A Practical Theory for Music Analysis: Principles, Categories, Extensions

by

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DEDICATION

For Dad, who would have loved sharing in this journey with me.

For Kirsten, currently with me sharing this journey in love.

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PREFACE

This project examines two types of music analysis—rhythmic reduction and Schenkerian graphing—by defining, exploring, and extending categories that frame these activities. Viewing these types of analysis through the categories developed here provides a convenient way for focusing a discussion of many different types of musical content. This study begins by examining familiar kinds of musical content, as a way to initiate a discussion of ways in which these categories may be practically extended to include other, less familiar, kinds of musical content. By choosing our categories to be concrete yet flexible, they not only provide convenient focal points for discussion; they also allow for the inclusion of a wide variety of musical content, in diverse media and on many different possible levels of abstraction. The project as a whole comprises a group of test cases of the thesis that conceiving music analysis through framing categories allows for productive extensions of existing approaches as well as affinities—sometimes surprising ones—among musical activities not usually conceived as primarily analytical.

Part One begins by describing rhythmic reduction in a general way, as a product that embodies three basic categories. These categories also double as goals, a rhythmic reduction striving to "sound like the piece," "preserve its essentials," and "fit in a proposed environment." While analytical rhythmic reductions, such as those designed to support Schenkerian analyses, align conveniently with these categories, one of the purposes of this study is to ponder how these categories might be ethically and profitably expanded beyond their traditional confines, as there are many ways to "sound like a piece" or to conceive of a particular aspect as "essential," just as a wide range of environments might fit a particular musical activity, some involving performance primarily, others devoted to description or other kinds of discussion. As with all of the groups of categories in this study, this set of categories is not meant to be all inclusive, as other elements may be at play in any situation; but for the purposes of this investigation, these general designations seem to encompass most of the content and relationships involved, and their very generality will allow for the kinds of extension that form the main purpose this study.

As these categories are expanded, filled with different varieties of musical material, the relationship between product and piece becoming more and more abstract, it is fair to question whether the term "rhythmic reduction" any longer applies. Use of this term is maintained simply as a matter of practicality, standing for any type of analysis that represents our three categories. Different terms, such as "notation-preserving analyses" or "musically scripted simulacra" would also convey the overall idea, but these neologisms would probably be more cumbersome to use. This study sets out to test the boundaries of the categories, not the patience or goodwill of the reader.

With this definition of rhythmic reduction, as a product, in place, we will explore some of the processes involved in converting the notes in the score into tones in the representation. Once more, using categories will help guide and focus our discussion. The processes we will consider are those of "keeping," "altering," "adding," and "omitting" particular content.

Rhythmic reductions of various types are considered in two basic environments, those of *making music* and those of *studying music*. Rhythmic reductions created in the service of making music are further divided into three venues: performance, personal, and rehearsal. Rhythmic reductions created in the service of studying music are also divided into three venues: discussion, pedagogy, and analysis. Here the generality of our initial categories will prove especially useful, as it will allow us to draw connections among a wide variety of musical activities in diverse media.

In Chapter 1, our consideration of numerous types of performance reductions will move slowly up the ladder of abstraction, as we begin to discover the multiplicity of ways that a rhythmic reduction may be said to "sound like the piece," to learn what may constitute an "essential" to be "preserved," and to explore some benefits and limitations of a particular "environment of fit." Some examples are reasonably straightforward, such as piano reductions of orchestral works; others are decidedly abstract, as in the case of Al Yankovic's "Dare to be Stupid," a rhythmic reduction (in our extended sense) that sounds like Devo, preserves the group's style, and maintains a similar environment of vocal and instrumental fit.

Rhythmic reductions for performance in the personal venue expand the possible content of our categories as they address, among other issues, the level of difficulty, focusing on challenges posed by the ability of performers. Here the essentials preserved must be playable, whether in the form of a simplified Chopin nocturne for beginners or a suitable chart for a five-button plastic guitar for use in a video game.

Rhythmic reductions in the rehearsal venue (the final category of those designed for making music) still maintain a relationship to an original piece, but they reside further up the ladder of abstraction. In this venue, rhythmic reductions tend to preserve the minimum amount of content deemed essential to learn a particular work, as the performer is expected to fill in the remaining musical material as necessary. Among the examples illustrated here are bare lyric sheets, lead sheets, guitar tablature, and vocal scores.

Chapter 2 encompasses the second main arena for making rhythmic reductions: studying music. Here we will see how rhythmic reductions found in the discussion venue represent only the content necessary to advance the larger conversation, perhaps in the form of a single melodic line that serves as a thematic reminder or possibly a string quartet reduced to two staves, just to name two. Pedagogical rhythmic reductions in this arena tend to focus on highlighting relationships involving theory or analysis in general, rather than those specific to the piece itself. Examples are taken from the classic textbook *Harmony and Voice Leading*, by Aldwell and Schachter.

Our final venue in the arena of studying music is that of analytical rhythmic reductions, which are of particular importance to music theory, as they are integral to the activity of making Schenkerian analyses. This portion of our investigation requires a set of categories specific to rhythmic reductions that serve the production of Schenkerian graphs. Though graphs may also be said to "sound like the piece," "preserve its essentials," and "fit a proposed environment," I sought to identify a group of categories more specifically tailored to the products of graphing. Striving to consider Schenkerian graphs apart from the full apparatus of Schenkerian theory—and any attached connotations or perceived limitations—I decided on the categories of "tones," "ranking," "grouping," and "structural levels." This seems to be the most neutral, flexible, and inclusive set of categories available for the enterprise, and most conducive to the kinds of extension this project seeks to discover. As with the term "rhythmic reduction," some readers may wonder if the term "Schenkerian graph" is appropriate or if some other term, like "Schenker-influenced" might be better. It makes no difference, if we simply think of products that convey the four basic categories of "tones," "ranking," "grouping," and "structural levels" stated above.

Having established these particulars for the Schenkerian (or Schenker-influenced) graph, Part One of this study finishes with a discussion of analytical rhythmic reductions, focusing on types of information conveyed in a rhythmic reduction that tend most directly to inform the creation of a Schenkerian graph. Two case studies follow, showing the application of our categories of tones, ranking, grouping, and structural levels. The results of these studies show that while analytical rhythmic reductions provide some clarity in the visual representation, highlighting the basic harmony and voice leading, they also have difficulty providing deeper insight into issues of ranking, grouping, and structural levels, most often because of the need to preserve the metrical framework and the generally low level of abstraction that can be clearly and conveniently depicted in rhythmic reductions of this kind.

Part Two of this dissertation examines the arenas of counterpoint, harmony, and melody from two distinct categorical perspectives. The first categorical perspective examines the CORE of each area of study, its "context," "objects," "relationships," and "effects." One of the purposes of this set of categories is to frame each subject in perhaps more common or easily recognizable terms, sorting out some of the aspects to be translated into the categories of Schenkerian graphing, those of tones, ranking, grouping, and structural levels. The CORE category of "relationships" is perhaps the most intriguing, as it often highlights aspects that are difficult to represent explicitly in a Schenkerian graph.

In Chapter 3, our study of counterpoint is straightforward enough, showing how elements of intervals, diminutions, linear intervallic patterns, consonant support, and the treatment of consonance and dissonance all inform the creation of a graph.

Chapter 4 shows that certain elements of harmony, on the other hand, are less simple—and less helpful. Harmony, in the guise of the harmonic scale step, is the most powerful grouping agent in graphing: every note is grouped by harmony at some level of structure. What seems unexpected is of how little intrinsic value such common elements as motion by fifth, harmonic rhythm, and even harmonic syntax prove to be when it comes to making decisions about ranking and grouping.

Since many elements of melody are addressed, if only indirectly, in other sections of this project, Chapter 5 will examine just two aspects in particular: register and reaching over. Register has the ability to bring even some non-juxtaposed melodic tones into relationship, a relationship easily captured by a graph. Reaching-over motions often magnify other tonal relationships, perhaps amplifying an arpeggiation or other melodic succession, but they can also have grouping agency of their own. In some cases, reaching-over motions can supplant harmony, at a particular level of structure, as the dominant grouping agent.

Having seen in Part Two how the most typical content (tonal counterpoint, harmony, and melody) is represented in our categories of tones, ranking, grouping, and structural levels, Part Three considers some less traditional musical information—less traditional, that is, in terms of Schenkerian graphing. By considering rhythmic reductions from so many angles in Part One, by stretching the boundaries of its broad categories, by thinking in such abstract terms, we have better prepared ourselves to take on the challenges of examining how various other types of material may also provide content, raw material that may be expressible in these categories of graphing. The final part of this dissertation considers how we might begin to stretch the boundaries of our categories for Schenkerian graphs even further, similar to the way we expanded the categories of rhythmic reduction in Part One. Thinking of Schenkerian analysis and graphing as a type of tool, freed from the full range of assumptions that govern Schenkerian theory, opens up new possibilities for the representation of musical—or perhaps even nonmusical—information. The possibilities are as exciting as they are limitless, but I have decided to consider two types of musical content developed by composers early in the twentieth century. Though significantly expanding on the tonal practices discussed earlier in the project, the content chosen for this part involves techniques that are fairly concrete and approachable, allowing us to set the tone and direction of what further study may entail. This contemplation of elementary twentieth-century materials will address two types of content: basic elements of transformation theory, focusing on neo-Riemannian transformations, and some foundational aspects from set theory, especially elements of twelve-tone composition. One of the goals of this investigation will be to form reasonably defensible statements as to why graphs using this type of content may "sound like the piece" and "preserve certain essentials" of a proposed viewpoint in this environment of fit.

Chapter 6 shows how basic triadic transformations have the advantage of simplicity; any two consonant triads can be shown as related by some combination of transformations. The problem is that these kinds of relationships supply almost no help in ranking or grouping tones in a graph. In addition, if the analytical symbols (such as P, L, and R) are omitted, the relationships may remain hidden. Fortunately, it would appear that these monikers may appear freely in a graph, highlighting these small relationships, the standard Schenkerian notation illustrating the rest of the reading. In other words, the relationships are able to be graphed.

As we move into the arena of set theory for Chapter 7, especially in the context of twelve-tone works, matters become less clear and more complicated. In particular, almost all relationships are free and contextual, effects are *forged*, rather than merely *controlled*. Certain decisions are relatively easy: all of the notes of the score are often converted to tones, and grouping agents such as sets, aggregates, rows, and such are straightforward enough. The chief problem in converting notes into tones in a Schenkerian graph involves the designation of *ranks* among tones and groups of tones. Such ranks may be proposed, and they will help formulate a hearing pathway, but the veracity of a reading will likely hinge on whether or not it "sounds like the piece" and "preserves its essentials" in a convincing way.

As at the end of Part One, Part Three finishes with two case studies. I will propose a partial graph for the opening of Schoenberg's Piano Piece Op. 33a, based on the analytical insights of Joseph Straus. In addition, I will present two partial readings from the opening of Schoenberg's String Quartet No. 4, Op. 37, based on my own analysis, in conjunction with those of Straus and Joel Lester. Here we will see some of the problems and pitfalls in this type of analysis, mostly involving the depiction of relationships, not entities.

As a whole this project shows how conceiving rhythmic reduction and Schenkerian graphing in terms of broad categories clears pathways for gathering musical information, as well as launching points for expansion. The flexible and neutral nature of these categories encourage more abstract thinking, unhindered by unwanted connotations or even existing theoretical paradigms. The products created in this enterprise are remarkably diverse and abstract, and I hope suggestive to further study of this type in the future.

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ABSTRACT

This project examines two types of music analysis—rhythmic reduction and Schenkerian graphing—by defining, exploring, and extending categories that frame these activities. Part One begins by describing rhythmic reduction in a general way, as a product that embodies three basic categories: "sound like the piece," "preserve its essentials," and "fit in a proposed environment." By choosing our categories to be concrete yet flexible, they not only provide convenient focal points for discussion; they also allow for the inclusion of a wide variety of musical content.

Part One continues with a description of Schenkerian graphing in terms of its own categories: "tones," "ranking," "grouping," and "structural levels." These categories are necessary because of the unique nature of Schenkerian analysis. Part One finishes with a discussion of analytical rhythmic reductions, focusing on types of information that tend to inform the creation of a Schenkerian graph. The results of two case studies show that while analytical reductions provide clarity in the visual representation, they also have difficulty providing deeper insight into issues of ranking, grouping, and structural levels, often because of the need to preserve the metrical framework and their generally low level of abstraction.

Part Two examines the arenas of counterpoint, harmony, and melody from two distinct categorical perspectives. The first examines the CORE of each area of study, its "context," "objects," "relationships," and "effects." This set of categories helps frame each subject in more common or recognizable terms. The category of "relationships" is perhaps the most intriguing, as it often highlights aspects that are difficult to represent explicitly in a Schenkerian graph.

Following this investigation, certain aspects of these arenas are translated into the four categories of Schenkerian graphing stated earlier.

Part Three considers how the boundaries of our categories for Schenkerian graphs may be stretched even further, exploring the inclusion of elements from transformation theory and set theory. In the end, this study will form some reasonably defensible statements as to why graphs using this type of content may “sound like the piece” and “preserve certain essentials” of a proposed viewpoint in this environment of fit.

Part I

Rhythmic Reduction: Plurality of Perfection

Chapter 1

Rhythmic Reductions Used in Making Music

There is no perfect pickle; there are only perfect pickles.
–Howard Moskowitz[1]

Rhythmic reduction provides a useful entry point to this study of practical aspects of music analysis. There are several reasons for starting here, a few of which I want to highlight from the outset. As part of a time-honored tradition of working with music, rhythmic reduction has been used in assorted contexts and by countless people. In addition, many aspects of rhythmic reduction are analogous to those of Schenkerian graphing. Rhythmic reductions, thoughtfully applied, can also collaborate productively in the creation of a Schenkerian graph, which will be a concern throughout this project, especially in Part Two.

Rhythmic reductions and Schenkerian graphs are kindred in many respects. They are both abstractions, portraying the score in unique ways based on specialized goals, while staying true to a specific hearing, the individual interpretation of the analyst. Each of these two kinds of product opens up new opportunities for analysts and their readers to engage with a work, perhaps

[1] Comment attributed to Howard Moskowitz by Malcolm Gladwell in his TED talk from February 2004. See Malcolm Gladwell, "Choice, Happiness, and Spaghetti Sauce," filmed February 2004, TED video, 17:26, accessed 25 August 2013, www.ted.com/talks/malcolm_gladwell_on_spaghetti_sauce?language=en#t-297017.

facilitating discussion or performance; exposing some deeper-level insight; or simply providing needed clarity as a precursor to further investigation. For both the rhythmic reduction and the Schenkerian graph, the use of musical notation grants easier access to the representations, allowing the works to be heard, at diverse levels of abstraction, by those viewing them. In essence, rhythmic reductions and Schenkerian graphs are both in relationship with and displaying relationships within the piece being studied.

Though similar in these regards, rhythmic reductions and Schenkerian graphs are still different products constructed through differing processes, and they can interact with each other in various ways. The most obvious distinction is worth mentioning here, because it involves the use of basic musical notation symbols. In their textbook, Allen Forte and Steven Gilbert state this contrast succinctly: "In an elementary way, the reductive process—simplification through stages—has already been introduced…. In dealing with this matter we used two kinds of music notation: *rhythmic notation*, where notes are assigned value according to temporal placement or duration (in other words, traditional music notation); and *analytic notation*, where the value of a note depends upon its relative melodic and harmonic importance."[2] On this view, a rhythmic reduction maintains a temporal, metrical framework, even if at some level of abstraction. In a Schenkerian graph, however, rhythmic notation draws attention to the relative melodic and harmonic importance of each note, often by highlighting groupings and structural depth. In this environment, shorter durations (including stemless noteheads as the "shortest") represent tones of lesser structural weight within a proposed hierarchy.

If rhythmic reduction were viewed as just an analytical technique, however, that would be selling it quite short. There are different kinds of rhythmic reductions, each with individual

[2] Allen Forte and Steven E. Gilbert, *Introduction to Schenkerian Analysis* (New York: W. W. Norton, 1982), 134, emphasis original.

goals and outcomes, and each kind deserves consideration in its own right. In the next section, I will lay out my own theory of rhythmic reduction, which builds on some traditional views but also highlights a certain level of expanded scope and flexibility. This examination will significantly enhance our discussion of how rhythmic reductions and Schenkerian graphs relate to and cooperate with one another.

1.1 Rhythmic Reduction: An Expanded View

A question like, "What is rhythmic reduction?" sounds so simple, almost innocent, implying that the term has but one meaning, suggesting that you could simply take the score, apply an algorithm, and come up with the desired result, as if rhythmic reduction were a kind of sausage grinder: put in the material, turn the crank, watch the concoction come out the end, tidy, encased, complete, ready for consumption. A little experience with rhythmic reductions will show, however, that they are often anything but simple, in either substance or assembly, each one individually suited to its task, each one dependent on the purpose, goals, and environment of the enterprise at hand. Howard Moskowitz, during an interview with National Public Radio discussing Malcolm Gladwell's TED talk about the topic of happiness, stated: "I helped identify the fact that there's a plurality of perfection, and that what *you* like is not necessarily what *I* like."[3] Moskowitz was saying that perfection is a matter of personal taste, that any product near the level deemed perfect for some individuals would not be perfect for others, that there could be any number of perfect examples—each different from the rest. In the case of a rhythmic

[3] Howard Moskowitz, "Ideas Worth Spreading," transcript from the TED RADIO HOUR from NPR, posted on 4 May 2012, www.npr.org/templates/transcript/transcript.php?storyId=151899611, emphasis added.

reduction, the desire of the individual constructing it, the goals that shape it, the environment it inhabits, and countless other factors all contribute to developing a "perfect" product.

Within this cluster of perfections, some elements appear to be reasonably constant. This should not come as a surprise, as David Zarefsky, a noted expert in the field of argumentation studies, points out in one of his articles: "It is almost a truism … that productive disagreement must be grounded in agreement. Shared understanding of the goal, shared commitment to the particular procedures, and shared adherence to basic truth-claims are thought to be necessary."[4] For rhythmic reductions in this expanded view, analytical types often come to mind first, but they share certain qualities with other, more abstract types as well. In other words, some people might like their pickles zesty, some might like them sweet, but all of them know what a pickle is, as an *entity*—a shared basic truth-claim, in general terms at least—even if the assortment of perfect pickles is vast. Therefore, I would like to focus our attention, for the moment, on a rhythmic reduction as an *entity*, and seek to understand some of its fundamental goals, leaving a discussion of rhythmic reduction as a *process*, the employment of its "particular procedures," for later investigation.

For the most part, a rhythmic reduction embodies three main aspects: it tends to sound like the piece, preserve the essentials of the work, and fit the prescribed environment. Within each of these three goals lies the possibility for substantial variation. "Sounding like the piece" could refer to surface issues like melody, harmony, instrumentation, tempo, articulation, text, and numerous others, as well as to more abstract issues like hermeneutical content, idealized underlying paradigms of musical structure, overall contour, timbre, style, and so on. "Preserving

[4] David Zarefsky, "The Appeal for Transcendence: A Possible Response to Cases of Deep Disagreement," in *Topical Themes in Argumentation Theory: Twenty Exploratory Studies*, edited by Frans H. van Eeveren and Bart Garssen (Dodrecht: Sprinter Netherlands, 2012), 77.

the essentials" depends mainly on how the term "essential" is defined for the endeavor. The matter of preservation then becomes subject to the level of abstraction involved, the proper codification of the data, and the necessary fit. While the essentials are often thought to be simply the melody and harmony, what happens if only one of those is preserved? In a more abstract sense, what if only the text or the contour is deemed essential? "Fitting the prescribed environment" could range from something as simple as needing to fit on two staves or on a single page of a publication or across ten fingers, to something as complex or abstract as a voice-leading graph or a five-segment melodic line for a plastic guitar or a setting for voices that includes emulating percussion instruments. The diversity available is endless, but these three basic tenets help shape some boundaries, facilitating the decision-making processes encountered during the construction of any rhythmic reduction.

The final aspect of rhythmic reduction, as an object, that I would like to touch upon has to do with its nature: a rhythmic reduction is *in relationship* with the original music, *interacting* with it in various ways. I characterize a rhythmic reduction as "in relationship" with the original rather than, say, "a simplification" of it—even though the appellation "reduction" might suggest otherwise—because the final product is an abstraction, created purposefully, thoughtfully, striving to fulfill the three main goals outlined above: to sound like the piece, preserve its essentials, and fit the intended environment.

The first two of these goals help to assure that a rhythmic reduction never loses sight of its forbear completely. A rhythmic reduction can "sound like the piece" even if the level of abstraction is high, possibly acting only as a kind of reminder of the original content. A "preservation of the essentials," no matter how few or how altered, also provides a link to the score, though filtered through the particular interpretation.

The third element, the arena of "fit," is perhaps the most intriguing, routinely bringing with it numerous challenges and side effects during the development of a rhythmic reduction. Though in many cases the fit is prescribed at the outset (a piano reduction, for example), it should neither be construed as some sort of Procrustean bed, disfiguring the essentials or the sound of the piece, nor should it be perceived as artificially or arbitrarily limiting by nature. Issues of fit do force decisions to be made regarding the proper codification of the data, but such a need ought to be an opportunity, not a hindrance, fruitful, not forceful. The pressure that the environment of fit exerts on the musical essentials, in any number of different directions, and the challenges it presents open up intellectual space for beautiful handcrafting, leaving room for extra creativity and even the liberty to alter or add content in new and interesting ways; fit is much more about what is being put in rather than what is somehow taken out—even if some of that content is brand new.

Having considered some of the properties of the rhythmic reduction as an object, we now turn briefly to some of the processes involved in constructing them. As intimated above, most of the processes involved in constructing a rhythmic reduction can be placed into one of four general categories: keep, alter, add, and omit. Aspects that are kept could be as simple and general as the melody and harmony or as complex and detailed as texture or style. Alterations come in any number of flavors and levels of abstraction; for example, registers could be modified, rhythmic placements could be shifted, harmonizations could be reworked, or styles could be transformed. Content that is added might be as ordinary as a descant line to a hymn tune, as unique as a jazz-style accompaniment to a Baroque work, or as abstract as running commentary about the original work being performed. Objects might be omitted for numerous reasons. Perhaps they reside on the lowest level of structural significance, or they might simply be too high to sing or too difficult to play on an alternate instrument.

Bearing in mind these aspects of rhythmic reduction, considered as product and as process, the following discussion will address through examples some characteristic types of rhythmic reduction, in our expanded sense, organized into two broad categories: those for use in *making music* and those for use in *studying music*. This division, as well as each of the subdivisions to come, is not meant to be all inclusive; other possibilities certainly exist: a patron having a rhythmic reduction in a prominent, well-lighted place on the wall, serving as a piece of art, just to name one. I have chosen these broad categories, rather than choosing to focus exclusively on analytical specimens, since all of the types to be considered share the goals discussed above.

Rhythmic reductions associated with making music may be divided into three smaller groups, each focusing on a primary setting: performance in concert, personal enjoyment, and rehearsal. Rhythmic reductions linked with studying music may be similarly divided into three smaller groups, each centered on uses in discussion, pedagogy, and analysis. Some of this discourse will remain general, in order to establish a theoretical framework for the illustrations that follow. At the end of Part One of this project, we will consider outcomes designed to be perfect assistants in creating Schenkerian graphs.

1.2 Rhythmic Reductions Used in Making Music: Performance Venue

With these general concepts in place, we take up our study of specific types of rhythmic reduction with those constructed in the service of making music, leading off with those destined for the concert hall as their primary venue: *performance* types, the inclusion of an *audience* being a primary deciding factor among venues.[5] In this initial group of rhythmic reductions designed for making music, more traditional settings will take center stage, those intent on sounding like the piece in the most direct of ways. Following that, the focus will shift toward more abstract types and examples, those intent on preserving perhaps fewer essentials from the original or perhaps those choosing to focus instead on new creative content.

When shaping a rhythmic reduction for the concert hall, getting fit, if you will, requires particular attention to the performing force. The fit must take into account the number of musicians and their abilities: skill level, number of fingers, vocal range, and such; as well as the number of instruments and their abilities: types and absences (percussion, in particular), overall range, dynamic scope, voicing issues, limits of attack (especially for repeated notes), limits of sustain, and limits of unique orchestral effects such as vibrato, fluidity of dynamic range, plucking, harmonics, playing on the bridge, flutter tongue, and many others. Awareness of these boundaries serves to constrain some of the many possibilities involved in making a rhythmic reduction, but each new fit also brings its own level of freedom, advantages, and benefits. For example, certain performers or instruments could be highlighted, showcasing their special abilities or timbres. Smaller venues could be engaged, allowing for more intimate settings. New content might be introduced, adding to, altering, or even replacing elements of the original work. A good place to begin is with possibly the most traditional of traditional types: rhythmic reductions for keyboard, which have the advantage of featuring, in general, a low level of abstraction.

Keyboard reductions have been around for centuries, giving players and audiences access to various vocal and instrumental works without having to assemble the original ensemble.

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[5] As we shall see, however, these and other rhythmic reductions can cross over into the other two categories of making music: personal enjoyment and rehearsal.

Customarily, the goal has been to sound like the piece in the most forthright manner, having the pianist *impersonate* the orchestra to the degree capable in the environment of only ten fingers and one keyboard, always bearing in mind the abilities and limitations of the performer and the instrument, being ready to alter, add, or omit, information content as necessary for the proper fit in the new arena.

Martin Katz, in his wonderfully exhaustive book on piano collaboration in performance, suggests in his chapter on "The Steinway Philharmonic" that the person making a piano reduction of an orchestral setting should strive to be able to say: "This is the very best compromise, the best lie I could devise. I have heard the original. I have experimented sufficiently, and I feel that my version respects and preserves the salient and essential features of this music, as I hear and understand them. I deliver my version to my partner [in the collaboration] and my audience with the confidence that only pianistic comfort and guaranteed practicality can bring."[6] This statement intimates that the number of available fingers is not the only limitation or interest in the exercise, and Katz later divulges some information content apart from the written notes that should also be added to the reduction: cues of instrumentation, articulation, effect, just to name a few, prompts for an imitation of the highest quality. He describes techniques for such pianistic imitation of the orchestra, covering all of the common instruments and groupings (strings, winds, brass), deliberately, going into fine detail, talking plainly and clearly about how to sound as much as humanly possible like the original, as if trying to take the mantle of "symphony in a box" away from the pipe organ, placing it firmly on the lid of the piano.

[6] Martin Katz, *The Complete Collaborator: The Pianist as Partner* (New York: Oxford University Press, 2009), 155.

Figure 1–1: Mozart, “Voi che sapete” from *Le nozze di Figaro*, opening

Figure 1–2: Katz, performer’s reduction of Mozart’s “Voi che sapete” from *Le nozze di Figaro*, opening

Katz engages with our three main goals in clever and elegant ways in his rhythmic reduction of Mozart's "Voi che sapete," reproduced as Figure 1–2.[7] Sounding like the piece, in this instance, amounts to much more than simply transcribing every tone. Here, a handful of notes are missing, some are displaced, others are hidden (for example, much of the original bassoon melody), and a few are even added or altered somehow, yet this version sounds much like the original. Using these distinctive, artistic decisions, Katz shows that the proof is in more than the pitches, also stating: "Be aware that everything that is sustained—everything!—is a woodwind. The combination of flabby, unvoiced fingers for the string pizzicato and concentrated, very voiced fingers for the winds makes the orchestration here as magical as Mozart's notes themselves."[8]

His rhythmic reduction for this piece demonstrates that the *texture* constitutes an essential element to be preserved, more essential than even some of the given rhythmic and pitch content. For example, in the second half of bar 2, if the middle Cs of the violins and the bassoon were transcribed as originally composed, they would fall nearly on top of one another—and would also need to be played with two different techniques, in order to emulate their instrumental origins—leading to the possibility of a muddy texture and a confused hearing. Katz thwarts this problem by substituting A–C–E♭ for Mozart's C–E♭–F in the tenor register, thus maintaining the pizzicato accompaniment and motivic structure, as well as the exact rhythmic placement of the bassoon's melodic middle C. This setting is true to the essentials of the piece, even if some details are removed or rearranged.

[7] Katz, *The Complete Collaborator*, 174, my reproduction (editorial errors have been fixed without comment).
[8] Katz, *The Complete Collaborator*, 174.

As with the first two goals, fitting the new environment also has less to do with the number of fingers and more to do with other matters. Katz advises us that practicality is essential as well, remarking that certain musical aspects could trigger a change in a particular rhythmic reduction, where: "something is risky or downright impossible technically[;] something is playable but does not capture the orchestral truth[;] something is playable and sounds acceptable, but there is a better solution[;] something is playable and sounds orchestral, but does not warrant my estimate of the many hours of practice required to master and guarantee it."[9] Other examples of Katz's alterations to the original Mozart work could be given,[10] but a final question must be addressed: "'Could the composer have written this?' An affirmative answer is required before your decisions can be finalized."[11]

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[9] Katz, *The Complete Collaborator*, 190.
[10] Most notably, the displacement of the cello and bass notes from the downbeats of bars 3 and 4, allowing the bassoon melody to be "heard" through the sea of plucked notes around it. Ingenious!
[11] Katz, *The Complete Collaborator*, 231.

Figure 1–3: Brahms, Symphony No. 3, III, opening

This next set of examples will highlight other aspects of our expanded view of rhythmic reduction, aspects which go beyond the consideration of only transferring over as many pitches as feasible; as stated above, the struggle is often more about deciding what to keep rather than what to cut. The focus this time will be on increasingly complex performance reductions of the opening of the third movement from Brahms's Symphony No. 3, progressing from two versions for solo piano to a version for piano four-hands (on one piano) to Brahms's own version for two pianos.[12] Over the course of these discussions, we will see that sometimes the notes transcribed from (or at least strongly implied by) the score can fail to "capture the orchestral truth," sometimes new content can emerge simply as a product of the new environment of fit, and sometimes content can be added in order to give extra attention to an essential element already being preserved.

[12] These rhythmic reductions could be seen to cross over into the private venue, as well. For more on this perspective in the case of piano four-hand reductions, see Thomas Christensen, "Four-Hand Piano Transcription and Geographies of Nineteenth-Century Musical Reception." *Journal of the American Musicological Society* 52, 2 (1999): 255–298.

Figure 1–4: Percy Goetschius, performer's reduction of Brahms's Symphony No. 3, III, opening, for piano solo

Figure 1–5: Robert Keller, alternate performer's realization of Brahms's Symphony No. 3, III, opening, for piano solo

The extracts in Figures 1–4 and 1–5 come from published keyboard reductions by Percy Goetschius[13] and Robert Keller.[14] In these two examples, we can see that only a couple of fundamental ideas are preserved. The haunting melody and its accompanying triplet figures (though without their eighth-note suffixes) provide enough of the original character to recognize this work, but one simple difference between these two versions makes all the difference in the world. In bar 2 of the full score, the a♭^{2} in the first violin marks the endpoint of the ascending

[13] Johannes Brahms, *Symphony No. 3, Op. 90*, arr. Percy Goetschius for piano (Philadelphia: Theodore Presser, 1938), 20.
[14] Johannes Brahms, *Symphony No. 3, Op. 90*, arr. Robert Keller for piano (Berlin: N. Simrock, 1884), 103.

triplet figure, and also fills in the third of the F-minor harmony, justifying its possible inclusion in any rhythmic reduction. Goetschius takes this note, transposes it down an octave, and places it just above the melodic g[1] of the right hand, while Keller places it below the melody instead. Both versions are certainly playable, but Keller's solution seems the better one, the a♭ still constituting the high point of the line, yet without competing against the main melody. Here the orchestral truth, the dissonance between G and A♭, originally a minor ninth, is more musically represented by the major seventh than the minor second, it seems.

Figure 1–6: Keller, reduction of Brahms's Symphony No. 3, III, opening, for piano four-hands (one piano)

Figure 1–6, a piano four-hand reduction of Brahms's Symphony No. 3, III, also by Keller, shows how a certain fidelity to the score can give rise to new content purely as a byproduct of the setting.[15] The player on the left-hand side of the piano bench has the melody in the right hand, imitating the high-reaching cellos from the low-strings section, while the other performer's arms surround it. This formation maintains the continuity of melodic lines and enables some interesting close-quarter maneuvers. For a more practical and less artistic setting, the player on

[15] Johannes Brahms, *Symphony No. 3, Op. 90*, arr. Robert Keller for piano four-hands (New York: Schirmer, 1893), 26–27.

the right could easily take the melody in the left hand and the upper part of the triplet figure in the right hand, thus alleviating any potentially awkward arm crossing; however, the physical intertwining of arms in Keller's version seems to anthropomorphize the interweaving of melodies and rhythms, which are such a part of the character of this movement. In this way, new *visual* content has been generated simply by attempting to stay true to the personality of the movement, not just the notes.

Figure 1–7: Brahms, rhythmic reduction of his Symphony No. 3, III, opening, for two pianos

Finally, we arrive Brahms's own setting for two pianos (Figure 1–7).[16] His adaptation is intriguing in several respects. The previous two renditions strive to maintain not only as many of the notes but also as much of the spirit as possible, and Brahms, of course, has taken his version to another level. His is the first to include all the triplet notes in their original registers and to retrieve all of the duple sixteenth notes of the violas, but his iteration also leaves some material behind; the eighth-note suffixes of the triplet figures are still absent, along with the longer notes

[16] Johannes Brahms, *Symphony No. 3*, *Op. 90*, arr. Brahms for two pianos (Berlin: N. Simrock, 1884), 31.

of the woodwinds, just to name a couple of elements.[17] What is omitted from his version, however, is much less striking than what he adds to it. Neither the performance marking of *dolce* nor the roll from C to A♭ appear in the original manuscript of the orchestral score, but they both serve the same purpose: to highlight and maximize the sweet softness at the culmination of the ascending triplets. In this way, Brahms takes special care to ensure that the essential, *dolce* quality is preserved, even amplified, perhaps because the *espressivo* swell, along with the timbre of the high cellos, are incapable of being replicated on the piano.[18]

As demonstrated above, even in an environment where every note could be covered by twenty fingers and two pianos, Brahms chooses to alter and omit certain content, instead making sure that the essence of the movement, including elements that are less tangible, is maintained. In this way, his thoughtful rhythmic reduction keeps more than just the notes in mind. This is no MIDI exercise, where the notes are entered in and the synthesizer plays; rather, this is a human exercise, where more than the notes is retained, leading to a more effective outcome.

As we can begin to see more clearly from the previous examples, my theory of rhythmic reduction encompasses products that are in relationship to an original work, striving to sound like it in some way, preserve some of its essential characteristics, and fit into a new setting. Some of these examples, as well as many of the ones to follow, depart from a more traditional viewpoint of rhythmic reduction, but this expanded outlook allows for a vast number of new, yet related outcomes, each sharing basic traits, uniting what appear to be markedly different

[17] As was the case of Katz's setting of the Mozart, close repetitions of notes in the same register, along with what would be an awkward mixing of performance techniques for winds and strings, especially when notes are shared (as in the case of the flutes and the first violins in bar 1), hinder a transcription of *every* note and effect.

[18] Other facets could always be considered, but even a quick glance at how the left hand of the first piano regroups, alters, and omits tones to serve the emphatic and voice-leading goals desired answers one of Katz's earlier questions to the fullest: *only* the composer could have written this.

creations under a shared umbrella. The ideas of stretching boundaries and uniting outcomes will continue to be of interest throughout this project.

The next set of illustrations considers rhythmic reductions that are designed to be more abstract, more distantly related to the original: keeping, altering, adding, and omitting content as necessary and desired in order to achieve that distance, the distance being formed as much by intent as by content. In addition, remember that rhythmic reductions incorporating the most material from the original are not necessarily the least abstract, just as the longest notes of a work are not necessarily the most highly ranked elements in some underlying voice-leading structure. The following instances will engage with six categories of musical elements, arranged from least to most abstract: melody, harmony, performing force (people and instruments), text, visual aspects, and style, each showing some different levels and types of abstraction.

1.3 More Abstract, Performance-Oriented Rhythmic Reductions

Because melodies are so memorable, so characteristic, so unique, capable of drawing us closer to the original work, rhythmic reductions engaging with relationships of melody tend to be the least abstract. In what follows, I would like to consider rhythmic reductions that interact with melodies in four ways: keeping the melody of the original only, adding melodic embellishments, adding a new melodic line, and constructing a work around given melody.

Melodies removed from any accompanying environment often keep a close relationship with the original. Popular at sporting events, “The Star-Spangled Banner,” sung as a solo, would seem to point to an underlying original, more complete work in the most direct sense; however, even though we might recognize this particular tune and could easily construct a suitable harmonization for it, differing harmonizations are certainly possible.[19] In this way, even this widely known performance work can still be seen as an abstraction, if a modest one.

A small step further away from an established melody arises from alterations or additions in the form of embellishments. Sometimes the embellishments are written out, as in the case of variations on a theme. Sometimes points of embellishment are suggested by the notation, adornments in the form of turns or trills or the like. At other times, embellishments might be implied by tradition: in centuries past, section repeats in certain Baroque settings were often ornamented; in the near past, performers like Barbara Streisand would decorate and alter melodies, adding personal and unique touches to any number of songs; and today, some performers save certain embellishments for live performances (or singing competitions).

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[19] For a much more detailed and intriguing discussion of this work, including a look at just how many alternate lyrics and settings are found, see Jerry Blackstone, Mark Clague, and Andrew Kuster, "A Star-Spangled Bicentennial: A Conversation with Jerry Blackstone, Mark Clague, and Andrew Kuster," *The Choral Journal* 54, 9 (2014): 7–17.

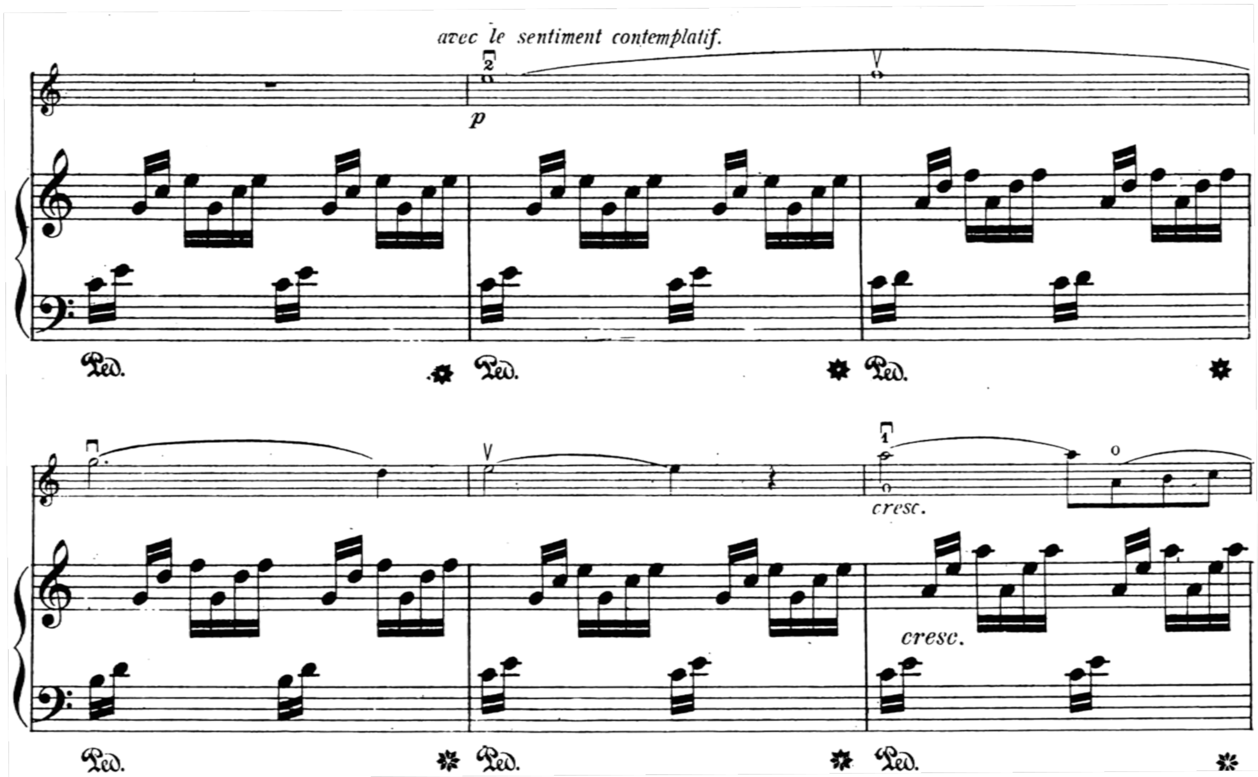

Figure 1–8: Gounod, beginning of his added melody to Bach's Prelude No. 1 in C Major, BWV 846

Adding a new melodic line to a given original work also opens up new levels of abstraction. Descant lines, for one, bring their own level of interest and richness to a composition, and this content is usually of secondary importance. On the other hand, sometimes a melody could be added and be considered of primary importance, even though it is simply implied, in a sense, by the music. Charles Gounod, in his *Méditation sur le Premier Prélude de Piano de S. Bach*, improvised a melody above J. S. Bach's Prelude No. 1 in C major, BWV 846 (Figure 1–8). In a more modern setting, Natalie Cole sings "virtual" duets with her late father. These settings of "Unforgettable," "When I Fall in Love," and others are touchingly poignant and desperately beautiful in their own way, with the addition of this new content, even adding a visual reference in concert settings: singing along with black-and-white videos of Nat's original works.

Figure 1–9: Brahms, *Variations on a Theme by Haydn*, Op. 56b, opening

Figure 1–10: Vaughan Williams, *Fantasy on a Theme by Thomas Tallis*, opening

For certain cases, the melody is not added or altered; instead, it is the centerpiece around which the rest of the work is constructed. This is not an instance of mere harmonization or simple borrowing; rather, the following pair of examples show how a given melody is treated as the key ingredient. Brahms borrowed from Haydn (he thought) when he composed his *Variations on a Theme by Haydn* (Figure 1–9). The result is less a traditional theme and variations and more of a spectacle that squeezes so much out of so many aspects of this seemingly simple melody. In the same way, early in the twentieth century, Ralph Vaughan Williams imagined a piece around Thomas Tallis's *Third Mode Melody* from the English Hymnal of the time, producing his *Fantasia on a Theme by Thomas Tallis* (Figure 1–10), infusing his modern style with elements and melodies of the Renaissance.

Harmony provides a foundation that allows for a bit more abstraction, in relationship to the original work, and is certainly not as closely tied to it as melody is. Deeper-level, slower-moving harmonic progressions, in particular, could be found to undergird any number of compositions, from the blues or other types of jazz improvisation to longer pieces that are governed by little more than moving from the home key to a closely related key and back again. Nearer to the surface, altered harmonic settings of a work often cling to the original through melody. Harmonizations of hymn tunes are often recast, possibly to suit the meaning of a particular text more closely. Broadway show tunes and parlor songs could also be reset, perhaps another arranger adding new points of interest to an older work.

E♭ C^7 Fm Fm6

Fm6

Figure 1–11: Chorus from "My Melancholy Baby" by Ernie Burnett and George A. Norton (1912 version), with chord names added

E♭6 C^7 Fm C^7 Fm
Come to me my melancholy baby, Cuddle up and don't be blue;

E♭ G♭dim Fm^{7-5} E♭ $E♭maj^7$ $D♭^7$ C^7 Fm C^7 Fm $B♭^{7-9}$ Fm^7
Come to me my mel – an – chol – y ba – by, Cuddle up and don't be blue;

Figure 1–12: Lead sheets from Allen Forte[20] and from Judy Garland's version in the 1954 film *A Star is Born*, respectively. (Both later versions have been transposed to E♭, in order to facilitate reading the differences between them.)

[20] Allen Forte, *Listening to Classic American Popular Songs* (New Haven: Yale University Press, 2001), 6.

Figures 1–11 and 1–12 show three different harmonizations of Burnett and Norton's classic song, "My Melancholy Baby." In Forte's version, the only conspicuous change is the alternate colorization of the word "be." The version from 1954, while maintaining similar harmonic goals to the original, infuses intervening harmonies, adding an extra layer of chromatic activity. Each version maintains a close relationship to the original through the melody, but the harmonic settings grant each its own particular flavor.

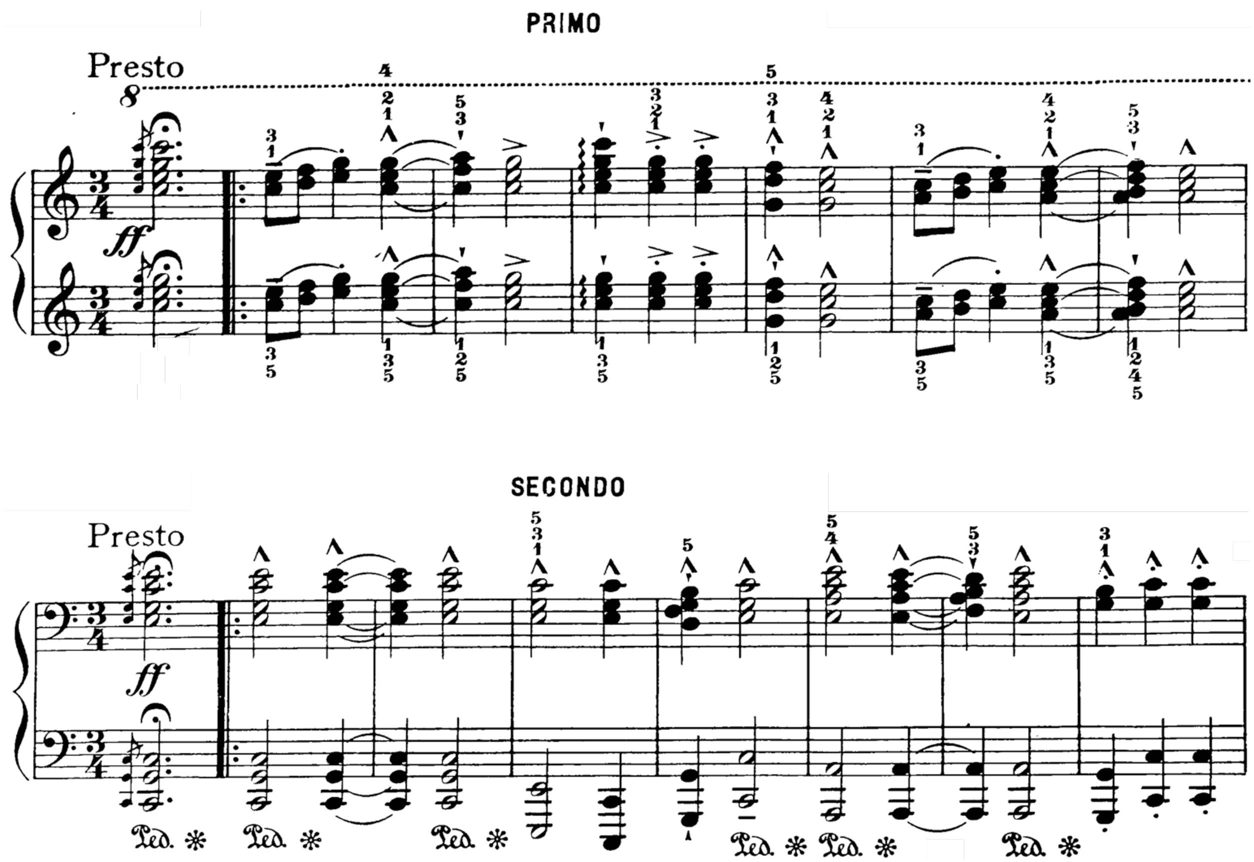

Figure 1–13: Dvořák, *Slavonic Dances*, Op. 46, No. 1 (piano four hands), opening

Figure 1–14: Dvořák, *Slavonic Dances*, Op. 46, No. 1 (orchestra), opening

When it comes to the performing force in a particular rhythmic reduction, the level of abstraction is affected less by the number or types of alterations, the particular environment of fit in each case, and more by the design of the arranger. As described previously, solo performances usually have a close relationship with what is assumed to be its accompaniment—even in its absence. Traditional piano reductions, like Katz's example from *Figaro* earlier, often set out to be as closely connected to the original as possible. Full orchestrations of piano settings, such as the Slavonic Dance suites of Dvořák, also appear to be at a low level of abstraction (Figures 1–13 and 1–14); if anything, they magnify elements that lie hidden, somehow prior to their piano manifestations, bringing out present but as-yet-unheard content through the use of percussion or particular characteristics of instrumental timbre.[21]

The idea of exposing and exhibiting elements thought to be within a conceptually prior version of a piece could be taken to any number of extremes. In 1963, Ward Swingle and his Swingle Singers produced *Jazz Sebastian Bach*: a selection of Bach's works transcribed for voices, along with the addition of a drum kit and double bass part. In this way, the perceived jazz-like nature of the originals is brought to light.[22]

Alternate versions of songs that create more distance from the original can come in the form of covers, "unplugged" renditions, and adaptations for singing competitions. In general, covers of songs sung in clubs or bars often involve only a change of performers (and possibly slight variations in instruments, amplifiers, and such), rather than any change of musical content. Unplugged versions of songs tend to amplify musical material by paring the original down to a

[21] As previously shown in the Brahms example (Figure 1–7), such hidden content can also be "revealed" in the other direction, moving from the full orchestra to two pianos.
[22] See The Swingle Singers, "Sinfonia from Bach's Partita No. 2 in C minor, BWV 826," YouTube video, 4:55, from an appearance in Croatia in 1969, posted by "Zvonko Slisuric," 12 June 2009, www.youtube.com/watch?v=pkA8fC9_z9c.

certain level of essentials, perhaps substituting instruments for electrons, as in the case of 30 Seconds to Mars's version of their song "The Kill," which is set for two acoustic guitars and string trio—quite a difference from a typical setting for a rock band.[23] Renditions crafted for singing competitions often bring a somewhat greater level of abstraction, in order to highlight the talent of the singer, possibly bringing an older song into more modern territory, rather than preserving all of the essentials of the original. One extreme of this kind of modernization can be found in the performance reduction of Henry Purcell's "When I am Laid in Earth" (Dido's Lament) from *Dido and Aeneas*, Z. 626, once again with the Swingle Singers at the helm but with one curious addition: beatboxing.[24] In this version, all of the original notes are retained, though they are sung, and the beatboxing is meant to bring a modern sense of "lament" to the work as well. Nothing is comedic here, just contemporary.

