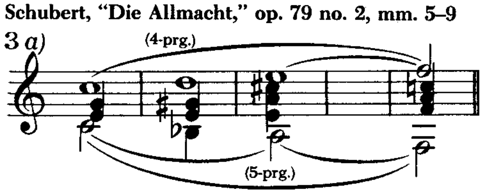


Plate 5.7 *Der freie Satz*, figure 98/3a

Schenker also identifies III♯ *Stufen* which do not progress directly or prolongationally to V, usually in situations generally closer to the foreground. These occurrences of III♯ tend to mark the end point of prolongations of a *Kopfton* on $\hat{3}$. In Figure 82/2, such a III♯ progresses (as $^{V}/_{VI}$) to VI; similarly in Figure 152/1. As such they do not define important harmonic areas, but simply pave the way to the next prolongation.

Descending third-dividers, which traverse the fifth from tonic to subdominant, are rarely shown in *Der freie Satz*. Although they do occur in the music Schenker analyzes, the subdominant has considerably inferior status to the dominant in Schenker's theory, and is much less apt to be seen as the goal of this sort of bass progression. Moreover, neither a descending upper line nor a common tone fit well at all with a descending third-divider, making it a poor candidate to hook up with an *Urlinie*. For example, I–VI would necessitate $\hat{3}$ in the *Urlinie*; but IV contains neither $\hat{3}$ as common tone nor $\hat{2}$ in descent. One clear example of the process does exist in Figure 98/3a (Schubert, *Die Allmacht*; Plate 5.7). This divider is low-level, spanning only four measures, and diatonic in outline, containing the lower sharp mediant. The *Urlinie* is not involved; instead, there is an unusual ascending fourth progression in the upper line. Even with such a short-range passage, the difficulty involved in expressing the details of the descending third-divider in this analytic system is apparent, and this, rather than an acute lack of the dividers themselves in the literature, probably accounts for their curious absence in *Der freie Satz*.[18]

on the way from I to V." By this, though, Oster does not deny the weight and substance of III♯ itself. He means to say that the chord does not derive principally from its scale degree as such, but rather from the prolongational process he describes. Whatever its provenance, the III♯ is definitely present, and what Oster is defending is the substantiation of deeply structural chromatic harmonies. Nowhere does he (or Schenker) say that III♯ is to be understood as a form of diatonic III. In fact, the Schenkerian theory of *Stufen* allows equally for diatonic and chromatic realizations, since only the scale degree itself participates in high-level structure. But the entire content of the chords associated with *Stufen* is meaningful; otherwise, Schenker would not modify his Roman numerals with chromatic alterations when they occur. A truly normalizing theory would not make such distinctions: diatonic and chromatic upper mediants alike would be represented by the plain symbol III. Furthermore, Oster singles out one case in Brahms (Symphony No. 3, I) in which, over the course of a sonata form exposition, the rising third progression does not continue on to V, but rather returns directly to I. He discusses this wholly independent background chromatic mediant progression with relish.

18 Oster, in the same note just cited, recounts several instances of descending third-dividers (I–VI–IV) in Beethoven and others. Schenker himself also documented descending third-dividers involving both all major chords and all minor chords in *Harmonielehre*, as I have discussed earlier.

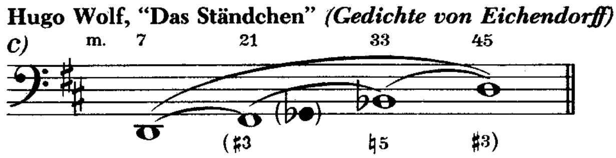


Plate 5.8 *Der freie Satz*, figure 100/6

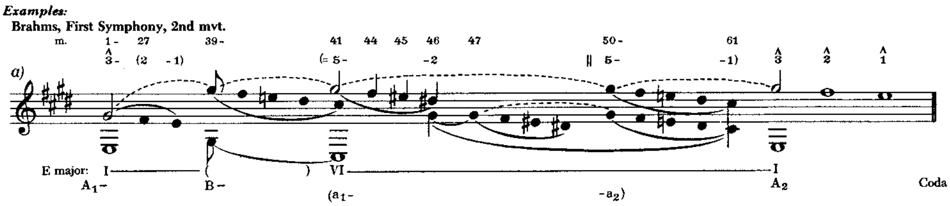


Plate 5.9 *Der freie Satz*, figure 88/4a

The most striking of Schenker's examples showing chromatic mediant movement in the principal bass line is his infamous Example 100/6 (Plate 5.8). It outlines the harmonic structure of Hugo Wolf's song *Das Ständchen*, which traces a pure circle of major thirds supporting major key areas, while lacking any dominant or other traditional *Stufen*. Clearly aberrant in Schenker's own terms, this diagram, which has disturbed many commentators, shows Schenker's curiosity about harmonic structures which can in no way be seen to conform to his principles, his willingness to admit this, and his attempts to seek some answer. I will consider this diagram in detail below in section 8.6.2, which deals with circles of thirds.

5.1.4 *Der freie Satz*: Chromatic mediants associated with the *Urlinie*

The other principal means by which a chromatic or relative mediant can arise as a middleground *Stufe* is through neighbor motion, generally against a prolonged *Urlinie* tone. There are several instances of these documented in *Der freie Satz*. One relatively straightforward example is found in Figure 88/4a (Brahms, Symphony No. 1, II). Here a common tone $\hat{3}$ is prolonged through the exposition and development into the recapitulation, while the principal bass motion traces a minor third down from and back up to the tonic. This mediant starts out as minor and ends up as major (Plate 5.9).

A similar structure prevails in Figure 130/4b (Chopin, Etude in C major op. 10/1): a prolonged $\hat{3}$ extends through sections a_1 and b into a_2, while the principal bass traces a minor third down and up. Here the mediant is exclusively the lower relative (Plate 5.10).

Schenker precedes this analysis with a background sketch, Figure 130/4a, which, including only the tonic, relative mediant, and final descent through V, makes clear the deep structural significance of this relative mediant.

Plate 5.10 *Der freie Satz*, figures 130/4a-b

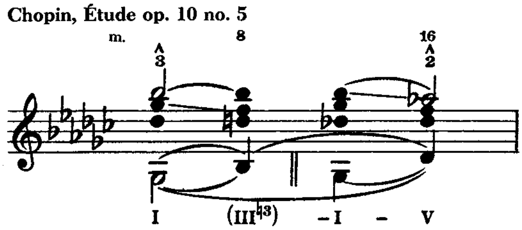


Plate 5.11 *Der freie Satz*, figure 131/2

Figure 131/2 (Chopin, Etude in G♭ major op. 10/5) shows a chromatic mediant acting at a middleground level. Here, under a prolonged $\hat{3}$, is a neighbor motion from tonic to upper sharp mediant and back. The upper sharp mediant is the one generally found in the rising third-dividers discussed above, but this example shows that it may also appear by virtue of a common tone in the *Urlinie* (Plate 5.11).

Figure 102/6 (Chopin, Scherzo in D♭ major) contains a rare occurrence in *Der freie Satz* of a structural lower flat mediant, the most common chromatic mediant in surface harmonic progressions (Plate 5.12). The complicating factor in the LFM prolongation, as I have noted above, is that the common tone between tonic and LFM is $\hat{1}$, and so cannot serve in the body of a Schenkerian analysis at the deepest levels. Here in Figure 102/6 Schenker cannot but acknowledge the importance of A major – he respells it as B♭♭, making clear the third relation – in direct relation to tonic D♭. The bass to this example contains a clearly indicated principal motion down to and back up a major third, with *Stufen* indicated only for I, $^{\flat\flat}$VI^5, and I, followed by the final descent. Remarkably, he accommodates chromatic motion in the *Urlinie* itself, connecting the fifth of the LFM, F♭, as a whole note to the F♮ of the *Urlinie*, also a whole note (although he does not actually apply the symbol $^{\flat}\hat{3}$ to the F♭), rather than simply assigning it as E♮ to an inner voice, an easy alternative. In this example, then, Schenker has allowed chromatic pitches into both the principal

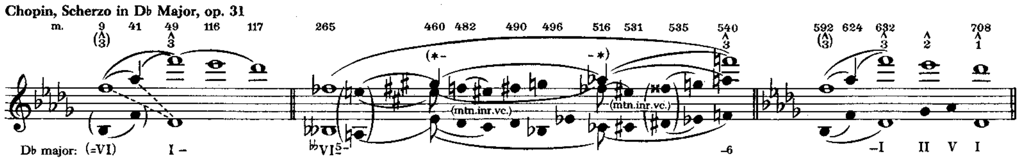


Plate 5.12 *Der freie Satz*, figure 102/6

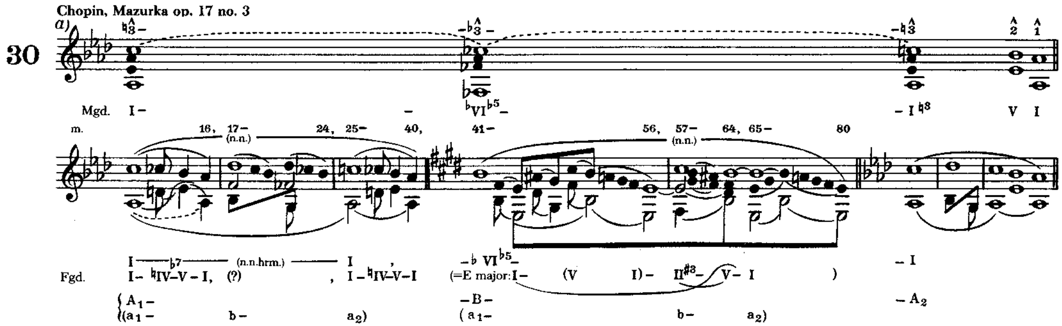


Plate 5.13 *Der freie Satz*, figure 30a

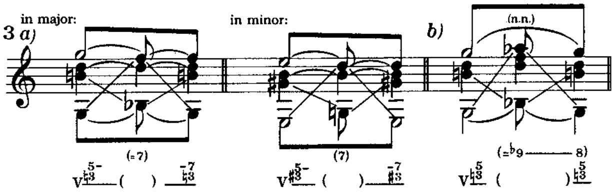


Plate 5.14 *Der freie Satz*, figures 113/3a-b

bass arpeggiation and the *Urlinie*. This is what it takes to accommodate a structural lower flat mediant, and despite the risk of straining the limits of his analytic theory, Schenker, at least in this incontrovertible case, felt obliged to faithfully reflect the obvious.[19] In sonata form pieces, such a background structure is improbable. But in nineteenth-century character pieces such as this scherzo, in which important secondary structural keys other than the dominant are frequent, it may not always be the case that the dominant is the focus of the principal structural inflection.

Figure 30a from *Der freie Satz* displays the only other example of this type (Plate 5.13). Chopin's mazurka in A♭ major op. 17/3, contains a significant structural shift to F♭ major, the LFM, preceded and followed by tonic A♭. Here Schenker indicates a *Kopfton* of C♮, $\hat{3}$, active through the entire first section. As long as F♭ major is present, though, C♮ as *Kopfton* is impossible. One might expect Schenker to relegate F♭ major to the middleground; surprisingly, he includes its fifth, C♭, in the *Urlinie*, necessitating temporary chromatic alteration of the C♮. Schenker indicates this C♭ at the same level as the C♮ which surrounds it, as an open note bearing the $\hat{3}$ symbol. This would suggest that, to Schenker, the scale degree as a sort of ideal entity persists, incarnate in more than one actual pitch.

A final example containing a neighboring relative mediant relation involves the only one of the four chromatic third progressions not yet shown here – the upward minor third. Figures 113/3a-b contain abstract representations of a neighboring chromatic mediant relations by upward minor third, but originating from the *dominant*, not the tonic (Plate 5.14).

The diagrams show the purer forms involving mostly triads; 113/3b has a dominant seventh as its mediant. Succeeding examples make it clear that more complex formations including sevenths and ninths preserve the relation. In Figure 113/3c (Chopin, Polonaise op. 26/1), the mediant is a dominant seventh, as in Figure 113/3b. In Figure 113/3d (Beethoven, Sonata op. 22, I), the mediant is also a dominant seventh, while the originating V chord is a dominant minor ninth (Plate 5.15).

[19] It would be helpful to see Schenker's background sketch for this piece in order to have a clearer picture of his conception of its *Urlinie*. But in its absence, the background status of the LFM is nonetheless clear and unmistakable. This Scherzo was one of the pieces Schenker planned a complete analysis for, along the lines of the *Five Graphic Analyses*, but did not finish, according to Ernst Oster (see his note in that work). Several excerpts from it are distributed in figures throughout *Der freie Satz*, but none other than the one shown here treats the mediant-related sections.

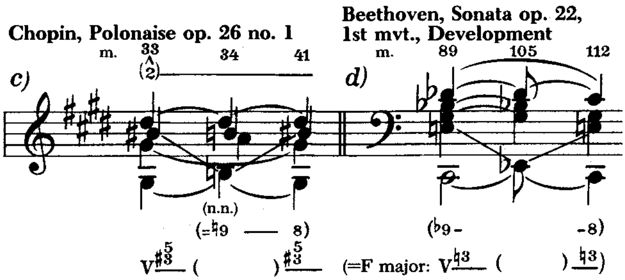


Plate 5.15 *Der freie Satz*, figures 113/3c–d

Since these third-related chords do not resolve as dominants in the foreground, the chromatic mediant relation is preserved.[20] In these cases the mediant, being well out of the key and in the middleground, does not define a *Stufe*.

This second class of high-level chromatic mediant *Stufen* is, from my point of view, even more significant than the first. In the case of the third-divider, even though the III♯ *Stufe* operates in some cases as deeply as the background, it is linked to the relationship between the tonic and dominant, dividing the interval that separates the two, and is thus ultimately dependent on the dominant, since without the dominant there can be no third-divider. What the third-divider does prove is that the chromatic mediant involved is indisputably something other than either tonic or dominant. But in the case of the long-range neighbor prolongations, the chromatic and relative mediants arise from and return to a single chord, either the tonic or the dominant, without the participation of another *Stufe* or other prolonged harmony. In these cases the identity, independence, and fundamental nature of the chromatic and relative mediants is most forcefully displayed.

This is not to suggest that Schenker conceived of an independent class of harmonic relationship to the tonic defined by chromatic mediant progressions. While in his early work he explicitly allows for third relations (diatonic and chromatic) alongside fifth relations, he is considerably less explicit by *Der freie Satz*. Nevertheless he never attempts to devalue the chromatic mediant relations he documents. It is true that, all things being equal, Schenker sees diatonic events as more basic than chromatic ones. But he does not regularize chromatic events, nor does he define them as lesser versions of their diatonic counterparts. (Both III♮ and III♯, for example, are complete and self-sufficient manifestations of the third scale-step.) In fact he argues for their inclusion in a far-reaching concept of tonic-key purview which treats chromaticism as more distantly connected to the tonic than diatonic harmony, but connected nevertheless, even enhancing the power of the tonic by extending it through greater distances than more diatonically constrained theories would propose. This aspect of Schenker's theory, which approaches a notion of chromatic tonality, resonates well with my views: chromatic mediants do not need to be interpreted as variants of diatonic ones in order to be understood as acting within the tonic key.

[20] This treatment of chromatic mediant relations containing dominant chords mirrors my own in section 8.3.4.

5.2 ARNOLD SCHOENBERG

Arnold Schoenberg's harmonic theory is pedagogic and prescriptive, informed to a large extent by his own compositional practice and that of his time. The highly fluid, linear chromaticism characterizing this style was not the most fertile ground for the directness of the chromatic mediant relations. Third-related keys, however, remained common occurrences. Schoenberg's explanations of chromatic mediant relations are mainly directed to this level.

5.2.1 *Harmonielehre*

In his seminal book on harmony, *Harmonielehre* (1911–22), Schoenberg distanced himself from the systematic theorist, especially the non-practitioner or poor practitioner whose ideas, in Schoenberg's mind, could never fully express the nature and compass of tonality, and whose theories in their incompleteness served to inhibit creative investigation:

> To hell with all these theories, if they always serve only to block the evolution of art and if their positive achievement consists in nothing more than helping those who will compose badly anyway to learn it quickly.[21]

Of course, Schoenberg engaged in speculative, if not systematic thinking on the nature of harmony. His treatise contains expressions of admiration and respect for Schenker (with whom, however, he disagreed in fundamental ways) and for Riemann, both systematic theorists. The structure of his treatise is, nonetheless, decidedly pedagogical, concerned with descriptions and examples of and rules for usage. Straightforward presentations of abstract topics are not always the norm.

Furthermore, Schoenberg was acutely concerned with presenting the complete range of harmonic possibility to the student. He was interested in finding connections wherever possible, and as a composer of highly chromatic tonal music, there was much which seemed possible (although much also which, as bad writing, was to be avoided). Thus he states:

> within the more rudimentary relationships of tonality the mutual relationships of a number of chords are apparently not direct, they nevertheless have the capacity for creating unity – a capacity that the ear must grasp, because in the prototype, in the tone given by nature, sounds even more remotely related unite to form one composite euphonious sound.[22]

Unlike Schenker, who justified including only the fifth and the third as admissible root relations by claiming that only the first five tones of the overtone series are perceptible,[23] Schoenberg affirms the presence of the entire overtone series in perception, and adduces it as a basis for the admissibility of quite distant progressions, even those whose harmonic composite falls short of the simultaneous natural content of the series.

[21] Arnold Schoenberg, *Theory of Harmony* [*Harmonielehre*, 1911–22], trans. Roy Carter (Berkeley: University of California Press, 1978), p. 9.
[22] *Ibid.*, p. 255. [23] Schenker, *Harmony*, p. 235.

Chromatic third relations by this time were hardly at the vanguard of harmonic innovation, and in Schoenberg's mind, their successful use in music would have been the only justification necessary for their existence. As a separate theoretical construct, chromatic mediants held little meaning for him. In fact, in *Harmonielehre*, he never presents the sharp mediant relations, directly or indirectly. The flat mediant relations do appear, indirectly, in his discussion of the chords related to the minor subdominant, all of which appear to the flat side of the tonic. His exhaustive presentation of these chords as they connect to all scale degrees (Plate 5.16) includes a group of related progressions, each of which is designated by a sign, ⊗.

Plate 5.16 Flat mediants in Schoenberg's minor dominant discussion

Table 5.2. *Schoenberg: classes of harmonic relation*

Ascending	Descending	Superstrong
Fifth down/Fourth up	Fifth up/Fourth down	Second down
Third down	Third up	Second up

These, as it turns out, are nearly all chromatic flat mediant relations (two are disjunct) connecting two minor or major triads.[24] Schoenberg discusses them thus:

Of far-reaching significance are connections like that of I of C major with III or VII of *f* minor (I or V of *A*♭ major) . . . The standard for the harmonic evaluation of these connections is merely the root progression . . . I can ignore a currently popular explanation that calls such progressions "third relationships," "fifth relationships," etc.; for I consider them adequately motivated just because they are related. In one way or another all chords are naturally related to one another just as are all men.[25]

Thus the coherence of these chromatic mediant relations for Schoenberg comes not at all from their essential nature as third relations, but from the particular connection of chords within the key that each individual progression exhibits. Nonetheless, even if he insists otherwise, Schoenberg has indirectly defined a class of harmonic relations which have in common root motion of a third and, for the most part, preservation of mode. Explanations which cite root-interval relations need only explain similarity of effect. They do not necessarily specify the cause or motivation of a progression, as Schoenberg intimates.

Schoenberg does in fact have a well-articulated if skeletal theory of harmonic relations. He defines three classes: ascending (strong), descending, and superstrong. These are summarized in Table 5.2.[26]

These classes define the strength of all the possible diatonic progressions. Unlike other schemes which rely on root-interval type or the number of common tones, Schoenberg's is based on the nature of qualitative harmonic change from the first chord to the second, which is in turn predicated on the change of quality of certain common tones. Descending progressions (Schoenberg balks at calling them weak[27]) result in the upgrading of the status of tones from the first chord to the second: what was third or fifth becomes root. Ascending progressions (which he does call strong) downgrade the root of the first chord to third or fifth of the second, while the new root is a completely new tone. Superstrong progressions contain no common

[24] Riemann, with his root-interval theory, distinguishes principally between the major-third and minor-third mediants. Schenker, with his theory of *Stufen*, distinguishes principally between the upper mediants and the lower mediants. Schoenberg, with his theory of chord alterations and borrowings, distinguishes principally between the flat mediants (which arise from the minor subdominant) and the sharp mediants (which arise from their diatonic counterparts).

[25] Schoenberg, *Theory of Harmony*, p. 228. [26] *Ibid.*, drawn from pp. 115–121.

[27] As he says, "*Weak* qualities have no place in an artistic structure." Schoenberg, *Structural Functions of Harmony* [1954] (New York: W. W. Norton, 1969), p. 6, note.

tones. The upshot of this system is that fifth relations and third relations as classes are eliminated. Instead, as Table 5.2 shows, cadential fifth motion and downward third motion are grouped together, as are plagal fifth motion and upward third motion. Thus the descending third is seen to display considerable strength, more so than the ascending third.[28] Schoenberg applies this approach to the group of flat mediants referred to above:

> The strong leap of a third downward needs no impetus, while the weaker leap of a third upward is to be judged essentially as before . . . [as particularly weak].[29]

In other words, he finds the lower flat mediant to be easy to achieve, and the upper flat mediant considerably less so. This is borne out in the literature, where the LFM is common, the UFM less so.

The topic of modulation, often the locus of considerable comment about direct chromatic mediant relations in nineteenth-century treatises, does not move Schoenberg similarly. He does not even mention direct modulation in the treatise, while he rails against abrupt modulations involving a pivot such as a diminished-seventh chord, as outlined in more systematic treatises:

> But if someone takes a trip he wants to tell about, he does not go as the crow flies! Here the shortest way is the worst . . . If everything fuses together, anything can be everything.[30]

Schoenberg's modulations are not lean, efficient changes of key; they are full and eloquent, first introducing the dominant of the new key, then looping around and finally zeroing in on the cadence. His taste, and it is taste, clearly rebels against too-sudden shifts in point of reference. Consequently the direct chromatic modulation, though an unquestionable element of some music, disturbs him to the point of denial.

Schoenberg does treat modulations in groups according to their destination keys. One group is composed of the keys of the third and fourth degree of the circle of fifths: that is, the keys of the chromatic mediants. The modulations he shows are all of the extended type – none direct – but at least at the level of key relation he has acknowledged the similarity among these four keys. Like Hauptmann, who for very different reasons also eschewed classes of root relation, Schoenberg relies on the circle of fifths to define this group of keys. And like Hauptmann, Schoenberg recognizes that these keys have a closer relation to the tonic key than do the ostensibly closer keys of the second fifths.[31]

[28] This comparison stands in marked contrast to Schenkerian theory, which, as I have pointed out, accommodates and elevates the ascending third as part of the third-divider between tonic and dominant, while downplaying the descending third as a lower-level neighbor tone to the dominant, or as part of the much rarer descending third-divider between tonic and subdominant. In practice, Schoenberg's assessment is the more accurate, at least on the surface level: lower mediants are preponderant, and are easier to reach. On higher structural levels, especially in sonata form, structural upper mediants become more common; these are more amenable to portrayal by Schenker's theory.

[29] Schoenberg, *Theory of Harmony*, p. 228. [30] *Ibid.*, p. 165. [31] *Ibid.*, p. 207.

5.2.2 *Structural Functions of Harmony*

Schoenberg's second important harmony treatise, *Structural Functions of Harmony*, was written in 1954, more than three decades after the final revision of *Harmonielehre*. Schoenberg intended *Structural Functions* to be a distillation of the earlier work, and in many respects the earlier theory is retained – the three types of root relations, for instance. But *Structural Functions* contains a major evolutionary aspect: Schoenberg's theory of monotonality. It also contains a classification system of chords, harmonic regions, and their relationships – a theory of the sort which Schoenberg himself had so strongly condemned in *Harmonielehre*. This new system, a necessary outgrowth of the notion of monotonality, embodies a descriptive and all-inclusive approach, rather than being reductive and selective – qualities of systems which Schoenberg found reprehensible.

Schoenberg's theory of monotonality is directed toward the same purpose as Riemann's functional theory and Schenker's analytic theory: to show that, even in contexts of heightened chromaticism and frequent tonicization of non-tonic degrees, the tonic key remains in control. Schoenberg's solution was quite different from the others. It depends on his theory of regions, harmonic areas which may be associated with any possible triad in its relation to the tonic. Tonicizations of particular triads, which in Schoenberg's examples are frequent, evoke the harmonic regions associated with those triads; successive tonicizations result in a flow from region to region, often overlapping, all ultimately referred to the tonic. The theory seems to reflect the thinking of a latter-day Marx, in that important chords, while functioning within a key, are understood as carrying a sense of their related key with them.

Schoenberg's table of harmonic regions and their relationships is shown in Plate 5.17.[32] This table is not as systematically arranged as Riemann's 1920 harmonic grid (see Plate 6.1 below), from which it differs greatly. It distinguishes between major and minor triads, and includes intervals of relation other than fifths and thirds. Like Riemann's grid, degrees of relation are represented by closeness to the tonic. The relative mediants are signified by **m** and **sm**; the chromatic mediants by **M**, ♭**M**, **SM**, and ♭**SM**. In the diagram, the relative mediants appear directly next to the tonic, indicating that they are directly related to it.

The chromatic mediants all appear in the next rank. The sharp mediants are achieved through the relative mediants, while the flat mediants are achieved through the minor tonic and subdominant. This derivation is essentially along the same lines as in the *Harmonielehre*.[33] It would seem to indicate that, for Schoenberg, the chromatic mediants are not directly related to the tonic, despite their simple single-letter nomenclature.[34] This interpretation is confirmed by Schoenberg's explanation

[32] Schoenberg, *Structural Functions*, p. 20.

[33] This distribution of the mediants on both sides of the diagram goes to show how little scale degree has to do with harmonic identity in Schoenberg's system, despite the liberal use of Roman numerals in his analyses.

[34] Dieter Rexroth, in "Arnold Schönberg als Theoretiker der Tonalen Harmonik" (Ph.D. dissertation, Rheinische Friedrich-Wilhelms-Universität, Bonn, 1971), pp. 284–293, discusses in detail the ways in which chromatic

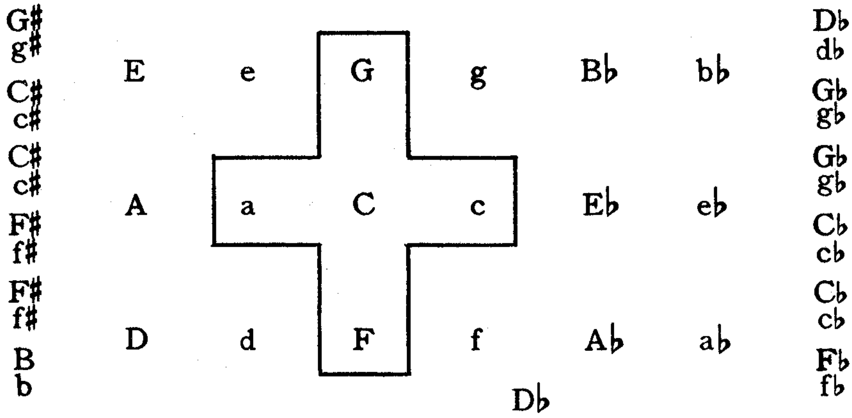


Plate 5.17 Schoenberg: chart of harmonic regions

of the relation of these chords to the tonic as "indirect but close," their shared feature being their keys' three or four tones in common with the tonic.[35] He provides several examples of harmonic movement into each of these regions and back to the tonic; as in the *Harmonielehre* modulations, these are extended progressions, none involving a direct chromatic mediant relation.[36]

Thus the more systematic presentation of *Structural Functions* only reaffirms Schoenberg's earlier position regarding chromatic mediants. He accepts them as functional elements within the key, as he accepts a host of other chromatic chords, and as suitable secondary areas of harmonic activity. But his own compositional aesthetic precludes the direct, tonicizing, or modulatory chromatic mediant relation, which remains totally absent from his discussion.

5.3 OPPOSITION TO THEORETICAL ACCEPTANCE OF CHROMATIC MEDIANTS

The attitudes of some other early twentieth-century German theorists regarding chromatic third relations are documented by Dieter Rexroth.[37] These writers, somewhat surprisingly, were generally not very accepting. Hans Mersmann, for instance, distinguished between the natures of fifth relations and third relations, the latter being passive and without connection, drawing on color rather than harmonic power

mediants fit into Schoenberg's system of harmonic relations. He points out the deceptive nature of these simple symbols for chromatic mediants; single letters, one would think, would indicate a direct relation, but Schoenberg's commentary and the diagram itself prove otherwise.

[35] Schoenberg, *Structural Functions*, p. 69. For the sharp mediants' derivation, Schoenberg cites the common dominant shared by them and the relative mediants; for the flat mediants, he cites the agency of the minor subdominant. The "indirect but close" class of keys having three or four tones in common with the tonic also includes the keys of the minor tonic, dominant, and subdominant.

[36] Schoenberg, *Structural Functions*, chap. VIII, pp. 57–62.

[37] Rexroth, "Schönberg als Theoretiker," pp. 280–284.

for whatever sense of connection they do convey. Edwin van der Null rejected the very term third relation (*Terzverwandschaft*), which to him implied a status akin to that of fifth relations. In his view, third relations have no connection to the tonic; in fact, they violate the cadence. Sigfrid Karg-Elert went even farther:

> third relations rupture the key. They lead ultimately to the dethronement of the fifth and thereby to the loosening of the cadence and lastly to the dissolution of the cadence. In the place of Art walks only Color, more and more.[38]

Yet Karg-Elert's own complex dualistic harmonic system included direct mode-preserving relations by major third and minor third with the tonic. Following Riemann, Karg-Elert's major-third mediants, which he called primary, are capable of direct relation with the tonic. His minor-third mediants, which he called secondary, are not directly intelligible. Karg-Elert showed considerable interest in chromatic mediants in music despite his view of their negative effect on tonal coherence.[39]

Rexroth himself has a different view:

> Without doubt the introduction of third relations does not necessarily mean the dissolution of tonality... The intrinsic meaning of third relations is not to be denied, even if their incorporation into the system of tonal harmony appears problematic.[40]

He notes that there is a further, logical problem created by interpreting chromatic third relations as indirect, secondary progressions, and thereby as functional ones, meaning as substitutes in the Riemann sense.[41] For, if it is admitted that third relations helped usher in the dissolution of tonality, then it is contradictory to consider them as indirect versions of tonally affirming harmonies. Rexroth cites many of Riemann's works but comes to the conclusion that while Riemann recognized the special nature of chromatic third relations, he never reconciled them with his system, which retained only three functions up until the end.[42] But I have shown that Riemann did define new functions for his *Terzschritte* in 1916, and furthermore, as outlined in the next chapter, proposed T(erz) moves as integral parts of his algebra of progressions. Thus Riemann's own view would be that the *Terzschritte* are not secondary, derived progressions, but in fact are functions in their own right, and as such, key-affirming.

5.4 TOVEY'S PLAIN JUXTAPOSITION

Donald Francis Tovey was an empirical analyst, not a theorist; perhaps even more than Weber, he "rejected abstract thinking and systematic theory in music."[43] Yet

[38] Sigfrid Karg-Elert, *Polaristische Klang- und Tonalitätslehre* (Leipzig: F. E. C. Leuckart, 1931), quoted by Rexroth, *ibid.*, p. 283.

[39] Harrison (*Harmonic Function*, p. 316) warmly outlines Karg-Elert's system and documents this paradoxical behavior.

[40] Rexroth, "Schönberg als Theoretiker," p. 283.

[41] This is the explanation given by Carl Dahlhaus in *Zur chromatischen Technik Carlo Gesualdos*, p. 79, as quoted by Rexroth, "Schönberg als Theoretiker," p. 284.

[42] "Schönberg als Theoretiker," p. 282, note.

[43] Ian Bent, *Analysis* (New York: W. W. Norton, 1987), p. 55.

he produced an organized speculation on mid-nineteenth-century harmony which is worth notice. In his 1928 article, "Schubert's Tonality," Tovey gave an overview of the mechanics of tonality predicated more on observed circumstances than on system or principles. Claiming that "it is, so far as I know, new," Tovey describes a harmony which takes the key, not the tonic–dominant–subdominant complex, as its point of departure, and considers key relations, not chord relations, as the primary agent of harmonic coherence in music. According to him,

> The basis of key-relation is that two keys are related when the tonic chord of one is among the common chords of another . . . To [a tonic] all the five keys . . . are equally related.[44]

By the common chords, Tovey meant the triads built on the second through sixth degrees of the diatonic scale (the seventh, being diminished, is excluded); the five keys are those whose tonics are these common chords. This idea was not essentially new with Tovey, despite his claim. It was expressed much earlier as the system of "relative keys," each an equally proper goal of modulation from the tonic, by Reicha, a theorist of Schubert's own time.[45] For Tovey, however, this property of equal relatedness of keys did not extend to the lower-level relations between chords within a particular key. These he construed more conventionally: the tonic and dominant are prominent, with the subdominant an important lesser partner.

Tovey's purpose was not to explain these normative aspects of the harmonic system, but, much like Riemann, to show how the more remote key areas regularly explored by Schubert fit into that system. In his article, Tovey begins by introducing a central idea, commonplace by now: major and minor in Schubert are different faces of the same tonic, and their diatonic sets are the property of both. In this way Tovey allows modal alteration on each of the natural degrees of a scale. He also associates all of the common chords of a minor key with the parallel major tonic, and vice versa (part of his table of relations is shown in Plate 5.18).[46] To Tovey the mechanism behind this remains "relatedness"; it is enough to point out that two associated chords share membership in a single key-structure. Consistent with the idea of equal relatedness is that none of these additional keys is distinguished from the others by its particular relation to the tonic or the key.

Notice that one result of Tovey's broader definition of relatedness is the admission of all possible varieties of fifth relation, and of all possible varieties of third relation, into the realm of meaningful harmonic opposition to the tonic. By Tovey's criteria, then, Schubert's expansion of harmony was focused on direct relations between the tonic and all variants of the scale degrees III, IV, V, and VI – in other words, the dominants and the mediants. He restates his definition:

> Two keys are related when *some form* of the tonic chord is identical with *some form* of one of the common chords of the other; with the exception of keys a whole tone apart, which are related only when their common chords are unaltered.[47]

[44] Donald Francis Tovey, "Schubert's Tonality," *Music and Letters*, 9, 4 (1928), reprinted in *The Main Stream of Music and Other Essays* (New York: Meridian Books, 1959), p. 135.

[45] Reicha, *Cours de composition*, p. 54.

[46] Tovey, "Schubert's Tonality," p. 144.

[47] *Ibid.*, p. 147.

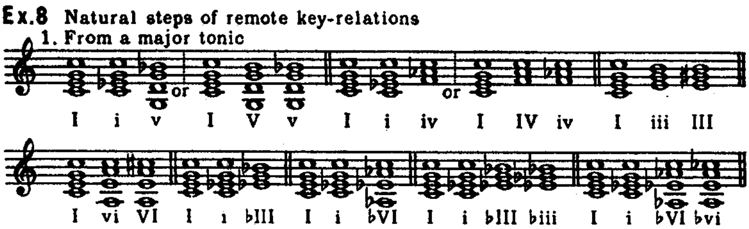


Plate 5.18 Tovey: table of remote key relations with a major tonic

Thus, he admits progressions to those chords of the second degree which are among the common chords, but none which is chromatically altered or the result of modal mixture. He feels that II and ♭VII in major are nearly impossible to hear as tonics, for they too strongly imply the keys of the dominant and subdominant, respectively.

Tovey does discuss the mechanism of modulation to these remote tonics in a general way. The most common means, which he terms "natural modulation," is by smooth progression through related intermediate chords. Such modulations are displayed in Plate 5.18. But there are other ways, which Tovey cites:

> Or else by plain juxtaposition without the intermediate steps. Or even by breaking down the tonic chord into a single note and then building that note up into another chord . . .

Nor are these merely poor siblings of the natural modulations:

> Plain juxtaposition may be hardly thought worthy of inclusion among these natural modulations, but it is in many ways the most important of all . . . [Some composers] must interpolate explanatory chords. Not so Haydn, Beethoven, Schubert, Brahms.[48]

This point is well taken: modulations do not always take place as the textbooks, or Schoenberg, would have it. More often than one might think, modulations are truncated, or lack a clear pivot or moment of transition; frequently a composer simply begins in a new key, in the manner of the plain juxtaposition Tovey describes. Nor does Tovey share Riemann's view that plain juxtapositions (key-leaps) are always the rough cousins of their smoother relatives. While Tovey reports the use of plain juxtaposition in moves to remote keys, the technique occurs as well in association with the more common key changes.[49] Where Tovey's harmonic system falls somewhat short is in his assertion that all keys corresponding to common chords are related equally to the tonic. Tovey rejects any idea of hierarchy among these keys, and does not consider any of the details inherent in specific harmonic relations. It is hard to

[48] *Ibid.*, p. 145.

[49] Patrick McCreless, in "An Evolutionary Perspective on Nineteenth-Century Semitonal Relations," in *The Second Practice of Nineteenth-Century Tonality*, ed. W. Kinderman and H. Krebs (Lincoln, Nebr.: University of Nebraska Press, 1996), pp. 87–113, discusses Tovey's belief that keys in Classical music are always related by immediate context, never abstractly by the agency of an understood third key. This suggests a predisposition to the idea of plain juxtaposition as an explanation for direct chromatic relations in early Romantic music, rather than a normalizing theory which would reinterpret their goals in terms of something else.

Table 5.3. *Tischler: mediant classification system*

Mediant class	Class characteristic	Examples in C major
Diatonic	No chromatic pitches	A minor, E minor
First-degree chromatic	One chromatic pitch	A major, E major
Second-degree chromatic	Two chromatic pitches	A♭ major, E♭ major
Third-degree chromatic	Three chromatic pitches	A♭ minor, E♭ minor

imagine how the key of the second or third degree and the key of the dominant could be equally related to their tonic (although this is also a tenet of Reicha's theory); it is hard to imagine that progressions from the tonic containing two common tones are equal in weight to others containing no common tones. Perhaps Tovey overreacts – in order to allow meaningful relations outside the realm of the traditional three functions, he grants the other keys equal access, as it were, to the tonic, without sensing the need for the additional step of determining the relative strength of each particular relation. While his system would benefit from more careful working out, his observations on the true-life mechanics of key relation are sound, and his claims regarding chromatic mediants hit the mark.

5.5 OTHER CLASSIFICATION SCHEMES

Chromatic mediants began to catch the attention of American theorists in the late 1950s. In a brief article, "Chromatic Mediants – A Facet of Musical Romanticism," Hans Tischler provides a classification system for mediants and a view of their relationship to tonality. Tischler's classification system (Table 5.3) is predicated on the raw chromatic content of each mediant chord.[50]

He makes no claim regarding the relative strength or closeness of these chords to the tonic other than the basic one distinguishing the diatonic mediants from the chromatic mediants. The informal assumption is that increasing chromatic content means greater removal from the tonic; first, second, and third degrees get progressively farther from I. He makes no mention of common-tone content, nor the contexts in which these chords appear, nor the practical differences between chords of different degrees. The system is appealing in its neat division by pairs and its even integral steps. But I do not agree with Tischler's first-degree/second-degree distinction. His system depends on identification of single chords, rather than chords in relation to others by root-interval or by common tone, or by total change in the diatonic set of the mediant. Thus the chromatic mediants with diatonic roots and only one chromatic pitch (the sharp mediants) are given theoretical precedence over those with chromatic roots and two chromatic pitches (the flat mediants). In

[50] Hans Tischler, "Chromatic Mediants – A Facet of Musical Romanticism," *Journal of Music Theory*, 2, 1 (April 1958), pp. 94–95.

practice, though, the second-degree mediants, especially the LFM, act as smoothly and as closely as the first-degree ones. While it is true that the flat mediants have twice as many chromatic pitches as the sharp mediants, they are all pitches native to the parallel minor, while the single chromatic pitches in the sharp mediants are well outside the key. Thus the sharp mediants' chromatic profiles are as highly marked as the flat mediants'. The system presented in this study, with its common-tone criterion, more accurately groups all four chromatic mediants together, and allows for major/minor-third and upper/lower-affinity pairings as well as the sharp/flat one built into Tischler's system. Tischler claims that chromatic mediants go far in "abandoning tonality." While some may be interpreted as the result of modal mixture,

> many chromatic mediants leave tonality behind and exist merely because of the colorful clash of chords which already attracted Gesualdo and Giovanni Gabrieli.[51]

He does not say how these chords leave tonality behind, nor for how long, merely that they do. Yet he pronounces them "one, if not the most important, technical ingredient(s) of Romantic harmony" – which is generally considered to be completely tonal. His view is conventional: chords which exceed the diatonic set and the typical auxiliary functions cannot interact with the system. They are merely agents of color set among functional harmonies. Tischler provides no examples of actual progressions, just a very modest statistical survey of four works which purports to show that the frequency of use of chromatic mediants increased over the course of the nineteenth century. At the least, his basic idea of chromatic mediants and their place in (or outside) the harmonic system is clearly presented.

Also in 1958, Ronald Jesson, in a study of chromatic third relations, proposed a simple classification system of two categories, first and second order.[52] His first order is equal to my affinity group of flat mediants; his second order is equal to the affinity group of sharp mediants. Jesson makes only this distinction, overlooking the other affinity groups of major/minor third and lower/upper. Unlike Tischler, he does not treat the entire constellation of sixteen mediants.

5.6 NEO-SCHENKERIAN AND VOICE-LEADING APPROACHES

Some more recent studies of nineteenth-century chromatic harmony have been conducted from a Schenkerian viewpoint. While accepting the essential validity of chromatic mediant relations, all feel it necessary, not surprisingly, to provide an explanation which attributes their coherence to some other property of the tonal system. Thus, in one way or another, these studies prolong conventional notions of chromatic third relations.

[51] *Ibid.*, p. 95.

[52] Ronald Jesson, "Third Relation in the Late Eighteenth and Early Nineteenth Centuries" (Ph.D. dissertation, Indiana University, 1958).

The most thorough recent discussion of the nature and behavior of mediant relations is contained in a much-cited dissertation by Harald Krebs devoted entirely to the subject.[53] Krebs treats third relations in music ranging from Haydn to Schubert and Chopin, directing a combination of customary harmonic views and Schenkerian insights to the purpose of clear categorization and explanation of dozens of large-scale instances of structural mediant relations, both diatonic and chromatic, in the music he analyzes. The sheer multiplicity of analytic middleground sketches serves to reinforce Krebs' point that structural mediant relations are relatively common in early nineteenth-century music, and frequent even in the eighteenth century.[54]

Krebs advances a Schenkerian view of monotonality, the notion that a tonal piece, no matter what its harmonic complexity, always takes place within a single key. Tracing the idea back to several principal eighteenth- and nineteenth-century theorists, he contends that modulations are to be viewed as achieving scale steps, not new keys. Krebs argues strongly for the pre-eminence of the dominant in harmony and in form. At the same time, he allows for the existence of third relations, explaining them as acceptable middleground phenomena. His explanations follow Schenker's: scale degree III can form part of a third-divider linking tonic and dominant; it may also be the focus of a returning figure, an "oscillatory progression" about the dominant (V–III–V) – or, in later music, about the tonic (I–III–I). Scale degree VI may serve as an upper neighbor to V, and, in later music, may anchor oscillatory progressions around the tonic. Circles of major and minor thirds also appear, though Krebs shows that these are generally reducible to oscillatory progressions in the middleground.

In his analytic work, Krebs concentrates on middleground progressions.[55] Most of his examples concern parts of pieces where mediants are strong harmonic goals, but are not always in close relation to the tonic on the surface. Generally several chords intervene between tonics or dominants and mediants, and the bulk of Krebs' analytic efforts consist of showing that the mediants, among all the harmonic material, are the important middleground entities. The actual mechanics of third relations receive little attention, and works in which third relations are the only important harmonic events other than surface I, IV, and V – the Schubert songs *Die Sterne* and *Der Musensohn*, for instance – become trivial cases. Structural mediants, especially III♯, which can be located in a few of Schenker's basic middleground diagrams, need no more explanation as Krebs sees it.[56]

53 Harald Krebs, "Third Relations and Dominant in Late 18th- and Early 19th-Century Music" (Ph.D. dissertation, Yale University, 1980).

54 *Ibid.*, p. 20.

55 However, Krebs does identify chords on the surface using Schenker-style inflected Roman numerals, distinguishing between diatonic and chromatic mediants: the former are represented by a bare symbol, the latter by accidentals indicating alteration, a prefix indicating an altered root and fifth, and a suffix indicating an altered third. Thus in major the diatonic mediants are III and VI; the chromatic mediants are ♭III, III♯, and ♯III♯, and ♭VI, ♭VI♭, and VI♯. He does not distinguish between chromatic mediants containing one common tone and those containing none, nor between flat and sharp mediants.

56 Brian Hyer, in "Tonal Intuitions in *Tristan und Isolde*" (Ph.D. dissertation, Yale University, 1989), pp. 350–351, calls Krebs' method into question on two grounds: first, that Krebs makes no distinction between major and

With respect to Haydn, Mozart and early Beethoven, Krebs claims that third relations almost always appear as parts of middleground progressions involving the dominant, and are thus secondary to it. Later, with Schubert and Chopin, he observes that while mediants continue to be used in this fashion, they can also occasionally stand on their own in relation to the tonic. Such independent upper and lower mediants may form part of an oscillatory progression, or may agglutinate in a circle of thirds. Only once – in Schubert's song *Meeres Stille* – does Krebs identify a background progression containing a mediant and no dominant.[57] While clearly warm to his subject, and observing that chromatic mediants may at times exist independently of dominants in this music, he nonetheless characterizes them as quantities which have a negative, even chaotic effect within the system of tonal harmony:

> The rise in early nineteenth-century music of the use of third-related triads independently of the dominant is . . . an important factor in the departure from the tonal clarity and stability of eighteenth-century music . . . In the chromatic oscillatory progressions, [the dominant] is missing. The tonic triad, returning directly after the disorienting chromatic triad, is therefore not clearly recognizable as the tonic. When the tonic is not recognizable, tonality must be said to be weakened.[58]

Krebs' observation makes sense in the context of the eighteenth-century music he first discusses. But for the nineteenth-century ear the agency of the common tone and the root interval of a third can provide certainty. As these progressions became normative, the presence of a dominant was not necessary to signal relation to a tonic, and would in fact have compromised their character. Think, for example, of *Der Musensohn*, analyzed in section 2.2, with its smooth juxtapositions of G major and B major. According to Krebs' prediction, these connections would result in a disorienting effect, making the tonic returns hard to recognize as such. Since this chromatic oscillation happens twice, one would expect total confusion in the listener by the final cadence. But, to the contrary, the connections are clear, and the perception of coherent, connected departure from the tonic and return to it is undeniable. What Krebs calls clarity might be better expressed as simplicity. To be sure, nineteenth-century music is more complex harmonically than eighteenth-century music, but an increase in complexity does not of itself necessarily bring about murkiness and uncertainty. Traditional descriptions such as "unclear" and "unstable," which convey judgments rooted in criteria developed for earlier styles,

minor thirds; second, that Schenkerian theory is dependent on diminutions of the interval of a fifth to explain the structure of pieces, and is thus ill-suited to explaining chromatic third relations and other long-range structures not based on fifths.

57 In later work Krebs revises this analysis. Rather than identifying a unified background framed by the oscillating mediant progression, he proposes a dual-tonic explanation in which the elements of the chromatic mediant relation are structurally independent and equal. This approach enables him to justify the stability of the chromatic mediant. Krebs, "Some Early Examples of Tonal Pairing," in *The Second Practice of Nineteenth-Century Tonality*, ed. W. Kinderman and Harald Krebs (Lincoln, Nebr.: University of Nebraska Press, 1996), pp. 23–30.

58 Krebs, "Third Relations and Dominant," abstract, final page; pp. 106–107.

can compromise the perception of later music for what it is and does. It is beneficial to think that in music of the nineteenth century, chromatic mediants, as elements of an expanded system of common-tone tonality, convey clarity and impart stability. Both diatonic and chromatic chords may suggest and initiate motion away from the tonic; their strength is relative to context and style.

A number of other studies conducted from a Schenkerian or voice-leading perspective also deal with chromatic third relations. Deborah Stein's study of a broad range of nontraditional tonal harmonic procedures in the songs of Hugo Wolf also springs from a classic Schenkerian point of view, although one analytically more flexible than Krebs'.[59] In conventional cases of third relations – third-dividers and neighboring motion – she employs a Schenkerian model. In other cases, though, she finds Schenkerian procedures to be inappropriate to the subject, incapable of showing the structural aspects of songs in which chromatic elements express ambiguity, and/or in which an important structural dominant is lacking. She concludes that an extension of strict Schenkerian techniques to account for this more chromatic style is undesirable, since Schenker's analytic method is so intimately bound up with the basic diatonic processes of common-practice tonality. Stein's interest in third relations is focused on the special case of mode-preserving circles of major thirds. These formations are particularly resistant to straightforward analysis by Schenkerian methods, since there is no structural dominant in the principal bass arpeggiation (an augmented triad tracing *Stufen* I, III♯, and ♭VI). She agrees with Krebs that chromatic third relations are destructive of the sense of key, but parts company with him in further concluding that the circle of thirds is incapable of prolonging the tonic, and provides alternative explanations. Her analyses will receive closer consideration below in section 8.6.2.

In contrast are a number of less orthodox studies which conclude that the circle of major thirds does prolong the tonic on its own terms, as the arpeggiation of the augmented triad which equally divides the octave. Robert Morgan coins the term "dissonant prolongation" to refer to general circumstances of this kind, in which structures other than the consonant triads of Schenkerian theory, such as diminished-seventh chords and whole-tone series, serve as the framework for prolongational process in tonal music. In this context, he argues that the symmetrical nature of the even-interval structure of the major-third circle may form the basis for prolongation without the involvement of a dominant.[60] Howard Cinnamon expands this argument, describing an evolutionary process of ever-diminishing diatonic restrictions. In his model, the circle of thirds in its earlier usage was necessarily grounded by a dominant before the final arrival to the tonic. As style evolved, it developed into an independent structure, with each step representing a tonicized major-key area, no dominant required. Finally, the circle emerged as a true

[59] Deborah Stein, *Hugo Wolf's Lieder and Extensions of Tonality* (Ann Arbor: UMI Research Press, 1985).

[60] Robert Morgan, "Dissonant Prolongations: Theoretical and Compositional Precedents," *Journal of Music Theory*, 20, 1 (Spring 1976), p. 82; also "Symmetrical Form and Common-Practice Tonality," *Music Theory Spectrum*, 20, 1 (Spring 1998), pp. 1–47.

prolongational entity, with augmented triads built on each pitch of the horizontalized augmented triad formed by the steps of the circle, a structure particularly characteristic of some of Liszt's late, tonally ambiguous music.[61] In this last case motion from one triad to another represents inversion rather than transposition or progression, even if other chords are interposed, since the pitches do not change. While these studies do conclude that the circles of thirds do prolong the tonic, they view them as dissonant configurations, and provide explanations which are linear, downplaying the issue of the intrinsic harmonic nature of the chord relations and what they bring to the structures. R. Larry Todd has documented this process with regard to Liszt's fascination with the augmented triad throughout his career, from his early use of more conventional chromatic third relations along with the occasional augmented-triad sonority to later experimental music based principally on the augmented triad, both as vertical sonority and as bass arpeggiation. He treats Liszt's use of the augmented triad during his early and middle career as an expansion of conventional tonal process without invoking the prolongation concept, while in his view the later music employing exclusively major-third circles and augmented triads represents a transition to atonal process.[62] I would agree: harmony in this later music, based equally in its horizontal and vertical dimensions, can truly be said to be based on the tripartite division of the octave. Major-third circles containing major triads, in contrast, still derive much of their sense from tonal relationships.

Gregory Proctor's 1978 dissertation, "Technical Bases of Nineteenth-Century Chromatic Practice," also speaks from within the Schenkerian tradition. Like Krebs and Stein, Proctor focuses on nineteenth-century music containing harmonic structures which do not readily conform to the norms of Schenkerian analysis, but he comes to very different conclusions. He argues that while much of the chromatic repertory of the later nineteenth century does not follow regular Schenkerian structural principles, this is not necessarily destructive of tonal coherence and the sense of key. Instead, he abandons the strict notion of prolongation and offers alternate structural mechanisms to account for these nontraditional processes within the scope of the unified key.

Proctor's theory includes an enhanced notion of the identity of chromatic pitches, which he illustrates with an example from Schubert. Resurrecting Riemann's discussion, he cites an excerpt containing a conflict between the harmonic and linear interpretations of a pitch resulting from neighbor motion from tonic D major to F♯ major and back.[63] The chromatic tone is named A♯ if viewed as the third of

[61] Howard Cinnamon, "Tonic Arpeggiation and Successive Equal Third Relations as Elements of Tonal Evolution," *Music Theory Spectrum*, 8 (1986), p. 24. Morgan concentrates on Liszt as well.

[62] R. Larry Todd, "The 'Unwelcome Guest' Regaled: Franz Liszt and the Augmented Triad," *19th Century Music*, 12, 2 (Fall 1988), pp. 93–115; also "Franz Liszt, Carl Friedrich Weitzmann, and the Augmented Triad," in *The Second Practice of Nineteenth-Century Tonality*, pp. 172–173.

[63] This is the same conflict described by Riemann in the *Katechismus*, p. 38, treated above in section 4.5. The excerpt is the passage from the third movement of Schubert's D major sonata, D850, which is discussed below in Figure 8.7, section 8.3.2.

the F♯ major chord in which it appears, and B♭ if viewed as the element of the voice in which it serves as the upper neighbor to the A♮ in the D major triad. Proctor asserts that while this would be a severe conflict in the eyes of Classical, diatonic-based practice, it is a feature of chromatic tonality that these two pitches, A♯ and B♭, are really one and the same. In a pure tuning system they would sound quite different; in the equal-tempered system they are identical, making A♯ a perfectly suitable upper neighbor to A♮. I would add that this conflict is enhanced by the limitations of our notational system. This A♯ is neither the A♯ which passes from A to B nor the B♭ which is upper neighbor to A. Rather, as the third of a chromatic mediant, it has a very different quality, in a Hauptmannian sense, from either of the pitches with which it could share a name; it resolves the opposition between the conflicting aspects of its nature. So while this returning-tone group does not move to B♭, neither does it move to an A♯ which is a simple chromatic alteration of the fifth scale degree, but rather to another pitch of different quality which has been assigned the same name in the system. The situation is not a clash between a harmonic A♯ and a linear B♭. Rather, it is a move within chromatic tonality to a pitch which synthesizes the harmonic and linear perspectives.[64]

Proctor proposes a transformation mechanism to explain larger-scale chromatic structures not traceable to long-range voice-leading procedures. He asserts that successions of similar triads (generally three or more) appearing in structural relation to each other, but not sharing a common scale or diatonic structure, can be said to be the result of a regular transposition operation rather than a contrapuntal or harmonic process. Symmetrical or orderly divisions of the octave are particularly amenable to explanation along these lines, based on underlying structures such as diminished-seventh chords and whole-tone and octatonic scales. Thus a circle of major thirds can be interpreted as the result of three successive transpositions of four semitones, instead of as a network of particular prolongations, or as a succession of highly altered harmonies. This explanation makes a great deal of sense in some contexts. Although the idea of abstract transpositions of material *per se* for structural ends is an institutional concept of atonal music, it is demonstrable that nineteenth-century composers also employed systematic transposition series from time to time in ostensibly tonal contexts.[65] As with Morgan's dissonant prolongation, Proctor's conception transcends the Schenkerian requirement that a dominant is needed to provide tonal stability in such structures.[66] (He does allow that the transposition operation may take place in concert with traditional processes of

[64] It is notable that Proctor takes this example seriously, rather than dismissing F♯ major as surface ornamentation, in line with Schenkerian thought. Proctor, "Technical Bases," pp. 140–142.

[65] Morgan provides an extended discussion of this topic in "Symmetrical Form."

[66] For this reason Stein rejects the applicability of Proctor's approach to her Wolf analyses. She feels that chromatic third relations are too weak to support tonal structures within a key (*Hugo Wolf's Lieder*, pp. 90–91). Since Proctor's transposition operation, by essentially sidestepping the troublesome issue of chromatic third relations' harmonic nature, allows for such key-preserving structures, its acceptance would work against notions of double tonicity.

counterpoint.) Like the circle-of-thirds theorists above, though, Proctor does not discuss a concurrent harmonic dimension. His transposition operation draws on purely structural properties of symmetry and directed motion; thus his circles of major and minor thirds retain no essential identity as series of chromatic third relations, only as groups of related transpositions. In some cases transposition schemes certainly do seem to be the principal structural determinant. For instance, the circle of major thirds in the final movement of the Schubert G major piano sonata (mm. 153–160; see below, section 8.6.1) is expressed as a series of disjunct repetitions of a two-measure gesture, repeatedly displaced without any common-tone or voice-leading connections to smooth the moves. There is little or none of the common aural effect of normative chromatic mediant relations. Here the most plausible explanation is the imposition of a transposition operation. But I would argue that there is more than sheer transposition at work in most of the chromatic structures cited throughout this essay, and even here: there also exist concrete harmonic effects which are best served by harmony-based explanation. Music like the Brahms excerpt discussed below in section 7.9, whose harmonic connections are so direct and strong, argues for mode-preserving circles of thirds' arising from more than mechanical divisions of the octave. We do not explain the dominant–tonic relationship solely by referencing its participation in the circle of fifths, for it has an independent harmonic identity. Likewise, neither are chromatic mediants purely the result of circles, even if their interval of root relation dovetails smoothly with the tri- or quadripartite division of the octave. The individual harmonic relations have their own independent sense, while the intervals of root relation create a natural vehicle for interaction with cyclic process.

6

RIEMANN'S LEGACY AND TRANSFORMATION THEORIES

6.1 RULES OF HARMONIC PROGRESSION

While never completely abandoned at home, Riemann's ideas, whether understood or misunderstood, fell into deep disfavor in the English-speaking theoretical community for several decades. Beginning in the 1980s, though, particulars of his theory have once again gained attention, as a lively interest in tonal harmony, especially of the nineteenth century, has resurfaced among American theorists. Riemannian ideas are not only being revived but are being recast in novel ways. The purpose of this chapter is to visit those aspects of his theory which are fundamental to the new perspective, to outline the new theoretical approaches, and to consider the ways in which Riemannian concepts have been transformed in the service of these "neo-Riemannian" approaches.

It is a common belief that Riemann's functional theory includes the condition that all well-formed functional progressions must take the form T–S–D–T.[1] The propensity to see the progression T–S–D–T as a necessary condition for functional coherence may spring from an urge to read in rules for harmonic progression into Riemann's theory in particular and harmonic theory in general. As stated above in section 1.3, the notion of harmonic function often carries a sense that chords by their inner and/or contextual nature determine motion to other chords. Riemann himself did start out thinking this way, employing cadential models of harmonic progression for fifteen years, from his dissertation up to the *Systematische Modulationslehre*. But, as discussed in chapter 4, he had largely abandoned this position by the time of the 1893 functional theory.[2]

A demonstration of the new attitude is contained in the *Große Kompositionslehre* of 1902. Early on in the *Kompositionslehre*, Riemann introduces the three tonal functions and demonstrates their interrelation in music. He considers the relative quality of the two cadential progressions T–D–S–T and T–S–D–T:

[1] For example, Brown, "A Rational Reconstruction of Schenker's Theory," Ph.D. dissertation, Cornell University, 1989, p. 194. See also Burnham, "Method and Motivation in Hugo Riemann's History of Harmonic Theory," p. 7.

[2] See Harrison, *Harmonic Function*, p. 278.

Provided that one really hears this [first] formation in C major and not G major, the harshness of the subdominant directly following the dominant is made plainly palpable . . . the inverted [second] ordering is a more natural, satisfying process.[3]

He goes on to explain that in the latter progression, the tonic is first heard as a possible dominant of the subdominant, then regrounded in its true function by the dominant which follows. In the former, on the other hand, the powerful, salutary destabilizing effect of the subdominant is lost. But this discussion, an explicit one from Riemann's mature period, does not forbid anything. The *Kompositionslehre* is not a theory treatise; it is a composition treatise, geared toward encouraging successful music writing. While no one would argue with Riemann's conclusion that T–S–D–T is smoother than T–D–S–T, there is nothing in this discussion to prove that the weaker cadence cannot be functional, nor that the stronger one is the only possible functional progression. The conclusion is merely that it works and sounds much better; the purpose of the discussion is chiefly to discourage the student composer from blithely writing an inappropriate progression from D to S. Further evidence comes from the musical examples later in the treatise, some of which carry functional analyses. There are not many of these, yet three show the functional progression D–S–T.[4] If Riemann had meant to disallow this progression, he surely would not have illustrated it thrice so soon afterward. Furthermore, Riemann's most extended analytic work, the complete Beethoven sonata analyses from the late 1910s, shows a variety of functional progressions other than these two – T–D–T, T–S–T, T–D–S–D–T, T–S–D/D–D–T – along with various secondary and altered functions and incomplete, compound, and modulatory progressions. These analyses, moreover, contain the occasional T–D–S–T progression, usually prominent in opening themes with unusual profiles.[5] One must conclude that essentially, in Riemann's system, any function may be followed by any other function or by another version of itself, save that the succession D-S is discouraged. Progressions do tend to follow general cadential formulas in the long run, but the particulars of chord-to-chord progression are only lightly constrained, while the possibilities of their combination, as apparent from Riemann's analyses, are manifold.

But while Riemann does describe the effects of the relationships of chords to each other (e.g. the different perceptions of the tonic in relation to its subdominant and dominant), he does not specify any firm rules by which chords must follow each other. Consequently, his analyses do not contain any compelling demonstration of their rightness. On this point, Carl Dahlhaus reproaches Riemann for claiming the

3 Riemann, *Kompositionslehre*, p. 33.

4 These are examples 69 and 71, which show the modulations T = D–S–T, and 96a, an analysis of a Mozart theme, T–D–S–T–D–T. *Ibid.*, pp. 68–69, 89.

5 In Riemann's *L. Van Beethovens sämtliche Klavier-Solosonaten*, vols. I–III (Berlin: Max Hesse, 1920), these include op. 26, I: T–D–S–T (D is a half cadence), v. 2, pp. 166 ff.; op. 27/1, II: T–D^{+}–°D–$S^{III<}$–$S^{III\natural}$–T, followed by a regular S–D–T cadence, v. 2, pp. 217 ff.; op. 31/1, III: T–D–(D^{7}/S)–S–°S–T, v. 2, pp. 362 ff.; op. 78, I: T–S–D–S–T, v. 3, pp. 149 ff.; op. 90, II: T–D–S–D–T, v. 3, p. 241. All are first themes except op. 31/1, which is an answer to the theme. Also, Riemann shows a Phrygian cadence type having the formula °T–°Dp–°Sp–T^{+}, v. 2, p. 464. T–D–S–T progressions are commoner in later styles, and of course in popular music.

attribute of musical logic for his system.[6] Dahlhaus observes that, while the system does explain harmonic content of chords and the relations of chords within the tonal system, it must also supply rules and norms of harmonic progression in order to be truly logical.[7] Such rules are completely lacking in Riemann's system, which as a result appears more descriptive than logical.[8] Dahlhaus' argument need not be restricted to Riemann. In a similar way, other systems' attempts at rules may display an empirical perspective which does little to explain how and why these rules might have come about.[9] But fixed and definite rules of harmony may well be unattainable. The perceived propensities of chords may owe as much or more to combinations of syntactical implications along with counterpoint and other contextual factors such as patterns and sequences than to any innate, key-determined, teleological nature of chord identity. Demonstrating harmonic coherence and organization may well constitute the proper limit of strictly harmonic theory. I think of this as harmonic theory's Riemann uncertainty principle. One can specify a chord's location in the key; one can specify its exact trajectory. But one cannot do both at the same time with the same expression. Either the chord's meaning (identity or function) or direction (root-interval) may be described; the complete picture requires both perspectives.[10]

The reorientation of focus from goal-directedness to structural coherence becomes a defining aspect of latter-day Riemannian theory, representing a decided break from the teleological paradigm. The apex of teleological models of tonality is the Schenkerian hierarchy, an analytic model of fixed levels controlled by a background cadential progression and suffused with the ideal of *Tonwille*. In contrast, neo-Riemannian analyses are cast as networks of interrelationships, directional but not determined. Each network is idiosyncratic, defined by the structure of the analyzed work. To an extent, this is a reflection of the musical focus of each approach. Schenkerian theory emphasizes counterpoint, which is more readily expressible in terms of rules. Riemannian theory emphasizes harmony, less amenable to rule-based explanation.

6 Dahlhaus, "Terminologisches zum Begriff der harmonischen Funktion."

7 Brian Hyer has also addressed this issue in his talk "The Concept of Function in Riemann," given at the 1990 conference of the Society for Music Theory in Oakland, CA, and cited in Burnham, "Method and Motivation," note 26. He argues a relational aspect for the *Funktion* concept.

8 Thomas Christensen, reviewing Carl Dahlhaus' *Studies on the Origin of Harmonic Tonality* in *Music Theory Spectrum*, 15, 1 (Spring 1993), p. 97, writes that "Dahlhaus sees Riemann's theory as an entropic *relationship* of functional categories to a central tonic . . ." (italics his). But it is clear from the above that Dahlhaus is reacting to the *lack* of such an aspect in Riemann. Relation does not necessarily beget motivation; the functional categories simply do not impel individual chords to progress in a particular way. They serve instead to explain the coherence of music within *Tonalität*. As Dahlhaus says in *Origin of Harmonic Tonality*, p. 8, "Tonality is the embodiment of chordal meanings."

9 E.g. Walter Piston, whose progression rules are loose empirical ones, and which say little about the qualitative influence of harmonic context, for example: "III is followed by VI, sometimes IV, less often I, II, or V." Walter Piston and Mark DeVoto, *Harmony*, 5th ed. (New York: Norton, 1987), p. 21.

10 Schenker's theory, of course, can be seen as successful at combining aspects of harmony and counterpoint in analysis. But it does this in part by strongly de-emphasizing the role of chordal harmony, especially at the foreground, and so cannot be said to fully combine the two.

6.2 RIEMANN'S VIEW OF WEBER

A late section of the 1890 *Katechismus* contains an important evaluation of Weber's Roman numeral (and by implication the scale-degree) notion of harmony. This statement provides considerable insight into the advantages Riemann saw in his root-interval system, as well as what Riemann's notion of chord identity, eventually chord function, does and does not entail conceptually:

> Unfortunately [Weber's] manner of symbol identification is, despite its cumbersomeness, insufficient, wholly aside from the fact that it causes very simple progressions to seem more complicated than other equally simple ones.[11]

Riemann provides an illustration: differing Roman numeral interpretations of the harmonic progression from a C major triad to an A♭ major triad as it fits into various keys. He gives the following analysis and commentary:

in C major: I–VI♭
in C minor: I–VI
in F minor: V–III

> [the progression] appears in none of these cases to be directly intelligible. In C major the sixth scale degree must be lowered in order to obtain a root for the chord, while in C minor the genus of the tonic chord must be altered; only in F minor are both harmonies indigenous, but they are related by way of the F minor chord.[12]

By "directly intelligible" here, Riemann means a relation in which neither chord is heard as an alteration or variant of some other chord.[13] Riemann boasts that his root-interval system is superior to the Roman numeral method, for it allows progressions to be characterized directly by the relationship of their roots. He argues that root-interval progression types are equally intelligible no matter where they occur in the key. Better to determine the nature of a progression and then figure out how it fits into a key as a particular instance, rather than to begin with a notion of key and scale degree and to characterize a progression contextually in relation to the tonic. Curiously, what we would see as a strength of Weber's approach – the same "empirical" root progression is shown to assume a different harmonic identity in different contexts – is seen by Riemann as a weakness. His attitude is thus quite at odds with a scale-degree oriented notion of harmonic identity and function, in which progressions do, and must, mean quite different things depending on where they occur in the key.[14] It is clear from this discussion that Riemann rejects the

[11] Riemann, *Katechismus der Harmonielehre*, p. 65. [12] *Ibid*.

[13] The upper-case Roman numerals for the C major triad in the minor keys denote alteration.

[14] Riemann's assertion is not as radical as it may seem, though. For example, we would think that the progressions V–I and vi–ii are instances of similar fifth-down root progressions, and also that they are unequal in strength; these two observations do not seem contradictory. Riemann, on the other hand, would find V–I and vi–ii to be instances of different progression types, since the first joins major triads and is a *Gegenquintschritt*, while the second joins minor triads and is a *schlichte Quintschritt*. But Riemann would also find the progressions i–iv and III–VII in minor, as well as I–V in major, to be instances of the *schlichte Quintschritt*, thus equating what he

notion of scale degree as an essential element of harmonic identity. This idea persists into the function theory, in which scale degree has little to do with determining the functional identity of a chord.[15]

It is noteworthy that Riemann uses the example of a chromatic mediant relation to point out a weakness in Weber's system. Chromatic third relations are a special case of progressions working essentially within a key yet implicating pitches outside the diatonic set. Weber's system is predicated on diatonic principles and, in Riemann's eyes, is incapable of expressing a basic progression within chromatic tonality. This is a crucial point for the neo-Riemannian systems: independence from scale-degree identification, and in some cases from the constraints of the key as well, forms a central tenet.

6.3 THE *LEHRE VON DEN TONVORSTELLUNGEN* AND THE Q AND T OPERATIONS

Late in his career, Riemann formulated an entirely new theory of harmonic relation. This new theory appears in an article in the Peters *Jahrbuch* of 1914–15 entitled *Ideen zu einer "Lehre von den Tonvorstellungen*."[16] In it Riemann introduces a considerable reworking of the *Tonnetz*. What Riemann brings to the grid this time around is a quasi-mathematical interpretation of harmonic progression in which he expresses the distance between chord roots as the total product of unit moves by fifth and major third (Plate 6.1). Major triads read as triangles pointing up; minor ones as triangles pointing down. Upward moves by fifth (to the right) and major third (diagonally northeast/southwest) are expressed by the quantities Q and T; downward moves by their inverses 1/Q and 1/T. Thus, for example, from tonic C major, D major is reached by the formula 2Q. Past two fifths, though, Riemann claims that purely fifth-based connections weaken significantly. He makes the explicit point that E major is directly linked to C major by the formula as its upper mediant, with formula T, not 4Q; likewise, A♭ major is the lower mediant, with formula 1/T, not 1/4Q.[17]

would eventually call the secondary functional progressions Tp–Sp in major and °Tp–°Dp in minor with the primary functional progressions T–D in major and °T–°S in minor. These are to our minds, and probably to Riemann's as well, progressions of unequal power. In fact, remarkably, Riemann does not mention either plain fifth progression occurring between secondary functions in the original *Katechismus* nor in later revisions. Once again he ignores progressions which do not conform to his function/root-interval classification scheme. And in this case, amidst the forest of complex functional relations he documents in the course of his progression-type descriptions, he omits two of the simplest possible functional relations, Tp–Sp and °Tp–°Dp, both fully diatonic.

15 This conclusion is different from Mooney, "The 'Table of Relations'," pp. 102–105, who finds that function expressed scale-degree notions. He cites a later quote by Riemann, from 1901, in which the theorist states that his "designation of tonal functions was nothing more than a simplification, elaboration, and deepening of Weber's *Stufenziffern*." Mooney concludes that Riemann is drawing a parallel between the two theories. But especially given the reputation that Riemann is developing among scholars as a crafty self-promoter, one could also take this quote to mean that he is advocating his theory as a clear advance over Weber's, rather than as an alternative. Better to succeed by superseding the theory than by opposing it.

16 Riemann, *Ideen zu einer "Lehre von den Tonvorstellungen*," in *Jahrbuch der Musikbibliothek Peters 1914–15*, ed. Rudolf Schwartz, vols. XXI–XXII (Leipzig, 1916), pp. 1–25.

17 *Ibid.*, p. 20. T = Terz; Q = Quint.

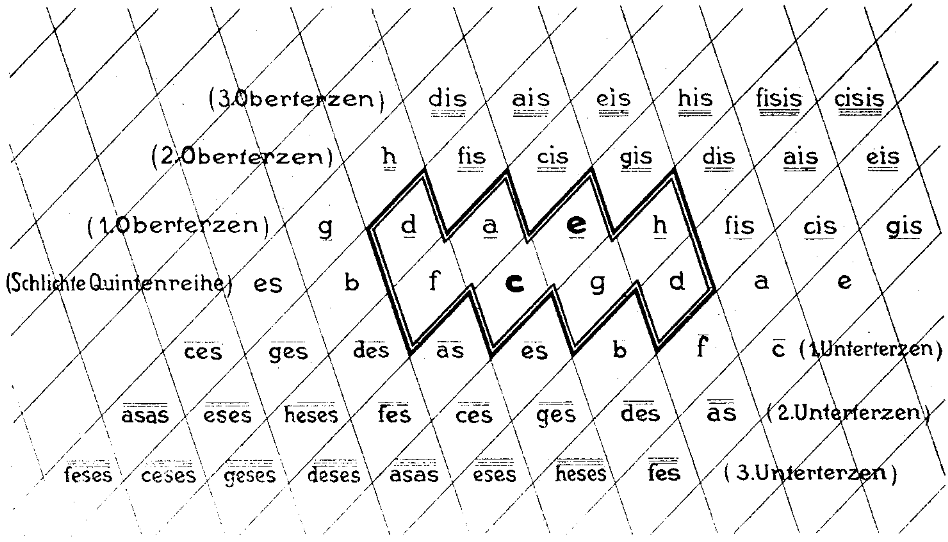


Plate 6.1 Riemann: three-dimensional *Tonnetz* from the *Lehre von den Tonvorstellungen*

Direct connections for the minor-third mediants are not provided for mathematically, even though they are explicit on the grid (reading northwest/southeast).[18] Their formulas show them to be somewhat more distantly related to the tonic, while still partaking strongly of mediant function: E♭ major is Q/T (not 1/3Q), while A major is T/Q (not 3Q). Other harmonic relations may also result from combinations of T and Q: B major, for example, has the formula TQ. In general, Riemann favors expressing a progression in terms of the smallest number of total moves, which is greatly facilitated by the T dimension. He justifies this musically by explaining that the ear favors closer relationships.

This is a powerful statement: Riemann is asserting that fifth relations and the circle of fifths are not the sole factors in joining chords and keys, and further that even in cases where an explanation of key relation by fifths alone is plausible, it may not be preferable: the power of fifth relation may be superseded to some degree by that of third relation should the latter exert a stronger pull. Remember that Hauptmann, too, argued that no connection is really possible at the remove of three fifths; in some ways this grid reads like the realization of the idea behind Hauptmann's mechanism of chromatic third relations.[19] Remember also Riemann's early citation of Marx (section 4.1), wondering how it can be that major chords at the remove of three and four fifths on the circle sound more closely related than those at the interval of two fifths. Riemann's operational theory formalizes the answer to this apparent paradox. First, chord relations mediated by the circle of fifths (Riemann's Q operation) do indeed grow weaker with every successive fifth. It is not that the

[18] This *Tonnetz* is three-dimensional where Riemann's previous ones were two-dimensional. It implicitly includes minor-third relations along with fifth and major-third relations, all at 60° angles rather than 90°.

[19] Hauptmann, *Die Natur der Harmonik*, p. 152, discussed above, section 3.6.

power of direct relationship through the circle of fifths fades at the second one and then strengthens beyond; rather, by that point, the circle's potency is dilute at best, so much so that a completely different secondary mechanism of chord relation by major third (Riemann's T operation) is free to assert itself. This agent of chord relation is operative only when the efficacy of fifth relations reaches its limit in substitution for them: i.e. $4Q = T$.

Certainly, while Riemann abstains from using the term "function" here to describe his T and Q operations, the T move represents some kind of clear formalization of independent mediant relations, whose role in the tonal system goes beyond the class of major-third relations proper to involve it, in tandem with fifth relations, in enabling the coherence to more distant connections. Where all of Riemann's more conventional theory could not satisfactorily accommodate his instincts regarding the directness of chromatic major-third mediant relations, this formulation finally sufficed. This new approach resonates with Riemann's belated inclusion of major-third chromatic mediants in the functional theory of the *Handbuch*, also in 1916. Its expression as mathematically determined moves on a harmonic grid, rather than a set of diatonic archetypes, neutralizes Riemann's reservations about the mediants' chromatic content. But this difficult idea, arrived at so late, has provoked little resonance in the reception of Riemann's theory until recently, and forms no part of modern textbook harmonic theory.[20]

What was the purpose of this new theory, presented only in rough outline? How do these operations fit in with Riemann's concepts of function and root-interval relation? They are presumably not meant to complement them, since neither is mentioned in the context of this discussion. Does the Q and T system combine and thereby supplant aspects of both functional and root-interval theory?

Reformulating the nature of connections between chords rather than the identities of those chords, the operations theory has its roots squarely in the root-interval system. Far the more unwieldy of the two principal branches of Riemann's existing harmonic theory, the root-interval system, with its exhaustive taxonomic apparatus basically unchanged since its introduction in the *Skizze*, stood in need of the sort of simplification which the functional theory brought to the matter of chord identity. Much as the original T, D, and S functions stood for all-encompassing, fundamental types of harmonic meaning within a key, underlying all manifestations of chords on the musical surface, the Q and T operations were to stand for all-encompassing, fundamental types of root-interval relation underlying all manifestations of chord progression on the musical surface. Thus these Q and T operations are not functions; rather, they *connect* functions.

Like the root-interval theory, the operational theory appears to be tonic-blind: one need not know what the tonic is in order to calculate the formula expressing a particular root relation. All that is needed is the grid above, or some similar

[20] One unrealized, suggestive aspect of Riemann's chart is the other diagonal, an axis of minor-third relations which could account for the other chromatic mediants.

representation.[21] Clearly, then, the operational theory is designed as independent of and complementary to the functional theory. Accordingly, it is even more significant that the operational theory contains such a chromatic third-relation component. For this means that as of 1916, both branches of Riemann's harmonic theory were revised to involve major-third chromatic mediant relations at a deeply fundamental level. The operational theory, in fact, could not exist without its T operations, which are an essential part of its language and of the concept of the breakdown of pure circle-of-fifth relations which is one of the theory's major insights.

This simple mathematical reconception of Riemann's theory by the author himself is the precursor of the more complex transformational approaches to be described below. What persists is the fundamental idea that a defined operation applied to one chord yields another chord within the system. The revamped *Tonnetz* constitutes another legacy, used as the basis of imaginative extensions to model common-tone tonality. The Q and T operations, however, give way to different basic sets. The T operation in particular is redefined as a derived entity, although the chromatic third relation, given its place in nineteenth-century harmony, remains an important topic.

6.4 RIEMANNIAN CONCEPTS AND TRANSFORMATION THEORY

Over the past two decades there has been considerable development of transformational models of chord relations, pioneered by the theorist David Lewin along with several others. Predicated on direct relationships between contiguous chords acting as integral harmonic entities and the higher-level harmonic relationships which result, transformation theory is well removed from Schenkerian concerns. It is also removed from scale-degree concerns, for it defines chord relationships either in terms of intervals between roots, or in terms of shift of harmonic meaning within a key. Transformation theorists have designed their systems to account for the highly chromatic music of the middle to later nineteenth century. In the process, all address the subject of chromatic third relations head on, although for interesting reasons chromatic mediants are not expressed directly in their systems of triadic harmony, as discussed at length below. In short, this is due in part to aspects of transformation theory which remain rooted in theoretical paradigms derived more from eighteenth-century music than to the music of the later nineteenth century to which they are principally applied. This leads in some cases to the perpetuation of some core diatonic assumptions rather than the formulation of dedicated mechanisms for chromatic relations.

Nonetheless, nothing in the transformational approach precludes the direct expression of chromatic relationships. Quite the opposite: it provides a very suitable

[21] Although C as tonic is placed at the center of the diagram, this is arbitrary. Any location on the grid can be taken as tonic, with Riemann's sawtooth template imposed upon it.

vehicle, given a slightly revised set of basic assumptions. The rest of this chapter will review and discuss the principal tenets of systems proposed by Lewin, Brian Hyer, and Richard Cohn. In the following chapter I will propose a modified system which encompasses operations present in the others but also allows for all the chromatic mediants and other common-tone relations in straightforward fashion.

In line with Riemann's own repudiation of Weber, Lewin has recognized the fundamental difference between the familiar scale-degree conception of harmony and the system of relationships inherent in Riemann's system:

> The nature and logic of Riemannian tonal space are not isomorphic with the nature and logic of scale-degree space. The musical objects that Riemann isolates and discusses are not simply the old objects and relations dressed up in new packages; they are essentially different objects and relations, embedded in an essentially different geometry.[22]

His example is an amplification of the problem of the dual identity of a single pitch viewed from different perspectives, as discussed above by Riemann and Proctor. Lewin traces three relationships of a D major chord from an A♭ major section of *Parsifal* to different levels of context: as the Neapolitan of a neighboring subdominant D♭ major; as a chord six fifths removed flatward from tonic A♭ (which it indeed approaches by six plagal cadences); as a substitute subdominant in its own right. These are all subdominant functions of different types, yet some would seem to be best notated as E♭♭ rather than D (Neapolitan relationship; cycle of fifths). Lewin argues that it is preferable to indicate the function (relational meaning) of the chord as D major, associating it with the "subdominant" fourth degree, than to fix the spelling (surface identity) as E♭♭ major, associating it with the "dominant" fifth degree, although the function itself is not essentially degree-related. This emphasis on chord relationships rather than chord identification forms the linchpin of Lewin's adaptation of Riemann's theory.

Lewin's system has its beginnings in a 1982 article, "A Formal Theory of Generalized Tonal Functions." A specialized version of this theory, directed specifically to common-practice tonality, is introduced in chapters 8 and 9 of his 1987 treatise *Generalized Musical Intervals and Transformations*, and further developed in a 1992 article, "Some Notes on Analyzing Wagner: *The Ring* and *Parsifal*." I will begin by outlining essential aspects of Lewin's theory up to 1987.

In his 1982 article, Lewin outlines the mathematical formalization of a general type of harmonic system which he calls a Riemann System. A Riemann System is defined by a tonic pitch, T, and two basic intervals, d and m, for dominant and mediant. The intervals d and m specify a given *distance* in semitones from the tonic rather than any particular pitch location, and may not have the same value from one specific system to another. The three fundamental elements combine to generate a tonic triad, $[T, T+m, T+d]$, expressed as an ordered triple containing the tonic pitch along with the two different pitches generated by adding a mediant interval

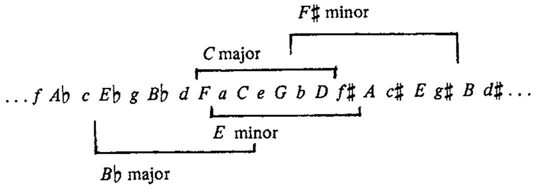
[22] David Lewin, "Amfortas' Prayer to Tiurel and the Role of D in *Parsifal*: The Tonal Spaces and the Drama of the Enharmonic C♭/B," *19th Century Music*, 7, 3 (1984), p. 345.

and a dominant interval. In such a general system the intervals represented by d and m need not be fifths and major thirds; they may be any of a variety of different integral sizes other than zero, as Lewin demonstrates. Additional triads are constructed from the three basic pitches. Thus the subdominant triad is $[T-d,\ T-d+m,\ T]$, the dominant triad $[T+d,\ T+d+m,\ T+2d]$. Lewin derives a seven-member diatonic set in a similar manner. To represent its fundamental form, which he calls the canonical listing, he revives the third-based ordering principle of Hauptmann's key schema: $[T-d,\ T-d+m,\ T,\ T+m,\ T+d,\ T+d+m,\ T+2d]$. Furthermore, Lewin's canonical listings of individual systems display a Hauptmann-like alternation between upper- and lower-case letters, where the lower case represents notes involving the mediant interval m. Thus the canonical listing of the familiar major-minor system ($d=7$; $m=4$) is *FaCeGbD*; in contrast, another system based on different intervals ($d=3$; $m=4$) has the canonical listing *Ac♯CeE♭gF♯*.[23] It is meaningful that even at so basic and abstract a stage Lewin finds it necessary to include mediant relations along with dominant relations in order to generate his prototypal tonal harmonic system.

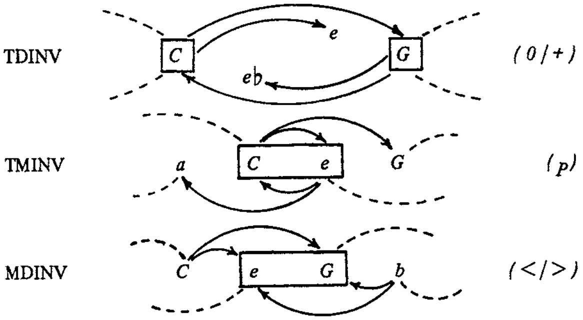
Next, Lewin proposes operations which transform Riemann systems wholesale and relate them to one another. The first is SHIFT, an operation which transposes all the elements of the system a fixed number of places to the left or right on the Hauptmann schema. Thus SHIFT(2) moves a system with tonic pitch C two places to the right, where it becomes a system with tonic pitch G – the dominant system of the original – which preserves the interval structure of the original. SHIFT(-1) moves the same system one place to the left, where it becomes a similar system with tonic pitch a – Lewin calls it the submediant system of the original – whose interval structure is a reflection of the original, i.e. a dualistic minor key.

Lewin does come to focus on some familiar aspects of the special Riemann system in which $d=$ perfect fifth and $m=$ diatonic major third. First, he defines a group of four related SHIFT operations having values of 2, 1, -1, and -2, called DOM, MED, SUBM, and SUBD, for they accomplish moves into the systems corresponding to keys of the dominant, diatonic upper-relative mediant, diatonic lower-relative mediant, and subdominant. Next, he defines a second group of three transformations, INV, all of which derive from operations which hold two members of a triad constant while replacing the third with its inversion about the axis formed by the constant members. There are TDINV, holding tonic and dominant pitches constant, while the third moves by semitone; TMINV, holding tonic and mediant constant, while the dominant is reflected from minor third above the mediant to minor third below the tonic; and MDINV, holding mediant and dominant constant, while the tonic is reflected from major third below the mediant to major third above the dominant. These operations turn out to be dualistic, working upward from major triads and downward from minor triads. In conventional terms, TDINV corresponds to parallel mode change, TMINV to relative mode change, and

[23] Lewin, "A Formal Theory of Generalized Tonal Function." *Journal of Music Theory*, 26, 1 (Spring 1982), p. 30.



a) SHIFT



b) INV

Plate 6.2 Lewin: SHIFT and INV operations

MDINV to motion to what Riemann and (in homage) Lewin call the *Leittonwechsel* chord of the original – also a relative mode chord. With these two transformation groups Lewin defines two different classes of chord relation. One is predicated on directed displacement within a diatonic system of unequal segments (the Hauptmann schema contains alternating major and minor thirds), while the other is predicated on symmetrical inversion relations between individual chords. These are shown in Plate 6.2.[24]

Among a host of other possible secondary operations which Lewin also proposes are two more SHIFT-based ones which he calls operation X and operation Y. X transposes a Riemann system by m, while Y transposes a Riemann system by $d - m$.[25] With $d = 7$ and $m = 4$, these two operations thus produce direct, mode-preserving motion by major and minor third, displaying the potential of the system for the clear and direct characterization of chromatic mediant relations. This potential, however, has not been realized, due to the direction in which the development of the other formal operations has led.

The differences between the key-shift and dualistic inversion operations are brought into plainer view in chapter 8 of Lewin's 1987 treatise, *Generalized Musical Intervals and Transformations*. While much of this treatise, as well as his later work in transformation theory, focuses on atonal music, Lewin here forgoes the mathematics of generalized Riemann systems in favor of the subset of operations

[24] *Ibid.*, pp. 49 and 53. [25] *Ibid.*, p. 55.

Table 6.1. *Basic transformations of the three systems*

int.	a) Lewin (1987)		b) Hyer		c) Cohn (1997)		d) This study	
5th	DOM	down a perfect fifth	D	down a plain perfect fifth (inverse: D^{-1})			D	down a plain perfect fifth (inverse: D^{-1})
	SUBD	up a perfect fifth						
							F	down a changed perfect fifth (inverse: F^{-1})
3rd	LT	major third (up or down) to leittonwechsel chord	L	major third (up or down) to leittonwechsel chord	L	major third (up or down) to leittonwechsel chord	R	major third (up or down) to leittonwechsel chord
	REL	minor third (up or down) to tonic of relative mode	R	minor third (up or down) to tonic of relative mode	R	minor third (up or down) to tonic of relative mode	r	minor third (up or down) to tonic of relative mode
	MED	down a diatonic third, either major or minor						
	SUBM	up a diatonic third, either major or minor						
							M	down major third in either mode to chromatic mediant (inverse: M^{-1})
							m	down minor third in either mode to chromatic mediant (inverse: m^{-1})
1me	IDENT	no motion	I	no motion			I	no motion
	PAR	mode change only	P	mode change only	P	mode change only	P	mode change only
chrom. semitn.	SLIDE	invert around third					S	invert around third

Legend: progression types		
plain—no mode change	DOM	diatonic plain progression
change—mode changes (major→minor or minor→major)	REL	diatonic change progression
	M	chromatic plain progression
	P	chromatic change progression

tied specifically to the major-minor tonal system.[26] Along with the SHIFT-derived DOM, SUBD, MED, and SUBM operations, Lewin renames TDINV, TMINV, and MDINV to the more descriptive PAR, REL, and LT. Given their different natures, it is not surprising that the two operation groups act differently. The operations DOM, SUBD, MED, and SUBM refer the genesis of a transformation to its outcome: DOM signifies that the initiating chord becomes the dominant of the resulting chord, not that the initiating chord moves to its dominant. Thus, in Lewin's formulation, (C, +)(DOM) = (F, +): in other words, C major moves toward the chord of which it is the dominant.[27] On the other hand, the dualistic operations transform one entity into another, referring the outcome of the transformation to its genesis: REL signifies that the initiating chord moves to its relative chord. Thus (C, +)(REL) = (A, −): C major moves away to its relative minor.[28] Since the dualistic operations transform each of their two possible values into each other, one could as easily frame this process in the opposite way (C major moves to the chord of which it is the relative major), but Lewin does not do so.[29]

As is clear from Table 6.1a, the MED-SUBM and REL-LT transformation pairs both produce the same set of diatonic third relations. Although redundant, the pairs work in different ways, as shown in Figure 6.1.[30]

The SHIFT-derived MED and SUBM operations always work in the same direction whether the originating chord is major or minor; only the interval size differs. The INV-derived REL and LT operations, on the other hand, work in different directions whether the originating chord is major or minor; the interval size, however, remains the same. Lewin justifies this redundancy most explicitly in his 1992 article, discussed below. For now, it is enough to note that the MED and SUBM transformations, like DOM and SUBD, convey a sense of "toward" and of relation to a tonic. The REL and LT transformations, like PAR, convey a sense of "away from," and of greater harmonic motion. MED and SUBM are not dualistic; REL and LT are. Lewin also supplies an identity transformation, IDENT. A final transformation, SLIDE, formalizes the orphan common-tone progression between major and minor triads a semitone apart, with dualistic properties similar to REL and LT.

[26] Earlier in the treatise, though, Lewin pays Riemann a direct homage by presenting Riemann's earlier two-dimensional *Tonnetz*, calling it modular harmonic space. He defines individual moves along its axes (essentially Q and T) as *intervals* within this space – that is, as unit moves between points in a defined sphere of operation (Lewin, *Generalized Musical Intervals and Transformations*, hereafter *GMIT* (New Haven: Yale University Press, 1987), section 2.1.6, pp. 20–22). Lewin's Riemann Systems are special cases of a more general concept he defines as a GIS, or generalized interval system. This is a group of elements (whether pitch, duration, or other) in a defined intervallic relation, linked by mathematical functions applicable to each member of the group; for example, Q and T can be applied to any pitch to move by specified intervals represented by the *Tonnetz*. Although applicable to tonal music, Lewin directs his theory more to twentieth-century music, since its flexibility allows for approaches specific to individual styles and works for which analytic models are not available.

[27] This is the opposite of the earlier 1982 definition of DOM as SHIFT(2), the motion from the tonic key to the dominant key; it is also the opposite of Riemann's Q operation.

[28] In transformation theory, each individual aspect of a quantity which can be subject to an operation is expressed as a separate mathematical entity. For a triad, the two variable aspects are its root and its mode. These are shown as the elements of an ordered pair; Lewin appropriates Riemann's signs + and − to signify major and minor. Hence (C, +) stands for a C major triad.

[29] Lewin, *GMIT*, pp. 176–178.

[30] For the notion of inverse, see note 37.