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[23] Compare this acoustic version: 30 Seconds to Mars, "The Kill," YouTube video, 4:41, live performance, posted by "Miguel Meza," 18 April 2007, www.youtube.com/watch?v=kHfOi_RUqCE&list=RDkHfOi_RUqCE with the original: 30 Seconds to Mars, "The Kill," YouTube video, 5:35, official video, posted by "30SecondsToMarsVEVO," 22 September 2010, www.youtube.com/watch?v=8yvGCAvOAfM&list=RDkHfOi_RUqCE&index=4.

[24] See The Swingle Singers, "When I am Laid in Earth," YouTube video, 5:04, from a live concert in Moscow in 2008, posed by "ZemljaZarnetskaja," 22 February 2011, www.youtube.com/watch?v=3FSPJ5f9CWI.

Figure 1–15: Schubert, "Ellen's Gesang III" (later set with traditional *Ave Maria* text), opening

Working with text or lyrics can open up several different types and depths of abstraction. Altering text could take the form of word substitution, in order to please the censors, an editor removing profane or suggestive elements in favor of others more suitable for the general public. Text-swapping (contrafactum) might also take several forms. A psalm recitation formula could be proper for numerous texts, depending on the occasion. Texts that are exchanged could be somewhat closely related, as in the case of Schubert's "Ellens Gesang III," D. 839, Op. 52, No. 6 (Figure 1–15), from his setting of portions of Walter Scott's poem *The Lady of the Lake*, where Schubert's original was replaced with the text of the traditional Latin prayer *Ave Maria*. The alternate text could also be quite far removed from the original: Al Yankovic's "Fat" bringing a new set of words—and connotations—to Michael Jackson's "Bad," for example.[25]

A text could simply be added to an existing work, as in the case of Samuel Barber adding words to his own *Adagio for Strings* (itself an ensemble version of the middle movement from his String Quartet, Op. 11) to produce his *Agnus Dei*. The furthest level of abstraction could be gained by using the text alone; at first, this seems in stark contrast to using melody alone, but anyone who has heard Steve Allen's dramatic reading of "Be-Bop-A-Lula" by Gene Vincent[26] or "Hot Stuff" by Donna Summer would likely agree.

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[25] Compare Yankovic's version: "Weird Al" Yankovic, "Fat," YouTube video, 4:55, official video, posted by "alyankovicVEVO," 27 July 2010, www.youtube.com/watch?v=t2mU6USTBRE to Jackson's: Michael Jackson, "Bad," YouTube video, 4:19, official video, posed by "michaeljacksonVEVO," 3 October 2009, www.youtube.com/watch?v=dsUXAEzaC3Q.

[26] See Steve Allen, "Be-Bop-A-Lula," YouTube video, 0:56, video clip from TV show, posted by "Phil Marcade," 13 December 2007, www.youtube.com/watch?v=SpxhEoV5IsE.

Figure 1–16: Brahms, Rhapsody Op. 79, No. 2, opening

Most all performances involving an audience will include some sort of visual components, even if not expressly spelled out in the score.[27] For the purposes of rhythmic reduction study, I will limit the visual aspects to those that can be tied to the tones of the score in some way. A simple example of this would be a piano score calling for the crossing of hands for some reason, as in the case of the opening of Brahms's Rhapsody in G minor, Op. 79, No. 2 (Figure 1–16); unseen, this need not have an effect on the sound of the music, but in live performance, the effect is quite noticeable. The next extension of this type is shown in Keller's performance reduction of Brahms's Symphony No. 3, III (Figure 1–6), where his reduction indirectly calls for the crossing of the performers' arms. Going a step further still, Victor Borge's piano four-hands arrangement of Liszt's second Hungarian Rhapsody has the performer on the left play the higher part and vice

[27] Aside from radio performances, a prescribed lack of visual elements, playing in the dark or offstage, for example, is as much of a special effect as any other kind of staging or costuming.

versa, thus making their entire bodies cross as they play their assigned portions. Again, this effect is meant to be seen more than heard. Perhaps the most abstract examples in this arena would be the virtual duets of Natalie and Nat Cole, described earlier.

"*Style is content*."[28] Although this quote is from a book about prose style, these words of Brooks Landon, acknowledged specialist in this field of study, resonate in the field of rhythmic reduction as well.[29] Later he continues: "So with a mixture of desperation and ingenuity, I've come up with a definition of style that I use when talking about sentences: *Style is what the writer writes and/or what the reader reads*. That's about as inclusive a definition of style as one can get. It's also a definition that refuses to distinguish style from content or meaning."[30] For our last group of rhythmic reductions involving ensembles and arrangement, I want to take a look at how different artists have approached the concept, the *content*, of musical style. The following examples display aspects from three general categories: those that alter the prevailing style, add to it, or extract it completely (so that the style alone can be put to use outside the realm of any one musical work). Within these categories, I will continue to order the examples by their level of abstraction, the distance measured here in terms of *reverentiality*: the degree that they are deemed considerate or respectful of the original—though perhaps not to the same level as the reductions of Martin Katz and other traditionalists.

The simplest, most reverential interaction with style could take the form of alterations brought on by considerations of historically informed performance, especially those involving details of rhythm and articulation, factors that could easily be accounted for in a version of the

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[28] Brooks Landon, *Building Great Sentences: How to Write the Kinds of Sentences You Love to Read* (New York: Penguin Group, 2013), 9, emphasis original.
[29] I do not contend here that music and language are somehow equivalent—I will leave that discussion to another forum—but I do find a useful parallelism in the comparison here.
[30] Landon, *Building Great Sentences*, 22–23, emphasis original.

score. Initially, this might not appear to be a "true" rhythmic reduction type—even in our expanded sense—but if such details are considered more precisely, the addition of staccato dots or legato slurs (or any number of other amendments absent from the original manuscript) makes a difference that is easily perceptible in live performances.

Sometimes an original song may be covered, but new stylistic content is added as well as altered or removed.[31] This is the case regarding the rhythmic reduction of Dido's Lament by the Swingle Singers, mentioned previously, where beatboxing was added. While this style addition strives to be appropriately reverential, yet unmistakably cutting edge, other covers have distinctly different ideas behind them. In the hands of Spike Jones, "Cocktails for Two,"[32] the graceful post-prohibition song by Arthur Johnston and Sam Coslow,[33] adds style in the form of raucous mayhem surrounding the two lovers in the bar. Richard Cheese's cover of "Only Happy When it Rains"[34] by the group Garbage[35] not only swaps out the original alternative-rock style for that of lounge-singing style, he also cleverly sprinkles in stylistic elements from "Singin' in the Rain." Stan Freberg, in his cover of "The Great Pretender" by The Platters, takes matters a step further,

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[31] For a wonderful discussion of Bach's "covers" of three Vivaldi concertos, sorting out the alterations and improvements on the originals as well, see Vincent C. K. Cheung, "Bach the Transcriber: His Organ Concertos after Vivaldi," (unpublished manuscript, 2008), PDF file.

[32] See Spike Jones and his City Slickers, "Cocktails for Two," YouTube video, 2:44, theatrical short, posted by "SpindleRecords," 21 April 2007, www.youtube.com/watch?v=lvt4b_qwC_Q.

[33] See Arthur Johnston and Sam Coslow, "Cocktails for Two," YouTube video, 2:48, early recording, posted by "MusicProf78," 29 February 2013, www.youtube.com/watch?v=UrBrm4CLaVM.

[34] See Richard Cheese, "Only Happy When it Rains," YouTube video, 2:09, along with artful splicing from an associated movie, posted by "Joe Scaramanga," 23 May 2008, www.youtube.com/watch?v=NVICMt7Owvs.

[35] See Garbage, "Only Happy When it Rains," YouTube video, 4:01, official video, posted by "GargabeVEVO," 14 November 2013, www.youtube.com/watch?v=GpBFOJ3R0M4.

adding a kind of running commentary during the performance, criticizing everything from the melodic style to the "clink-clink-clink jazz" of the beatnik crowd.[36]

Sometimes the style can be an element unto itself, having no specific song as a referent. A pair of particularly reverential examples in this category come from Freddie Mercury, his "Crazy Little Thing Called Love"[37] paying tribute to Elvis Presley, and Beyoncé, her "Love on Top"[38] being noted as: "a shameless throwback to perky, squeaky clean mid-Eighties R&B, and it's a blast.… If you've been craving a modern take on old-school Whitney Houston, this song is for you," according to *Rolling Stone* magazine's Matthew Perpetua.[39]

Slightly less reverential style-cullings often take on satirical or comedic elements, in addition to the appropriated style. Tom Lehrer stays true to the particular style with selections like "The Masochism Tango"[40] and "It Makes a Fellow Proud to be a Soldier,"[41] but with a slightly twisted or colorful sense of humor. Al Yankovic engages style with humor also, but in a more abstract manner. During an interview for *Behind the Music*, he states: "I've always been a huge Devo fan. They've always been one of my very favorite groups. And every once in a while,

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[36] See Stan Freberg, "The Great Pretender," audio clip with commentary, 6:35, Track 4, from "The Pop Chronicles": Hail, Hail, Rock 'n' Roll: The rock revolution gets underway, narrated by John Gilliland in 1969, posted by the UNT Digital Library at the University of North Texas, site last updated 16 April 2015, digital.library.unt.edu/ark:/67531/metadc19751/m1/.

[37] See Queen, "Crazy Little Thing Called Love," YouTube video, 2:50, official video, posted by "QueenVEVO," 22 December 2010, www.youtube.com/watch?v=EE34cSvZCd8.

[38] See Beyoncé, "Love on Top," YouTube, 3:16, official video, posted by "beyonceVEVO," 16 October 2011, www.youtube.com/watch?v=Ob7vObnFUJc.

[39] Matthew Perpetua, "Beyoncé's '4': A Track-by-Track Breakdown," album review, posted 8 June 2011, www.rollingstone.com/music/news/beyonces-4-a-track-by-track-breakdown-20110608.

[40] See Tom Lehrer, "The Masochism Tango," YouTube video, 3:03, video from 1967, posted by "The Tom Lehrer Wisdom Channel," 1 October 2007, www.youtube.com/watch?v=TytGOeiW0aE.

[41] See Tom Lehrer, "It Makes a Fellow Proud to be a Soldier," YouTube video, 4:50, audio with preceding commentary, posted by "#TomLehrer," 28 January 2015, www.youtube.com/watch?v=aEgNS6VJzEQ&index=8&list=PLVllgpqE3l2I5-K6AulCLIxAyrOm6LtW7.

I do what I call 'style parodies'; I will do a song which is not a parody of a particular song, but it's an original that's very much in the style of a particular artist or group."[42] This kind of thinking helped create the song "Dare to be Stupid," which borrows elements from Devo's style, musically as well as visually, incorporating elements reminiscent of some of that band's iconic videos.[43] I judge this outing as reverential, based not only on the words of Yankovic but also of Mark Mothersbaugh, frontman for Devo: "I was in shock. Uh. It was the most beautiful thing I'd ever heard…. He sort of resculpted that song into something else and, um… I hate him for it, basically."[44]

Style parodies know no boundaries, in terms of musical era, either. Peter Schickele (in the guise of P.D.Q. Bach) gives us the early-music inspired "Good King Kong Looked Out,"[45] complete with the impersonation of instruments—coming from kazoos, and the Norwegian

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[42] "Weird Al" Yankovic, "Behind the Music," YouTube video, 43:57, from the VH1 show, Season 2, Episode 36, posted by "RadioActiveFilmsCorp," 14 March 2013, www.youtube.com/watch?v=SwIbW8lFA9E.

[43] See "Weird Al" Yankovic, "Dare to be Stupid," YouTube video, 3:33, official video, posted by "alyankovicVEVO," 27 July 2010, www.youtube.com/watch?v=SMhwddNQSWQ.

[44] Mark Mothersbaugh, "Behind the Music," YouTube video, 43:57, from the VH1 show, Season 2, Episode 36, posted by "RadioActiveFilmsCorp," 14 March 2013, www.youtube.com/watch?v=SwIbW8lFA9E. I feel it must be said that not all parodies and satires come off equally well in the eyes of the composer(s). In Sam Coslow's autobiographical book *Cocktails for Two: The Many Lives of Giant Songwriter Sam Coslow* (New York: Arlington House, 1977), p. 145, he writes: "The question I am most frequently asked is how I felt about Spike Jones's famous recording of 'Cocktails for Two'.... He never told me he was doing it, and the record was a shock to me. I hated it, and thought it was in the worst possible taste, desecrating what I felt was one of my most beautiful songs." What a stark contrast to Mothersbaugh's own (obviously mock) "shock" and "hatred," indeed, even after over thirty years had passed since the premiere of the version by Spike Jones.

[45] See The Virginia Beach Chorale, "Good King Kong Looked Out," YouTube video, 3:26, video with actions, posted by "tingo123," 26 January 2010, www.youtube.com/watch?v=lrbHOtAthqA.

comedy duo Ylvis gives us the thoroughly modern, dance-club inspired "What Does the Fox Say,"[46] making use of a multiplicity of tropes from this group of style possibilities.

Although the above examples and descriptions are nowhere near exhaustive, we can begin to see the tremendous number of "perfect" entities Moskowitz suggests, just in the venue of performance. Some are more traditional, some more radical. Some are more reverential, some more audacious, yet all are still rhythmic reductions, in our broader sense, as they sound like the piece, preserve the essentials, and fit some new environment, all while relating to a specific work. In this way, rhythmic reductions can inhabit a great number of spaces, whether traditionally adapted or adapted to some new kind of environment.

1.4 Rhythmic Reductions Used in Making Music: Personal Venue

In the next venue, that of the *personal* or *private*, rhythmic reductions focus on aspects of delight, amusement, recreation, and the like, without, in general, considering any audience.[47] Obviously, these categories are not meant to be completely rigid. Performance-oriented reductions could cross over into this category, along with some original works, especially those of the lower difficulty level, as in the case of Beethoven's Opp. 49 and 79, or pieces like Schumann's *Album for the Young*, Op. 68. Other works seem to be more transitional, bridging the gap between concert works and those destined for pleasure use.

[46] See Ylvis, "What Does the Fox Say?" YouTube video, 3:44, official video, posted by "TVNorge," 3 September 2013, www.youtube.com/watch?v=jofNR_WkoCE.

[47] In times past, rhythmic reductions destined for the private venue were created so that pieces could be experienced outside of the concert venue (before radio, television, streaming audio, or even the pipe organ as the "symphony in a box"). In times present, the audience is often limited to houseplants, cheese puffs, and companion animals (live or stuffed).

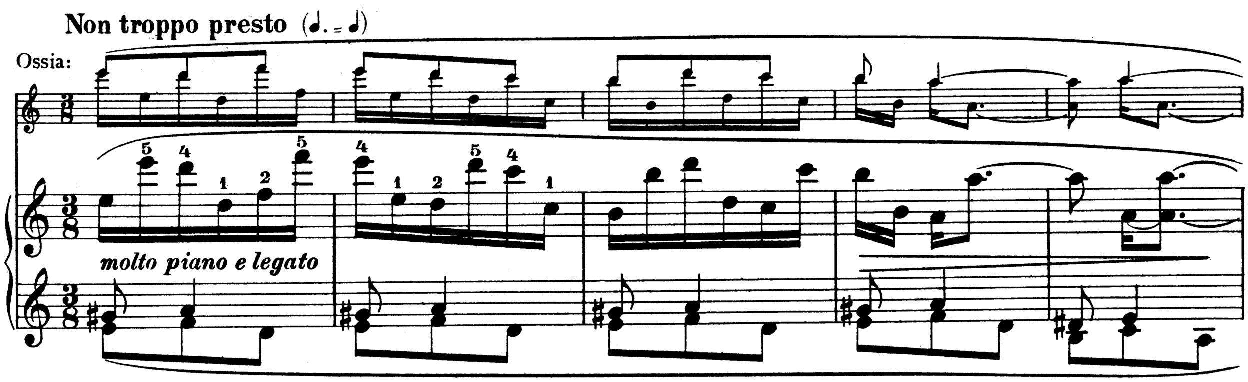

Figure 1–17: Brahms, Intermezzo Op. 116, No. 2, mm. 19–23

Figure 1–17 shows that Brahms's Intermezzo Op. 116, No. 2, contains an *ossia* line, which implies its appropriateness for multiple venues. The portion of rhythmic reduction present in the form of an *ossia* line takes the original music, where the pianist sounds as if three hands are involved, and distills it a touch; all of the essential voices are present, and it certainly sounds like the piece—but using "only" two hands this time.

Figure 1–18: Liszt, two-piano arrangement of Beethoven’s Piano Concerto No. 5, Op. 73, just after the opening

Another trio of transitional examples comes from the concerto literature this time. Though it might be difficult to imagine any piece devised by Liszt is somehow *not* meant for concert performance, his arrangements of Beethoven’s works give off the impression of straddling the line between the performance and the private venues. Initially, Liszt’s two-piano arrangement of Beethoven’s Piano Concerto No. 5, Op. 73 (Figure 1–18), shows just what might be expected: the soloist finishes a section, and the second pianist begins emulating the orchestra (complete with tremolo substitutions in the left hand). Then a few bars later, the "solo" pianist begins assisting with the orchestral imitation, this edition even sketching in the instruments involved, for reference. This unexpected twist in the setting feels somewhat less concert like, the soloist becoming mixed in with the orchestra.

Figure 1–19: Emil von Sauer, reduction of Brahms's Piano Concerto No. 2, Op. 83, opening

In contrast to Liszt's setting of the Beethoven concerto, Emil von Sauer's setting of Brahms's second piano concerto (Figure 1–19) maintains separation of the soloist and the orchestra throughout, not because the orchestral part is any less challenging—far from it—but because of the desired separation of players and roles.[48] While this could be seen as either a kind of performance or rehearsal version, I think it more likely to be a private version, since a professional soloist would probably learn just the part, apart from everything but the occasional orchestral cue.

On the extreme of this type of setting lie the products of Music Minus One.[49] Here, of course, the soloist can play or sing against the background of the full orchestra (or whatever the original group happens to be). These works, just like the two concerto versions discussed above, seem to fit into the personal venue, as well, for the same reasons. A treatment of the ultimate, modern extension of this type, however, will come at the end of this section.

Works that seem to fall more squarely into the personal venue open up new types and levels of abstraction, though the overall goals from before remain the same. Sounding like the piece can range anywhere from basic melodic tones and fundamental harmonies to an exact replica of the original. Preserving the essentials often takes the shape of what is more practical, rather than "the best lie" that could be devised (as Katz called for earlier), since performer ability—or lack thereof—is an issue in this venue. The environment of fit, in some cases, could be as diminutive as a five-note fingerboard.

As seen above in the performance venue discussion, rhythmic reductions in the personal venue bring their own sets of challenges as well as benefits. The main challenges of performance reductions often center on the environment of fit, making sure the performer or instrument can handle the tasks assigned—or even be located, as Thomas Christensen points out in his article on

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[48] Johannes Brahms, *Piano Concerto No. 2, Op. 83*, arr. Emil von Sauer (Leipzig: Peters, 1910), 3.

[49] I suppose karaoke machines could be included here as another type of crossover or transition, since an audience of a sort is often involved.

four-hand piano transcription: “Almost any permutation of several instruments was possible.… But these configurations all had drawbacks. Solo piano transcriptions were usually too difficult for most amateurs, and in any case they tended to leave too much out. Arrangements for small combinations of stringed or wind instruments, on the other hand, faced difficulties of logistics. One could not organize a string quartet as easily as one could find a pianist or two.”[50] These types of challenges take on somewhat of a finer point in the personal venue, especially since the level of difficulty is often the chief concern, as amateurs often—though not always—lack a certain level of ability. Virtuosic display is frequently traded for approachability, complete imitation for suitable approximation.

Among the many benefits displayed in examples from the performance venue, one stands out in particular: the variable level of abstraction (shown especially in interactions with aspects of style); by contrast, examples in the private venue usually strive to be the least abstract, within the difficulty constraint proposed earlier, any new content serving the goals of imitation of the original material, as well as performability. While one likely benefit of the piano performance reduction, for example, is that of cost savings, one potential benefit of the personal reduction is that of revenue generation, the music garnering extra money through score sales, rather than simply through concert tickets. Also, another possible benefit is that of raised awareness: amateurs buying and playing a particular composer’s works might be encouraged to either buy more works or even to attend performances. Christensen makes this point with particular reference to four-hand piano transcriptions, saying: “It is not surprising, then, that composers, pianists, and publishers conspired to bolster the transcription trade, and that it became standard by midcentury for publishers to issue full scores and piano arrangements simultaneously. The

[50] Christensen, “Four-Hand Piano Transcription”: 260.

latter functioned as an essential promotional vehicle, advertising the music and hopefully stimulating interest in live performances."[51]

Since all of the following examples strive to carry a low level of abstraction, in general, the discussion will center instead on traditional, modern, and ultra-modern environments and techniques. In each case, meeting the goals of sounding like the piece and preserving its essentials is relatively straightforward; it is the arena of prescribed fit that poses the challenges.

Figure 1–20: Brahms, Waltz Op. 39, No. 15, opening (original version for piano four hands)

[51] Christensen, "Four-Hand Piano Transcription": 267.

Figure 1–21: Brahms, Waltz Op. 39, No. 15, opening (his reduction for piano)

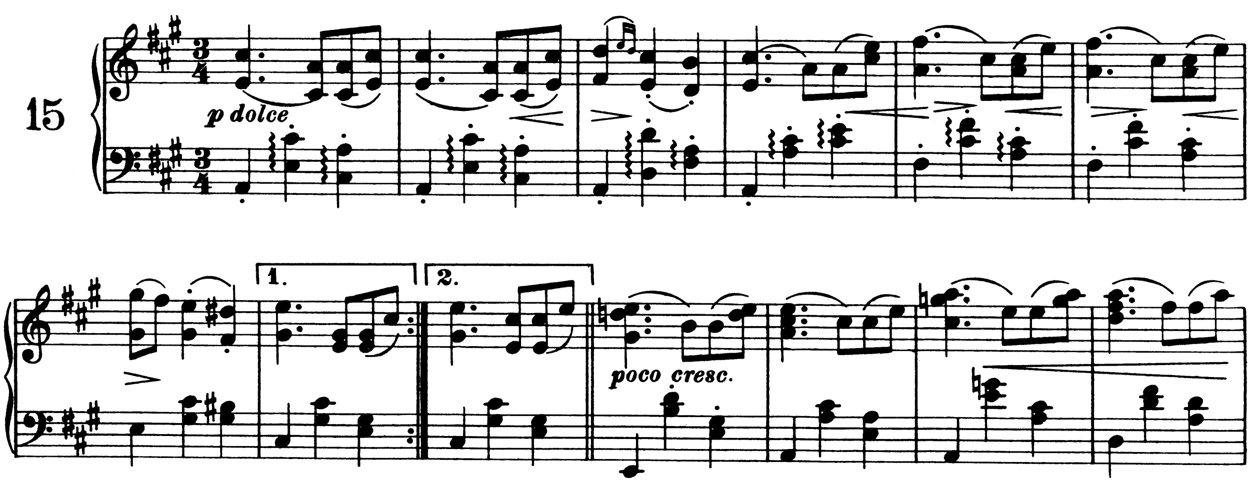

Figure 1–22: Brahms, Waltz Op. 39, No. 15, opening (his reduction for simplified piano)

The example from the traditional environment is Brahms's Waltz No. 15, from his Op. 39, originally for piano four hands (Figure 1–20). In the two rhythmic reductions, each by Brahms (Figures 1–21 and 1–22), the original melody is completely preserved, along with the basic harmonic structure. Like the other performance-oriented reductions discussed earlier, the (standard) piano reduction, in its new environment of fit, keeps, adds, alters, and omits content, in order to capture as much of the original essentials as possible. Similar to Brahms's own adaptation of the opening of the third movement of his Symphony No. 3 (Figure 1–7), only the composer could have written this, making distinct choices that are difficult to infer from the original score; rolled chords appear, the melodic contour of the bass line is altered, and the key is changed, presumably to make it easier for the *experienced* performer to play, just to name a few differences.[52]

His version for simplified piano, the one presumably constructed for the personal arena, contends with the fit environment implied by the assumed facility of the performer. In other words, this version needs to sound like the piece but be easier to play. Brahms accomplishes this by thinning the texture, rarely asking the player to strike more than two notes in each hand, by compressing the registral span in the bass, and by returning to the original key of A major, presumably to make it easier for the *novice* performer to play.[53] In spite of these differences, the overall level of abstraction is extremely low: it sounds almost exactly like the original, the items moved or removed being decidedly less essential than those retained.

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[52] Other moves toward signatures with more black keys: No. 13 (C major to B major), No. 14 (A minor to G-sharp minor, and No. 16 (D minor to C-sharp minor).

[53] Another prime example of this is the key change of waltz No. 6 from C-sharp major to C major.

Figure 1–23a: Chopin, Nocturne Op. 9, No. 2, mm. 1–18

Figure 1–23b: Chopin, Nocturne Op. 9, No. 2, m. 19 to the end

Figure 1–24a: Bergerac, arrangement of Chopin's Nocturne Op. 9, No. 2, mm. 1–18

Figure 1–24b: Bergerac, arrangement of Chopin's Nocturne Op. 9, No. 2, mm. 19–end

The example from the modern environment is from Chopin's Nocturne No. 2 from his Op. 9. Bergerac's arrangement (Figures 1–24a and 1–24b) is found in a collection of piano works for beginners and shows what could be the simplest possible reduction of Chopin's original.[54] Only the most iconic melodic and chromatic elements appear in this minimalist representation. Throughout the work, the outer voices, though framed in a new key and metrical grouping structure, are preserved almost exactly, but the most striking thing about this rhythmic reduction has less to do with its treatment of melodic or harmonic-contrapuntal material and more to do with its treatment of phrase structure and form. Of its thirty-seven measures (essentially equivalent to nine bars of the original), only the opening phrase of the main section and part of the coda are preserved, lending a sense of balance even in the absence of so much musical material. Repeats are removed, along with their florid embellishments, in order to obtain a manageable length and level of difficulty, with the exception of an intriguing compression in the coda. Borrowing from what would be m. 25 of the original, this arrangement, beginning with bar 17, grafts the first seven beats of the antecedent phrase (becoming mm. 17–23) directly onto the back half of the altered and expanded consequent phrase (becoming mm. 23–37), merging with the last beat of m. 30 in the original and continuing to the end (without the short cadenza). This selective surgery preserves the coda's beginning and ending material, while removing a phrase repeat, along with its more challenging melodic elements, the final product carrying most of the earmarks of its ancestor.

[54] Frédéric Chopin, *Nocturne Op. 9, No. 2*, arr. Bergerac, in *The Big Book of Beginner's Piano Classics: 83 Favorite Pieces in Easy Piano Arrangements* (New York: Dover, 2008), 32.

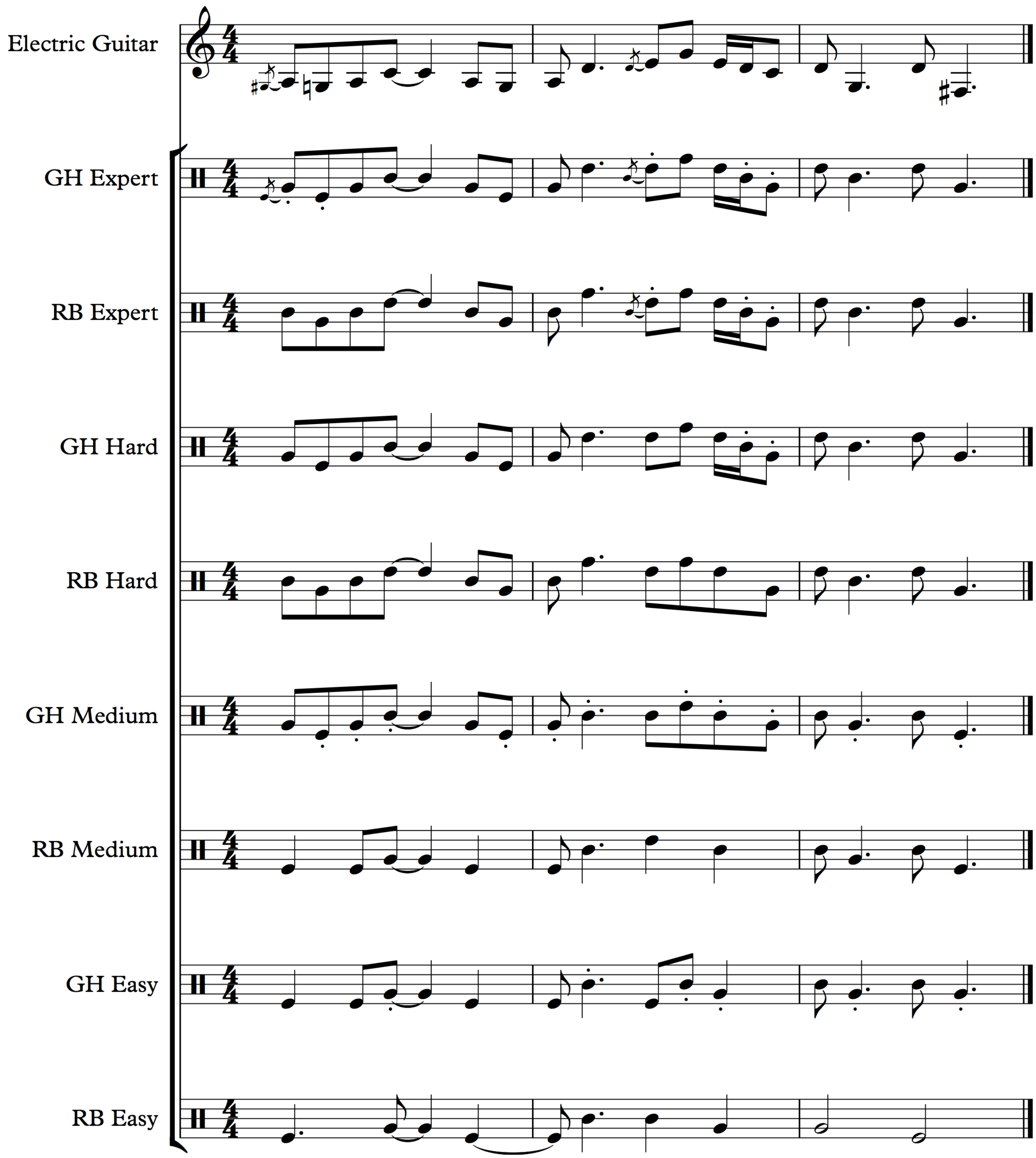

Figure 1–25: Opening riff from "Carry On My Wayward Son" by *Kansas*, showing rhythmic reductions at the individual levels of difficulty in *Guitar Hero* and *Rock Band*[55]

[55] Here, the five-button environment is mimicked by the five lines of the staff, each line standing in for one of the buttons on the fingerboard. Also, staccato dots represent hammer-on or pull-off tones (notes that do not require strumming).

For the ultra-modern example, I would like to discuss a couple of excerpts from the lead guitar part in “Carry On My Wayward Son” by Kansas, as modeled in the rhythm-based games *Guitar Hero* and *Rock Band*. In a sense, the rhythmic reductions found in these games are extensions of setting types like Music Minus One, with one key difference: all of the versions for various difficulty levels, when played correctly, will produce the *exact* sound of the original part. For example, the Expert part from *Guitar Hero* (Figure 1–25), like so many traditional settings for alternate instruments, sets out to *impersonate* the original in the most forthright and direct manner possible. Even in this compressed environment of fit, many of the essentials have been maintained, assuming what we mean by “essentials” has to do with basic melodic elements. Every rhythmic event of the original is captured in the part. In addition, most of the contour is retained, even if some kind of one-to-one pitch relationship is elusive, at best. All of this helps to ensure that this rhythmic reduction, along with the others at the lower levels of difficulty, will sound like piece, but at what level of abstraction are these essentials preserved?

Peter Schultz alludes to this topic, in his article on music theory and music games, stating: “Just as *Guitar Hero*’s scoring system favors some musical elements as more important than others, the structure of difficulty levels marks some musical events as more important than others.”[56] Later, he goes on to say: “In effect, the developers employ a kind of reductive analysis to select certain notes as more important than others, allowing these important notes to percolate down into the easier difficulty levels, so that only the most structurally important notes make it down into Easy mode. This process should sound familiar to music theorists, who are accustomed to analyzing music, particularly tonal music of the last four centuries, as simple

[56] Peter Schultz, “Music Theory in Music Games,” in *From Pac-Man to Pop Music: Interactive Audio in Games and New Media*, edited by Karen Collins (Burlington, VT: Ashgate, 2008), 184.

structures decorated by progressive elaboration."[57] The implication here is that the parts constructed for the lower levels of difficulty are increasingly abstract, as they represent successively deeper levels of structure. But two of Schultz's terms require some clarification: "important notes" and "simple structures." While I agree that "important notes" are retained as we move down the difficulty ladder, I would hesitate to label them the "most *structurally* important" notes. Also, viewing the set of rhythmic reductions in Figure 1–25 from the bottom up, we do see progressive elaboration, and it, indeed, comes from "simple structures," but these structures are simple in terms of *complexity*, rather than being somehow *conceptually prior*. In other words, the Easy part is a *simplified* version of the Expert line, but more in terms of difficulty than anything else.

Another illusion of abstraction comes in the form of what Nicole Biamonte, along with Schultz, calls *hierarchy*. In her article on musical representation in rhythm games, Biamonte says: "While not originally interpretive [analytical] in purpose, the relationships between note cues at different levels of difficulty in the games create large scale *hierarchies* of melodic and rhythmic segmentation, which can be reimagined as implicit analyses."[58] And Schultz, in his article says: "The rhythmic relations across difficulty levels are strictly inclusive; in other words, every time-point that carries an Easy note also carries a Medium note and so on, always adding notes without removing or shifting any as the difficulty increases.… This consistency of approach encourages a metrically *hierarchical* hearing of rhythm."[59] These ideas seem to assert that "hierarchy" is meant to carry a connotation of analytical depth and rank, the chart for Easy

[57] Schultz, "Music Theory in Music Games," 185.
[58] Nicole Biamonte, "Musical Representation in the Video Games Guitar Hero and Rock Band," in *Pop-Culture Pedagogy in the Music Classroom: Teaching Tools from* American Idol *to YouTube*, edited by Nicole Biamonte (Lanham, MD: Scarecrow Press, 2011), 134–135, emphasis added.
[59] Schultz, "Music Theory in Music Games," 187–88, emphasis added.

carrying “the most important structural elements.” Imagine playing these parts, however, and it seems evident that all of them, even the Easy parts, sound quite closely related to the original musical surface, even within the claustrophobic confines of three to five available tones. That is to say, these parts seem to be less representative of abstraction and structural depth and more representative of *nesting* instead, the events simply grouped inside one another, not unlike Russian Matryoshka dolls, all within a narrow band of structural rank.

I draw attention to the level of abstraction, because rhythmic reductions in the private venue usually strive to be the least abstract, the “best lie” possible, just at lower levels of performance difficulty. The beauty of the various rhythmic reductions found in rhythm games is that the player’s involvement increases with the level of difficulty, some parts in some songs requiring extreme levels of dexterity, even within the fit environment of only a few tones. “Through the Fire and Flames”[60] by DragonForce is, perhaps, the paradigmatic example of insane difficulty here, along with others like the settings of “Soothsayer”[61] and “Jordan”[62] by Buckethead, but these parts reward the player possessing a high level of ability with the additional pleasure of a quite visceral performance experience.

1.5 Rhythmic Reductions Used in Making Music: Rehearsal Venue

The final venue I want to consider in this series of rhythmic reduction types having to do with making music is the venue of *rehearsal*. The main goal of these rehearsal reductions is just like it sounds: to aid in preparing for performance. Products tend to take shape while keeping three

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[60] See Danny Johnson, “Through the Fire and Flames,” YouTube video, 8:34, performance video, posted by “GuitarHeroPhenom,” 11 November 2012, www.youtube.com/watch?v=cHRfbiwdheg.
[61] See Danny Johnson, “Soothsayer,” YouTube video, 10:00, performance video, posted by “GuitarHeroPhenomHD,” 27 September 2009, www.youtube.com/watch?v=-DyH9AzL7Rs.
[62] See Danny Johnson, “Jordan,” YouTube video, 4:02, performance video, posted by “GuitarHeroPhenomHD,” 27 September 2009, www.youtube.com/watch?v=VLLkEJAY2fI.

objectives in mind: presenting the minimum amount of content necessary for the performer to be able to learn the work and construct a performance of it; maintaining the minimum amount of space used in displaying that information; and proffering additional content based on the ability of the performer. In this venue, sounding like the piece has less to do with replicating the musical surface than supplying the appropriate reminder of it. Preserving the essentials involves keeping only what is necessary and sufficient for the learning process, ranging from a sheet of lyrics to a nearly complete setting, as dictated by how much the performer needs to know to prepare the projected performance. The environment of fit is determined by practicality, in answer to the following questions: How much of the necessary information can be presented in the smallest visual area? How much additional content can be added based on the level of difficulty required for the ability of the performer?

The following examples will show increasing levels of information content captured based on two criteria: the amount *necessary* in the given context and the amount *possible* given the ability the performer. Perhaps the smallest amount of information necessary for a rhythmic reduction in the rehearsal venue involves no music at all, as in the case of a lyric sheet supplying the necessary content for a performance of "The Star Spangled Banner," given that the singer is presumed already to know the melody and accompaniment setting.

Figure 1–26: Mendelssohn, Violin Concerto, Op. 64, opening of solo part

The solo part from Mendelssohn's Violin Concerto, Op. 64 (Figure 1–26), shows how little extra material needs to be offered to the proficient soloist. In this excerpt, the only material added to the solo line is an orchestral cue for the opening and the melody line for the orchestra, heard when the soloist rests. This arrangement allows for the maximum number of solo measures within the minimum amount of space on the page.

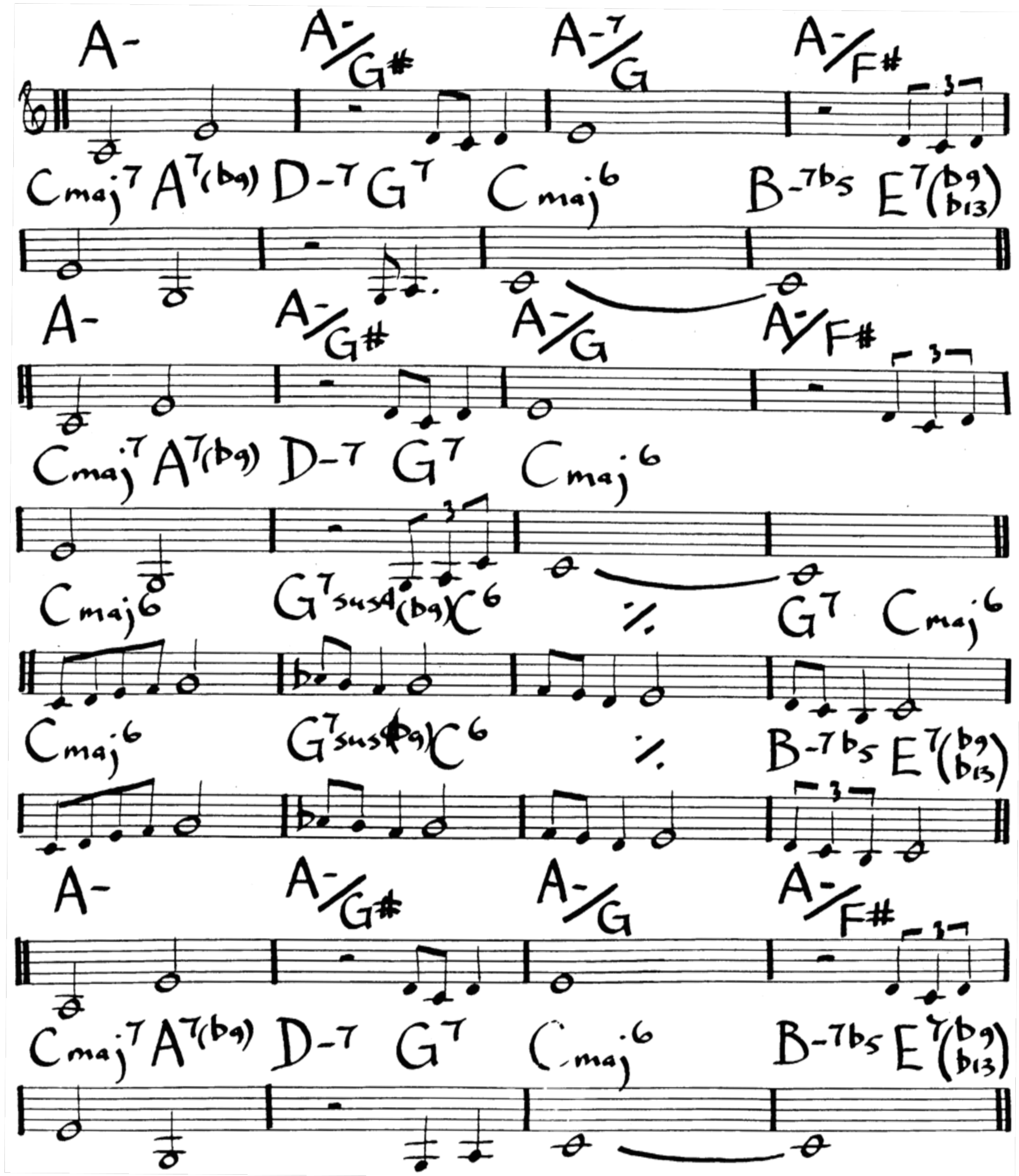

Figure 1–27: Berlin, “Blue Skies,” arranged in *Jazz Ltd: Over 500 Tunes the Real Books Missed*

The rhythmic reduction of Irving Berlin's "Blue Skies" (Figure 1–27) provides a little more information than just the melodic line. On top of that melodic line, chord symbols are added, presumably to lay out the harmonic environment available for improvisation. Again, only what is necessary is retained; even clefs (after the first, of course) are left out. This type of reduction, similar to the "little black book" of the by-request pianist, serves to remind the performer, in as little physical space as possible, of only what is necessary to create a performance of the original work (or at least some version of it).

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e |––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––
B|––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––
G|––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––––
D|–––––––––––––––––––––––––5––––––––––––––––––––––––––––––––––––––
A|–––––––––3––––––––5––5/ 7–––7p5p3–5––––5––––––––––––––––––––––––
E|–4/ 5–3–5––––5–3–5––––––––––––––––––3––––2––––––––––––––––––––––
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Figure 1–28: Guitar tab for "Carry On My Wayward Son"[63]

In the past, tablature notation was reasonably detailed, as noted by Thurston Dart, John Morehen, and Richard Rastall in their description: "Systems of tablature have been in use in western European music since at least the early fourteenth century, most of them deriving from the playing technique of a particular instrument. Whereas staff notation shows in one symbol both the pitch and duration of a note, tablature systems, in general, use one symbol to show how to produce a sound of the required pitch from the instrument in question (which string to pluck, which fret to stop, which key to press, which holes to cover and so on) and another to show its

[63] The numeric shorthand refers to fret numbers, the slashes designate sliding between the two notes, and the "p" means pull-off to reach the lower note.

duration."[64] More recently, indications for rhythmic values are often omitted (and specialty symbols added), leaving the player to make certain performance decisions, usually based either on other performances or scores. My own, modern guitar tab for "Carry On My Wayward Son" (Figure 1–28) shows a certain economy of instruction, presuming familiarity with the original, allowing for individual interpretation and potential elaboration in performance.[65]

[64] Thurston Dart, John Morehen, and Richard Rastall, "Tablature," *Grove Music Online*, www.oxfordmusiconline.com.proxy.lib.umich.edu/subscriber/article/grove/music/27338 (accessed 14 February 2015), at 1: "General."

[65] See Figure 1–25 for the original guitar line.

Figure 1–29: Handel, *Messiah*, "For Unto Us a Child is Born," vocal score, opening

As seen with the other venues, certain types can easily cross categories. For example, in addition to using the collaborator-style reductions discussed previously, rhythmic reductions in the form of vocal scores could be used both to prepare the singing ensemble and for use during the performance, as Watkins Shaw notes in his original Preface to the Novello edition of Handel's *Messiah*: "Every such arrangement in the vocal scores known to the editor is designed for the pianoforte, for rehearsal purposes only. But the fact remains, whether or not one considers it desirable, that innumerable performances of *Messiah*, in whole or in part, are given year-by-year to an organ, not an orchestral, accompaniment. With this in mind, the editor has here attempted the (admittedly thankless) task of devising an arrangement which, while still being useful for pianoforte rehearsal, yet gives more assistance to the organist than hitherto."[66]

In light of the minimal accompaniment printed along with the solo part in the Mendelssohn concerto, we might be tempted to ask why the keyboard arrangement was included in the vocal score at all, but the answer seems reasonable enough: because the level of proficiency of choruses is so wide ranging, the accompaniment part does a great service for the group, helping them to remain in the proper place in the score as often as possible. In other words, the need for that extra content increases as the ability of the singing ensemble decreases.

[66] George Frideric Handel, *Messiah*, ed. by Watkins Shaw (London: Novello, 1981), iv.

Figure 1–30a: Chausson, "Chanson Perpétuelle," mm. 1–7 (full score)

Figure 1–30b: Chausson, "Chanson Perpétuelle," mm. 8–11 (full score)

For the final discussion of this section, I would like to take a look at a few different rhythmic reductions of Chausson's "Chanson Perpétuelle."[67] The context I have chosen for these examples is one where the singer is given no recording and no accompanist, only the score. In this scenario, the products that could be constructed from this original must account for the singer's ability to play and to sing, while still trying to preserve as much and as many of the musical essentials as possible and practical.

[67] See Jessye Norman, "Chanson Perpétuelle," YouTube video, 7:21, audio performance, posted by "menkhar," 2 May 2009, www.youtube.com/watch?v=vaDlo7rapvg.