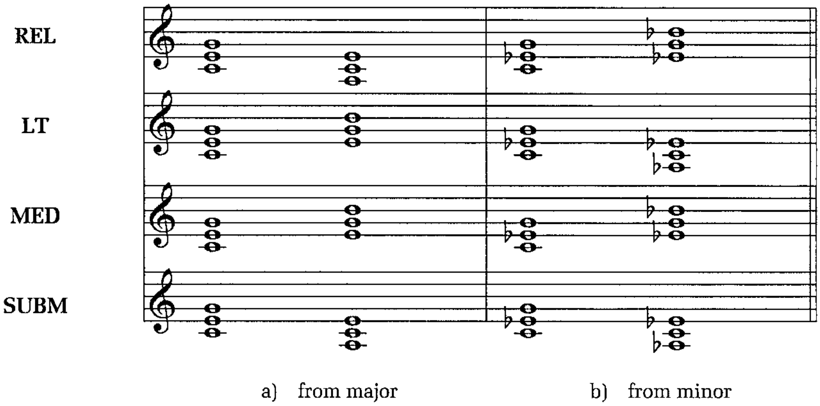


Figure 6.1 Results of Lewin's diatonic-third transformations

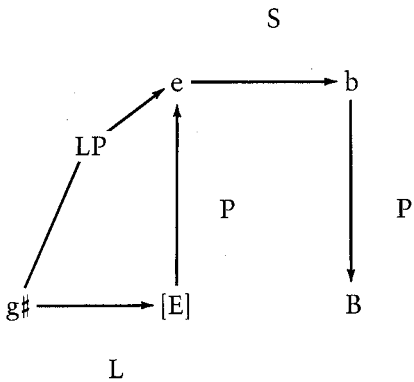


Plate 6.3 Lewin: network analysis of a passage from Wagner

Lewin's analysis of an excerpt from Wagner (Plate 6.3), discussed more fully below in section 7.8, handily shows the interaction of the redundant transformations.[31] The relation between E minor and B minor in the middle of the excerpt is formalized as SUBD (further abbreviated to S), a diatonic relationship within the tonic key. E minor is preceded by a G♯ minor chord in a chromatic third relation reaching outside the key. With no transformation to directly model this relation, Lewin proposes an intermediary, elliptical E major triad to facilitate the progression. In this chromatic context he calls on LT, not MED, to link G♯ minor with virtual E major,

[31] Lewin, "Some Notes on Analyzing Wagner: *The Ring* and *Parsifal*," *19th Century Music*, 16, 1 (Summer 1992), pp. 49–58, fig. 3a, p. 52, revised from *GMIT*, fig. 8.2a. The diagram is to be read as follows. The letters at nodes (the beginnings and ends of arrows) are the customary names for triads. These are for readability: E means (E, +), while e means (E, −). The arrows represent transformations, whose names appear beside them. The bracketed [E] represents a triad not present on the surface but implied by the compound formula LP. The arrow to the left represents the result of the compound transformation. The directions of arrows are determined for the most part by clarity of presentation, subject to the condition that the diagram as a whole reads from left to right.

Table 6.2. *Third-relation formulas in the three systems: 2 common tones = relative mediants; 1 common tone = chromatic mediants; 0 common tones = disjunct mediants*

comm. tones	System: interval motion (initiating triad)	Lewin (from major)	Hyer/Cohn (from major)	Author (Chap. 7) (from major)	Lewin (from minor)	Hyer/Cohn (from minor)	Author (from minor)
2	m3↓ change (maj) M3↓ change (min)	REL *or* MED	R	r	LT *or* MED	L	R
	M3↑ change (maj) m3↑ change (min)	LT *or* SUBM	L	R	REL *or* SUBM	R	r
1	M3↑ plain	LT-PAR	LP	M^{-1}	PAR-LT	PL	M^{-1}
	M3↓ plain	PAR-LT	PL	M	LT-PAR	LP	M
	m3↑ plain	PAR-REL	PR	m^{-1}	REL-PAR	RP	m^{-1}
	m3↓ plain	REL-PAR	RP	m	PAR-REL	PR	m
0	M3↓ change (maj) m3↓ change (min)	PAR-LT-PAR	PLP	MP	PAR-REL-PAR	PRP	mP
	m3↑ change (maj) M3↑ change (min)	PAR-REL-PAR	PRP	$m^{-1}P$	PAR-LT-PAR	PLP	$M^{-1}P$

followed by PAR to E minor (abbreviated to LP). Thus he uses a compound formula containing a dualistic transformation to describe a direct chromatic mediant relation.

This compound-formula approach holds true for all chromatic mediants in Lewin's system, as shown in Table 6.2. The LT transformation, then, is useful in a more chromatic context less closely referred to a tonic.[32] Quite interestingly, DOM, SUBD, MED, and SUBD, with origins in the SHIFT operation, which moves between keys, come in 1987 to represent diatonic motions within keys. REL, LT, and PAR, on the other hand, with origins in relations between individual chords, come to represent larger motions between modes – and, in the case of the PAR transformation, to embody virtually all chromatic motion.

Lewin identifies his basic transformations with aspects of Riemann's functional theory. Hence his use of the terms *relative* and *leittonwechsel* to describe diatonic

[32] The MED and SUBM operations, being referred to a tonic, may only point in one direction for any given pair of relative-mode related chords or keys. The PAR and LT operations, being dualistic, may point in either direction for any given pair.

third-related progressions, invoking Riemann's concepts of *Parallelklang* and *Leittonwechselklang*. But Riemann's terms have somewhat different meanings than Lewin's. As I have argued earlier, functions define chord *identity* in the key by associating secondary and chromatic harmonies with the principal ones. A *Leittonwechselklang* does not necessarily progress from or to its paradigmatic chord; rather, it draws its meaning from it. Chord progression for Riemann involves his taxonomic system based on root-interval size (as outlined in Table 4.1). Riemann does not think principally in terms of *Parallelschritte* and *Leittonwechselschritte*, rather in terms of *Terzschritte*, *Kleinterzschritte*, *Gegenterzschritte*, and the like. Lewin notes that Riemann did not follow through on the implications of his own functional concepts:

> [Riemann's] dominants just sit around, not going anywhere . . . He did not quite ever realize that he was conceiving "dominant" . . . as something one *does* to a Klang, to obtain another Klang.[33]

In my view, though, this was deliberate: Riemann did not intend the terms *dominant* and *leittonwechsel* to embody properties or aspects of progressions. For him, there were progressions involving fifths and thirds which may or may not lead to chords possessing dominant or *leittonwechsel* function. Concepts of dominant and *leittonwechsel*, and the functional theory and functional labels in general, served the purpose of specifying the meaning of individual chords with relation to their key, thus explaining their coherence in a system in which a very wide variety of chords was possible. Riemann's function labels, by and large, were not meant to convey definitive information about the potentials of chords. His root-interval theory served to specify the mechanism of particular chord-to-chord progressions in a system in which nearly all progressions were possible. The early root-interval theory contained a different mechanism for each different root-interval relation; the 1916 operational theory involved a highly simplified field containing only two mechanisms (Q and T) by which to account for all relations; these, rather than the function terms, are closest in nature to Lewin's transformations.

Now, of course, Lewin's definitions of transformation types and his theory of directedness are completely valid in their own right; the application of Riemann's functional terms to progression types constitutes a fresh and interesting development. Moreover, Lewin's words are extremely provocative. On one hand, he finds Riemann's dominants too impassive. On the other, though, he does not propose that they should be seen as the seat of their own motivation. Rather, he defines the dominant transformation as "something one *does*" – one presumably being the composer, or perhaps even the performer or the listener parsing the progression. He characterizes it as the deliberate act of the musically involved person, not the result of natural law or the innate tendency of the notes themselves. Although aimed at Riemann, this statement equally constitutes a strong rejection of the teleological paradigm and an affirmation of the transformation model as a representation of the active role of the musician in creating sense from structural relationships. Given

[33] Lewin, *GMIT*, p. 177. Lewin adopts Riemann's term *Klang* to represent a harmonically acting chord.

his adaptation of the original sense of Riemann's functional terms, perhaps Lewin's Riemann systems should more properly reflect their real inventor: they might better be called Lewin systems.[34]

6.5 A STREAMLINED TRANSFORMATION SYSTEM

From a similar perspective comes a system proposed by Brian Hyer. More explicitly than Lewin, Hyer assumes a vantage point of theory of harmony and rejects Schenkerian theory as unsuitable to his subject matter. His conviction that the quality of individual harmonic progressions is intrinsic to the meaning and structure of nineteenth-century tonal music leads him to adapt Lewin's approach to tonal systems, and to recast some of Riemann's ideas in the wholly new contexts of harmonic interrelationships expressed in the language of Lewin's group theory.

For Hyer, even more than for Lewin, harmonic meaning is resident less in isolated chords than in relationships between chords. Hyer simplifies the slate of transformation formulas and jettisons the organizing idea of tonic dependency for analysis of chromatic music, locating tonal coherence in the structure of groups of chord relations themselves.[35] Unlike Lewin, he downplays the potential application of dualistic constructs to tonal theory, and demonstrates some shortcomings in Riemann's dualism.[36] As shown in Table 6.1b, he defines a single fifth-relation transformation and its inverse, $\mathbf{D}/\mathbf{D}^{-1}$, which serves to model both dominant and subdominant relations. He further calls on the **R**–**L** transformation pair to stand for all diatonic third relations, retaining the P transformation to account for the parallel mode and therefrom all chromatic relations, along with the **I** transformation.[37] This yields just five transformations: **D**, **R**, **L**, **P**, and **I**, displayed in an imaginative updating of Riemann's *Tonnetz* (Plate 6.4).[38] Hyer's version of the grid assumes enharmonic equivalence, renders the infinite continuation of possible common-tone harmonic moves in four dimensions, and is best imagined as covering the surface of a torus, on which the loose ends of the representation on the page would be connected.[39] Despite his retention of Riemann's terms and his considerable debt to the Öttingen/Riemann

[34] Lewin's generalization of functional identity to include progression identity brings to mind an appealing analogy with the Schenkerian concept of horizontalization of a triad: the metamorphosis of a single harmonic datum into one which accounts for multiple events connected in time. But the horizontalization idea, while natural to us, is foreign to Riemann's own approach (save exceptional cases like those shown in section 4.6).

[35] Brian Hyer, "Reimag(in)ing Riemann," *Journal of Music Theory*, 39, 1 (Spring 1995), p. 130.

[36] Lewin, "A Formal Theory of Generalized Tonal Functions," pp. 40–47; Hyer, "Reimag(in)ing Riemann," p. 107. Section 7.8 below contains a discussion of elements of dualism inherent in Lewin's system.

[37] The inverse of a transformation (e.g. $\mathbf{D}^{-1}$) indicates a similar progression in the opposite direction, which effectively cancels out its model; thus $\mathbf{D}(\mathbf{D}^{-1}) = \mathrm{I}$. The presence of an inverse renders unnecessary separate transformations for different directions, such as D[ominant] and S[ubdominant], and is mathematically preferable and musically intuitive. See Lewin, *GMIT*, p. 24; Hyer, "Reimag(in)ing Riemann," p. 109. The dualistic transformations constitute their own inverses (**P** from C major is C minor; **P** from C minor is C major), so only one form is required.

[38] Hyer, "Tonal Intuitions in *Tristan und Isolde*," figure 3, p. 119.

[39] Hyer, "Reimag(in)ing Riemann," pp. 118–119, 126. Riemann's 1916 *Tonnetz*, as Hyer points out, goes on forever: for example, three moves from on the major-third diagonal to the upper right reach B♯; three moves to the lower left reach D♭♭. At the next remove these would become A triple sharp and E quadruple flat, and so on. Enharmonic equivalence gives C at each of these points and results in a repeated pattern.

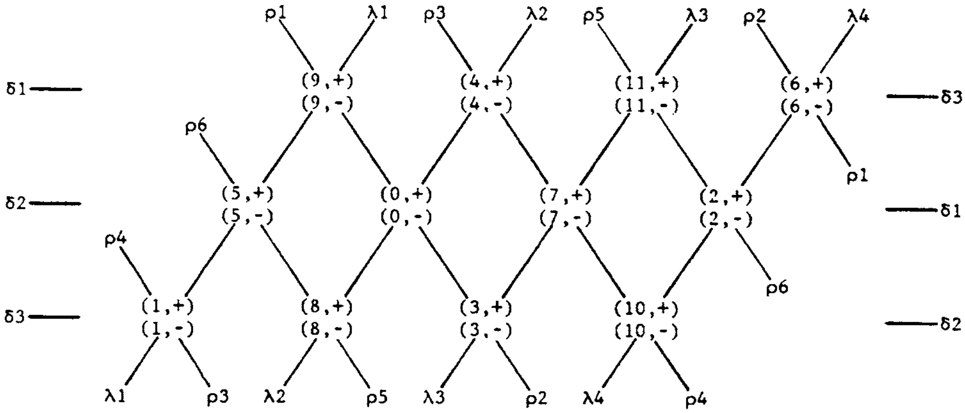
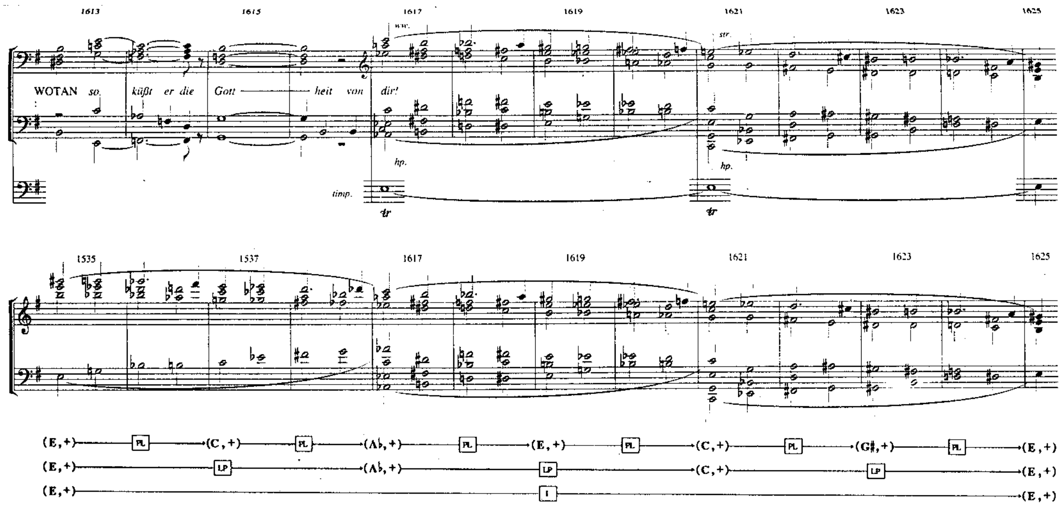


Plate 6.4 Hyer: four-dimensional transformation scheme (continuation symbols indicate unbroken 4-D transformational paths; δ = dominant; λ = *leittonwechsel*; ρ = relative)

grid, Hyer's model also departs (profitably) from Riemann's intent by applying functional concepts to progression types. Ultimately, his system is a condensation and streamlining of Lewin's, containing no new transformations. It remains true in both systems that every chromatic harmonic relationship involving root motion must be expressed as a compound harmonic process combining one or more parallel-mode transformations with one or more diatonic transformations (Table 6.1). Hyer points out that **D** behaves differently from the others: it always has the same result from any triad, and is commutative, meaning that it may appear at any point in the same formula with the same effect (e.g. **DL** = **LD**). The other transformations are all dualistic, moving in opposite directions from major and minor triads; their position in a formula affects the outcome. This property will be more fully discussed in the next chapter with regard to chromatic relations.

Hyer demonstrates the group structure of his set of transformations by algebraically charting the results of their various combinations. In all, he proposes a list of 144 possible combination types between chords, which reduce to twelve basic transformational processes, some simple (such as **D** or **R**) and some compound (such as **PLP**). Several of these basic compound transformations produce chromatic mediant relations: **LP**, **PL**, and **RP**.[40] Notwithstanding the generality of Hyer's system, much of his analysis draws on Wagner's use of chromatic mediants. Hyer discusses a familiar passage, the *Schlafakkorden* from *Die Walküre*. Plate 6.5 shows his analysis, tracing structural cycles of major thirds at two levels. He considers the intervening

[40] Interestingly, in his table of basic transformation classes, Hyer ("Reimag(in)ing Riemann," fig. 3, p. 119) lists **PL** and **LP** as inverses, but shows **RP** as its own inverse, with **PR** absent. This would imply that major-third chromatic mediant progressions as a class within the group possess demonstrably different properties than minor-third progressions. Hyer provides an algebraic explanation for **RP**'s inversional identity on this level, but does not muse on its potential musical significance. Earlier (p. 116) he does account for **RP** and **PR** being algebraic inverses on the level of individual transformations operating within their class.



Example 5: *Die Walküre*, Act 3, Scene 3

Plate 6.5 Hyer: major-third cycle in *Die Walküre* progressions, including the tonicizations at the end of each phrase, to be subsidiary, controlled by the chromatically descending upper line and bass arpeggiation. For him it is neither Morgan's prolongation of an augmented triad nor Proctor's equal division of the octave which gives the passage its coherence. Rather, it is the algebraic structure of the circle itself, the fact that **LP** thrice applied to E major ends up back at E major, achieving closure: $(\mathbf{PL})^3 = \mathbf{I}$. This is sufficient to create its own sense, with no necessary recourse to tonic or prolongational process. I would argue that there is also a harmonic component to the **PL** and **LP** transformations that contributes to the process. For example, it is noteworthy for this analysis that the chromatic mediant relations between triads, both local and larger-scale, are among the most stable: the rest are non-common tone relations which sound quite distant, or progressions involving diminished-seventh chords. This contextual harmonic stability renders them suitable for their structural role.

Hyer has implied that his work aims at realizing Riemann's intent: "Riemann . . . struggled to realize the group structure of his functional transformations. Riemann tried to represent the group as a 'table of tonal relations,' " this table being the *Tonnetz*. More recently he has moderated this stance, noting the static tonic orientation of Riemann's functional labels and *Tonnetz,* and attributing their reworking as transformation processes to our own time.[41] This is appropriate; Riemann did not struggle to realize the group structure of his functional transformations, for he had no such concept, only one of functional meanings of individual chords. Furthermore, the *Tonnetz*, for Riemann, does not show functional relationships, but rather root-interval relationships. Riemann's algebraic expressions and the Q and T operations embodied in the grid do demonstrate that he was attempting to realize some sort of mathematical structure corresponding to these *root-interval* transformations. As with Lewin, it is no weakness of Hyer's own approach that he chooses to use functional relationships rather than root-interval ones as a basis for his group-theoretical work. And as it turns out, their adaptive use of what appear to be functional concepts ironically precludes them from the expression of Riemann's functional relationships in their transformational theory. By construing the concepts as progression types rather than as identity processes associating chords, they revise the concepts of relative chord and *leittonwechsel* chord to represent root-intervals: the **R** transformation always indicates root motion of a minor third, while the **L** transformation always indicates a major third. Thus what would appear to be a synthesis of the functional and root-interval approaches reveals itself to be a pure root-interval system, which is in fact a necessary aspect of a system which can be represented as Hyer's four-dimensional model. These transformational theories, then, do not strongly reflect Riemann's functional concept, notwithstanding the terminology chosen to represent them. And even taken as root-interval systems, they do not correspond to Riemann's; where his was all-inclusive, Lewin's and

41 Hyer, "Tonal Intuitions," p. 189; "Reimag(in)ing Riemann," p. 128.

Hyer's transformations are limited to common-tone relationships, with very fruitful results.[42]

6.6 A DUALISTIC TRANSFORMATION SYSTEM

A body of speculative work published over the last several years investigates the possibilities of reducing the number of transformations, of recasting the basic set, and of developing the approach in new directions. Richard Cohn probes the properties of intricate harmonic systems using constructs predicated on minimal voice motion between chords. He proposes that systems based on incremental voice-leading may exist apart from the traditional diatonic system, forming an independent basis for understanding chromaticism in music. As a model, he introduces the concept of *maximally smooth* transformation cycle, in which only a single pitch within a defined set changes by semitone per unit move.[43] He demonstrates that there are only a few such cycles possible in tonal music, each with an important role. One such cycle is the circle of fifths, which results from the repeated raising or lowering of the leading tone of the diatonic sets of fifth-related keys.[44] Another cycle involving triads derives from alternating patterns of *leittonwechsel* and parallel, giving six chords in all – thus a *hexatonic* system, which describes a circle of major thirds by way of incremental diatonic motion. Cohn uses this construct to model key relations in passages from the core nineteenth-century repertory of composers such as Wagner, Franck, and Liszt which resist conventional harmonic analysis. Plate 6.6 shows four such systems orbiting a core of source sets. Each hexatonic cycle contains six intervals of alternating unequal size but of equal value as unit moves in the system. In the language of transformation theory, every unit move within a system represents an interval. Hence in a hexatonic system a single clockwise move, whether by **L** or by **P**, is a transposition "up" by one interval (T_1), whether the result is mode change or a move by diatonic third. Two clockwise moves, (T_2) will always yield a chromatic third relation, whether they consist of **L** then **P**, or **P** then **L**. At a higher level, an interlocking nexus of four hexatonic cycles with different sets of tonics models the complete tonal complement in a "hyper-hexatonic system" in the absence of dominant relations, as portrayed by the entirety of Plate 6.6.[45] Direct connections between neighboring hexatonic cycles are considered as higher-level interval moves (T_1, here meaning the conventional transposition by semitone). Two

[42] Henry Klumpenhouwer, on the other hand, has translated Riemann's complete root-interval system into transformational terms in "Some Remarks on the Use of Riemann Transformations," *Music Theory Online*, 0.9 (July 1994).

[43] Richard Cohn, "Maximally Smooth Cycles, Hexatonic Systems, and the Analysis of Late Romantic Triadic Progressions," *Music Analysis*, 15, 1 (1996), pp. 9–40.

[44] The diatonic set's complement, the pentatonic set, also produces a maximally smooth cycle. For an analysis of a portion of such a cycle used by Debussy, see my "Pentatonic Organization in Two Piano Pieces of Debussy," *Journal of Music Theory*, 41, 2 (Fall 1997), pp. 261–288.

[45] This diagram appears in Cohn, "As Wonderful as Star Clusters: Instruments for Gazing at Tonality in Schubert," *19th Century Music*, 22, 3 (Spring 1999), p. 216.

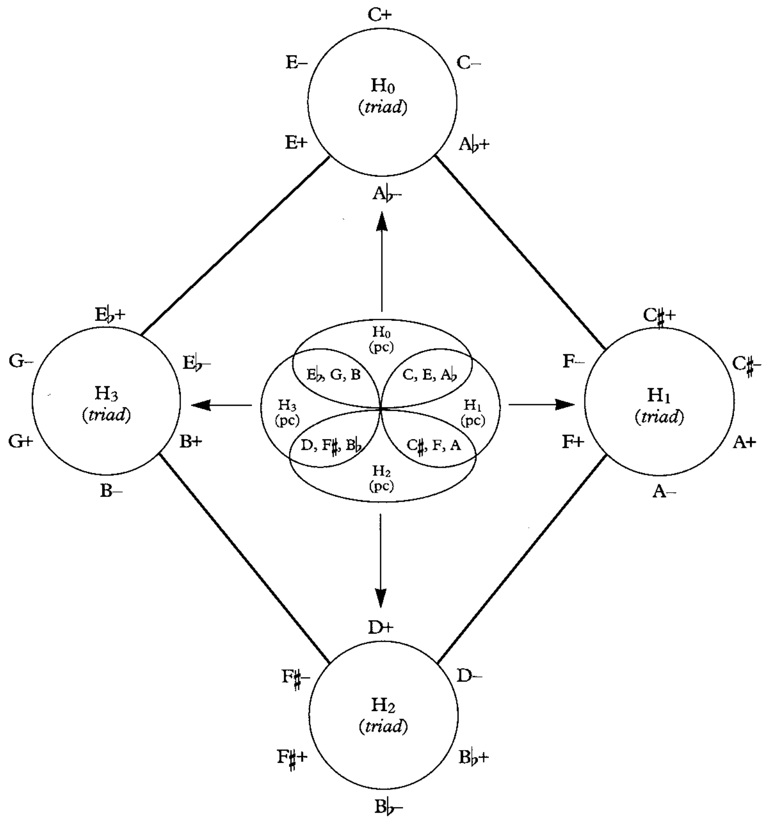


Plate 6.6 Cohn: hyper-hexatonic system

moves (T_2, by two semitones) are required to relate non-contiguous cycles. Thus while transposition means the same thing in the abstract on the two levels of the system – a clockwise unit move – it can mean different things in practical terms, since at the level of the individual systems the nature of actual chord change may vary, while at the level of the hyper-hexatonic system it is unvarying. Cohn provides analytic examples of passages which trace a single hexatonic cycle in unit moves, as well as others which move from cycle to cycle, usually in an organized way such as transposition of passages from one level to another.

By this theory Cohn extends the tradition of Riemann and Weber in proposing a view of tonality which necessitates independent mechanisms of fifth and third relations for completeness. However, this model maintains an essentially diatonic explanation of chromatic music, in which every chromatic progression is understood as the outcome of a number of diatonically predicated unit moves within the model, or else as a complete discontinuity.

In a subsequent study, Cohn adapts Hyer's system, reducing the number of transformations by one.[46] The **D** transformation, containing two common tones, does

[46] Cohn, "Neo-Riemannian Operations, Parsimonious Trichords, and their *Tonnetz* Representations," *Journal of Music Theory*, 42, 1 (Spring 1997), pp. 1–66.

A minor $\xrightarrow{D}$ D minor $\xrightarrow{D}$ G minor $\xrightarrow{D}$ C minor $\xrightarrow{P}$ C major

G major $\xrightarrow{R}$ E minor $\xrightarrow{L}$ C major

Figure 6.2 Third-relation transformation formula using fifth relations; fifth-relation transformation formula using third relations

G major $\xrightarrow{R}$ E minor $\xrightarrow{L}$ C major   G minor $\xrightarrow{R}$ B♭ major $\xrightarrow{L}$ D minor

C major $\xrightarrow{L}$ E minor $\xrightarrow{R}$ G major   D minor $\xrightarrow{L}$ B♭ major $\xrightarrow{R}$ G minor

Figure 6.3 Dualistic binary fifth relations from major and minor triads. Top line: **RL**; Bottom line: **LR**

not yield maximally smooth cycles; furthermore, it can be expressed as the combination of **R** and **L**, and is thus redundant and inelegant from a certain point of view. (Figure 6.2 shows the relative economy of expressing a fifth relation in terms of third relations versus the opposite.) The addition of **R** spells an important advantage for Cohn's approach, expanding the range of triadic cycles to include ones which include whole-tone as well as semitone motion. This leads to the inclusion of a wider range of harmonic phenomena: the individual primary transformations **L**, **P**, and **R**, along with the binary transformation pairs **RL**/**LR**, **PL**/**LP**, and **RP**/**PR**, which model perfect fifths, chromatic major thirds, and chromatic minor thirds, respectively: the intervals of Riemann's 1916 *Tonnetz*.

There is an important ramification to substituting **RL** for **D**, shown in Figure 6.3. While **RL** takes G major to E minor, then C major, it takes G minor to B♭ major, then D minor, whereas **D** takes G major and minor to C major and minor. Similarly, **LR** takes G major to B minor, then D major, but G minor to E♭ major, then C minor, whereas $\mathbf{D}^{-1}$ takes G major and minor to D major and minor.

As has already been shown, the four other binary combinations of **P**, **R**, and **L** (**PR**, **RP**, **PL**, **LP**, each pairing a relative third relation with mode change) result in dualistic models of mode-preserving chromatic third relations. Consequently, when dominant transformations are replaced by relative mode transformations, the *entire* system becomes dualistic, open to all the attributes of symmetry and the complex structures which dualism supports.

Cohn's initial expressed purpose is largely speculative; he remarks that theory has been so preoccupied with the actual acoustic properties of music and the strongly organizing roles of tonic, dominant, and subdominant since Riemann's time that it has been impossible to investigate the systematic properties of the "**LPR** family" of transformations for their own sake. What **L**, **P**, and **R** have in common operationally is two common tones and a single stepwise motion. Since not all of them result in maximally smooth cycles, Cohn calls this more general shared property *parsimonious*

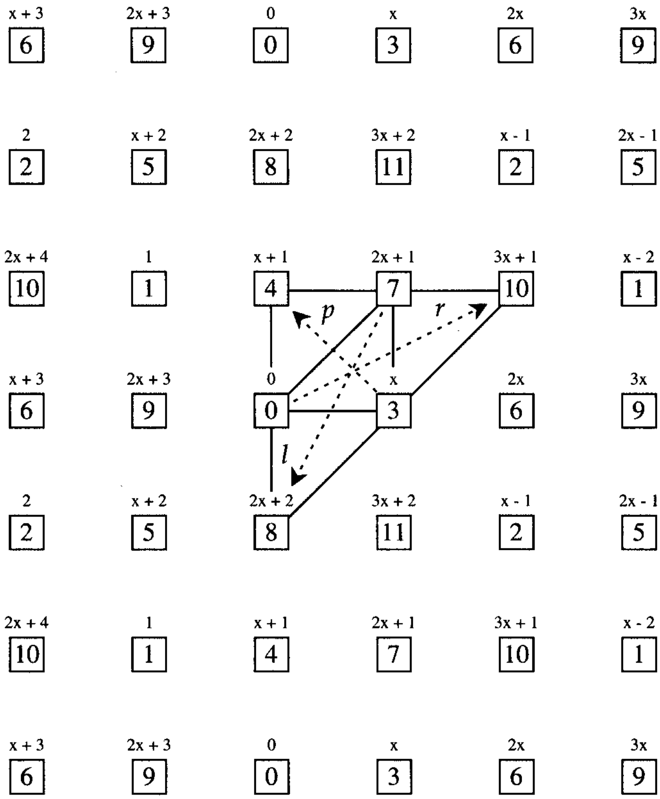


Plate 6.7 Cohn: *Tonnetz* reoriented to minor and major thirds, centered on minor triad (0,3,7) and displaying the results of **P**, **L**, and **R** as inversion operations about different axes

voice-leading, and the tonal objects they relate *parsimonious trichords*. He investigates the ways in which these elements combine in cycles and chains to define harmonic systems and tonal paths, noting that the unary **L**, **P**, and **R** transformations, as well as any compound transformations containing an odd number of elements, result in inversion at some transpositional level (thus mode changes), while compound transformations containing an even number of elements result in simple transpositions (thus mode is preserved).[47] To best display the full range of transformational relations Cohn employs a *Tonnetz*, reorienting it to feature third relations over fifth relations (Plate 6.7). Note that in this version of the *Tonnetz* the horizontal axis traces minor thirds (by additions or subtractions of three semitones) while the vertical axis traces major thirds (by additions or subtractions of four semitones); the fifths (seven semitones) resulting from their combination form the diagonal.

Plate 6.7 shows unary **L**, **P**, and **R** transformations from the minor triad [0, 3, 7]. Each transformation is indicated by an arrow which traces the path of the one pitch

[47] Cohn credits John Rahn with making this observation in 1980.

which undergoes change. In the **P** transformation, the root [0] and fifth [7] are held constant while the third [3] inverts around the axis they form, moving to its mirror image on the diagram, [4], the major third, as C minor becomes C major. This is the exact graphic representation of Lewin's original definition of the **P** transformation, TDINV. Hence the major tonic [0, 4, 7] is easily perceived as the minor tonic's dualistic mirror reflection on this *Tonnetz*, and the unary **LPR** transformations associated with it would form a mirror opposite of Plate 6.7. Likewise, the **L** transformation holds root [0] and third [3] constant, inverts fifth [7] about them to [8] below, and corresponds to Lewin's TMINV (C minor becomes A♭ major). Finally, the **R** transformation holds third [3] and fifth [7] constant, inverts root [0] about them to [10] above, corresponding to Lewin's MDINV, as C minor becomes E♭ major. Thus the *Tonnetz* provides an excellent visual representation of the **LPR** system's dualism: major triads are oriented exactly opposite minor triads, and transformations are seen to work in exactly opposite directions. The dualism of equivalence and the dualism of opposition are equally well represented here. Cohn further uses his *Tonnetz* to model cycles of major thirds (**PL**/**LP**), minor thirds (**PR**/**RP**), and perfect fifths (**RL**/**LR**) which result from repeated chains of transformation groups. As musical validation, he identifies harmonic progressions by common-practice composers which follow the cyclic structure of each particular cycle.

While advancing the development of neo-Riemannian theory in one direction, this aspect of Cohn's work would ironically seem to turn some of Riemann's core concepts on their head. In Riemann's functional theory, relative and *leittonwechsel* are variant forms derived on the principal functions; without tonic, dominant, and subdominant, they have nothing from which to draw their meaning. This situation is completely reversed *chez* Cohn: dominant and subdominant, no longer prior to the **LPR** operations, now become dependent on *them*. It is helpful to remember that these transformations embody directed motion derived from the root-interval theory using terms borrowed from function theory, so that in this usage the individual transformation names refer to local relationships rather than chord meanings within their key.

Without **D**, the **LPR** system not only becomes dualistic; it also inherently posits that at some level every constituent element of every progression involves change of mode. This stands in considerable contrast to familiar non-dualistic systems in which basic progressions such as V–I are understood to preserve mode. Further, the doctrine of parsimonious voice-leading aims to express all progressions and harmonic systems as the product of a series of minimal changes, none of which can be further subdivided. Thus the underlying position is an atomistic one.[48] On the other hand, traditional harmony and the transformational systems which admit mode-preserving (single common-tone) transformations inherently posit the quality of a harmonic relationship may transcend the sum of its constituent parts. Thus their position is a more holistic one, allowing for both parsimonious and non-parsimonious

[48] One could also call it *reductive*, but that term would not reflect the generative orientation of the transformational approach.

progressions. Both the integral major-third circle and the hexatonic cycle, for instance, or the circle of fifths and an **LR** cycle, would present equally valid models in different contexts. Conceptually, the atomistic/holistic opposition is prior to the dualistic/non-dualistic opposition; the atomism of parsimonious voice-leading gives rise to dualism, not the other way around. Moreover, the atomistic/holistic distinction is more precise than the dualistic/non-dualistic one, since the holistic approach allows for dualistic analysis in situations dominated by change transformations.

In another study, Cohn develops a system of classifying triadic progressions by adding together the directed motion of all their component voices.[49] By this approach, for example, all voices in a progression from C major to D major move up by two semitones, so that the sum value is 6. In a progression from C major to G major, C moves down to B, E moves down to D, and G remains constant, for a sum of $-2 + -1 + 0 = -3$, or 9 (modulo 12).[50] Since both of these progressions contain parallel or similar motion, the summation is additive. Where voice motion is contrary, as is the case with the major-third mediants, summation is subtractive. Thus from C major to A♭ major, C is stationary, E moves down to E♭, and G moves up to A♭, for a sum of $0 + -1 + 1 = 0$. Likewise, from C major to E major, C moves down to B, E remains stationary, and G moves up to G♯, for a sum of $-1 + 0 + 1 = 0$; the same sum value arises from a different combination of voice motion. The relationship of these two triads to C major creates a class of three triads whose roots are related by augmented triad. Other groups of major-third related triads are also generated by this method; for example, G major shares class 9 with E major and B major in relation to C major. All members of each class behave similarly to all members of each other class in terms of their *summed* voice-leading relationship.

Cohn goes on to define two favored relationships between classes, in which the sum differs by 1 or 2. The component progressions of each class can be expressed as transformations, and he is obliged to expand his repertory to include some non-parsimonious ones involving motion by more than one voice. To the first class belong **P** (only the third moves), **L** (an outer voice moves by semitone), and a new transformation **H**, for hexatonic pole, a term for the disjunct major-third mediants which lie at opposite ends of hexatonic cycles. These disjunct mediant relationships involve parallel motion of two semitones and contrary motion of a third, for a sum of $1 + 1 + -1 = 1$. The introduction of **H** indicates a very significant change in the makeup of Cohn's transformational group brought about by the voice-leading summation approach. For the inclusion of the subtractive relationships admits non-common-tone relationships for the first time, and further defines them as equivalent (by its criteria) to common-tone relationships having significantly less voice motion. Cohn's **PLH** class assumes a voice-leading equivalence between parallel mode, *leittonwechsel*, and disjunct mediant progressions, which not coincidentally

[49] Cohn, "Square Dances With Cubes," *Journal of Music Theory*, 42, 2 (Fall 1998), pp. 283–295. He attributes the summation idea to the theorist Jack Douthett.

[50] "$-3 = 9$ modulo 12" is similar to saying that moving three positions counterclockwise from 12 on a clock face is the same thing as moving nine positions clockwise.

are the components of his hexatonic cycles. To the second class having a sum of two semitone motions belong **R** (one outer voice moves by whole tone), **S** (both outer voices move by semitone), and a new transformation **N**, after the usage of German theorist Carl Friedrich Weitzmann (one outer voice and the third move by semitone).[51] Thus the **RSN** grouping defines equivalence between relative mode, SLIDE, and fifth-change progressions.[52] It is clear that these associations are not essentially harmonic, but rather serve to define classes of voice-leading relationship.[53] While increasing the repertory of transformations, all six of these still involve mode change. The plain dominants and mode-preserving chromatic mediants remain as derived entities, while considerably more distant harmonic relations figure as integral transformations. Cohn demonstrates an analytic application for the system in short passages by Brahms and Liszt which create patterns derived from alternating progressions between members of the first class and members of the second.[54] These show that the voice-leading equivalence classes can demonstrate organization under the musical surface which the individual transformations do not display on their own. Conversely, the equivalence classes may separate chords which are normally understood to exhibit similar function.

In a further study Cohn informally integrates fifth relations into his hexatonic system for use in an analysis of Schubert's music. Here the flat plane of distributed cycles is reworked into an ordered, interconnected cylindrical stack of fifth-related cycles (Plate 6.8a).[55] Sliced along its side and laid flat, the cylinder becomes a species of *Tonnetz* (Plate 6.8b), with fifth relations forming the vertical dimension, and parsimonious **P** and **L** relations forming the horizontal. Since transformation symbols are not used this study, the genesis of the fifth relations is not defined. The table is to be read tonally, aligned to the tonic of the subject work, the B♭ major piano sonata, D960. Accordingly, the second line of the table begins with the tonic and extends from it to the right in a hexatonic cycle. Above this line is a similar one which emanates from the dominant; below it is another which emanates from the subdominant. The fourth line, at the bottom of the table, does not figure in the analysis nor in the system. Each line, representing a hexatonic cycle, defines a harmonic region

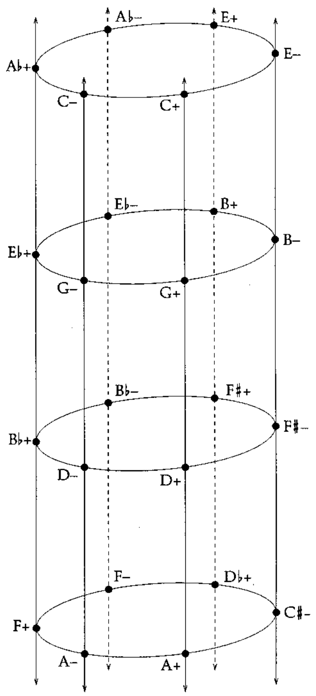
[51] Weizmann created a theory of chromatic chord relations based on the augmented triad, which is of interest particularly as a model of late Liszt and Wagner. He introduced the term *Nebenverwandt* (or neighbor-related) in 1853 to describe the relationship of dualistic mirror-image triads, as in C major inverted to become F minor – what Riemann would come to call a *Seitenwechsel*. I introduced a similar transformation in "A Systematic Theory of Chromatic Mediant Relations in Mid-Nineteenth Century Music" (Ph.D. dissertation, Brandeis University, 1995); see below, section 7.3.

[52] Where the first class defined a hexatonic cycle, which as a set can be thought of as three parallel mode pairs joined as a major-third cycle, this second class, which Cohn names a Weitzmann region, defines a set of three SLIDE pairs joined as a major-third cycle. Cohn, "Square Dances With Cubes," p. 290.

[53] This system rests on the claim that equivalence exists between voices in contrary motion which numerically "cancel each other out," and voices which remain the same in relation to each other.

[54] Cohn, "Square Dances With Cubes," p. 292.

[55] A close look at the cylinder shows that either end will continue on in two further transposed iterations of the four-cycle series before returning to the starting point on the other side, thus creating a circle of fifths of hexatonic systems, whose ends, joined together, would form a torus or doughnut shape.



a: cylindrical representation

E♭+	E♭–	B+	B–	G+	G–	E♭+
B♭+	B♭–	G♭+	F♯–	D+	D–	B♭+
F+	F–	D♭+	C♯–	A+	A–	F+
C+	C–	A♭+	A♭–	E+	E–	C+

b: function-region table:
top line = dominant region
second line = tonic region
third line = subdominant region

Plate 6.8 Cohn: Hexatonic system integrated with fifth relations

associated with its functional archetype. Within each region voice-leading process is the generating force behind chord relationships. The implicit result is an expanded chromatic Riemannian functional system along hexatonic lines, with some notable differences, such as the absence of dual functional identity of some secondary triads. Inter-regional chord progressions are depicted as horizontal displacements; leaps between functional areas are vertical or diagonal.

Cohn makes no claims for this system beyond its value for analyzing the work at hand, although it clearly suggests more generalized utility, and provides a way to align his theory with Riemann's diatonic three-function model. He states that one purpose of his model is to portray Schubert's harmony in a positive and direct way, rather than as aberrant or wrong, which is also a refrain of this book.[56] He does this by explaining unusual chords both as members of harmonic regions and as voice-leading phenomena having motivic associations with fundamental events involving linear semitones and major thirds.[57] For example, the exposition's second theme is in

[56] Cohn, "Star Clusters," p. 218.

[57] The semitone motive is a cornerstone of analysis of this piece, deriving from the opening theme (B♭–A–B♭) and the ominous trill (F–G♭–F) in the bass preceding the move to the lower flat mediant in m. 20.

the distant key of F♯ minor, which is in disjunct mediant relation to tonic B♭ major, and in SLIDE relation to the eventual dominant key of F major.[58] Cohn explains that while F♯ minor belongs to the tonic region despite its lack of common tones, the theme and ensuing music (mm. 48–80) project the major-third motives A–C♯ and F–A, which in describing the augmented triad F–A–C♯ (and in concert with semitone motives) connect F♯ minor to subsequent A major and dominant F major. Thus he provides a harmonic explanation for chords related somewhat distantly, and a linear/motivic explanation for seemingly closer common-tone relations. This is intentional, for he comes to assert that the latter type are predominantly non-tonal in nature, drawing their coherence from systems of voice-leading connections in the absence of the capability of diatonic tonality to incorporate chromatic relations as harmony.[59] This viewpoint is at odds with the one advanced in this book: Schubert's music is eminently tonal and partakes of a harmonic system of chromatic tonality.

With the development of the transformation theories outlined above, the historical cycle of alternation between fifth-relation theories and theories of incremental voice-leading is renewed in the present day. The advantages and insights of the approaches outlined above are many. However, their dualism and ever-increasing reliance on mode-change building blocks leave room for other approaches.[60] Moreover, this discussion makes clear the extent to which transformation theory has diverged (or is able to diverge) from the harmonic model originally proposed by Lewin, replaced by a voice-leading model more consistent with other current strands and tenets of tonal theory.[61] The adaptability of transformation theory to formalize different systemic contexts, plus its ability to demonstrate relationships between seemingly different musical phenomena, and its power to support speculative constructs of considerable complexity provide potent new tools for characterizing seemingly refractive musical relationships in a positive and constructive way. One may get the sense, though, that in the excitement of creating new models, something of value may be

58 Cohn, "Star Clusters," p. 217. The special status of disjunct mediant pairs or "polar harmonies" was outlined above in the description of the **H** transformation.

59 *Ibid.*, p. 231. Cohn's treatment of the move to the lower flat mediant in m. 20, an event discussed extensively above in section 2.4, exemplifies this approach. He contends that the chromatic mediant relation and common tone B♭ are of negligible effect, while the linear inner-voice semitones F–G♭ and D–D♭ are prominent in the ear of the listener (*ibid.*, p. 221). Given that the outer voices contain the common tone in the upper register and the root motion B♭–G♭ in the bass, that the inner voices are not present at the very moment of progression, and that the change of color is so tangible and whole, along with the other factors discussed in chapter 2, I would come to a different conclusion.

60 Riemann's own theory turns out to be a hybrid, blending dualism with non-dualism. He achieves this by (1) separating harmonic relations from root relations, and (2) after the early theory, allowing for similar outcomes of **D** and **S** from major and minor triads.

61 While this discussion has been limited to the work of a few theorists whose work bears closely on the subject of this book, considerable other work is being accomplished in transformational and neo-Riemannian theory by scholars such as John Clough, Jack Douthett, David Clampitt, Carol Krumhansl, Edward Gollin, Adrian Childs, Julian Hook, and several others. Its genesis is further described by Cohn in "Introduction to Neo-Riemannian Theory: A Survey and a Historical Perspective," *Journal of Music Theory*, 42, 2 (Fall 1998), pp. 167–179, while the rest of that issue provides a sampling of work in the area, including articles by the above-mentioned theorists.

neglected: holism, non-dualism, harmonic sensibility. Since, as Lewin says, one of the strengths of transformation theory is its capability to represent the same phenomenon differently, I would like to propose another system of transformations, based on the common-tone table in Table 1.1, in order to investigate alternatives which preserve the notion of unary fifth relations, and which allow for the direct chromatic processes of common-tone tonality.

7

A CHROMATIC TRANSFORMATION SYSTEM

7.1 A MODIFIED CHROMATIC SYSTEM

As recounted in the previous chapter, the line of inquiry in tonal transformation theory seems to be shifting its focus of late from theory of harmony *per se* toward models based on voice-leading and economy of transformations. Without question this approach is providing considerable insight into aspects of organization in nineteenth-century music. But concomitant with this shift is a turning away of attention from the idea that the tonal harmonic system itself might possess greater complexity than is inherent in common practice. Instead, the argument is that some chord relations beyond the diatonic must be the result of nonharmonic processes. In many cases this is most certainly true, but in others a notion of chromatic function seems appropriate. The foregoing review of nineteenth-century theory, along with my presentation of the nature of common-tone tonal harmony, argue strongly for the recognition and inclusion of chromatic common-tone relations in a comprehensive model of the appropriate musical subject. Thus I would like to propose a transformational system based on common-tone tonality. From the perspective of common-tone tonality it would be beneficial to conceive of every type of fifth relation, and every type of third relation, as unary harmonic processes. From a harmonic point of view, a plain fifth relation is more basic than two diatonic third relations, even though it may be divided into them on the musical surface or reduced to them in theory. Similarly, a fifth-change relation is harmonically more basic than the two diatonic third relations plus mode change it may be reduced to, and a chromatic third relation in context may be more basic than the diatonic third relation plus parallel mode relation it may be divided into. An approach along these lines yields a system of transformations deriving more directly from the ideas of direct fifth and third relations inherent in Riemann's later root-interval theory, as well as the views of diatonic and chromatic third relations advanced in this essay. It replaces some of the other systems' compound transformations with direct transformations and allows for transformations identified with harmonic quality, rather than specific root-interval or change operations (see Table 6.1d). The result is a set of six transformation types arranged as three pairs (refer back to Table 1.1). For each of the three common-tone root intervals (the prime, the third, and the fifth), one transformation represents mode constancy, while the other represents mode change. I will refer to this system as the chromatic transformation system, as opposed to the more diatonic and dualistic systems discussed in the previous chapter.[1] Since many of the transformation types are shared, those belonging to the system proposed in this chapter will be designated by italics: e.g. **P** in the diatonic systems, ***P*** in the chromatic system.

7.2 PRIME AND MEDIANT TRANSFORMATIONS

Lewin's system defines two transformations for the prime: IDENT, which, in preserving all the pitches of a chord, preserves mode; and PAR, in which the third of a triad changes from minor or major to the other state. The latter surpasses its literal meaning to become the all-purpose indicator of chromatic change. Cohn's **LPR** system includes identity only implicitly, and elevates **P** as one of only three basic elements. The chromatic system preserves Lewin's two transformation types, designating them as ***I*** and ***P***, respectively. The role of ***P*** is diminished, though, for the system will include other dedicated transformation types to account for direct chromatic common-tone progressions.