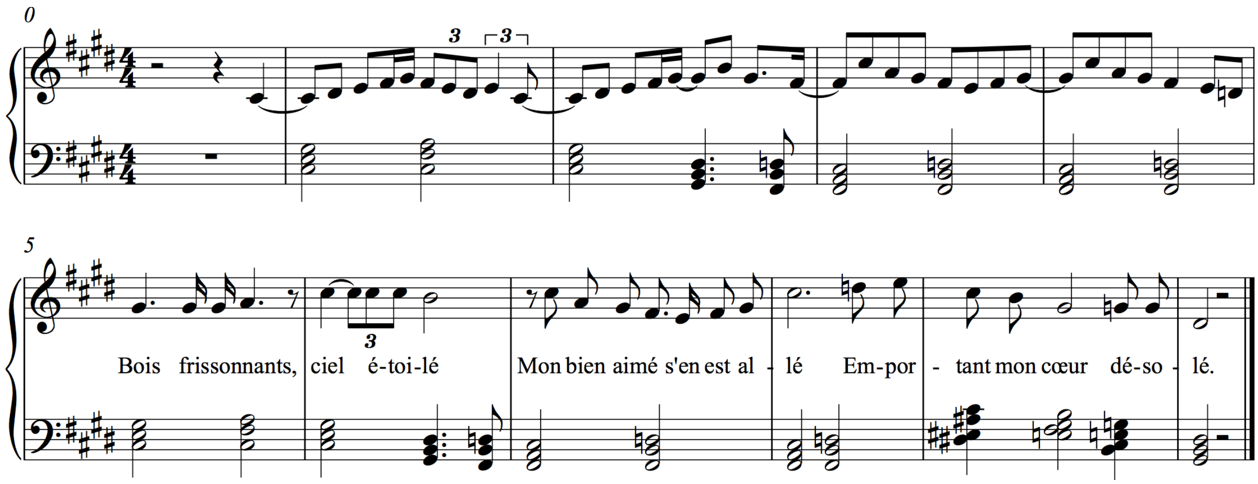

Figure 1–31: Singer's reduction of Chausson's "Chanson Perpétuelle," with emphasis on simple melodies and closer voice leading

The singer's reduction of Chausson's "Chanson Perpétuelle" shown in Figure 1–31 assumes lower levels of melodic sight reading abilities as well as only rudimentary piano skills. Here the right hand focuses solely on a single melodic line, either the instrumental or sung melody, sacrificing any countermelodies or accompanying harmonic tones in favor of simplicity and facility. The left hand provides harmonic support through block chords, also sacrificing any countermelodies, along with certain surface aspects of the bass line, in order to keep the hand in one place as long and as often as possible. This product, though basic, still sounds like the piece enough to facilitate learning the vocal line in an efficient manner, ensuring that most of the singer's mental energy remains available to rehearse what is necessary, rather than bogging down the performer with more difficult keyboard work.

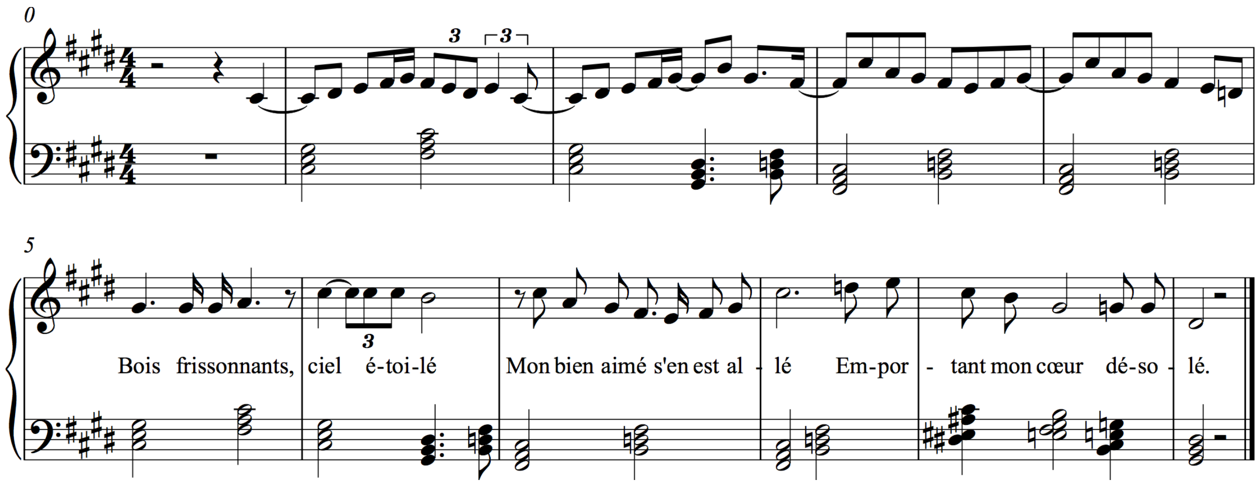

Figure 1–32: Singer's reduction of Chausson's "Chanson Perpétuelle," adding emphasis on root-position accompaniment

This next singer's reduction of Chausson's "Chanson Perpétuelle" (Figure 1–32) adds more difficulty to the accompanying line of the left hand, incorporating the surface bass (though still in a higher register at times, in order to keep the sound from being muddied). In doing so, this rhythmic reduction captures more essentials for the performer with slightly better piano skills, moves down the ladder of abstraction, and provides a bit more authentic musical experience.

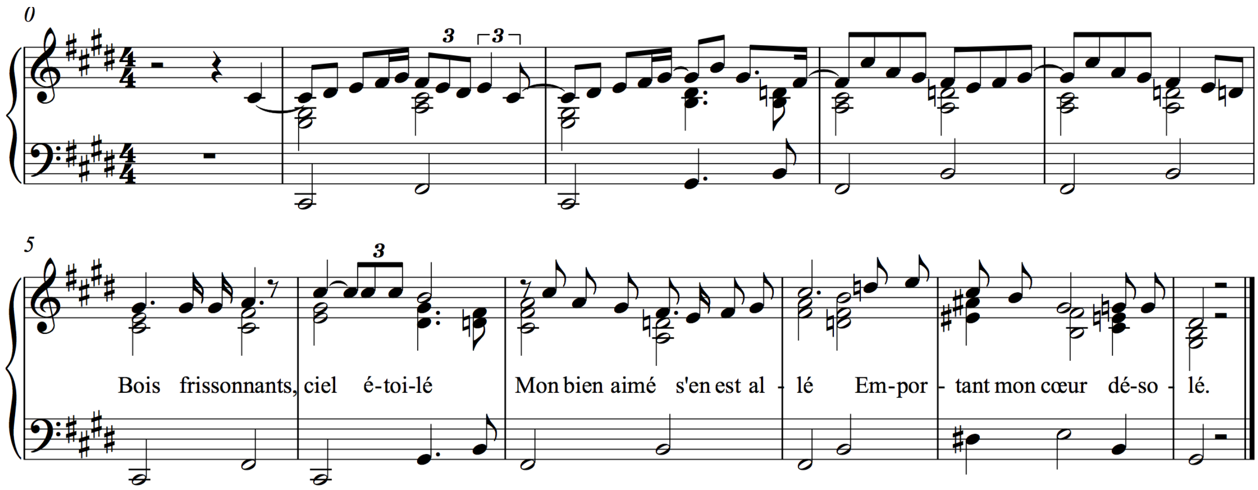

Figure 1–33: Singer's reduction of Chausson's "Chanson Perpétuelle," with more emphasis on replicating the surface bass, while shifting harmonies to right hand

Although the singer's reduction of Chausson's "Chanson Perpétuelle" in Figure 1–33 gives the impression of a lead-sheet realization, it does depict a few more of the musical essentials than the previous outing. For this version, the surface bass finally appears intact, and the harmony is filled in with the right hand in registers closer to the original. This rhythmic reduction still lacks some of the impression that multiple contrapuntal lines are working together, but it sounds much more like Chausson's own work.

Figure 1–34: Chausson, "Chanson Perpétuelle" (his piano reduction)

Speaking of Chausson's own work, Figure 1–34 shows the opening of his own rhythmic reduction for piano (and vocal) performance, which weaves together elements of the original version with piano quintet. Singers with a great deal of proficiency at the piano as well as at sight singing could rehearse with this, the most authentic version of them all.

Across all of the rhythmic reductions shown so far in the service of *making* music, we have seen how they set out to sound like the piece, preserve its essentials, and fit the particular environment, each product keeping, altering, adding, or omitting material as necessary, in order to achieve an appropriate result. Outcomes reside on various of levels of simplification and abstraction, as they strive to suit the goals of the particular venue: performance, personal, or rehearsal, all while maintaining a relationship to a particular musical work.

Continuing this examination of rhythmic reduction types in our expanded view, the next chapter will consider rhythmic reductions created in the service of *studying* music. Examples discussed there will come from the venues of discussion, pedagogy, and analysis.

Chapter 2

Rhythmic Reductions Used in Studying Music

> The purpose of the final [rhythmic] reduction …
> is to show those tones that enter into the broadest
> and most far-reaching connections
> within the context under view.[1]
> –Felix Salzer and Carl Schachter

For the second half of our look at various types of rhythmic reductions in my expanded view, we will focus on three venues in the arena of *studying* music: discussion, pedagogy, and analysis. A number of illustrations could appear to cross over between discussion and pedagogy venues, but I wish to distinguish the two by saving pedagogy reductions for those more focused on teaching and learning specific aspects of music theory, rather than on examples employed for discussing a given topic in more general terms.

That said, one crossover from the performance environment deserves mention here, regarding the use of piano transcriptions. Thomas Christensen reminds us: "The benefits of four-hand arrangements were naturally not limited to bourgeois music amateurs and students. Critics and professional musicians relied upon them too. Countless published reviews of symphonies in the nineteenth century were based not on the orchestral score but on arrangements. Sometimes the full score was not available, as was the case when Schumann wrote his famous review of Berlioz's *Symphonie fantastique* using Liszt's solo piano transcription, and when G. W. Fink

[1] Felix Salzer and Carl Schachter, *Counterpoint in Composition: The Study of Voice Leading* (New York: McGraw-Hill, 1969), 128.

reviewed Mendelssohn's overture to *A Midsummer Night's Dream* based on a duet arrangement."[2]

As we progress through these three venues, the individual pieces that relate to their rhythmic reductions will take on more significance. Rhythmic reductions used in the discussion venue often form examples and points of reference to aid a larger conversation about music (rather than the original work or the rhythmic reduction it is in relationship with), perhaps exemplifying some feature of music as simple as melody or as complicated as emotion. In the pedagogy venue, rhythmic reductions often become vehicles to learn about basic elements of music theory, such as voice leading, harmony, and so on, the original work merely constituting an illustration of a given concept or paradigm. Finally, rhythmic reductions used in the service of analysis turn the tables somewhat, taking the knowledge of certain aspects of music along with certain elements of music theory and turning it back toward the individual pieces, revealing something of the original works themselves, rather than the original works revealing something about music.

2.1 Rhythmic Reductions Used in Studying Music: Discussion Venue

A rhythmic reduction in the discussion venue is not necessarily meant to be performed in any way; instead it often acts as only one contributing agent in the musical discourse. The sound of the piece is often generated by the reader's mind, rather than by any instrument(s). Essentials that are preserved serve to facilitate communication, and the environment of fit tends to be practical and economical, usually saving space on the page for other matters. In fact, a discussion reduction might even be incomplete in some way, as a more complete representation might be an

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[2] Thomas Christensen, "Four-Hand Piano Transcription and Geographies of Nineteenth-Century Musical Reception," *Journal of the American Musicological Society* 52, 2 (1999): 266.

unnecessary part of the dialogue. Charles Rosen sums up the situation nicely in a note about his own musical examples: "In reducing the orchestral and chamber scores by grouping several instruments on one stave, the object has been to combine ease of reading with the possibility of seeing all details of the full score. It should be possible to reconstruct the original score in almost all cases.… The examples of orchestral or quartet writing on two staves are, therefore, in no sense transcriptions for piano but transliterations of the originals."[3] Since no consistent pattern of simplicity or abstraction applies to the rhythmic reductions of the following examples, they will simply be grouped by topic: melody, counterpoint, harmony, theme, phrase, form, gesture, and meaning.

[3] Charles Rosen, *The Classical Style: Haydn, Mozart, Beethoven* (New York: The Viking Press, 1971), 13.

d. Turning around one or two points. Schubert: Symphony in B minor, first movement.

e. Connected or *conjunct.* Beethoven: Ninth Symphony, Hymn to Joy.

f. Disconnected or *disjunct.* Bach: Concerto for Two Violins in D minor, first movement.

g. Directly to a point. Beethoven: Sonata in F minor, Op. 2, no. 1, first movement.

h. Rounded. Mozart: Symphony in G minor, Menuetto.

Figure 2–1: Ratner, examples of melodic movement

In Figure 2–1, Leonard Ratner retains only melodic fragments from the original works, in order to have a discussion about melodic movement.[4] Ratner has chosen several widely known works, as a way of adding weight to his own points about melody. The reader is presented with enough information to understand these points immediately, and a number of examples can be given in a small amount of space.

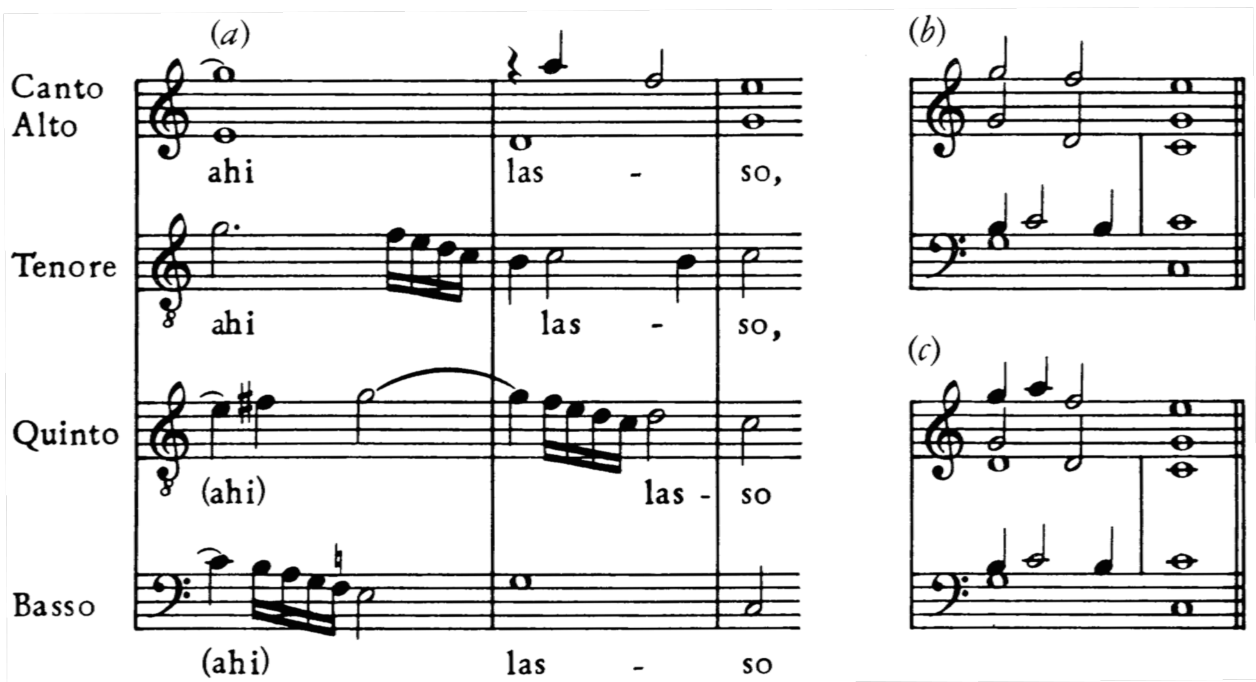

Figure 2–2: Palisca, counterpoint example from Monteverdi, *Cruda Amarilli*, mm. 12–14

Examining the debate about Monteverdi's controversial counterpoint employed in his *Cruda Amarilli*, Claude Palisca provides a simplified yet suitably abstract summary of the underlying counterpoint under scrutiny (Figure 2–2).[5] Palisca's rhythmic reduction highlights the exact points of controversy, removing surface details that are inconsequential to the discussion.

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[4] Leonard G. Ratner, *Music: The Listener's Art* (New York: McGraw-Hill, 1957), 20.
[5] Claude V. Palisca, *Studies in the History of Italian Music and Music Theory* (Oxford: Clarendon Press, 1994), 8.

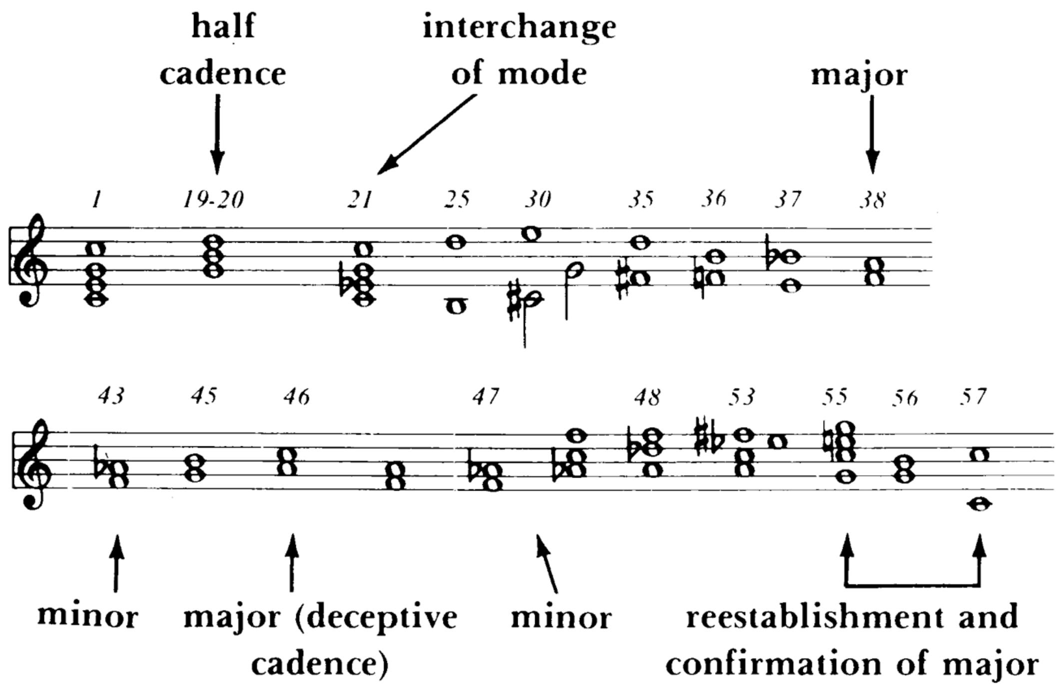

Figure 2–3: Ratner, interchange of mode, Mozart, Quintet in C major, K. 515, I, opening

For this example concerning harmony (Figure 2–3), Ratner has compressed and preserved only the most basic chordal elements of Mozart's quintet, layering on descriptors to facilitate his discussion of mode interchange.[6] Access to (or knowledge of) the full score is assumed, measure numbers providing the necessary referents to follow along. Once again we see how the minimum number of square inches are employed in the making of his point.

[6] Leonard G. Ratner, *Classic Music: Expression, Form, and Style* (New York: Schirmer, 1980), 57.

a. Introduction

b. Allegro of first movement.

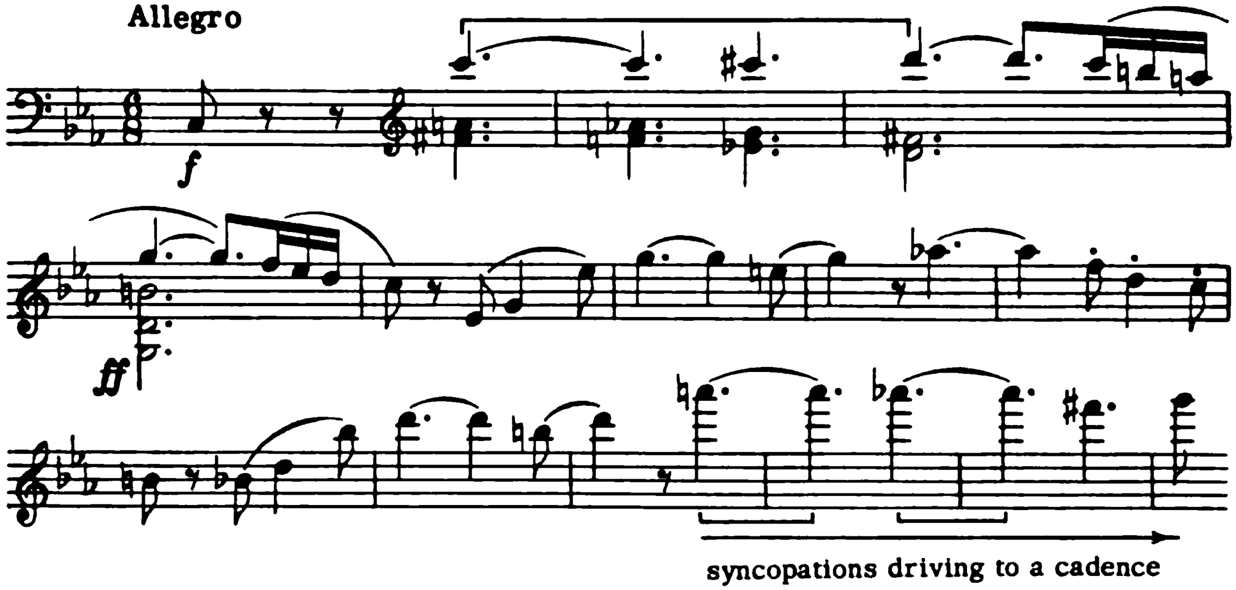

Figure 2–4: Ratner, thematic reminders from Brahms, Symphony No. 1

Ratner employs a greatly condensed form of the full score of Brahms's Symphony No. 1 for his discourse (Figure 2–4).[7] In each case, only the barest essentials of melodic and rhythmic content are preserved for the reader. As in the case of rehearsal reductions we examined previously, these rhythmic reductions act as incomplete reminders, priming the reader to remember the rest of the score from memory or at least to provide a visual reference point if score study is necessary.

Figure 2–5: Mozart, String Quintet in G minor, K. 516, III, mm. 56–66

[7] Ratner, *Music*, 257–58.

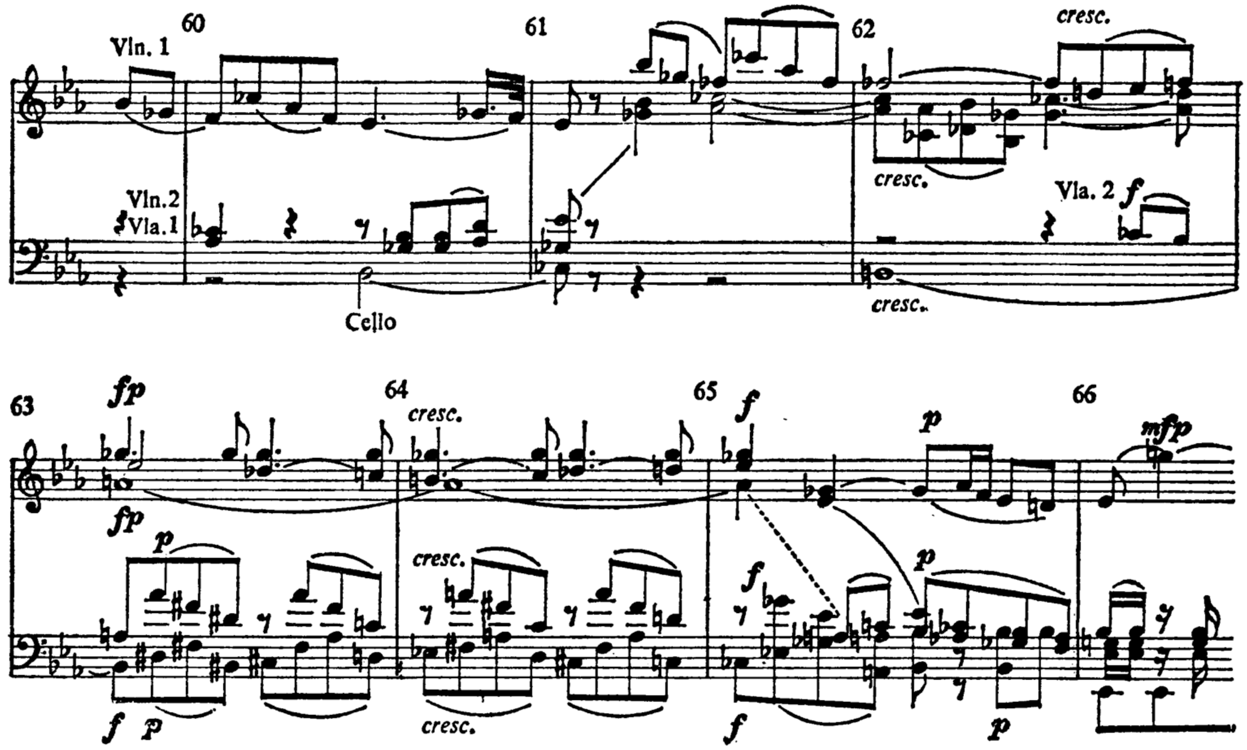

Figure 2–6: Rosen, phrase expansion, Mozart, String Quintet in G minor, K. 516, mm. 60–66

For Charles Rosen's discussion of phrase expansion (Figures 2–5 and 2–6), he simply transcribes five staves onto two, simplifying the texture and designating the members of Mozart's quintet where appropriate.[8] This allows the reader to focus more squarely on the element of phrasing, avoiding the need to read perhaps unfamiliar alto clefs in duplicate, even though playing it would be a stretch to say the least.

[8] Rosen, *The Classical Style*, 88.

Figure 2–7: Beethoven, String Quartet in C minor, Op. 18, No. 4, opening

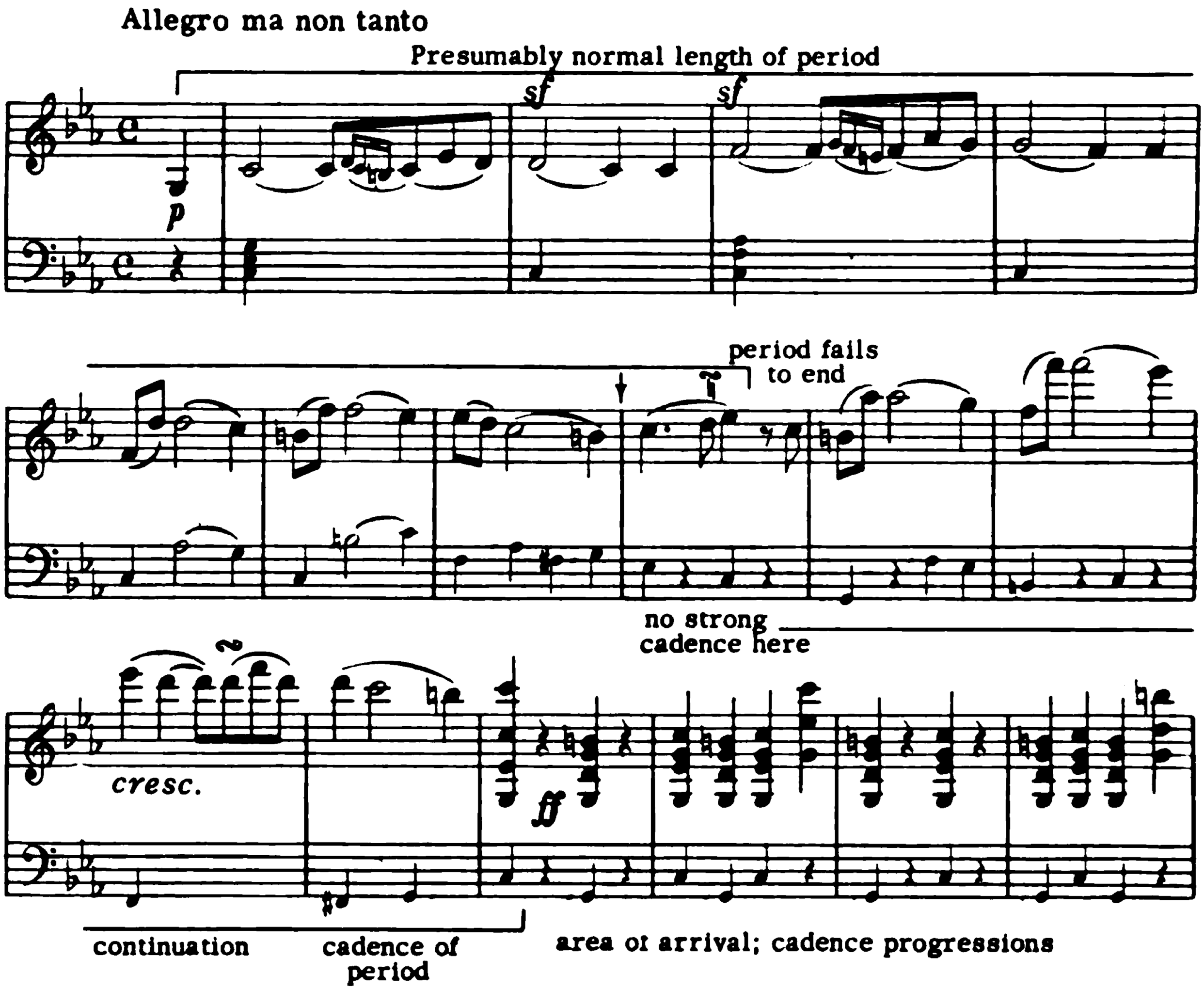

Figure 2–8: Ratner, aspects of periodic structure, Beethoven, String Quartet in C minor, Op. 18, No. 4, opening

As seen in Figures 2–7 and 2–8, Ratner uses a rhythmic reduction to facilitate a discussion of certain elements of periodic structure.[9] A quick glance shows that it is not meant to be played (at least by one person), but it portrays all of the relevant information: the complete melody, as well as simplified harmony and bass line elements. On top of his reduction, he has layered on descriptions relevant to his topic; in this way, a *new* type of material is added to this representation, constituting words instead of musical elements we encountered in previous

[9] Ratner, *Music: The Listener's Art*, 182.

examples in the making-music environment. Remember: this is not an *analysis* of Beethoven's quartet but an example used to make Ratner's point about this aspect of form in music.

Figure 2–9: Mozart, Piano Concerto No. 9, K. 271, mm. 32–40

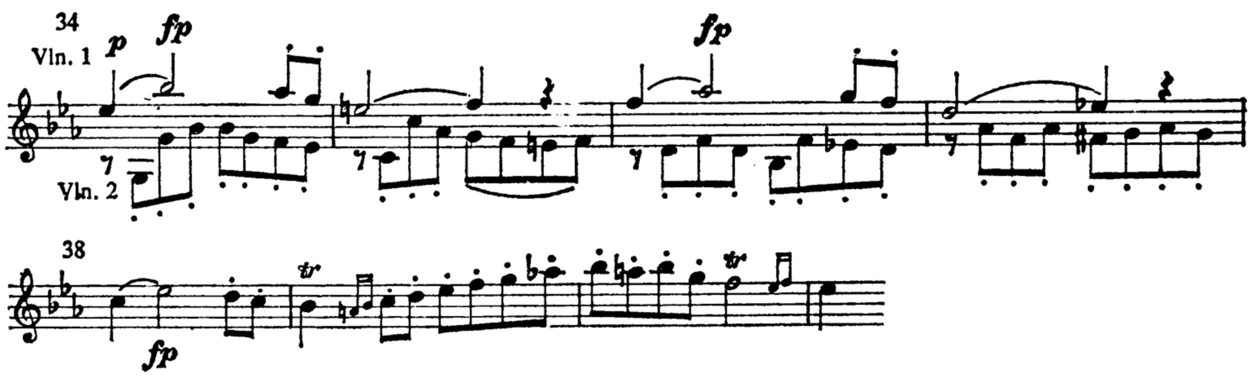

Figure 2–10: Rosen, musical gestures in Mozart's Piano Concerto No. 9, K. 271, mm. 34–41

Moving up the ladder of abstractions slightly, Rosen speaks of Mozart's Piano Concerto No. 9, K. 271 (Figure 2–10), in terms of style and musical gesture, referring to "graceful movement upwards"[10] and "expressive intensification,"[11] when discussing the shape of the voices along with their melodic content. As we have seen in other cases, only what is necessary is preserved, the supporting voices in the lower strings being left aside.

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[10] Rosen, *The Classical Style*, 200.
[11] Rosen, *The Classical Style*, 200.

Figure 2–11: Mozart, *Don Giovanni*, Act 1, Scene 2, mm. 15–30

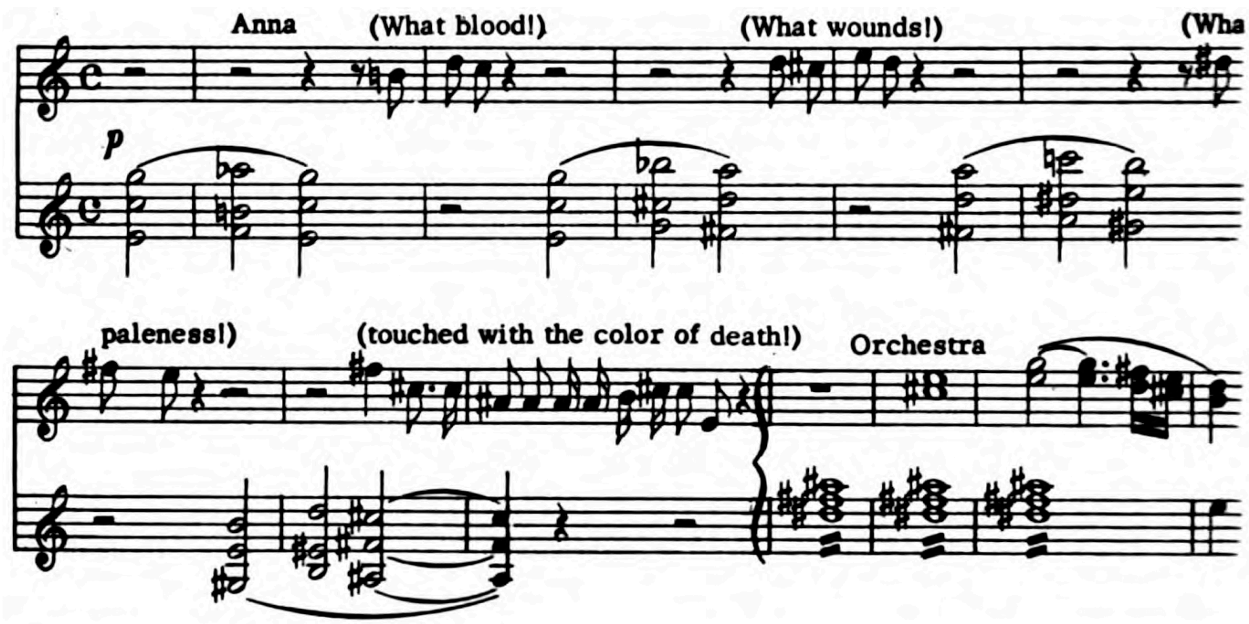

Figure 2–12: Ratner, hermeneutical example from Mozart's *Don Giovanni*, Act 1, Scene 2, mm. 17–29

Our final example in the discussion venue has to do with emotional content, rather than strictly musical content. Here Ratner provides an excerpt from Mozart's *Don Giovanni* (Figure 2–12), investigating how the fits and starts of the melody, along with the harmonic interest in the accompaniment, help generate the emotions implied by the words, saying: "Here we have fragments of expressive melody, pathetic touches, outbursts of strong feeling."[12] Indeed, the words themselves are only given as parenthetical additions, though they are present in the full score and sung in performance. Again we see yet another type of perfect product: the minimum space used for maximum effect.

[12] Ratner, *Music: The Listener's Art*, 170.

2.2 Rhythmic Reductions Used in Studying Music: Pedagogy Venue

The following insights will serve as a helpful reminder about the nature of the rhythmic reduction explored in the next two venues. Edward Aldwell and Carl Schachter, in their classic textbook, tell us that: "Any reduction will be less beautiful, interesting, and special than the original passage, but a good one will reveal the aspects of the music that might not be immediately obvious from looking at the score. For this to happen, *your reduction should sound coherent and logical. And it should sound close enough to the original passage to serve as a good 'map' of that passage*. Although the surface rhythms of a reduction may be very different from the original, *the underlying pace of the chord progressions should remain close to that of the actual music*."[13]

As mentioned previously, rhythmic reductions in the pedagogy venue set out to teach about some relatively specific aspect of music or music theory in particular. Similar to discussion reductions, pedagogy reductions fit the minimum amount of space in their conservation of what is deemed essential. Examples may be more or less abstract, depending on the topic and context involved, expanding further the notion of what "sounding like the piece" could mean. Following the organization of the previous venue, illustrations will proceed topically, covering aspects of melody, counterpoint, voice leading, harmony, along with grouping and ranking.

[13] Edward Aldwell and Carl Schachter, *Harmony & Voice Leading*, 4th Edition (Boston: Schirmer, 2011), 693, emphasis original.

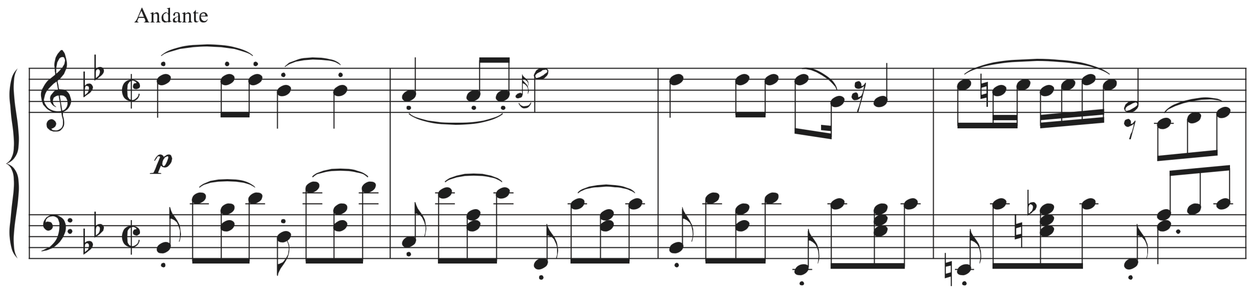

Figure 2–13: Schubert, Impromptu, D. 935, Op. 142, No. 3, opening

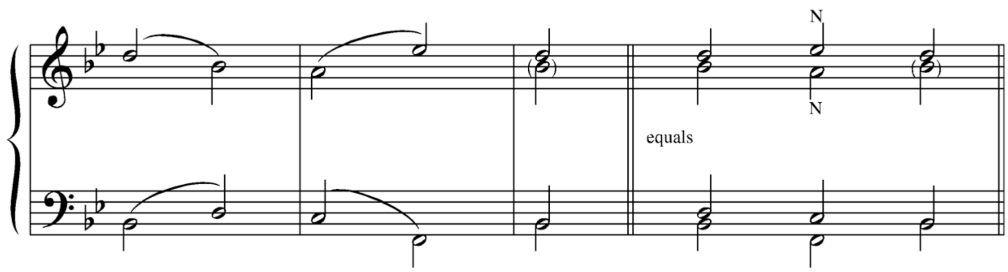

Figure 2–14: Aldwell and Schachter, polyphonic melody example from Schubert's Impromptu, D. 935, Op. 142, No. 3, opening

For our first example in the pedagogy venue (Figure 2–14), Aldwell and Schachter use a Schubert impromptu (Figure 2–13) as the basis for a rhythmic reduction that highlights the slower-moving compound melodies found in both hands, before further simplifying them by normalizing the displacements of the inner voices, in order to show an even longer-range melodic neighbor motion in the upper parts.[14] In this way, readers can relate an underlying concept to an actual piece of music, a fundamental goal of the pedagogy venue.

[14] Aldwell and Schachter, *Harmony & Voice Leading*, 374.

Figure 2–15: Petzhold, Minuet, mm. 9–16

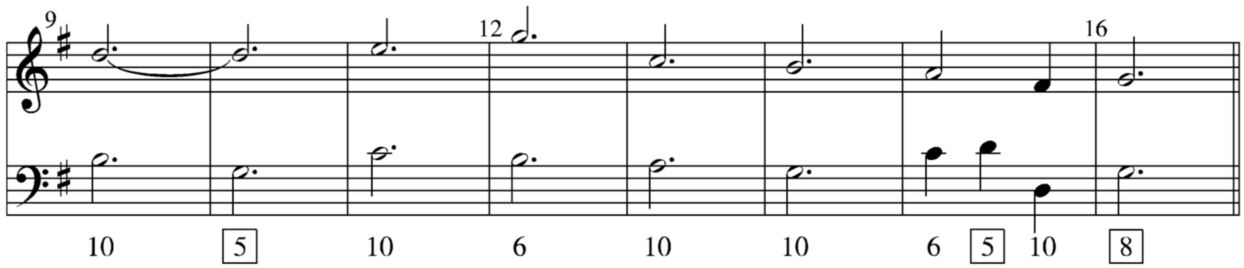

Figure 2–16: Aldwell and Schachter, counterpoint example from Petzhold's Minuet, mm. 9–16

Aldwell and Schachter's rhythmic reduction of Christian Petzhold's minuet (Figure 2–16) provides a simple illustration of how a first-species framework can undergird a tonal work. The essentials preserved here are the structural intervals of each measure, with the preference obviously going to the slower-moving consonances.[15] Even though many of the same intervals are marked in the score excerpt (Figure 2–15), the rhythmic reduction adds clarity as well as interpretation, in order to facilitate learning the topic under scrutiny.[16]

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[15] Aldwell and Schachter, *Harmony & Voice Leading*, 70.
[16] Aldwell and Schachter, *Harmony & Voice Leading*, 70.

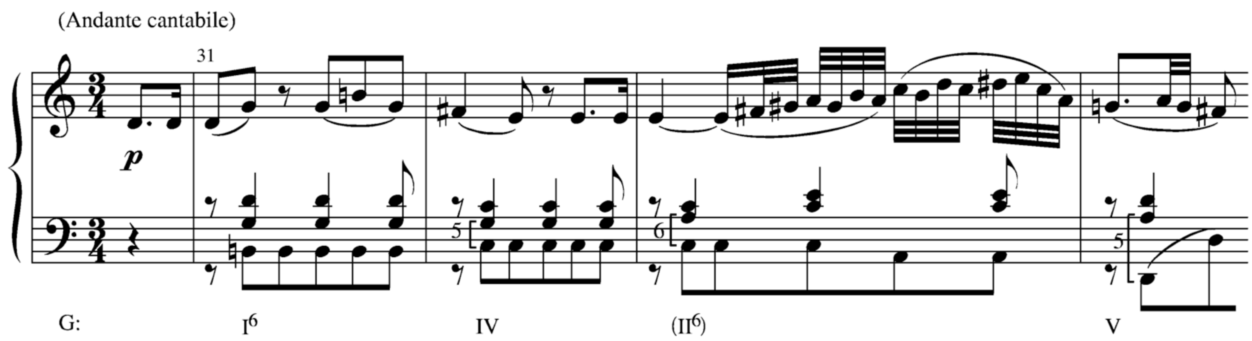

Figure 2–17: Mozart, String Quartet K. 387, III, mm. 31–34

Figure 2–18: Aldwell and Schachter, voice-leading example from Mozart's String Quartet K. 387, III, mm. 31–34

For this next pair of examples, Aldwell and Schachter use a rhythmic reduction (Figure 2–18)[17] of a Mozart string quartet excerpt (Figure 2–17, itself a type of performance reduction),[18] in order to demonstrate two concepts: the contrapuntal expansion of the subdominant IV harmony (in bars 32–33), and the avoidance of parallel fifths (presumably from bars 32–34), both accomplished through the 5–6 voice-leading motion. Aldwell and Schachter's pedagogy reduction clarifies the texture of Mozart's original for their own purposes by moving the first tenor line up to the treble staff and removing the melodic diminutions. Also, they highlight and preserve the essential voice-leading motion under investigation by providing brackets and numbers around the lower two voices.

[17] Aldwell and Schachter, *Harmony & Voice Leading*, 174.
[18] Aldwell and Schachter, *Harmony & Voice Leading*, 173.

Figure 2–19: Bach, Little Prelude, BWV 924, opening

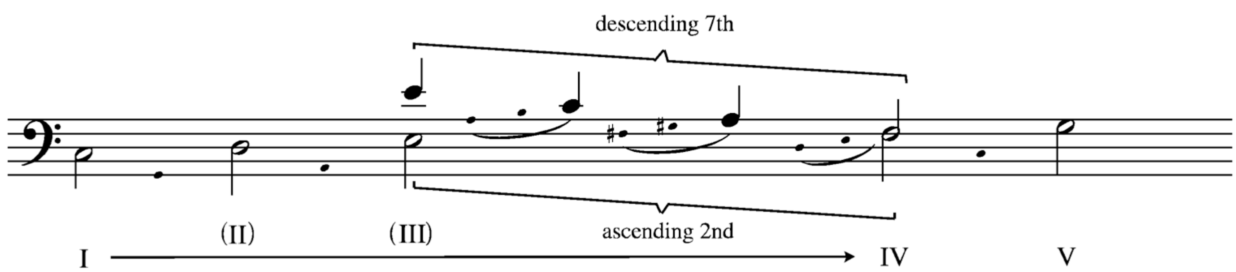

Figure 2–20: Aldwell and Schachter, harmony and ranking example from Bach's Little Prelude, BWV 924, opening

The final pedagogy reduction of this section takes Bach's Little Prelude, BWV 924 (Figure 2–19), and highlights aspects of harmonic motion, along with a depth of rank through the use of musical notation and other visual aspects of the representation.[19] In this instance (Figure 2–20), Aldwell and Schachter draw attention not only to the long-range harmonic motion from I to IV but also to the smaller motions within that larger motion, using Roman numerals in

[19] Aldwell and Schachter, *Harmony & Voice Leading*, 499.

parentheses along with small, stemless noteheads to show elements of lower structural rank.[20] All of the other elements are stripped away; the entire melody abandoned, as well as many of the bass diminutions, these bits of information deemed non-essential for their goals at the time. Looking at this rhythmic reduction in particular, we can see the pedagogical types begin to cross over into the analytical venue, this representation appearing to be much more than a simple illustration of a particular music-theoretical paradigm and more like an analysis of that section of the original piece.

2.3 Rhythmic Reductions Used in Studying Music: Analysis Venue

As intimated earlier, rhythmic reductions in the analytical venue shine the spotlight on the original work, granting us access to some of its inner workings, possibly giving the analyst a first look at some undiscovered content, as Carl Schachter states: "The hearing of structure cannot be confined to the mental representation of 'what is there' in the music, but must also encompass the active searching out of what is *implied* by what is there."[21] These types of rhythmic reductions are not pedagogical reductions as previously defined, though pedagogical goals are often involved: creating analytical rhythmic reductions helps us (or our students) learn to abstract, to think more critically, more deeply, more creatively about music. In other words, how we contemplate and create rhythmic reductions helps make us better *musicians*.

Over the past five venues, we have encountered a vast number of perfect products, rhythmic reductions in any of the multitude of relationships with original works, all of them seeking to sound like the piece, preserve its essentials, and fit a particular environment, using the

[20] Aldwell and Schachter, *Harmony & Voice Leading*, 500.
[21] Carl Schachter, "Structure as Foreground: 'Das Drama des Ursatzes,'" in *Schenker Studies* 2, edited by Carl Schachter and Hedi Siegel (New York: Cambridge University Press, 1999), 304, emphasis added.

processes of keeping, altering, adding, and omitting material on the way to the final outcome. Each outcome may reside on any level of simplification and any degree of abstraction, as dictated by the particular circumstance, and may be more or less traditional in its outlook. Martin Katz and Claude Palisca brought us more traditional rhythmic reductions (Figures 1–2 and 2–2, respectively); Al Yankovic and the programmers of *Guitar Hero* brought us more modern ones ("Dare to be Stupid" and Figure 1–25, respectively). Ralph Vaughan Williams gave us less simplicity in execution (Figure 1–10), and Bergerac gave us considerably more simplicity in execution (Figure 1–24). An extremely low level of abstraction appears in Brahms's performance reduction (Figure 1–7), while a much higher level of abstraction is displayed in Aldwell and Schachter's pedagogy reduction (Figure 2–20). Taking my expanded view, all of the examples encountered so far show us the extreme range of flexibility and intricacy in something as seemingly common and unimaginative as rhythmic reduction.

In this, our concluding venue, I want to investigate rhythmic reductions produced in the service of analysis, specifically those geared toward aiding in the creation of a Schenkerian graph. With this objective in mind, it will be beneficial to take a survey of some of the information that Schenkerian graphs regularly contain.

2.4 Schenkerian Graphs: A Fundamental Look

Without delving too deeply into Schenkerian *theory*, a consideration of some general aspects and components of Schenkerian *graphs* will facilitate our discussion of rhythmic reductions dedicated to analysis. From there, I will consider some possible benefits of employing rhythmic reductions in conjunction with Schenkerian graphing, some preferences in their assembly, some readily available data from that assembly, as well as some potential pitfalls or drawbacks in their use.

Similar to a rhythmic reduction, a Schenkerian graph also tends to "sounds like the piece," as an abstract representation of the structural melodic, harmonic, and voice-leading elements; it "preserves the essentials" of the original work, the analyst having made decisions on what constitutes those elements; and it "fits the prescribed environment," an environment where musical notation itself, as Forte and Gilbert informed us earlier, has the ability to carry many additional and alternate meanings to this particular embodiment of analysis.

Continuing the trend of thinking in large, general categories—as I did when forming my theory of rhythmic reduction—a Schenkerian graph could be thought of in this way: a compilation of *ranked tones* in *groups*, presented in abstract time and across various *structural levels*, or perhaps more simply put: *tones* in *relationships*. As is the case with my categories for rhythmic reductions, the relational and classification types I have just mentioned for a Schenkerian graph are not meant to comprise a totally sealed system, able to cover every possible entity and every possible relationship that could be represented, but they do contain much of the content that is likely to be captured in a Schenkerian graph. In addition, all of the relationships depicted in a graph are in synthesis with one another, intertwined, perhaps an aspect being granted primacy at certain points, perhaps rendered subordinate at other points, all within the complex whole of the analysis, itself often more than the simple sum of its constituent parts.

Some of the multiplicity of relationships contained within a graph are displayed with musical notation symbols, and some are shown with other labels or symbols, such as figured-based signatures, outer-voice interval ordinals, designations of elements of form, Roman numerals, or by more specialized, graph-specific indicators. The next section will proffer some basic examples of how Schenkerian graphs exhibit information in the categories of “tones,” “ranking,” “grouping,” and “structural levels.” Keep in mind that just as a multi-level Schenkerian representation does not mimic the compositional process, the following discussion of categories, processes, and principles is also not meant to mirror the analytical process in any sort of linear or strict way, as making decisions in one category often affects the view of one or more of the other categories.

Tones:

While William Rothstein’s article on implied tones suggests that “Schenkerian analysis can be described as a process of abstracting tones from notes,” it neglects to mention specifically—but tacitly acknowledges—that a Schenkerian analysis does more than this, converting those pitches not only into tones, but tones *in relationships*.[22] A *tone* is a manifestation of interpretation, as Rothstein states: “[Tones] are not what we ‘hear’ in the literal sense of that word; rather, they are a way of representing to ourselves what we have heard already.”[23] Shortly thereafter, he continues with: “Tones, as just defined, possess only some of the qualities of notes, although the degree of commonality between the two categories varies with the degree of abstraction: in other words, tones may be more or less abstract.”[24] Therefore, tones may share some, all, or perhaps even none (as may be the case with implied tones) of the qualities of the converted pitches from the score: pitch, register, duration, tempo, articulation, phrasing, dynamics, timbre, orchestration, context, meaning, and so forth, each step away from the original seen as moving a step up the ladder of abstraction.

[22] William Rothstein, “On Implied Tones,” *Music Analysis* 10, 3 (1991): 295.
[23] Rothstein, “On Implied Tones,” 294.
[24] Rothstein, “On Implied Tones,” 294.

Figure 2–21: Schubert, "Wandrers Nachtlied," Op. 4, No. 3, D. 224

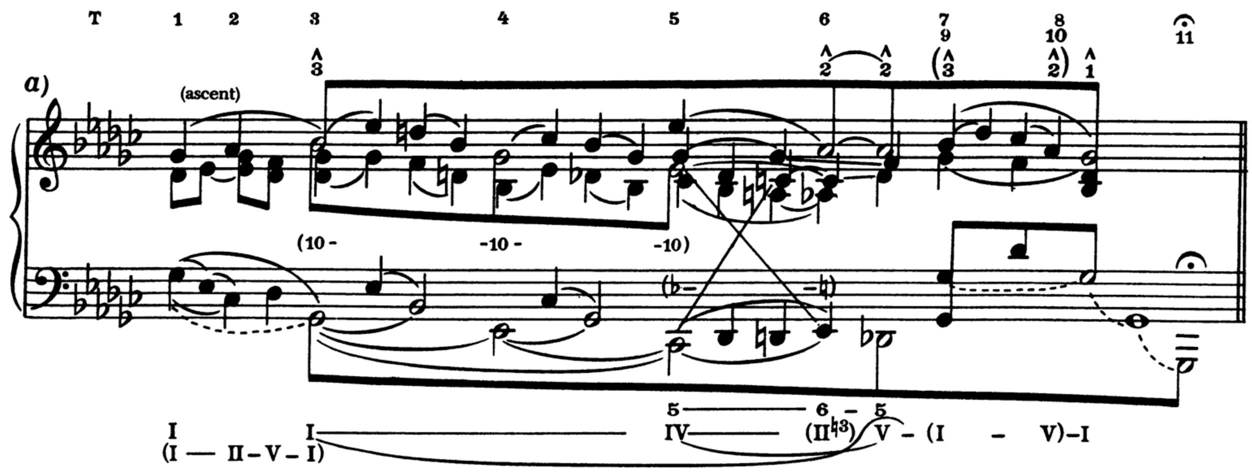

Figure 2–22: Schenker, analytical graph of Schubert's "Wandrers Nachtlied," Op. 4, No. 3

Schenker's analytical graph of Schubert's "Wandrers Nachtlied," Op. 4, No. 3 (Figure 2–22), shows one possible transmutation of the notes of the score (Figure 2–21) into analytical tones, showing many of the common relationships displayed in a typical graph: structural importance represented by rhythmic values;[25] grouping by slurs and beams; scale degrees over the most structurally significant melodic tones; contrapuntal patterns (exemplified by the 10–10–10 figure between the staves); voice-exchanges shown by diagonal lines; Roman numeral analysis below the bass line; the use of specialized terms ("ascent" over the first three melodic tones, for example); and measure numbers running across the top.[26]

The conversion of pitches into tones generally engages two decision areas: *inclusion* and *position*. Decisions regarding "inclusion" revolve around whether or not to display a particular note as a tone in the graph, the visual arena; while these decisions may take the form of what

[25] Note that these values are located purely abstract time and do not necessarily coordinate directly with any actual surface durations. For example: bar 2 has one quarter note in it, while bar 3 has four of them. This does not mean that Schenker or Schenkerian analysis disregards rhythm, as Rothstein's dissertation and Schachter's articles in *The Music Forum* (among many other sources) will show.
[26] Heinrich Schenker, *Free Composition*, translated and edited by Ernst Oster (1979; repr., Hillsdale: Pendragon Press, 2001), Figure 37.

appears to be mere elimination, as in the removal of a surface diminution, for example, I prefer to construe the process as *telescoping*, since on some level any eliminated notes are subsumed, contained, somehow bound up with the tones placed in the graph to stand for the surface events under investigation, just as a drawing of a car at an intersection might include an octagonal shape on a post as a representation of a stop sign, that shape constituting the sign's essential quality, its other aspects (the white border, red color, and white lettering) being left out, inferred by the symbol standing in for them. "Telescoping," therefore, is addition through subtraction: the removal of certain content, guided by the goals of the given type of portrayal, helps draw attention to other aspects of a particular interpretation. This telescoping of material can also go the other direction as well, exposing concealed content, highlighting less obvious aspects of the work, aspects deemed essential, perhaps even expanding such content in the arena of tones during the conversion process.

Once the seemingly simple "in or out" process of inclusion is more or less complete, the analyst faces decisions of "position." That is to say, each included tone must be placed in abstract time and register (in addition to being ranked and grouped with other tones), the position of a tone often modified through processes of *normalization*, as we will consider shortly.

In what follows, I will discuss some of the conversion process from notes of the score to tones in a graph, taking advantage of the four methods I have used up until now: keep, alter, add, and omit. From there, the conversation turns toward the other three categories, those of ranking, grouping, and structural levels, showing some examples from each arena, always bearing in mind that these categories, their content, and the examples chosen do not comprise some kind of primer for analysis itself.

“Keeping” a note from the score and representing it as a tone in a graph is not quite as simple as it might, at first, appear. Since the tone is already an abstraction, residing at some level of conceptual distance from the score, perhaps we should remember what retaining content meant in some of our earlier examples of rhythmic reduction, where any type and amount of elements could be carried over from the original work. For example, the E♭ and B♭ of the bass line in bar 3 of Schenker’s graph of Schubert’s “Wandrers Nachtlied,” Op. 4, No. 3 (Figure 2–22) possess only their pitch *class*, their original register, duration, dynamics, and so forth left behind. In other words, notes do not have to be kept wholesale; any of its constituent elements could be altered in some way or even removed.

Figure 2–23: Mendelssohn, *A Midsummer Night's Dream*, No. 9, "Wedding March," mm. 1–17

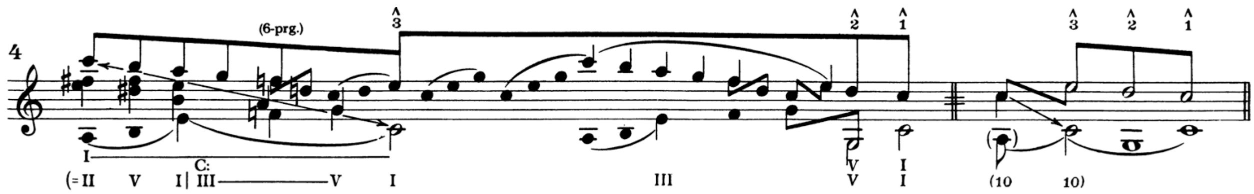

Figure 2–24: Schenker, multi-level graph of Mendelssohn's "Wedding March," mm. 6–13

One of the most common ways to "alter" a note, further fixing its position in this new abstraction, is to subject it to what Rothstein calls *rhythmic normalization*: "Rhythmic normalization—a term that originates in [Rothstein's] dissertation—is the opposite of rhythmic displacement. If a tone is understood to be displaced rhythmically, it is understood to have been shifted from a normal rhythmic position to an abnormal one.… Normalization reverses the displacement process. When a rhythm is normalized, any displaced tones are shifted back to their normal positions.… Normalization is an inherent component of the reductive process."[27] To speak in more specific terms, rhythmic normalization engages two components: *effective location* and *effective duration*. The "effective location" of a tone is its "normal" position in abstract time, as dictated by other factors in the synthesis of a musical work, including melody, harmony, harmonic rhythm, metric structure, and so on. The "effective duration" of a tone is its abstract length, even if that tone is not physically sounding the entire time.

Rhythmic displacements such as suspensions and syncopations are easy enough to understand in terms of their effective durations and locations, of course, but in his multi-level graph of Mendelssohn's "Wedding March" (Figure 2–24), Schenker shows us a slightly deeper aspect of such concepts,[28] as intimated by Forte and Gilbert: "Diminutions often displace the notes upon which they are dependent, sometimes causing musical elements which belong

[27] William Nathan Rothstein, "Rhythm and the Theory of Structural Levels" (Ph.D. diss., Yale University, 1981), 75.
[28] Schenker, *Free Composition*, Figure 89,4.

together to occur in different temporal locations."[29] In the first segment of this graph, corresponding to mm. 6–9 in the score (Figure 2–23), Schenker draws a double-headed arrow between the C above the staff and the C below the staff, the further abstraction laid out after the equals sign showing this displacement relationship more simply. Here a series of diminutions (the B–A–G–F♮) separates the related, displaced tones, the two Cs, shown as connected by the arrow (and the beam).

[29] Allen Forte and Steven E. Gilbert, *Introduction to Schenkerian Analysis* (New York: W. W. Norton, 1982), 14.

Figure 2–25: Mozart, Piano Sonata in A Major, K. 331, III, mm. 1–26

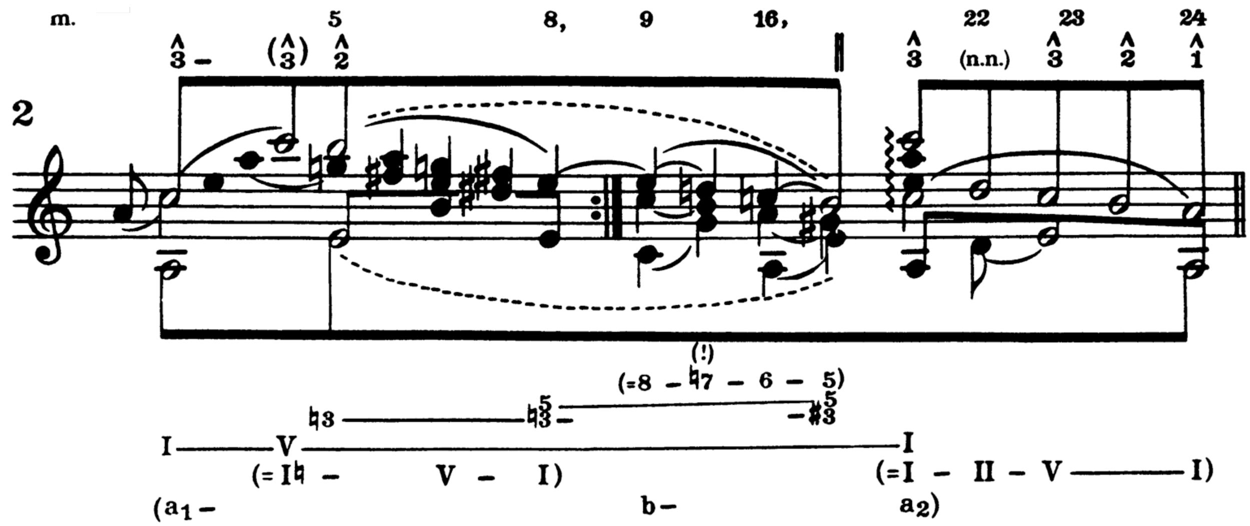

Figure 2–26: Schenker, graph of Mozart's Piano Sonata in A Major, K. 331, III, mm. 1–24

Carrying this concept a bit further, Rothstein tells us: "All tones of an arpeggiated harmony 'belong' together as a vertical chord. In a normalized version, the tones of arpeggiation will eventually be realigned so that the displaced arpeggiation tones are restored to the vertical chord from which they originate."[30] Arpeggiations that appear as mere diminutions across a single beat or bar normalize quite simply, but the graph in Figure 2–26 of Mozart's widely known Rondo "Alla turca" movement (Figure 2–25) shows what arpeggiation may mean at a higher level of structure.[31] In this example, the arpeggiation of the A-minor harmony spreads across the first four measures, and Schenker sums up this motion as a vertical sonority, beginning at the repeat of the opening section (mm. 16b–21a). Of course, rhythm is not the only aspect of a composition that can be "normalized." Other alterations to notes on their way to becoming tones include normalizing *register* and normalizing *the number of voices* preserved.

[30] William Rothstein, "Rhythmic Displacement and Rhythmic Normalization," in *Trends in Schenkerian Research*, edited by Allen Cadwallader (New York: Schirmer Books, 1990), 92.
[31] Schenker, *Free Composition*, Figure 35,2.

Figure 2–27: Chopin, Étude Op. 10, No. 12, mm. 1–18

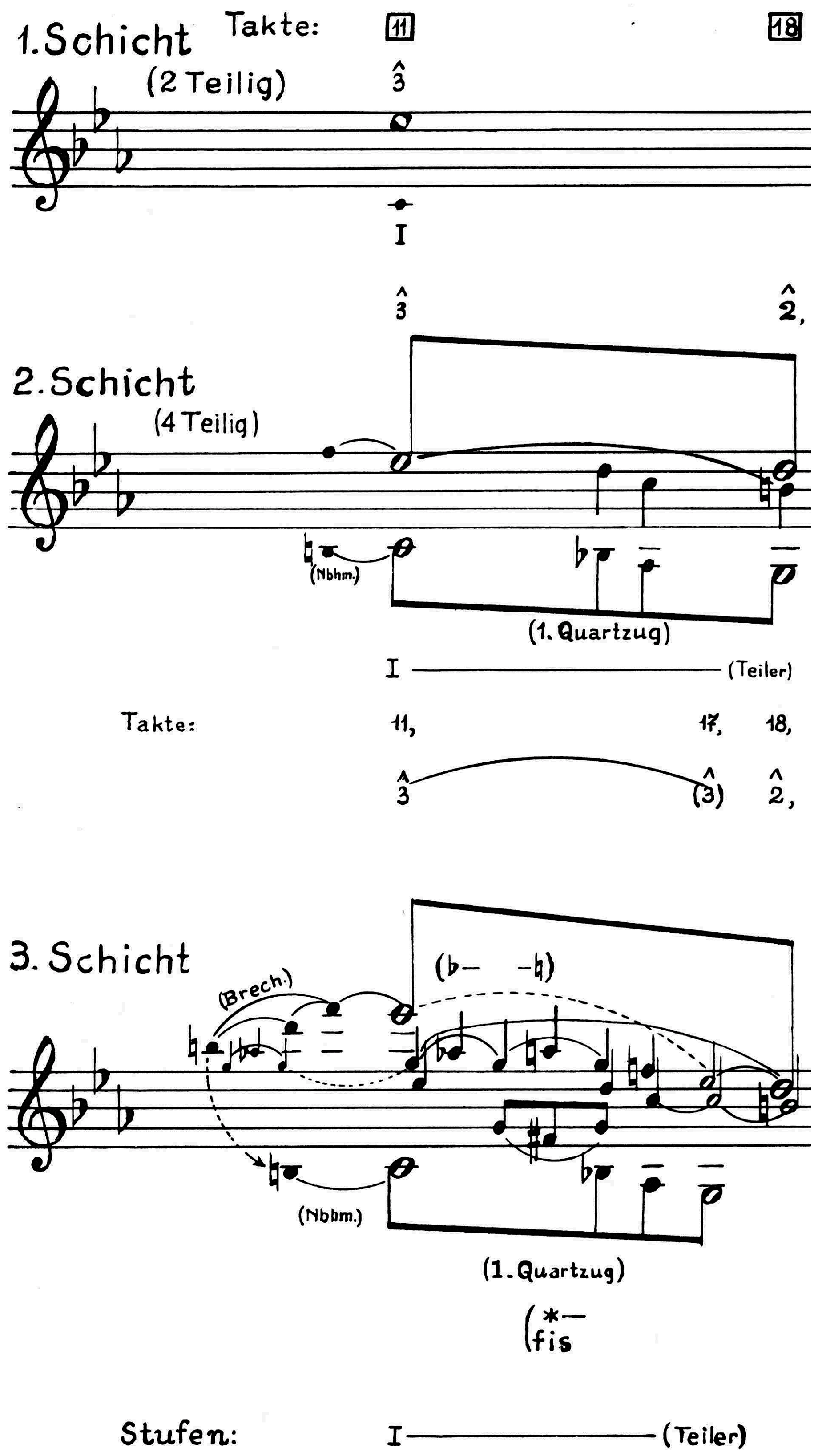

Figure 2–28: Schenker, graph of Chopin's Étude Op. 10, No. 12, mm. 1–18

Schenker's graph of Chopin's Étude Op. 10, No. 12 (Figure 2–28) shows normalization of register.[32] The top line register from the score and layer 3 (*Schicht*) is normalized down an octave in mm. 1–11 for layer 2 (the dotted slur between the two E♭s also showing the coupling of registers). The functional bass line register is also normalized, moving up two octaves in mm. 7–11 in all layers. These normalizations are employed not only to allow the graph to fit on a single staff but also to maintain melodic fluency (a general preference for stepwise melodic motion), as evidenced by the upper E♭ in bar 11 now exhibiting a stepwise relationship with the D of bar 18, their registers having been aligned through the normalization process.

[32] Heinrich Schenker, *Five Graphic Music Analyses* (1933; repr., New York: Dover, 1969), 54.

Figure 2–29: Schumann, *Dichterliebe*, No. 2, “Aus meinen Tränen sprießen”

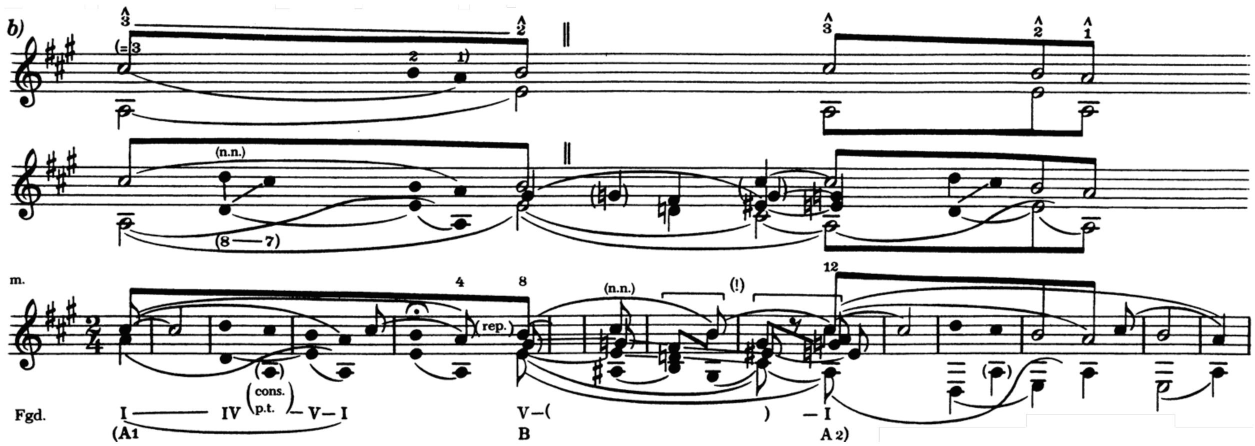

Figure 2–30: Schenker, multi-level graph of Schumann's *Dichterliebe*, No. 2, "Aus meinen Tränen sprießen"

Normalization of the number of voices is shown in stages in Schenker's multi-level graph of Schumann's *Dichterliebe*, No. 2, "Aus meinen Tränen sprießen" (Figure 2–30).[33] Each structural level in the representation retains only the minimum number of voices necessary, in order to show the essential harmonic and voice-leading entities. At the most surface level (marked "Fgd." for "Foreground" in the graph), Roman numerals stand in for the inner voices of mm. 1–8, and subsequent levels see yet more voices removed, as each layer shown above the bottom one demonstrates a move up the ladder of abstraction. By contrast, *every* voice is retained in the chromatic section of mm. 9–12 in the foreground level of the graph, as *all* of these tones are deemed essential at this level of structure and are not as easily replaced by some other form of notation.

In other situations, more voices could be added as desired, perhaps incorporating a relevant contrapuntal line or showing a proper resolution of a dissonance; more voices could also be removed, perhaps figured-based signatures or some other form of clear labeling substituted for inner voices.

[33] Schenker, *Free Composition*, Figure 22b.

Figure 2–31: Schubert, *Valse Noble*, Op. 77, No. 1

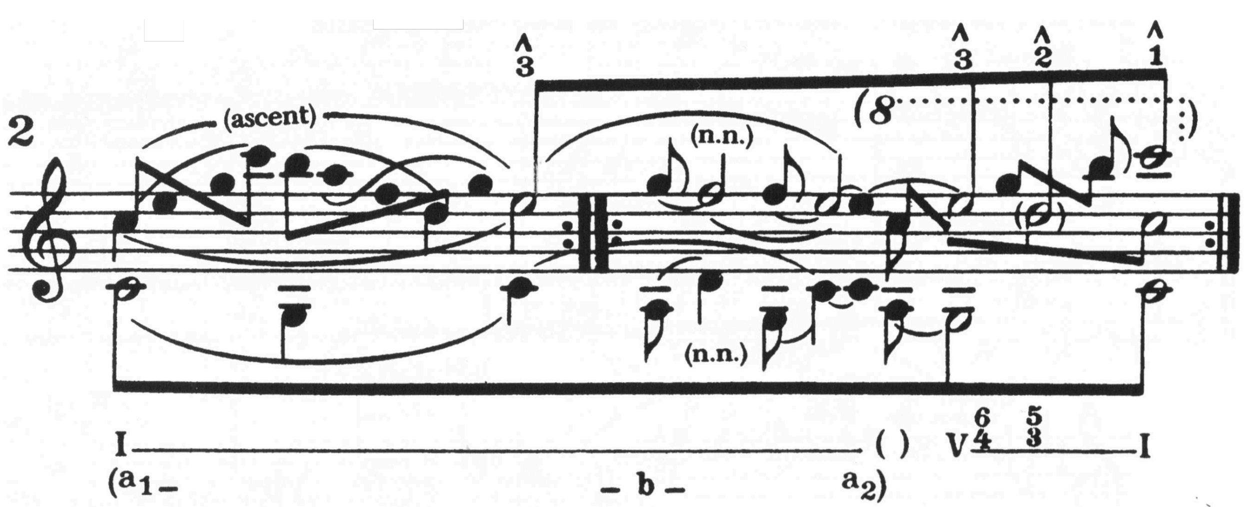

Figure 2–32: Schenker, graph of Schubert's *Valse Noble*, Op. 77, No. 1

"Adding" tones during the conversion process from score to sketch can take various forms, but a common addition is the *implied tone*. "Implied tones," as defined by Rothstein in his article on the subject, are "tones that, while literally absent, are present in some sense because their existence as indicated by surrounding events."[34] In Schenker's graph of Schubert's *Valse*

[34] Rothstein, "On Implied Tones," 289.

Noble, Op. 77, No. 1 (Figure 2–32), he puts parentheses around the D of the E–D–C melodic progression at the end of this analysis, implying its presence as part of the final cadence.[35] This tone is implied by the voice-leading motion of the cadential six-four succession and is presented by Schenker's graph because of the preference for melodic fluency, especially regarding the descent of the most highly ranked melodic tones. Forte and Gilbert note this and other situations for the employment of implied tones, saying: "In the free composition, a note may be *implied* although not actually present in the music. This is possible because of the completion of a voice-leading connection, the continuation of a linear intervallic pattern, the completion of a voice exchange, or by the completion of a component of a compound melodic structure (as a special case of a voice-leading connection)."[36]

"Omitting" notes in the conversion process from notes to tones is somewhat of a misnomer; while the notes of the surface appear to have been removed, more often they are actually telescoped into the tones that remain in the graph to stand for them, hidden, yet recoverable. Looking back at the "Wandrers Nachtlied" example (Figure 2–22), we can see how the apparent removals of octave doublings and redundant inner-voice tones actually represent a type of telescoping, the tones in the graph standing in for those other elements from the score. Another type of apparent omission comes through a process often labeled something along the lines of: "remove the notes of lower structural rank at the surface level," Forte and Gilbert explaining: "A first level of reduction can be done in rhythmic notation…. Essentially, this involves omitting diminutions and assigning their durational values to more basic components."[37] However, this process is perhaps more precisely (and more frequently) called

[35] Schenker, *Free Composition*, Figure 46,2.
[36] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 119.
[37] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 135.

reading the diminutions, since, as we have been noting, the term “omitting” is not entirely accurate, betraying the complexity and abstraction of the undertaking.

The graph of Mozart’s Rondo “Alla turca” (Figure 2–26) serves to illustrate the result of “reading the diminutions” in the score (Figure 2–25). In measures 1–4, we can see how the sixteenth-note turns are telescoped into the tones of arpeggiation. Also, the passing and neighboring thirds of mm. 5–6 are represented only by the B–G♮ shown at the outset of bar 5 in the graph, the rest of the descent coming from m. 7 (as evidenced by the bass motion during this descent). Finally, melodic fluency is maintained in the graph of mm. 9–16 by preferring the more abstract E–D♮–C♮–B melodic motion over some simplified version of the melodic line sounding at the surface, such as G–D♮–E–B (possibly including other auxiliary notes, in addition to these). As we can tell from this example, the process of reading the diminutions is deceptively abstract, the false appearance of simplicity through omission obscuring the actual process of analysis through interpretation. In other words, reading the diminutions is also a subtle form of *ranking*.

Ranking:

There are two principal *ranking* environments in Schenkerian graphs. The first is wrapped up in the rhythmic values of the musical notation, and the second is found in the division of the interpretation into various structural levels, each level typically represented on its own separate staff or staves.[38]

[38] Ranking *agents*, as opposed to ranking *environments* (or *entities*), are ideas or elements that constitute deciding factors behind the use of a particular notational representation. A more complete discussion of these agents will be taken up in later chapters.

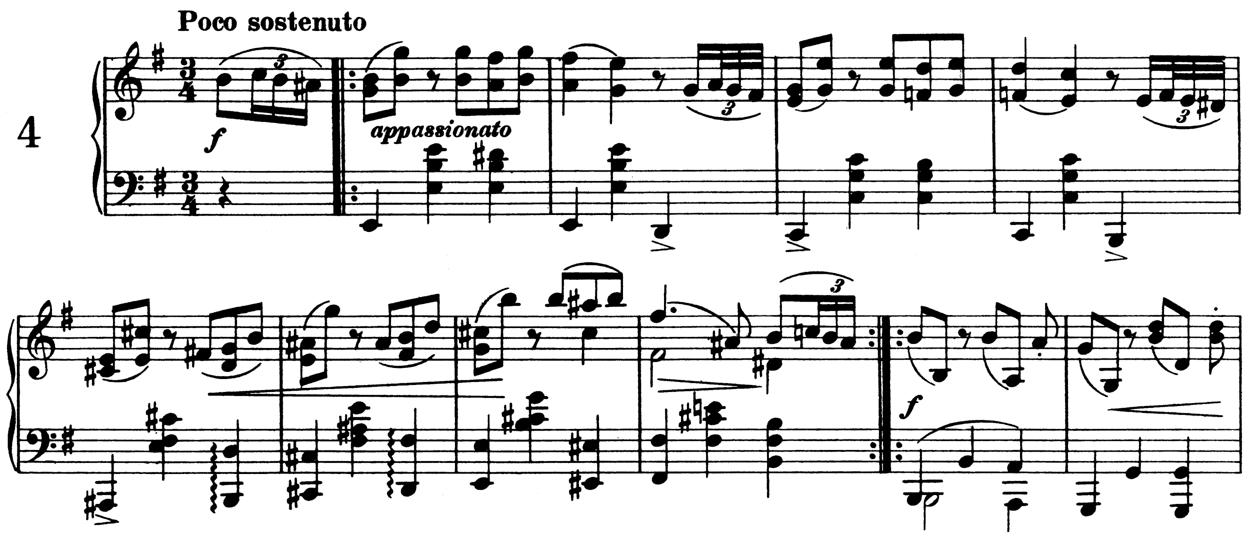

Figure 2–33: Brahms, Waltz Op. 39, No. 4, mm. 1–10 (his piano performance version presented for ease of reading)

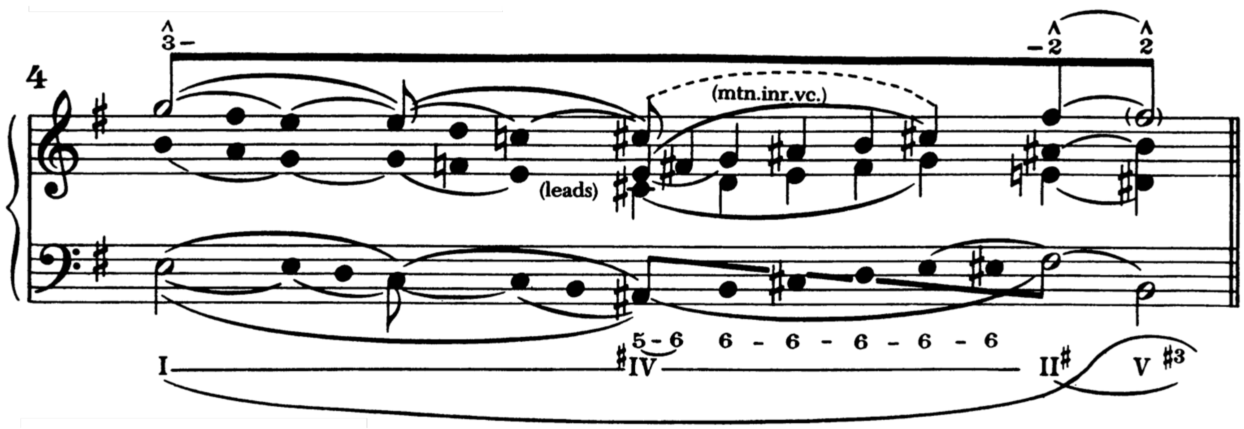

Figure 2–34: Schenker, graph of Brahms's Waltz Op. 39, No. 4, mm. 1–8

For the first type of ranking, longer durational values generally denote tones of higher structural rank; half notes (or notes with open noteheads connected by a beam) represent the deepest level of structure, and stemless, filled-in noteheads represent the most surface level of structure.[39] Schenker's graph of Brahms's Waltz Op. 39, No. 4 (Figure 2–34) shows all of these

[39] In some cases, other subtle ranking levels are seen: even smaller stemless, filled-in noteheads for the lowest level of structure and gradually longer stems for higher levels of structure, are two common examples.

gradations in rhythmic value, save one: the stemmed open notehead with a flag, which would denote a structural level between the quarter note and the half note.[40] The converted tones in this example are easily deduced from the musical surface (Figure 2–33), as they follow the outer-voice contour closely, and the succession of tones benefits from the added interpretation conferred through the ranking process. These rhythmic gradations are, however, only *general* distinctions in rank, as each tone of each rhythmic value need not necessarily reflect the *identical* level of structural depth. For example, the first three stemless noteheads in the alto line of the graph (B–A–G) are not all on the same structural level: the passing tone in the middle being subordinate to the two tones surrounding it.

[40] Schenker, *Free Composition*, Figure 96,4.

Figure 2–35: Bach, Twelve Little Preludes, No. 1, BWV 924

Figure 2–36: Schenker, multi-level graph of Bach's Twelve Little Preludes, No. 1, BWV 924

For the second type of ranking, we will consider individual illustrations grouped into discrete structural levels by general rank, each diagram within the graph delineating its own internal set of structural layers through the use of rhythmic notation values. In Figure 2–36, Schenker's graph of Bach's Twelve Little Preludes, No. 1, BWV 924, shows two distinct structural levels. The upper staff illustrates a deeper level of structure, while the lower staff represents a more surface level; in this case, the two levels maintain vertical alignment, in order to help show the relationships among the tones that are carried over from level to level.[41] I will return to the concept of structural levels soon, but this simple example shows how an abundance of ranking levels can be shown in conjunction with each other and in a relatively small amount of space on the page.

[41] Schenker, *Free Composition*, example for Figure 43b.

Grouping:

The importance of our next category, that of *grouping*, should not be underestimated, according to Fred Lerdahl and Ray Jackendoff: “Grouping can be viewed as the most basic component of musical understanding.”[42] In this context, grouping highlights *relationships*. As with our discussion of ranking, grouping *entities* (those items shown in a graph) will be considered in the following discussion, leaving for later chapters the discourse of grouping *agents*, the interpretations or reasons that guide the use of these entities, or in the words of Cadwallader and Gagné: “The analyst must have concrete reasons for the use of slurs and be able to explain the reasons in words.”[43]

The most frequently employed grouping entities tend to be related to standard musical notation, as Cadwallader and Gagné remind us in their recent textbook: “As his ideas developed, Schenker devised a system of graphic notation that uses common symbols such as slurs, ties, beams, and noteheads to indicate specific relationships and compositional techniques.”[44] Since the previous section on ranking shows how the various noteheads (rhythmic values) entail loosely formed groups among themselves, even if these relationships are only general, the following discussion will revolve around other notational norms before turning to a few broader and a few miscellaneous entities.

Our first new grouping entity is the *slur*. In the simple words of Forte and Gilbert: “Slurs indicate *dependency*.”[45] Cadwallader and Gagné expand this line of thought, stating: “In general, slurs group *related* tones, specifically those in arpeggiations (including horizontalized harmonic

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[42] Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge, MIT Press, 1983), 13.
[43] Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach*, 3rd Edition (New York: Oxford University Press, 2011), 385.
[44] Cadwallader and Gagné, *Analysis of Tonal Music*, 384.
[45] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 10, emphasis original.

intervals), linear motions with passing or neighbor tones, and nonadjacent stepwise connections at deeper levels.… Slurs must correspond to relationships implicit in the imaginary continuo, which should be identified before beginning a graphic analysis."[46] It is worth mentioning here that the *imaginary continuo* (*realization*) can be considered, in the words of Channan Willner, as: "a texturally and registrally comprehensive summary of the composition's voice leading grounded in figured bass."[47] Rothstein clarifies this concept further, saying: "Briefly, the imaginary continuo is a continuo 'accompaniment' abstracted from a composition that does not actually call for one.… The analytical realization of the imaginary continuo for a piece of music may be compared to the act of realizing an unfigured bass."[48] In other words, the imaginary continuo realization is a type of analytical rhythmic reduction of sorts; in this instance, it must act as a validating agent in the codifying of relationships grouped by a slur.

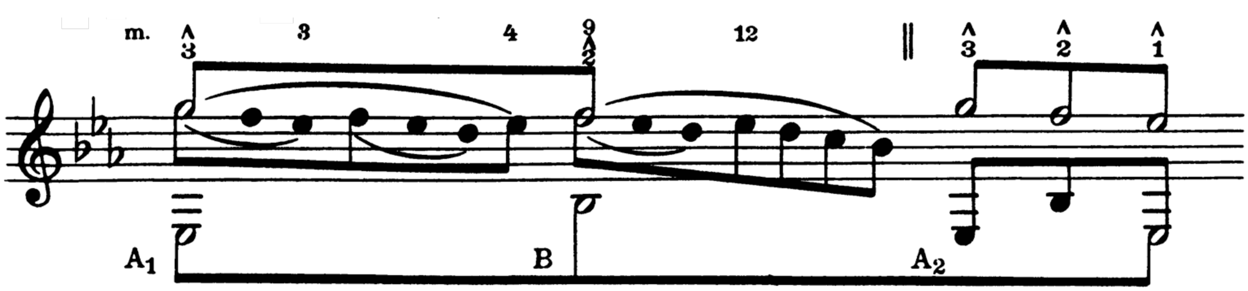

Figure 2–37: Schenker, graph of Chopin's Nocturne Op. 9, No. 2

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[46] Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach*, 3rd Edition (New York: Oxford University Press, 2011), 385, emphasis original.
[47] Channan Willner, "Sequential Expansion and Handelian Phrase Rhythm," in *Schenker Studies* 2, edited by Carl Schachter and Hedi Siegel (Cambridge: Cambridge University Press, 1999), 199. Note that the terms "imaginary continuo" and "imaginary continuo realization" are often used interchangeably; however, to my mind, the imaginary continuo encompasses the constituents of chords, some of which may express harmonic scale steps, in *every* register, leaving open more possibilities for interpretation, rather than a single depiction from that abstraction.
[48] Rothstein, "On Implied Tones," 300.

Schenker's graph from Mozart's K. 331, III (Figure 2–26) provides an example of an arpeggiation grouped under a slur, showing the relationship of the ascending tones C–E–A–C. A relationship of a different sort, the "horizontalized harmonic interval," is displayed in the bass line at the end of Schenker's graph from Brahms's Waltz Op. 39, No. 4 (Figure 2–34), where the $II^{\sharp}$ harmony is shown in an upper-fifth relationship to the following V harmony by the slur connecting them. An example of slurred "linear motion with a neighbor tone" appears in Schenker's graph of Schubert's *Valse Noble*, Op. 77, No. 1 (Figure 2–32); after the repeat sign, the G–F and F–E motions (where the first tone is an eighth note and the second tone is a half note) show how the first tone in each pairing is an upper neighbor to the following tone, the rhythmic notation also showing the dependency relationship, thus grouping the embellishing neighbor tones themselves in a larger sense. A "nonadjacent stepwise connection at a deeper level" is also found in Schenker's analysis from Figure 2–32. In this instance, the "n.n." designation in parentheses over the half-note F shows us that this tone is an upper neighbor to the surrounding half-note Es, and the slur above it that connects these three tones also highlights this neighbor-note relationship. Lastly, Schenker's graph of Chopin's Nocturne Op. 9, No. 2 (Figure 2–37) provides a clear expression of "linear motion with passing tones" in each of the three cases where stemless noteheads (with accompanying slurs below them) are involved.[49]

The *tie* is akin to a symbol showing the "effective duration" of a tone, since a tone or harmony will be "in effect" for the time spanned by the tie, even if that tone is not heard on the musical surface at every moment of that duration. The graph of Schubert's *Valse Noble*, Op. 77, No. 1 (Figure 2–32), shows this type of relationship in the lowest voice, the three Cs that are

[49] Schenker, *Free Composition*, Figure 84.

grouped together asserting tonic harmony (note the Roman numeral I shown covering the same length), even though several other bass tones intervene at a slightly lower levels of structure.

According to Forte and Gilbert, *beams* are used "to highlight significant stepwise melodic motions."[50] In addition, they tell us: "Groups of filled notes (as opposed to open notes) may also be beamed together, to denote middleground-level replicas of fundamental structure … or to highlight significant stepwise melodic motions other than those of the fundamental line."[51] To this Schachter adds a particularly intriguing aspect of a deeper sort: "I prefer the beam to convey a sense of *forward motion*."[52] The most significant "stepwise melodic motion" is the one that contains the structural melodic tones, which are alternately called the "fundamental line" or "*Urlinie*." These tones are also usually labeled with scale-degree numbers above them. The upper staff of the graph of Chopin's Nocturne Op. 9, No. 2 (Figure 2–37), provides an example of beamed tones of this type. An example of "filled notes beamed together" that "highlight significant stepwise melodic motions other than those of the fundamental line" appears in Figure 2–37 as well, in the form of the initial G–F–E♭ melodic succession (connected by the beam below them) descending from a structural melodic tone, here notated as $\hat{3}$.

Although Cadwallader and Gagné advise us that "*Beams* and *slurs* group related notes … and show unified spans on all levels of structure"[53] and that "Beams are equivalent to slurs in indicating relationships among notes of the underlying imaginary continuo,"[54] they also caution us, saying: "In general, however, when expressing groupings at different [structural] levels, we

[50] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 135.
[51] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 135.
[52] Carl Schachter, "A Dialogue between Author and Editor," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 11, emphasis added.
[53] Cadwallader and Gagné, *Analysis of Tonal Music*, 107, emphasis original.
[54] Cadwallader and Gagné, *Analysis of Tonal Music*, 388.

recommend using beams for those at deeper levels and reserving slurs for lower-level motions (hence slurs within beams)."[55] The graph from Figure 2–37 shows this graduated depth clearly in the representation of mm. 9–12. In consultation with the score for this nocturne (Figure 1–23), we can see that the slurred melodic succession F–E♭–D displays the initial stepwise melodic descent of mm. 9–12, progressing at a rate of one tone per bar. Following that, we see that the more structurally significant melodic succession (covered by the beam initiated with the F in bar 9) continues to its end entirely during the span of bar 12. Moreover, the slur that covers the melodic succession F–E♭–D–C–B♭ may be interpreted as showing the horizontalized harmonic interval F–B♭.

[55] Cadwallader and Gagné, *Analysis of Tonal Music*, 388.

Figure 2–38: Haydn, Chorale St. Antoni, Hob. II/46

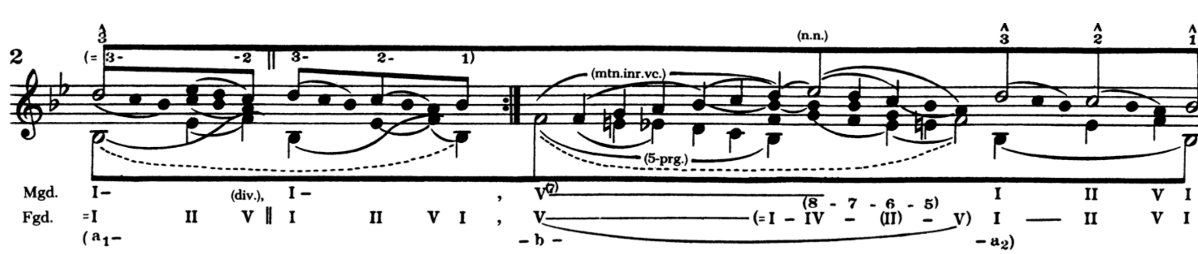

Figure 2–39: Schenker, graph of Haydn's Chorale St. Antoni, Hob. II/46

Earlier we discussed how the different notehead types form loose grouping categories among themselves, but now I want to focus on how just a single notehead can been seen as grouping other content. Two types of noteheads frequently group large amounts of information residing at lower structural levels: harmonic scale steps (*Stufen*) and structural melodic tones (*Urlinie* tones). We often think of harmony as a grouping agent in the small, allowing arpeggiations to be normalized into a single vertical unit, for example, but grouping by harmony can also take on deeper meanings in the large.

Schenker's graph of Haydn's Chorale St. Antoni, Hob. II/46 (Figure 2–39) provides us with three levels of grouping analysis by harmony; the first two are shown in the foreground ("Fgd.") and middleground ("Mgd.") layers below the staff, and the third is implied by the notation, in the form of the down-stemmed, open noteheads that are connected to the lowest beam.[56] Schenker avoids a chord-by-chord analysis here, even in the foreground layer. In this layer, the initial tonic sonority is shown as controlling all of mm. 1–3, the internal, lower-level chordal and contrapuntal motion subsumed by this single Roman numeral. Zooming out to the middleground layer, the tonic harmony now covers everything in mm. 1–5. Zooming out further still, the B♭ with the open notehead, representing the tonic *harmonic scale step*, now encompasses the entire first section, in a sense grouping all of that musical material under the governance tonic harmony.

Schenker describes this type of governance, of grouping by harmony in the large, saying that the concept of the "scale step" is "is far loftier and far more abstract than the conventional one. For not every triad must be considered as a scale step; and it is most important to distinguish between C as the root tone of a triad and C as a scale step. The scale step is a higher and more

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[56] Schenker, *Free Composition*, Figure 42,2.

abstract unit."[57] In Schenker's graph from Figure 2–39, for example, the open-note B♭ represents more than the simple root of a I chord, and the II and V chords in the foreground level are not seen as carrying the structural weight of harmonic scale steps at the middleground level. Two other properties of scale steps also deserve mention here: their length and their surface salience. In his *Harmony* text, Schenker notes: "The time occupied by a scale-step is variable,"[58] and Oswald Jonas, in his monograph introducing aspects of Schenkerian theory, states: "The fundamental tone of the scale degree [*Stufe*] manifests itself even without continuously having to be physically present."[59] Both of these attributes of harmonic scale steps highlight their flexibility and deeper level of abstraction as grouping entities.

Just as harmonic elements can be seen to group large amounts of musical material, melodic tones can also been seen exerting influence over extensive spans of music. Similar to the way that the tie is used to show the preservation of a particular tone from place to place, even if it goes unheard at times, structural melodic tones also exert their influence, their type of effective duration, until displaced by another structural melodic tone. Schenker's analysis of Chopin's Nocturne Op. 9, No. 2 (Figure 2–37), displays examples of this type of grouping, also on multiple levels of structure. The down-stemmed, beamed melodic succession G–F–E♭ portrays how the G and F encompass the two diminutions that follow them (under each slur). Zooming out a little, that same melodic succession is encompassed by the up-stemmed, beamed G, as it exerts its influence until the open-note F that follows and displaces it as the grouping entity. Zooming out another step, we can see how the open-note G and F each govern their own entire

[57] Heinrich Schenker, *Harmony*, translated by Elisabeth Mann Borgese (Chicago: University of Chicago Press, 1954), 138–139.
[58] Schenker, *Harmony*, 151.
[59] Oswald Jonas, *Introduction to the Theory of Heinrich Schenker: The Nature of the Musical Work of Art*, 2nd English edition, translated and edited by John Rothgeb (Ann Arbor: Musicalia Press, 2005), 46.

sections of this work, grouping all of the music under their own heading, even if they are not sounding at the surface for their entire (abstract) duration.

Figure 2–40: Beethoven, Piano Sonata Op. 27, No. 2, I, mm. 54–69

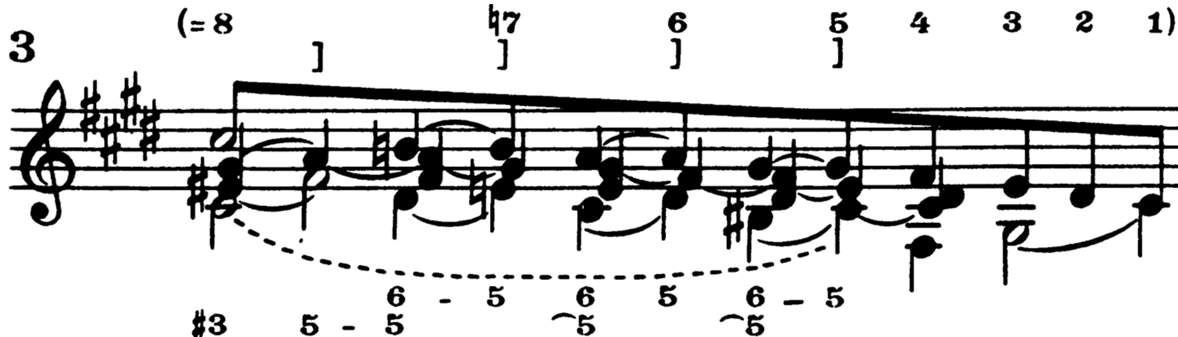

Figure 2–41: Schenker, graph of Beethoven's Piano Sonata Op. 27, No. 2, I, mm. 55–60

Other types of symbology could also group musical content in a graph. In Schenker's graph (Figure 2–41) of the end of the opening movement of Beethoven's "Moonlight" sonata (Figure 2–40), an influential melodic descent is depicted by a stepwise progression between the two C♯s under the beam.[60] Though the subordinate tones are grouped with the more structural tones of the descent by slurs, another relationship is also portrayed. The 6–5 figure under some of the chord pairings highlights the corrective function of the voice-leading chords in this contrapuntal motion, aiding in the avoidance of what would be parallel fifths at the musical surface (each fifth in the sequence shown with a "]" above it).