Unique to the chromatic system are transformations for the four chromatic mediant relations, all of which share a similar harmonic profile. They define a single transformation type: *mediant*. The mediant transformation comes in two forms: ***M***, with root motion of a major third, and ***m***, with root motion of a minor third. As with the ***D*** transformation (retained and described below), the principal direction is down;[2] upward motion by major and minor third yields $\boldsymbol{M}^{-1}$ and $\boldsymbol{m}^{-1}$.[3] Thus the upper sharp mediant will relate to the tonic by way of the ***M*** transformation: $[\mathrm{E},+] \xrightarrow{M} [\mathrm{C},+]$, while the upper flat mediant will relate by the ***m*** transformation: $[\mathrm{E}\flat,+] \xrightarrow{m} [\mathrm{C},+]$. The two relative mediant relations, which also share a similar harmonic profile, define a single transformation type: *relative*. Here the notion of relative transformation is expanded to include not only the tonic of the corresponding relative mode (vi in major, III in minor), but also the other relative mode chord (iii in major, VI in minor). Two forms are needed: ***R***, with root motion of a major third, and ***r***, with root motion of a minor third. The relative transformation, although less strongly cadential than the dominant and mediant transformations, is expressed similarly as motion toward its goal; thus, $[\mathrm{A},-] \xrightarrow{r} [\mathrm{C},+]$ and $[\mathrm{E},-] \xrightarrow{R} [\mathrm{C},+]$.[4] The

[1] This approach also provides a different kind of economy. The diatonic systems aim to describe the maximal number of musical relationships with the minimal number of transformations, although Cohn's "Square Dances With Cubes" may represent a move away from this approach. The chromatic system aims to describe the maximal number of direct musical relationships with unary transformations. One might distinguish the former as mathematically economical, the latter as musically economical.

[2] This makes for a consistent system in accordance with Lewin's. It also acknowledges the leading-tone resolution property of the descending chromatic major-third relation.

[3] Thus the lower flat mediant will relate to the tonic by way of the $\boldsymbol{M}^{-1}$ transformation: $[\mathrm{A}\flat,+] \xrightarrow{M^{-1}} [\mathrm{C},+]$, while the lower sharp mediant will relate by the $\boldsymbol{m}^{-1}$ transformation: $[\mathrm{A},+] \xrightarrow{m^{-1}} [\mathrm{C},+]$.

[4] It is perhaps forward to propose alternative and potentially conflicting labels for the diatonic system's **L** and **R** transformations, symbols which, as Cohn remarks in "Square Dances", "are by now standard." My intent is not to refute their validity or challenge their use but rather to frame a different way of thinking based on harmonic affinities, which requires a consistent approach here.

R and ***r*** transformations in this system thus correspond to the **L** and **R** transformations in the diatonic systems. While it is regrettable to lose the *leittonwechsel* concept (in name only, though, since the *leittonwechsel* relation *is* a relative mode relation), it is beneficial to gain an explicit sign of the correspondence between major- and minor-third relative mediants, analogous to that of the chromatic mediants. There could be reasons to call the *minor*-third relative mediant transformation ***R***: it represents the central relation between tonics of relative modes, and would correspond to the diatonic systems' **R** transformation. But, throughout the history of chord symbols, major and minor thirds have consistently been depicted by upper-case and lower-case letters, respectively. In that it ensures consistency of symbols in the system presented here, this notational tradition will be observed.

This group of mediant transformations provides some advantages. First, it better reflects the musical nature of chromatic mediant relations by eschewing diatonically based compound transformations in favor of unary chromatic ones. Second, in utilizing the ***M*** operation it draws more directly from both Riemann's later root-interval theory and his later functional theory, which is more faithful to the spirit and intent of his ultimate use of the *Tonnetz*. Third, it better portrays the interplay between the transformation types and their relation to the harmonic system. Rather than basing groupings solely on absolute root-interval type, the chromatic system groups third-relation transformations primarily by harmonic content (diatonic ***R*** vs. chromatic ***M***), and secondarily by root-interval (***R*** vs. ***r***, ***M*** vs. ***m***). Fourth, by proposing variability within the basic transformations, it accounts for the common harmonic characteristics shown by groups of progressions which involve different root-intervals, which must be accounted for by different transformations in the diatonic systems. (For example, the chromatic mediants, all of which share a similar aural profile, but which involve root-intervals of both major and minor thirds, are all ***M/m*** transformations in the chromatic system, while they are variously **PL**, **LP**, **RP**, and **PR** in the diatonic systems.) Fifth and last, it provides for simpler transformation formulas in many cases. Overall, I believe that these revisions strengthen the correspondence of the transformation system to the actual harmonic relationships it portrays.

There is an interesting mathematical ramification to the ***M*** transformations. In the diatonic systems, the **D** transformation, a plain operation which preserves mode, is commutative, meaning that it may appear at any position in a compound formula and still yield the same result.[5] But the **R**, **L**, and **P** transformations are not commutative: their positions in a compound formula affect the outcome. See for example Figure 7.1 below, in which the **LP** and **PL** transformations end up in different places. This is because the **R**, **L**, and **P** transformations are dualistic change operations, which have different outcomes depending on whether they originate with a major or minor chord. Their compound chromatic mediant transformations, likewise, are

[5] The IDENT or ***I*** transformation, since it changes nothing, is also commutative.

$$\text{C major} \xrightarrow{\mathbf{P}} \text{C minor} \xrightarrow{\mathbf{L}} \text{A}\flat\text{ major} \xrightarrow{\mathbf{R}} \text{F minor}$$
$$\text{C major} \xrightarrow{\mathbf{R}} \text{A minor} \xrightarrow{\mathbf{P}} \text{A major} \xrightarrow{\mathbf{L}} \text{C}\sharp\text{ minor}$$

$$\text{C major} \xrightarrow{\boldsymbol{M}} \text{A}\flat\text{ major} \xrightarrow{\boldsymbol{R}} \text{F minor}$$
$$\text{C major} \xrightarrow{\boldsymbol{R}} \text{A minor} \xrightarrow{\boldsymbol{M}} \text{F minor}$$

PLR≠RPL yet ***MR*=*RM***, even though **PL**=***M***

Figure 7.1 Noncommutativity of the compound **PL** transformation vs. commutativity of the unary ***M*** transformation

not commutative, even though their end result is the preservation of mode. The chromatic ***M*** transformations, on the other hand, *are* commutative; they may appear anywhere in a compound formula with the same effect.[6]

Thus the commutative ***M*** transformations present a non-dualistic model for the chromatic third relations, which, like the dominants, preserve mode. Furthermore, the ***D*** and ***M*** transformations share the property of being cumulative, since they will always continue smoothly in the same direction when applied continuously. This process results in harmonic circles involving a single interval. The ***D*** transformation, applied twelve times, yields the circle of fifths; the ***M*** transformation, applied three times, the circle of major thirds; and the ***m*** transformation, applied four times, the circle of minor thirds. This common property further validates the notion of a family of unary, commutative ***M*** transformations existing along with the ***D*** transformations.

Since the transformation system specifies root-interval relationships, while labels for mediant function specify chord identity, the two approaches are complementary, not mutually exclusive. Mediant transformations may occur both within the key and between keys, as long as they make sense; functional mediants may connect to a variety of other chords expressing meaning in a key. They work together to provide a sense of coherent progression to meaningful places. Thus the progression from a C major triad to an A♭ major triad in C major may be described in the following way: the tonic moves by way of an ***M*** transformation to its lower flat mediant.[7]

[6] Hyer makes a similar argument for the nonequivalence of the unary **D** transformations to the **RL** and **LR** transformations, which also yield mode-preserving motion by fifth. "Reimag(in)ing Riemann," p. 124.

[7] Cohn, "Neo-Riemannian Operations," pp. 58–59, note 3, considers whether the compound formula **PL**, which describes this progression, should be understood to represent a direct unary process or a compound process (**P**, then **L**, with an elided C minor triad as intermediary term). He leaves this question open. Hyer, "Reimag(in)ing Riemann," p. 111, on the other hand, considers **PL** to be a unary process in which the transformations "fuse together." But to my mind, the **PL** formula is by definition compound; the two-process *Tonnetz* representations of the diatonic transformation theories bear this out. The elided intermediary term is unnecessary within chromatic tonality, in the same way that two diatonic third relations are unnecessary to model a direct fifth relation in diatonic tonality. (If the intermediary term is present as a musical event, then it can be seen in context as a subsidiary diatonic element of an overall chromatic progression; see below, section 8.2.) A unary transformation is preferable to model a unary process which occurs along a different dimension of chromatic space than the ones followed by a compound diatonic one.

In the analyses that follow, I will employ both functional and transformational language to describe harmonic meaning and activity where a sense of tonic key is maintained.

7.3 PLAIN-FIFTH AND FIFTH-CHANGE TRANSFORMATIONS

My system retains Hyer's transformation $\boldsymbol{D}/\boldsymbol{D}^{-1}$, representing mode-preserving dominant-type relations by root-interval of a fifth. $\boldsymbol{D}/\boldsymbol{D}^{-1}$ is the only fifth-relation transformation in the diatonic systems. But there is another familiar class of common-tone progressions for which no direct expression exists in any of the diatonic systems. These are the fifth relations involving mode change, the most common of which occurs between major dominant and minor tonic. Some transformation systems in Table 6.1 give this progression the formula **DP**, reflecting, for example, the conventionally understood altered-third origin of the major dominant in a minor key. Nonetheless, it is hard to deny that the V–i progression sounds straightforward and direct, with no audible twist suggesting borrowing or conspicuous alteration. (To our ears, it is the minor dominant resolving to a minor tonic that sounds peculiar.) Another common fifth-change progression, ii–V in a major key, is fully diatonic and sounds equally straightforward. Thus for reasons both of musical instinct and systematic thoroughness, there is good reason to define fundamental transformation types for plain and change progressions by fifth to mirror those defined for the thirds and the prime.

Because the harmonic distance covered in chromatic mediant relations is so great, it is relatively easy to distinguish the harmonic and voice-leading aspects of these progressions. Juxtaposition of chromatically third-related key areas relays a sense of considerable, quick harmonic motion, while common tones and semitone motion provide smooth, close connections. For the fifth-change relations, an analogous distinction may be more difficult to make at first, since the harmonic distance between members is not as great. Moreover, these progressions juxtapose different tonics less often than the chromatic mediant relations do. Rather, fifth-change relations usually consist of a tonic and its modifier, or of chords participating in a single cadential progression. Thus fifth-change is not usually identified as a particularly chromatic process. To the extent that fifth-change does invoke some sense of the mixture of parallel modes, there is cause to formalize this by portraying them as compound transformations containing $\boldsymbol{P}$, as do Lewin and Hyer. But I believe that there are compelling reasons to do otherwise in most cases. First, fifth-change relations do not always unequivocally establish a tonic. For example, in the case of a minor tonic and major subdominant, both members of the relation may exhibit some tonic quality, since the progression can be heard, depending on context, either as i–IV or V–i. Second, the common fifth-change progression ii–V in no way involves the parallel mode. Third, nineteenth-century practice often blurs the distinction between

Table 7.1. *The four fifth-change operations*

Progressions between triads	Examples	Formula
major down to minor	V–i in minor; I–iv in major	F
minor up to major	iv–I in major; i–V in minor	F^{-1}
minor down to major	ii–V in major; i–IV in minor	F
major up to minor	IV–i in minor; V–ii in minor	F^{-1}

parallel modes.[8] Tonic major and minor may come to represent essentially the same harmonic area. In this context, the perception of key remains constant: little or none of the sense of a passage between parallel mode-related keys is invoked by the transitory appearance of a tonic of opposite mode. In such circumstances a compound transformation involving ***P*** actually seems inappropriate. What is needed instead is a unary transformation, ***F***, representing the direct relation between elements of the fifth-change.[9] ***F*** will need to account for all four instances of this progression class, shown above in the first column of Table 7.1.[10]

The first fifth-change pair, with major triad above and minor triad below, embodies the relationship between major dominant and its minor tonic, and major tonic and minor subdominant. The second fifth-change pair, with minor triad above and major triad below, embodies both the relationship between minor tonic and its major subdominant, and that between ii and V in a major key. While the appearance of the major triads IV and V in minor is normally explained as alterations to scalar motion for melodic reasons, or as borrowings from the parallel major key, these explanations do not affect their innate legitimacy as members of direct common-tone relations. It is worth noting that the two reciprocal fifth-change pairs are not identical. In the major-above pair, the two moving voices move by semitone, while in the minor-above pair they move by whole tone. Moreover, the major-above pair inverts about the pitch which forms a major third with the third of the chord, while the minor-above pair inverts about the pitch which forms a minor third with the third. In order to define the ***F*** transformations as reciprocal change relations, it would therefore be

[8] Harrison, *Harmonic Function*, pp. 19–21, discusses theoretical reception of this phenomenon.

[9] As noted above in section 6.6, Cohn has recently identified this transformation in "Square Dances" and named it **N** for *Nebenverwandt*. ***F***, introduced by me in "A Systematic Theory of Chromatic Mediant Relations," is retained here as a unary alternative, since the term **N** derives from the reciprocal (dualistic) process discussed in this section.

[10] A possible analogy with the ***M*** transformation, which also has four varieties, presents itself. The two forms ***M*** and ***m*** were necessary to accommodate two different interval sizes. ***F*** involves two reciprocal pairs defined by exactly the same process and involving the same interval size: one with a major triad above and a minor triad below, the other with a minor triad above and a major triad below. A solitary form of ***F*** defining downward interval motion of a fifth along with mode change, and its inverse, F^{-1}, thus accounts fully for all four fifth-change progressions.

necessary to define two different types of ***F*** in order to specify the interval around which the inversion takes place in any triad.[11]

But musical practice and intuition suggest that fifth-change, unlike prime-change and third-change, does not spring entirely from reciprocal operations. Whereas prime-change and third-change involve change relations between parallel and relative modes, fifth-change usually involves relations between primary chords within a single key. In this it is more like the plain fifth relations represented by the ***D*** transformation. Both G major → C major and G major → C minor, for example, represent dominant-to-tonic progressions. Thus root-interval appears to outweigh mode change in influencing the harmonic perception of fifth-change. Defining the ***F*** transformation by root-interval motion rather than reciprocal operations gives it simpler and stronger properties. In this model ***F*** represents downward fifth-change from the initiating triad, while its inverse, $\boldsymbol{F}^{-1}$, represents upward fifth-change from the initiating triad. This formulation works equally well no matter what the mode of the initiating triad is, requiring only one transformation type. Furthermore, ***F*** defined this way is commutative, as are ***D*** and ***M***. The commutativity aspect is essential for a notion of fifth-change which incorporates dominant behavior, which is direction-specific. It also makes good sense for yet another reason: ***F***, like ***D*** and ***M***, involves only a single common tone, while ***P*** and ***R*** entail two.

7.4 GENERAL TRANSFORMATION CHARACTERISTICS

Thus the complete system of chromatic common-tone transformations includes three root-interval types, each with two principal varieties – one preserving mode, the other changing mode. For the prime, ***I*** preserves mode, while ***P*** changes it. For the third, ***M/m*** preserves mode, while ***R/r*** changes it. For the fifth, ***D*** preserves mode, while ***F*** changes it. All of these transformations are shown in relation to the other systems in Table 6.1d.

These transformations differ in more than essential harmonic content: each displays a different set of properties. Summarized in Table 7.2, these give a more complete picture of the ways in which groups of transformations may act musically. They also serve to define each individual transformation more closely in terms of a unique combination of properties. Important properties include:

- *Accretion* – This distinction has ramifications beyond the obvious one of harmonic quality. The ***D***, ***F***, and ***M/m*** transformations are cumulative: successive applications of the same transformation propel harmony further in the same direction along the circles of fifths or thirds. Thus repeated applications of ***D*** to (D,+) yield (G,+), (C,+), and so on. Mathematically, these transformations are commutative (as is ***I***). The ***P*** and ***R/r*** transformations, on the other hand, are tightly circular: successive applications of the same transformation result in the

[11] For example, ***F***, inverting about the major third, would move from C major to F minor, while ***f***, inverting about the minor third, would move from C major to G minor.

Table 7.2. *Some aspects of the chromatic transformation system*

	Dominant (D)	Fifth-change (F)	Mediant (M/m)	Relative (R/r)	Identity (I)	Parallel (P)
Mode relation	plain	change	plain	change	plain	change
Root relation	perfect fifth	perfect fifth	major/minor third	major/minor third	prime	prime
Common tones	one	one	one	two	three	two
Varieties	two	two	four	two	one	one
Harm. range and outcome	1 ♭ ↔ 1♯; diatonic	4–2 ♭ ↔ 2–4 ♯; diatonic/chromatic	4–3 ♭ ↔ 3–4 ♯; chromatic	1–0 ♭ ↔ 0–1 ♯; diatonic	0	3 ♭ ↔ 3 ♯; chromatic
Accretion	cumulative	cumulative	cumulative	reciprocal (same) cumulative (mixed)	none	reciprocal
Commutativity	yes	yes	yes	no	yes	no
Inverse	D^{-1}	F^{-1}	M^{-1}/m^{-1}	R/r	none	P
Identity expr.	D^{12}	F^{12}	M^{3}/m^{4}	$R^{2}/r^{2}/R^{12}r^{12}$	none	P^{2}

alternation of just two values, yielding little cumulative harmonic motion. Thus repeated applications of ***R*** to (C,+) yield (A,−), then (C,+) again, and so on. The ***P*** and ***R/r*** transformations can further be understood as dualistic processes: the progress from minor to major is the mirror image of the progress from major to minor (see below, section 7.8).

- *Harmonic range* – some transformations, namely ***D*** and ***R/r***, yield chords closely related harmonically to the original; the diatonic sets of the keys associated with these chords vary by no more than one accidental from the original. The ***F*** transformations, mainly local phenomena, would vary diatonic sets by two to four accidentals. Other transformations more often involved in direct key relations, namely ***P*** and especially ***M/m***, yield chords whose associated keys differ from the original by three to four accidentals.
- *Varieties* – the number of individual progression types belonging to a group of transformations ranges from four (***M/m***) to two (***D***, ***F***, and ***R/r***) to one (***P*** and ***I***). This is a direct result of the number of root relations defining each transformation type. The chromatic mediants involve two root-interval sizes, resulting in double the number of transformations as in the dominant and relative groups, each of which involve only one root-interval. The parallel transformation, limited by its constant root, and the identity transformation, which preserves everything, have only one possible outcome.

Figures 7.2a and b propose a revamping and expansion of Hyer's relation-grid from Plate 6.4. Separate planes for major and minor chords replace the *Tonnetz*'s traditional conflation of major and minor chords with shared tonics on a single point; this allows for the distinction between plain and change transformations. Also present are the direct chromatic mediant relations of the ***M/m*** transformations. The affinities between the plain ***D*** and ***M*** transformation types, and the change transformation types ***R/r***, ***F***, and ***P***, are also made more apparent. Since this system contains six transformation types while separating out plain and change transformations, it is denser. Hyer's diagram entails 36 connections; this one entails 120.[12] While this scheme appears more complex, it reflects the greater richness of a common-tone harmonic space containing both diatonic and chromatic connections.[13] To begin, Figure 7.2a separates out major and minor triads into two Hyer-planes, equally defined by the plain ***D***, ***M***, and ***m*** transformations. Figure 7.2b adds the change transformations, which occur between planes: ***F/F***$^{-1}$, ***r/R***, and ***P***. Whereas the plain transformations continue on in four-dimensional Hyer-space, the change transformations ***r/R*** and ***P*** simply bounce back and forth between the same two points in different planes.

[12] Hyer's diagram shows the following individual relations: 12 **D**, 12 **R**, and 12 **L** (and perhaps 12 **P** relations at the pitch-loci). Since this diagram has two planes and adds two relation types, it includes 24 ***D***, 24 ***F***, 24 ***M***, 24 ***m***, 12 ***r***, and 12 ***R***. This provides for a nexus of 120 individual common-tone relations. This diagram does not show connections outside its boundaries but extends an extra fifth horizontally.

[13] This representation of the multiple connection-paths and harmonic dimensions of the tonal system is a manifestation of what Robert Morris calls a "compositional space" in *Composition with Pitch Classes* (New Haven: Yale University Press, 1987), chap. 2.

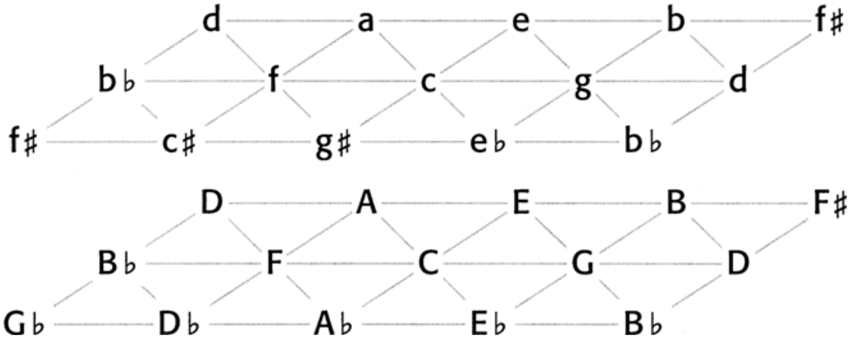


Figure 7.2a Separate *Tonnetz* planes for major and minor

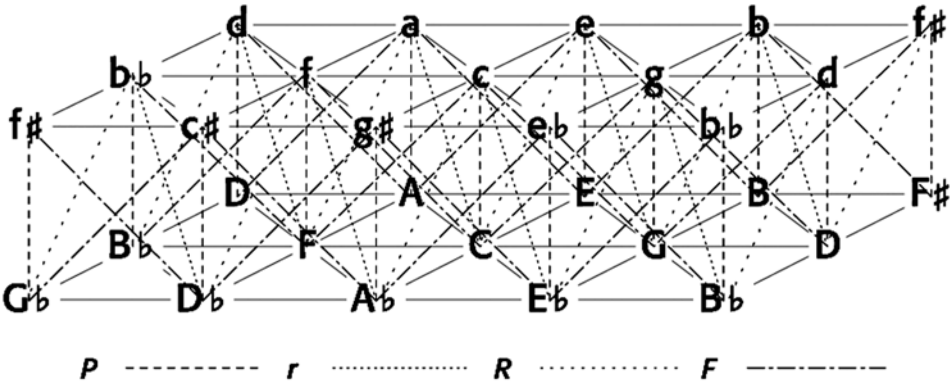


Figure 7.2b Expanded *Tonnetz* showing common-tone change relations

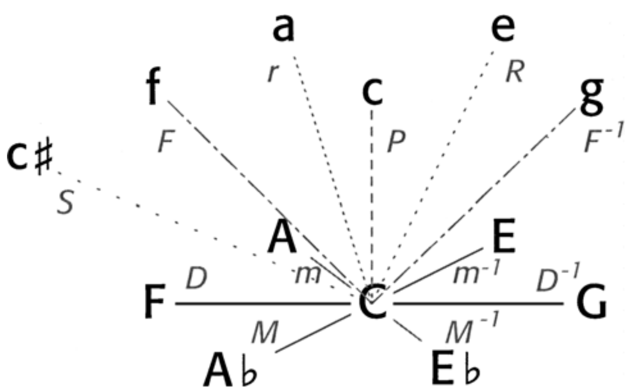


Figure 7.3 Full set of common-tone relations to a C major triad

$\boldsymbol{F}/\boldsymbol{F}^{-1}$, on the other hand, travel in a sawtooth pattern between planes until traversing their perimeters in four-dimensional space.[14] Zooming in, Figure 7.3 shows the complete set of unary transformations associated with a single locus, including the ***S*** transformation described immediately below.[15]

7.5 THE SLIDE TRANSFORMATION

One more common-tone relation resides at the bottom of Table 6.1. In this relation, the third is held common between both chords, while either chord inverts around this third to become the other. The result is a pair of opposite-mode triads a semitone apart, the major triad below and the minor triad above. This is the semitone change relation noticed by Marx (Plate 3.6), mind-twistingly dubbed *Doppelterzwechsel* by Riemann (Table 4.2), and recognized by Lewin as the SLIDE transformation. It is the consummate common-tone relation, whose harmonic strength, such as it is, is defined almost wholly by the common tone itself. The relation it represents is more distant than in any other common-tone relation: root motion by chromatic semitone joining keys four accidentals apart, with mode change. On the other hand, the common-tone relation is very strong: it forms the third of both chords. Only the parallel-mode relation, with its constant root and fifth, has a stronger common-tone component. Thus in SLIDE, the constant third greatly outweighs the harmonic connection. Voice-leading factors are also important, since the other two voices move by semitone, the privileged interval of parsimonious voice-leading theory.

Given the insignificance of its root relation, it may seem unnecessary to include SLIDE as a formal element of a systematic transformational theory. It occupies an odd place in Table 6.1. It appears in nineteenth-century music but not with the profile of the chromatic mediants. But there is one common harmonic relation which SLIDE fits like a glove: the progression from the Neapolitan chord to the dominant. The traditional explanation has it that the Neapolitan acts like a chromatic member of the class of dominant preparation chords resembling either ii through alteration or iv through 6-5 substitution. Scale-degree designation by Roman numeral for the Neapolitan chord is often withheld, since its "root" is located on lowered $\hat{2}$, which belongs to neither mode. Its only diatonic element is $\hat{4}$, which, although clearly the most important pitch connecting the Neapolitan to the dominant, cannot serve as the scale-degree root with which the chord is identified. But this common tone $\hat{4}$ between these chords suggests a transformational interpretation, shown in Figure 7.4. To begin with, the model for all dominant preparation progressions is the descending fifth progression ii–V, an instance of the fifth-change transformation ***F***. Next, the difference between ii in major and the Neapolitan chord is exactly SLIDE, or ***S***.[16] Thus, where the formula for ii–V is ***F***, the formula for the

[14] The difference between the dynamic paths traced by some transformations and the static paths traced by others relates to the concepts of essential and reciprocal dualism, to be introduced in section 7.8.

[15] Another schematic representation of tonal relations based on both harmonic and common-tone connections is advanced by Fred Lehrdal in "Tonal Pitch Space," *Music Perception*, 5, 3 (Spring 1988), pp. 315–349.

[16] ***S*** for SLIDE is not to be confused with **S** for SUBD in Lewin's system, which is replaced by $\mathbf{D}^{-1}$ in Hyer's.

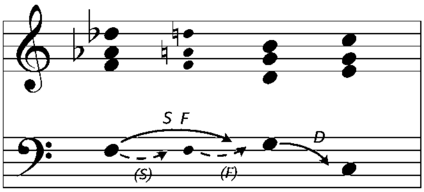


Figure 7.4 Involvement of ***S*** and ***F*** in the Neapolitan progression in major

progression N–V is ***SF***. This expression exactly captures the harmonic sense of the progression.[17]

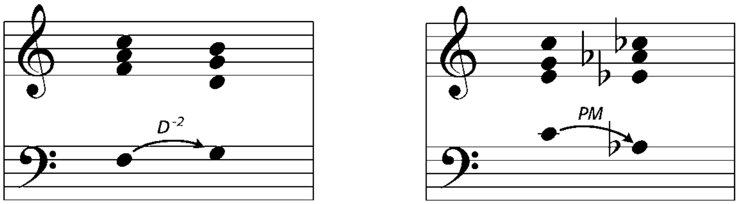
Without the ***S*** transformation, other formulas for N–V are possible, but fall short as precise, concise description. N–V is a mode-preserving tritone progression, and could thus be defined as $\boldsymbol{m}^2$, the product of two plain minor-third transformations. This expression, however, has little to do with how the Neapolitan acts in music, and is more suitable for analysis of circles of minor thirds (see below, section 8.6). Alternatively, the Neapolitan's affinity with iv in minor could suggest the influence of ***R***, after which the path to V is completed by $\boldsymbol{D}^{-1}\boldsymbol{F}^{-1}$. The complete formula $\boldsymbol{RD}^{-1}\boldsymbol{F}^{-1}$ is plausible yet awkward, while ***SF***, with its descending-fifth relation, is simpler, more accurate, and more powerful. Another option is a translation of Riemann's functional interpretation of the Neapolitan as a subdominant *Leittonwechselklang* borrowed from the minor mode.[18] This suggests the transformational relation ***PDR*** between Neapolitan and tonic, but does not illuminate the actual N–V progression. Thus, thinking in terms of SLIDE is an elegant and appropriate way of accounting for the direct sense of the chromatic Neapolitan progression to the dominant. It also shows the usefulness of ***S*** beyond the specific progression which defines it. ***S*** will also prove useful in other ways in some of the analyses that follow.

7.6 STEP PROGRESSIONS

The relatively fewer compound transformations which exist in the chromatic transformation system take on more specific meanings. They invariably represent non-common-tone relations, such as the N–V relation just described. As another example, Figure 7.5a shows a chromatic progression containing no common tones – a disjunct mediant relation between C major and A♭ minor. Among the possible ways of expressing this relation, the compound transformation formula ***PM***, which describes a parallel-mode change accompanied by a chromatic mediant relation, makes good musical sense. This order of transformations reflects the norm in musical contexts where the intermediary step is expressed, but since ***M*** is commutative, either order

[17] In minor, the Neapolitan more closely resembles iv than ii. But the ***SF*** formula maintains a concrete reference, since the mediating chord, minor ii, arises from the melodic form.

[18] Cited in Robert Gjerdingen, "Guide to Terminology," in Dahlhaus, *Studies in the Origin of Harmonic Tonality*, p. xv.



a) diatonic step progression b) chromatic disjunct mediant

Figure 7.5 Some compound transformations in the chromatic system

is possible. This clear-cut notion of parallel-mode displacement of a strong mediant relation captures this progression more precisely than the conventional yet vague term "double mixture."

Some compound transformations may also be diatonic. Here is where transformation theories revive one of the more problematic aspects of common-tone theory: the unavoidable conclusion that step progressions are not unary and direct. Progressions between triads with roots a second apart (Fig. 7.5a), with the exception of SLIDE, contain no common tones, and strict common-tone theory must find that no direct connection exists in such cases unless extra tones such as sevenths are introduced.

Historically, harmonic theories have recognized both the special nature of the step progression and its difference from the other progression types. Rameau, for example, allowed thirds, fourth, fifths, and sixths freely in the fundamental bass; the second, a dissonance, could only occur as a byproduct of dissonance resolution or as the result of a disruptive progression. He interpreted some common step progressions as involving different fundamental bass intervals: the deceptive cadence, for instance, was at times explained as the arrival to a 6-5 substitution over a tonic bass, and thus as a fifth progression.[19] Moreover, Rameau's concept of *double emploi* redefined the common step progression IV–V as something else entirely, explaining that (in modern terms) IV, always carrying the essential dissonance of an added sixth whether or not it is not actually present, acts as ii when moving to V.[20] Thus, in order to explain its clarity and strength, he reinterpreted this step progression as a fifth progression.

In the early nineteenth century, Weber, for whom Roman numerals constituted the limit of explanation, could point to the validity of any chord succession and, in the case of IV–V, a relationship between principal chords with common membership in the key. Interval of root relation was not an issue for him. Riemann also accommodated step progressions as easily as anything else in his root-interval system, which was designed to account for all possible progressions. His dualistic

[19] Rameau, *Traité de l'harmonie*, bk. 2, ch. 1. Among the many discussions of this cadence are Allan Keiler's "Music as Metalanguage: Rameau's Fundamental Bass," in *Music Theory: Special Topics* (New York: Academic Press, 1981), and Thomas Christensen's *Rameau and Musical Thought in the Enlightenment*, p. 123.

[20] Rameau, *Génération harmonique*, p. 115.

theory meant, however, that in his system step progressions between chords of opposite mode occur between the lowest note of the major chord and the highest note of the minor chord (refer to Table 4.1). Since Riemann's functional theory defined categories which were not tied to the presence of specific pitches, step progressions were readily explained as the succession of two functions. The strength of the progression IV–V was easily accounted for as involving two pure function archetypes (S–D). In other step progressions, at least one function would appear as other than the basic form (e.g. V−vi = D−Tp). Schoenberg's harmonic theory also allowed for all possible progressions. He did distinguish step progressions from all others, though, isolating them in the category of rougher disjunct relations.[21] In Schenkerian theory, fifth and third progressions generally arise as the result of arpeggiation, a chord-based or harmonic process.[22] Step progressions principally arise as neighbor notes or as the filling in of an interval with passing tones, a more linear or contrapuntal process joining chord members. Thus step relations, while perfectly legitimate, will appear in Schenkerian analysis as lower-level occurrences with regard to the chord-based processes on which they depend. In sum, while many of these theories allow for the direct coherence of step progressions, all accord them a status somewhat inferior to fifth and third relations.

The common-tone theories, on the other hand, did not allow for direct step progressions. The purer theories of Hauptmann and Dehn accounted for step progressions by positing an unrealized mediating chord having tones in common with both chords in the actual progression, providing needed cohesion. In the whole-step progression between major triads, such as IV–V, this mediating chord would lie a fifth above the lower chord and a fifth below the upper one; in other words, these two chords refer to their tonic. Marx, however, felt it important to directly validate at least the IV–V progression. As recounted above in section 3.5, he observed that, for V^7 at least, the seventh provides a common tone with IV, lending this progression direct coherence. However, Marx limited his explanation to this single case. Other step progressions, including plain IV–V, were not direct for him, and must derive their meaning from context. Reicha took the opposite tack, finding a common tone in the subdominant's added sixth, à la Rameau.

Transformation theories formalize the common-tone theorists' mediating-chord approach to step progressions. IV–V, for instance, receives the formula $\boldsymbol{D}^{-2}$, representing one inverse dominant transformation from the initiating chord to the mediating chord, followed by another from the mediating chord to the goal chord.[23] This formula represents the shortest path from one chord to another along the Öttingen grid. The semitone progression from a minor triad to a major triad, such as iii–IV,

[21] This category was described above in section 5.2.1.

[22] As argued above in section 5.1, Schenker's mature theory is not principally a harmonic theory, but insofar as it derives from ideas put forth in *Harmonielehre*, and shows relationships between harmonic areas and *Stufen*, some general remarks seem fair.

[23] Lewin's analytic network diagrams make explicit use of mediating chords. An analysis containing mediating chords is found below in Figure 7.8.

requires a similar mediating chord located either a diatonic third or fifth below the minor triad, since a $\boldsymbol{D}^{-2}$ formula would involve a questionable diminished fifth. In the chromatic system, the transformation formulas for these progressions would be ***RD*** or ***DR***, respectively.[24] Other step progressions may appear even more distant in common-tone terms.

Thus while the more celebrated harmonic systems described above – Rameau, Riemann, Schoenberg, Schenker – all incorporate some notion of direct step progressions, the common-tone theories, old and new, do not. Rather than indicating a weakness on the part of the common-tone theories, this difference shows their value for revealing aspects of harmonic relations which other theories pass over. The conclusions one can draw seem reasonable: step progressions, containing no common element, must either imply a third harmony to which they both relate, or draw on contexts outside themselves for coherence. Step progressions between diatonic chords having strong significance in their key can bring powerful contexts to bear. Common-tone progressions, on the other hand, make immediate, local sense, which may then be interpreted in a larger context. For chromatic mediant relations, which cannot draw on a context of shared key identity, local sense is paramount. For fifth relations, context and connection are equally potent, and the relationship is the strongest of all.

The disjunction between IV and V may in fact be an important aspect of the capability of the progression to introduce the feeling of strong arrival characteristic of fifth-directed cadential motion. Prominent common-tone connections may sometimes provide too smooth a path to the penultimate point. Thus in the ii–V cadential progression, the melodic progression $\hat{2}$–$\hat{2}$, emphasizing the common tone between the chords, is much less favored than the melodic progression $\hat{2}$–$\hat{7}$. The latter emphasizes melodic disjunction, while implying the passing tone $\hat{1}$, which suggests IV and its concomitant step progression.

Furthermore, while IV–V is a common progression at the level of chord relation, direct modulations by whole step between tonic triads of similar mode are not as frequent as other types. This may be the true test of the innate coherence of any progression: if two chords do in fact possess a direct connection, then they should be able to bring about a direct modulation, serving as successive tonics. The fifth relations work well this way; so do the parallel and relative mode relations and the chromatic third relations. But the step relations work less well. When direct modulations by step do occur, it is often in the context of a sequence, which, although an important structural device, is not determined by chord identities expressed in cadential relationship, but rather by a more syntactic principle of displacement.[25] Hauptmann's observation that keys of the third and fourth degree appear more closely related to the tonic than those of the second degree applies to this case: chromatic

[24] All things being equal, the third makes more intuitive sense.

[25] Of course, upward direct modulations of a semitone or whole tone also occur in many styles of music as a simple device for increasing intensity.

mediant relations make for better *Tonalitätssprünge* than do mode-preserving step relations.

The common-tone theories' mediating-chord explanations do not imply that step progressions do not cohere, nor that they lack harmonic sense. They do imply that step progressions are operative within the key, making local syntactic sense, but are dependent for it on outside information. Other factors, such as neighbor motion in the bass and other parts, or parallel or sequential structure, figure more strongly than they might in progressions where the direct harmonic connection is more powerful. Tonal transformation theory models the content of specific relations; it does not measure other aspects of musical language which may also be operative. Hence it is perfectly reasonable to assert that some chromatic progressions are harmonically direct, while some diatonic ones are not.

7.7 THE AUGMENTED SIXTH

The transformational structure of the augmented-sixth progression from the exposition of Schubert's B♭ major sonata, D960, discussed in section 2.4, suggests an intriguing interpretation of a stock progression within the key. It was established that the earlier move from tonic to lower flat mediant is direct: $\boldsymbol{M}$, in chromatic transformation terms. But the ensuing progression appeared more complex, with dissonance transforming the stable LFM into an unstable German sixth, leading to a cadential $^6_4$ and beyond. A similar progression occurs near the opening of Chopin's mazurka op. 56 no. 1, analyzed below in section 9.2. Here a tonicized G major, potentially the real tonic, is proved false by the addition of an augmented sixth, leading like the Schubert to a cadential $^6_4$ and a cadence in the (true) tonic, B major. This is immediately followed by another occurrence of the same progression type at the transition from the opening section to the first inner section, modulating up another major third to E♭ major (Fig. 9.1, end; Fig. 9.2, beginning). In traditional terms, the triads and the German sixths embody different analytic entities. The former are usually given Roman numerals (e.g. ♭VI) while the latter are not. Both are considered to be unstable in relation to the key. But in chromatic tonality, the non-diatonic location of the fundamental pitch of these chords does not necessarily signify instability. In transformation theory strictly speaking, the motion of every note in a chord progression must be specified mathematically. The greater variety of four-note chords in the tonal system, and the greater complexity of their interrelation to each other and to triads, presents a theoretical challenge which is being addressed at present. For this study I am taking a more informal harmonic-theory approach, treating added dissonance as an extra-transformational adjunct to triadic relations. Accordingly, both V–I and V^7–I are instances of $\boldsymbol{D}$, and by analogy both LFM–I and Ger^{+6}–I are instances of $\boldsymbol{M}^{-1}$. Thus in the Schubert, the addition of the augmented sixth to the lower flat mediant does not alter the basic relationship to the following chord, which constitutes an $\boldsymbol{M}^{-1}$ relation on the surface as well as to the goal chord of the cadence. Likewise in the Chopin, where these progressions are the first in a number of chromatic mediant relationships which define much of the harmonic structure of the piece. Hence the formula for this common progression is basically $\boldsymbol{M^{-1}}$, enhanced by the characteristic dissonance. This sets the German augmented-sixth resolution to major $^{6}_{4}$, with its distinctive punch, apart from the others, none of which involves the power of unary ***M/m***. The variant progression in which the German sixth resolves directly to root-position tonic (section 8.3.2, Figure 8.9 below) makes for an even more clear-cut case. The formula for the resolution of a German sixth to a minor $^{6}_{4}$ would be ***R***, since there are two common tones in the progression. The less common resolution of a German sixth directly to the dominant would require a compound formula, since there are no common tones, thus $\boldsymbol{M^{-1}D^{-1}}$ to major, $\boldsymbol{RF^{-1}}$ to minor. The greater propensity of the French augmented sixth to resolve directly to the dominant is in part due to the presence of a common tone; thus its formula would be unary. But the interval structure of the French sixth makes it difficult to think of ♭$\hat{6}$ as the focal pitch of the transformation for this resolution. The old-fashioned approach to the French sixth, taking the common tone ($\hat{2}$, an augmented fourth from the bass) as the fundamental pitch of the chord, makes surprising transformational sense. Its resolution to the dominant would then correspond to unary ***D***, grouping it appropriately with other predominant harmonies. (When resolving to the tonic, the French sixth would have similar transformational behavior to the German sixth.) The unary German sixth transformations, which more readily resolve to the pitches of the tonic triad, would group with other direct relations with the tonic: modal, subdominant, chromatic. Their compound-formula relations with the dominant group them appropriately with other predominant harmonies such as the subdominant and relative mediant, both of which also have no tones in common with the dominant yet often stand in direct relation to it.

Thus, as with the formula for the Neapolitan chord which includes ***S***, we have the case of a standard chromatic progression within diatonic tonality which is best modeled by a transformation drawn from chromatic tonality. This further demonstrates the utility of the chromatic transformations beyond their dedicated meanings. It also negates the idea of a fixed point of demarcation between diatonic and mid-nineteenth-century chromatic tonality.

7.8 DUALISM

The ways in which transformations work in all four systems discussed here invoke the concept of harmonic dualism. Dualism is present when similar harmonic operations work in a symmetrically opposite way from major and minor chords. In other words, what goes up from a major chord will go down from a minor chord. Two significantly different types of dualism are evident in these sections. The first type appears in the **R**(/**r**) and **P** transformations of all the systems, which work in mirror-image ways for major and minor triads, alternating between the members of one major-minor pair; that is, they are their own inverses, shown in Figure 7.6.

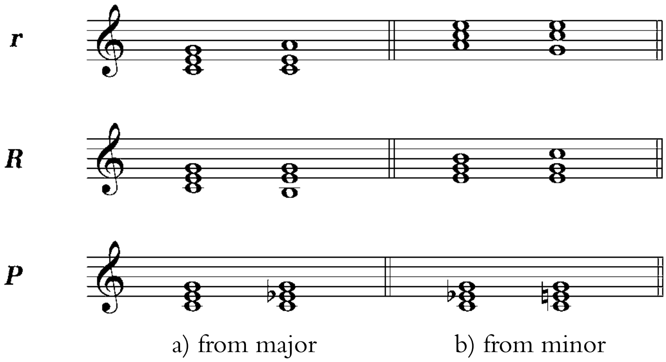


Figure 7.6 Mirror-image reciprocal change transformations in the chromatic system

Accordingly, I call this type *reciprocal dualism*. Reciprocal dualism's change relations result from fundamental properties of the major-minor harmonic system as we conceive it; their nature is evident and undeniable.

The second type appears in the compound diatonic transformations representing chromatic third relations. These do not result in the two-element change loops of the **R** and **P** operations, but rather in directed chains of mode-preserving progressions projecting in opposite directions from major and minor chords. Their appearance is that of old-fashioned dualism in the style of Öttingen, Riemann, *et al.*, in which motion in opposite directions is the natural concomitant of the symmetrically opposite nature and orientation of major and minor. Thus, I call this type *essential dualism* (Table 6.2 shows instances of this). Assertions of essential dualism occur throughout the history of tonal theory, from Rameau's undertones in the eighteenth century to the theories of Hauptmann and Öttingen in the nineteenth, leading to Riemann's youthful assertion that the dominant of a minor triad is located a fifth below it. Of late, dualism has received considerable renewed interest in the theoretical community, both with regard to transformation theory and for its own sake.[26] In his 1982 article on transformations, Lewin himself revived serious consideration of systemic aspects of essential dualism. Subsequently, Lewin has invoked essential dualism in an analysis of motives from Wagner's *Das Rheingold*, which provides a clear example of the different conclusions offered by dualistic and non-dualistic transformation systems.[27] Lewin's point of departure is the familiar

[26] Cohn has also noted these different types of dualism. Harrison bases an entire system of harmonic function in chromatic music on dualistic principles arising from oppositions inherent in tendencies of individual tones in the major and minor key systems, rather than in major and minor triads. He also provides a sympathetic history of the concept in German harmonic theory, including strictly dualist post-Riemann functional theories. Mooney, in "The 'Table of Relations'," also traces the development of nineteenth-century dualistic theory and provides a lucid explanation of its role in Riemann's early work.

[27] Lewin, *GMIT*, and "Some Notes on Analyzing Wagner." Plates 7.1 and 7.2 reproduce Figure 1, p. 50, and Figure 3, p. 52, from the latter.

a. Tarnhelm motive, Das Rheingold, sc. 3, mm. 37*ff*

b. Modulating section of Valhalla theme, Das Rheingold, sc. 2, mm. 5*ff*.

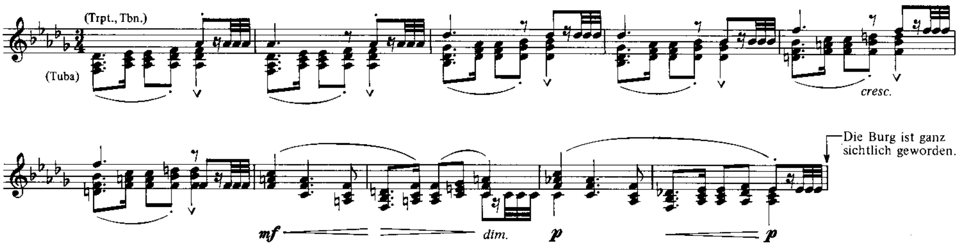


Plate 7.1 Two excerpts from Wagner's *Das Rheingold*

Tarnhelm and *Valhalla* motives (Plate 7.1), which sound similar despite their different harmonic content.

Lewin provides identical graphical node-and-network analyses for each, arguing for mathematical equivalence of harmonic motion in the two motives (Plate 7.2).[28] The analyses chart the motives' principal harmonic progressions:

(a) the *Tarnhelm* progression – G♯ minor → E minor → B minor/major
(b) the *Valhalla* progression – G♭ major → B♭ major → F major

Both progressions contain initial chromatic mediant progressions involving root motion of a major third, followed by an ascending fifth. The *Tarnhelm* mediant progression, between minor triads, moves down; the *Valhalla* mediant progression, between major triads, moves up. Cumulative harmonic motion for the complete *Tarnhelm* motive is an upward minor third; for the *Valhalla* motive, it is a downward semitone. Equivalence between these two progression series is possible because the system construes chromatic mediant relations as compound transformations.[29] The formula for both major-third chromatic mediant progressions is **LP**, which, as shown in Lewin's analysis, works oppositely from major and minor initiating triads: G♭ $\xrightarrow{LP}$ B♭, while g♯ $\xrightarrow{LP}$ e.

Thus this analysis construes chromatic mediant relations as essentially dualistic. The notion that the reciprocally dualistic diatonic (relative-mode) third relations work in opposite ways from major and minor initiating chords is easy to accept.

[28] While Lewin's formal claim is that the two series of progressions are mathematically equivalent, he substantiates and fortifies his claim with his intuition of strong musical similarity between the two. "Some Notes on Analyzing Wagner," pp. 49–52.

[29] Both Lewin and Hyer do argue that these compound formulations act like a single transformation. However, in their analytic systems, they behave like compound processes.

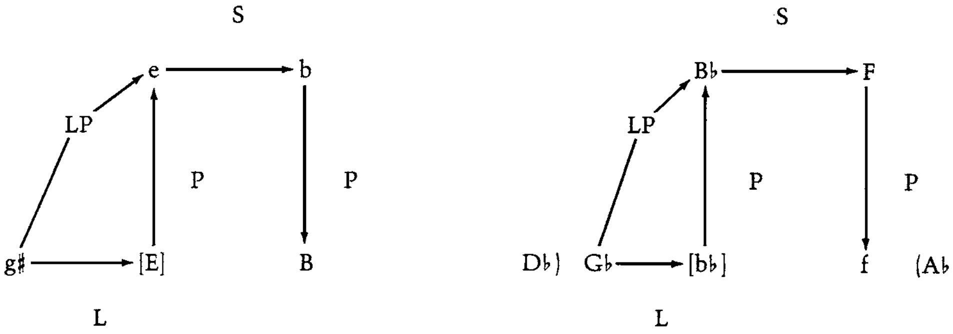


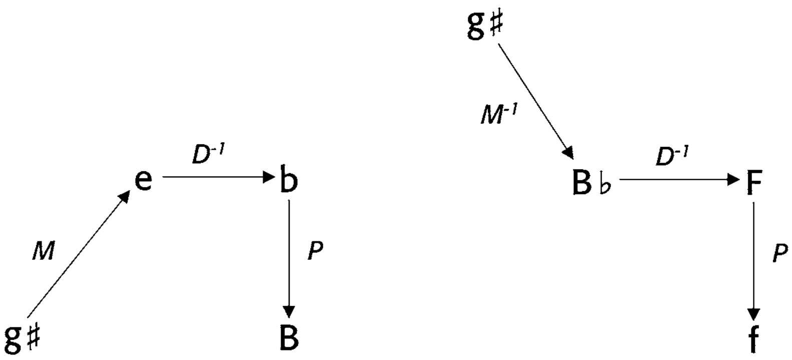
Plate 7.2 Lewin: transformationally equivalent dualistic analyses of themes from Wagner's *Das Rheingold*

Their nature as change relations has a good deal to do with this perception. But the conclusion of essential dualism for the mode-preserving chromatic third relations is less foregone. They are not change relations, and, as I have endeavored to show over the course of this essay, there is a long if informal theoretical tradition of conceiving chromatic third relations as direct progressions more harmonically analogous to fifth relations than to the relative mediants. In the chromatic system, the family of ***M*** transformations resembles the family of ***D*** transformations; both are plain, commutative, and non-dualistic. The ***M*** move that goes up a major third from a major triad would do the same from a minor triad. From this point of view, instead of equivalent **LP** transformations in the two Wagner motives, there are different transformations: ***M*** in the first case, $\boldsymbol{m}^{-1}$ in the second. Figures 7.7a and b show analyses based on unary ***M*** transformations without interpolations. While the first harmonic moves in the two graphs are not exactly the same, they do involve varieties of the same transformation, which may be seen to account for Lewin's strong perceived similarity between the two progressions. Chapter 1, after all, demonstrated the strong family resemblance between chromatic mediants, especially in relation to other types of progression. In a way, the equivalence demonstrated by Lewin is somewhat independent of harmonic content, and presages the voice-leading approach described later in this chapter.[30]

Lewin cites a circle of alternating *leittonwechsel* and parallel progressions in another excerpt as an example of a basic harmonic process in the music of Wagner, an example of what Cohn would come to call a hexatonic system.[31] Showing the circle as the result of an additive process of alternating **L** and **P** moves implies that this is the fundamental form of the circle. I would like to suggest, though, that this

[30] Lewin revisits the *Tarnhelm* motive in "Some Ideas about Voiceleading between PC Sets," *Journal of Music Theory*, 42, 1 (Spring 1998), pp. 65–67, in order to demonstrate a relationship between its opening and that of the Forgetfulness motive from *Götterdämmerung*, which contains a similar alternation between two chords (minor triad and half-diminished $\frac{4}{3}$) and a similar rhythmic profile. This discussion cites elements of voice-leading, transposition, and retrograde order; given that minor triads are contained in all four chords, dualism would not be relevant.

[31] Lewin, "Some Notes on Analyzing Wagner," pp. 56–57.



a) *Tarnhelm* progression b) *Valhalla* progression

Figure 7.7 Lewin: Wagner analyses with unary chromatic mediant transformations

circle is derivative – a decomposed circle of (chromatic) major thirds. Consider the analogous case of the circle of fifths. For us, this circle is a fundamental system whose elements (each individual fifth) are basic, atomic progressions. This has not always been the common understanding: in the late seventeenth and early eighteenth centuries, for example, Werckmeister's circle was based exclusively on relative mediant relations, while Mattheson's and Heinichen's progression schemes showed circles in which fifths and relative chords intermingled.[32] In the nineteenth century, Dehn's and Hauptmann's common-tone theories, which recognized direct fifth relations, viewed them ultimately as progressions resulting from combinations of two relative mediant relations, which for them were closer and more basic than fifth relations. Our view rejects these constructs; we see plain fifth relations and the circle of fifths they generate as direct and fundamental, stronger than and prior to these component parts. Likewise, I argue, we may understand the circle of major thirds in chromatic music to contain the direct, fundamental relationships inherent in the ***M/m*** transformations representing chromatic mediants. While the chromatic mediant relation can be broken down into relative mediant and parallel-mode relations (e.g. either ***RP*** and ***rP***, using my transformation symbols), it, like the fifth, has an integrity which supersedes its component parts. The paradigmatic major-third circle is composed of ***M*** relations, just as the paradigmatic fifth circle is composed of ***D*** relations. And just as the fifth circle can be broken down into a series of alternating ***R*** and ***r*** relations, the major-third circle can be broken down into alternating ***R*** and ***P*** relations. Furthermore, both the ***R/r*** and ***R/P*** circles may be seen as derivative, demonstrably less fundamental than the ***D*** and ***M*** circles, for they incorporate more than one kind of transformation.[33]

[32] Shown in Lester, *Compositional Theory*, pp. 215–216.

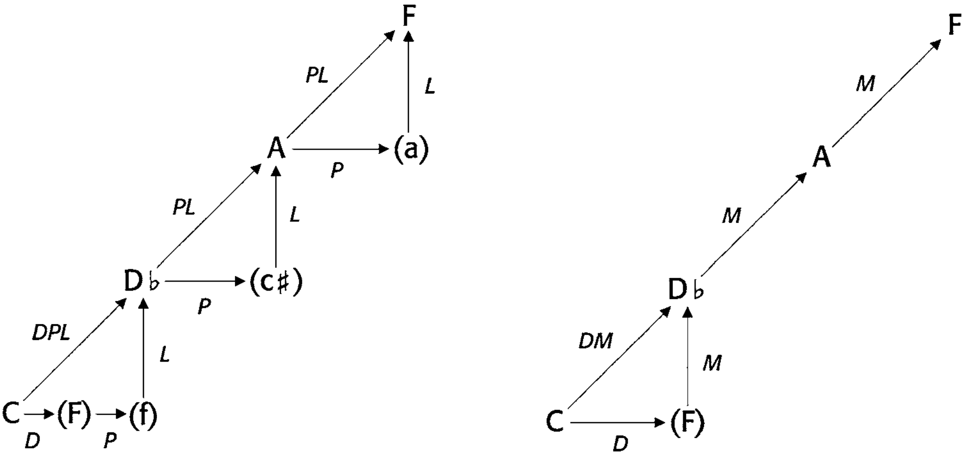
[33] Cohn's basic six-element hexatonic system (see Plate 6.6) is a formalization of Lewin's circle of **L** and **P** relations (***R*** and ***P*** in the chromatic system). Since in a hexatonic system a clockwise move, whether by **L** or by **P**, is a

Example 7.1 Brahms, clarinet sonata op. 120, no. 1, IV, mm. 158–175

7.9 THREE SHORT TRANSFORMATIONAL ANALYSES

Three further musical examples will show some advantages of thinking in terms of the ***M*/*m*** and ***R*/*r*** transformations. Two examples involve elaborations of the chain of major thirds. The first of these, from the final movement of the first Brahms clarinet sonata, op. 120/1, also contains an ***M*** transformation which forms part of a compound transformation (Ex. 7.1). The harmonic structure of the excerpt is simple,

transposition by one interval, calling different harmonic progressions by the same name, T_1, gives the system a semblance of mathematical equality and symmetry which is not reflected in the progressions themselves. As two clockwise moves, i.e. T_2, always yield a chromatic third relation, whether **LP** or **PL**, or **P** then **L**, this aspect, corresponding to the chromatic system's unary ***M*** transformation, does reflect the mathematical symmetry.



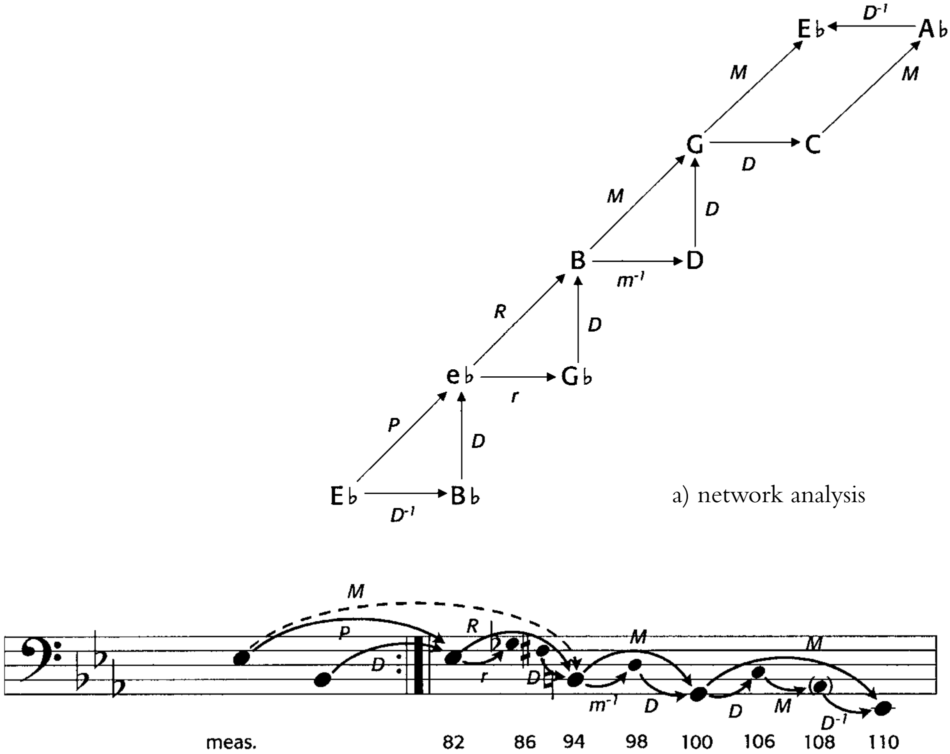
a) with compound **PL** transformations b) with unary ***M*** transformations

Figure 7.8 Two network analyses for the Brahms op. 120/2, IV excerpt

consisting only of four direct chord relations. From tonic F major, a dominant pedal on C culminates in an abrupt move to a D♭ major triad at m. 163. From there, a series of pure chromatic mediant progressions, or ***M*** transformations, with the common tone quite prominent, completes the cycle of major thirds, moving through an A major triad at m. 167 back to tonic F major at m. 170. The initial progression from C major to D♭ major is the most interesting one here. One could say that it is a deceptive progression from the dominant to the major triad on the sixth degree of the parallel minor – in other words, to a borrowed chord. But the subsequent move to A major shows this frame of reference to be temporary at best. The diatonic transformation formula for the progression from C to D♭, ***DPL***, conveys the sense of an intricate process. The chromatic system assigns this cadence the simpler formula ***DM***.[34] This latter expression captures the directness of the move and the immediate displacement of the goal by mode-preserving major third. At the same time, it shows explicitly how it comes to form the first element in the complete cycle of major thirds which it initiates. Figure 7.8 shows two network diagrams depicting the entire excerpt.

The first diagram, which employs the compound transformations, requires eight nodes, half of which are interpolated steps, including two interpolations in a row for the deceptive progression. The second uses the unary ***M*** transformations. This requires only five nodes, with a single interpolation for the deceptive progression. This diagram is more concise, directly reflecting the circle-of-thirds structure of the

[34] The standard deceptive cadence V–vi has the transformation formula ***Dr***. Thus these two deceptive cadences, one diatonic, one chromatic, may receive analogous formulas, ***Dr*** and ***DM***, which express their underlying harmonic and syntactic similarities. The second term in each formula specifies the exact "deceptive" displacement.



a) network analysis

b) bass sketch showing circle of third and component transformations

Figure 7.9 Transformational analyses of the development section of Beethoven's *Les Adieux* sonata, op. 81a, I

passage. It also shows the value of the ***M*** transformation for describing harmonic relations beyond chromatic mediants.[35]

The second example consists of the development section of the last movement of Beethoven's *Les Adieux* piano sonata, op. 81a. This involves a series of brief tonicizations of key areas whose structure resists easy characterization either in terms of conventional harmonic analysis, or in Schenkerian terms as the long-range arpeggiation of a single triad. The section begins at m. 81 in E♭ minor, the parallel key to the tonic. The arrival to this key from the dominant, B♭, at the end of the exposition, along with its formal status as the opening harmony of the section, gives it a structural importance. A similar, sequential phrase begins on G♭ /F♯ major, which in turn becomes the dominant of a tonicized B major at m. 94. The interrelation of these harmonies and their relative mode connection is shown at the beginning of the network diagram of Figure 7.9a and the bass sketch of Figure 7.9b, in which the local relative mediant relation between E♭ and G♭, ***r***, and the dominant relation

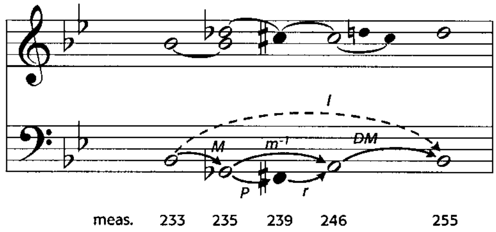
[35] In this and the following network diagram, the surface progressions form the jagged trace along the right-hand side, while the structural chromatic mediant progressions form the smooth trace along the left-hand side.

between F♯ and B, ***D***, combine to form ***R***, the controlling *leittonwechsel* relation between E♭ and B. From B major, the music moves next to tonicize G major at m. 100 by way of its dominant, D, which is reached from B by a direct chromatic third relation. Figures 7.9a and 7.9b again show the dual relations between initiating chord and dominant and tonic of the newly tonicized area, this time with the character of chromatic mediants: B to D involves $\boldsymbol{m}^{-1}$, D to G involves ***D***, and the overall motion from B to G involves ***M***.

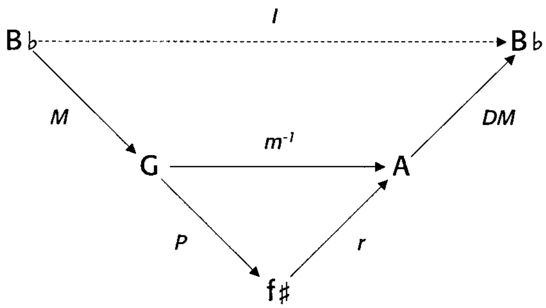
The return to tonic E♭ major from G major takes place by means of a more complex process again involving a direct chromatic mediant along with dominant transformations. First, G major moves away at m. 106 to C major, its subdominant, by way of ***D***. At m. 108, C major is transformed directly into an A♭ major $^6_3$, another instance of ***M***. A♭ then gives way as subdominant to tonic E♭ major at m. 110, with a $\boldsymbol{D}^{-1}$ transformation balancing out the previous dominant move.

Thus in this last link of the chain of thirds, the chromatic mediant relation takes place on two levels: the immediate level of the ***M*** relation of the subdominants C and A♭, and the principal level of the analogous ***M*** relation between tonicized G and tonic E♭. This is shown best in the parallel left- and right-side traces in the upper part of Figure 7.9a. It is noteworthy that, while the earlier ***M*** relation between B and D is facilitated in the conventional manner by the agency of the common tone in the principal melodic register, the effect of this ***M*** relation between subdominants is enhanced by featuring the chromatic semitone in the upper register and relegating the common tone to the bass, and by revealing itself gradually, first as an ambiguous dyad, and only later as a complete triad.

Transformation formulas are useful in describing chromatic mediant relations when they occur between chords which are neither tonic nor dominant, or in sections of harmonic flux in which a tonic is not evident. In these situations the function terms LFM, UFM, etc., have attenuated meaning, since they are predicated on direct relations with a tonic. Transformations may also help to indicate the influence of mediant relations which may not be present on the surface. A case in point is the modulating passage from the recapitulation of the first movement of Schubert's piano sonata D960, whose parallel in the exposition was described above in section 2.4. While the single chromatic mediant progression to G♭ in the earlier passage takes place completely within tonic B♭, the recapitulation progression goes farther afield, as shown in Figures 7.10a and b. The first chromatic mediant progression (***M***) at m. 235 moves directly from B♭ major to G♭ major as before, with common tone B♭ changing meaning from $\hat{1}$ to local $\hat{3}$. The next progression, a compound one on the surface ($\boldsymbol{Pr} = \boldsymbol{m}^{-1}$) culminating at m. 242, takes the music into A major, well outside the purview of the tonic key, where it lingers. A new common tone D♭ = C♯, changing local meaning from $\hat{5}$ to $\hat{3}$, becomes prominent. Both common tones, although beginning with different meanings, arrive to the third of the new chord, providing an aural connection between the two chromatic mediant progressions. Eventually a dominant seventh is added to A major at m. 253. Whereas the parallel chord in the exposition resolved as an augmented sixth, this one introduces a



a) Transformations in succession



b) Network diagram from the excerpt

Figure 7.10 Mediant transformations acting in different ways in Schubert sonata D960, I, recapitulation

deceptive cadence in the next measure, leading to the chord a major third below the expected one (***DM***). C♯, up until now heard as common tone, resolves up as leading tone to D, third of B♭, the true tonic. This ascending semitone produces a heightened dramatic effect, since at the parallel place in the exposition, the common tone persisted unchanged into the cadential arrival. According to this analysis, chromatic mediants figure in the transformation formulas in three different ways. In the first progression, a direct chromatic mediant results in a unary transformation. In the second, a compound progression with a relative mediant results in the cumulative value of a chromatic mediant. In the third, an unexpected twist is explained in the formula as displacement by the value of a chromatic mediant. Thus chromatic mediants inform the sound of this passage in a variety of ways.

The analytical bass sketches and musical reductions which appear here and in succeeding chapters should not be understood as modifications of Schenker-style analyses. Upper-part slurs for the most part are ties which indicate common-tone relationships between actual pitches. Curved lines with arrowheads in the bass are analytical, indicating directed harmonic (chordal) motion. It may seem that slurs and lines are showing two quite different things. But, since I maintain that common tones also embody directed musical motion through change of meaning, the upper-part slurs are also intended as analytical notation working together with the lower-part curves, which indicate transformations, not prolongational processes, to show the combined effect of directed root-interval and common-tone connections. Some diagrams, such as Figure 7.9, are only bass sketches; others, such as Figure 7.10, show other voices or four-part reductions of the musical texture in order to show common-tone connections and other surface features.

8

CHROMATIC MEDIANT RELATIONS IN MUSICAL CONTEXTS

8.1 INTRODUCTION

In addition to progressions between tonics or tonicized chords, such as those presented in chapter 2, chromatic third relations may occur within progressions and phrases in any number of other musical contexts. Like juxtapositions of tonics, some of the most basic and recurrent of these also come to act as normative relationships within common-tone tonality. Chromatic mediants may be separated by intermediary relative mediants. They may involve dominants in relation to tonics or two dominants in relation to each other. They may occur as third-dividers. Multiple chromatic mediant relations may group by affinity pairs; they may be chained into circles of thirds. And they may involve more than one of these contexts at a time. This chapter provides musical examples to illustrate these circumstances.

8.2 CHROMATIC MEDIANT RELATIONS WITH INTERMEDIATE CHORDS

Tovey's table of key relations (Plate 5.18) contains examples of third relations in which relative mediants appear as chords intermediary to the tonic and the chromatic mediant goals. If one allows for the plain juxtaposition of chromatic mediants, it follows that the relative mediants are not necessary intermediary chords, and that the controlling relation in a progression containing both kinds of mediants may well be the non-contiguous one between the tonic and the chromatic mediant.

Two short examples will demonstrate this: one from Schubert, the other from Chopin. The Schubert excerpt, a passage in the song *Abschied*, from *Schwanengesang*, shows a modulation from the local tonic, E♭ major, through the parallel minor, E♭, to the lower flat mediant, C♭ major. The Chopin excerpt, from the Fantasy for piano in F minor, shows a similar modulation in the opposite direction from the local tonic, also E♭ major, through E♭ minor, to the upper flat mediant, G♭ major. In both cases a strong aural impression of chromatic mediant progression is present in the modulation despite the softening of the move to a chromatic mediant by the intermediary minor chord.

In a conventional explanation for the Chopin passage, tonic E♭ major is superseded by its parallel minor, by means of modal mixture. E♭ minor then leads to its relative

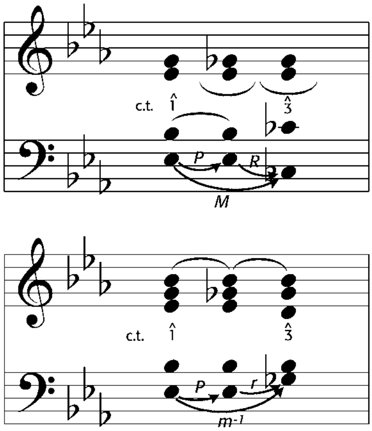


Figure 8.1 Chromatic mediant relations with relative mediant intermediary chords: a) Schubert, *Abschied*; b) Chopin, *Fantaisie*

major, G♭, by an informal law of relative-mode replacement, since vi–I is not a strong enough cadence to establish a key. A similar conventional explanation of the Schubert is a bit trickier despite the similarity of harmonic effect. This passage also begins with modal mixture, but then comes up against a direct progression from E♭ minor to C♭ major, which do not represent the tonics of relative-modes. The progression can most easily be seen as taking place through the agency of a closely related key, such as A♭ minor: E♭ minor becomes the dominant of the relative minor of C♭ major. In both cases these progressions are characterized as a sliding through modal passageways on the periphery of the functional system.

Concepts of mediant function and transformation can facilitate these explanations. In the Chopin, the combined effect of the two progressions, ***Pr***, brings about a modulation from the tonic to upper flat mediant. In the Schubert, similarly, the combined effect of the two progressions, ***PR***, is a modulation from tonic to lower flat mediant. Although it is possible to explain these progressions wholly by means of relations between relative and parallel modes, it is clear that they are directed toward chromatic mediants. And they *sound* more like chromatic mediant moves than mere incremental shifts between modes. The Schubert passage, for instance, plays heavily on the common-tone relations between all three chords. While the mode-determining G♮ moves to G♭, the bass remains steady; next, as the bass moves to C♭, all melodic tones remain constant. The focal point of the overall progression is the perceptible change of the value of the common tone E♭ from $\hat{1}$ to $\hat{3}$. The effect is as if the two voices involved in the mediant progression move successively, rather than simultaneously, giving rise to the parallel- and relative-mode relationships in the process.

Similarly with the Chopin example. Here, though, each step of the progression is emphasized to a greater degree than in the Schubert. The change from G♮ to G♭ occurs on an important strong beat (it was on a weak beat above); the relative mediant move occurs with a change of voicing (everything moves up a third along with the bass) and the common tone occupying the strong beat. This, along with the bass motion, conveys the sense of a chromatic mediant shift.[1] Although this second progression can be explained readily as a move to the relative major, the aural impact is that of a third relation, and the overall effect is one of a chromatic mediant progression occurring in successive steps.

Also, the transformation formulas directly show the similarity of the harmonic relationships in the two progressions. Moving outright from E♭ minor to closely related C♭ major, cumbersome to describe in traditional terms, is an elemental *leittonwechsel* relation in transformation theory. The descriptions above, using the symbols ***r*** and ***R*** (rather than **R** and **L**), have the additional advantage of showing their shared relative mode aspect.

8.3 CHROMATIC MEDIANT RELATIONS INVOLVING DOMINANTS

While chromatic third relations occur most characteristically between either tonics or tonicized triads, they may also occur in other contexts, mostly ones involving dominants. These fall roughly into three categories. In the first, a tonic triad moves to a dominant, usually a seventh chord. In the second, a dominant or dominant seventh moves to a third-related triad. In the third, both chords are dominants or dominant sevenths.

8.3.1 Triads moving to dominant sevenths

The usual effect of a triad moving to a dominant seventh other than its own is of motion to a secondary dominant. The identity of the dominant seventh becomes so strongly linked with its chord of resolution that the chromatic effect leading to it is largely superseded. Accordingly, conventional harmonic analysis recognizes no direct connection between the initiating chord and the dominant seventh, but rather a syntactic boundary.[2] Direct connections are identified between dominant seventh and resolution, and on a higher level between initiating chord and resolution. Historically, though, the harmonic implications of the dominant sevenths assume less importance in many theories than the scale degree which supports them, and the chords are seen to form a third relation with what precedes them. This is so, for example, with Rameau's fundamental bass. His discussion in *Génération harmonique*, cited

[1] Relative mediant progressions may readily display the sound characteristic of chromatic mediants. An example is the move from A minor to F major in the middle of Schubert's *Gretchen am Spinnrade*, with common tone A prominent in the melody, changing from $\hat{1}$ to $\hat{3}$.

[2] Keiler, in "The Syntax of Prolongation" pp. 3–27, provides the seminal discussion of the syntax of harmonic categories.

Table 8.1. *Chromatic mediant progressions from triad to dominant*

Root relation in progression	Progression from tonic C	Resolution of dominant	Root relation of tonics
Major third up	C–E^7	A	minor third down
Minor third up	C–E♭^{7}	A♭	major third down
Minor third down	C–A^7	D	whole tone up
Major third down	C–A♭^{7}	D♭	semitone up

above in section 3.1, documents this type of direct third progression; the fundamental bass would simply indicate the secondary chords as containing alterations, and would interpret them as dominants with regard to the chords which follow. For quite different reasons, Schenker, in *Harmonielehre*, adopted a bass-oriented notion of harmonic connection in line with his developing concept of *Stufe*. Thus a progression which in conventional terms would be written as V–V/vi–(VI) is explained by Schenker to be V–III♯–VI. This expression documents a direct relation between F major and D major triads not accountable as a third-divider, while avoiding the concept of secondary dominant.[3]

Nonetheless, the secondary dominant impression is generally strong. Still, certain contexts allow for the perception of chromatic mediant relations. A focus on the common tone gives the same effect as in progressions between tonicized chords. The effect also occurs where progressions take place over phrase boundaries. Within a phrase, motion from a triad to a dominant seventh to its chord of resolution will inevitably sound like a single directed cadential motion. But a bit of musical punctuation between the initiating triad and the seventh chord which follows may focus attention on the relation of the two chords themselves, since, while on one plane they occupy different levels of importance in the cadential progression they take part in (primary vs. secondary harmony), on another, they occupy the same level (phrase boundary chords). The examples which follow will illustrate this point. Table 8.1 displays the four possible progressions of this type.

This table shows an important difference between upper and lower mediant progressions to a dominant. The upper mediant moves culminate in new tonics which themselves are in mediant relation to the initiating chord; the lower ones do not. In the former cases conventional analysis is especially hard pressed to find a direct relation between initiating chord and goal chord. An explanation in the terms of this study can acknowledge chromatic mediant relations at both levels of the progression. Such progressions thus result in an enhanced chromatic mediant effect, as the following examples from Schubert demonstrate.

Each of the two strophes of the song *Die Post*, from the cycle *Winterreise*, contains a series of progressions which modulates well to the subdominant side of the tonic. The first goes by descending fifths from tonic E♭ major through A♭ to D♭ major; the return to the tonic is paved by an augmented-sixth chord. The second invokes

[3] Schenker, *Harmony*, p. 227.

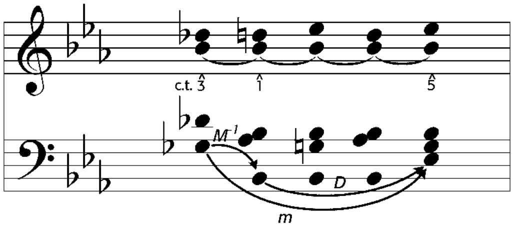
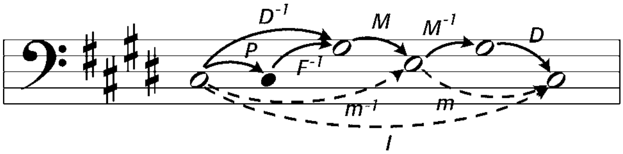


Figure 8.2 Chromatic mediant motion ($\boldsymbol{M}^{-1}$) to a dominant in *Die Post*

the parallel minor, then continues through D♭ to arrive at G♭ major. At this point Schubert juxtaposes a dominant seventh on B♭, leading back to tonic E♭. The sudden move from G♭ to B♭ dom^7 has the effect of a chromatic mediant progression by upward major third, produced in no small part by the striking effect of the common tone in the melody: B♭ is emphasized as third at m. 33, the moment of cadence to G♭; it is repeated, after the piano interlude, at m. 37, where it is immediately redefined as root of B♭, as well as fifth of tonic E♭ (thanks to several V–I resolutions over the dominant pedal point). G♭ thus stands in chromatic third relation both as a flat mediant to contiguous B♭ ($\boldsymbol{M}^{-1}$), as well as to its resolution, E♭ (***m***). Meanwhile, common tone B♭ changes meaning from $\hat{3}$ to $\hat{1}$ to $\hat{5}$ over the course of the passage. Figure 8.2 shows this process.

The first half of Schubert's song *Der Flug der Zeit* defines a symmetrical mediant complex, framed on both sides by direct juxtapositions. In the first thirteen measures, harmony moves from tonic A major through a strong intimation of parallel A minor to a half cadence on E major. This ushers in a direct progression to C major by descending major third, with leading-tone motion in the melody; the common tone is evident in the upper line of the accompaniment. C major lasts for eight square measures, a complete couplet of text, mostly as a pedal point but with an incident of bass motion to its dominant. In this compact song form, it has the presence of a key. At the beginning of the next phrase comes a direct progression back up by major third to an E dominant seventh, and an immediate return to tonic A major (the common tone remains in the accompaniment throughout). Despite the clear secondary dominant function of the E^7, its position at the phrase boundary also causes it to be heard directly against the C major which precedes it.

Since C stands in relation as a flat mediant to both E and A, a number of mediant relations characterize this passage. First are the two immediate and direct relations between dominant E and its lower flat mediant, C – what Krebs would call an oscillating progression. At a slightly higher level is the relative mediant relation between C major and the A minor of mm. 10–11; this is brought home by the prominent C♮ in the melody in those measures, returned to prominence in m. 14 at the moment of juxtaposition of E major and C major. Finally, the highest level relates C major and the tonic A major which frames it. These are the stablest key areas in this half of the song, and since the direct relations between C and E always



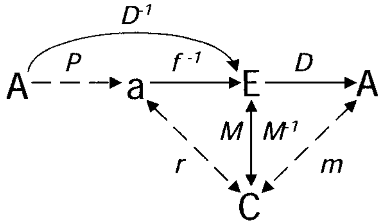


Figure 8.3 a) Mediant transformations in *Der Flug der Zeit*;
b) Network diagram

involve E as dominant, the relation between C and A is always implicit in them. Figure 8.3a shows the transformations connecting the principal harmonic points in this passage; Figure 8.3b displays them in a network formation.

Another example of an upward progression to a dominant features a sharp mediant. The second theme of the first movement of Schubert's G major string quartet, D887, analyzed more fully below, begins with a progression from a tonicized F♯ major triad to a dominant-seventh chord on A and a momentary resolution to D major. Locally, F♯ acts as a sharp mediant resolving directly up by minor third to A; it is also a sharp mediant in relation to tonic D major, as shown in Figure 8.4. The first progression benefits from a pronounced phrase boundary effect, stemming from the strong cadential arrival to F♯ immediately preceding.

In contrast to the examples above, the lower mediant moves to dominant sevenths produce step progressions, not mediant relations, between tonics. Accordingly, as mediant relations, they can never project more than a local effect. Chopin's A♭ major prélude, op. 25, no. 17, provides an example. The opening eighteen-measure group concludes with a cadence to the tonic, with $\hat{1}$ in the upper line. Immediately afterwards, at m. 19, the pitch serves as common tone in a direct move down a major third to a dominant seventh on E, followed by its resolution to A, for a net move of a semitone up. Since the progression occurs at an important phrase boundary, and since the common tone is prominent, one hears the effect of an LFM progression, indicated in Figure 8.5. But this is quickly superseded by the resolution of the dominant seventh, and since the two tonics are a semitone apart, it is this relationship that ultimately stays in the ear.

8.3.2 Dominants moving to third-related triads

The usual effect of a dominant chord resolving by other than descending fifth to a chord not its normal chord of resolution is one of irregular progression. Common

Table 8.2. *Chromatic mediant progressions from dominant seventh to triad*

Root relation [transformation type]	Chord of resolution [from C E G B♭]	Root distance from implied F major resolution
Major third up [M^{-1}]	E major	semitone down
Minor third up [m^{-1}]	E♭ major	whole tone down
Minor third down [m]	A major	major third up
Major third down [M]	A♭ major	minor third up

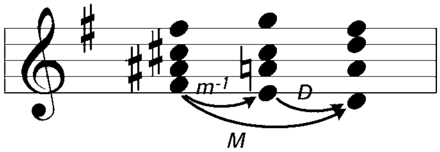


Figure 8.4 Chromatic mediant motion ($\boldsymbol{m}^{-1}$) to a dominant in Schubert D887, I

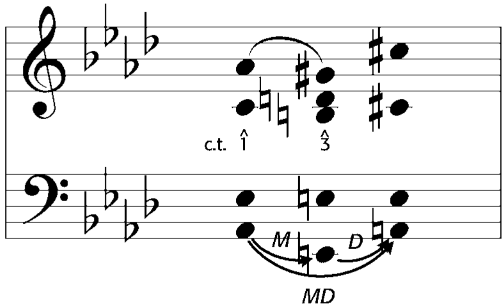


Figure 8.5 Low-level chromatic mediant relation (***M***) to a dominant in Chopin prélude op. 25/17

examples are the deceptive cadence, resolving by upward step progression, and the redefinition of a dominant seventh as a German augmented sixth, resolving by downward semitone to a new dominant or cadential $^6_4$. Resolutions by third may also informally be called deceptive, but they act essentially as chromatic mediant relations in which the first chord is colored by the addition of a non-harmonic seventh. Table 8.2 displays the four possible progressions of this type.

The opening theme of the Andante from Brahms' third piano sonata, op. 5, analyzed in Figure 8.6, contains a direct ***M*** transformation linking a half cadence on E♭ to a new phrase beginning on C♭. This phrase tonicizes C♭ major, the lower flat mediant, then returns through dominant E♭ to tonic A♭. On the surface this may appear to be another oscillating-progression structure like the one described above in *Der Flug der Zeit*. But other factors cause C♭'s principal relation to be with the tonic rather than the dominant. First, E♭ is never more than a dependent

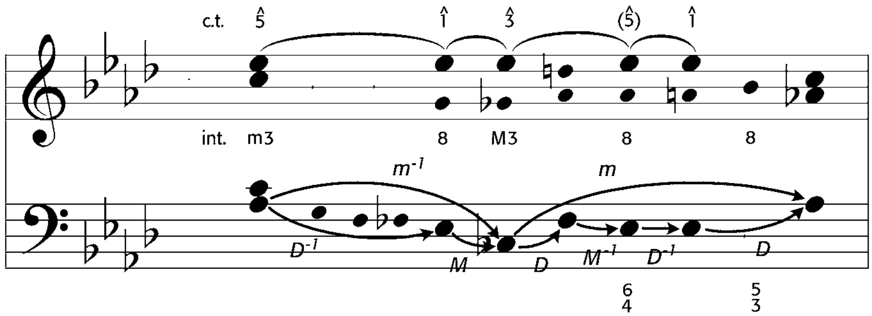


Figure 8.6 ***M*** transformation in context, and changes in common-tone meaning in Brahms op. 5, II

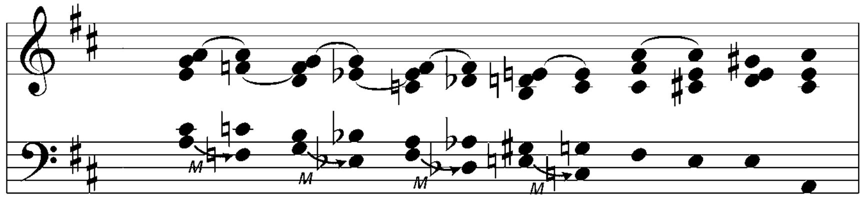


Figure 8.7 ***M*** transformations from dominant sevenths in sequence in Schubert D850, I

chord, while C♭ controls a series of chords. Roughly the first two measures of the C♭ major phrase are an exact transposition of the original phrase in A♭ major; the parallel structure emphasizes the two keys' direct relation. E♭, the common tone between all three, works on two levels. Locally, it connects dominant E♭ to C♭. But E♭ is also common with tonic A♭, and is the pitch which begins both phrases. Thus, it bridges over the local connection to join tonic A♭ to C♭ as well. C♭ major is well enough established that the return can take the form of a modulation which it initiates as pivot chord. It is further integrated into the passage by the presence of an augmented-sixth chord on F♭ in the cadential progression of both phrases. In m. 3 it appears as a French sixth, containing B♭. In m. 7, the chord becomes a German sixth, containing the pitch C♭ instead. This transforms the stable root of C♭ major into a charged pitch which resolves as doubly augmented fourth to C♮. Thus C♭ is led back to A♭ separately as chord and as pitch, reinforcing its status as principal opposing harmony to the tonic.

Schubert employs this ***M*** type of mediant progression from a dominant extensively toward the end of the exposition of the first movement of his D major piano sonata, D850. As Figure 8.7 shows, mm. 71–72 contain an A dominant $^4_2$ followed by an F major triad, for root motion of a downward major third in an A major context. The first chord is approached as V$^4_2$/IV, while the second chord is left from a ♭VI or an incomplete German augmented sixth moving to cadential $^6_4$ – which, as motion from an F major triad to an ostensible A major triad, is itself a sort of mediant relation.

But the label $\mathrm{V}^4_2/\mathrm{IV}$–♭VI for this direct connection makes no sense. Within the progression itself, the chords act in chromatic mediant relation; to their surroundings, they present their more conventional faces.

The progression quickly recurs at m. 79, now used as the basis for a chromatic sequence ultimately prolonging F major. There are several dominant-seventh-to-triad chromatic mediant tonicizations in which each tonic note provides a common tone with the seventh of the initiating chord of the next pair: A^7–F major, G^7–E♭ major, and F^7–D♭ major. At this point Schubert abandons the common-tone link between chord pairs, breaking the whole-tone pattern with E^7 to arrive at C major. This resolves as dominant back to F major, the lower flat mediant and goal of the original $\boldsymbol{M}$ progression, also regaining $\hat{1}$ in the upper register. F is treated as before, resolving to a cadential $^6_4$.

Another example, this time the $\boldsymbol{m}^{-1}$ type moving up a minor third, occurs in the middle of the slow movement of Chopin's sonata for violoncello and piano, seen in Figure 8.8. At the beginning of the movement, the two-measure opening theme, in B♭ major, is stated twice, both times ending on an F major triad by way of the half cadence $\mathrm{V}^6_5/\mathrm{V}$–V. Immediately following, at the beginning of m. 5, a first-inversion A♭ major triad acts as vi^6_3 to initiate a modulation to C minor. The chord's transitional status as an inverted secondary triad on its way to another tonic works against its being perceived as a stable chromatic mediant in relation to F major.

Circumstances are different when the opening theme returns halfway through the movement, at m. 14. (The first measure of the theme now contains the end of a sequence which arrives at the tonic by the third beat.) As before, the single statement of the theme ends with the half cadence $\mathrm{V}^6_5/\mathrm{V}$–V. But this time, at m. 16, A♭ major appears in root position and continues on as tonic of the new phrase, linked to the previous phrase by common tone C in the melody, passed from cello to piano over the phrase boundary. This effect is wholly one of a chromatic mediant relation, made more dramatic by the reference to the opening of the piece: transformation of the A♭ major triad from the expected unstable vi^6_3 into a stable root-position local tonic.

The next example, once more from Schubert, involves $\boldsymbol{M}^{-1}$ from a dominant-seventh chord up a major third to a new tonic triad. This happens at a high point of the song *Die junge Nonne*, where a dominant seventh on D♭ gives way to a triad on F major. The importance of this progression in the song's structure is discussed thoroughly in section 9.6 below. Here it is enough to note that Schubert reinforces the progression by emphasizing both the common tone, F, in the piano part, and subsequently the leading-tone progression between chords, B♮–C, in the melody, as displayed in Figure 8.9.

This progression is strongly suggestive of a German augmented sixth and its resolution. From this point of view, the resolution of the initiating chord is irregular: while the upper member of the augmented-sixth interval resolves normally by ascending semitone, the bass, instead of moving down by semitone to the local dominant scale degree, moves directly by ascending major third to the root of the new tonic. In one sense, this could be understood as an elliptical progression in which a German sixth

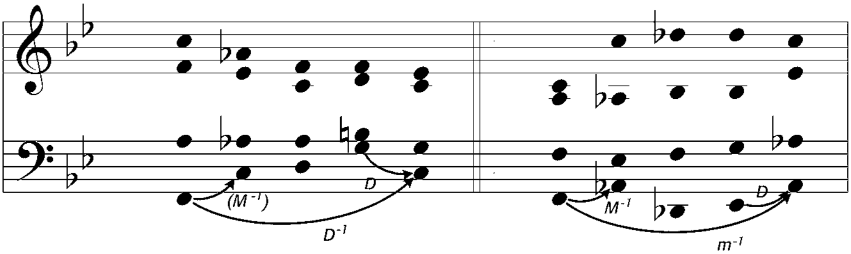


Figure 8.8 Increasing prominence of the progression to A♭ in the Chopin cello sonata, II: a) mm. 5–7; b) mm. 15–17

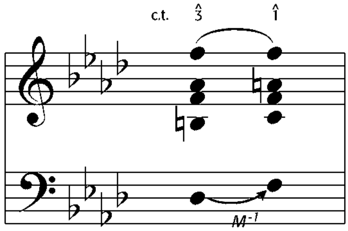


Figure 8.9 M^{-1} transformation from a dominant seventh in *Die junge Nonne*

progresses directly to its tonic without the intervention of cadential $^6_4$ or dominant.[4] Schubert implies this, for he spells the defining pitch of the first chord as B♮, not C♭, consistent with an augmented sixth. But in another sense, the absence of the crucial descending bass muffles the impression of augmented sixth, while the presence of the common tone and bass motion by third to root position result in the pronounced effect of a chromatic mediant progression, which requires the same spelling.

A similar progression in a more complex context occurs at the end of the last movement of Schumann's Fantasy for piano op. 17. It is the second of two successive chromatic mediant relations, the first down a minor third from tonic C major to an A major dominant seventh, the second up a major third from this chord to D♭ major, which resolves as root-position Neapolitan to the dominant, G major. Here any local impression of direct resolution of a German augmented sixth from A to D♭ is offset by the potent presence of C major as tonic at the beginning and end of the progression. Instead, a number of altered-chord explanations are possible. D♭ major could be understood to stand in for D minor in the progression I–V/ii–ii, which appears at the end of the previous movement. A major could be understood to stand in for A♭ major in the progression I–V/N–N. Both A major and D♭ major could be understood as chromatic elaborations of the diatonic progression I–vi–ii. Within an expanded system of direct diatonic and chromatic common-tone

[4] Deborah Stein, in *Hugo Wolf's Lieder and Extensions of Tonality*, calls this type of resolution a "cryptic $^+$6–I progression"; thinking in terms of a direct relationship might help to crack the code.

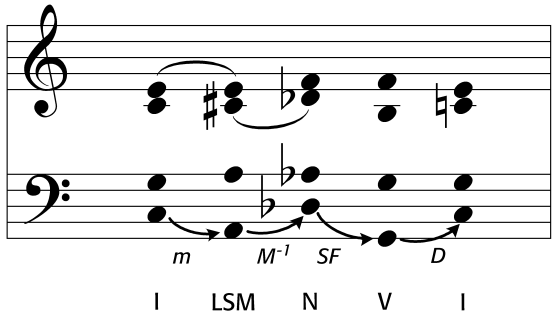


Figure 8.10 Transformations and functional interpretation of cadential progression from the end of the Schumann Fantasy, op. 17, III

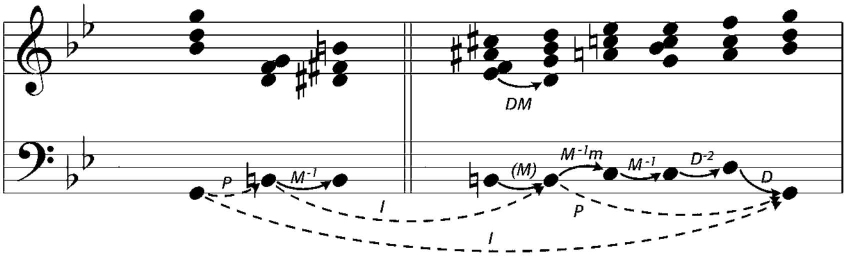


Figure 8.11 Transformations linking sections in Brahms' Ballade op. 118/2

relations, though, the progression I–LSM–N–V–I is direct and functional in and of itself. While it recalls a simpler progression from a previous movement, it represents a definite modification, and can (and should) be heard as a straightforward, if heady, cadential formation. Figure 8.10 details the transformations which connect all of these functions.