Another analytical grouping entity commonly appearing in graphs is the symbol for *interruption*: two vertical parallel lines. Schenker's graph of Chopin's Nocturne (Figure 2–37) shows this grouping relationship above the staff, at the end of the B section. In general, the "interruption" symbol simply separates what comes before and after it into distinct groups; though it also appears in more specific and varied contexts, this broad connotation holds in all cases.

The last grouping aspect I want to cover is that of surface-level form labels.[61] As a grouping entity, form labeling is often considered only an afterthought in Schenkerian analysis, a foregone conclusion of sorts, as Charles Smith points out in his essay on form: "The only way to arrive at many of Schenker's formal classifications is to have already determined the forms

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[60] Schenker, *Free Composition*, Figure 54,3.

[61] For more on this formidable topic and a sample of the ongoing, rich discourse in this area, see Schenker, *Free Composition*, 128–145, showing how he sees form analysis as subordinated to harmonic and voice-leading analysis; Charles J. Smith, "Musical Form and Fundamental Structure: An Investigation of Schenker's 'Formenlehre,'" *Music Analysis* 15, 2/3 (1996): 191–297, showing how he sees form analysis subordinating voice-leading analysis; and Janet Schmalfeldt, "Towards a Reconciliation of Schenkerian Concepts with Traditional and Recent Theories of Form," *Music Analysis* 10, 3 (1991): 233–287, showing how the two sides might be united.

before applying the structural criteria."[62] While there is certainly a grain of truth to this, form labels generate interest in a graph when they compete with the groupings outlined by the tonal structure. Yet this friendly competition, as displayed in Schenker's graph of Mozart's Piano Sonata in A Major, K. 331, III (Figure 2–26), and his graph of Schubert's *Valse Noble*, Op. 77, No. 1 (Figure 2–32), adds a different layer of depth to an analysis though, even if the grouping established through the form labels seldom affects the outcome of the graph. Schachter puts our predicament succinctly: "Boundaries between prolongational spans—especially between those spans governed by structural harmonies—often coincide with points of formal articulation.… Sometimes, however, the extension of a prolongational span bridges over the formal division."[63]

Structural Levels:

Our final category for examination in this look at Schenkerian graphs is that of *structural levels*. Since the graduations of the rhythmic notation are limited, only providing abstract space for a handful of layers of depth within a representation of a complete structural level, multiple structural levels are often delineated within a single analysis of a piece. Schenker's graph of Bach's Twelve Little Preludes, No. 1, BWV 924 (Figure 2–36), provides a simple example of this situation. This example shows how different levels, each depicting its own group of rankings, each at its own level of structural depth, can be captured and compared with one another easily, since they are aligned and on one confined area of the page. Another advantage of this type of visual arrangement is that each level can assist in elucidating the others. The structural level shown at the bottom of Figure 2–36 shows how the multitude of diminutions in the score can be

[62] Smith, "Musical Form and Fundamental Structure," 239.
[63] Carl Schachter, "Either/Or," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 127.

telescoped into a few more highly ranked entities, and then the structural level outlined above the previous one shows how the tones of this lower level may be telescoped even further, resulting in a representation of the most structurally significant tones of this work, the entire rendering illuminating relationships on the path from score to deeper abstraction. Although this practice of employing and aligning complete structural levels is common in graphing, there are various other methods of introducing and engaging alternate structural levels in an analysis.

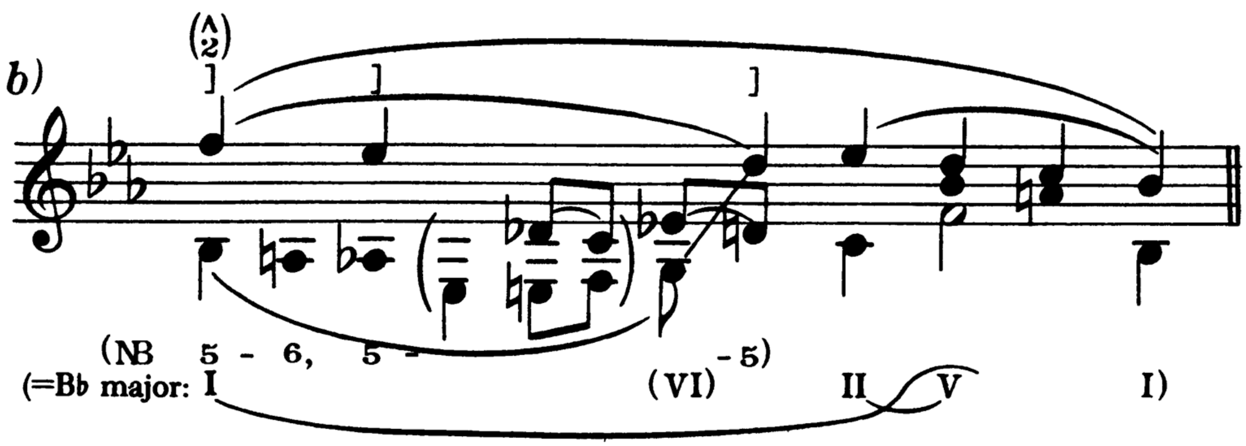

Figure 2–42: Schenker, analysis of Chopin's Nocturne Op. 9, No. 2, mm. 9–12

In some situations, perhaps only a portion of a given structural level with be dealt with at a different level. Schenker's analysis of mm. 9–12 of Chopin's Nocturne Op. 9, No. 2 (Figure 2–42) zooms out to a more surface level of structure, expanding upon the information given in his graph of the entire work (Figure 2–37), drawing attention to the avoidance of parallel fifths through contrapuntal 5–6 motion.[64] Here the levels could be aligned visually on a page, but the analysis of Figure 2–42 would still be an incomplete representation of the piece, exhibiting only the section under study.

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[64] Schenker, *Free Composition*, Figure 88b.

Figure 2–43: Haydn, String Quartet Op. 76, No. 3, II, “Emperor Hymn,” variation theme

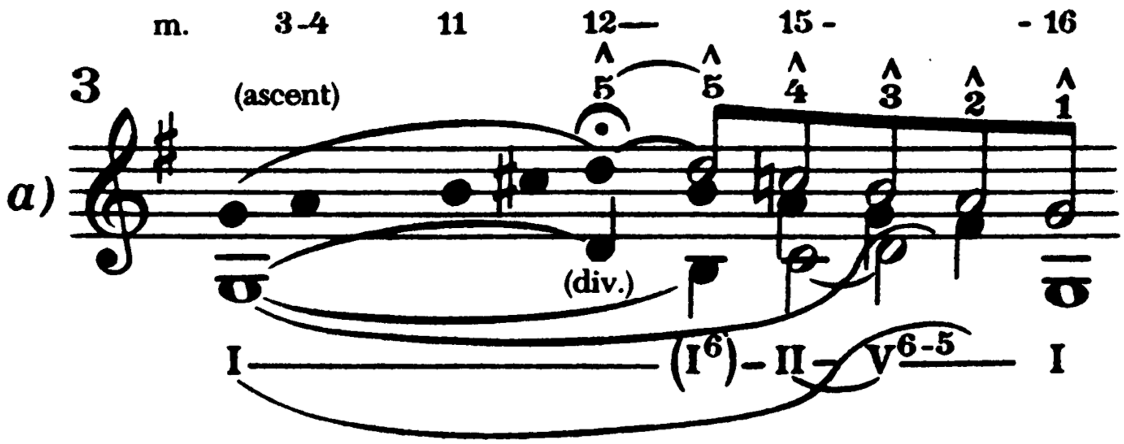

Figure 2–44: Schenker, graph of Haydn's String Quartet Op. 76, No. 3, II, "Emperor Hymn," variation theme

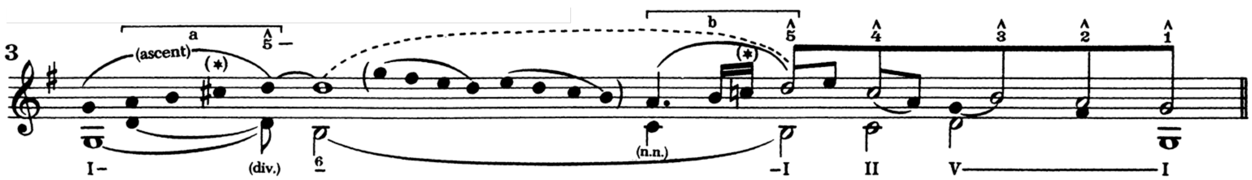

Figure 2–45: Schenker, graph of Haydn's String Quartet Op. 76, No. 3, II, "Emperor Hymn," variation theme

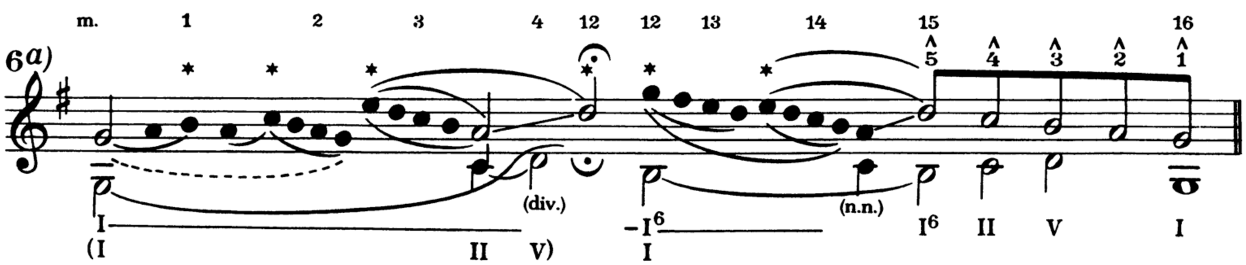

Figure 2–46: Schenker, graph of Haydn's String Quartet Op. 76, No. 3, II, "Emperor Hymn" variation theme

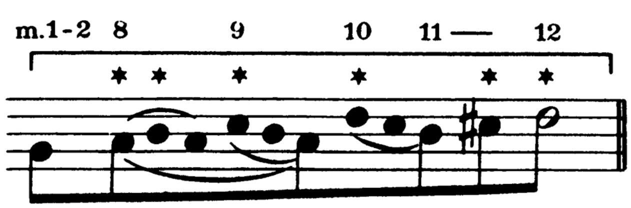

Figure 2–47: Schenker, graph of Haydn's String Quartet Op. 76, No. 3, II, "Emperor Hymn," mm. 1–12

Sometimes the relationships between notated structural levels are more freeform. Each structural level may feature various levels of zoom and different amounts of detail, and each level may highlight certain types of content over other types of content, in order to suit the goals of the analyst. A number of these more freeform relationships appear in Figures 2–44 to 2–47. Schenker's graph of Haydn's String Quartet Op. 76, No. 3, II, "Emperor Hymn" variation theme (Figure 2–44) shows the harmony and voice-leading structure at a significant level of abstraction, with only the most highly ranked elements included in this particular structural level.[65] By contrast, the graph from Figure 2–45 shows all these same relationships—plus a few more—and they are ranked and grouped a little differently, so that they draw attention to the melodic ascents A–B–C♯–D (under bracket *a*) and A–B–C♮–D (under bracket *b*), especially the change from C♯ to C♮.[66] The analysis in Figure 2–46 alters the view of Figure 2–44 even further, as it *decreases* the number of tones (voices) present in mm. 15–16 and *increases* the number of tones present in mm. 1–14.[67] In this case, Schenker uses asterisks (*) to warn the reader about a possible false interpretation, one that would attempt to group these tones into some higher-level melodic span.[68] Schenker alters the ranking, grouping, and level of zoom once more in Figure 2–47 (as compared with Figure 2–44), again using asterisks to illustrate how these upper tones (A–B–C♯–D) appear to form a structural melodic motion, when the lower succession of tones (the one covered by the beam) carries more structural value.[69] In this way, Schenker clarifies his inner hearing and reasoning for it, in the face of other possible choices. Across the group of figures just mentioned, the structural level of the musical material represented is neither linear nor even

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[65] Schenker, *Free Composition*, Figure 39,3a.
[66] Schenker, *Free Composition*, Figure 119,3.
[67] Schenker, *Free Composition*, Figure 120,6a.
[68] Schenker, *Free Composition*, 100, §255.
[69] Schenker, *Free Composition*, Figure 120,6b.

progressive; the information displayed simply fits within the ranking system of the rhythmic notation for that particular illustration, showing a particular level of flexibility within the synthesis of some of our larger categories: tones, ranking, and grouping.

In the end, a Schenkerian graph endeavors to illustrate, among other facets, the analyst's interpretation of the contrapuntal lines, harmonic entities, and melodic progressions of all or perhaps only part of a work. Each structural level represented portrays its own internal graduations in rank, as well as its own groupings among elements. In addition, any graph may also strive to integrate (even if only implicitly) thematic, motivic, surface-formal, textual, hermeneutic, and any other conceivable content brought to bear in the analysis. Clarity often comes from depicting multiple levels of structure, drawing focus on points of interest, intentionally, purposefully, reasoning through a reading, lobbying for the analyst's particular "perfect product."

Gaining access to any such products, however, may prove difficult, as Schachter tells us: "The graph, after all, is a representation and as such is dependent upon *the conception leading to it*."[70] With so many possible outcomes for a graph, based on the sifting, sorting, and shuffling of so many possible morsels of musical (and perhaps extramusical) content from so many possible domains, the task may appear somewhat confusing or even a bit daunting, so the more tools and methods of obtaining relevant information, the analytical "conceptions," the better. With this in mind, we turn our attention to the first source under investigation for more information and the last subject of this chapter: analytical rhythmic reduction. During the following discussion, we will consider what kinds and amounts of information this type of rhythmic reduction is capable

[70] Carl Schachter, "Rhythm and Linear Analysis: A Preliminary Study," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 18, emphasis added.

of bringing—along with some information they have difficulty bringing—to aid in the creation of a Schenkerian graph.

2.5 Analytical Rhythmic Reductions: What They Bring to a Schenkerian Graph

I hope that by now we can see that describing rhythmic reduction in the analytical venue is not quite as straightforward as determining: "which notes are given harmonic support and which are notes of rhythmic or melodic embellishment. Removal of the latter types results in a representation of the voice leading at the metric level."[71] I realize that David Beach has pedagogical aims in mind with this sentiment, using it in a broad sense as part of his overall discussion, but this view is somewhat oversimplified. Just because creating an analytical rhythmic reduction is a complicated venture, however, does not mean that the effort is not a worthwhile and productive aspect of Schenkerian analysis, as Cadwallader and Gagné insist: "We cannot emphasize strongly enough the importance of working out your ideas *before* expressing them through graphic notation. As a first step, prepare an imaginary continuo realization of a given passage.… This method will enable you to notate ideas about harmonic and melodic prolongations in a simpler format before notating them through Schenker's more intricate and expressive system."[72] Here, as noted previously, an "imaginary continuo realization" can be thought of as a kind of analytical rhythmic reduction. A larger purpose of analytical reductions, according to Felix Salzer and Carl Schachter, has to do with what they *do* and *do not* capture: "The final reduction will not necessarily contain the most prominent tones of the

[71] David Beach, "Schenker's Theories: A Pedagogical View," in *Aspects of Schenkerian Theory*, edited by David Beach (New Haven: Yale University Press, 1983), 19.
[72] Cadwallader and Gagné, *Analysis of Tonal Music*, 385, emphasis original.

musical foreground.… The purpose of the final reduction is to show those tones that enter into the broadest and most far-reaching connections within the context under view."[73]

Analytical rhythmic reductions employ some of the same processes that Schenkerian graphs do when converting notes into tones, and often generate congruent—though not identical—products; nevertheless, analytical reductions also accumulate results and relationships that differ from those that may be present in a Schenkerian graph of the same musical work.

In terms of our three main goals for rhythmic reductions, analytical reductions draw us closer to the original work in distinct ways and from various interacting perspectives. "Sounding like the piece" in the analytical venue assures, as always, that a relationship to the essentials of the piece is being preserved, the "sound" reflected in hearings at diverse levels of abstraction. That is to say, our internal, *imagined* type of hearing becomes abstracted into the world of tones (the rhythmic reduction), which then emerges as a more external, *literal* type of hearing. As Schachter writes, "Learning to analyze means learning to hear in depth; a good analysis is always verifiable by the educated ear,"[74] also commenting later in the same article: "If the analysis has been successful it leads to hearing that is incomparably clearer and more comprehensive than it had been before; it never leads to abstraction without sensory content."[75] "Preserving the essentials" takes both this abstraction and sensory content, this meshing of internal and external hearings, and presents a clear and simple representation of the melody, harmony, and voice leading of the work, all within the boundaries of the original metrical framework. The presentation of these essentials usually appears on a single pair of staves: its arena of "fit."

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[73] Felix Salzer and Carl Schachter, *Counterpoint in Composition: The Study of Voice Leading* (New York: McGraw-Hill, 1969), 128.
[74] Schachter, "Rhythm and Linear Analysis: A Preliminary Study," 19.
[75] Schachter, "Rhythm and Linear Analysis: A Preliminary Study," 35.

If our desire is to have rhythmic reductions in this part of the discussion assist in creating Schenkerian graphs, then we should keep a few additional goals in mind. Preferring some of the methods of Schenkerian graphing, such as the normalization types, the tendency to group by harmony, the favoring of melodic fluency, and so forth, often proves advantageous when preparing this specific type of rhythmic reduction, since these methods of note conversion should help the analytical reduction carry over similar content from score to representation in a graph. In addition, care should be taken so that this content remains *underinterpreted* where necessary or profitable, in order to leave open the potential for the maximum number of readings, striving not to foreclose any viable alternatives. This is often easier said than done, of course, as we soon shall see. With these guidelines in hand, the rest of this chapter will consider how analytical rhythmic reductions can provide information to a graph in the categories of "tones," "ranking," "grouping," and "structural levels," contemplating how that information can help the analyst make decisions about some deeper-level relationships in a piece.

Tones:

An analytical rhythmic reduction, much like a Schenkerian graph, converts the notes of the musical surface into abstract tones, facing comparable decisions regarding their inclusion and position in the new arena. This conversion process is easily misconstrued as mere "simplification" because of the "removal" of elements from visible depiction in a rhythmic reduction. In order to more effectively mirror our earlier discussion about graphs, I will engage the same set of four processes (keep, alter, add, omit) to organize the upcoming section on converting notes to tones in analytical reductions. It should be clear by now that the term "reduction," as used in this project, connotes more than just removal or simplification of musical material; it involves the abstracting out of any number and type of musical (and nonmusical) elements, emphasizing them, portraying relationships between a rhythmic reduction and an original work.

Figure 2–48: Mozart, *The Magic Flute*, Act II, "March of the Priests," mm. 1–8

Figure 2–49: Textural reduction of Mozart's "March of the Priests," mm. 1–8

If basic tone conversion processes may be envisaged as a sort of first pass at evaluating surface contents, making elementary decisions on inclusion and position, perhaps the simplest example of "keeping" notes as tones comes in the form of a *textural reduction*. In the Mozart example from *The Magic Flute* (Figure 2–49), all the pitches have been retained from the orchestral score, without employing any normalization processes. This product is still an abstraction, somewhat separated from the original, as it leaves behind the associations of performance slurs, articulation marks, and instrumental grouping, just to name a few. This type of analytical reduction has the visual advantage of an exceptional amount of clarity, the tones packed together on only two staves, the transpositions having already been resolved for the analyst, and so on, even if some musical information is lost in the translation.

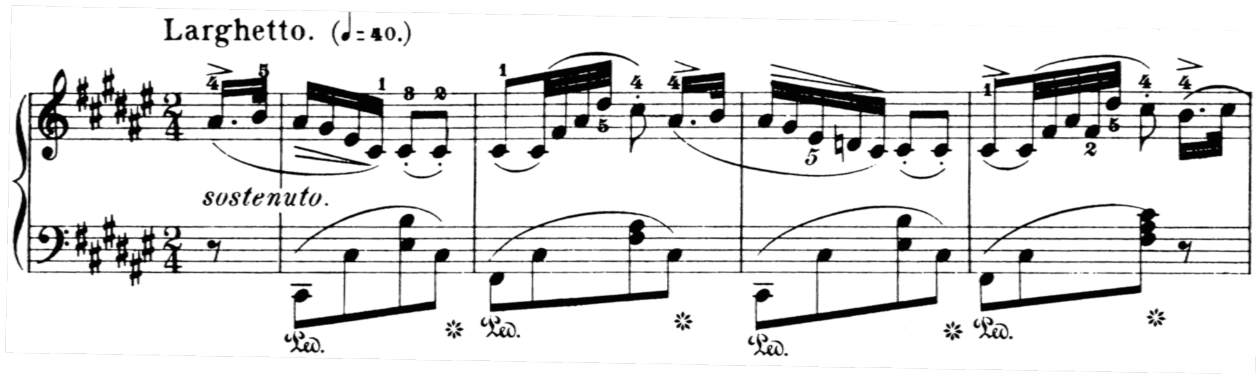

Figure 2–50: Chopin, Nocturne Op. 15, No. 2, mm. 1–4

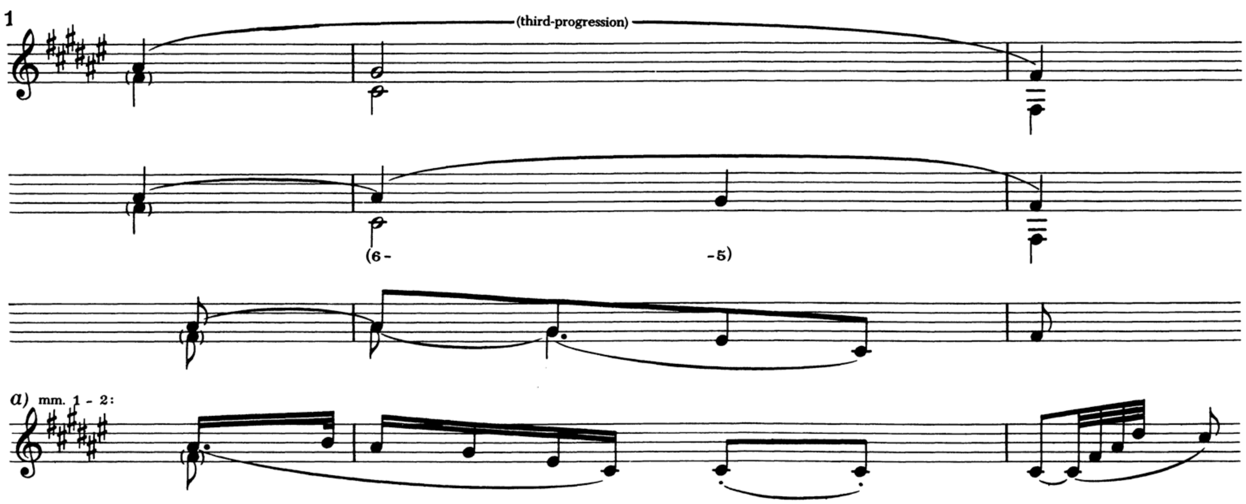

Figure 2–51: Schenker, successive telescoping of Chopin's Nocturne Op. 15, No. 2, mm. 1–2

"Altering" notes on the way to becoming tones in an analytical reduction often takes form in ways similar to the normalization processes we examined when looking at Schenkerian graphs. Remember that we normalize (in both cases) because, as Forte and Gilbert warn us: "The duration and/or metrical placement of a note [in the score] can just as often work contrary to a correct analysis."[76]

[76] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 136.

Examining Figure 2–51, we can see how Schenker takes Chopin's melody from bars 1–2 and successively normalizes and telescopes the notes.[77] In the first staff above the bottom one, the melodic succession in m. 1 (A♯–G♯–E♯–C♯), formerly sixteenth notes, is normalized, using the process Rothstein calls *equalization*, which "refers to rhythmic shifts performed in order to achieve a more even surface rhythm,"[78] in order to show Schenker's hearing of the effective durations and locations of these four tones at this deeper level of structure. Moving up one staff, further up the ladder of abstraction, the A♯ and G♯ are normalized further, and the E♯ and C♯ are telescoped inside the G♯ left to represent them in the abstract sense. At this level, the C♯ half note is *added* (not normalized from the melodic C♯) to represent the structural bass tone. For the top staff, the A♯ is normalized backward, into the quarter note upbeat to bar 1, which leads to the final product, where the G♯ has been relocated to the beginning of the measure and has been given an effective duration of the entire bar. This interpretation, though suitably abstracted and visually clear, is not without its potential drawbacks; perhaps there is something motivic about the neighbor-note motion, the downward arpeggiation, or a combination of both.[79]

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[77] Schenker, *Free Composition*, Figure 117,1a.
[78] Rothstein, "Rhythm and the Theory of Structural Levels," 28. See also Schenker, *Free Composition*, §261 and Figure 125.
[79] For a discussion of some of these lost elements, please see Charles Burkhart, "Schenker's 'Motivic Parallelisms,'" *Journal of Music Theory* 22, 2 (1978): 149–55.

Figure 2–52: Schenker, example showing rhythmic normalization of Scarlatti's Sonata in G major, L. 124, K. 260, mm. 4–6

Schenker's analysis of Scarlatti's Sonata in G major, L. 124, K. 260 (Figure 2–52), shows an example of the rhythmic normalization of a displacement in the original piece.[80] Here the displaced C in the bass of bar 5 is normalized, placing the conceptual arrival of the II harmony on beat 2 instead of beat 1, in keeping with the hemiola pattern implied by the melody. In so doing, the effective location of the C in the bass has altered the effective locations and effective durations of the G and the D adjacent to it.

Other analytical choices could have been made here, possibly one where the melody was normalized away from the proposed hemiola grouping scheme, instead keeping the harmonic grouping intact, but in this case, a choice had to be made. As Schachter notes in his article on analytical decision making: "Certain successions and combinations of notes inevitably create a forked path for the analyst, who must search for clues about which of two or more possible interpretations is the correct one, or about which of two or more 'correct' ones is the truest artistically."[81] This example highlights the difficulty that analytical rhythmic reductions have at times: the inability to retain the musical content in such a way as to leave open the opportunity

[80] Schenker, *Free Composition*, Figure 132,4.
[81] Schachter, "Either/Or," 122.

for multiple readings. In this case, the analyst has to pick one hearing or the other to represent, the two possibilities being mutually exclusive, in a *notational* sense.

Figure 2–53: Schenker, normalization of the fugue subject of Bach's Fugue in E♭ Minor (D♯ Minor), WTC I, BWV 853

Just as we saw earlier, in the normalization of a long-range arpeggiation in Mozart's Rondo "Alla turca" (Figure 2–26), Schenker's analysis (similar to a rhythmic reduction) of Bach's fugue subject (Figure 2–53) shows how the E♭-minor triad is a normalized form of the first bar and a half of surface material in the original.[82] As we have seen before, melodic and motivic content can be lost in the immediate visual representation, telescoped into the tones of the analysis, but a certain amount of clarity has been gained in their absence, especially in regard to the proposed melodic fluency and the underlying harmonic structure. In this way, aspects of the fugue subject are more easily recognized than they would be by simply looking at the musical surface.

[82] Schenker, *Free Composition*, Figure 109,e5.

Figure 2–54: Rothstein, imaginary continuo realization underneath the original score for Bach's Violin Sonata No. 1, IV, BWV 1001, mm. 8–13

Normalization of register is another type of alteration to which analytical reductions are well suited. Rothstein's imaginary continuo realization, based on Bach's Violin Sonata No. 1, IV, BWV 1001 (Figure 2–54), shows this preference for normalizing register through the use of an imaginary continuo realization.[83] As Cadwallader and Gagné note: "The imaginary continuo realization can clarify harmonic prolongations and stepwise melodic associations in a tonal framework."[84] In this instance, Rothstein clarifies some of the "stepwise melodic associations" through the normalization of register.

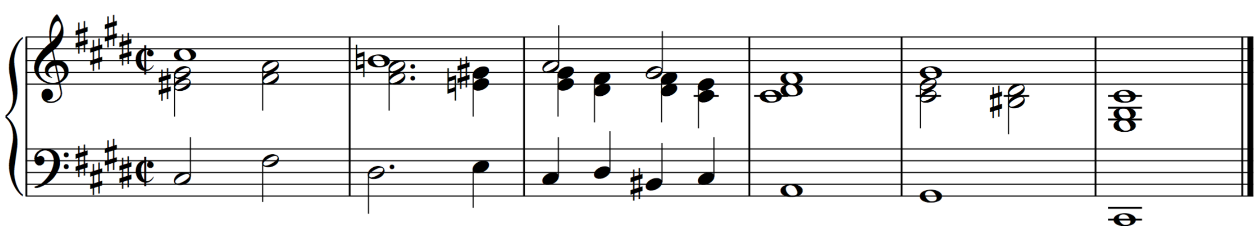

Figure 2–55: Analytical rhythmic reduction of Beethoven's Op. 27, No. 2, I, mm. 55–60

My analytical reduction in Figure 2–55, from near the end of the first movement of Beethoven's "Moonlight" sonata (Figure 2–40), illustrates normalization of the number of voices,

[83] Rothstein, "On Implied Tones," 309.
[84] Cadwallader and Gagné, *Analysis of Tonal Music*, 68, emphasis original.

along with other normalization types. Comparing with Schenker's graph of this section (Figure 2–41), we can see that nearly all of the tones of the reduction have analogues in the graph (with the notable exception of the G♯ in the melody of the penultimate measure), though his bass line is further normalized in register. All of these normalizations serve to clarify the texture and provide the necessary building blocks, but further analysis is definitely necessary, as the rhythmic reduction gives few clues as to how some of the entities should be ranked and grouped.

Figure 2–56: Beethoven, Piano Sonata Op. 31, No. 1, II, mm. 1–8

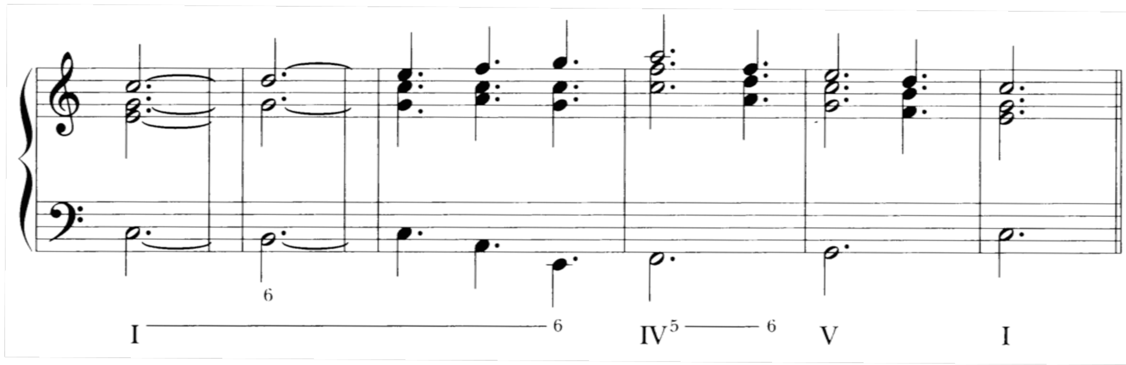

Figure 2–57: Cadwallader and Gagné, imaginary continuo realization of Beethoven's Piano Sonata Op. 31, No. 1, II, mm. 1–8

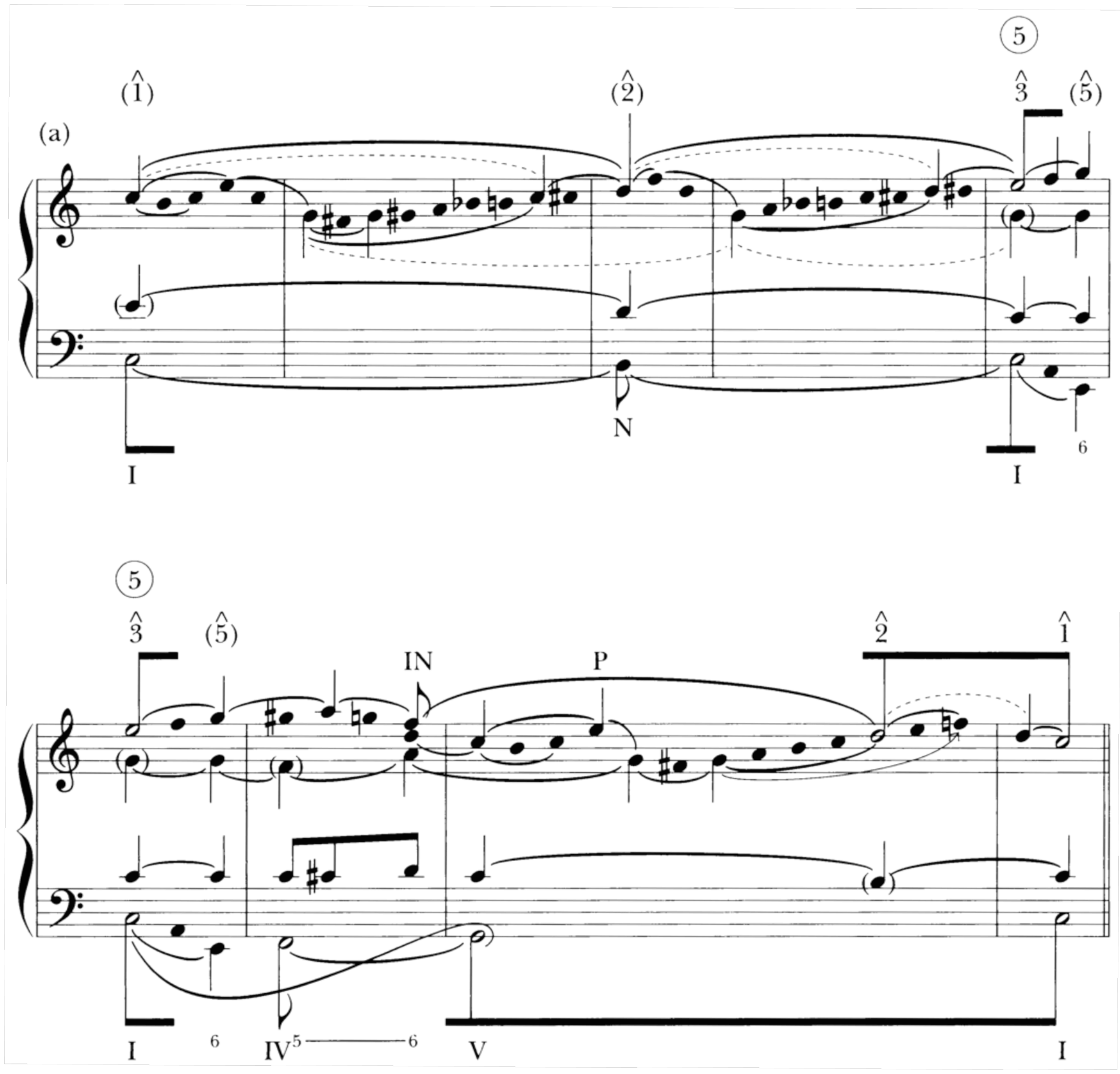

Figure 2–58: Cadwallader and Gagné, foreground sketch of Beethoven's Piano Sonata Op. 31, No. 1, II, mm. 1–8

A word of caution is perhaps prudent at this time, regarding imaginary continuo realizations (and other types of analytical rhythmic reductions), that I have only implied until now. Rothstein explains, "A polyphonic melody will reduce to a chordal texture when its non-chord tones are reduced out, its constituent voices are verticalized, and the rule of arpeggiation [tones of an arpeggiation can be normalized as a single, vertical chord] is applied. I like to think of this latent chordal texture as a sort of imaginary continuo accompaniment that underlies every piece of tonal music—regardless of scoring, texture, or date of composition,"[85] but we should remember that this "latent chordal texture," though often useful because of its high level of clarity in certain areas, also hides the removal of a certain degree of other musical content.

Figure 2–57 shows an imaginary continuo realization of Beethoven's Piano Sonata Op. 31, No. 1, II, mm. 1–8 by Cadwallader and Gagné.[86] Comparing this with their foreground sketch (Figure 2–58,[87] along with the score in Figure 2–56[88]), we see in somewhat dramatic fashion just how much content (and potential relationships) can be left behind in favor of harmonic clarity and melodic fluency; here (with rare exception) the entire surface melody is shown converted into tones in their graph. By no means is this meant as a criticism of this type of analytical rhythmic reduction, just a reminder that reductions like this constitute only one possible element in an analysis of a piece, an element that may help or hinder.

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85 Rothstein, "Rhythmic Displacement and Rhythmic Normalization," 94, emphasis added.
86 Cadwallader and Gagné, *Analysis of Tonal Music*, 172.
87 Cadwallader and Gagné, *Analysis of Tonal Music*, 172.
88 Cadwallader and Gagné, *Analysis of Tonal Music*, 171.

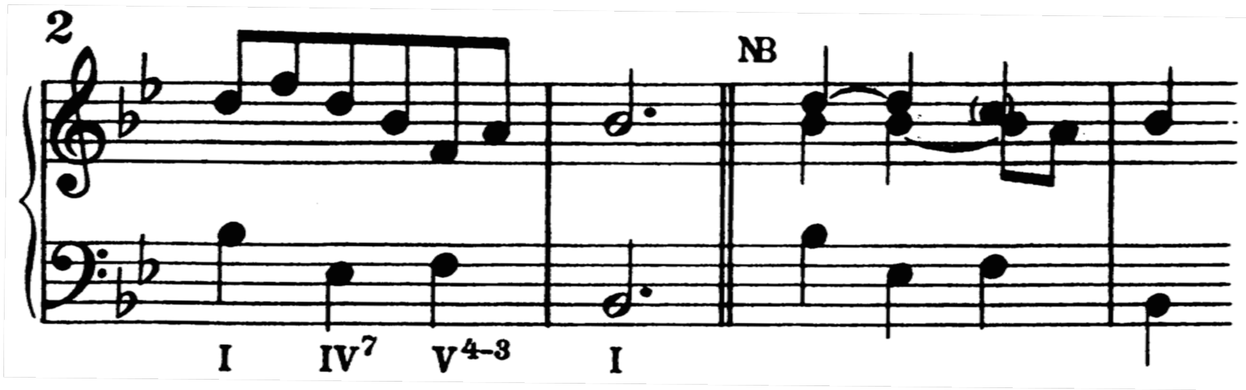

Figure 2–59: Schenker, normalization of the final two bars of Bach's Keyboard Partita No. 1, Menuet I, BWV 825

"Adding" tones in analytical reductions often manifests itself in the form of implying tones. Figure 2–59 presents the final two bars of Bach's Keyboard Partita No. 1, Menuet I, BWV 825, along with two bars of analysis immediately after them.[89] In addition to the normalized melodic tones (the B♭s and D), Schenker has added the intervening C, tucked in parentheses, in order to uphold the preference for melodic fluency (and to depict the resolution of the seventh). As discussed earlier, other tones might be added to an analytical reduction, but this is the most typical type of occurrence.

Figure 2–60: Schenker, analysis of Bach's Italian Concerto, III, BWV 971, mm. 102–04

"Omitting" tones, as discussed in conjunction with Schenkerian graphs, should be seen as something of a misnomer: interpretation is "added" as content is "omitted." A prime example of

[89] Schenker, *Free Composition*, Figure 132,2.

this type of analysis is "reading the diminutions," as Forte and Gilbert note: "By reversing the diminutions process a convincing analysis revealing an even more basic structure is produced."[90] Here again, this pedagogically oriented statement, in similar fashion to Beach's sentiment earlier, seems analogous to a statement like: "Building a racecar is the reverse of smacking it into a wall at 201 miles per hour." It hides the complexity of the operation. Sometimes artifacts left behind belie their source.

Schenker's analysis of Bach's Italian Concerto, III, BWV 971, mm. 102–04 (Figure 2–60) shows some examples of reading the diminutions, as well as the aftereffects of some normalization techniques we explored earlier. For example, Roman numerals stand in for inner voices when possible, the arpeggiation in the bass line of bar 103 rhythmically normalizes the low D to the downbeat, and the high F speaks for the melody at the beginning of bar 103, as the A in beat 2 is telescoped into the F, in order to maintain melodic fluency.[91] In measure 102, the running eighth notes in the melody (G–F–E) are not *normalized* as such (note that no E is present at the analogous spot in the analytical representation); instead all three notes may be considered as being *telescoped* into the G left to stand for them, those three tones considered diminutions, embellishing tones, between the G and the F that follows it.

In the various examples of tone conversion we have just seen, a constant danger lurks in the distance: the gaining of clarity at the expense of content. Perhaps Carl Schachter can enlighten us in this matter, as well: "One can never hope to arrive at a correct view of the background by simply making a 'reduction' of the foreground, for example, by eliminating dissonances, chromatics, or non-tonic notes. Without some sense of the background, one can't

[90] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 14.
[91] Schenker, *Free Composition*, Figure 133,4. Note that the only thing that keeps this from being a more strict rhythmic reduction is the notation of the tonic chord over the first D in quarter notes, instead of in half notes.

begin to understand the foreground; it might be precisely those dissonant or chromatic elements a reduction would eliminate that form the 'background' of a passage. But if one needs to understand the background to make sense of the foreground, one also needs to understand the foreground to make sense of the background—a seemingly hopeless impasse."[92] In other words, these types of simplified, abstract analytical rhythmic reductions help the analyst gaze slightly toward the background of a work, leaving the surface intact in the score, sorting some of its elements just beneath the surface, leaving accessible as many potential hearings as the notational environment allows, all in order to facilitate the journey even further inward. Of course, side-by-side with this type of investigation, assertions and assumptions are being made about what deeper structures might look like. Eventually, the two enterprises come together, informing each other, sometimes unexpectedly or even haphazardly, in the pursuit of a more comprehensive analysis.

Regarding our first general category involving Schenkerian graphs, that of *tones*, we have just witnessed that even though many of the processes of converting notes into tones in an analytical rhythmic reduction mimic those of constructing a Schenkerian graph, the outcomes created are often quite different. The analyses from Beethoven's Op. 31, No. 1, II (Figures 2–57 and 2–58), make some of these differences easily perceptible. Despite employing similar processes, analytical reductions and Schenkerian graphs often capture somewhat different *relationships* in a musical work, or at least illustrate them in alternate ways. As we also saw, some of those illustrations advance the development of a graph, and some forestall it. The next part of our discourse will consider how much and what type of information analytical rhythmic

[92] Carl Schachter, "A Commentary on Schenker's *Free Composition*," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 198.

reductions may bring to our other broad categories of Schenkerian graphing: ranking, grouping, and structural levels.

Ranking:

As discussed earlier, the process of converting notes into tones involves making certain decisions in the arena of *ranking*. At this point, initial decisions are made as to which notes will be converted into tones for visual representation; thus the tones in an analytical reduction are only ranked in the most basic of degrees.

Figure 2–61: Analytical rhythmic reduction of Schubert's *Valse Noble*, Op. 77, No. 1

One possible analytical reduction of Schubert's *Valse Noble*, Op. 77, No. 1 is given as Figure 2–61. A glance back at Schenker's graph of this work (Figure 2–32) will reveal that my reduction captures most of its aspects, in terms of note conversion: preserving the opening pair of arpeggiations, the functional bass line, and the general shape and tones of the upper voices. Further analysis of these features would necessarily follow, since these tones lack any gradation of rank in this venue. Other solutions are, of course, available, but gearing this one toward Schenkerian graphing entailed certain decisions. For example, in mm. 7–8, the preference for melodic fluency, which would have produced the upper line D–E, was overridden in favor of retaining the melodic contour from the first set of four measures, instead producing an upper-voice progression of D–G–E. Making this decision also enabled the preservation of the long-range, stepwise connection between the A of bar 5 and the G of bar 7, modeled by the S-shaped slur in the graph.

This representation also avoids one potential pitfall of rhythmic reductions regarding ranking: the implied or assumed structural weight of the outer registers. Since standard musical notation has little way of showing that the voices underneath the topmost one (or above the lowest one) may be more highly ranked structurally, the default setting for highest rank naturally falls to the outer voices. To circumvent this problem, the covering tones of the B section (the high A of mm. 8–10 and the high G of mm. 10–12) had to give way to the voice below them, so that attention could be drawn to its potential rank. In spite of all these types of tactics, however, it would prove difficult in mm. 15–16 to maintain the sound of the piece while still modeling the smooth, stepwise melodic descent so common at the end of Schenkerian graphs. I suppose the upper tones could be shifted in register, placing them below a descending E–D–C in the final melody, but that solution seems—at least to my ear—to leave the remainder of the analytical reduction at a much lower level of structure, a much lower level of *abstraction*, leaving it somewhat disconnected to my internal hearing. In other words, the mixing of elements at significantly disparate levels of structure may lead to a product that no longer "sounds like the piece."

Grouping:

Analytical rhythmic reductions engage issues of *grouping* in two arenas: the process of constructing them and the resulting product. The processes involved tend to group melodic tones by stepwise motion and to group other tones vertically by membership in the prevailing chord or harmony. Grouping in this way streamlines the results, hiding certain musical clutter from view, so that the analyst has an easier time recognizing deeper entities or perhaps even alternate grouping and ranking schemes for lower-level content. Though common, these processes may be avoided or modified, when necessary. For example, the reduction of Schubert's *Valse Noble*, Op. 77, No. 1 (Figure 2–61), avoids retaining the high A in bar 9 (which would promote melodic fluency and display the appropriate preparation for the dissonant seventh right after it), so that the larger melodic contour, a characteristic of this piece, could be preserved.

In terms of harmonic grouping of melody, Forte and Gilbert say: "In the preceding examples [involving compound melody] good use has been made of the technique of verticalizing, to show the alignment of voices that contribute to the compound melodies, without temporal (rhythmic) displacement. This technique, while very useful, is not without pitfalls and should be used with discretion."[93] Such discretion is applied in the rhythmic reduction by Cadwallader and Gagné (Figure 2–57); in the reduction of bar 1, they group the C and G (from bar 2 in the score) but abstain from also grouping the high E as the top melodic factor along with them, even though it is a part of the governing C-major harmony and "sounds like the piece" by virtue of surface emphasis from the preceding trilled C, the grace notes, and its arrival on a semi-strong beat of the measure. Placing this E in the reduction would have fostered a false impression of its structural weight, because of our natural tendency to prefer tones in the outer registers.

[93] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 74.

Their graph (Figure 2–58), on the other hand, is able to depict *both* tones, separating them in rank through the use of analytical notation.

The resulting products, the rhythmic reductions themselves, exhibit grouping mostly in terms of basic harmonies and metrical values. The rhythmic reductions from Figures 2–57 and 2–61 constitute relatively uncomplicated examples following these types of grouping processes. Here it is worth remembering that the grouping relationships presented in a graph are often much more complex than a rhythmic reduction can faithfully produce, since grouping by shared length, harmony, span, register, and so on has no one-to-one relationship to grouping schemes present in a graph. For example, the melodically fluent span in mm. 1–6 (C–A) in the top voice of the rhythmic reduction of Beethoven's Op. 31, No. 1, II (Figure 2–57), is not grouped as a set of structural melodic tones in the graph (Figure 2–58). Also, glancing at the graph of Schubert's *Valse Noble*, Op. 77, No. 1 (Figure 2–32), it is easy to notice that the basic durations of the chords in the rhythmic reduction (Figure 2–61) are not grouped in any analogous way to rhythmic values in the graph, where rhythmic values comprise one type of loose grouping entities.

Structural Levels:

Analytical rhythmic reductions frequently take the role of intermediaries when it comes to forming ideas about *structural levels*. They customarily inhabit an abstract space near the musical surface, hovering somewhere near the foreground level of structure, yet offering access, if only limited, to deeper levels.