If the two tonics invoked in this type of local chromatic mediant relation are of different modes, they cannot themselves relate as chromatic mediants, which are always of similar mode. Either they will be more closely related as relative mediants, or more distantly related, as disjunct mediants or by SLIDE. Brahms' G minor Ballade op. 118, no. 2, contains an instance of the latter, shown in Figure 8.11. The mediant progression occurs at a conventional spot, the transition between the principal sections of the piece. Brahms ensures a smooth connection by placing the single common tone between the chords in the bass: a dominant $^{6}_{5}$ on B moves directly to a new B major tonic. This connection suggests an evolutionary step from those discussed above in section 8.2, in which a relative mediant is interpolated within a controlling chromatic mediant progression. Here the overall progression is a disjunct mediant progression: G minor and B major have no tones in common. The interpolated chromatic mediant progression from G dominant seventh to B major facilitates the move, equivalent overall to the transformation formula $\boldsymbol{PM^{-1}}$. The return to G minor takes place in a similar but more complex way. At m. 72, common

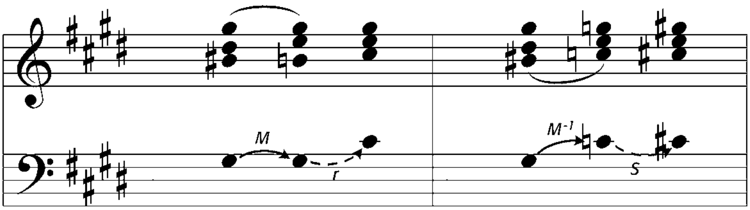


Figure 8.12 Different transformations from the same chord in Schubert D960, II and relation of goal chord to expected tonic: a) m. 14; b) m. 103

tone B in the bass supports a progression from V^7/B to a major $^6_3$ on B, analogous to the earlier dominant $^6_5$. This produces the deceptive cadence by semitone ***DM***, involving the displacement of the goal by the interval of a chromatic mediant.

A final example, from the slow movement of Schubert's B♭ major piano sonata, shows both close and distant relations. Two striking progressions appearing in parallel places begin with a G♯ major triad functioning as V in C♯ minor. In the first progression, at m. 14, G♯ major moves by downward third to an E major triad in $^6_3$ position. In the second, at m. 103, G♯ major moves by upward enharmonic major third to C major. Both goal chords function as tonics of the phrases which follow. The first progression results in a smooth ***M*** relation at the moment of juxtaposition, and a common relative mediant relation between the two tonics. The second, striking progression seems considerably more distant, for good reason. The upper voice of this $\boldsymbol{M}^{-1}$ relation features a descending chromatic semitone rather than the common tone. Moreover, the implied relation between expected resolution C♯ minor and actual resolution C major is quite distant (it is equivalent to SLIDE; only the common tone E connects the two). Figure 8.12 shows the context of the second move to C major, which resolves in the same augmented-sixth fashion as G♭ major did in the first movement (see section 2.4). C major also goes on to form the focal point of an incomplete rising circle of major thirds, $\boldsymbol{M}^{-1}$–$\boldsymbol{M}^{-1}$, returning to tonic C♯ minor by way of a conventional deceptive cadence, ***Dr***.

8.3.3 Chromatic mediant relations between dominants: triad to dominant seventh

Two dominant chords standing in direct third relation immediately imply two levels of similar mediant relations, since the mediant relation at the surface is exactly mirrored in the relation between the chords' tonics. This holds true for all mediants, upper and lower alike. This is so in Schenker's *Harmonielehre* example; it is also implicit in the Schubert G major quartet example above, although the first tonic never actually appears. A more complete progression occurs in the middle of the third of Schumann's *Davidsbündlertänze*. The phrase structure to this point is regular: four eight-measure phrases followed by one of four measures. The key at this point is D major, the dominant of the piece. An eight-measure pedal on its dominant from mm. 37 to 44 prepares the initiating chord; it begins as V^7 with root A in m. 38,

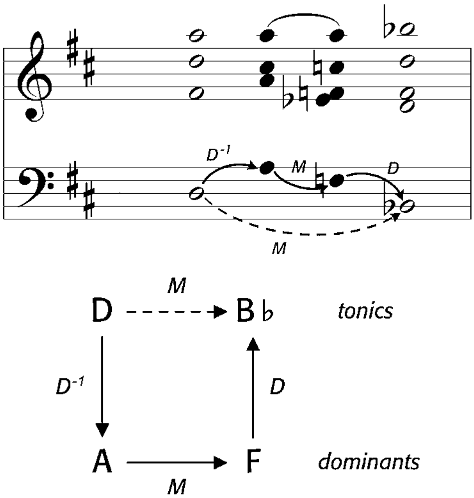


Figure 8.13 *M* transformations linking dominant sevenths in the third *Davidsbündlertanz*: a) Transformations; b) Network diagram

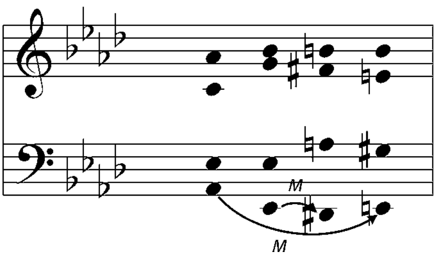


Figure 8.14 ***M*** transformations linking dominants and tonics in Chopin's prélude op. 25/17

but passes through $^6_4$ to become $^5_3$ by m. 43. At m. 45, the next phrase boundary, A major yields to a dominant seventh on F, with common tone A tied over in the upper voice. It resolves shortly to the expected B♭, tonicized briefly before the return to dominant D in m. 61. Figure 8.13a shows this process; Figure 8.13b illustrates the similar ***M*** relations between dominants and their tonics.

Chopin's A♭ major prélude, discussed above as Figure 8.5, contains a second descending major-third progression to a dominant seventh at m. 43, this time starting from a half cadence on the dominant rather than the tonic. In this latter case, seen in Figure 8.14, the two tonics are in the same chromatic mediant relation as the dominants which actually form the progression. But the enhanced mediant effect is not pronounced, for a number of reasons. First is the memory of the original progression from the tonic; this one is heard with the expectation of a similar effect, to the point of giving the progression to the E♭ chord at m. 42 a plagal cast in retrospect. In addition, the common tone, in the bass, becomes the leading tone, while the upper voice moves chromatically. The lingering effect is still one of a secondary dominant progression.

A sublime example of this type of progression threads through the entire second theme of the first movement of Schubert's G major string quartet, D887. While the theme begins and ends in D major, it contains several tonicizations of related keys, most notably E minor and G major, with two strong motions toward B major, both sidelined by a chromatic mediant relation involving dominants which comes to define the theme. This mediant relation occurs three times during the theme, progressively redefining the chord of departure, and becoming clearer and more forceful with each occurrence. The theme itself is preceded by an arrival to F♯ major, which, while vigorously tonicized, is introduced by a plagal progression (mm. 55–56) giving F♯ the potential to act either as tonic or dominant. The theme proper begins at once at mm. 64–65 with the chromatic third relation described above: F♯ major moves up by minor third ($\boldsymbol{m}^{-1}$) directly to an A dominant $^4_3$. This resolves briefly to a half cadence in D major (V$^4_3$–I–V), only to modulate away to E minor. This first F♯, previously tonicized, changes meaning to sharp mediant in relation to both A and to tonic D major. Soon after, at m. 68, a root position E minor–F♯ major progression suggests iv–V in B minor. Schubert approaches this F♯ more clearly as a dominant, but slides away as a neighbor chord by way of $\boldsymbol{m}^{-1}$ to a second V$^4_3$–I–V cadence in D major. Next, mm. 72–73 bring a step progression from G major to another F♯ major triad, suggesting VI–V in B minor; F♯, though, moves once again to an A dominant $^4_3$ and its resolution, this time a D major triad in $^6_3$ position, leading finally to a full cadence in tonic D major. While evoking a similar harmonic effect, this mediant progression is more marked than the previous ones, for three reasons. First, the chromatic semitone is now in the first violin's upper register rather than in an inner voice. Second, the F♯ major lasts much longer than before and is tonicized slightly in m. 73, giving it more weight. Third, the close clustering of major-third chords in the G major–F♯ major–A dom^7 succession results in more of a clash than did E minor–F♯ major–A dom^7. The extra twist perfectly orients the wayward theme toward its final and first secure cadence. Figure 8.15 traces the harmonic course of the theme, including the dual mediant relations of each F♯. Note the change at the third entrance of F♯ after m. 72; note also the compound doubly-rising transformations, $\boldsymbol{D}^{-1}\boldsymbol{F}^{-1}$ and $\boldsymbol{M}^{-1}\boldsymbol{D}^{-1}$, at mm. 69 and

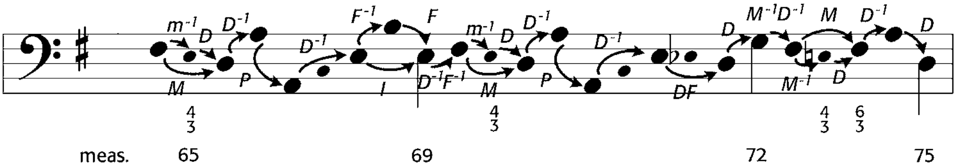


Figure 8.15 Transformations in the second theme, Schubert D887, I

Table 8.3. *Common tones in chromatic mediant relations between dominant sevenths*

Root-interval progression [transformation]	Common tones with C E G B♭	Number of common tones
major third up [M^{-1}]	E G♯ B D	1
minor third up [m^{-1}]	E♭ G B♭ D♭	2
minor third down [m]	A C♯ E G	2
major third down [M]	A♭ C E♭ G♭	1

72, whose complex formulas embody the points where Schubert twists harmony from tonicized chords back to the F♯ major triad.

8.3.4 Chromatic mediant relations between dominants: two dominant sevenths

As Table 8.3 shows, when both chords in a chromatic mediant progression are dominant sevenths, another factor arises. While the major-third dominant-seventh progressions contain only one common tone, the minor-third progressions contain two. Thus, interestingly, where the chromatic mediant progressions between tonics tend to favor the major-third relations, the chromatic mediant progressions between dominant sevenths are often smoothest by minor third. Rising minor thirds are the most common.[5]

An excellent example of this type of minor-third common-tone progression occurs at the end of the opening section of the final movement of Beethoven's piano sonata op. 31, no. 1. Having modulated to the dominant, B♭, Beethoven sets up two endings, the first a return to the opening and the second a move into new key areas. He does this by transforming tonic B♭, through a rising $\substack{5\\3} - \substack{6\\4} - \substack{7\\5}$ figure over bass B♭, into a dominant seventh. At the first ending, this V^7 goes naturally back to tonic E♭. At the second ending, though, Beethoven immediately reproduces the $\substack{5\\3} - \substack{6\\4} - \substack{7\\5}$

[5] Along with Cohn, Adrian Childs, in "Moving Beyond Neo-Riemannian Triads: Exploring a Transformational Model for Seventh Chords," *Journal of Music Theory*, 42, 2 (Fall 1998), pp. 181–193, and Edward Gollin, in "Some Aspects of Three-Dimensional *Tonnetze*," *Journal of Music Theory*, 42, 2 (Fall 1998), pp. 195–205, have modeled aspects of transformational relationships between seventh chords. Childs explores parsimonious voice-leading relationships between dominant- and half-diminished-seventh chords, which share similar interval structures (they are each other's inversion). Exploring transformations proceeding by two semitone motions and two common tones, he shows that while most lead to chords of the opposite type, one set of transformations originating from a dominant-seventh chord leads to the three dominant-seventh chords related through the minor-third circle. Childs notes that since it is possible to move from any dominant-seventh chord to any other by a binary combination of mode-changing transformations, the unary mode-preserving transformations could be considered superfluous (p. 189). However, he argues that they must be included in the system, since they form part of the originally defined group of direct transformations – an implicit acknowledgment that the atomistic cannot always substitute for the holistic. Here, then, the parsimonious approach does isolate one species of direct chromatic mediant relationship, that between dominant sevenths a minor third apart, along with those related by tritone. Furthermore, it is notable that this model naturally produces a mode-*preserving* and potentially non-dualistic relationship.

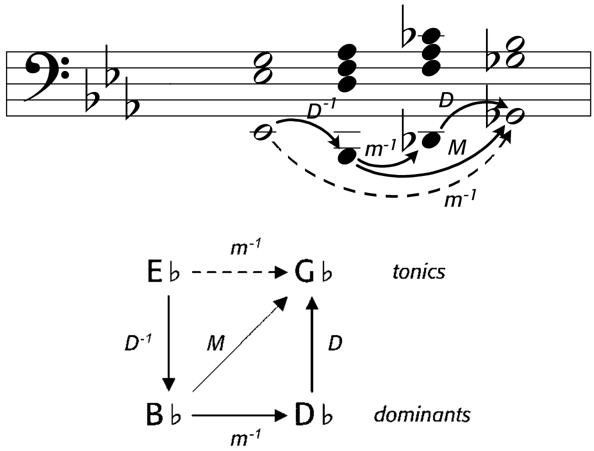


Figure 8.16 $\boldsymbol{m}^{-1}$ transformations between two dominant sevenths in Beethoven op. 31/3, III: a) Transformations; b) Network diagram w/actual and implied connections

figure above a D♭ bass, resulting in a direct juxtaposition between dominant sevenths on B♭ and D♭. The two common tones F and A♭ provide a very smooth link, for they form the $^{7}_{5}$ which ends the first voice progression and the $^{5}_{3}$ which begins the second. The resulting direct $\boldsymbol{m}^{-1}$ relation between dominants B♭ and D♭ is also reflected in the relation between their respective tonics E♭ and G♭, illustrated in Figure 8.16.

The first movement of Beethoven's piano sonata op. 10, no. 2 contains a very conspicuous $\boldsymbol{m}^{-1}$ relation which introduces the modulation to V in the exposition. Here a dominant seventh on E progresses directly to one on G, resolving to new tonic C. This progression was discussed above in reference to Plate 4.6, where Riemann's analysis 3^{+}–V–I utilized one of his newly defined mediant functions. In this case the relation between the two implied tonics is largely overpowered by the arpeggiation of a C major triad in the bass notes of the progression.

Another example with $\boldsymbol{m}^{-1}$ comes from *Glückes genug*, the third of Schumann's *Kinderscenen.* The first sixteen measures of the piece are in D major; at the end of m. 16, though, a dominant $^{6}_{5}$ on C♯ gives way to a dominant $^{7}_{5}$ on C♮. Schumann plays a trick, staggering the bass and the upper voices, which lag behind by an eighth note. Nonetheless the upward minor-third relation between the two dominant-seventh chords with roots A and C♮ is clearly a direct one, creating a similar higher-level relation between tonics D and F. The return to D in m. 20 is accomplished similarly, this time though between a dominant seventh on C and a diminished seventh on C♯ – not quite the reverse of the progression of m. 16, but still a direct juxtaposition of tonics F and D. Figure 8.17 details these relationships.

A final $\boldsymbol{m}^{-1}$ example, from the middle of the fifteenth of Schumann's *Davidsbündlertänze*, adds an interesting wrinkle: two additional common tones. At

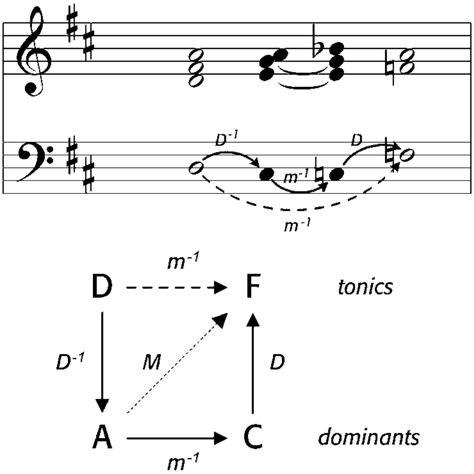


Figure 8.17 m^{-1} transformations between dominants in *Glückes genug*:
a) Transformations; b) Network diagram w/actual and implied connections

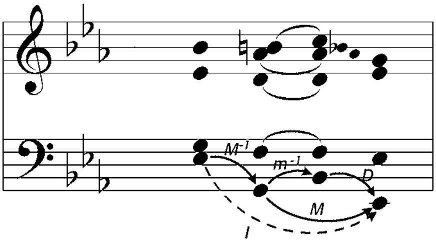


Figure 8.18 m^{-1} transformations between dominant ninths in the fifteenth *Davidsbündlertanz*

m. 37, Schumann juxtaposes two minor-third-related dominant-minor-ninth chords on G and B♭. Along with the two usual common tones, the leading tone of the first chord (B♮), made conspicuous as an isolated right-hand trill, persists through the chord change and becomes the minor ninth (C♭) of the second chord. This produces a very dramatic and audible change in the note's quality, beyond what normally characterizes a chromatic mediant relation: the leading tone, which tends up by semitone, becomes the minor ninth, which tends down by semitone. This emphasizes not only the relation between dominant chords on G and B♭, but even more the relation between tonics C and E♭. As with the Schubert example above, this progression, traced in Figure 8.18, forms part of a larger mediant-oriented complex.

Another example, this time involving downward root motion of both types, comes from Schubert's song *Die junge Nonne*. At the downbeat of m. 56, a C major dominant $\frac{4}{2}$ is followed by an A dominant ninth, facilitated by the descending semitone in the bass; this in turn is followed by an F dominant seventh two measures later. These define successive chromatic mediant progressions of minor third and major third,

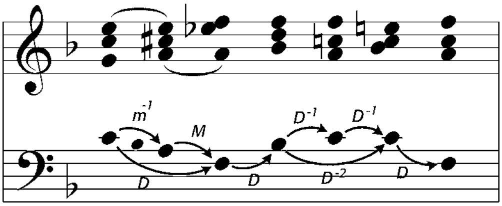


Figure 8.19 Transformations connecting functions in *Die junge Nonne*, mm. 56–61

or ***m*** and ***M***, adding up to ***D***, shown in Figure 8.19. Clearly, the organizing force in this passage is the downward third-divider, which arpeggiates the tonic triad and anticipates its return: the F dominant seventh in m. 58 is interpreted as V^7/IV, moving directly by IV–V–I cadence to tonic F by m. 61. The third-divider, with its overall diatonic motion from V to V^7/IV, in no way obviates the sense of the individual chromatic mediant progressions, however. Just the opposite: it supports and facilitates them. The dominant ninth on A counts as more than simply an alteration of diatonic A minor. In context it does not as much imply D minor by virtue of being a ninth chord, as it implies itself, a sharp mediant, with nonessential dissonant coloration.[6] However, since these mediant progressions take place within the arpeggiation of a fifth, rather than at phrase boundaries, they represent only chords, not keys.[7]

8.4 CHROMATIC MEDIANTS AS THIRD-DIVIDERS

The example from *Die junge Nonne* shows third-dividing chromatic mediants at a low level. Some ways in which chromatic mediants may appear as third-dividers have been already discussed in section 5.1 in reference to Schenker's theory. The progression of a fifth between tonic and dominant or tonic and subdominant may be divided into two thirds. Most commonly, the fifth is divided by a diatonic pitch, on which is based a diatonic triad; these third-dividers will be the relative mediants. However, these fifths may in theory be divided by either a major or minor third, which may carry either a major or minor triad. Thus all four chromatic mediants represent potential third-dividers.

Another small-scale example of a downward chromatic-mediant third-divider, Figure 8.20, begins the last movement of the Schumann Fantasy for piano. The divider initiates a cadential progression involving five chords with major thirds: C major–A major–F major–G dominant seventh–C major. The result is successive chromatic mediant relations of downward minor and major thirds, respectively, at the beginning of the phrase, moving overall from tonic to subdominant. Clearly, this third-divider resembles the diatonic progression I–vi–IV. But this explanation,

[6] The analysis of the complete song in section 9.6 treats this progression in relation to the piece as a whole; A major, as a sharp mediant, points to other events.

[7] An analysis of two $\boldsymbol{D}^{-1}$ transformations where the cadential $^6_4$ connects the terms of the IV–V step progression makes sense and does not contradict the essentially dissonant quality of the $^6_4$. (A similar analysis works less elegantly for a cadential $^6_4$ connecting ii^6 and V, though, since the disjunction occurs between ii^6 and the $^6_4$.)

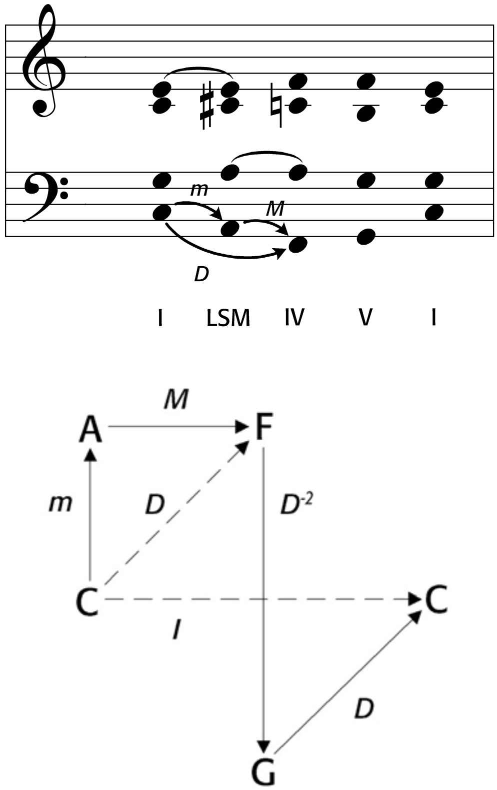


Figure 8.20 Third-divider between tonic and subdominant at the beginning of the Schumann Fantasy, III: a) Functions and third-divider; b) Transformation network

although it is not wrong, inadequately renders the sense of the passage. The difference between the effect of an A minor chord and an A major chord at this point is considerably more than the incidental alteration of the chord tone C to C ♯, especially considering the role that sharp mediant relations play later on in the movement (see below, section 8.5). To explain this passage, it is enough to recognize the third-divider's role in supplying the roots for the progression, and to note the multiple possibilities for building chords with common-tone connections on those roots, one of which is to have three major triads, giving rise to two chromatic mediant progressions.

Another simple but longer-range third-divider involves the same three chords, but connects dominant to tonic. It occurs in the second half of the opening part of the scherzo of Beethoven's "Spring" sonata for piano and violin op. 24 and is seen in Figure 8.21. Here a cadence on dominant C major leads directly to an extended A major triad, and from there back to tonic F major. Even more than in the Schumann example above, this A major is clearly more than a substitute for diatonic A minor. It

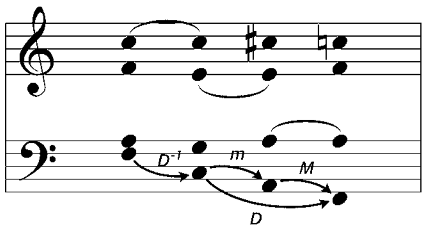


Figure 8.21 Third-divider between dominant and tonic in Beethoven's "Spring" sonata, op. 24, III

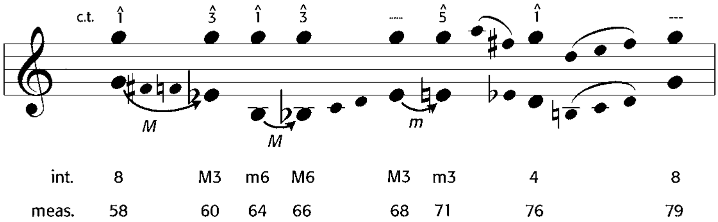


Figure 8.22 Common tones redefined by identity and by interval with the bass, along with mediant transformations in the second theme of Schubert piano sonata D956, I

is held firmly in the structure of the piece by the dual agency of chromatic mediant relations and the fifth which it divides.

A particularly interesting instance involves one of Schubert's more celebrated chromatic mediants, which arises from a chromatic pitch forming a downward flat mediant third-divider between tonic and subdominant. It occurs at the entrance of the second theme of the first movement of the C major string quintet D956. At this point, the key of the dominant, G major, has been established as the local tonic. With G as common tone in the upper voice, the lower line moves down through a major third to arrive at E♭, forming E♭ major, the lower flat mediant of the dominant and the upper flat mediant of the piece. (This is an exact analogue of the first chromatic mediant move in the piano sonata D960, but while that one is initiated from the tonic, the one in the Quintet is initiated from the key of the dominant.) A lyric theme in E♭ appears to modulate, moving to V/C at m. 65.[8] But another ***M*** move brings back E♭ for a second phrase. This time, though, with G remaining as common tone in the upper voice, another chromatic mediant move by minor third leads directly to C major, briefly tonicized, but quickly serving as subdominant in a final cadential move to G major, terminating the theme. Figure 8.22 traces this network of relationships.

While actual bass motion does not trace the root motion in this passage, there is at one point in this theme a descending progression joining G major, E♭ major,

[8] The C minor triad immediately preceding this G major chord suggests V of C minor rather than C major, further differentiating this G major from its earlier appearance. The C minor also strengthens E♭ major as the proper goal, since it has a more secure presence than C minor to this point, but would be clearly secondary to tonic C major.

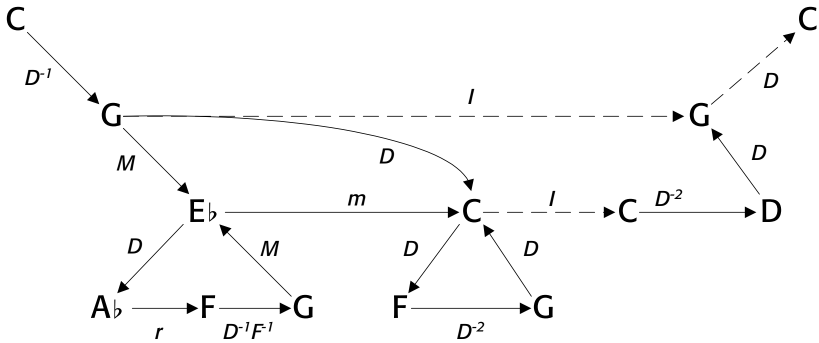


Figure 8.23 Hierarchic network of transformations in the second theme of Schubert D956, I: LEVEL 1: Key of piece; LEVEL 2: Tonic of section; LEVEL 3: Tonicized or principal chords; LEVEL 4: Local progressions

and C major. The roots of these chords form a third-divider, which shows up in the transformation diagram in Figure 8.23 as transformations ***M*** and ***m*** overarched by ***D***. Locally, the third-divider joins tonic G with LFM E♭ and subdominant C. But of course this reverses the relationships of the principal key, where G is dominant, E♭ is upper flat mediant, and C is tonic. Adding to this network of multiple significations is the G major triad of m. 65; sandwiched as it is between E♭ major, it forms a hierarchically inferior oppositional harmony in both its potential and actual meanings – sounding like V of C, it acts as USM of E♭ major. Furthermore, the C major of m. 71 acts as a pivot chord for the transition from E♭ major back to G major: approached as LSM in E♭ major, it acts first as I in an unstable C major, then as IV in G major. Thus G major is heard variously as V, USM, and I, while C major is heard variously as IV, LSM, and I (both locally in mm. 71–73, and globally in the movement). Figure 8.23 shows these shifting relationships as a transformation diagram indicating harmonic connections and levels of hierarchic importance.[9]

Charles Rosen, in *Sonata Forms*, has this to say about the passage:

> The great C-major Quintet . . . appears to interpose E♭ major between C major and G major, and the "second group" goes directly without warning to E♭ after a half-cadence on V of the tonic minor. . . But the return to C major without warning in bar 71 shows that the status of E♭ major is not that of an established opposing tonality to C, but a contrast of color.[10]

Judging from this statement, the only options in dealing with the E♭ mediant are extremes: either call it a firmly established key area by way of modulation, or dismiss it as color. Since in conventional harmonic theory there is no way to directly account for the relation linking G major and E♭ major chords, or the higher-level relation linking E♭ with tonic C major as its UFM, there is no choice for Rosen but to conclude that the relation is not real – that the mediant does not exist as functionally

[9] I break Lewin's rule of precedence ordering in network diagrams here, since some of my arrows point slightly to the left. (Lewin, *GMIT*, p. 212. His hierarchic diagram on p. 214 does have two-headed arrows pointing at 315°.)

[10] Charles Rosen, *Sonata Forms* (New York: W. W. Norton, 1980), p. 245.

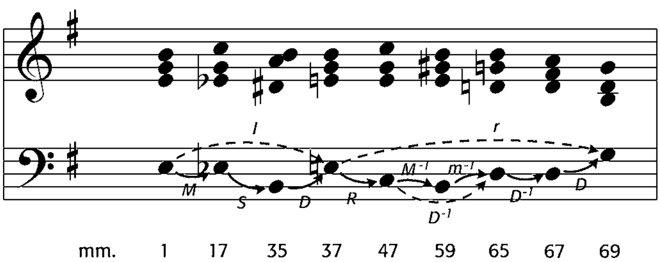


Figure 8.24 Lower flat mediant in minor in the opening of Smetana's first string quartet

related to the tonic, but simply embellishes the prevailing tonality. That we approach and leave E♭ major "without warning," which is to say without cadential intervention of a dominant, is justification enough for denying E♭ its status, for we have no means to describe and thus accept the direct juxtaposition of tonic and chromatic mediant. I would maintain, however, that the stable presence of E♭ major is not an illusion, but rather the result of a direct functional progression taking place between the tonic and its UFM. Rosen continues,

> The secret of Schubert's wonderful color effect is that the E♭ major is still only a chromatic harmony in another tonality, but it is treated as if it were a key in its own right. The sweetness of this theme has its source in the ambiguity, the attempt to sustain what is essentially transient.[11]

I would conclude otherwise. E♭ major *is* a key in its own right within C major Riemannian *Tonalität*. The sweetness of the theme derives to a significant degree from the sweetness of the harmonic relations which frame it, a quality which distinguishes similar harmonic areas in other works of Schubert. This mediant may be less functionally strong than the dominant, and in this sense transient, but of course *all* non-tonic harmonies and keys, the dominant included, end sometime. Some are simply more transient than others. For lack of a name, Rosen refers to the chromatic mediant as a color effect. We may think that we hear tonic and dominants as chromatically neutral, but we are simply inured to their quality. In fact, their colors are simply more muted than those of chromatic relations.[12] Perceiving the chromatic mediants directly, naming them, and ascertaining their nature and behavior, we may more clearly hear them emerge with a definite harmonic identity.[13]

The opening of Bedřich Smetana's first string quartet (Fig. 8.24), which contains an upward subdominant third-divider, also illustrates some of the differences which can result when characteristic chromatic mediant progressions occur in minor

[11] *Ibid.*

[12] I argue similarly for the harmonic quality of "color" relationships in music of Debussy in "Pentatonic Organization," p. 261.

[13] In more recent work, *The Romantic Generation* (Cambridge, Mass.: Harvard University Press, 1995), Rosen revisits the subject, detailing some activities of chromatic mediants: coloristic; substitute dominants opposing the tonic (largely in Beethoven); less oppositional independent areas (largely in Chopin and Schubert). His discussion, which is fairly informal, contains numerous of examples of chromatic mediants.

contexts. The first progression of the piece is a highly accented juxtaposition of tonic E minor with C minor, the lower flat mediant, at m. 17. In major, the ***M*** progression from tonic to LFM results in a major triad located on the lowered sixth scale degree, which if it does not return to the tonic has the potential either to be transformed into a German augmented sixth (as was the case in the opening of the Schubert B♭ major sonata) or to form the middle element in a downward third-divider leading to the subdominant. In minor, the progression to the lower flat mediant results in a minor triad located on the natural sixth scale degree. As a minor triad this mediant does not have the easy potential to be transformed into an augmented-sixth chord. But its minor third creates a potential connection not available in major: it is the lowered tonic scale degree, which is enharmonically equivalent to the leading tone.[14] Hence the progression from LFM to dominant is a common-tone progression in minor, equivalent to ***S*** (SLIDE), whereas it is a disjunct step progression in major. Smetana takes advantage of this relationship, moving through to a V^7–i cadence at m. 35 to quickly finish the opening phrase.[15]

The next phrase postpones the chromatic third relation a bit. At the beginning E minor moves not to C minor, the LSM, but by ***R*** to C major, the *leittonwechsel* chord, which initiates a modulation to the relative major. Smetana structures this modulation around an ascending chromatic third-divider which effectively cancels the tonic and sets up the new key. The third-divider, passing from C through E to G, carries all major triads, so that the return from C to E is transformed from a *leittonwechsel* relation into a chromatic third relation, $\boldsymbol{M}^{-1}$, which alters the mode of the tonic. The sense of uprootedness which results is enhanced by the arrival to E major in second inversion, where it floats sweetly for several measures. The next step of the third-divider, $\boldsymbol{m}^{-1}$ to G major, directly juxtaposes a second $^6_4$, now clearly cadential. This succession of dissonant $^6_4$s conveys a dramatic sense of the transfer of energy from E major to G major, and is intensified by the literal rise of a minor third in the bass. From the cadential $^6_4$, Smetana again moves quickly to the new tonic. Thus a major-key mechanism, the third-divider with major triads, is used here to effect a modulation from minor to major in a particularly potent way.

8.5 SHARP MEDIANT AFFINITY PAIRS IN LARGER COMPLEXES

The development section of the first movement of Beethoven's sixth symphony contains two plainly emphasized chromatic mediant relations which connect long-lasting chords having the effect of tonicized keys. None of the chords in these mediant progressions is either the tonic or the dominant. What makes the chromatic mediant relations work, given that they do not involve direct relations to the tonic, is their participation in a broad harmonic plan stretching from the end of the exposition

[14] In E minor, the third of the LFM, C minor, is E♭. It is enharmonically equivalent to D♯, the third of the dominant triad or seventh on B.

[15] Mm. 31–35 contain a D♯ diminished-seventh chord, which essentially suspends one root (C) into the next (B).

until shortly after the last chromatic mediant relation (mm. 135–247). During this passage, Beethoven tonicizes each of the seven diatonic degrees of tonic F major in turn with a major triad. The order of tonicization does not follow a simple pattern; it does not trace either a rising or falling circle of fifths. It does, however, involve three sets of falling fifths connected by chromatic mediant relations. From C major at m. 135, the music passes flatward by fifth (***D***) through tonic F major at the beginning of the development, m. 143, continuing on to B♭ major at m. 151. At this point a further descent by fifth would lead to a tonicization of a non-diatonic pitch (E♭) on the flat side of the diatonic set. Beethoven supplies a shortcut leading back in the sharp direction: a direct chromatic mediant progression by ascending major third ($\boldsymbol{M}^{-1}$) to D major at m. 163. From there, a descending fifth leads to G major at m. 191. One more descending fifth would touch C major, which was already tonicized at the beginning of the passage. A second major-third chromatic mediant progression would reach a non-diatonic pitch (B) on the sharp side of the diatonic set. Beethoven opts for a different chromatic third relation by descending minor third (***m***) leading less far in the sharp direction. This brings him to E major at m. 209, from which a final descending fifth progression tonicizes A major at m. 237, the last of the seven diatonic degrees. The similar aural quality displayed by these different chromatic mediant relations can be understood by referring to the affinity pair associated with their two types. Both are sharp mediant progressions, the first USM-type, the second UFM-type. Accordingly, the common tone in both is the third of the initiating chord.[16] In the first progression, common tone D, the third of B♭ major, facilitates the move to D, while in the second, common tone B, the third of G major, does the same for the move to E. There is also a difference in aural effect in each progression, which has to do with where the common tone ends up. In the first progression, it becomes the new root, while in the second, it becomes the new fifth. Thus chromatic mediant relations allow Beethoven to create a complex yet clear succession of major harmonies which starts in the middle of the portion of the circle of fifths containing the diatonic scale degrees of tonic F major, progresses to the end of that range, and then loops back twice by sharp mediant moves to cover the rest of the diatonic degrees. Figure 8.25 displays this process.[17]

Schumann uses a similar type of sharp-mediant affinity construction twice in the last movement of the op. 17 Fantasy. This example appears in a wider harmonic context which involves frequent tonicization of chromatic degrees. As Figure 8.26 shows, mm. 34–41 and 91–98 contain similar transitional passages involving pairs of opposing sharp mediant relations. The two passages are transpositionally equivalent: the second is a fifth lower than the first.

16 This property of the sharp mediant affinity pair was examined in section 1.5.

17 The sharp mediant affinity pairs demonstrate a slight drawback in my usage of transformation symbols. The symbols are predicated on directed root motion and interval size. But, as major thirds down go flatward and minor thirds down go sharpward, they do not reflect directed harmonic motion. Thus the transformation pair for sharp mediant motion is ***m*** and $\boldsymbol{M}^{-1}$, which do not relate as symbols. The symbols do indicate the other two affinity pairs: lower/upper mediants are $\boldsymbol{M}/\boldsymbol{m}$ and $\boldsymbol{M}^{-1}/\boldsymbol{m}^{-1}$; major- and minor-third mediants are $\boldsymbol{M}/\boldsymbol{M}^{-1}$ and $\boldsymbol{m}/\boldsymbol{m}^{-1}$.

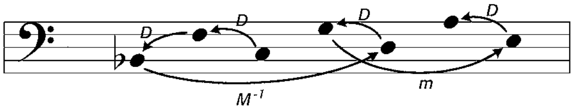


Figure 8.25 Dominant/mediant transformation loops in the development of Beethoven Symphony no. 6, op. 68, I (path begins at C and follows arrows; all chords are major)

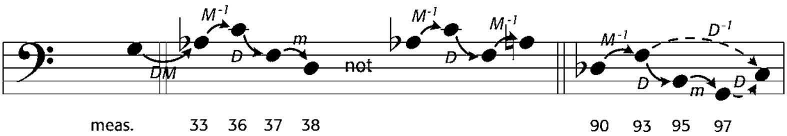


Figure 8.26 Sharp mediant transformation pairs in the Schumann Fantasy, III

The first section of the movement, mm. 1–29, establishes tonic C major within a wandering harmonic field. A deceptive cadence to A♭ major (the LFM) at m. 30 introduces a half-cadence in the same key at m. 33. Mm. 34–35 complete the V–I progression to A♭, but the downbeat of m. 36 brings an unexpected juxtaposition of a C major triad, up by major third. M. 36 continues as if a sequence had been initiated, with C major acting not as tonic but as dominant in a V–I progression to an F major triad. The downbeat of m. 38 contains the expected sharp mediant relation, but, as in the Beethoven example above, this one goes not up by major third but down by minor third from F major to D major. Thus the goal chords of the two sharp mediant moves are C major and D major, a step apart. Neither serves as a tonic in the music that ensues. C major is settled on only briefly at m. 36 and is hardly perceived as the tonic of the movement; here and through the rest of the section (until m. 71), it serves as the dominant of F major, the principal if not sole harmonic focus of the section. D major is heard chiefly as dominant of G minor, a secondary focus. Several half cadences to a dominant on A (mm. 47, 51, and 71) pointedly lead anywhere but to D major or D minor.

The harmonic plan of this movement is looser than Beethoven's, and it is difficult to attribute a definitive reason to Schumann's choices in mm. 34–38. Were he to have made his sequence exact, the chromatic mediant relation in m. 38 would have again gone up a major third, to A major and a tonicized D minor. Since, as the music stands, Schumann resists tonicizing D throughout this section, the harmonic twist at m. 38 may represent a deliberate avoidance. Of course, this twist also has its color effect, as in the Beethoven: the expectations of a sharp mediant and the third of the initiating triad as common tone are fulfilled, while the goal chord itself is a fifth away from the expected one. More importantly, overall, mm. 30–71 accomplish harmonic movement away from tonic C major. Subdominant F major becomes a focus, while tonicization of both D minor/major and G major, cadential chords in

C major, is avoided. The chromatic third relations help to deflect harmonic motion away from the tonic as this process begins.

In mm. 91–98, though, the transposed sharp-mediant complex now reorients harmony toward the tonic. The second section of the movement begins vaguely, but settles by m. 80 into a transposed repeat of the opening section, down a fifth. Mm. 87–90 parallel mm. 30–33: a cadence destined for F resolves deceptively to D♭ major. Thereupon the sequence-like phrase begins: D♭ major moves by upward major third back to F major at m. 93; F major by descending fifth to B♭ major; and B♭ major by descending minor third to G major at m. 97. Thus this time the goal chords of the chromatic mediant relations are F major and G major, primary chords of tonic C major. The following music is altered from the first part to downplay the roles of the F and G as local dominants, and to de-emphasize the half cadences. The only remaining half cadence, on E, leads directly to an A dominant ninth and a strong evocation of D minor, so conspicuously absent from mm. 30–71. Sequential motion to C minor leads to a resurgent tonic C major, with F and G restored to their proper roles.

In both of these examples, the sharp mediant pairs associate by the similar sound of the progressions into sharper territory, and especially by the shared common tone from the initiating chord. This exemplifies the observation made above in section 1.5: the sharp mediant affinity pairs associate together more readily than the flat pairs.

8.6 MAJOR-THIRD MEDIANT AFFINITY PAIRS: CIRCLES OF THIRDS

One of the most powerful properties of fifth relations is their association with the circle of fifths: moving continually by fifth in the same direction touches every one of the twelve chromatic tones. Pure circles of thirds are decidedly smaller. The circle of major thirds consists of only three components, whose roots outline an augmented triad. The circle of minor thirds consists of four components, whose roots outline a diminished-seventh chord. All three of these circles represent ideal constructs which are not always completely realized. Rarely, for example, does a tonal piece modulate through the entire circle of fifths. This does not render this circle any less compelling as a theoretical construct. Likewise, we should not consider it essential to locate complete instances of either circle of thirds in order to justify thinking about them, although their reduced scope does increase the likelihood of completion, tempered by the greater harmonic distance covered by each step.

The circle of fifths, with its twelve members, is generally too long to serve in its complete form as the organizing structural element for anything larger in scale than a sequence; even at the level of the sequence, complete circles of fifths are of course the exception. Circles of thirds, being shorter, might seem to provide more potential, not only for quick progressions, but also to prolong each chord into a structural entity. The mode-preserving minor-third circle, however, leads quickly to the chord or key of the tritone; such a marked effect precludes much usage until the later nineteenth century. In practice such circles are often incomplete and/or mixed with other common-tone relations. On the other hand, both of the non-tonic elements of the mode-preserving major-third circle stand in direct relation to the tonic as chromatic mediants. Its conciseness offers the truest structural potential both at the foreground and at deeper levels. Some examples follow.[18]

8.6.1 Local circles of thirds

Brahms uses such a circle of major thirds locally in the passage from the F minor clarinet sonata op. 120, no. 1, whose transformational structure, shown in Figure 7.8, was discussed in section 7.9. At m. 163, Brahms begins his circle with a deceptive cadence, an implied, elliptical first move down by major third from expected F major to realized D♭. He strongly emphasizes the common tone characterizing this cadence by giving the clarinet nothing but the three-note repeated-tone motto of the movement. For the next stage in the circle, now a sequence, the clarinet moves down a major third, providing the common tone for a direct move to B♭♭, enharmonically A major. Again the clarinet moves down a major third to the next common tone, and the sequence bottoms out at tonic F major. Unlike the circle of fifths, the circle of major thirds does not have a built-in V–I cadence at the end, and so Brahms, in order to signal arrival back to the tonic, augments the durational values of the sequence's constituent phrase, so that the ornamental $^6_4$ of the previous stages takes on the character of a more substantial plagal cadence.

One could say, along Proctor's lines, that this circle of major thirds does not need to draw on harmonic properties to make sense; invoking the principles of sequence or of equal division of the octave explains the coherence of this passage well enough. But there is a definite impression of harmonic connection worth examining. The connections in a major-third sequence are not the same as those in a typical sequence by major second, in which elements are related by the simple perception of ascending or descending step or else are smoothly joined by intervening fifth relations. The connections in Brahms's sequence are achieved by common tones in the hallmark manner of ***M*** relations, anchors by which harmony is able to drop considerable distances while retaining a sense of functional progression. The sonorous character of chromatic mediant relations defines the harmonic effects of the circle of major thirds, and is best taken into account in a comprehensive explanation.

In the finale of his G major piano sonata D894, Schubert employs a major-third circle of short cadential phrases which begins and ends on the tonic. Here

[18] Other recent studies of third-circles: Proctor, "Technical Bases of Nineteenth-Century Chromatic Tonality," chap. 4, analyzes several third-circles as divisions of the octave. Hyer, "Reimag(in)ing Riemann," pp. 111–116, traces a detailed, multi-leveled major-third circle transformation pattern in Wagner. Cohn bases his hexatonic systems on major-third circles mediated by **L** and **P** transformations. Stein's analyses of Wolf songs are discussed below.

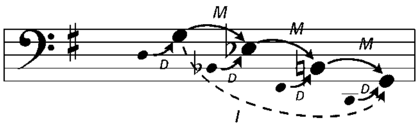


Figure 8.27 Complete downward circle of major thirds in Schubert D894, IV

the joining technique does not depend on common tones, but is disjunct, the sort which Riemann cautioned against in the *Skizze*.[19] What allows these rough joints to work is the sequential construction of the circle. Since the phrase elements at each pitch level of the circle are identical, the circle is perceived in whole units; the disjunct progressions between elements actually facilitate the perception. Thus, despite the lack of common-tone smoothness, the harmonic connections are quite sound; these are still direct ***M*** relations on both the immediate level of the joints and the level of the phrase (Fig. 8.27). In fact, the sense of disjunction stems as much from the unprepared $^6_4$s which begin each sequential element after the first as from the mediant relations themselves. The impact of the passage is further enhanced by the paradoxical effect of continual registral rising of the sequential elements while the root motion falls by third, as well as by the direct juxtaposition of the darker sound of E♭ major, the LFM, with the distinctly brighter sound of B major, the USM. In large part because of these aspects, the return to the tonic G major triad, despite only a short absence, is dramatic.

Tovey had this to say about the passage:

> the reason that we know that Schubert has returned to G and not arrived at A double flat is not because the pianoforte expresses no difference, but because this passage did originally remain in G with no modulations at all . . . [20]

This can only be if the chromatic mediants are directly related to the tonic (by plain juxtaposition), rather than being successive stations in a unidirectional major-third chain, which in ideal terms would never return to its starting point.

Although the division of the major-third circle by diatonic relative mediant relations (Cohn's hexatonic cycle) is by far the most common and intuitive process, it is not the only possibility. A striking alternative exists in the first movement of Schubert's fourth symphony D417. This movement's distinctive exposition moves from tonic C minor to A♭ major, the *leittonwechsel* key, rather than to relative E♭ major. Once A♭ major is attained in m. 85, a fully complete, expanded major-third circle lasting twenty-five measures defines the territory of the new key, transforming

[19] Riemann, *Skizze*, p. 26, cited above as Plate 4.2 in section 4.5. McCreless, in "An Evolutionary Perspective on Nineteenth-Century Semitonal Relations," p. 101, has discussed the preponderance of major- and minor-third circles in Schubert's later music.

[20] Tovey, "Schubert's Tonality," p. 155.

Figure 8.28 Different subdivisions of the circle of major thirds: a) Alternating ***P*** and ***R*** in the conventional circle; b) Alternating ***F*** and ***r*** in Schubert, Symphony no. 4, D417, I

the former tonic from minor to major in the process, and preparing a series of decisive cadences.[21] Just as the goal key of the exposition is unusual, so is the mechanism of this subdivided major-third circle. The usual circle (Fig. 8.28a) alternates the parallel and *leittonwechsel* relations ***P*** and ***R***. But here (Fig. 8.28b) Schubert writes a chain of completely different progression types, alternating ***F*** and ***r*** instead. Like the usual ***PR*** circle, the ***Fr*** circle switches between major and minor chords. However, unlike the ***PR*** circle's consistent double-common-tone progressions, the ***Fr*** circle alternates between progressions of one and two common tones, consequently reaching a new root with each step. Schubert's realization of this circle clearly emphasizes its major-third components with a distinctive arpeggiated motive, treating the intervening chords as secondary. Remarkably, the relative-mode progressions sound more like arrivals than do the descending-fifth relations, in part for syntactic reasons: the first chord occurs on an upbeat at the end of a phrase, while the second, like a resolution, occurs on a strong downbeat at the beginning of a new phrase and initiates the motive. Buffering the increased harmonic distance traveled by this major-third circle, Schubert promotes smoothness by placing the common tone for each ***Fr*** progression and the resultant ***M*** progression (e.g. A♭/G♯ for A♭ major–D♭ minor–E major) in the upper register.

A partial ascending circle of minor thirds occurs, along with other chromatic mediant relations, in the second part of the trio of the second movement of

21 This transformation of C minor into C major is meaningful, for the recapitulation concludes decisively in C major without ever regaining C minor.

Schubert's piano sonata D850. In the trio's first part, a modulation to dominant D major introduces an oscillating ***M*** relation to and from a second-inversion F♯ major triad played ***fff*** at m. 132, setting up F♯ as a focal point of harmonic contrast to the tonic.[22] Here, the trio's second section begins with a direct move from D major to subdominant C major at m. 137. It continues with a series of direct juxtapositions by upward minor third, $\boldsymbol{m}^{-1}$, rising through E♭ at m. 141 to G♭ at m. 145, which recalls and (as root position) stabilizes the F♯ major of m. 132. Instead of continuing on to the next minor third, Schubert resolves G♭ enharmonically as dominant to B minor, quite far harmonically from the C major which initiated the minor-third circle. Steering the circle in this direction more firmly establishes F♯/B as a secondary harmonic focus for the section. But B minor moves quickly back by descending major third, ***M***, to a dominant seventh on G at m. 151, tonicizing C major two measures later. On the heels of this whirlwind chromatic excursion, Schubert does a wonderful thing. Rather than simply resolving C major as IV directly back to tonic G, he has C major give way obliquely to a D dominant $^{4}_{2}$, which moves by descending minor third, ***m***, to B major at m. 163. From here he reiterates the ***M*** leading to G heard previously in m. 151. This time, though, the goal is a triad, not a dominant seventh, resulting in a convincing cadential progression from USM to tonic. Thus, instead of returning to the tonic by way of the subdominant and dominant, both of which are tonicized during the trio, Schubert chooses to recall and enhance the status of a significant chromatic mediant by having it close directly to the tonic. This relationship is further played out toward the end of the section, where the trio's opening material remains in the tonic rather than modulating to the dominant as before. The oscillating relation which ornamented D major in m. 132 now ornaments tonic G at m. 175; the chromatic mediant is now a B major $^{6}_{4}$. This last juxtaposition of G and B underscores the significant role which chromatic mediant relations play throughout the trio, while the conventional cadence which follows rounds off the primary, fifth-related area. Figure 8.29 shows the transformation network underlying this section, with its preponderance of ***M*** and ***m*** relations. In fact, all of the connections to the B and F♯ major triads are chromatic mediant transformations, save the arrival to B after the circle of minor thirds at m. 149.[23]

A very familiar instance of a complete ascending circle of minor thirds comes from the love duet from act II, scene II of Wagner's *Tristan und Isolde*, shown in reduction in Figure 8.30. Its diminished-seventh-chord backbone is highly appropriate in a work like *Tristan*, which is suffused with their presence. The circle takes the form of a sequence beginning with two four-measure phrases and continuing with two

[22] This is the progression, described by Proctor in section 6.6.3 of "Technical Bases," which carries the full force of a chromatic mediant relation despite the mediant's being in second inversion.

[23] In this diagram, all of the chromatic mediant transformations are shown above the notes; other transformations are shown below. Stemmed notes represent tonicized harmonies.

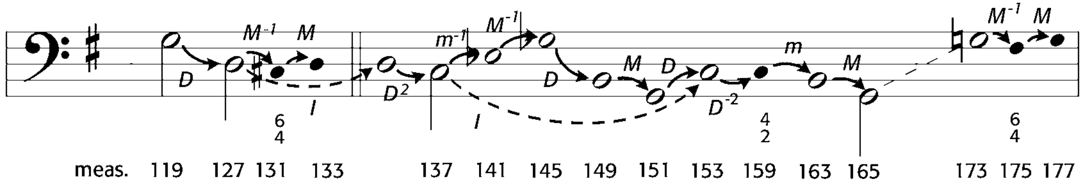


Figure 8.29 Preponderance of chromatic mediant transformations in the trio of Schubert D850, II

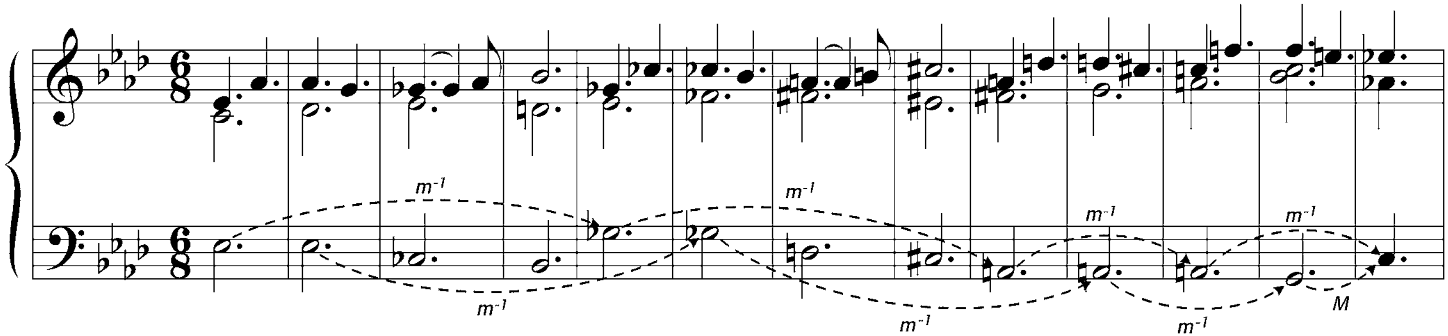


Figure 8.30 Wagner: Alternative ascending circles of minor thirds from *Tristan und Isolde*

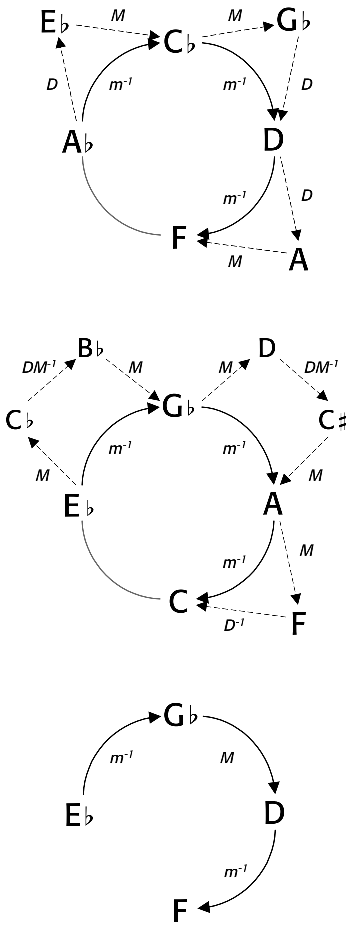


Figure 8.31 Different networks suggested by the *Tristan* progression: a) phrase boundaries; b) dominants at beginnings; c) implied phrase tonics

truncated two-measure phrases. Both the modules of the sequence as well as several surface progressions are structured by chromatic mediant relations: $\boldsymbol{m}^{-1}$ at the higher level, $\boldsymbol{M}$ at the lower. There are a number of approaches to analysis of this phrase; three network analyses follow which highlight different aspects of chord relations in the passage. The first analysis, Figure 8.31a, respects all of the surface connections. The $^6_4$s beginning each phrase, relatively stable in this style, define the circle, while the resolution chords of the $^6_4$s lace the perimeter, approached by $\boldsymbol{D}^{-1}$ and left by $\boldsymbol{M}$. The final chords of the first two phrases are treated as neighbors since they are preceded and followed by the same chords; the A♭ major $^6_4$ which follows the sequence completes the circle. A steady, organized interaction between the primary and secondary transformation streams characterizes the diagram.

Alternatively, the $^6_4$ which begins each phrase might still be considered subordinate to its resolution. Also, the chords at the ends of the first two phrases sound more like half-cadential arrivals than neighbors. Figure 8.31b presents a network whose core is formed by the second chord of each phrase, outlining a different diminished-seventh chord than the one which anchors Figure 8.31a. The $^6_4$s are left out, while the chords at the ends of the first two phrases are integrated into the transformational flow. In this diagram chromatic mediants are even more preponderant than in the first. The absence of $^6_4$s not only eliminates lower-level ***D*** relations, but also elevates B♭ major and D major from neighbor status, connecting them by ***M*** to the anchoring chord of each following phrase, thereby creating paired ***M*** progressions connected by a step relation at the beginning and end of the first two phrases. A final ***M*** relation connects the passage to the A♭ major $^6_3$ at the end. This diagram, less symmetrical than the first, reveals some more underlying relationships. One can analyze yet a step further, isolating just the keys implied by each of the four phrases: E♭ major, G♭ major, D major, and F major, as shown in Figure 8.31c. Interestingly, this progression does not form a minor-third circle, since the truncation of the last two phrases means that their half-cadences are based on the second chord rather than the fourth chord, previously a fifth away. Nonetheless, the succession of tonics still forms a highly significant chromatic-third pattern – $\boldsymbol{m}^{-1}$ – $\boldsymbol{M}$ – $\boldsymbol{m}^{-1}$ – revealing a role for the omnipresent lower-level ***M*** deeper in the harmonic background.

One possible modification to the cycle of major thirds is the insertion of the tonic between the two chromatic mediants, which transforms the circle into the archetypal chromatic-mediant cadence from Riemann's *Musik-Lexicon*. In Figure 8.32, the second theme from the final movement of Ernest Chausson's piano trio of 1881, Riemann's progression and his demonstration of the clash of harmonic and contrapuntal aspects of common-tone relations come convincingly alive.[24] The first four measures of the theme, shown in reduction in Figure 8.32, begin in C major and move directly by ***M*** to its lower flat mediant, A♭ major, emphasizing the diatonic semitone G–A♭ in the melody. Returning to C major, the next four measures begin identically but complete the circle of thirds by moving instead in the opposite direction by $\boldsymbol{M}^{-1}$ to E major, the upper sharp mediant. Once again the melody features the same ascending semitone, now necessarily spelled G–G♯. Another return to C major completes Riemann's progression, although there is no cadence; rather, the theme continues through a second iteration of A♭ major, weaker this time in first inversion and with no special emphasis on its tonic in the melody. This prepares a few measures of transitional material which lead to a repeat of the entire theme down a semitone in B major.

[24] Cf. Plate 4.4 and the extended quote with examples in section 4.5.

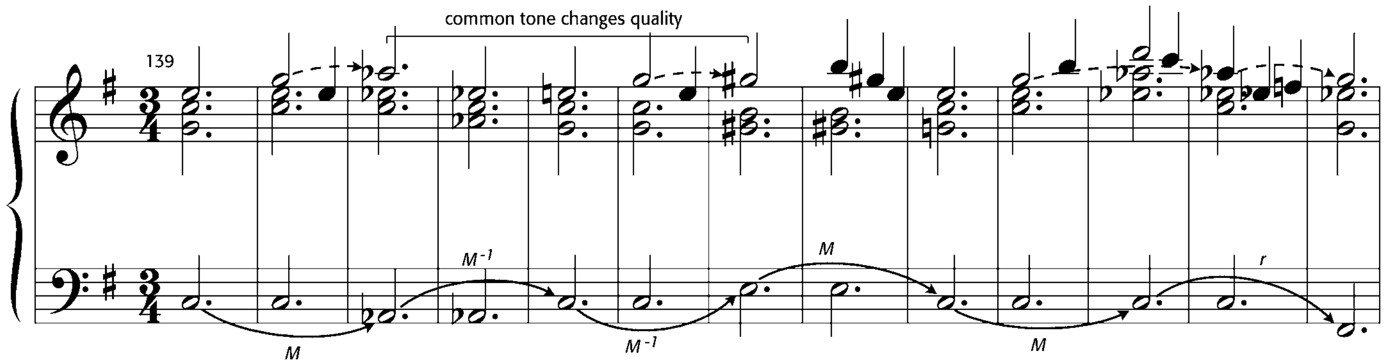


Figure 8.32 Chausson: Riemann-progression theme from Piano Trio, II

In the context of Chausson's harmonically fluid, developmental writing at this point in the movement, this cycle-of-thirds theme stands out as a stable event, analogous to a I–IV–I–V–I progression in a more diatonic context. Furthermore, while the diatonic progression touches only a fraction of the circle of fifths, the Chausson progression articulates the full content of the major-third circle, lending a tangible sense of completeness. Other than the presence of the major-third circle itself, the distinguishing feature of this theme is certainly the melodic common tone, A♭/G♯. The second appearance of C major in the fifth measure, which creates an oscillation between opposing chromatic mediants rather than a progressive major-third circle, also serves to set the effect of the opposing contrapuntal natures of A♭ and G♯ in sharp relief. Were the circle to be pure, with A♭ major going directly to E major, the common tone would be heard continuously, in the typical manner of chromatic mediant juxtapositions, and the harmonic relationship between the two chords would accordingly counterbalance the common tone's change of quality. But with contextually neutral C major separating the two chords, their direct harmonic relationship is de-emphasized. This frees the ear to associate the melodic common tones more independently of harmony, and to perceive their divergent relationships to the G which precedes them. As a result, the two tones, notwithstanding their identical pitch levels on the piano, sound quite distinct in realization, even as all of the direct chromatic mediant relations pass by quite smoothly, in a process which might well be called the Riemann Effect.

The chorale from the famous Largo of Dvořák's Symphony no. 9, op. 95, presents an excellent example of a melodic common-tone relationship outside the tonic triad which occurs in the context of a minor-third circle. Two versions of the chorale are heard close together, one at the beginning of the movement and another at m. 22, just before the entrance of the familiar theme. As Figure 8.33 shows, the second chorale is the more regular, beginning and ending in tonic D♭ major. Exactly as in the Chausson theme, the upper voice of this chorale moves up twice by semitone from a steady pitch to a common tone between two third-related triads, which sounds different each time due to its different meaning within its chord. Here the effect is perhaps even stronger, since the process displaces the tonic pitch itself by a chromatic semitone.

As tonic D♭ major moves by $\boldsymbol{m}^2$ to and from a tritone-related G major triad, the melody moves from D♭ to D♮ and back, with D♮ heard as triadic fifth. After this, D♭ moves by unary $\boldsymbol{m}$ to B♭, which in combination with the first two chords defines the greater part of a circle of minor thirds. This progression is accompanied by the same melodic motion as before, although D♮ is now heard as the third, imparting a sense of change to the common tone. From here the chorale continues down by $\boldsymbol{M}$ through a third-divider to G♭ major, which as subdominant initiates a short cadence back to the tonic. This arrival at G♭ major constitutes a transition point in three senses. First, chromatic mediants in characteristic formations give way to other common-tone

Figure 8.33 Two versions of the chorale from the Largo of Dvořák's Symphony no. 9, op. 95: a) First appearance; b) Second appearance

relations in cadential succession. Second, the melody, which to this point has been oscillating between chromatic semitones, begins to climb by diatonic whole tones.[25] Third, the phrase's overall motion from D♭ to G♭ is reversed. For this reason G♭ occupies a central location in the network diagram of Figure 8.34b. While there are other ways to express the opening tritone progression transformationally, $\boldsymbol{m}^2$ (the double mode-preserving minor third) is strongly suggested by the close proximity of three elements of the minor-third circle, the preponderance of chromatic third relations until the final cadence, and the focus on the change of quality of the common tone, in itself a type of *movement*.

The progression which begins the movement may best be understood as a variation on the later version. This opening chorale begins on an E major triad, enharmonically the lower flat mediant, and continues on with a transformational structure identical to the one described above, inflecting toward tonic D♭ major only at the end of the third-divider, where A major leads through F♯ minor to a

[25] One could readily imagine the "story" of this melody as two unsuccessful tries to escape the gravitational pull of D♭, only to be dragged back from too short a distance, followed by a third successful attempt reaching farther and resulting in upward motion.

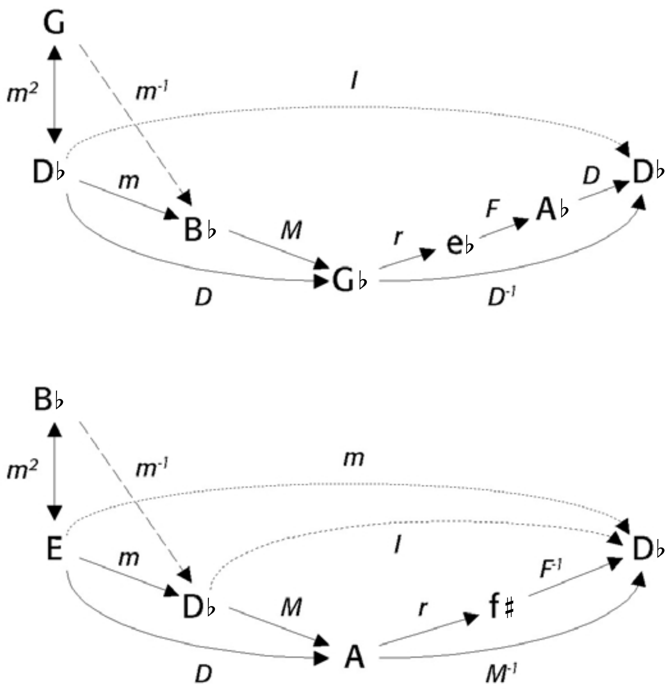


Figure 8.34 Networks for the two versions of the *New World* chorale: a) First appearance; b) Second appearance

plagal cadence.[26] Figure 8.34a shows the result of this displacement. Whereas in the tonic-bounded chorale, chromatic mediant relations are confined at all levels to the first section, in this tonic-seeking chorale they extend into the end of the phrase at higher levels, while the number of fifth relations is significantly reduced. The $\boldsymbol{M}^{-1}$ relation between A major and D♭ major is pronounced, both because A major is perceived to initiate cadential motion and is heard in relation to the goal for factors similar to those cited above for G♭, and because the common tone is featured in the upper register (of a very low-pitched texture). The stepwise melody so prominent in the tonic-bounded chorale is also present in this phrase, transposed up a minor third to begin on E, although it sits in an inner voice. Since the symphony's tonic is E minor, this opening chorale may be seen as a modulation of sorts, achieved overwhelmingly by the agency of direct chromatic mediant relationships. At the same time, especially given its familiarity, it may be heard as a chromatic progression within the key, anchored by tonic D♭ and its two flat mediants, E (F♭) and A (B♭♭) major.

[26] The passing D♯ is best analyzed as a sixth added to the minor subdominant, in an instance of Harrison's dualism. Dvořák's notation for this passage, which switches constantly between flats and sharps, makes root relations a bit difficult to figure. Although technically one should read flats for sharps (i.e. F♭ and B♭♭ major as mediants in relation to tonic D♭), it is easier simply to substitute C♯ for D♭ when examining Figure 8.36.

8.6.2 Long-range major-third circles

Examples of structural circles of major thirds in longer-range passages or entire pieces are not common until the later nineteenth century. Some of the clearest examples in the literature are found in songs by Hugo Wolf, three of which have been identified and carefully analyzed by Deborah Stein. The issues which these formations raise are crucial ones for a Schenkerian approach: are chromatic third relations always subsidiary to fifth relations, no matter how negligible the latter may be? Can we consider chromatic third relations to be functional, and if not, how do we explain their harmonic content? And can they be understood to prolong the tonic?

Both Krebs and Stein address the prolongation issue, which is critical to undertaking a Schenkerian analysis. Krebs argues that major-third circles must prolong the tonic, but only by virtue of their structure, not their content:

> When the tonic arrives at the end of such a progression, it is no longer recognizable as such, the aural connection between the initial and final tonics having been obliterated by the intervening chromatic triads . . . The tonic circle, then, clearly illustrates the weakening of tonality resulting from the use of chromatic third related triads independently of the dominant.[27]

But in my view, given repeated hearing, third-circles can indeed convey a heard sense of directed departure from and return to the tonic. The distance covered is greater; the pace of change is more marked; the chromatic content challenges the ear. But the circle is short, direct connections are present between each element, and there is no reason to assume that the tonic must be reintroduced by its dominant to be heard as the tonic once again. In fact, after two identical chromatic third relations, the likely continuation is one more of the same – which provides the return to the tonic. Also, a memory of the tonic may well linger to confirm arrival. Consider again the downward circle of thirds in the last movement of the Brahms F minor clarinet sonata: tonic F major has been so strongly established for so long, common tones are so clearly brought out, and the tonic return is so clearly associated in its sound with other appearances of the tonic, that there is no ambiguity whatsoever. Or the circle in Wolf's song *Das Ständchen*, discussed below: the tonic arrivals are unmistakable harmonic events. In fact, in a well-composed piece, the differentness of the sound of the two major-third related keys sets off the tonic, recognizable in its own aural character, more dramatically than do the keys of the dominants.

Stein comes to a different conclusion: the circle of major thirds cannot prolong the tonic.[28] She reasons that there is no clear process of diminution embellishing I,

[27] Krebs, "Third Relations and Dominant," pp. 119–120.

[28] Thomas McKinley comes to the same conclusion from a non-Schenkerian viewpoint, referring to circles of major thirds as "non-functional." "Dominant-Related Chromatic Third Progressions." Unpublished manuscript, Tulane University, 1994, p. 24.

while the harmonic progression truly departs from the tonic and returns to it from afar rather than keeping it alive during the process:

> The background structure . . . does not cohere into a tonic prolongation: even though scale step III is in the bass, the chromaticism of ♯$\hat{3}$ [its major third] undermines tonal coherence and obscures tonal function.[29]

But, as I have noted earlier, Schenker himself was not the least bit disturbed about the major third of III♯, which in his view could prolong I, even in the absence of V. Furthermore, his unelaborated Figure 100/6 (*Das Ständchen*) in *Der freie Satz*, discussed below, expressly depicts a tonic prolongation by a pure major-third circle.[30]

Since Stein reasons that the circle of major thirds cannot prolong the tonic, she explores other ways to account for them. Her analyses of songs by Wolf containing these circles highlight key issues, and I will briefly consider two of these here along with offering some observations of my own. The first song, *Das Ständchen*, moves from tonic D major directly to F♯ major, directly again to B♭ major, and finally back to D major by way of its dominant chord. Thus the principal bass motion is D–F♯–B♭–A–D. Stein offers two alternatives. The first is a classic interpretation: a prolonged fifth D–A, with F♯ as third-arpeggiation within the fifth, and B♭ as upper neighbor to A. The second involves the same prolonged fifth D–A, but with F♯ and B♭ separate from it, directing motion away from the tonic and returning to it. While observing here that the chromatic mediants may work independently of fifth relations, Stein asserts the "tenuousness of functional relationship" between them, with the common tone providing a sort of smokescreen. I would take this second analysis even further and assert that the connections are more than tenuous, that the common tone is an integral element of the functional relationships, and that the structural importance of the final dominant is minimal in the face of the major-third circle.[31]

It happens that Schenker himself discounted the possibility of I–V prolongation in *Das Ständchen* in one of the most arresting analyses in *Der freie Satz*.

Plate 8.1 shows an unelaborated circle of major thirds, with each bass note supporting a major triad, and the whole forming a bass arpeggiation of an augmented triad which, as the slurs explicitly indicate, prolongs the tonic through the entire song. The dominant does not figure at all in Schenker's own diagram, which appears not to follow the guidelines of Schenkerian theory. Given the obvious third-circle framework of the piece, he followed the example of the song rather than perform

[29] Stein, *Hugo Wolf's Lieder*, p. 107.

[30] Whether or not the major-third circle prolongs the tonic does not determine whether the progressions are functional, and vice versa. Schenker's prolongation concept has little to say about harmonic function, and he is emphatic that his *Stufe* is very different from the functional triad.

[31] The A does not derive from any tonicization of the key of the dominant; it is a musically slight modulatory chord connecting B♭ major with the return to tonic D. The prominent, controlling key areas of *Das Ständchen* are D major, F♯ major, B♭ major, and D major again.

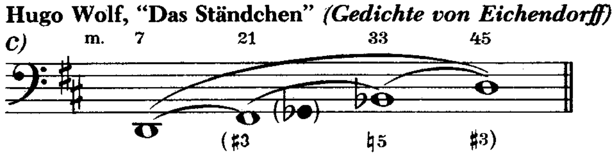


Plate 8.1 *Der freie Satz*: Figure 100/6

the Procrustean act of fitting the analysis to an existing model. Presumably he recognized that *Das Ständchen* presents a coherent, unified structure whose organizing principle lay outside the fundamental structures of his own theory. This seems not to have unsettled him – he includes this diagram in *Der freie Satz*, after all – but rather to have interested him. As Stein herself observes, if one takes this diagram to show that the chromatic harmonies do not prolong the tonic in the conventional Schenkerian way, the result is "a shift in stature for third relations from subsidiary and merely embellishing to structurally independent."[32] My own analysis of the song's structure would be identical to Schenker's: three rising major-third chromatic mediant progressions ($\boldsymbol{M}^{-1}$), leading overall from tonic back to tonic ($\boldsymbol{I}$).

To my mind, the conventional use of Roman-numeral scale-degree identification for chromatic mediants serves to limit the observation that the chromatic mediants are operating in a different plane than the fifth relations with which they coexist. The harmonies labeled III♯ and ♭VI have little to do with their diatonic scale-degree counterparts. III♯ is emphatically not the *leittonwechsel* chord associated with the relative mode, but rather the upper sharp mediant, very differently related to its tonic. ♭VI implies an altered scale step, whereas the chord occupies a normative place in the circle of major thirds and is heard with straightforward meaning, not as a version of something else. By representing the major-third cycle instead as I–USM–LFM–I, or as a series of pure $\boldsymbol{M}^{-1}$ transformations, one eliminates any suggestion or possibility of its implication in a third-divider process, or of association with the diatonic relative-mode chords iii and vi. As Riemann observed of Weber's system, sometimes Roman numerals can obscure the true nature of progressions, especially chromatic ones.[33]

Stein also considers Wolf's *In dem Schatten meiner Locken*, which is shot through with chromatic third relations. It has a three-part harmonic structure roughly corresponding to the text's three stanzas. The first and third sections contain relatively

[32] Stein, *Hugo Wolf's Lieder*, p. 97. Sonia Slatin, in "The Theories of Heinrich Schenker in Perspective," Ph.D. dissertation, Columbia University, 1967, Ann Arbor: UMI Research Press, wonders what Schenker was thinking:

> How is it that an arpeggiation that includes the replacement of a tone as vital to the meaning of the triad as the fifth can function on the same unifying level as the purely diatonic triad? . . . the filled-in octave span, although it functions as a source of integration and coherence . . . is nonetheless secondary to that broad triadic horizontalization as a means of achieving overall unity, according to Schenker's concepts.

She muses that Schenker may have planned to develop his theory to account for such structures. See also Proctor, "Technical Bases," p. 180.

[33] Harrison (*Harmonic Function*, p. 138), writing from a different point of view, also notes the constraining influence of Roman numerals on these analyses.

straightforward ascending chains of major thirds connecting major tonics (B♭–D–G♭–B♭). The second section contains another chain, but with a significant expansion of the B♭–D progression. During the course of the song, D emerges as the significant secondary harmonic area, while G♭/F♯ remains subordinate to the other two. Stein offers two different readings of the piece. Her first draws heavily on the concept of harmonic substitution in order to regularize chromatic third relations, and she implies that it is not the preferred one. As an alternative she postulates two tonics in the song, B♭ and D, arguing that D "suggests double tonality because it extends beyond its local function as III♯/B♭."[34] This could be put more simply, that D major is established as a secondary key area, except for the obstacle of imagining D major in meaningful relation to B♭ major. But if D major can be understood as directly related to tonic B♭, then it is no longer necessary to posit the two as independent tonics.[35]

An analysis in this spirit is shown in Figure 8.35. In the first part of the song, mm. 1–12, D at m. 5 and G♭ at m. 10 are heard as elements in an ascending chromatic major-third circle. As I have argued, these circles establish an order and imply their completion, and their constituent harmonies thereby imply their tonic, which returns at the end of the section.[36]

In the expanded second part, mm. 13–43, Wolf amplifies and explores the relationship between B♭ and D, first by approaching D through intervening fifth relations (mm. 20–26); next by bypassing it in favor of another chromatic mediant, D♭, which, unlike D, serves as a third-divider between B♭ and F; and finally, at the most agitated spot of the song (mm. 34–39), by subverting B♭ in favor of D. Here, repeatedly, a dominant seventh on F resolves not to the expected B♭, but irregularly yet smoothly by a descending chromatic mediant progression to D, in contrast to all the others in the song, which ascend. Wolf, who heavily favors chromatic third relations throughout the song, is making a point here. The dominant F, which is hardly present at all in the piece, lacks even the ability to function locally as V^7; it cannot resolve by fifth to the tonic, but must follow the path of a characteristic mediant resolution. As in the next song, the chord is not so much a dominant-seventh chord whose necessary resolution by fifth is inevitable, as it is simply a dissonant chord, a symbol implying necessary motion to another chord, but not any particular one. In this case, the seventh resolves to the root of the following chord, not the third

[34] Stein, *Hugo Wolf's Lieder*, p. 100.

[35] The concept that highly chromatic pieces may contain two tonic complexes functioning simultaneously is put forth by Robert Bailey in "An Analytical Study of the Sketches and Drafts," in *Richard Wagner: Prelude and Transfiguration from Tristan und Isolde*, ed. R. Bailey (New York: Norton, 1985), pp. 121–122; by Christopher Lewis in "Mirrors and Metaphors: Reflections on Schoenberg and Nineteenth-Century Tonality," *19th Century Music*, 11, 1 (1987), pp. 26–42, and is explored among other places by a number of writers in *The Second Practice of Nineteenth-Century Tonality*, ed. William Kinderman and Harald Krebs (Lincoln, Nebr.: University of Nebraska Press, 1996). My point is not to challenge the idea of double tonality, but only to claim that it is not needed to explain this piece. A recent, skeptical review of the concept appears in Robert Morgan's "Are There Two Tonal Practices in Nineteenth-Century Music?" *Journal of Music Theory*, 43, 1 (Spring 1999), pp. 135–163.

[36] Therefore these circles fall under Schoenberg's definition of harmonic function, which is that chord progressions which imply a definite direction and a particular tonic are functional.

Figure 8.35 Mediant-dominated harmonic process in Wolf's *In dem Schatten meiner Locken*

(authentic cadence) nor fifth (deceptive cadence); it is a less common, but no less coherent progression. At the same time, the persistent association of D with the F dominant seventh, a chord so central to tonic B♭, can only underscore the meaningful and coherent oppositional relation between the two keys. After this oscillation, D finally moves on to F♯, continuing this circle of thirds, which is quickly completed as F♯ drops into tonic B♭ without preparation at m. 43. At this point the simple circle of thirds which began the song is reiterated, and the song closes.

9

FIVE ANALYSES

9.1 COMMENTS ON THIS CHAPTER

The analyses contained in this chapter will serve as the culminating argument for the utility of the common-tone approach advocated throughout this study. They present pieces in which chromatic third relations play crucial roles in concert with other common-tone relations. The manner of description and analysis draws on aspects of all of the preceding chapters. The following ideas underlie my viewpoint: that chromatic mediant relations, like fifth-change and relative-mode relations, are functional; that the tonal system can support chromatic relationships along with diatonic ones without loss of the sense of tonic; that harmonic relationships are holistic entities whose essence may surpass the sum of their parts; that root relationships between chords are not necessarily bound to the scale; and that dualism, where it occurs, may be a derived rather than a defining element of the system. The language of common-tone relations and transformations represents first and foremost a way of thinking directly about chromatic harmony in music. This language provides for a way both to identify chromatic mediants directly within the key (LFM, USM), as well as to describe localized harmonic progressions in expanded tonality (Riemann's *Tonalität*) by their nature, without reference to scale degree, in the new tradition of transformation theory. The transformation labels ***D***, ***r***, ***M***, etc., are not ciphers but rather a shorthand for a limited number of basic common-tone progressions, essential for conceptualizing harmonic relationships in a chromatic tonality in which chords may be rooted anywhere, and in which the sonorous character of an expanded palette of progression types is itself an important factor. These symbols focus attention on properties of the harmonic system which in my view operate at a level most effective for characterizing certain principles of nineteenth-century tonal language and musical structure. Reading the symbols and their meaning with familiarity, then, should bring to mind and ear something qualitative, in the same way that we experience the symbols V–I not as abstractions but as an identifiable, normative constituent of felt musical experience.

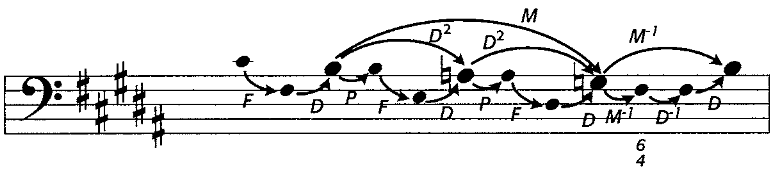
9.2 CHOPIN, MAZURKA OP. 56, NO. 1

Chopin's mazurka in B major, op. 56, no. 1, provides a clear-cut example of a harmonic structure determined by major-third affinity pairs arranged symmetrically around a tonic. The mazurka's form is tripartite: A B^1 – A B^2 – A C. The recurring A section, which begins and ends in tonic B major, prepares the chromatic mediant relations to come by dramatically tonicizing the lower flat mediant before settling on the tonic. The two B sections begin at opposite major thirds from the tonic and continue moving away from it symmetrically. The final A section and coda remain in tonic B major, with considerable use of sequence and chromatic elaboration (Ex. 9.1).

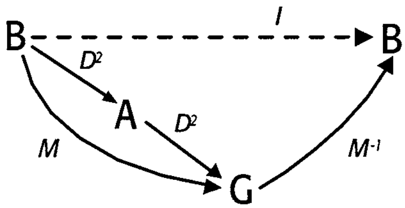
The mazurka's opening section (shown as a network diagram and bass sketch in Figure 9.1) projects tonal ambiguity for much of its duration. After an indefinite beginning on an open third, E–G♯, the bass continues downward to trace an unstable C♯ minor $^6_4$ chord, which finally gains context in the next two beats as the initiating chord of a ii$^6_4$–V$^6_5$–I progression arriving in m. 2. This process occurs twice again in sequence, descending by whole step through A major in m. 4 to G major in m. 6, for cumulative motion of $\boldsymbol{M}$, a major third. G major remains as a pedal point for several measures, as if the descending sequence had reached bottom and settled on the tonic. At this point rising motion takes over. The melody ascends a full octave by scalar motion above the pedal while the opening bass motive repeats on G, confirming the arrival. A second octave ascent by the melody, however, overshoots by a step as, along the way, the G major triad is transformed at m. 12 into a German augmented-sixth chord, whose resolution initiates a return to B major. The arrival to B at m. 16 sounds even more final than that to G, and is affirmed by several V–I cadences. In retrospect, then, G major is heard as the lower flat mediant, returning to the tonic through the familiar augmented-sixth route described often above. Chopin's innovation is to expand the I–LFM juxtaposition at the beginning of the basic cadential framework (I–LFM–Ger^{+6}–cad. $^6_4$–V–I, as in the Schubert B♭ major sonata) into a three-element descending sequence. While B major, which sounded like a false tonic at the beginning, is revealed to be the true tonic, G major, the LFM, has been strongly tonicized by the sequential expansion as well. In this way Chopin sets up a chromatic mediant relation as the governing harmonic polarity of the mazurka's first section.

At the transition into the first B section, Chopin treats B major as he had G major, transforming *it* into a German augmented-sixth chord, resolving properly up by $\boldsymbol{M}^{-1}$ to E♭ major (enharmonically D♯ major, the USM) at m. 24. Thus, having just confirmed its tonic, the music immediately wanders off in the opposite direction. Notwithstanding this abrupt sharpward chromatic transition, and in contrast to the earlier dramatic play between chromatically third-related keys, this new section proceeds by a series of stable eight-measure pedal points alternating calmly by pivot-chord modulation between E♭ and A♭ major, the other member of the sharp mediant affinity pair (enharmonically G♯ major, the LSM). The appearance of these new harmonies in the absence of any focus on fifth-related keys makes it clear that Chopin is intent on exploiting the oppositional qualities of chromatic third relations to the tonic. The last phrase of this section, in A♭, dissolves before it ends into a single suspended line at m. 46 in preparation for the return to opening material. Direct

Example 9.1 Chopin, Mazurka op. 56 no. 1, opening



a) Bass sketch of surface detail



b) Network diagram of main structure

Figure 9.1 Chromatic-mediant transformation structure of the first section of Chopin's Mazurka op. 56 no. 1

motion back from A♭ is potentially quite smooth despite its chromatic relation to the tonic, since the A section begins with a C♯ minor chord, and G♯/A♭ major may act as its dominant. Chopin chooses to move slowly, though, first changing A♭ major to A♭ minor, and only then moving to C♯ minor. In so doing, Chopin decomposes the chromatically tinged dominant relation ***F*** into a subtler modal fifth relation ***PD*** whose sound and effect are less marked than the chromatic mediant relations controlling the piece's structure. This eases back into the beginning in an indefinite manner more appropriate to its tentative quality than a straightforward V–I progression would be. Figure 9.2 recounts this process and that of the following sections.

The second B section transpires as the mirror reflection of the first. The transition into this section from the repeat of the opening takes B major down a major third rather than up, flatward toward G major, already familiar from its tonicizations in the opening section.[1] Once settled in G at m. 82, B^2 proceeds with pedal-point material equivalent to that of B^1, including the modulations by fifth at the end of each eight-measure phrase. But these modulations are the opposite of the earlier ones: where E♭ major had moved down a fifth to A♭ major, G major moves *up* a fifth to D major, the UFM and last chromatic mediant to appear, at m. 90. The alternating pedals repeat as before, dissolving again into a single line in anticipation of the return to the tonic. The relation between D major and the opening is more distant than the one at the end of B^1, and Chopin pads the return with a long

[1] In order to create a similar effect here to the modulation into B^1, since an augmented-sixth progression is not possible, Chopin moves by direct ***M*** to a first-inversion G major chord, initiating a half cadence. Nonetheless the transition is smoother, due to the lack of dissonance and the inherent ease of moving to the LFM.

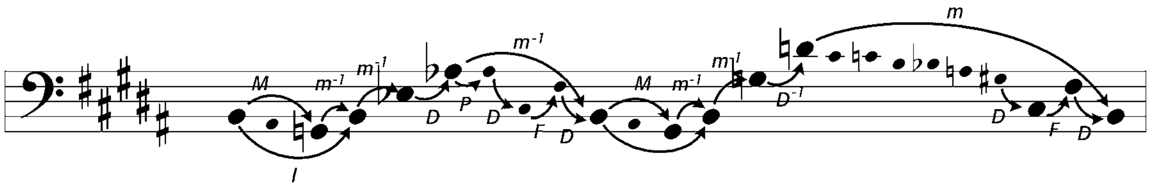


Figure 9.2 Transformation structure of Chopin's Mazurka op. 56 no. 1, up to the final section

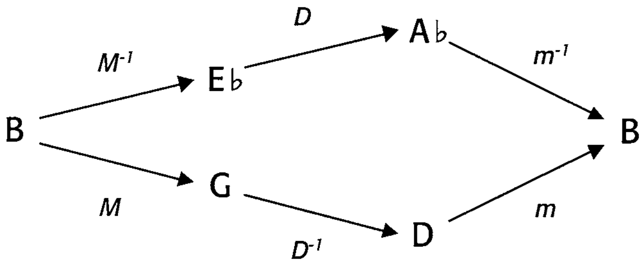


Figure 9.3 Symmetrical transformation network, formed by the middle sections of Chopin's Mazurka op. 56 no. 1, incorporating all four chromatic mediants and all four chromatic mediant relations

and subtle stepwise approach reviving the indefinite feel of earlier events, moving downward chromatically in parallel $^6_3$ chords from D major (m. 106) to the same G♯ minor he previously used to prepare C♯ minor (m. 123).

The change in B^2 is crucial, for it allows for a symmetrical harmonic structure (Fig. 9.3). Where the A–B^1 sections move from B major up a major third to E♭ and down a fifth to A♭ ($\boldsymbol{M^{-1}D}$), the A–B^2 sections move down a major third to G and up a fifth to D ($\boldsymbol{MD^{-1}}$). Defining this symmetry through this change in B^2 allows Chopin to visit all four chromatically third-related keys: G, the LFM; G♯/A♭, the LSM; D, the UFM; and D♯/E♭, the USM. Clearly a deliberate construction, this smooth, regular structure unites the tonic with all of its chromatic mediants in a harmonic formation more complex and sophisticated than Schubert produced in *Die Sterne*, although without the marked effect of direct surface mediant relations, except at the transitions into the B sections.

Following the third iteration of the opening material, Chopin lets loose with section C, a vigorous coda full of sequential passages tonicizing "neglected" diatonic harmonies vi, IV, ii, and V, along with cadential reaffirmations of tonic B major. There is a regularizing effect, to be sure, and in retrospect Chopin appears to have isolated and emphasized the qualities of the chromatic mediants' greater harmonic remove from the tonic in the earlier sections in order to set up the diatonic return. But this in no way invalidates the coherence of the earlier sections. In fact, it is exactly the coherence of the chromatic mediant relations *as* chromatic mediant relations that allows for the definite contrast between the first two sections and the last to be drawn.

9.3 LISZT, *CONSOLATION* NO. 3

Many pieces which possess a harmonic structure predicated on third relations, such as Chopin's mazurka and some of the Wolf songs analyzed by Deborah Stein, undergo a smoothing-out process wherein chromatic mediant relations in early parts of the piece give way to diatonic third and fifth relationships toward the end. Unlike these works, Liszt's *Consolation* No. 3 in D♭ major begins diatonically and becomes more chromatic as it goes along (Ex. 9.2). The *Consolation* contains three distinct harmonic

Example 9.2 Liszt, *Consolation* no. 3, second episode

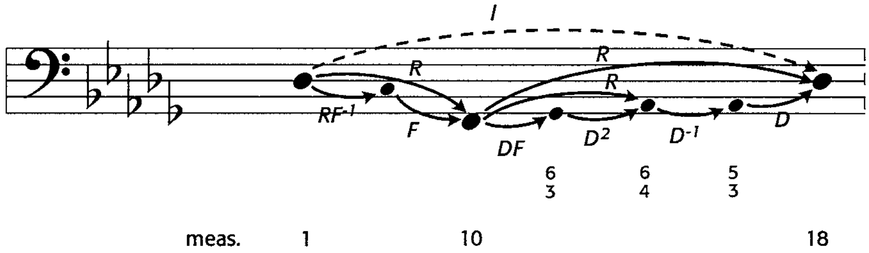


Figure 9.4 Liszt, *Consolation* no. 3, first episode

episodes in which tonic D♭ anchors different structures based on third relations. The first episode, mm. 1–18, contains a simple oscillating relative mediant relation. The second episode, mm. 18–43, is more elaborate, incorporating an ascending circle of thirds which entails both diatonic and chromatic mediant relations. The third episode, mm. 43–61, is a coda consisting of an extended plagal cadence whose culmination is enhanced by a striking ascending chromatic-mediant third-divider.

In the first episode (Fig. 9.4), tonic D♭ major is established by a simple cadence over a tonic pedal, after which the music modulates at m. 10 by conventional pivot-chord means to F minor, its upper relative or *leittonwechsel* key. Immediately thereafter, the music becomes sidetracked: a diminished-seventh chord implying a move (as B D F A♭) to a C minor $^{6}_{3}$, bass descending, moves instead (as D F A♭ C♭) to a peculiar-sounding first-inversion E♭ major triad while the bass creeps up in the "wrong" direction. In response the texture dissipates upward in a single line as if wondering where it is.[2] Eventually lighting on an equally odd-sounding unprepared D♭ major $^{6}_{4}$ (if the way is lost, why not just skip to the conclusion), the music pauses again as if to test if it has found the right spot, and continues on to a tonic cadence. Figure 9.4 depicts the disjunct nature of the low-level stepwise relationships from F to E♭ to D♭ as binary transformations.[3] On the higher level of the phrase, the oscillation between tonic and *leittonwechsel* defines a reciprocal relative mediant loop, ***RR***.

The second episode (Fig. 9.5) begins exactly as the first, with an identical modulation to F minor. Here, though, Liszt follows the arrival to F minor with two after-cadences, the first at m. 29 reaffirming F minor, but the second at m. 31 suddenly introducing F major. Despite the similarity of these two short cadences, the one to F major sounds more like an arrival to a new tonic than a simple modal substitution or secondary harmony. This stems in part from the sheer effect of two successive cadences, enhanced by the melody, which jumps an octave to a new register, giving the second cadence a distinctly new color. It is also enhanced by the

[2] The strange effect of this E♭ major tonicization in the presence of tonic and relative minor recalls Hauptmann's observation that keys at two fifths' remove from the tonic sound more distant than those at three or four fifths' remove.

[3] Harmonic relations like these are more suited to sequential passages; one reason they sound so strange here is their presence in the cadential phrase of the opening section of a piece, realized with a bass line moving in contrary motion to their roots.

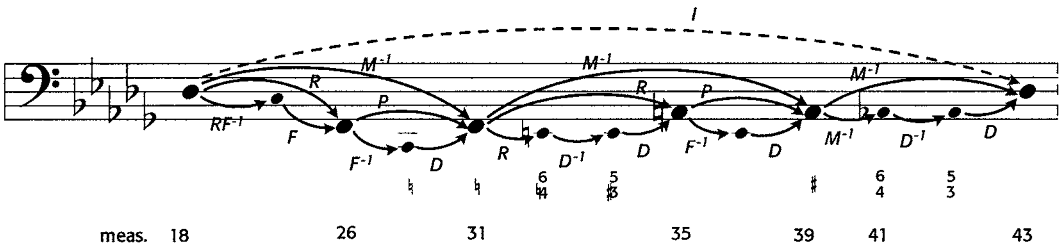


Figure 9.5 Liszt, *Consolation* no. 3, second episode

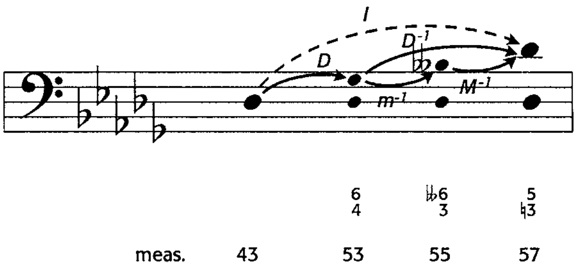
two measures of F major pedal point which follow. The overall motion from tonic D♭ major to this point is the major-third chromatic mediant relation $\boldsymbol{M}^{-1}$, with constituents ***R*** and ***P***.