Though analytical reductions emanate the illusion of *abstraction*, of portraying higher levels of structure, in fact they are—for the most part—only *simplifications*, much like the Easy charts for *Guitar Hero* are only simplified versions of the parts in the original songs (Figure 1–25), uncluttered adaptations more easily approachable by the amateur player that still "sound" remarkably like the musical surface. In similar fashion, rhythmic reductions also provide clarity, but in hopes that this clarity can offer the analyst the opportunity to hear deeper or more complicated relationships. As Forte and Gilbert inform us: "Although foreground events may be notated analytically [using Schenkerian notation] as well as rhythmically [by way of rhythmic reduction], and although the rhythmic reduction contains material belonging to the higher structural levels, it is nonetheless true that rhythmic notation by itself cannot *describe* or *delineate* anything beyond the foreground level.… It does, however, clarify harmonic and melodic outlines, and thereby makes the next stage, in analytic notation, easier."[94]

The admonition by Forte and Gilbert that rhythmic reductions model only foreground-level material also holds for *durational reductions*. In a durational reduction, the ratio of beats is altered, entire bars or more shown as mere beats or less, thus producing the effect of zooming out—but without the benefit of abstraction, among other things, as Schachter relates in his article on the subject: "At the same time, certain inescapable disadvantages limit the usefulness of these graphs [durational reductions]. As I mentioned earlier, the rhythmic notation makes it more difficult to show structural levels and, in general, makes the voice leading harder to perceive. This problem is minimized in simple pieces.… The solution to these problems seems simple and obvious. It is to use the durational reductions only where they reveal important features of the piece more clearly than other methods would. And, where necessary, to offset their deficiencies by using them together with voice-leading graphs. The rhythmic reductions will probably prove

[94] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 136, emphasis original.

most useful as an adjunct to graphs of the voice leading and harmony, used to clarify some otherwise obscure aspect of the rhythmic organization."[95]

Having contemplated how analytical rhythmic reductions can help answer questions about information that may belong in the categories of tones, ranking, grouping, and structural levels in graphs, the question naturally arises as to whether or not the analyst should "graph" the rhythmic reduction itself, as part of a sequential analytical process from musical score to graphical sketch. According to Forte and Gilbert: "The rhythmic reduction may be thought of as a foreground sketch…. The rhythmic reduction need only occur as a first step; for the more experienced it is a stage which can often be bypassed."[96] From this we might be tempted to infer that a rhythmic reduction is a foreground graph in waiting, waiting only for the stems, slurs, noteheads, and other such trim of Schenkerian graphing to be thoughtfully applied, but Schachter's warnings from a moment ago about the limitations of rhythmic reductions, along with the conspicuous differences we saw previously between the rhythmic reduction of Figure 2–57 and the graph of Figure 2–58, should be enough to give us some pause and remind us once more that analysis of this depth and complexity is, almost by its nature, nonlinear in execution.

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95 Carl Schachter, "Rhythm and Linear Analysis: Durational Reduction," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 76.
96 Forte and Gilbert, *Introduction to Schenkerian Analysis*, 136, emphasis original.

2.6 Rhythmic Reductions in the Analytical Venue: Two Case Studies

Now that we have looked at each of the categories of tones, ranking, grouping, and structural levels separately, it is time to consider them all together in conjunction with two short pieces.

Figure 2–62: Handel, Suite No. 5 in E Major, HWV 430, Air, "Harmonious Blacksmith"

Figure 2–63: Analytical rhythmic reduction for Handel's "Harmonious Blacksmith" Air

We begin with the Air ("Harmonious Blacksmith") from the final movement of Handel's Suite No. 5 in E major, HWV 430 (Figure 2–62). In terms of tones, the analytical rhythmic reduction in Figure 1–94 shows the reasonably straightforward results of familiar processes (various types of normalization, the omission of cover lines, and reading of the diminutions), but a couple of issues require further comment. The C♯s in bars 5 and 6 were left in their original register, in order to avoid a succession of faulty parallels. Reading of the diminutions in bar 1 shows the preference for melodic fluency, and normalizing the implied suspensions in the upper register of m. 2 also highlights a melodically fluent span (C♯–B–A♯), which "sounds like the piece" at this small level of abstraction; however, this later span may require further interpretation, as a somewhat concealed ascending line of E–F♯–G♯–A♯–B seems to unite the stretch from mm. 1–3. For this reason, the G♯ on beat 2 of measure 2 was included, in order to conserve the musical material necessary to this viable interpretation.

Regarding ranking, the omission of covering tones in mm. 3–4—which also "sound like the piece" at this level—helps draw attention to the tones of greater structural rank that lie beneath and around them.

Grouping required careful thought, as blindly or mechanically gathering notes into verticalities based on harmonic inclusion could have easily led not only to artificially highlighting tones of lower structural rank but also to creating a product that sounds less like the piece, as we shall see in a moment.

The level of zoom could have been targeted to a few different structural levels, changing a few outcomes along the way. For instance, the six-four chords in mm. 3 and 4 could have been absorbed into tonic harmony, and the eighth notes in bar 4 may have been normalized differently, in order to show some alternative, slower-moving entities. But for this reduction, I chose to attempt to conserve as much musical material as I thought possible, in order to keep open the possibility of the maximum number of readings in subsequent analysis, as this product leaves many aspects open to interpretation.

Figure 2–64: Analytical reduction of Handel's "Harmonious Blacksmith," illustrating a few pitfalls

The analytical reduction of Handel's "Harmonious Blacksmith" (Figure 2–64) looks and sounds somewhat like the piece, but the details leave something to be desired. In measure 1, nearly all of the notes have been carried over from the score, grouped by harmony, but certain tones of beats 2 and 3 are granted excessive structural rank by virtue of being positioned in the outer voices. This shows that there may be a significant difference between "sounding like the piece" and "containing all the notes."

The reduction in m. 4 suffers from what I call *whittling*. "Whittling" bears a strong resemblance to the widely known children's "Telephone" game, where each successive listener attempts to retain and retell the important or interesting parts of the story.[97] In the same manner,

[97] Sometimes material is clipped unknowingly and must be duly reintegrated into the analysis. For a wonderful example of this, please see Ernst Oster, "The Dramatic Character of the Egmont Overture," in *Aspects of Schenkerian Theory*, edited by David Beach (New Haven: Yale University Press, 1983), 209-22.

the analyst in Figure 2–64 has chosen what appears to be the structurally more significant tones in each successive beat of bar 4. In bar 5, the upper voice has been normalized down an octave in register, in order to avoid parallel fifths and to maintain melodic fluency, but even the seemingly insignificant loss of the upper melodic tone B makes this version sound much less like the original. As a whole, the types of "standard" processes employed also place the analytical content on quite disparate levels of abstraction, leading even more so to a disjointed hearing.

Figure 2–65: Mozart, String Quartet No. 15, K. 421, III, opening

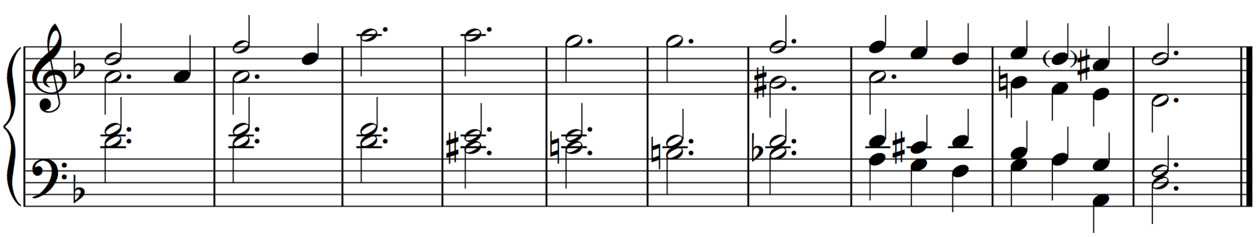

Figure 2–66: Analytical reduction for Mozart's String Quartet No. 15, K. 421, III, opening

Constructing an analytical reduction for the Menuetto from Mozart's D-minor String Quartet (Figure 2–65) engenders several challenges and leaves several questions unanswered, with regard to the construction of a Schenkerian graph. The product in Figure 2–66 reflects a relatively stable, slightly deeper-level foreground rhythmic reduction. Reading the diminutions, along with normalizing displacements and the number of voices, leaves simple harmonies throughout, a basic linear intervallic pattern in the middle, and an embellished cadential formula (complete with implied tone) at the end. This simplification, however, loses much if not all of the nuance of the flowing melodic lines in bars 2 and 8 (though their parallel character is kept), as well as the flavor of the many anticipation figures. Though various deeper-level groupings remain available as part of the final cadence, this analytical rhythmic reduction offers little insight as to which of those potential readings might be preferable.

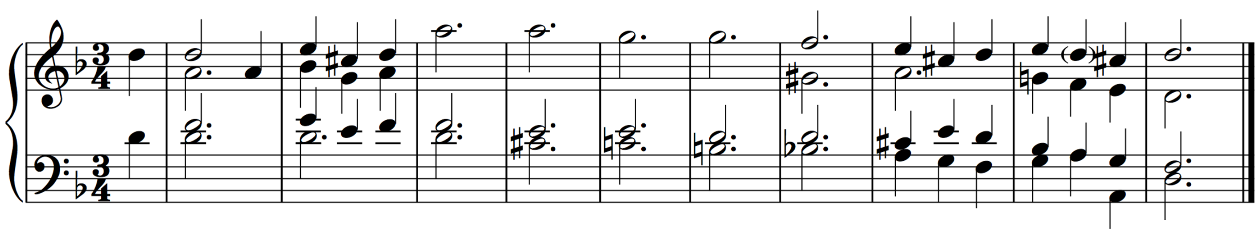

Figure 2–67: Analytical reduction of Mozart's String Quartet No. 15, K. 421, III, opening, illustrating "either/or" situations

The analytical reduction of Mozart's String Quartet No. 15, K. 421, III (Figure 2–67), captures some alternate content from the musical surface. A hint of the anticipation figures is modeled by the upbeat tones to the first measure, a touch of the flowing melodic line from bar 2 is retained in the double neighbor figure (and paralleled, as in Figure 2–66, with m. 8), and a new melodic and harmonic succession is proffered in bar 8. Two of these hearing pathways, those in mm. 2 and 8, are unable to be captured in the reduction from earlier (Figure 2–66), thus representing instances of Schachter's "either/or" dilemma discussed previously. In the case at bar 2, the ambiguous nature of the high F (is it an anticipation? a primary tone on the downbeat? a primary tone somewhere in the third beat?) is still lost in this reduction, and the representation in bar 8 seems somehow contrary to the spirit of the original, at least to my internal hearing.

Rhythmic reductions in the analytical venue have several strengths and weaknesses, as a means of providing information helpful in constructing a Schenkerian graph. The chief advantages of this type of reduction are clarity and simplicity, as they remove some of the visual clutter of the lower-ranking entities; make some of the least challenging decisions regarding diminutions; highlight the basic harmony and voice leading within the original metrical setting of the work under scrutiny; and advance the possibility of deeper hearings. The chief drawback to analytical reduction is its difficulty in providing deeper insight into ranking, grouping, structural levels—relationships graphs routinely contain—because of the constraints of the metrical framework and the low level of abstraction.

With so many questions as yet unanswered about relationships within a piece that a Schenkerian graph might represent, where should the analyst turn? That is the subject of the next few chapters, beginning with an examination of the discipline of *counterpoint*.

Part Two

Schenkerian Information: Realities from Reflection

Chapter 3

Counterpoint

Strict counterpoint is not a tool of subjugation.
Rather, it is a means that allows us to better understand
the forces that underlie the interaction of pitches in tonal music.
–L. Poundie Burstein[1]

This chapter on strict counterpoint begins a series of looks into disciplines that provide useful information for creating a Schenkerian graph. We have been employing the tenets of counterpoint, along with harmony and other factors, when making the rhythmic reductions discussed in the previous chapters; we just hid them, or left them to operate implicitly, in the processes we called "keep," "alter," "add," and "omit." Those tenets will now be made more explicit. And whereas our discussion of rhythmic reduction dealt with a kind of musical representation that can encompass a work in its entire span, the issues raised in this and later chapters will pertain only to certain dimensions of a piece, and even these dimensions may be covered only partially. Thus the project for this chapter is twofold: to examine the basic elements of strict counterpoint, as we attempt to follow Schenker's advice, "The true meaning of voice

[1] L. Poundie Burstein, "Of Species Counterpoint, Gondola Songs, and Sordid Boons," in *Structure and Meaning in Tonal Music*, edited by L. Poundie Burstein and David Gagné (New York: Pendragon, 2006), 39–40.

leading must nevertheless be probed and ascertained,"[2] and to discuss how those elements can provide useful information in the construction of a Schenkerian graph, looking through our lens of categories, considering the information as represented in the form of tones, ranking, grouping, and structural levels.

Each of the elements studied in this chapter, and in subsequent chapters, constitutes only one element in the synthesis of factors that form a piece of music, and any information that an individual element may contribute to the analysis should be deemed only incomplete, only tentative, until a more comprehensive and complete picture of an analysis can be constructed. Among the many musical factors formed into this synthesis, counterpoint and harmony are the chief ones. Felix Salzer and Carl Schachter describe part of this symbiotic relationship between counterpoint and harmony: "The growth of harmonic organization influences but does not diminish the role of counterpoint; most works show the cooperation and mutual influence of the two organizing forces."[3] Because these forces are in cooperation with one another, the rank and influence of any single element has the ability to rise and fall, exerting authority at times, being subdued at times. For this reason, it is best to try and separate the players, in order to learn more about how they influence a musical work as individuals, before placing them in relationship in analysis. As Salzer and Schachter suggest: "Counterpoint is only one of the elements of composition. To make counterpoint serve its true purpose, it must first be separated, so to speak, from composition";[4] and "Harmony and counterpoint represent fundamental architectural forces in our music; these two forces act upon and react to each other, and sometimes become very

[2] Heinrich Schenker, *Free Composition*, translated and edited by Ernst Oster (1979; repr., Hillsdale: Pendragon Press, 2001), 16.
[3] Felix Salzer and Carl Schachter, *Counterpoint in Composition: The Study of Voice Leading* (New York: McGraw-Hill, 1969), xviii.
[4] Salzer and Schachter, *Counterpoint in Composition*, xvii.

closely interconnected. However, the harmonic and contrapuntal concepts differ markedly in their essential characteristics; only if we are clear about the essential nature of each will we fully understand the various ways in which their cooperation and fusion organize musical textures."[5] John Rothgeb lobbies for individual study in this manner as well: "Therefore the exclusion from strict counterpoint of any specifications regarding harmonic progression, far from being a theoretical deficiency, actually makes a positive contribution to the study of voice leading as such. By isolating those constraints and liberties that belong to pure voice leading independently of harmony, strict counterpoint immeasurably enriches our understanding of the interaction of those dimensions in free composition."[6] And Salzer and Schachter provide the finishing touch, in regard to the level of emphasis this type of study should receive: "Analysis cannot be divorced from the study of counterpoint."[7] In arguing for the study of counterpoint as a separate discipline, not as a set of prescriptions for actual composition, these authors follow Schenker's insistence on "draw[ing] the boundaries between the *pure theory of voice leading* and *free composition*," as a means toward "reveal[ing] *the connection between counterpoint … and the actual work of art*."[8]

I hope that our previous study of rhythmic reduction, which demonstrated myriad ways to isolate and manipulate many of its constituent parts, shows the benefits of this type of detailed investigation. For this chapter, we begin with a broad overview of the discipline of strict counterpoint before discussing how certain aspects can assist the analyst in making decisions about relationships to be depicted within a Schenkerian graph.

[5] Salzer and Schachter, *Counterpoint in Composition*, 148.
[6] John Rothgeb, "Strict Counterpoint and Tonal Theory," *Journal of Music Theory* 19, 2 (1975): 264.
[7] Salzer and Schachter, *Counterpoint in Composition*, xix.
[8] Heinrich Schenker, *Counterpoint* Book 1, translated by John Rothgeb and Jürgen Thym, edited by John Rothgeb (1987; repr., Ann Arbor: Musicalia Press, 2001), 10, emphasis original.

3.1 The CORE of Strict Counterpoint: Context, Objects, Relationships, Effects

Taking our familiar tactic of surveying a topic in music theory in terms of general categories, I would like to examine strict counterpoint in its original environment. Following that, we will consider how certain facets of this discipline can supply information to our four large categories of Schenkerian graphing: tones, ranking, grouping, and structural levels.

Rothgeb provides us with a suitably terse definition of strict counterpoint: "the study of voice leading apart from the influence of other musical forces."[9] Schenker, in somewhat typical fashion, aggrandizes this study, saying: "Voice-leading must always and everywhere be regarded as the actual foundation of music."[10] We begin our survey with an examination of strict counterpoint's original *context*.

The original context for study in the discipline of strict counterpoint is the artificial environment of the cantus firmus-based exercise. As Forte and Gilbert explain: "The world of species counterpoint is an abstract idealized world from which many aspects of the free tonal composition are absent."[11] According to Schenker, the principal goal for studying in this context, this idealized world, is: "investigation of the possible configurations of the voices and the treatment of each, wherein at the same time the most painstaking effort must be exerted always to make manifest to the ear (in respect to both configuration and treatment) the gradation from the most natural and simple to the more advanced and the less simple."[12] Here we can see that even in this arena of exercise, the multiplicity of possibilities, from simple to complex, must not only be understood but also heard.

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[9] Rothgeb, "Strict Counterpoint and Tonal Theory," 266.
[10] Schenker, *Free Composition*, 16.
[11] Allen Forte and Steven E. Gilbert, *Introduction to Schenkerian Analysis* (New York: W. W. Norton, 1982), 42.
[12] Schenker, *Counterpoint* Book 1, 10.

The *objects* involved in this type of context will come as no surprise: tones. Other objects could be named in conjunction with tones, but most of these, including such basic phenomena as “interval designation” or “figured-bass signature,” seem to belong to a different realm, as they involve relationships.

When Oswald Jonas tells us, “The discipline known as *strict counterpoint* teaches us which *intervals* the moving voices may form and what type of motion may be used in approaching them,”[13] he also implies other kinds of *relationship*. “Which intervals” refers to basics of size and quality, and also to consonances and dissonances, to their proper treatment through approach and departure, and even to aspects of variety. “Types of motion that may be used” refers to the standard types—parallel, similar, oblique, and contrary—but also to the general preference for stepwise motion, issues of leap recovery, independence, and the proper treatment of both consonances and dissonances.

The discipline of strict counterpoint employs various exercises, in order to aid in the understanding, use, and control over diverse *effects*. Such control often takes shape in the use of stepwise motion and variety, the avoidance of objectionable parallel perfect intervals, and the proper treatment of dissonance.

Many of these aspects of voice leading tend to carry over into the world of tonal composition as well, the world away from that of the mere exercise, a *new context*. As it turns out, the tenets of voice leading flourish in this new environment. According to Salzer and Schachter, “It is the underlying voice leading that gives impulse and coherence to the details of

[13] Oswald Jonas, *Introduction to the Theory of Heinrich Schenker: The Nature of the Musical Work of Art*, 2nd English edition, translated and edited by John Rothgeb (Ann Arbor: Musicalia Press, 2005), 58, emphasis original.

the musical foreground."[14] In addition, Schachter tells us: "Schenker believed that the materials and procedures of strict counterpoint are always implicit in compositional foregrounds, even in those that seem most at variance with the 'rules' of counterpoint."[15] It is these compositions that will ultimately become the objects of analysis, rather than the exercises of strict counterpoint.

In many cases, aspects of tonal composition work against the goals of counterpoint. For example, melodic motives and interval-repetition schemes, though they lack a certain propriety in a strict counterpoint exercise (because of the preference in that arena for independence, a smooth, unarticulated line, and so forth), call attention to themselves in a manner befitting this new arena, as these ideas have more space to be worked out, space an artificial exercise lacks. In addition, as Schenker informs us: "the interpretive force of the scale-degree … can bind together a longer *chain* of syncopes into one single unit—a phenomenon that counterpoint is unable either to originate or to demonstrate."[16] Some relationships from the strict environment remain the same but take on more depth, as we shall see. For instance, in the expansion of a harmony, a single tone may be a consonance on one structural level and a dissonance on another, deeper level.

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[14] Salzer and Schachter, *Counterpoint in Composition*, 117.
[15] Carl Schachter, "Motive and Text in Four Schubert Songs," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 210.
[16] Schenker, *Counterpoint* Book 1, 295, emphasis original.

3.2 Aspects of Voice Leading: What They Bring to a Schenkerian Graph

In our study of analytical rhythmic reductions in Chapter 2, we found that voice leading can provide only partial insight into the final product. The same is true when voice leading informs a graphical representation of a piece. Information gained from a knowledge of counterpoint acts in consort with numerous other sources of content, in order to aid in developing a more comprehensive analysis. The following discussion will examine what types of material may be added to the categories we developed in our study of Schenkerian graphs, the categories of tones, ranking, grouping, and structural levels.

Since graphs present "tones in relationships" and many types of voice-leading knowledge imply a number of different relationships, we begin the section on "tones" with the simpler, more concrete types of relationships, knowing that these relationships can still cross categories easily; for example, a harmony may be viewed simultaneously as an object, a unit of rank in a structural level, and a grouping agent. We begin with a few relationships involving intervals, including basic voice-leading tracing and rudimentary voice-leading correctives, since these relationships are the simplest, while also being closely affiliated with relationships of displacement and normalization that we encountered earlier.

Tones:

Counterpoint, in its *taxonomy*, provides some elementary relationships among tones. The most basic designation in this taxonomy is the interval, but even this humble moniker may assist in highlighting or unlocking other relationships around it, much the same way as a rhythmic reduction prepares and presents a simplified, alternate version of the original work, so that deeper relationships may be sought.

Figure 3–1: Beethoven, Piano Sonata Op. 26, I, mm. 1–12

Figure 3–2: Cadwallader and Gagné, rhythmic reduction of Beethoven's Piano Sonata Op. 26, I, mm. 1–8, with interval labels overlaid between and below the staves

In their rhythmic reduction of Beethoven's Piano Sonata Op. 26, I (Figure 3–2), Cadwallader and Gagné have marked the outer-voice intervals between the staves and the figured bass signatures below the bass staff.[17] These concrete pieces of information, because of the tones involved, begin to imply other relationships and to open up new questions. For example, the appearance of the $^4_3$ and $^4_2$ designations imply seventh chords with their accompanying dissonance and dissonance treatment elements, and the succession of parallel tenths in mm. 6–7 may indicate the presence of some larger grouping relationship. In addition, the use of the $^4_2$ in m. 6 also shows a first pass at interpretation, the upper-voice E♭ silently normalized to the second beat, replacing the implied F.

[17] Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach*, 3rd Edition (New York: Oxford University Press, 2011), 55.

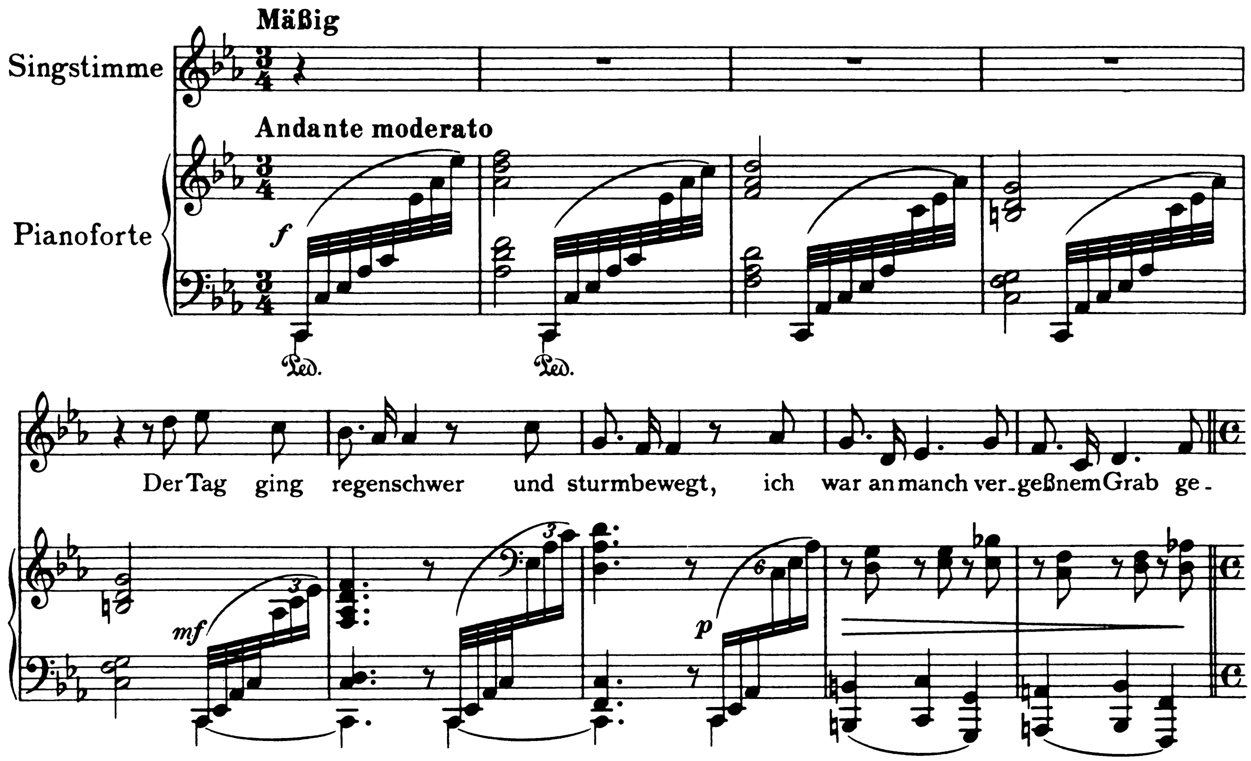

Figure 3–3: Brahms, Op. 105, No. 4, "Auf dem Kirchhofe," mm. 1–8

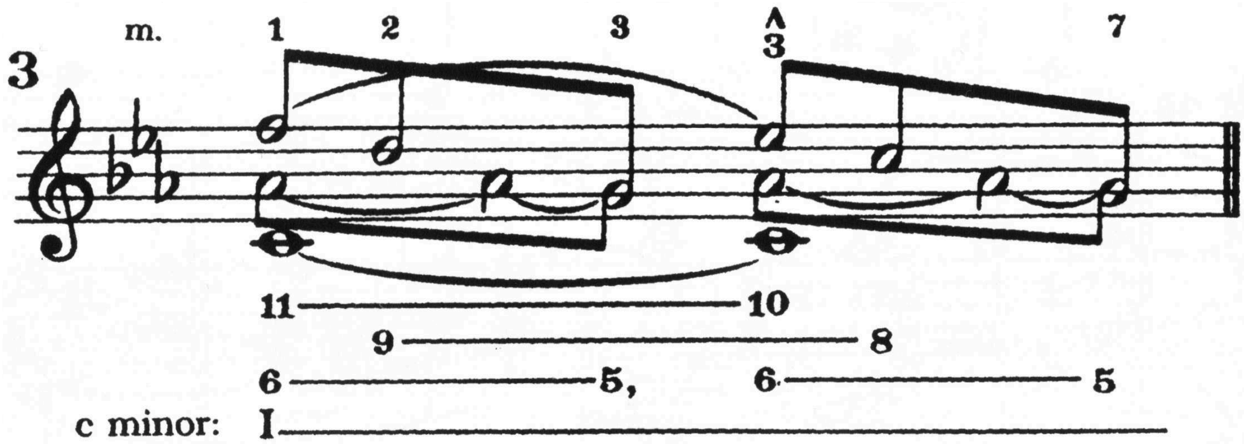

Figure 3–4: Schenker, analysis of Brahms's Op. 105, No. 4, "Auf dem Kirchhofe"

Schenker's analysis of Brahms's Op. 105, No. 4 (Figure 3–4) shows interval labels linked with dashes, in order to trace the progression of different voices. This linking indicates that other relationships may exist in terms of ornamentation, displacement, dissonance treatment, and longer-range connections, among other possibilities. In particular, this analysis uncovers the long-range F–E♭ motion, passing between the piano and the entry of the soloist.

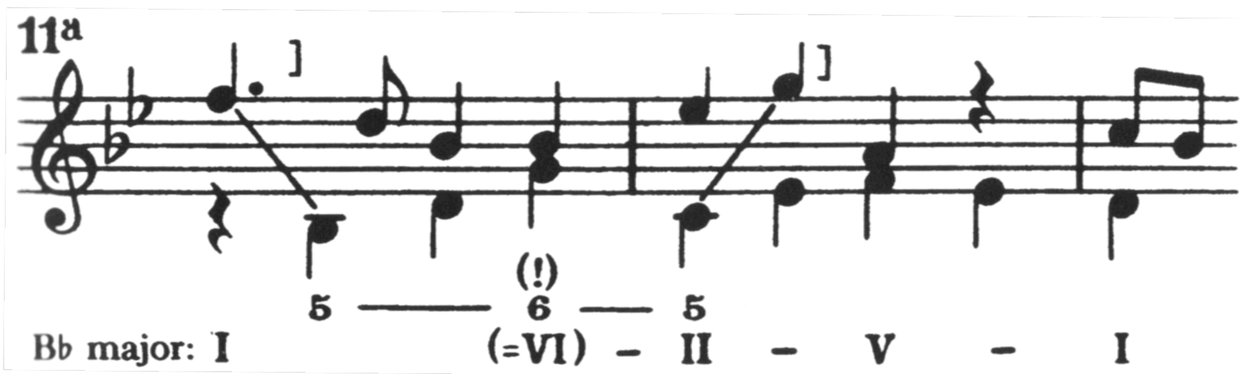

Figure 3–5: Schenker, analysis of the opening measures of Mozart's Piano Sonata, K. 333, III

I have placed the subject of voice-leading correctives here, as they bear a resemblance to the normalization principles we studied in conjunction with rhythmic reduction, only in the opposite direction. After all, according to Schenker: "The middleground frequently displays forbidden successions; it is then the task of the foreground to eliminate them."[18] A common method of removing deeper-level parallel fifths is shown in Figure 3–5.[19] In this analysis of the opening of the final movement of Mozart's Sonata in B♭ major, K. 333, Schenker highlights the voice-leading corrective that avoids parallel fifths by marking the 5–6–5 contrapuntal succession underneath the score. Schenker's graph of Beethoven's Piano Sonata Op. 27, No. 2 (Figure 2–41) displays an extension of this type of technique, continuing the pattern a couple more times.

[18] Schenker, *Free Composition*, 56.
[19] Schenker, *Free Composition*, Figure 54,11a.

Figure 3–6: Chopin, Étude Op. 25, No. 1, mm. 1–8

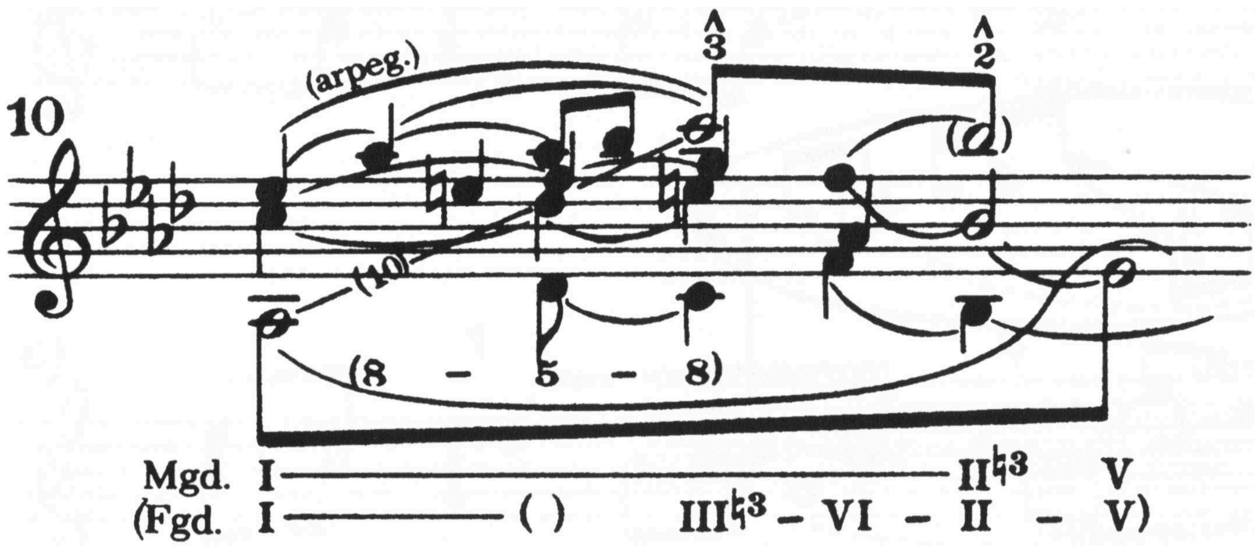

Figure 3–7: Schenker, graph of Chopin's Étude Op. 25, No. 1, mm. 1–8

Sometimes more elaborate compositional strategies excise forbidden parallels. Schenker reminds us: "Even in strict counterpoint we have had the experience that 8–8 and 5–5 successions, which somehow seem to be unavoidable because of voice-leading requirements, can be eliminated. We can eliminate them simply through contrary motion, or else through crossing of parts, interpolation, syncopation, or rhythmic displacement, and sometimes even by means of a rest."[20] Salzer and Schachter also note that: "The rule prohibiting parallel fifths and octaves remains a fundamental principle of voice leading from the Renaissance through most of the nineteenth century. Many important compositional techniques evolved as a result of this principle."[21] The graph of Chopin's Étude Op. 25, No. 1 (Figure 3–7) shows an example of what Schenker terms "interpolation," a compositional technique imported from strict counterpoint. In this instance, Schenker points out how Chopin inserts a perfect fifth between the octaves (shown as 8–5–8 in parentheses), in order to break up the 8–8 succession.[22]

[20] Schenker, *Free Composition*, 57.
[21] Salzer and Schachter, *Counterpoint in Composition*, 16–17.
[22] Schenker, *Free Composition*, Figure 40,10.

Figure 3–8: Chopin, Étude Op. 10, No. 8, mm. 29–40

Figure: 3–9: Schenker, analysis of Chopin's Étude Op. 10, No. 8, mm. 29–40

Schenker's analysis of Chopin's Étude Op. 10, No. 8 (Figure 3–9), shows how Chopin uses a compositional technique reminiscent of fourth-species exercises, but in an altered form.[23] A chain of suspensions 5–4–5–4–5 in fourth species remains an unusable option, since the dissonant fourths would not be strong enough on their own to counteract the effect of the surrounding fifths; in tonal composition, however, using dissonances and displacements as distractors works perfectly well, luring the ear away from the impression of the parallel fifths. In addition, the dissonances also fall on the weak half of the bar, anticipating the consonances that follow, rather than falling on the downbeat and displacing them.

Our final topic in the category of tones involves reading the diminutions. In the discipline of strict counterpoint, diminutions are *special*, complicated entities that are treated with great care. Second-species exercises introduce the learner to the passing tone, third species examines the neighbor note, and fourth species deals with displacements. In tonal analysis, reading the diminutions is often challenging because they may participate in multiple types of relationships simultaneously. Diminutions may be mere tones of surface embellishment, culled on the first pass; they may take on various levels of rank within a structural level; they may, as subordinate elements, engender grouping relationships; they may permeate almost every structural level from background to foreground; they may be consonant or dissonant—or both, depending on their place in a set of graduated structural levels.

Schenker's graph of Schubert's *Valse Noble*, Op. 77, No. 1 (Figure 2–32) shows several types of diminutions. The first eight tones in the melody show successions of consonant (chordal) skips; the initial, down-stemmed C–D–E depicts the D as a passing tone; and the half-note F (with "n.n." above it) acts as a neighbor note to the half-note Es on either side of it. Also,

[23] Schenker, *Free Composition*, Figure 54,5.

in Schenker's graph of Chopin's Nocturne Op. 9, No. 2 (Figure 2–37), we can see how the passing motions grouped by slurs and beams reside on slightly different levels of structure. Indeed, any graph that is well conceived and presented will show such readings of diminutions on different levels of structure. The graphic notation is designed to highlight just such levels of embellishment: diminutions of diminutions.

Ranking:

Ranking and grouping often form their own small synthesis in a Schenkerian graph. Because of this, it can prove difficult to discuss one apart from the other, as grouped entities frequently contain tones of various levels of rank (as shown through the rhythmic notation or even across structural levels). Perhaps the main types of ranking relationships that engage the tenets of strict counterpoint are those of consonance and dissonance. In the environment of strict counterpoint, these qualities are essentially fixed in both type and connection. According to Schenker: "It comes down to this: the consonant interval speaks for itself; it rests in its euphony, signifying by itself both origin and end. This is not true of the dissonance, whose presence always requires further justification; far from resting at peace in itself, the dissonance instead points urgently beyond itself; it can only be understood in relation to—that is, by means of and in terms of—a consonant entity, from which it follows that the consonant entity alone signifies origin and end for the dissonance."[24] In tonal composition, however, context often plays a decisive role and may alter or even upend these connotations and designations. As Salzer and Schachter inform us: "Consonance and dissonance are not absolute qualities; the different consonant intervals possess

[24] Schenker, *Counterpoint* Book 1, 111.

varying degrees of stability, and the dissonances possess varying degrees of tension. And, of course, context can exert a modifying influence upon an interval."[25]

An example of this type of upending appears in the rhythmic reduction from Beethoven's Piano Sonata Op. 26, I (Figure 3–2). Wayne Petty, in his monograph on analysis, declares: "In figured bass theory the consonant 3 in the $^{4}_{3}$ and perfect 5 in the $^{6}_{5}$ are said to be 'bound' or 'restricted' consonances because they clash with the adjacent interval. According to the theory of chord inversions, these consonances above the bass count as dissonances because they would be dissonant sevenths if the chords were in root position."[26] In addition, the perfect fourth of the $^{4}_{3}$ counts as a *consonant* fourth.

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[25] Salzer and Schachter, *Counterpoint in Composition*, 13.
[26] Wayne C. Petty, *Basic Tonal Analysis* (unpublished monograph, 1997), 14.

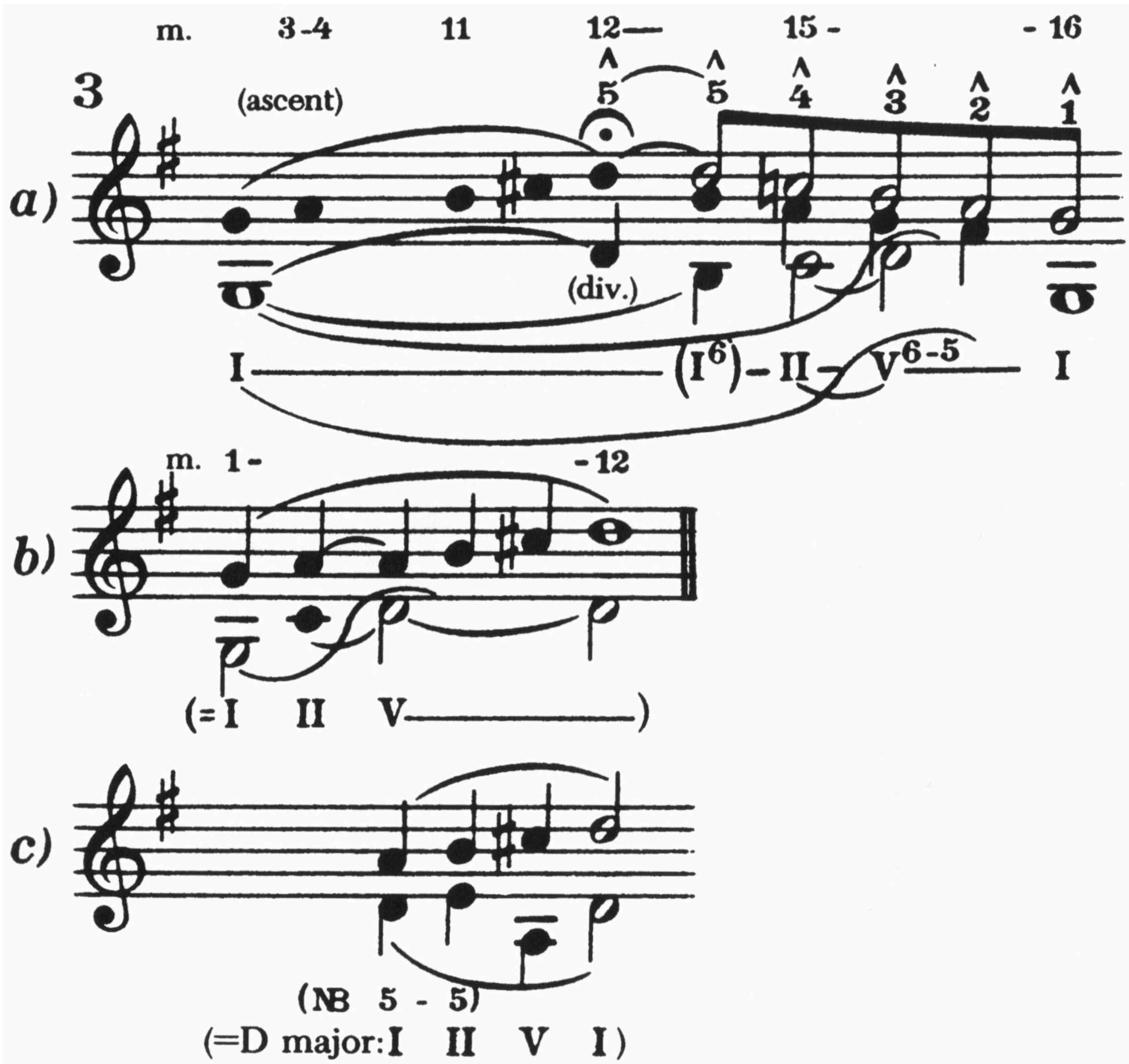

Figure 3–10: Schenker, multi-level analysis for Haydn's String Quartet Op. 76, No. 3, II, "Emperor Hymn," variation theme

If, according to Petty, "Dissonance arises from melodies working in combination,"[27] then Schenker takes this perspective to new levels. Schenker's multi-level analysis for Haydn's String Quartet Op. 76, No. 3, II (Figure 3–10), shows how a successive unpacking, un-telescoping of the melody in the lowest voice reveals how the upper-voice A and C♯ are simultaneously

[27] Petty, *Basic Tonal Analysis*, 4.

dissonant *and* consonant—just at differing levels of structural depth.[28] At level *a*, the A and C♯ are both dissonant against the accompanying G; at level *b*, the A is consonant and the C♯ is still dissonant; and a level *c*, the closest level to the surface, both tones are seen as consonant, the bass melody now providing consonant support for all tones of the upper melody.[29]

In the examples we have just witnessed, we can see how describing a tone or a relationship between tones as "consonant" or "dissonant" depends on several factors, any of which may change with the level of structural depth. A dissonant tone at a deeper level may masquerade as consonant tone closer to the surface. In addition, no clear, direct relationship between level of consonance and level of depth exists, either; the background, in most cases, is comprised entirely of consonances, and the surface contains many elements of consonant support, surrounded by diminution, but the middleground often contains dissonances in the form of passing tones or other voice-leading entities.[30]

Grouping:

Strict counterpoint produces many details of information that can aid in making decisions about grouping in a Schenkerian graph. Some pieces of information are more concrete, highlighted through the use of interval labels, often taking shape as interval successions or linear intervallic patterns. Other pieces of information are more abstract, highlighted through the use of concepts. This type of abstract content often manifests itself in regard to a preference for stepwise melodic movement (melodic fluency); the proper treatment of consonance and dissonance; and reading

[28] Schenker, *Free Composition*, Figure 39,3.
[29] Also, zooming out to the score (Figure 2–43), we can see how Haydn uses further diminution to remove the parallel fifths at the surface level.
[30] As is widely known, an unsupported stretch in an 8-line (passing from $\hat{8}$ to $\hat{5}$, perhaps) or 5-line (passing from $\hat{5}$ to $\hat{3}$) appears frequently enough.

the diminutions. In general, the main advantage of grouping content derived from aspects of strict counterpoint is its relative level of simplicity and ease of identification; the drawbacks involve the need for further interpretation, because a synthesis of factors, such as context, other grouping agents (most notably harmony), and structural level, all influence the final outcome.

Our first examples come from contrapuntal motion *within* the boundaries of a harmonic scale step. In the opening measure of the final movement of Mozart's Piano Sonata, K. 333 (Figure 3–5), Schenker shows how the 5–6 shift implied above the B♭ is considered to extend the tonic harmony (though he also notes it locally as expressing VI). Schenker's graph of Schubert's *Valse Noble*, Op. 77, No. 1 (Figure 2–32), also discussed earlier, shows the same type of motion at a much deeper level, the $I^{5–(\,)}$ standing for $I^{5–6}$ motion with an added root (the A in the bass). Another harmony frequently subject to this kind of harmonic shift is IV. The foreground sketch by Cadwallader and Gagné of Beethoven's Piano Sonata Op. 31, No. 1, II (Figure 2–58), not only shows the $IV^{5–6}$ shift (bar 6), but it also shows the difference between this contrapuntal shift and chord inversion (shown in bar 5, where I moves to I^6). In Schenker's analytical graph of Schubert's "Wandrers Nachtlied," Op. 4, No. 3 (Figure 2–22), he shows a more complex case of the $IV^{5–6}$ shift; the subsequent II harmony encompassed by IV is altered through a chromaticized voice exchange. For all of these cases, the identification of this type of contrapuntal shift groups content together within the even larger grouping agent of harmony.

A mix of 5–6 harmonic shift with more extended melodic motion appears in Schenker's graph of Haydn's Chorale St. Antoni, Hob. II/46 (Figure 2–39). In this instance, the contrapuntal motion 8–7–6–5 highlights the melodic grouping that expands the IV harmony, yet resides inside the deeper-level, controlling dominant harmony of the entire section.

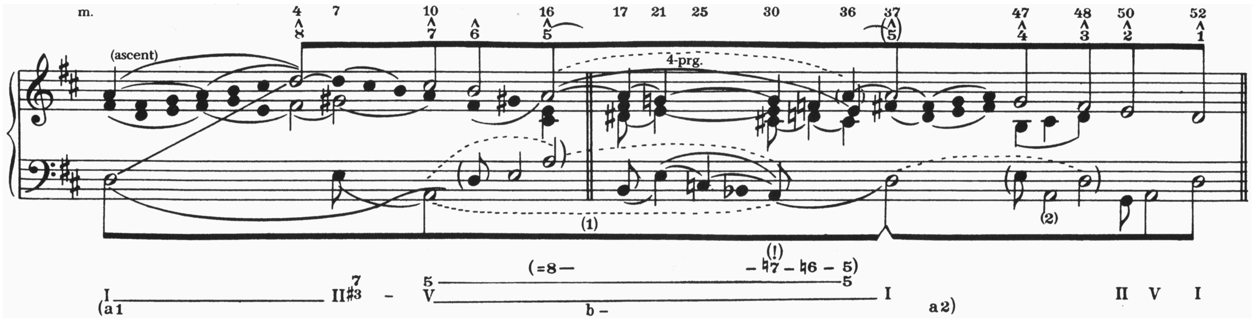

Figure 3–11: Schenker, graph of Mozart's Piano Sonata K. 331, II, Trio

Schenker's graph of Mozart's Piano Sonata K. 331, II (Figure 3–11), also shows an extended melodic progression (8–♮7–♮6–5). This time around, Schenker frames this melodic motion, which groups the changes of harmony residing closer to the surface, within the controlling V harmony.[31]

The last of our relatively concrete grouping entities is the *linear intervallic pattern* (LIP). Forte and Gilbert define this term as "a voice-leading design made up of successive recurrent pairs of intervals formed between the descant and bass (outer voices)."[32] Petty describes it more generally, as "a repeating succession of intervals above a moving bass."[33] Using techniques similar to the melodic progressions we just witnessed, "the essence of the linear intervallic pattern," Forte and Gilbert remind us, "is stepwise motion."[34] They also state that the LIP has its basis in the world of voice leading, "Thus the linear intervallic pattern represents in the most concise and intensive way the basic voice-leading motion of tonal music,"[35] continuing later, "We have stressed the fact that the linear intervallic pattern owes its origin to voice leading: each

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[31] Schenker, *Free Composition*, Figure 20,4.
[32] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 83.
[33] Petty, *Basic Tonal Analysis*, 74.
[34] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 99.
[35] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 99.

pattern is a determinant of linear progression and establishes a coherent and uncomplicated framework for directed motion."[36]

This melodic-contrapuntal framework also works in synthesis with other compositional factors, in order to form groups. The most common relationship is with harmony, but in the case of the LIP itself, harmonic concerns remain secondary. According to Forte and Gilbert, "Although the components of a linear intervallic pattern may sometimes have harmonic value … the pattern is essentially either without harmonic meaning or the harmonic reading is a secondary feature, subsidiary to the pure voice-leading impetus that drives the design toward a goal,"[37] and, "If there is a harmonic function of the linear intervallic pattern, it is as a *connector* of harmonies: in other words, harmonic importance (if any) resides in where the pattern begins and where it ends. A linear intervallic pattern may effect the connection between two statements of the same harmony … or between one harmony and another harmony."[38] Nevertheless, even though harmony might be subordinate to the structure of an LIP, that LIP is also subordinate to even deeper structures. As Forte and Gilbert remind us: "These [linear intervallic] patterns, however intrinsically interesting and beautiful they may be, never serve as primary structural constituents but are always in the service of some musical element of a larger scale."[39] Thus these LIPs group content and become grouped between or within other grouping agents, especially harmonic ones, as we shall see in the next chapter.

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[36] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 99.
[37] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 99.
[38] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 100.
[39] Forte and Gilbert, *Introduction to Schenkerian Analysis*, 100.

Figure 3–12: Bach, Brandenburg Concerto No. 5, BWV 1050, II, mm. 1–11

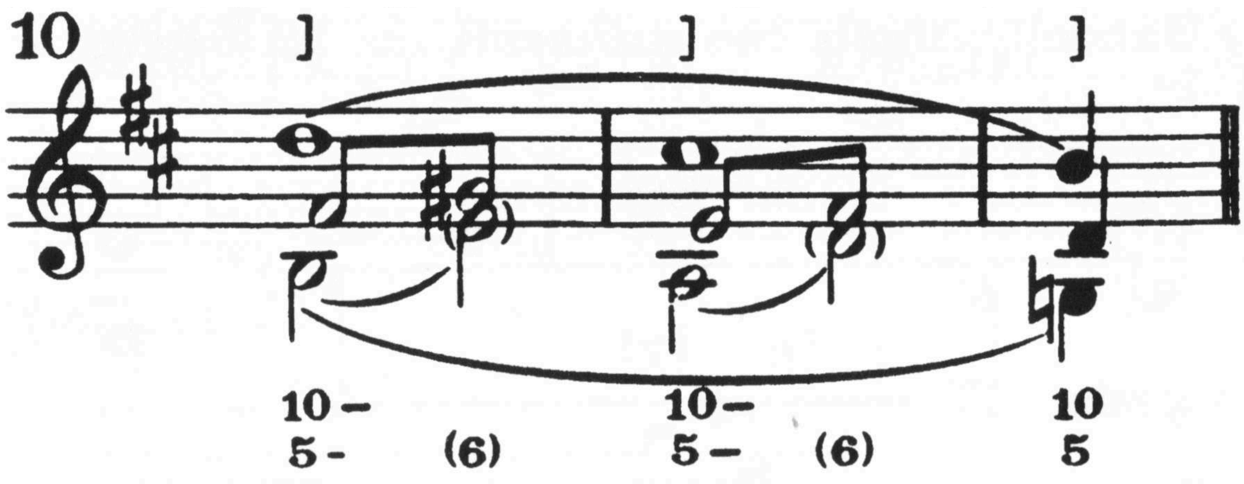

Figure 3–13: Schenker, voice-leading analysis of Bach's Brandenburg Concerto No. 5, BWV 1050, II, mm. 7–9

We first encountered a 10–10–10 LIP in the graph of Schubert's "Wandrers Nachtlied" (Figure 2–22). In that example, the contrapuntal tenths organized the harmonic motion from I to IV, acting as waypoints, grouping some of the content residing on lower levels, such as the more local harmonic motion and the melodic diminutions. Schenker's voice-leading analysis of Bach's Brandenburg Concerto No. 5, BWV 1050, II (Figure 3–13), combines a 10–10–10 LIP with 5–6 motion used as a voice-leading corrective.[40] Here Schenker shows how the harmonic motion by fifths is subordinate to the overall pattern of successive tenths, the entire passage grouped by the multiple contrapuntal successions.

[40] Schenker, *Free Composition*, Figure 54,10.

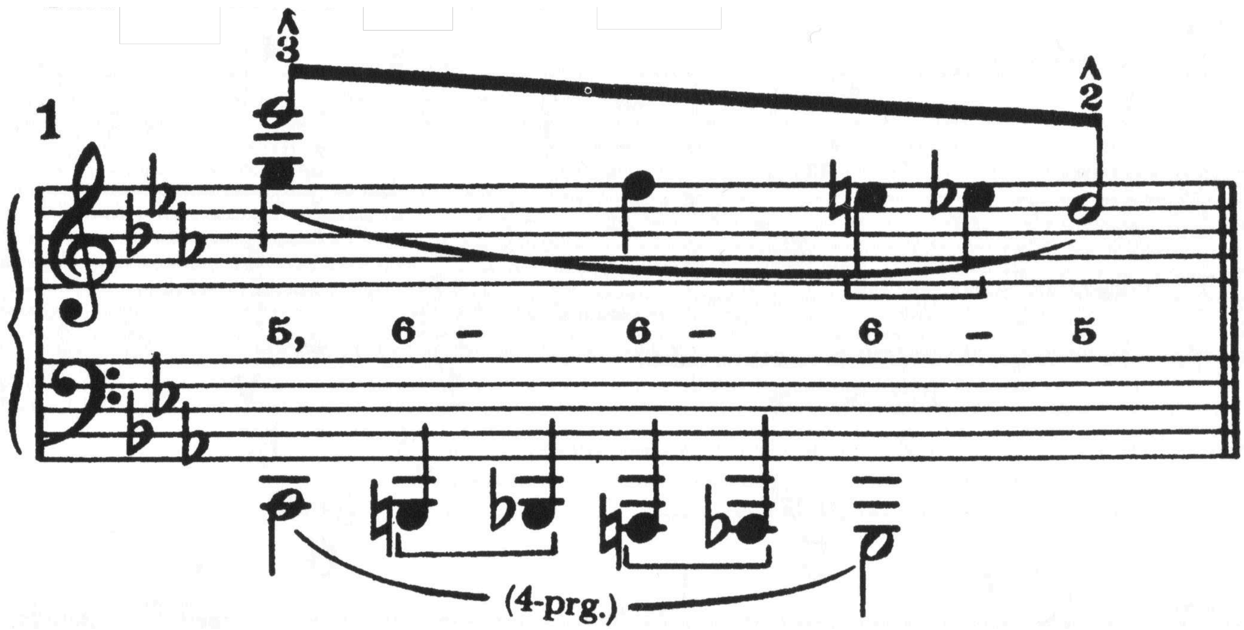

Figure 3–14: Schenker, graph of Chopin's Étude Op. 10, No. 12, mm. 11–18

Of course, other single intervals can participate in a linear chain, and the progression of sixths turns up frequently. Schenker's representation of parallel sixths in his graph of Brahms's Waltz Op. 39, No. 4 (Figure 2–34), illustrates how the framework of intervals groups and governs the progression toward the II$^{\sharp}$ harmony. In similar fashion, his graph of Chopin's Étude Op. 10, No. 12 (Figure 3–14), displays a more chromaticized version, where the chromatic bass helps bind together the content inside the trip from I to V.[41]

[41] Schenker, *Free Composition*, Figure 73,1. Figure 2–27 shows the score.

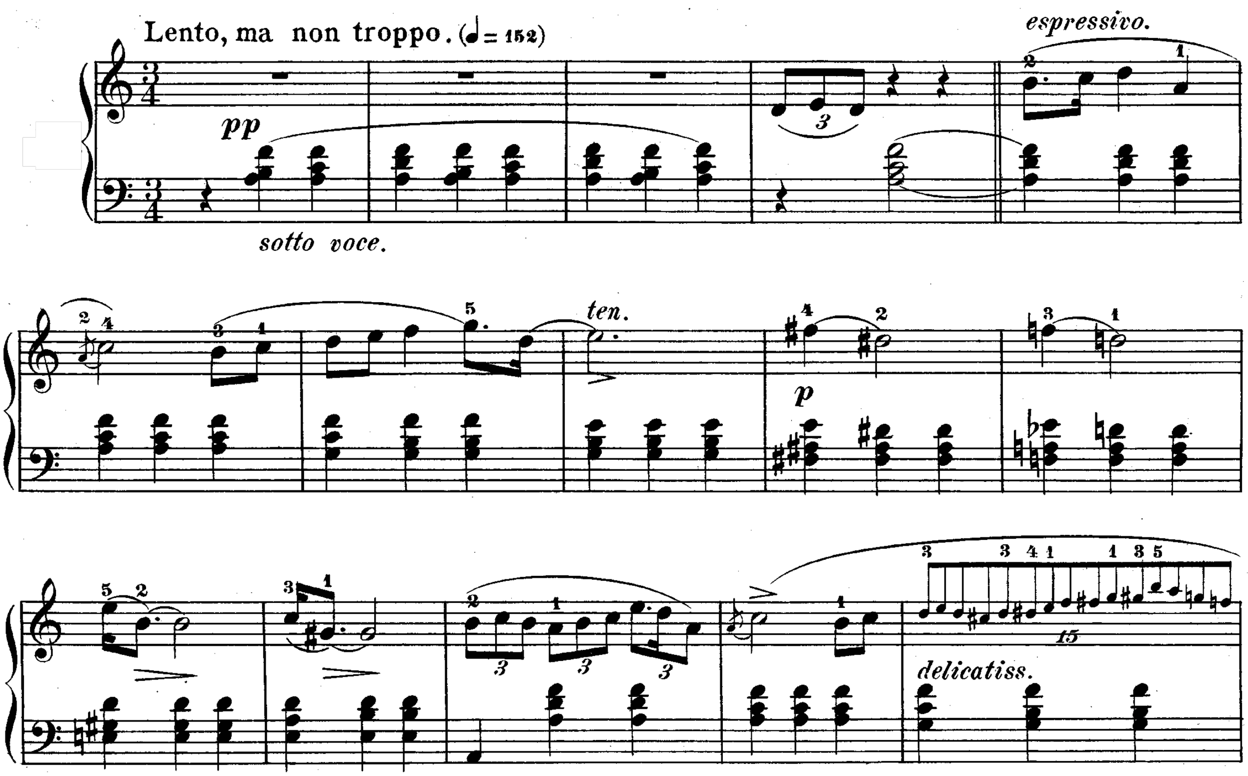

Figure 3–15: Chopin, Mazurka Op. 17, No. 4, mm. 1–15

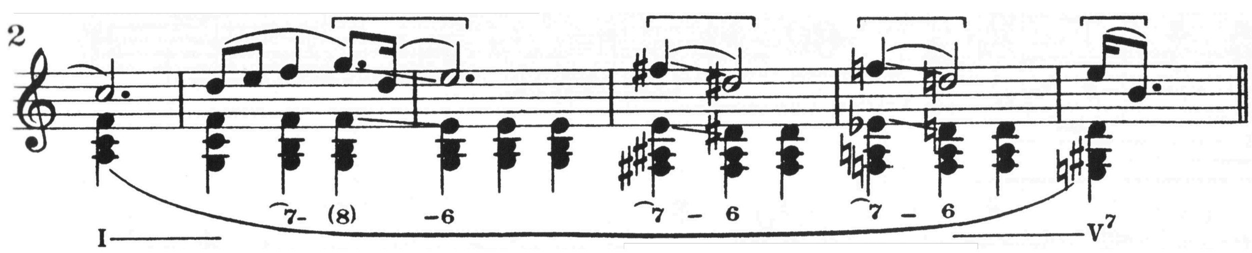

Figure 3–16: Schenker, analysis of Chopin's Mazurka Op. 17, No. 4, mm. 6–11

As Forte and Gilbert established with their definition earlier, LIPs commonly exhibit pairs of intervals grouping together. We saw a simple example of this in the graph of Beethoven's Op. 27, No. 2 (Figure 2–41), where the pairings moved 6–5. A more chromatic example appears in Figure 3–16.[42] Here Schenker highlights the chain of 7–6 motions (or 8–6, if the focus remains on the outer voices) that expand the harmonic motion from I to V. In addition,

[42] Schenker, *Free Composition*, Figure 65,2.

the initial tonic harmony stems from an implied contrapuntal 5–6 motion, the F replacing the E of the tonic sonority. Each of these contrapuntal pairings assist in uniting smaller pieces of information into larger categories or groups.

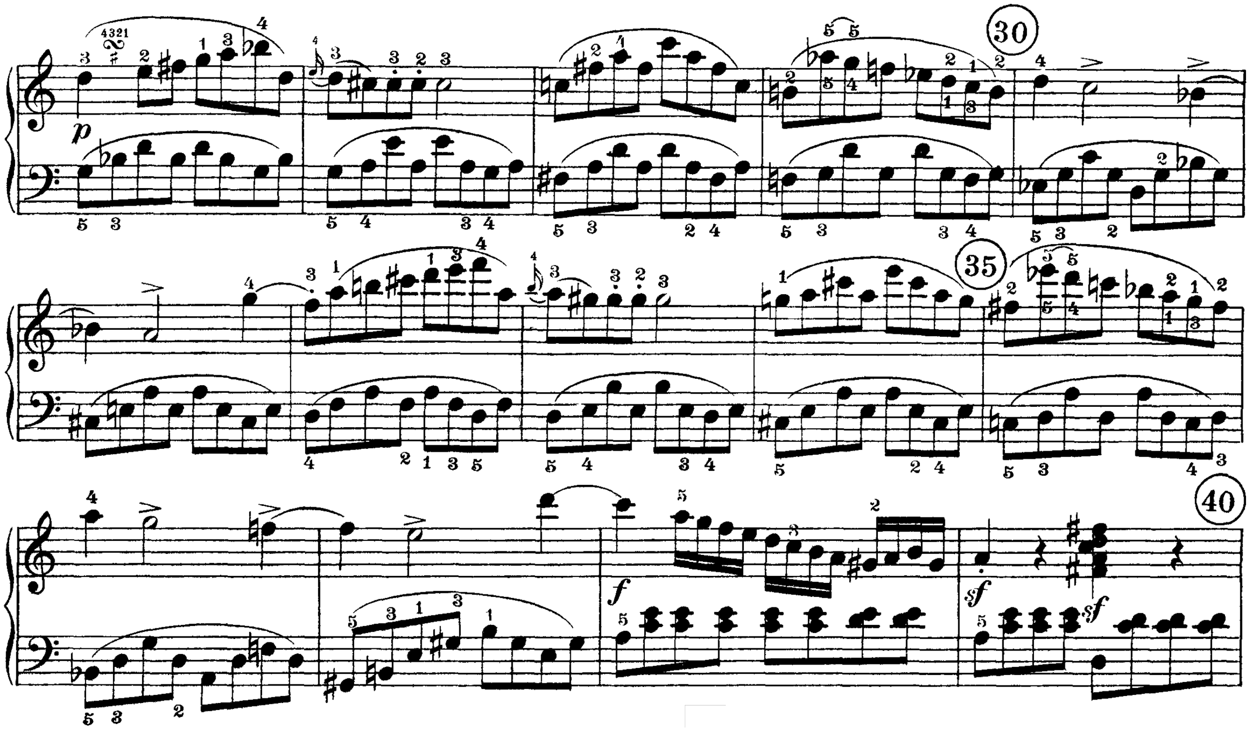

Figure 3–17: Beethoven, Piano Sonata Op. 2, No. 3, I, mm. 27–40

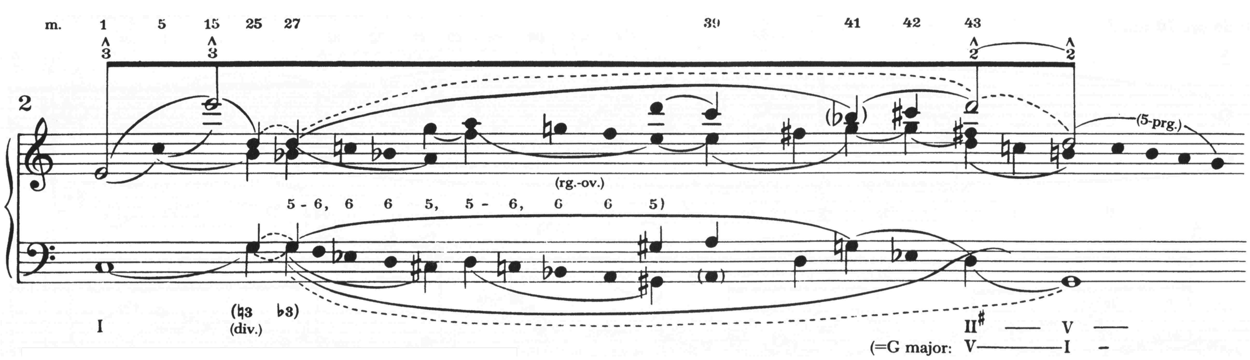

Figure 3–18: Schenker, graph of Beethoven's Piano Sonata Op. 2, No. 3, I

LIPs may also appear in quite complex patterns. In Figure 3–18, Schenker depicts the succession 5–6, 6–6–5, 5–6, 6–6–5 in mm. 27–37 of Beethoven's Op. 2, No. 3, I.[43] In each of these cases, the LIP binds tones from the score into groups, the contrapuntal patterning subordinating any apparent harmonic motion; yet each LIP also falls under the control of even deeper forces, often expanding or moving between two more structural harmonic scale degrees.

[43] Schenker, *Free Composition*, Figure 154,2.

Figure 3–19: Chopin, Mazurka Op. 41, No. 2, mm. 1–23

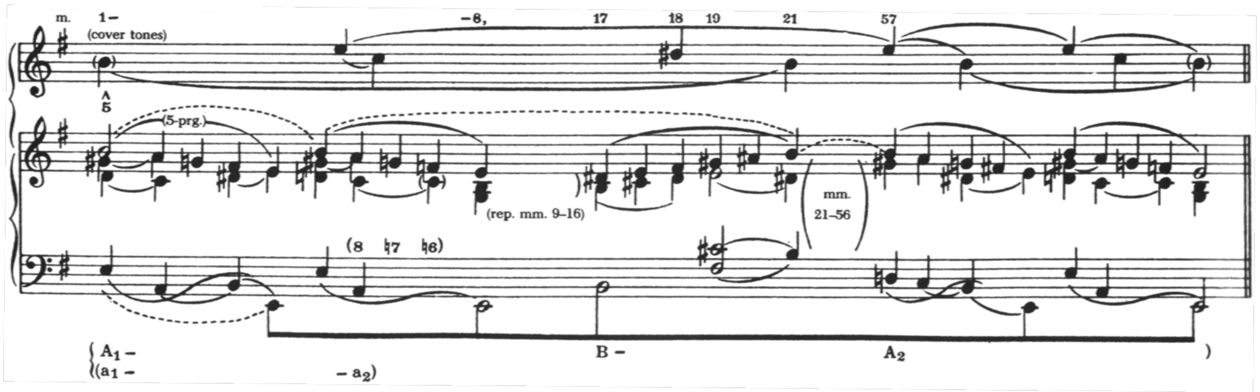

Figure 3–20: Schenker, graph of Chopin's Mazurka Op. 41, No. 2

As we begin our discourse on more abstract concepts from strict counterpoint that may assist in identifying the grouping agents behind the creation of a Schenkerian graph, the representation of Chopin's Mazurka Op. 41, No. 2 (Figure 3–20), provides us with an opportunity to address a term that we have avoided thus far: *linear progression*.[44] According to Rothgeb: "The linear progression is but an extension of the basic passing-tone concept of second species counterpoint, in that it allows for passing motions within intervals larger than a third. As such, it remains under the influence of the same psychological principles of hearing that pertain to the dissonant passing tone in strict counterpoint: (1) the initial tone of the linear progression, like the passing tone's consonant point of departure, is mentally retained; and (2) the passing tones within the linear progression never result in a change of the underlying harmony, but rather, confirm and strengthen it. Indeed, it is above all the linear progression that makes possible the unambiguous expression of harmonic steps and of coherent step progression."[45] The passing tone and other diminutions will be inspected later, but the linear progression, an extension of the preference for stepwise motion from melodic writing in strict counterpoint, constitutes a

[44] Schenker, *Free Composition*, Figure 75.
[45] Rothgeb, "Strict Counterpoint and Tonal Theory," 278.

grouping agent on its own. In Schenker's graph in Figure 3–20, two separate fifth-progressions (B–A–G♮–F♯–E and B–A–G♮–F♮–E) help organize the content of the A_1 section. Also, a sixth-progression (D♯–E–F♯–G♯–A♯–B) helps organize the material of the B section. In each case, the initial and final tones of the interval spanned by the linear progression fit within the controlling harmony, grouping this content within another category.

The next abstract grouping categories from strict counterpoint to be examined are those of consonance and dissonance. Since perfect consonances must be approached correctly and all dissonances must be approached and left correctly, they naturally tend to form groups of tones. Additionally, Schenker reminds us that consonance and dissonance also interact with each other, saying, "Dissonance remains bound for the time being to the rather strict specification that it must flow back into a consonance, and therefore can count only as a path, or a hidden bridge from one consonance to the other,"[46] and "The use of dissonances … necessarily lead[s] to the establishment of larger harmonic units."[47] In this type of grouping environment, Salzer and Schachter also note that "consonances provide a stable framework within which dissonances move. The meaning of a dissonance, however prominent or strikingly used, depends on its immediate or ultimate relationship to a context determined by consonances; consonances represent the primary sonorities that can create large contexts while dissonances are the transitory and dependent—but vital—elements that activate and enliven these contexts."[48]

We have already seen examples of the proper treatment of *consonances* (Figures 2–41, 3–5, 3–7, 3–9, and 3–13). In each of these cases, voice-leading correctives were used to avoid objectionable parallels. The proper treatment of *dissonances* entails attention to the tones on

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[46] Schenker, *Counterpoint* Book 1, 183.
[47] Schenker, *Counterpoint* Book 1, 110.
[48] Salzer and Schachter, *Counterpoint in Composition*, 13.

either side of them. Most often, dissonances are approached by step or by common tone and resolved by step, usually downward, and all of these events normally occur in the same voice.

Dissonances often arise as a product of melody, thereby grouping events in the horizontal. According to Salzer and Schachter: "All the dissonances of tonal music arise out of three fundamental types: the dissonance created by motion (passing tone), the dissonance caused by the ornamentation of a stationary tone (neighboring note), and the dissonance produced by rhythmic displacement (suspension)."[49] In other words, dissonances are often a product of *diminution*. As we have seen, intervallic motion within a harmony, one type of diminution, often encompasses a dissonance. For example, the interval succession 8–♮7–♮6–5 in the graph of Mozart's Piano Sonata K. 331 (Figure 3–11) shows the seventh as a passing dissonance, helping group some of the melodic content within the prevailing V harmonic scale step.

If, as Schenker discloses to us: "All foreground is diminution,"[50] then it seems worthwhile to discuss how the discipline of strict counterpoint may afford us some answers, in terms of grouping, based on some standard diminutions: consonant skip (arpeggiation), passing tone, neighbor note, and rhythmic displacements.

Perhaps the most basic type of diminution, the consonant skip or arpeggiation, is found in Schenker's graph of Mozart's Piano Sonata in A Major, K. 331, III (Figure 2–26). The opening five tones in the upper voice serve to outline—and are grouped by—tonic harmony. This grouping allows all of these consonant tones to be leapt to freely, without worrying about an inappropriate approach.

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[49] Salzer and Schachter, *Counterpoint in Composition*, 39.
[50] Schenker, *Free Composition*, 96.

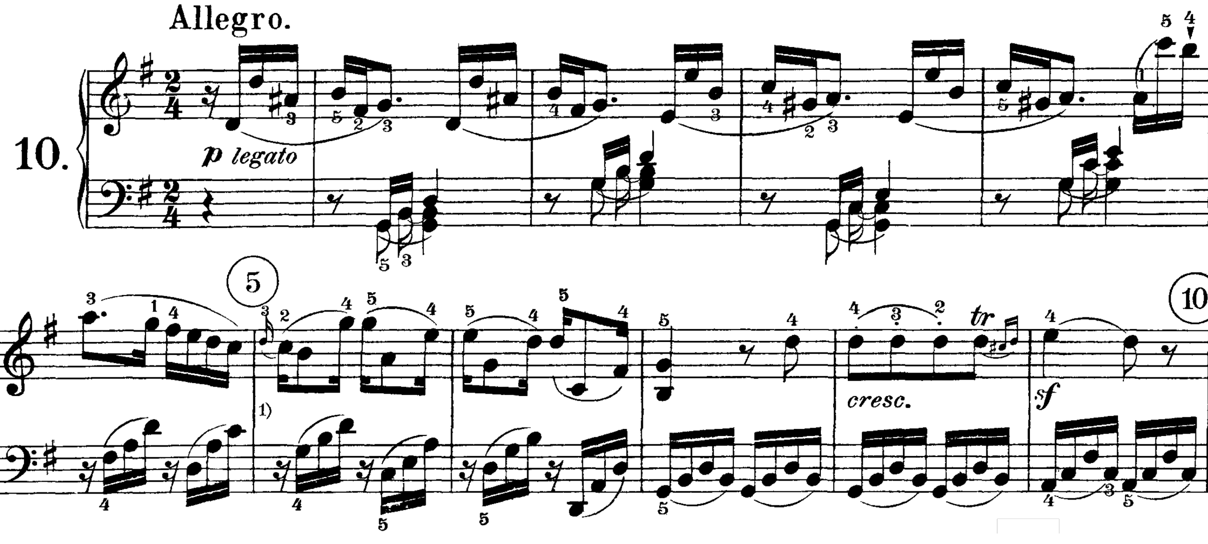

Figure 3–21: Beethoven, Piano Sonata Op. 14, No. 2, I, mm. 1–10

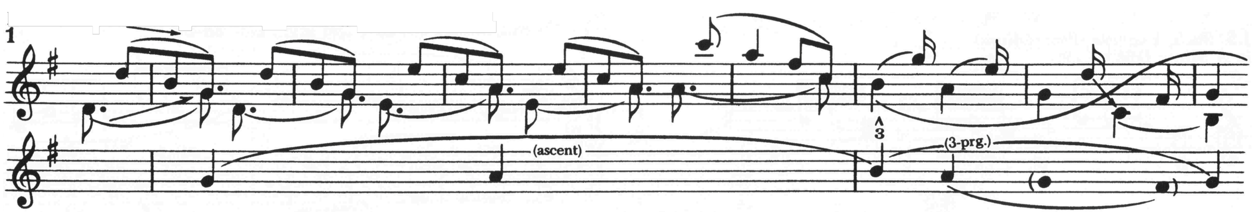

Figure 3–22: Schenker, analysis of Beethoven's Piano Sonata Op. 14, No. 2, I, mm. 1–8

Chordal skips may appear before or after a more primary tone. In Schenker's analysis of Beethoven's Piano Sonata Op. 14, No. 2 (Figure 3–22), he uses arrows to illustrate how chordal skips may lead to a more primary tone.[51] The pattern continues for the first five bars, emphasizing the initial ascent of the more structurally significant tones. In bar 6, we witness a reversal of this pattern, the chordal skips coming after the more primary tones. This analysis shows how the chordal skips support and expand a completely smooth, connected line, a line surrounded and perhaps somewhat hidden by diminutions.

[51] Heinrich Schenker, *Free Composition*, translated and edited by Ernst Oster (1979; repr., Hillsdale: Pendragon Press, 2001), Figure 122,1.

Figure 3–23: Bach, Fugue from his Chromatic Fantasy and Fugue, BWV 903, mm. 1–18

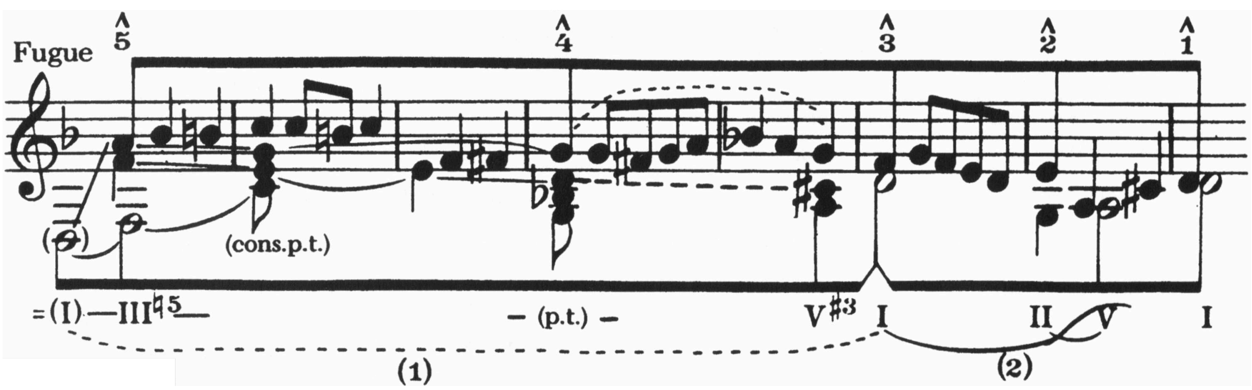

Figure 3–24: Schenker, graph of fugue subject from Bach's Chromatic Fantasy and Fugue, BWV 903

The passing tone is the first diminution addressed in strict counterpoint. It originates in second species exercises, and it forms a melodic event that connects the two different consonant notes adjacent to it. Schenker's graph of Brahms's Waltz Op. 39, No. 4 (Figure 2–34), shows many surface-level passing motions, the tones in between the boundary points of each slur representing passing tones. On a deeper level, the graph of Chopin's Nocturne Op. 9, No. 2 (Figure 2–37), depicts passing tones on a few levels of structure. The tones in the middle of the slurs (as in Figure 2–34), the down-stemmed F of the opening linear progression G–F–E♭, and the final F of the A_2 section are all passing tones. Figure 3–24, on the other hand, shows three other types of passing motions.[52] The first type is the chromatic passing tone (B♮) in the first bar, the second type is the passing tone G (implied) in the bass of m. 4, and the third type is the (normalized) E in bar 2. This E is part of a proposed F–E–D inner-voice melodic progression, where the E receives consonant support from the (implied) C below it; otherwise this E would count as a dissonance against the governing F-major harmony.

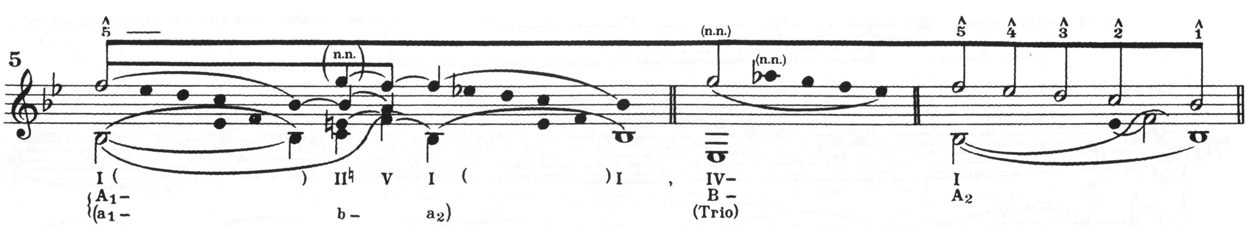

Figure 3–25: Schenker, graph of Chopin's Mazurka Op. 17, No. 1

Salzer and Schachter describe the difference between the passing and neighboring tones in this manner: "The passing tone forms a stepwise connection between two *different* tones; the neighboring note represents the stepwise decoration of a *single* tone."[53] Neighbor notes come in various levels of structural depth, as we remember from the graph of Schubert's *Valse Noble* (Figure 2–32). In Schenker's graph of Chopin's Mazurka Op. 17, No. 1 (Figure 3–25), he depicts the upper neighbor note G as governing the *entire* B section of the work, as well as other neighboring tones on lower levels.

[52] Schenker, *Free Composition*, Figure 20,2.
[53] Salzer and Schachter, *Counterpoint in Composition*, 58, emphasis original (though I would alter it to emphasize "connection" and "decoration" or such).

Diminutions in the form of rhythmic displacements may take several forms, many of which we encountered previously in association with normalization processes of rhythmic reduction. In the present chapter, displacements of various kinds were added in the form of voice-leading correctives, consonances or even dissonances being inserted between what would comprise a sequence of forbidden parallel intervals, Figures 3–5, 3–7, and 3–13 showing intervention of consonances, and Figure 3–9 showing intervention by dissonances.

As we can see, a knowledge of strict counterpoint provides the analyst several avenues into the category of grouping in a graph. Sometimes grouping agents are somewhat small, as in the case of a 5–6 shift or short melodic progression like 8–7–6–5. Linear intervallic patterns bind together intervals in successions, whether singly, in pairs, or possibly in even more complex units. Contrapuntal motions may group inside one another: a voice-leading corrective acting within a progression of tenths, for example; and contrapuntal groups are often contained by other grouping agents, harmony being the primary type in most cases. In addition, diminutions and linear progressions, as well as the proper treatment of consonance and dissonance all entail their own types of groupings.

Structural Levels:

Even though the exercises of strict counterpoint engage the idea of structural levels only close to the surface, if one accepts Schenker's view, the principles of strict counterpoint remain in effect even when operating in extended or "prolonged" form: "The principles of *voice-leading*, organically anchored, remain the same in the background, middleground, and foreground, even when they undergo transformations."[54] The most significant transformation occurs when a dissonance is recontextualized as a consonance. As Schachter apprises us: "Schenker maintained that a dissonant passing tone … could not be composed out unless it is first transformed into a consonance."[55] This transformation is significant, in other words, because granting a dissonance consonant support allows for it to be elaborated, opening up new structural levels in the process.

Schenker's graph of Chopin's Nocturne Op. 9, No. 2 (Figure 2–37), shows this consonant support on the deepest level. In this example, $\hat{2}$, furnished with consonant support beginning in m. 9, undergoes successive elaborations and eventually fills out the entire B section of the piece.

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[54] Heinrich Schenker, *Free Composition*, translated and edited by Ernst Oster (1979; repr., Hillsdale: Pendragon Press, 2001), 5–6, emphasis original.
[55] Carl Schachter, "A Commentary on Schenker's *Free Composition*," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 201.

Figure 3–26: Beethoven, Piano Sonata Op. 10, No. 1, I, mm. 106–152

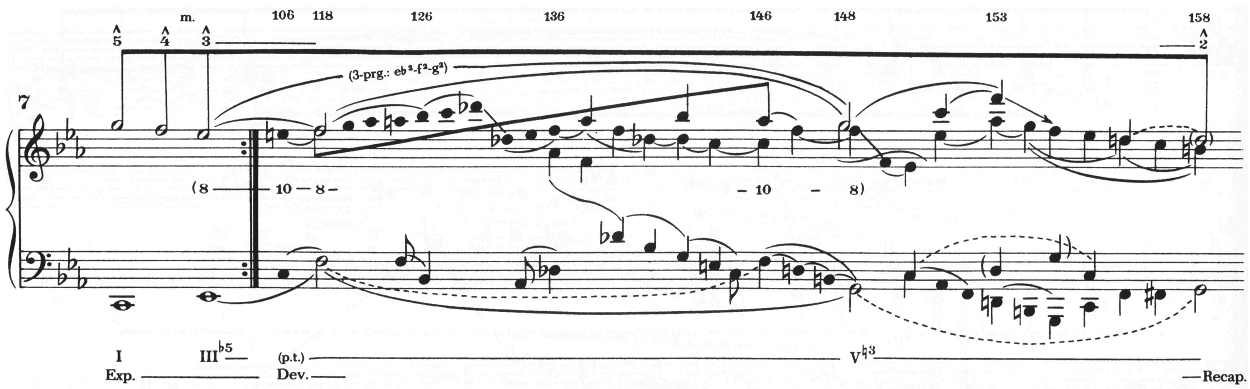

Figure 3–27: Schenker, graph of Beethoven's Piano Sonata Op. 10, No. 1, I

Another example of deeper-level consonant support comes in Figure 3–27.[56] Here Schenker's graph of part of the first movement of Beethoven's Op. 10, No. 1, shows how the passing tone (F, at the beginning of the development section) receives consonant support and is therefore able to be expanded to form a large portion of this section. In other words, consonant support allows a dissonant tone to move to deeper structural levels. For this example, the F is provided with enough consonant and harmonic support to acquire stability as a new *tonic*, yet it is still a passing tone, bridging the gap between the even deeper-level scale degrees of III and V.

By looking at strict counterpoint through the lens of our four basic categories under scrutiny: tones, ranking, grouping, and structural levels, we can see how this discipline adds a great deal of information toward the assembly of a Schenkerian graph, especially in the area of grouping. All of this information, however, is only relative, tentative, only one part in the synthesis of factors portrayed by such a representation. If, to hear Schenker tell it: "All musical technique is derived from two basic ingredients: voice leading and the progression of scale

[56] Schenker, *Free Composition*, Figure 154,7.

degrees. Of the two, *voice leading* is the earlier and more original element,"[57] then perhaps it is time to consider the second element: *harmony*.

[57] Schenker, *Counterpoint* Book 1, xxv, emphasis original.

Chapter 4

Harmony

Owing to its superior, more abstract, character,
the scale-step is the hallmark of harmony.
–Schenker[1]

The second discipline to be examined through the lens of our four categories of Schenkerian graphing (tones, ranking, grouping, and structural levels) is that of harmony. In tonal composition, counterpoint and harmony are in synthesis, each element bending and altering when necessary to fit together. Perhaps Schenker described the nature of harmony best; Matthew Brown observes: "For Schenker the tonal universe encompasses an almost limitless range of harmonic possibilities, restricted only by the rules of voice leading."[2] Also, Schenker himself tells us: "In contrast to the theory of counterpoint, the theory of harmony presents itself to me as a purely spiritual universe, a system of ideally moving forces, born of Nature or of art."[3] These descriptions of the discipline of harmony assert its great flexibility, its potential level of abstraction, its metaphysical, perhaps even ethereal, nature—a far cry from elementary, traditional definitions of harmony along the lines of "studying chord structure" or "identifying Roman numerals." Carl Schachter warns us that: "To study the endless formulas and white notes

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[1] Heinrich Schenker, *Harmony*, trans. Elisabeth Mann Borgese (Chicago: University of Chicago Press, 1954), 153.
[2] Matthew Brown, "The Diatonic and the Chromatic in Schenker's Theory of Harmonic Relations," *Journal of Music Theory* 30, 1 (1986): 25.
[3] Schenker, *Harmony*, xxv.

that disfigure so many harmony texts is to learn almost nothing about the ways chords can be prolonged and, therefore, to learn too little about harmony."[4]

This does not mean, however, that such elementary study has no place in analysis. In the words of Adele Katz: "Is it not more consistent and realistic to grant that just as grammar is a necessary preparation for the more advanced work in oral and written English, so the study of chords and chord structure, which underlies harmonic analysis, is an elementary preparation for a more comprehensive understanding of music? In other words, harmonic analysis provides the student with the grammar of music, as the study of word syntax provides the student with the essential elements of sentence structure. Both are a means to an end—but neither is an end in itself."[5] In other words, learning and labeling basic relationships is only the beginning of an analysis that involves *harmony*, in its full depth of potential. The following discussion will outline some of the elements of the discipline of harmony. Though much of this content will be familiar, its arrangement into our Schenkerian categories of tones, ranking, grouping, and structural levels is often revealing, as some aspects of harmony prove useful, some may confuse, and some provide little help at all.

4.1 The CORE of Harmony: Context, Objects, Relationships, Effects

The greatest difference between the discipline of strict counterpoint and the discipline of harmony is *context*: harmony lives in the land of tonal composition, not the artificial exercise. This dissimilarity of context, however, does not make aspects of harmony any more or less

[4] Carl Schachter, "Either/Or," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 123.
[5] Adele T. Katz, *Challenge to Musical Tradition: A New Concept of Tonality* (New York: Alfred A. Knopf, 1945), 8–9.

useful than those of strict counterpoint; content associated with the discipline of harmony is merely different.

Objects in the arena of harmony, like those of strict counterpoint, also vary from concrete to abstract. Concrete entities include triads, chord qualities, inversion position, and so forth, and abstract entities range from harmonic function (tonic, subdominant, dominant) to syntax (T–S–D–T) to chromaticism to harmonic scale steps. As we know, some of these entities overlap with entities familiar from the study of counterpoint, triads for example, which contain intervals, but they also bring new, independent information to an analysis.

Relationships may be as simple as identifying tones as diatonic or chromatic, chordal or non-chordal. Progressions are seen as adhering to typical grammatical syntax or not. Key areas are often described as opposite in mode or relatives, closely or remotely related. More abstract relationships often engage with a kind of harmonic distance, a quality that may be represented as motion by fifth, separation from the home key, or perhaps structural rank compared with the tonic, just to name a few. In addition, all of these relationships may lie on any degree of structural depth and may interact freely with one another—and with any other type of relationships in the synthesis of a musical work.

Effects most often suggest a sense of *motion*, not the parallel or contrary motion of counterpoint, but forward, delayed—even stasis. Other effects center around harmonic movement: toward or away from a goal; acceleration or deceleration of harmonic rhythm; closer or further from a particular tonal center. Any of these motions at any time could be completed, altered, or omitted, depending on the goals of the composer for that particular piece. Schachter addresses this type of motion and flow this way: "The 'distance' between successive keys also influences our time sense, for a key creates a feeling of a more or less extended 'now'—a ‘specious present,’ to use that unattractive expression—and key relationships have a lot to do with the ways these ‘nows’ flow into each other or isolate themselves.”[6]

Figure 4–1: Beethoven, Piano Sonata Op. 2, No. 1, IV, mm. 37–42

In certain circumstances, the effect of harmonic scale steps in motion may be quite strong, asserting its own brand of independence. As Schenker describes it: “Scale-degree progression, as a purely abstract expression of motion, is a matter so completely different from the concrete progression of the bass voice that one may even write parallel octaves against the bass in those places where its motion happens to coincide exactly with the path of the harmonic progression; this reflects the extent to which the obbligato character of the bass is obliterated whenever its primary duty is to express the scale-degree progression.”[7] In the excerpt from the last movement of Beethoven’s Op. 2, No. 1 (Figure 4–1), we can see such an occurrence. According to Schenker: “The tones G–C of the bass [in mm. 41–42] are more nearly incarnations of the scale degrees V–I than voices in the pure contrapuntal sense. That is, we hear the same tone

[6] Carl Schachter, “Analysis by Key,” in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 148.
[7] Heinrich Schenker, *Counterpoint* Book 1, translated by John Rothgeb and Jürgen Thym, edited by John Rothgeb (1987; repr., Ann Arbor: Musicalia Press, 2001), xxxi.

progression in the low register with a different purpose than in the high; in the former, scale-degree progression prevails, in the latter, nothing but melody."[8]

4.2 Aspects of Harmony: What They Bring to a Schenkerian Graph

Just as we attempted in Chapter 3 to keep aspects of counterpoint as separate as possible from harmony, we will strive here to isolate aspects unique to harmony. It should also be noted that I will leave a discussion of the broader harmonic-theoretical construct of *tonality* for another venue, as this topic lies outside the more practical nature of this study. As in the previous discourse, content will be arranged in the now-familiar four categories of tones, ranking, grouping, and structural levels.

Tones:

When contemplating tones in relationships with regard to the discipline of harmony, its taxonomy, like that of strict counterpoint, also imparts some basic information. In the case of harmony, though, objects are not always as simple as they appear. One the one hand, terms and entities like "triads," "qualities," and "inversions" are usually factual and acceptable; and "harmonies" can act as a backdrop when reading the diminutions, as seen in Schenker's graph of Mozart's Rondo "Alla turca" (Figure 2–26), where the underlying chords make the initial choices for tone inclusion much easier. On the other hand, an object or concept as ostensibly simple as a "Roman numeral" is often only *cloaked* in such concreteness.

[8] Schenker, *Counterpoint* Book 1, 156.

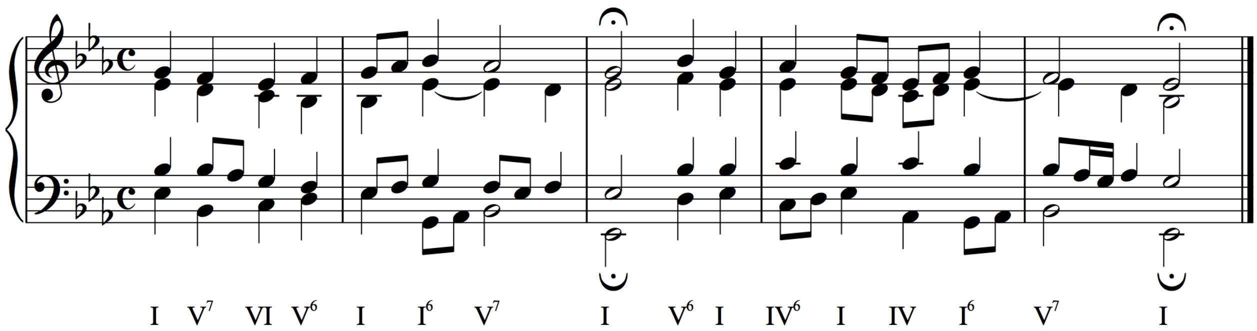

Figure 4–2: Bach, Chorale No. 22, "Schmücke dich, o liebe Seele," opening

Bach's chorale harmonization of "Schmücke dich, o liebe Seele" (Figure 4–2) displays what could be considered a "first pass" at harmonic analysis—of a sort. Proceeding strictly by tone content, the labels are accurate enough; however, that content is not the whole story. Adele Katz advises: "To know the status of a chord as a tonic, subdominant or any other position of the key is not sufficient. We know only its name, the same as we know the name of a character in a play; yet until we understand the role the character enacts, the name has no significance. The same is true of chords. To label a chord as a tonic every time it appears does not explain its role in the music, as the same tonic chord may appear several times within a phrase, each time in an entirely different character, each time serving a totally different purpose in the music."[9] As we can see, the Roman numerals listed below the staff give off the appearance of equal structural weight, by virtue of the limitations of their visual representation, but they obviously require further interpretation on the way to a more nuanced analysis, one interconnecting with aspects of ranking and grouping, as a start.

Carl Schachter expresses an even further complication in regard to Roman numeral analysis and meaning: "It is probably in the sphere of harmony, however, that the most frequent and difficult problems arise…. A problematic character is inherent in the very nature of harmony,

[9] Katz, *Challenge to Musical Tradition*, 9.

whose fundamental unit, the functional chord, or *Stufe*, exists not as a combination of particular sounds, but only as a kind of Platonic idea that can realize itself in many such combinations."[10] Here, of course, Schachter refers to Roman numerals as having the ability to denote harmonic scale steps, in addition to lower-level harmonies (and even the most basic, surface-level chords). These difficult problems manifest themselves in two ways: conception and depiction. The concept of this idealized harmonic scale step is relatively abstract and flexible, opening up several new avenues for analysis as well as hearing, and must be treated with thoughtful care. The depiction of Roman numerals is problematic, because they are *visually neutral*, in terms of their structural level. In other words, sometimes the symbology fails to adequately reveal the level of depth addressed.

In the following sections, we will try to unpack some of these distinctions and difficulties regarding Roman numerals, and sort them into more useful and specific categories. In addition, we will address a couple of other harmonic issues: key areas and chromaticism.

Ranking:

Three of the main ranking agents from the discipline of harmony are Roman numerals, key areas, and chromaticism. Considering the analysis in Figure 4–2, we might be tempted to think that Roman numerals are all created equal, each chord carrying the same structural weight, but, of course, we know better. Even at structural levels just underneath the surface of the music, we can find differences in rank. Looking back at Schenker's graph of the opening of the final movement of Mozart's Piano Sonata K. 333 (Figure 3–5), we can see how the contrapuntal 5–6 motion,

[10] Schachter, "Either/Or," 122.

expanding the tonic harmony, subsumes what might be considered motion to the VI harmony on beat four of the first measure, demoting it to the next lower level of rank.