Liszt now quickly destabilizes F major with a descending semitone in the bass, sending it by means of another ***R*** to A minor. Again there are two after-cadences, the first at m. 35 reaffirming A minor, the second at m. 39 breaking through to A major. This second ***RP*** series completes the second stage of an ascending major-third ($\boldsymbol{M}^{-1}$) circle. Up to this point, there is a sense of relatively equal alternation between ***R*** and ***P***, each step in the circle tonicized yet temporary, yielding two measures later to the next.[4] The harmonic relation of the minor and major triads is ambiguous: on one hand, the major triads may figure as pivot chords between minor tonics; on the other, the minor triads figure as intermediary chords in the major-third circle initiated by D♭ major at the beginning of the section. The expected continuation of this process would be another ***RP*** alternation, A major–C♯ minor–D♭ major, preserving some of the sense of ambiguity as it reaches the tonic. But Liszt intervenes, as it were, in the process. As Figure 9.5 shows, the expected next step is dramatically bypassed as A major gives way directly at m. 41 to a D♭ major cadential $^6_4$ at m. 43. This $\boldsymbol{M}^{-1}$ motion between LFM and tonic thereby completes the major-third circle, resolving much of the structural ambiguity of this section in favor of the major triads, and revealing the deeper, primary structure initiated in m. 18.[5] Thus the first section is built on diatonic ***R***, which naturally leads by two applications back to the tonic. The second section relegates ***R*** to being a subsidiary element of a structure built on its "beat" level from chromatic $\boldsymbol{M}^{-1}$, which naturally leads by three applications back to the tonic.

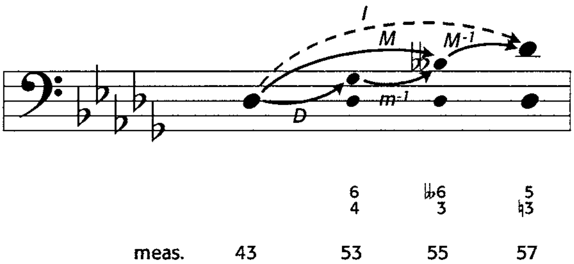
Although the third episode (Fig. 9.6) begins like the previous two with a complete four-measure statement of the first phrase, it devolves into a coda occurring entirely over a tonic pedal point. The consequent phrase leads by m. 53 to an inflection to subdominant G♭ major, its first appearance in the piece. It gives way by minor third, $\boldsymbol{m}^{-1}$, to B♭♭ major at m. 55, which yields in turn by major third, $\boldsymbol{M}^{-1}$, back to tonic D♭ at m. 57. The root of the B♭♭ major triad introduces a cross-relation with the B♭ found in the G♭ major triad. At the same time this process allows Liszt to revisit the cadential LFM of the previous section. Arriving this time by way of the subdominant rather than the ascending third-circle, he renders the cadence differently, bypassing $^6_4$ and dominant and going directly to root-position tonic. There are two ways to interpret the structure of this passage. In the first analysis, shown in Figure 9.6a, G♭ major initiates an upward third-divider whose middle term is B♭♭, so that the

[4] This relatively steady ***R-P*** alternation defines an instance of a hexatonic cycle. Beyond that, though, I would argue the presence of a major-third cycle grouping the hexatonic elements in pairs.

[5] It is interesting to note that the upward major-third circle reaches the same point as the more common downward T–LFM progression, such as the one discussed at the beginning of the Schubert B♭ major sonata. The downward progression is moving *away* from the tonic, so that the augmented sixth is needed to orient the LFM immediately back to a cadential $^6_4$. On the other hand, the upward third circle is headed *toward* its goal (first the LFM, then the tonic), so that the bare triad moves more naturally to the $^6_4$.



a) Third-divider governs



b) Lower flat mediant governs

Figure 9.6 Liszt *Consolation* no. 3, third episode: two views

higher-level process becomes a plagal oscillation, $\boldsymbol{D/D^{-1}}$. By contrast, in the second analysis, shown in Figure 9.6b, the LFM serves as the structural foil to the tonic, with G♭ as an intermediate term, and a chromatic mediant oscillation, $\boldsymbol{M/M^{-1}}$, as the higher-level process. Familiar diatonic arguments favor the first analysis: the primacy of the subdominant in the functional hierarchy, and especially the horizontalization of the minor subdominant in the IV–LSM–I progression. The second analysis relies more on context and a freer conception of tonality. As Figure 9.6b shows, the chord introducing the final cadence in all three episodes is a mediant: the URM in the first, and the LFM in the second and third. This privileges the LFM by analogy with the previous sections. Also, a higher-level chromatic mediant structure is the more natural outgrowth of the mediant-controlled structures of the previous two episodes. In this light, G♭ major represents another path than the third-circle to reach the LFM, which is the musically climactic chord in both the second and third episodes. Finally, the harmonic syntax of the final episode is I–IV–LFM–I. To paraphrase Riemann's deeply reasoned conclusion, the lower flat mediant possesses the ability to close directly to the tonic and need not be considered inferior to the subdominant.[6]

[6] This cadence is even more direct and consonant than the two discussed in the previous footnote: from dissonant German sixth and dissonant cadential $^6_4$, to consonant LFM and dissonant cadential $^6_4$, to the direct juxtaposition of consonant LFM and tonic triads in the final cadence.

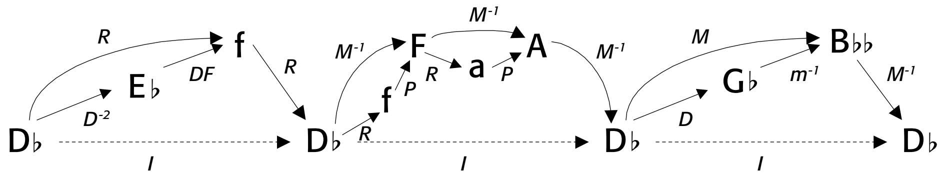


Figure 9.7 Basic network diagram for Liszt's *Consolation* no. 3

Both analyses have something to offer to the understanding of this passage, but in my mind the second is more in keeping with the details of the piece and with Liszt's forward-looking approach to harmony.

Hence two processes unfold over the course of the *Consolation*; both can be read from Figure 9.7, which unites the main structural elements of the bass sketches above into a network diagram for the whole piece. The first process provides continual change in the nature of structural third relations, from *leittonwechsel* oscillation to circle of thirds to chromatic-mediant oscillation. The second, more long-range process supplants the diatonic third relations up to m. 40 with chromatic third relations from m. 41 on. Together they provide for coherence, development, and unity in a piece during whose entirety the dominant and subdominant are never tonicized. One advantage of the holistic approach in this analysis is its ability to express how the high-level diatonic ***R*** relation in the first episode is replaced by $\boldsymbol{M}^{-1}$, becoming a lower-level element in the ensuing chromatic episode rather than retaining its status in an additive, diatonic ***RP*** process. Another advantage is its language, which permits the direct identification of a functional focal point, the LSM, and the description of the way in which it serves to organize the differing structural flows of the second and third episodes. These observations are possible only within a conception of true chromatic tonality, in which chromatic relations are understood to act in concert with diatonic relations rather than being dependent on them.

9.4 WOLF, *IN DER FRÜHE*

Hugo Wolf's song *In der Frühe*, no. 24 of his *Mörike-Lieder*, provides an even more distinctive example of music which progresses from diatonic content at the outset toward chromatic common-tone language at the end (Ex. 9.3). The song possesses a remarkable bipartite structure whose first half depends on stepwise motion and fifth relations, and whose second half depends solely on a mixture of juxtaposed chromatic third relations. In terms both of the work itself and in the context of Wolf's stylistic norms, it becomes clear that the song's harmonic content is carefully designed to convey the meaning of its text. The first half of Mörike's poem is dark, depicting the end of a sleepless night during which the narrator tosses and turns without respite from tortured thoughts. In contrast, the poem's second half is bright, Example 9.3 Wolf, *In der Frühe*, second half

affirming the joy and release from worry brought by the arrival of the new day, announced by the sound of morning bells.

Harmonic structure in the first half of the song is determined for the most part by a stepwise descending bass line beginning from tonic D minor. From there the music moves down (with a trudging effect) by a series of chromatically enhanced pedal points directly through C major and B major triads, the latter tonicized by its dominant. One more stepwise descent leads to a new phrase on A minor, beginning in m. 6 with similar material to the opening. Thus Wolf begins this section by filling in the downward interval from tonic to dominant, with the conspicuous use of chromatic B major rather than diatonic B♭ major. Once on A, the music forgoes stepwise motion and moves immediately down an additional fourth to E minor at m. 8, where it lingers on another pedal. The deviation to B major is now understood to anticipate the dominant of E minor, which remains until the end of the section.

In a one-measure transition at m. 10, the bass moves again, ending on C, which now supports a German augmented-sixth chord. This chord resolves directly back to its tonic a measure later without intervening chords in a direct LFM–tonic progression ($\boldsymbol{M}^{-1}$), of a type discussed above in section 8.3.2, Figure 8.9. At this point the tone of the text completely changes from anguish to optimism, and in response E minor is transformed into E major. In the world of this poem, what goes down must come up: the music continues to rise from this moment in a series of pedal points, all connected by chromatic mediants in direct juxtaposition, first to G major ($\boldsymbol{m}^{-1}$) in m. 14, then to B♭ major ($\boldsymbol{m}^{-1}$) in m. 18, and finally to D major ($\boldsymbol{M}^{-1}$) in m. 20. Most of this section, from m. 11 to m. 19, describes an incomplete ascending circle of minor thirds, broken only by the appearance of tonic D major in m. 20.

The network diagram of Figure 9.8 shows the overall transformational structure of the song. Two descending fifth relations linking minor triads anchor the first half, with the first descent significantly expanded by disjunct stepwise motion, whose relative roughness is implicit in its binary transformation formulas. Such incremental downward motion against a minor-mode backdrop mirrors the text's depiction of the agonizing passage of time accompanying a bout of insomnia. An ascending cycle of mixed chromatic third relations between major triads governs the second half, proceeding by a major third, then two minor thirds, and again by major third. The gradual rise (literal in the bass) and major-mode background convey the text's shift of mood from despondency to glad relief. Furthermore, the intrinsic nature of chromatic third relations contributes strongly to this effect. The greater harmonic distance they cover in relation to the fifth relations and step progressions prominent earlier in the song genuinely conveys the effect of quick elevation of spirit. Moreover, whereas many of the significant progressions in the first half are disjunct step relations,

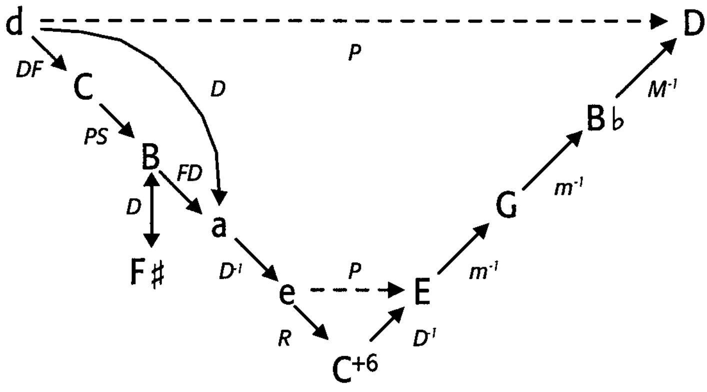


Figure 9.8 Network diagram for Wolf's *In der Frühe*

conveying a sense of effortful passage from one to the next, every element in the rising cycle of the second half is a common-tone progression. Wolf's setting brings out this difference; the stepwise moves sound uncomfortable and earthbound, while the third relations sound smooth and ethereal. The first of these, the mood- (and mode-) changing augmented-sixth resolution to E major at m. 11, is literally uplifting and particularly dramatic.

While the unequal intervals of the rising third-cycle may appear unorganized at first, each chord is exactly the right one for its spot. E major, of course, is the continuation of the tonic which ended the previous section; the parallel-mode relation allows for the best perception of this critical moment in the poem. It also allows for a parallelism between local $\boldsymbol{P}$ here at the midpoint of the song and overall $\boldsymbol{P}$ between beginning and end. G major, B♭ major, and D major, the chords that follow, all share common tone D, providing a continuity that firmly fixes the final arrival to the major tonic. However, this outcome is not otherwise expected, given the sequentially rising circle of minor thirds that precedes it, with each successive common tone prominent in the upper voice of the piano accompaniment, above the vocal line, at the moment of juxtaposition. This $\boldsymbol{m}^{-1}$ succession E–G–B♭ strongly suggests D♭ as its continuation with F as common tone. Instead, Wolf maintains the previous progression's common tone, D, which produces $\boldsymbol{M}^{-1}$. Accordingly, the upper voice of the piano, which had moved to F as if it were to be the next common tone, is obliged to move up by semitone to F♯. This highly palpable change underscores the dramatic climax of the song: the move to D major accompanies the text *glöcken* (contained in the compound word *Morgenglöcken*), the bells which signify release from suffering.[7]

There are some structural references to the first section contained in the second. The upward filling-in by third-arpeggiation of the interval from G to D ($\boldsymbol{D}^{-1}$) counterbalances the earlier downward filling-in of the interval from D to A (also $\boldsymbol{D}^{-1}$) by stepwise motion. Also, the appearance of B♭ major in the latter section makes up for its earlier absence and counterbalances the appearance of B major in the first section: each has its root on the locally mode-contrary sixth scale degree.

Without a doubt the sound of the mediant relations is intimately linked to the meaning of the text. The augmented-sixth $\boldsymbol{M}^{-1}$ resolution at m. 11 initiates the impression of spiritual lifting up more than any fifth relation could. The labored descent by disjunct steps and bland fourths contrasts sharply and clearly with the swift, sweetly dramatic rise by common-tone third relations. It would be most counterproductive to think of these last as alterations, colorations, or combinations when their intent and structural relationships are so clear, and when their effect so directly conveys the sense of the poem.

[7] It is difficult to ignore the strong affinities of this passage with the climactic moment of Schubert's *Die junge Nonne*, analyzed below in section 9.6, in which a major-third chromatic mediant relation also represents the chime of church bells and a release from the soul's suffering.

9.5 DVOŘÁK, SLAVONIC DANCE OP. 46, NO. 6

The sixth of Antonin Dvořák's first set of Slavonic Dances, op. 46, depends on chromatic mediant relations and other relationships which result from them for much of its large-scale structure and harmonic interest, even in the presence of significant fifth relations. Over its course the piece visits all four chromatic mediants, although they do not form an organized structural entity as they do in the Chopin mazurka analyzed above. Many of the mechanisms described in previous chapters, from direct juxtaposition to outright modulation, are in evidence here. The work consists of three sections, roughly comparable in length. Within these sections, three types of material of contrasting character alternate: an ambling music with an easygoing theme, stable harmonically; a più mosso, modulating, with a lively theme; and a syncopated music, containing most of the outright chromatic juxtapositions.

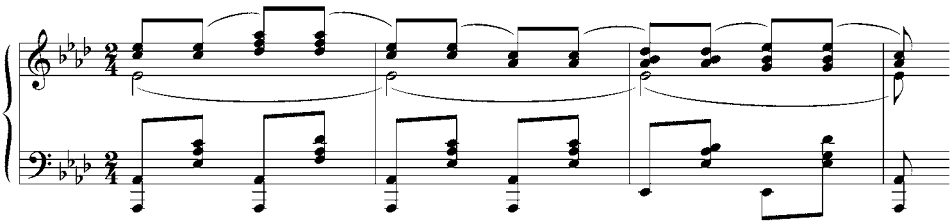
The formal structure of the piece is as follows:

First section	
Ambling music	mm. 1–28
Più mosso	mm. 29–48
Ambling music	mm. 49–65
Second section	
Syncopated music	mm. 66–89
Più mosso/transition	mm. 90–109/110–126
Third section	
Ambling music	mm. 127–161
Più mosso	mm. 162–203

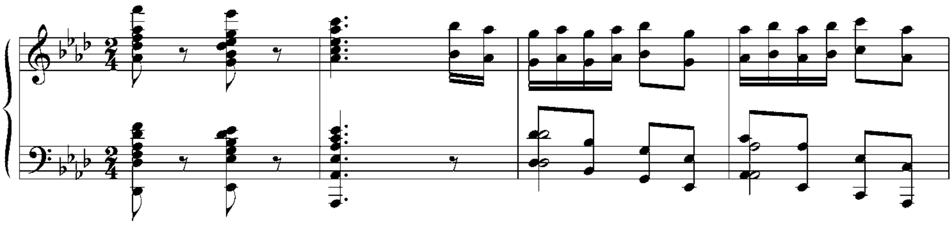
The opening section consists of two modules of ambling music, steady in tonic A♭ major, framing a più mosso episode containing conventional yet striking modulations to and from F major, the lower sharp mediant, at mm. 37–38 and 47–49. The middle section, by contrast, is considerably more active harmonically. M. 66 introduces the only appearance of the syncopated music in the piece, which quickly experiences a direct juxtaposition to E major, then a relative-chord-mediated move to C♯ major (in context really F♭ major, the lower flat mediant, and D♭ major), thus dividing the downward fifth from tonic to subdominant. However, C♯ does not figure as a goal; right away the music bounces sequentially back to E by juxtaposition. At this point, still within the syncopated music, E major becomes the origin of another downward chromatic third-divider, progressing by juxtaposition through C♯ major to A major (more accurately B ♭♭) at m. 90, the sectional boundary. This arrival at such a distant key is best explained as the outcome of a simple symmetrical network defined by the two chromatic third-dividers, seen in Figure 9.9, in which the common E–C♯ dyad, defining an interior minor third (***m***), serves to relate antipodes A♭ and A, a semitone apart, by exterior major thirds (***M***). A major, occurring

Example 9.4 Dvořák, Slavonic Dance op. 46, no. 6: materials

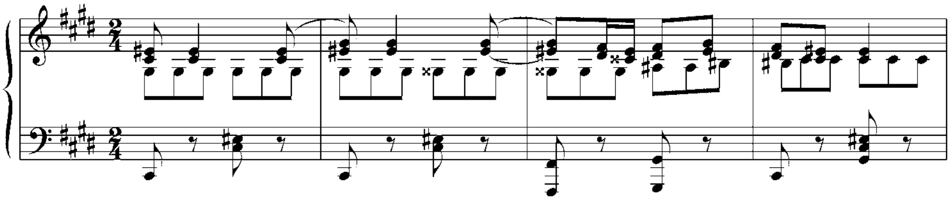
a) Ambling music



b) Più mosso



c) Syncopated music



essentially at the midpoint of the piece and greatly emphasized as a musical arrival, thereby comes to represent the focal point of opposition to the tonic in the piece, assuming a role associated with the key of the dominant or another diatonically related key in more traditional forms. Thus, although this piece's structure is not explicitly determined by a symmetrical chromatic-mediant network, it does possess a different sort of symmetrical network also articulated purely by direct chromatic mediant relationships.

Dvořák's common-tone path back from A major to the solid return of tonic A♭ major at m. 127 is completely different: this transition is the only passage in the piece completely bereft of chromatic third relations. From A major, an expected arrival at F♯ minor in m. 98 reaches D major instead, imparting the contextual character of a deception to this conventional fifth relationship. Following this, a sequence built from paired ***F*** relations linked by ***R*** ($\mathrm{D}\xrightarrow{F}\mathrm{g}\xrightarrow{R}\mathrm{E}\flat\xrightarrow{F}\mathrm{a}\flat$) blurs and redefines the functional relationships of its constituents. The second member of each pair, initially heard as a minor subdominant, eventually acquires tonic significance, especially when

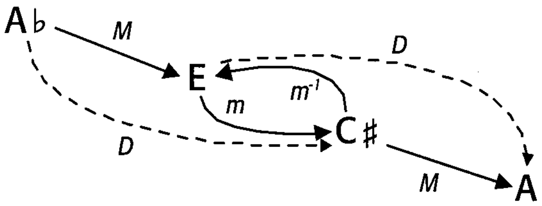


Figure 9.9 Dvořák, Slavonic Dance op. 46, no. 6: symmetrical network opposing semitone-related keys, formed by the first half of the piece

A♭ minor becomes (by ***P***) A♭ major in m. 114, and E♭ major a dominant pedal immediately thereafter.

The return to the tonic, along with the recurrence of the ambling music, signals the beginning of the piece's final section, expanded in its middle by a modulation to and from C♭ major, the lower flat mediant. The initial modulation to C♭ in mm. 141–144 is a smooth pivot-chord affair involving the tonic-mode mixture of the preceding transition. However, the modulation back to A♭ major in mm. 151–154 is achieved through the direct juxtaposition of two chromatically third-related dominants (G♭/E♭), according to the mechanism described in section 8.3.4. Thus the arrival back to the tonic is more marked than the earlier move away from the tonic, demonstrating that chromatic relations such as these may operate successfully toward the end of a phrase, and need not be confined to earlier moments to be offset by a more diatonic conclusion. This progression and the ones to be described below may be traced on the network diagram in Figure 9.10, which includes them all as part of a system which divides the upward fifth from tonic to dominant by its two different thirds, producing flat mediants and related chords on the upper half, and sharp mediants and related chords on the lower half. This system also displays symmetry: any pair of pitches at equal and opposite distances from the center reflect around the quarter tone between C♭ and C♮, the exact midpoint of the tonic triad.[8]

With F major, E (F♭) major, and C♭ major all heard, only the upper sharp mediant, C major, remains untouched. At m. 162, the più mosso returns, devolving by m. 170 into closing gestures which suggest an imminent end squarely in the tonic. However, this promise is deflected by ***M*** at m. 179 directly to F♭ major, which acts by $\boldsymbol{D}^{-1}$ as subdominant of C♭ major, a variant of the mechanism described in section 8.3.3. This gesture introduces a spate of chromatic mediants whose sense of quick long-distance motion serves to propel the music toward an even more vigorous conclusion, and to build toward the inevitable appearance of the missing mediant.[9] Following

[8] Or, the lower half is the retrograde of the upper half inverted around its midpoint.

[9] Granted, this may be more a conceptual and compositional inevitability than a logical/structural one as in Chopin's mazurka, although this looser organization does not necessarily mean that the perceived sense of completion would be any less absolute.

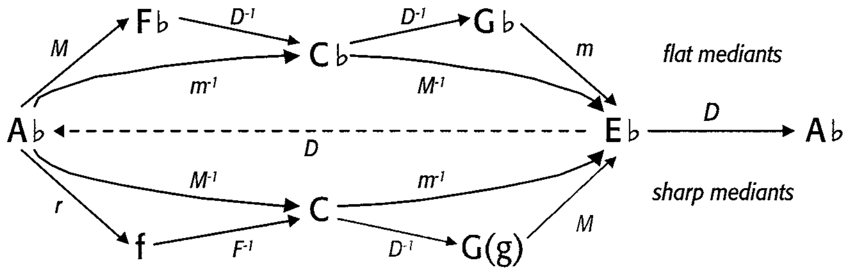


Figure 9.10 Dvořák, Slavonic Dance op. 46, no. 6: symmetrical network defined by the third section

this are juxtaposed cadences in C♭ major and A♭ major, reversing the foregoing process: C♭ moves by $\boldsymbol{M}^{-1}$ to E♭, which then moves by $\boldsymbol{D}$ back to A♭. The closing material begins again, deflected this time not by $\boldsymbol{M}$ but by $\boldsymbol{r}$ to an F minor triad. This constitutes a break in the symmetry of this section's harmonic relations: as a quick glance at Figure 9.10 will show, F major would be called for here. Dvořák's choice to use F minor instead derives from the parallel position of the two chords in their respective phrases. Whereas F♭ major and F major are disjunct, F♭ major and F minor are $\boldsymbol{S}$-related, sharing A♭ as common tone between themselves and with the tonic. A♭ provides continuity in the passage as well as a point of reference against which to hear the harmonic divergence of the two phrases. Also, F minor is the relative minor, while F major is a sharp mediant. By forestalling the chromatic move, Dvořák, having reserved his last mediant until the very end, makes the long-awaited arrival to C major by $\boldsymbol{F}^{-1}$ at m. 190 that much more dramatic: the sharpward chromatic progression happens at just that point, not a progression earlier as was the case with the flatward phrase.[10] Following this achievement, juxtaposed cadences in C major and A♭ major lead immediately back to the closing material and the final cadence.

This analysis suggests some questions. Is the symmetrical process which produces A major as antipode to A♭ major of tonal or purely mechanical nature? Does A major in fact act in opposition to the tonic, or is it just an undifferentiated event in a meandering harmonic journey that fortuitously ends up where it began? Taking the second question first, a good case can be made for opposition: A major occurs as a structural goal at the midpoint of the piece, is harmonically most distant of all the tonicized areas, is strongly emphasized musically by material otherwise associated with the tonic, and clearly initiates a modulatory process back to the tonic. As for the first question, the answer depends to an extent on one's view of tonality. If a tonal work is required to carry a constant *literal* background tonic presence (say through its prolongation by the dominant) to exist, then Dvořák's symmetrical

[10] This prominent C♭ → C♮ semitone relationship at the end of the piece may also serve as a summing-up gesture, recalling the important structural A♭ → A♮ semitone relationship in the first half, as well as the C♭ → C♮ semitone motion which transforms A♭ minor into A♭ major at the return of the opening theme.

process is mechanical and its result triadic but nontonal. But if one adheres instead to the *principle* of departure from and perceptible return to the tonic, then this work is consummately tonal. The music is clearly heard to move away chromatically from its tonic in organized fashion, to crest in a completely different harmonic place, and to progress coherently back to where it began. Put another way, it is certain *that* the music is in tonic territory, even if one is not exactly sure *where* the tonic is. One knows that it is not too far away and will be recognizable when it returns. That knowledge makes this music tonal.

9.6 SCHUBERT, *DIE JUNGE NONNE*

Schubert's song *Die junge Nonne* provides a compelling instance in which notions of mediant function help to clarify the nature of harmony and musical meaning in a work. Third relations permeate the piece and provide a critical vehicle for dramatic development and textual enhancement in the song. This is a useful insight, given that most of the apparent large-scale harmonic features of the song are not mediant-based. The most significant harmonic event, for instance, seems to be the switch from tonic F minor to F major at the midpoint of the song. Moreover, an important harmonic concern of the song hinges on the tension associated with the close proximity of tonic F minor and the acoustically near but harmonically distant chord/key of F♯ minor, along with their corresponding weak-mediant relatives, D♭ and D major. All of these keys acquire textual associations, mirroring contrasting states of anxiety and earthly torment, emptiness and death, and calm and spiritual purity. Strong harmonic disjunction provides a means to mirror the rapid fluctuations of mood characteristic of the song's highly emotionally charged text.

There are two parts to the harmonic structure of *Die junge Nonne*, corresponding to the two main sections of the song. In the first part, from the beginning to m. 51, Schubert establishes harmonic antipodes linked to the two extremes of emotional affect in the text. In the second part, from m. 52 on, these antipodes act in relation to the new parallel-mode tonic; these more extreme keys are balanced by their median, F major.

The song, reflecting the poem's structure, divides into the following sections:

Introduction	mm. 1–8
First stanza	mm. 9–34
Second stanza	mm. 34–50
Third stanza	mm. 51–61
Fourth stanza	mm. 62–94

The opening eight-measure introduction traces a square, strong cadential phrase in tonic F minor. The conventionality of this phrase stands in contrast to the striking harmonic content of the music accompanying the first three lines of text, which follows in mm. 8–19. This music can be represented readily enough by Roman numeral harmonic analysis:

F minor:	i – VI^6			
F♯ minor:		V^6 – i – VI^6		
mm.	8	11	15	19

This analysis (which includes the low bass notes occurring before and after the progressions) documents an ascending, modulating two-part sequence by chromatic semitone whose elements are connected by a diatonic pivot chord. But scale-degree labeling passes over other aspects of the passage crucial to a deeper understanding of its harmonic and rhetorical content. These aspects are:

(1) The phrase structure of the passage, in which each new chord, rather than each two-chord sequential element, carries a new phrase of text with a similar setting;
(2) The nature of harmonic change, in which the move to a new chord occurs at a similar point in each phrase – the rhythmic and textual climax – creating an onomatopoeic impact at that moment;
(3) The similar, heightened meanings of physical effect the texts carry at these climax points: *heulende* (howling); *zittert* (shakes); *leuchtet* (flashes);
(4) And, finally, the similar, though not identical, ways in which all the chords are approached and achieved.

The effect of these textural, rhythmic and textual factors is to give essentially equal weight to each chord arrival. This in great part supersedes the apparent harmonic structure of a two-element sequence with the effect, or illusion, of a four-element sequence corresponding to the phrase and dramatic structure of the text and music. The move to the C♯ major $^6_3$ chord at m. 11 strikes the ear as an arrival to much the same degree as do the moves to the F♯ minor $^5_3$ chord at m. 15 and the D major $^6_3$ chord at m. 19, even though the first chord is, technically, a less stable first-inversion triad serving as a pivot between two distantly related keys, while the second chord is a much more stable cadential arrival, and the third is again a less stable pivot, resolving irregularly. Nonetheless, both $^5_3$ and $^6_3$ are stable, consonant formations, contributing to the sense of equality of all the arrivals.

Another important factor equalizing these three progressions is the melody. In the second progression, which as a descending plain fifth, ***D***, contains the strongest root motion, the upper-register melodic progression is minimal: D♭–D♭, a common tone. On the other hand, in the first and third progressions, both of which are relative mediant relations, ***R***, the melodic progression is quite strong: C–D♭ in the first, C♯–D in the third (Fig. 9.11). These ascending chromatic semitones give a distinct effect of leading tone and resolution to these progressions, especially in this textual, textural, and rhythmic context, balancing out the descending-fifth root motion of the second progression. This weakening of the dominance of the dominant–tonic connection between D♭ major and F♯ minor is revisited and exploited later in the song.

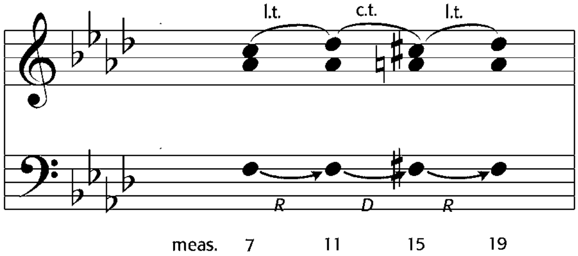


Figure 9.11 Opening progressions of *Die junge Nonne*

By these means the opening of *Die junge Nonne* establishes two premises important in the development of the song: the juxtaposition of the key areas of F and F♯ minor and the related D♭ and D major, and their interconnection by third as well as fifth relations. Furthermore, the meaning-relationships associated with these keys are initiated. From the beginning, the text conveys a scene of growing physical intensity, from the howling wind to the shaking windows and finally the crash and flash of lightning and thunder; each arrival at the climax of a text phrase and the accompanying chord change heightens the drama. The pitch content of the music reflects this in two ways. First are the more obvious voice-leading progressions, in which first the upper voice, then the lower ones, move up by semitone at the climactic moment, mirroring the text in conventional fashion. Second is the harmonic progression directly from flat keys (F minor/D♭ major) to sharp keys (F♯ minor/D major), as well as the subsidiary shifts from darker minor to brighter major in each pair.[11]

Completing the passage and the stanza is a change in the tone of the text and in the direction of the harmony. The eerie darkness of the night and the (implied) cold stillness of the grave – the polar complement of the earlier anxiety and arousal – are summoned musically by a progression of two diminished-seventh chords, stepwise downward and flatward – thus a reversal of the previous motion by upward semitone – and a cadential return to tonic F minor.

The second stanza, which follows, recounts a similar process. Interpolated at its beginning, though, is an auxiliary line which momentarily introduces new territory. The beginning of this line, mm. 30–32, offers a fleeting glimpse of F major, the parallel tonic, paired with the word *immerhin*. This word serves to briefly detach and distance the narrator from the tumult she so vividly describes. F major, a new harmonic area neither flat nor sharp, embodies the detachment, while serving as an appropriate foreshadowing of the eventual harmonic and spiritual goals to be

[11] The distinction I make between the flat-key areas aligned with tonic F minor/D♭ major (whose diatonic sets contain four and five flats, respectively) and the sharp-key areas aligned with contrasting F♯ minor/D major (three and two sharps) is a convenience. It might be more meticulous simply to identify F- and F♯-related key-purviews, rather than flat- and sharp-key areas, but I think that retaining the looser terms is suggestive in an appropriate way of the opposition Schubert creates here. The two areas are potentially connected, since D♭ major is F♯ minor's dominant.

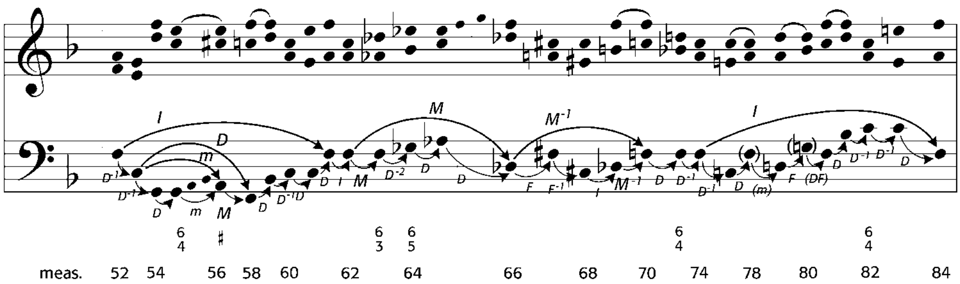


Figure 9.12 Long-range and local transformation process in the second half of *Die junge Nonne*

achieved in the second part of the song. The rest of the line's text sets up the premise of the stanza to come: internalization of the storm's physical intensity as emotional upheaval. This descent back into the maelstrom is accompanied by an immediate fall back into the ground-state of F minor at m. 33.

The associations of motion toward the sharp keys with intensity and upset, and of motion toward the flat keys with physical and spiritual emptiness, are strengthened as the song continues. They are immediately reinforced, of course, by the repetition proper of the opening passage, which begins at m. 35. This time the parallel impact of the chord changes is even more forcefully communicated by the text: the poem reiterates the word *jetzo* at each critical moment (mm. 37, 39, and 41), introducing yet another factor eliciting a sense of equal weight for each chord. Increasing intensity is also achieved by the elimination of the two-measure musical preparations which previously separated phrases of text. This doubles the harmonic rhythm and presents the succession of violent images twice as quickly, with hardly a pause for breath, until the return once again to emptiness and tonic F minor.

The second half of the song (see Fig. 9.12) begins at m. 51, with an abrupt shift from tonic F minor to its parallel major. The first phrase of this section, mm. 51–61, begins with harmonic motion tonicizing the dominant, followed by a chain of chromatic mediant relations: a direct move from C (locally as dominant $^4_2$) to A major at m. 56, and a striking juxtaposition of the latter (as dominant ninth) with the dominant-seventh chord on F at m. 58. This series of chromatic mediant progressions traces a downward third-divider spanning the fifth from C to F, with the chord on A at m. 56 interrupting and temporarily displacing the proper goal of V^4_2 at m. 58.[12] The first mediant progression catapults the music directly into sharp-key territory (A being the relative major of F♯ minor); the second draws it back just as quickly into the purview of the new tonic. Both goal chords of these mediant progressions are unstable, giving this passage an additional unsettled aspect. The chord on F, as V^7/IV, leads immediately through IV to a strong tonic cadence in F major. The overall progress of the phrase, then, traces a sharpward rise

[12] This passage was discussed above in reference to Figure 8.19, section 8.3.4.

from tonic F major through C to A, followed by a marked drop away from sharp territory back to middle ground. This sequence of events reinforces the text, in which a transition from storminess, recalled at the beginning of the passage, progresses through anticipation and, at the moment of breakthrough back to tonic territory, purity (*gereinigt*). The ninth chord on A is also noteworthy of itself: it is the only chord with root A in the entire song. Its framing by two chromatic mediant relations involving dominant sevenths sets it off sharply from its musical surroundings, such that it points to itself rather than to any tonic. This effectively mirrors the associated text, where for the first time the nun mentions her heavenly bridegroom, the source of her anticipated redemption from anxiety to calm and inner peace. However, the instability of the mediant progressions and the initial sharpness of the chord on A belie her claim of inner peace, conveying a strong sense of the suspense of waiting for him.[13]

The last stanza of the song brings a final, decisive opposition: rising tension fueling a move toward extremes, followed by the dissolution of that tension by spiritual redemption and a move back toward the tonic. Despite the nun's assertion that *im Herzen ist Ruh*, her thoughts turn again to delivery from her soul's torment. Schubert responds with an elaboration of the harmonic material of the opening phrase. At the mention of her yearning gaze (*sehnendem Blick*, m. 63), he provides an off-beat reminder of the first LRM progression of the piece (m. 11), moving to a D♭ major $^6_3$ chord. This time, however, he does not go on immediately to F♯ minor, but lingers to establish D♭ major in its own right, by way of a chromatic bass progression culminating in a strong cadence at m. 65. This tonicization of D♭, which, at the symmetrically opposite distance of a major third from tonic F, counterbalances the A major of m. 56, occurs at a symmetric point in the text: the second and only other mention of the bridegroom. Thus, rising tension in the text has again resulted in motion away from tonic F major toward a harmonic extreme, this time in the flat direction. As in the first phrase of the song, this D♭/C♯ is followed by an F♯ minor triad. Earlier, at mm. 14–15, the two chords related as dominant to tonic, although the progression's strength was diluted by contextual factors. Here the F♯ minor triad appears only in $^6_3$ position, alternating with C♯ major as if striving for but falling short of root position. The effect is clearly that of a plagal tonicization of C♯/D♭ (see Ex. 9.5). The text at this point, *Erlöse die Seele von irdischer Haft!* – the final mention of the narrator's torment – gives insight: her plea for release from her soul's earthly confinement translates into a musical striving toward release from the F♯ minor axis. At m. 70, C♯ major is transformed into a D♭ dominant-seventh chord, once more implying tonic F♯ minor. But this tendency is now decisively neutralized; D♭ moves away by direct juxtaposition to tonic F major, having been reinterpreted

[13] Despite the overtly religious nature of the text and the situation it describes, the poem's high emotion and drama, both internal and external, lend an acutely physical character to the narrative. Moreover, the poem, in focusing on the act of marriage as the path to purity, and in identifying Christ solely as the bridegroom, never as God, carries a strongly sexual subtext, brought close to the surface by the sheer physicality of the narrative as well as by Schubert's pulsing realization.

Example 9.5 Schubert, *Die junge Nonne*, mm. 66–75

as a lower flat mediant initiating an $\boldsymbol{M}^{-1}$ move.[14] In this way the accumulation of tension implied by the resumption of the opening sequence's sharpward climb is superseded by the stronger effect of the direct mediant relation, which accomplishes an immediate transition from the anxiety represented by the F♯ minor axis to the emotional and spiritual calm of F major.

[14] The direct juxtaposition of these chords also heightens the immediacy of the image of pealing church bells, I think. The clash of D♭ and F harmonies brings to mind (and ear) the clash of the complex overtones which characterize the sound of large bells.

In the progression from D♭ dominant seventh to F major, the second chord is the tonic of the song, so that the progression embodies the cadence LFM–T, a chromatic mediant relation. On the level of key relation, though, the dominant seventh has clearly pointed toward F♯ minor as its tonic. At this level, then, the implied relation is from F♯ to F – not a third relation.[15] This yields a greater clash between levels than the previous chromatic mediant progressions of mm. 54–58, which juxtaposed two dominants. As a result, this progression sounds more disjunct, and the relation more distant. At the same time, the progression is quite stable, for it culminates with the true tonic.

While this progression may not reach the emotional and dynamic intensity of the previous striking mediant relation (m. 58), it is, in light of the nature of the text, another sort of dramatic climax of the song: its *softest* moment. It is also a moment of great dramatic disjunction. During the D♭ dominant seventh, the nun beseeches her heavenly groom to free her from her passions. At mm. 59–60, her attention shifts and her mood changes abruptly, for she hears church bells and achieves some of the inner peace she has been craving. Accordingly, the accompaniment switches abruptly and directly to F major, the key which all along has signified that spiritual state. This state of transport is achieved harmonically not by the "earth-bound" sequential or cadential mechanisms used earlier in the piece, but by something which moves in a different dimension: the direct, functional mediant shift. Thus, the disjunction in the text is perfectly paralleled by the harmonic warp in the music and by the symbolic disjunction it has come to represent.

At the same time, viewed from another perspective, this mediant progression also achieves an integration of high order – one which draws on a different correspondence between the poetic and musical texts. It employs the common tone, signature of the functional mediant relation. From the beginning of the piece through m. 48, the primary content of the accompaniment, located in the piano's middle and lower registers, is punctuated regularly by a upbeat–downbeat repeated-tone motive. This motive gives a characteristic rhythmic profile to the piece; it also reinforces the melody at points and allows naturally for the functional mediant relations. At m. 71, the repeated tone resurfaces. Moreover, the text, *Horch! friedlich ertönet das Glöcklein vom Turm*, uncovers the motive's semiotic component: the uneven repeated tones are revealed to be church bells pealing in their tower. The nun, who up to this point has been wholly absorbed in the storm whirling about her, lost in the internal state it mirrors (thus the absence of the motive from the beginning of the second half of the song until m. 69), comes out of her self-absorption at this moment and perceives what has been in fact going on during the entire span of her narrative: the pealing of the bells. For the first time her consciousness and the "consciousness" of the accompaniment meet on a common level, joined by awareness (*Horch!*) of the common-tone motive, upon which is predicated the splendid mediant progression at m. 70, which captures exactly the shift of the nun's

[15] Cf. Table 8.2. Other aspects of this progression are discussed in the commentary to Figure 8.9.

Table 9.1. *Appearances of high F in* Die junge Nonne

Measure	F as chord member	Chord containing F	Note preceding F
32	fifth	IV^6_4	C
54–55	seventh	V^7/C	E♮ (as passing tone)
58–59	root → fifth	V^7/IV → IV	E♮ (as fifth)
61	root	I	E♮ (as third and l.t.)
65	third	p.t.; I/D♭	E♭; G♭
71	third	D♭ dom. 7th	C (B♮ following)
80–81	root → fifth	V^7/IV → IV	D
83	root	I	E♮ (as third and l.t.)

attention from intense concentration on her internal state to hearing what is going on outside.

Following this climactic moment is a dénouement, harmonically settled, in tonic F major. The rising sequence of mm. 78–81 is diatonic, not chromatic as before; remaining within the purview of the tonic, it returns unambiguously to it. In fact, at the downbeat of m. 80, the moment in the sequence at which it could begin to move toward the zone of extreme keys (to F♯ either through A, or through A♭ as dominant to D♭/C♯), Schubert pointedly lifts the material up a minor third. This places the music squarely back on the harmonic track to the tonic, paving the way for a strong cadence to F major, followed by a coda containing several after-cadences. This "earned" absence of conflict reflects the text, in which the nun now looks hopefully heavenward, leaving behind her expressions of anguish. Unison between vocal line and bass line on the upbeat – downbeat figures of each measure from 76 to 81, which mimic the repeated-tone bells in the middle of those measures – underscores and enhances the integration between melody, text, and accompaniment. This is especially evident at the high point at m. 81, where the repeated pitch is tonic F, and the text explicitly mentions the *süße Getön*, the pervasive repeated-note motive.

The influence of mediant relations in this song resonates with the unusual, somewhat static nature of its melodic development. Over and over, the melody traces stepwise ascents to F, the tonic pitch. In the first half, it spans the octave from F below, while in the second half, the ascent is essentially limited to the fourth C–F. The high F is achieved several times, as shown in Table 9.1 – only once in the first half, but seven times over the course of the second half. Yet this apparently repetitious process results in a melody which sounds fresh with each new stanza. It helps to think like Hauptmann, considering the context in which each F is heard. Doing so, it becomes clear that these eight high pitches are not at all the same F. In fact, this F functions in the large as a long-range common tone whose meaning (as chord member) changes throughout its appearances, much like the B♭ in the opening of Schubert's last piano sonata, traced earlier in this study.[16] In both

[16] Section 2.4.

cases, the common tone connects more than the elements of a chromatic mediant progression.

The first important F occurs in m. 32, during the fleeting appearance of F major. This arrival to F is relatively weak: it is approached by leap from C, not by step (in contrast to the strong stepwise motions between C, C♯/D♭, and D which precede it), and immediately afterward falls back by step to C. Furthermore, it is the fifth of a neighboring $^6_4$ chord: a secondary member of an evanescent harmony. Still, insubstantial as it is, the F establishes this upper reach of the song's melodic register, and provides a point of reference for future approaches to the pitch.

The next high F occurs shortly after the beginning of the second section, during the tonicization of C major. It is an unstable pitch, the seventh of V^7, approached by stepwise motion over a dominant pedal and resolving stepwise down to E♮, the third of C major. While this E appears as the sixth of I^6_4, it is not dissonant. This I^6_4 is directly juxtaposed with A major; E serves as common tone. Thus I^6_4 acts as a C major chord, not as a dissonant anticipation of G major.

The third approach to F, at m. 58, comes on the tail of the first set of chromatic mediant relations. This F is reached by step through E♮ and persists as a common tone in a dominant–tonic progression: E is fifth of the A major chord, and while F begins as the root of a dominant-seventh chord, it ends up as the same fifth as it did in its first appearance in m. 32. While this IV, the goal of a secondary cadential progression, is more stable than the earlier IV^6_4, it is still clearly in the midst of a phrase, and the melodic progression sports the character of a false arrival. Once again there is an immediate stepwise fall away from the F. Directly afterward, at m. 61, comes a reflected stepwise rise back to the same pitch. This time, though, while the approach is again E♮–F, the pitches are third and root of their respective chords, and are truly heard as $\hat{7}$–$\hat{1}$. This is the first appearance of the high F as root of a (tonic) triad, and achieving it in this way transforms its sound.

The next appearance of the F in m. 65 presents a new meaning for the pitch – as a passing tone becoming the stable third of D♭ major. Within a few measures, though, the chord is destabilized, and the high F of m. 70 is heard, again strikingly transformed, as a dissonant member of the tritone also containing B. The effect is underscored by the melodic context. Whereas in m. 65 the pitch is surrounded by stepwise motion, in m. 70 it is approached by a leap of a fourth and left by a leap of a tritone. This last F also belongs to the dramatic chromatic mediant relation between D♭ and F, playing the familiar role of common tone set off in the highest register. However, it proceeds to become root of F major only in the bells of the piano accompaniment, not in the melody proper. This shortchanges this appearance of F of its qualities of melodic arrival, setting up the expectation of another, more satisfying arrival to this well-trod spot.

This final proper arrival takes place only considerably later at mm. 80–83, toward the end of the song. This is a double approach to the F, the same as at mm. 58–61. The only difference is in the initial approach to the pitch: whereas in m. 58 it is stepwise, here there is a leap to F, akin to the first approach back in m. 32. This serves to weaken the arrival to the first F, so that the final stepwise approach in m. 83 seems stronger in comparison, giving this last F, fittingly, the most weight of all the arrivals to it in the song.

9.7 CONCLUDING REMARKS

By now I trust that the reader is comfortable thinking in terms of the language of common-tone tonality, and understands my argument for its usefulness in explaining signature aspects of nineteenth-century music. My hope is to have successfully communicated my position that harmony as well as voice-leading contributes to coherence in chromatic music, and that it is possible to conceive of a well-ordered harmonic system including both diatonic and chromatic relations – thereby providing a contribution to the current discourse on theory of nineteenth-century music.

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