Figure 4–3a: Mozart, Piano Sonata K. 331, II, mm. 1–34

Figure 4–3b: Mozart, Piano Sonata K. 331, II, mm. 35–48

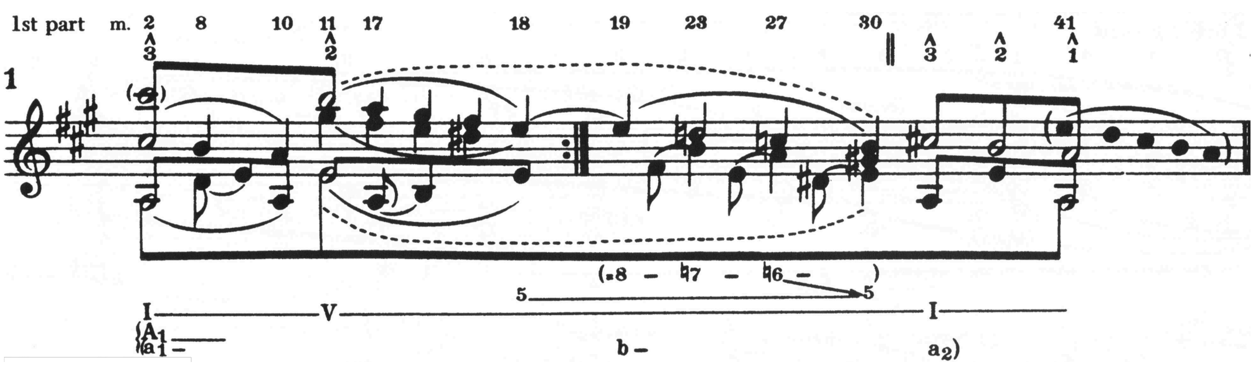

Figure 4–4: Schenker, graph of Mozart's Piano Sonata K. 331, II, Menuetto

In traditional harmonic analysis, the Roman numerals associated with cadences are often granted more significance; however, this may or may not prove true in a graph. Schenker's analysis of Mozart's Piano Sonata K. 331, II (Figure 4–4), shows how the structural weight of cadential harmonies compares and relates to the weights of certain other kinds of harmony.[11] For example, though the cadential arrivals in bars 18 and 30 each mark the end of a linear progression in the melody, the arrival of the structural dominant harmony is placed in bar 11 and continues through *both* cadences. In this instance, the harmonic resting points help delimit boundaries (as we shall discuss later), but they do not necessarily signal events of greater structural rank.

[11] Heinrich Schenker, *Free Composition*, translated and edited by Ernst Oster (1979; repr., Hillsdale: Pendragon Press, 2001), Figure 35,1.

Figure 4–5: Chopin, Polonaise Op. 40, No. 1, opening section

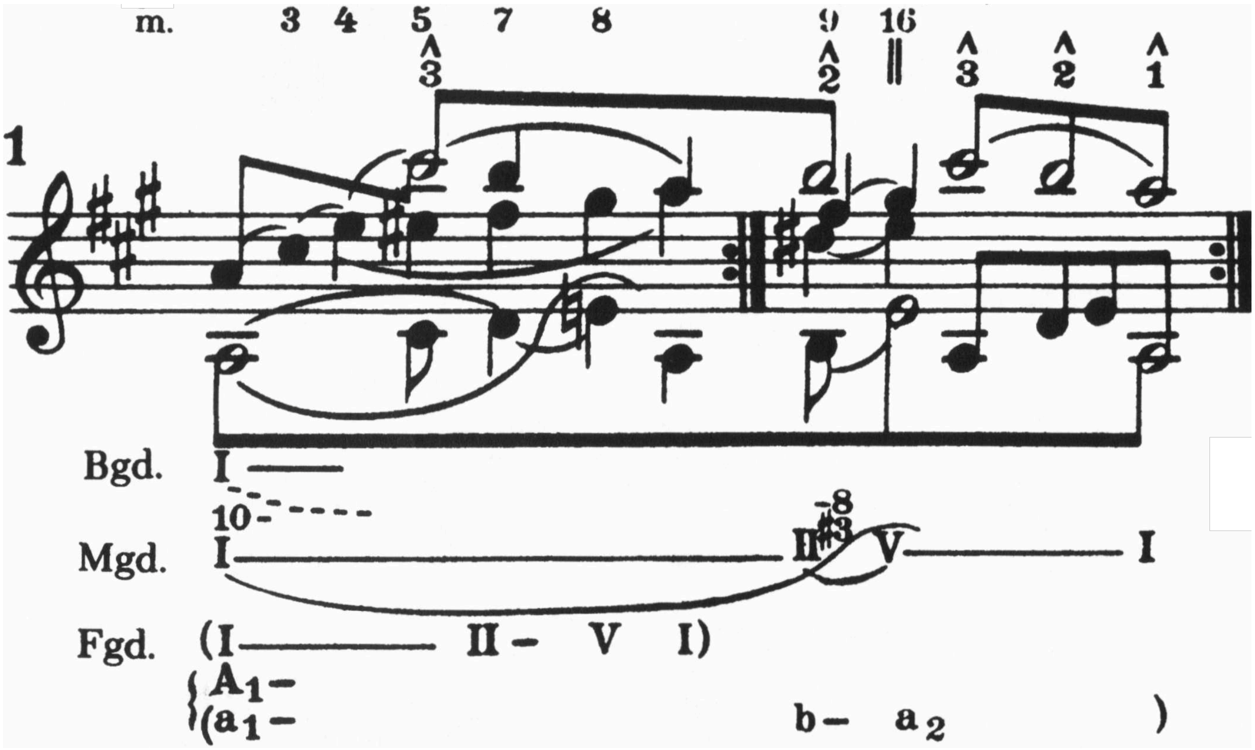

Figure 4–6: Schenker, graph of Chopin's Polonaise Op. 40, No. 1, opening section

Since Roman numerals have no inherent, visual differentiation in rank, such gradations must be clarified by other depictions. In his graph of the opening section of Chopin's Polonaise Op. 40, No. 1 (Figure 4–6), Schenker demonstrates how the opening tonic harmony inhabits three levels of structural depth simultaneously, while all of the other harmonies reside in only one or two levels.[12] As we progress to deeper levels of structure, lower-level harmonic motions are considered to be voice-leading events involved in expansions of the higher-level, governing harmony. As Schenker states from the reverse perspective: "The principle of voice-leading … liberates each individual harmony from the burden of having and proving the significance of a scale-step."[13]

[12] Schenker, *Free Composition*, Figure 40,1.
[13] Schenker, *Harmony*, 156.

Key areas in Schenkerian theory can be a subject of some controversy. In Schenker's later theoretical works, he decrees: "The most baleful error of conventional theory is its recourse to '*keys*' when, in its lack of acquaintance with background and middleground, it finds no other means of explanation.… Nothing is as indicative of the state of theory and analysis as this absurd abundance of 'keys.'"[14] What is only hinted at here is the concept of a monotonal background tonality (key), one that governs all of the other expansions of its own harmonic scale steps. In other words, as Schenker declared in an earlier treatise: "I do not want to omit this opportunity to make it quite clear to the reader that *not every key is in reality what it seems to be*."[15] While this may be the case, descriptions of keys areas in somewhat less strict terms have some semantic value.

The drawback of Schenker's late perspective is its binary nature; the home key remains primary, and all other keys are, in essence, illusory in some way. This point of view closes off an outlook where some key areas may be seen as possessing greater structural weight than others—let alone a work that ends in a different key than it begins. The problem, according to Schachter, is one of formal classification, one of *ranking*, "When is a 'key' a key? This question has no definite answer, and the wildly varying approaches of different analysts to the same piece indicate just how slippery the concept of key is.… Between these large structural key changes and the fleeting tonicizations that some authors call modulations, there is a vast range of possibilities. That range does not lend itself to exact demarcations."[16] He goes on to propose some preliminary ranking designations, as follows: "Between brief tonicizations and large-scale, generously ramified 'keys,' one might distinguish a few important categories. There are 'keys,'

[14] Schenker, *Free Composition*, 8, emphasis original.
[15] Schenker, *Harmony*, 298, emphasis original.
[16] Schachter, "Analysis by Key," 150–51.

for example, with full harmonic cadences, but without melodic closure. There are others that have an initial 'tonic' but that end with a dividing dominant harmony. There are still others that lead through what Schenker calls an 'auxiliary cadence' to a closing tonic; often these lack an opening tonic."[17] He also reminds us of how Schenker's *earlier* work dealt with the concept of keys, in terms of "chromatic elaboration": "In his *Harmony*, he distinguishes among three categories of chromatic elaboration: tonicization, where there is no sense of departure from the tonic key; illusory keys (*Scheintonarten*), where the diatony, or diatonic framework (*Diatonie*), recedes into the background but still exerts a controlling influence; and true modulations, which do not return to their point of origin, and which remain independent of any overarching diatony."[18] However these musical structures are labeled and discussed, Roman numerals still stand for them in visual representations most of the time.

[17] Schachter, "Analysis by Key," 151.
[18] Schachter, "Analysis by Key," 144.

Figure 4–7a: Chopin, Mazurka Op. 17, No. 3, mm. 1–38

Figure 4–7b: Chopin, Mazurka Op. 17, No. 3, mm. 39ff.

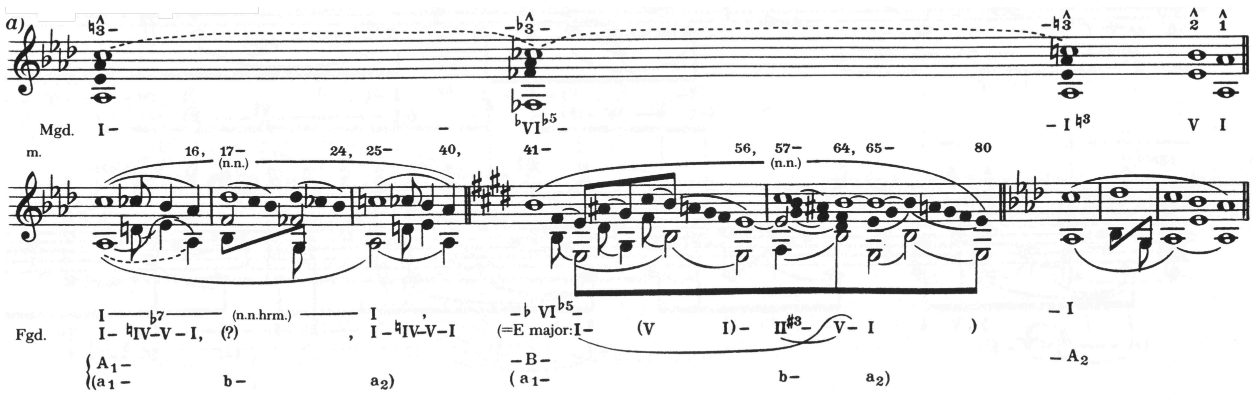

Figure 4–8: Schenker, graph of Chopin's Mazurka Op. 17, No. 3

The final ranking element under scrutiny in this discussion is that of chromaticism. Typically, diatonic elements are considered superior to chromatic ones; although, analogous to the level of dissonance in the last chapter, the level of chromaticism is not necessarily directly related to its level of structural significance. In Figure 4–8, Schenker's graph of Chopin's Mazurka Op. 17, No. 3, shows how the middle section, governed by a chromatically altered submediant harmony, assumes a high level of rank, being shown at the level of deep middleground structure in the top staff.[19]

Harmonic elements and ranking are problematic bedfellows, relationships often being uncertain, unpredictable, variable. Even though the visual representations for these aspects are straightforward and seemingly concrete, further interpretation is usually necessary, in order to illustrate the subtleties of rank in each individual work.

[19] Schenker, *Free Composition*, Figure 30a.

Grouping:

Every note of a tonal work is grouped in some way by harmony. Other elements may take precedence at a certain level of depth or over a certain span of music, but moving to a deeper level of structure will eventually reveal a harmonic grouping agent that encompasses these other elements.

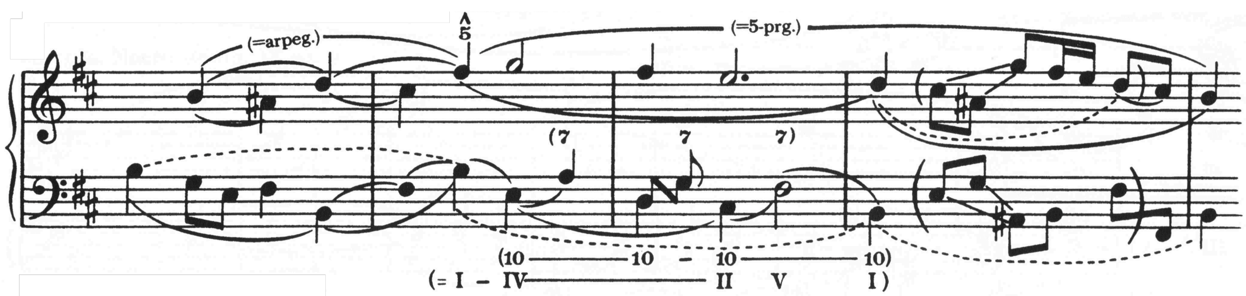

Figure 4–9: Schenker, analysis of Bach's Brandenburg Concerto No. 5, BWV 1050, II, mm. 1–5

Schenker's analysis of Bach's Brandenburg Concerto No. 5, BWV 1050, II (Figure 4–9), highlights how the 10–7 LIP controls the surface-level, moment-to-moment experience (Figure 3–12 contains the score), along with how that contrapuntal material is grouped by the harmonic succession portrayed below it; the next deeper level would show that entire span as grouped by tonic harmony.[20]

Some commonly encountered surface elements associated with harmony often prove to be of only small or secondary significance, in regard to grouping. Motion by fifth, harmonic rhythm, and harmonic syntax often provide only part of the information necessary to detail a complete group, as it may be represented in a Schenkerian graph. For example, Figure 4–9 shows how motion by descending fifth (or ascending fourth) groups elements into pairs in mm. 2–3

[20] Schenker, *Free Composition*, Figure 41,3.

(these 10–7 pairings connected either by slur or beam), but even this strong root motion is secondary to the linear intervallic pattern itself.

Harmonic rhythm often contributes to tonal grouping at the surface; in addition, when harmonic rhythm accelerates, the increased motion often points toward impending tonal closure, possibly indicating a boundary point for a group of tones. For example, in the opening section to Chopin's Polonaise Op. 40, No. 1 (Figures 4–5 and 4–6), the accelerating harmonic rhythm is one conventional element of cadential closure, and the phrase does end with a PAC. Even so, these effects pertain mostly to the second half of the phrase (mm. 4–8), making other content necessary, in order to complete the entire harmonic grouping unit. Other factors affect the ability of harmonic rhythm to form complete groups (or even suggest boundary points), especially in the case of accelerating harmonic rhythm; composers often engage this harmonic effect just before *evading* a cadence, perhaps delaying or avoiding closure entirely.

Harmonic syntax, as a general principle of governing the order of harmonic functions, would appear to group multiple harmonies as they progress to or from tonic and dominant harmonies. It is too simplistic to dismiss either the relevance of harmonic syntax or its ability to group harmonic progressions merely on the basis of an undifferentiated analysis similar to that of the Bach chorale in Figure 4–2; after all, chord-to-chord Roman numeral successions often bend the traditional rules at the surface level. The crucial question for our purposes here is how the concept of harmonic syntax, as a general principle, could help in visualizing or bounding groups at deeper levels of structure.

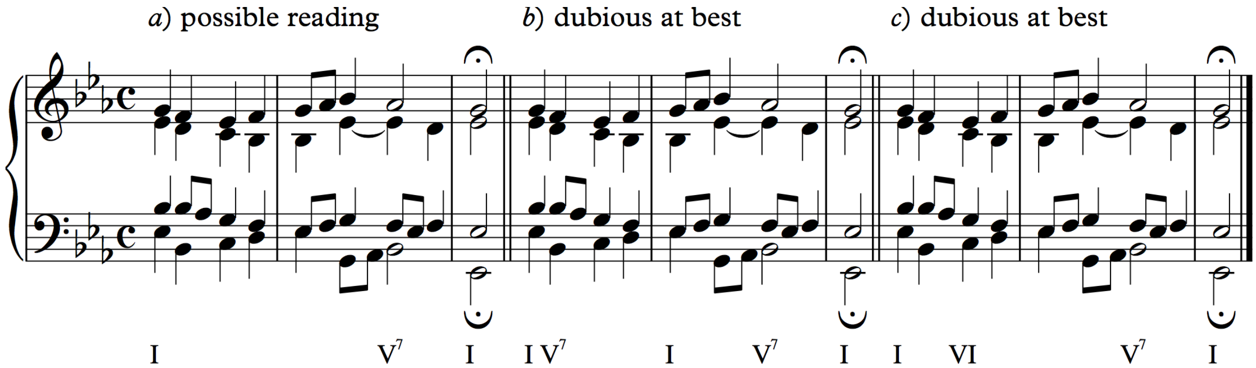

Figure 4–10: Three proposed readings of the opening to Bach's Chorale No. 22, "Schmücke dich, o liebe Seele," according to the principles of harmonic syntax

Looking back at the analysis of the Bach chorale in Figure 4–2, we may attempt to use the filter of syntax to help group deeper-level harmonies. Unfortunately, this tactic, in its most basic incarnation, opens up multiple possibilities, while offering little help with ranking or prioritizing them. For example, the first two measures could be read at some deeper level as in Example *a* (Figure 4–10). Trying to find a hearable, syntactically correct reading closer to the surface, however, may prove challenging. The analysis of Example *b* appears legitimate enough, but this hearing seems off, when we consider issues of longer-range melody and harmonic rhythm. In this instance, the E♭ in the soprano of the third chord seems more significant than some kind of lower neighbor. Example *c* seems closer to an acceptable hearing, in a way, but complete correctness would entail the omission of the tonic on the downbeat of bar 2; also, it is difficult to hear the VI harmony as persisting up until the dominant arrives in beat 3 of bar 2. Simply put, the problem of employing functional syntax frequently comes down to parsing the harmonic succession in terms of structural level, rather than to forming a syntactic unit. As Adele Katz reminds us: "It is enough to state that the Schenker method is not a theoretical approach to music, but a practical means of expressing what we hear in the music if we are guided by our aural perceptions rather than by a purely harmonic training."[21] In other words, if the analyst tries to group by harmonic syntax, multiple levels must be taken into account, avoiding the tendency to read harmonies as part of a more monochromatic landscape. Even then the results may be suspect.

Though deeper-level harmonic progressions often follow conventional syntax patterns, this is not always the case. For example, the deep-middleground analysis of Chopin's Mazurka Op. 17, No. 3 (Figure 4–8), shows the harmonic succession I–♭VI–I. Breaking the functional syntax, however, poses no problem for Schenkerian graphing, according to Schachter: "Schenker's early writings about modulation also sometimes overlook linear factors, but he does not make the mistake of equating all key successions with chord progressions."[22] He also explains that key-area successions should not be construed simply as "chord progressions writ large."[23] In other words, harmonic scale steps are different from chords, and as such remain outside the influence (and grouping ability) of harmonic syntax.

Indeed, the grouping agent with the most power and flexibility is the harmonic scale step, rather than more surface-oriented harmonic entities (even by extension). As Schenker proclaims: "The scale-step now constitutes that force which unambiguously joins several chords into one unit, in whose frame voice-leading can run its course all the more freely."[24] To which, Schachter adds: "When we use the word 'tonic' in analysis, we should do well to remember that it can represent quite different kinds of musical structure."[25] The following discussion will examine the

[21] Katz, *Challenge to Musical Tradition*, xxiv.
[22] Schachter, "Analysis by Key," 144.
[23] Schachter, "Analysis by Key," 142–43.
[24] Schenker, *Harmony*, 158.
[25] Schachter, "Analysis by Key," 140.

grouping agency of harmonic scale steps, along with some other influential grouping agents: keys, harmonic intervals, chromaticism, as well as some miscellaneous boundary markers.

Previously, we have described "governing harmonies" (harmonic scale steps) as controlling longer, lower-level stretches of music. This type of governing and grouping is displayed within a particular level of structure in Schenker's partial graph of Beethoven's Op. 27, No. 2, I (Figure 2–41). In this instance, the parenthetical progression IV–II–V–I, residing at a slightly lower level, is subsumed in the graph under the heading of tonic expansion. Also, Schenker's multi-level analysis for Haydn's "Emperor Hymn" variation theme from his Op. 76, No. 3, II (Figure 3–10), highlights the further telescoping of harmonies across progressively deeper structural levels. Here we can see how tonic harmony, at the deepest level shown, encompasses and even continues past the highlighted arrival on the dominant in bar 12.

This type of successive ranking of harmonies may also form groups in its own right. Schenker's graph of Haydn's Chorale St. Antoni, Hob. II/46 (Figure 2–39), groups harmony at two levels of structure. This type of grouping (by rank) also implies a certain level of stability, in a sense, depicting discrete levels, illustrating how the lower-level harmonies are compressed into the deeper "rings" of our proposed telescope, each ring forming a somewhat self-contained, coherent grouping structure on its own.

When discussing "keys," the main grouping factors in graphical representation often involve the purported level of structural depth and the amount of musical material arranged together. In other words, depth depends on a number of factors, and arguments over semantics ("modulation," "real," "illusory," and so on) have less relevance than the *relationships* involved. Whether the analyst chooses to consider a musical span as having modulated to another key or simply as elaborating a harmonic scale degree matters less than other types of harmonic and voice-leading connections. As we saw in our discussion of Schenker's graph of Beethoven's Piano Sonata Op. 10, No. 1 (Figure 3–27), an analyst may say that the piece has "modulated" to IV in the opening of the development section, but that designation means less than the *ranking* of that scale step elaboration within an overall set of structural levels.

Another difficulty in using keys to form groups is that it may prove difficult to mark where a key begins or ends. In addition, even if those boundary points could be identified, decisions would have to be made as to whether or not those boundaries enclosed a harmonic (or any other type of) group, using other factors and information. For example, parsing many sonata-form movements strictly by key will compete with thematic groupings.

The next type of grouping agent that I want to consider is the *harmonic interval*. In a sense, this type of grouping springs from the interaction of harmonic scale steps and linear progressions. As discussed in the previous chapter, a linear progression outlines a harmonic interval. In other words, when verticalized, the boundary tones of a linear progression form an interval that is part of one (or both) of the boundary harmonies of its span.

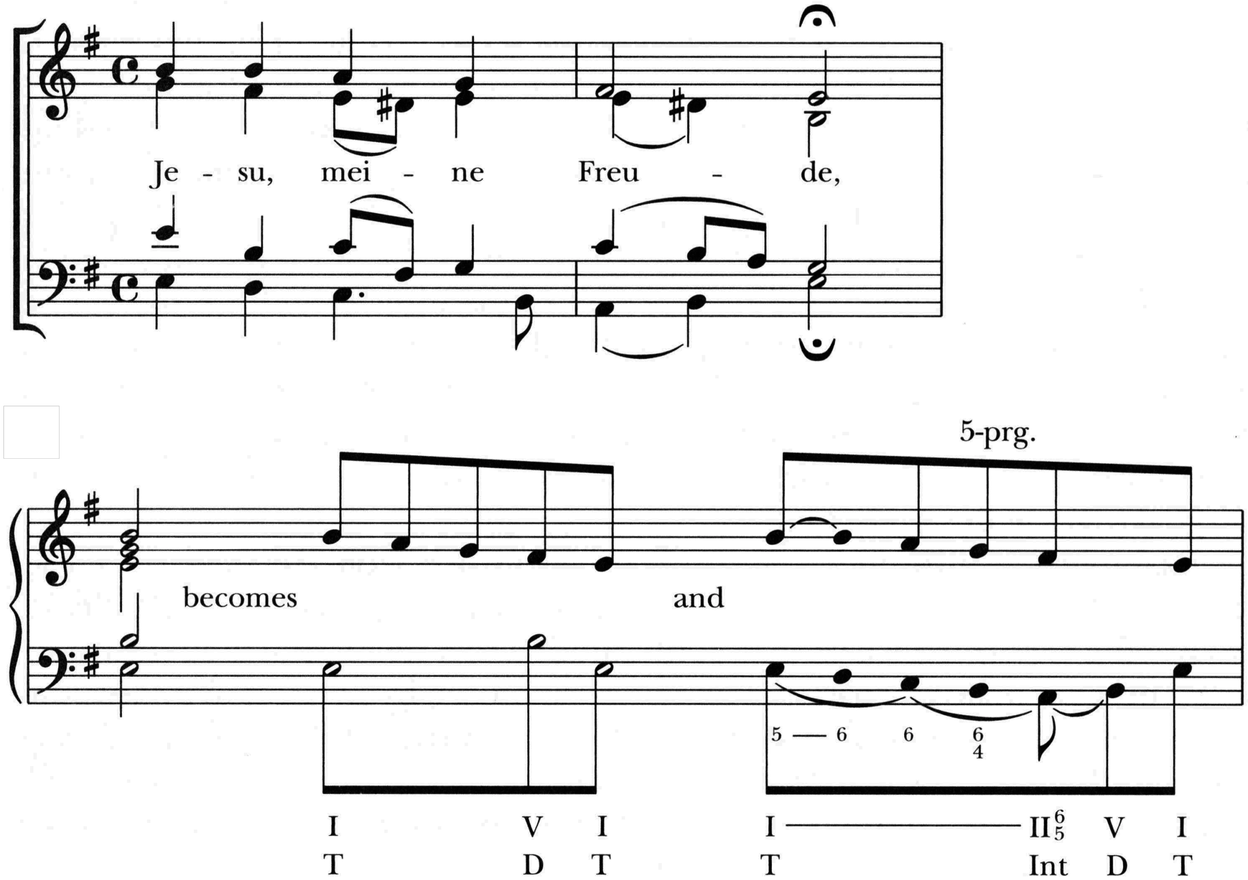

Figure 4–11: Cadwallader and Gagné, score and analysis of Bach's chorale harmonization, "Jesu, meine Freude," mm. 1–2

Figure 4–11 shows a multi-level analysis by Cadwallader and Gagné of a Bach harmonization of the chorale "Jesu, meine Freude."[26] The boundary pitches, B–E, spanned by the linear progression in the soprano voice may be heard as a harmonic interval, since they are grouped by the tonic harmony, as the authors illustrate by using the initial, half-note chord in their analysis. While linear progressions "unfold the interval … of an underlying chord," according to Cadwallader and Gagné, each tone of a linear progression also has the opportunity

[26] Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach*, 3rd Edition (New York: Oxford University Press, 2011), 80.

to receive its own harmonic support or to be part of a contrapuntal expansion of a harmony.[27] Here we see that the boundary tones are supported by tonic harmony, the penultimate tone is supported by dominant harmony (and the "intermediate" II harmony at the lowest level), and the first three tones form a contrapuntal expansion of the tonic harmony. In total, this abundance of relationships surrounding the tones of this linear progression is still grouped by tonic harmony.

Harmonic intervals, spanned by linear progressions, can group content of any length and on any structural level. Schenker's graph of Haydn's "Emperor Hymn" variation theme (Figure 2–44) depicts groupings at the deepest levels. His graph shows the ascending fifth progression outlining the motion from tonic to dominant harmonies (covered by the slur of mm. 1–12), with the arrival on the dominant seen as subordinate to the overall tonic expansion. This grouping of content is then mirrored by the descent of the fundamental line that organizes the rest of the work. In each case, the harmonic fifth spanned is contained in the tonic harmony.

Our next agent of harmonic grouping concerns chromaticism. At times, the presence of chromatic elements has the ability to set off a stretch of music as unified and related. Two common types of chromaticism that may highlight musical grouping are altered harmonic scale steps and mixture. In Schenker's graph of Chopin's Mazurka Op. 17, No. 3 (Figure 4–8), we can see how the chromatically altered scale step (♭VI) governs and groups the entire span of mm. 41–80.

[27] Cadwallader and Gagné, *Analysis of Tonal Music*, 79.

Figure 4–12: Schubert, Waltz Op. 9, No. 2

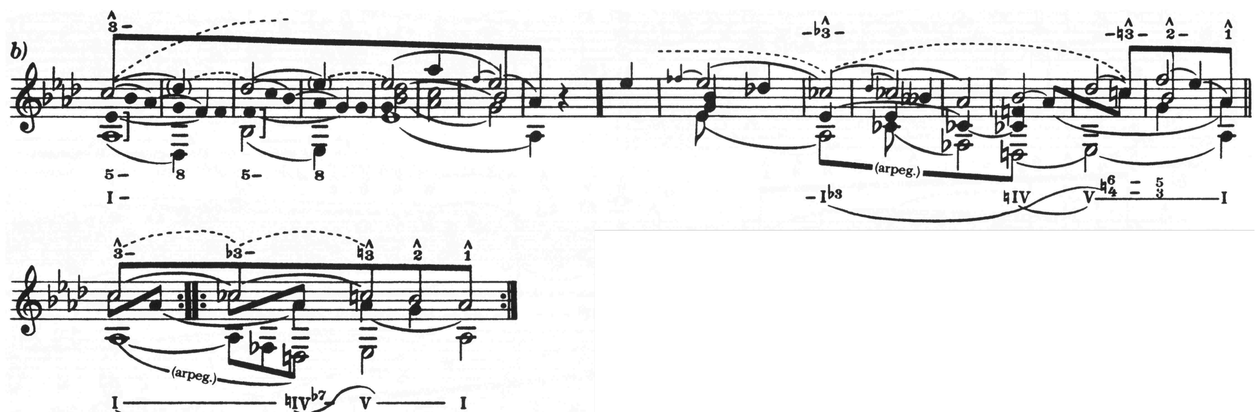

Figure 4–13: Schenker, multi-level graph of Schubert's Waltz Op. 9, No. 2

In the case of mixture, Matthew Brown informs us: "It is important to stress that mixture is an independent means of prolongation, quite distinct from linear progressions or neighbor-note motions."[28] Schenker's graph of Schubert's Waltz Op. 9, No. 2 (Figure 4–13), depicts modal

[28] Brown, "The Diatonic and the Chromatic," 19.

mixture altering the tonic scale step, which allows the content of mm. 9–12 to appear grouped together, opening up new compositional space.[29]

The last topic in our discussion of harmonic grouping is that of cadences. Cadences often mark significant points of articulation in a piece, boundary points, perhaps bringing key area confirmation or a sense of closure to a section of the form. As a type of boundary locator for Schenkerian graphing, however, cadences are only a partial grouping agent at best: marking off only one side of a grouping span—or perhaps more precisely, one side of *two different spans*, neither of which is completely bounded by it, only separated by it. In addition, as Schachter reminds us, form and tonal structure might not be completely congruent with one another: "Boundaries between prolongational spans—especially between those spans governed by structural harmonies—often coincide with points of formal articulation.… Sometimes, however, the extension of a prolongational span bridges over the formal division."[30] Schachter also says: "It helps to remember that the elements of linear structure in music are pitches, not keys," alluding to the fact that material grouped by harmonic scale steps is often different from the material grouped by keys and cadences at the musical surface.[31] In any event, cadences and tonal structure may interact in various ways.

Sometimes the grouping interactions are shaped across structural levels. As we discussed previously, Schenker's graph of Mozart's Piano Sonata K. 331 (Figure 4–4) illustrates how the cadential closure reached in bar 18 comes at the end of a linear progression, marking its ending boundary, but it does not group the rest of the musical material encompassed by the underlying, deeper-level dominant scale step, which reaches from mm. 11–30.

[29] Schenker, *Free Composition*, Figure 30b.
[30] Schachter, "Either/Or," 127.
[31] Schachter, "Analysis by Key," 142.

Figure 4–14a: Beethoven, Piano Sonata Op. 2, No. 2, IV, mm. 56–69

Figure 4–14b: Beethoven, Piano Sonata Op. 2, No. 2, IV, mm. 70–87

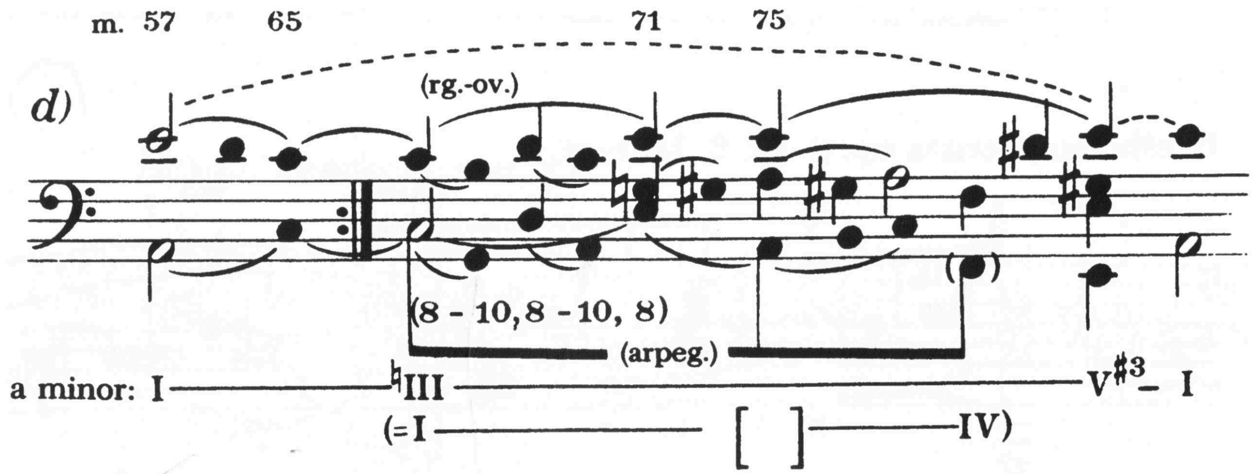

Figure 4–15: Schenker, graph of Beethoven's Piano Sonata Op. 2, No. 2, IV, mm. 57–79

Sometimes the grouping relationships between cadential boundary markers and the graph may be quite complex, portraying numerous relationships and levels of depth. Schenker's graph of Beethoven's Piano Sonata Op. 2, No. 2, IV (Figure 4–15), downplays the PAC in ♮III in bar 65, depicting the tonal motion as a chordal skip within the governing a-minor harmony.[32] Instead, he shows the onset of the ♮III harmonic scale step as bar 67. This analysis clearly illustrates the difference between "arrival in a key" and "expansion of harmonic scale step," mirroring Schachter's statement: "Thus the boundaries of a prolonged harmony need not coincide with the often indistinct boundaries of a key area, nor need those of either coincide with those of a form section."[33]

As we said at the beginning of this section, harmony ultimately groups all tones. Common surface elements, such as motion by fifth, harmonic rhythm, harmonic syntax, and even cadences and key areas, may prove to be of little intrinsic value on their own; it is their

[32] Schenker, *Free Composition*, Figure 100,3d.
[33] Schachter, "Analysis by Key," 138.

interaction with harmonic scale steps that allows more comprehensive analytical decisions to be made about grouping in a Schenkerian graph.

Structural Levels:

Harmonic scale steps organize every tone across all structural levels. They are also different from mere triads and even take on alternate designations, as a graph depicts deeper levels. As Schenker informs us: "Not every triad must be considered as a scale-step; and it is most important to distinguish between *C* as the root tone of a triad and *C* as a scale-step. The scale-step is a higher and more abstract unit. At times it may even comprise several harmonies, each of which could be considered individually as an independent triad or seventh-chord; in other words: even if, under certain circumstances, a certain number of harmonies look like independent triads or seventh-chords, they may nonetheless add up, in their totality, to one single triad, e.g., *C–E–G*, and they would have to be subsumed under the concept of this triad on *C* as a scale-step. The scale-step asserts its higher or more general character by comprising or summarizing the individual phenomena and embodying their intrinsic unity in one single triad."[34] For example, in Schenker's graph of Chopin's Polonaise Op. 40, No. 1 (Figure 4–6), we can see how he clarifies the harmonic groupings through the use of structural levels.

[34] Schenker, *Harmony*, 138-139.

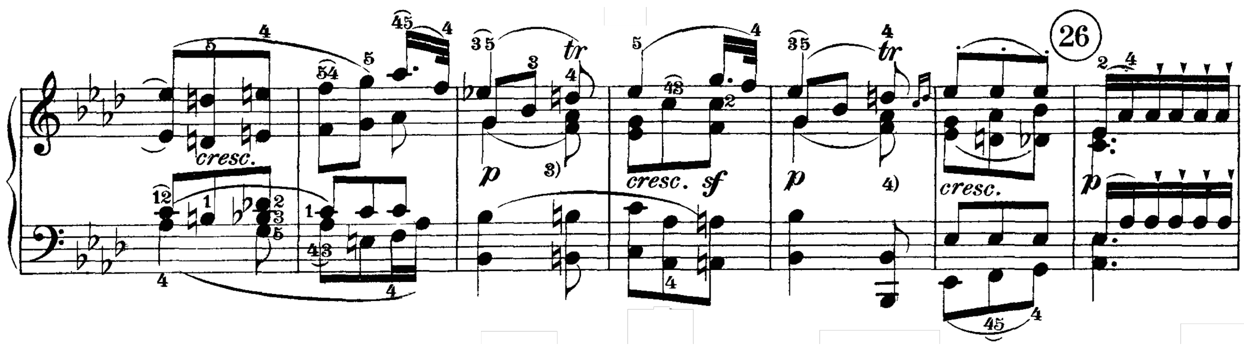

Figure 4–16: Beethoven, Piano Sonata Op. 26, I, theme, mm. 21–27

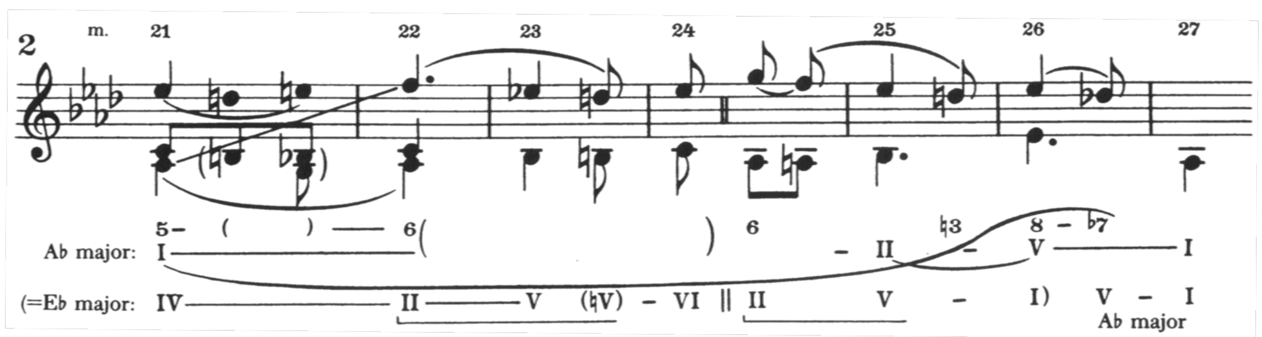

Figure 4–17: Schenker, analysis of Beethoven's Piano Sonata Op. 26, I, theme, mm. 21–27

According to Schachter: "It would be erroneous, therefore, to read all degrees in the foreground without discriminating between them, as though they were all of equal significance and origin. Rather one must make the following distinction: between harmonies that, in a particular way, serve particular diminutions close to the foreground, and those harmonies which, in their origins, express strong relationships in the levels close to the background."[35] In addition, a harmonic scale step may also take on an alternate designation, as it progresses to a higher structural level. Looking at Schenker's analysis of Beethoven's Op. 26, I (Figure 4–17), the bottom row depicts the surface-level progression of harmonies, as they move from E♭ major to

[35] Schenker, *Free Composition*, 112.

A♭ major.[36] Here not only are harmonies subsumed by the next level up, telescoped into deeper-level scale steps, those scale steps also appear in a new context, one entirely in A♭ major. The use of multiple levels, in this case, helps to clarify and expound upon numerous relationships in this part of Beethoven's theme.

In the last two chapters, we have examined a vast number of relationships and pieces of information that the disciplines of counterpoint and harmony may offer to the Schenkerian graphing categories of tones, ranking, grouping, and structural levels. The last chapter in our initial survey will scrutinize a couple of aspects in the field of *melody*.

[36] Schenker, *Free Composition*, Figure 71,2.

Chapter 5

Melody

Melody is music close at hand,
something familiar, the friendly face of music,
involving and gratifying, obsessive and liberating.
–Gino Stefani[1]

Melody is a mysterious thing. Whether we want to call melody a "discipline" or not, one with its own set of rules and regulations to be observed or followed, is perhaps up for debate. In any event, melodic aspects constitute the final element in our examination of typical agents that can provide information toward the construction of a Schenkerian graph, as viewed through our categories of tones, ranking, grouping, and structural levels. Our previous discussions, those associated with counterpoint and harmony, have addressed some of the potential properties and relationships associated with melody: overall profluence; consonance and dissonance; independence from yet intertwining with other lines; diminution; and so on. As in the case of our studies of counterpoint and harmony, this chapter begins with an overview of some basic elements of melody.

5.1 The CORE of Melody: Context, Objects, Relationships, Effects

The overall *context* of melody is composition—tonal or nontonal. Cantus firmus issues are encompassed in the discipline of strict counterpoint (Schenker himself devoting several dozen

[1] Gino Stefani, "Melody: A Popular Perspective," *Popular Music* 6, 1 (1987): 21, emphasis original.

pages to these issues in his first volume on counterpoint), but regarding any relationships to melody, Schenker makes a somewhat striking admission: "Everything must be avoided in the cantus firmus that would give it an individual character—that is, turn it into a kind of *real melody* in the sense of free composition."[2] In this sense, melodies appear to have many more elements surrounding them in this context than the "direction, continuity, variety, balance, and completeness," that Salzer and Schachter describe as properties of a good cantus firmus.[3] Though melodies may appear in any compositional environment, our focus in this discussion will remain in the context of tonal music.

Melodic *objects*, like those of contrapuntal voices, are tones. Other basic descriptors of melodic design may include aspects like register, rhythmic profile, overall contour, angularity, implied harmony, and so on, but even these basic taxonomic elements tend to suggest their own types of relationships.

Relationships among melodic tones often involve harmony, motive, theme, and so forth. In addition, melodies themselves relate to one another. Melodies interact with countermelodies or other lines; they may appear in stretto or become developed over the course of a particular composition.

Some common *effects* of melody concern topics such as flow, shape, memorability, malleability, and emotive or programmatic elements. Indeed, melody is a mysterious thing, and the composers widely held in high esteem tend to have the most creative control over it.

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[2] Schenker, *Counterpoint* Book 1, translated by John Rothgeb and Jürgen Thym, edited by John Rothgeb (1987; repr., Ann Arbor: Musicalia Press, 2001), 17, emphasis added.
[3] Felix Salzer and Carl Schachter, *Counterpoint in Composition: The Study of Voice Leading* (New York: McGraw Hill, 1969), 3.

According to the biographer Stendhal: "'[Melody] is the soul of music,' continued [Haydn], 'it is the life, the spirit, the essence of a composition.'"[4]

Since a number of melodic agents have already been considered in the previous chapters, the rest of this chapter will focus on two aspects that have yet to be considered: one property and one relationship. Each of these two aspects will receive its own discussion, in terms of our four familiar categories of Schenkerian graphing: tones, ranking, grouping, and structural levels. In our first discussion, we will consider the property of *register*. As a musical element, register is not specifically tied to melody, as a single melody may inhabit numerous registers during its course; rather, register *interacts* with melody, a particular tessitura perhaps highlighting aspects of a melody, its progress in time, its engagement with other melodies. For our second discussion, we will examine the Schenkerian relationship known as *reaching over*. Schenker defines reaching over this way: "When a group of at least two descending tones is used to place an inner voice into a higher register, I call the phenomenon a *reaching-over* (*Übergreifen*)."[5] In this way, reaching over has a kind of contrapuntal DNA, the kind associated with melodic leap recovery by step in the opposite direction (even though this descending motion is not, by definition, necessarily stepwise), but the overall effect of reaching-over motion is often more wide ranging than just the two (or so) melodic tones involved, as we will soon see.

[4] Stendhal, *The Life of Haydn, in a Series of Letters Written at Vienna. Followed by the Life of Mozart, with Observations on Metastasio, and on the Present State of Music in France and Italy*, translated by Robert Brewin (London: John Murray, 1817), 87.
[5] Heinrich Schenker, *Free Composition*, translated and edited by Ernst Oster (1979; repr., Hillsdale: Pendragon Press, 2001), 47.

5.2 Aspects of Register: What They Bring to A Schenkerian Graph

While register is in relationship with melody, it also has unique properties of its own. The following discussion will highlight some of the relationships and interactions between melody and register, in terms of the categories of tones, ranking, grouping, and structural levels.

Tones:

A single melody may appear in multiple registers, and a particular register may house multiple melodies; but register may also engender other types of relationships involving melody, across various spans of music and at many levels of structural depth.

Figure 5–1: Brahms, Waltz Op. 39, No. 2 (performance reduction for one piano)

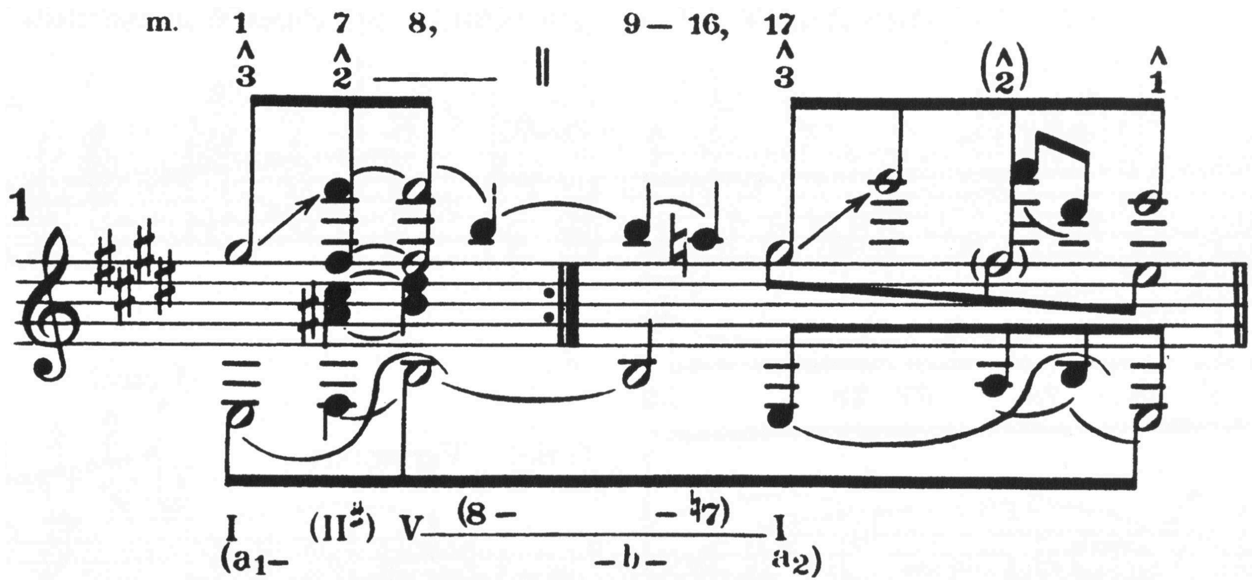

Figure 5–2: Schenker, graph of Brahms's Waltz Op. 39, No. 2

In his graph of Brahms's Waltz Op. 39, No. 2 (Figure 5–2), Schenker uses arrows to highlight *register transfer*.[6] As defined by Forte and Gilbert: "*Register transfer* denotes a change of octave, or the placement of a note in a different octave (including a return to its original register from some other register)."[7] This element of registral activity, such a characteristic feature of this waltz, is illustrated as doubling most of the primary melodic tones. As such, the melodic tones form an unbroken line that crosses into multiple registers.

A certain band of register, a given tessitura, may help draw attention to relationships of melody that are less obvious upon initial hearing or examination. When listening to the first few measures of Mozart's Menuetto from K. 331 (Figure 4–3), it may be easy to hear the high C♯ in bar 3 as a simple chordal skip, less important than the slower-moving melodic progression C♯–B–A proceeding an octave lower in mm. 3–10. In bar 11, however, the reassertion of the upper

[6] Schenker, *Free Composition*, Figure 46,1.
[7] Allen Forte and Steven E. Gilbert, *Introduction to Schenkerian Analysis* (New York: W. W. Norton, 1982), 123, emphasis original.

register, with the onset of the high B—complete with the flourish leading into it—draws a relationship between this B and the previous C♯, as Schenker shows in his graph of this section of the piece (Figure 4–4). From the high B in m. 11, he delineates a melodic progression to the B in m. 30 an octave below, before the return of the structural melodic tone C♯ in that same, middle register a step above. Here the non-juxtaposed motion C♯–B of mm. 3–11 is linked by register, this autonomous tessitura, regained after eight bars of absence, binding these upper melodic tones together.

Ranking:

Register can both feature and obscure relationships of rank. Melodies and other lines sounding in the outer voices have a natural tendency to be granted higher levels of rank, as they draw the greatest attention from the listener; however, those voices do not always contain the most structurally significant musical material. In Schenker's graph of Chopin's Mazurka Op. 41, No. 2 (Figure 3–20), an additional staff has been placed above the usual two; this upper staff depicts a handful of covering tones residing on top of the melodic progressions that have deeper influence. The high E opens the highest sounding register in m. 6, but then that register is abandoned until the D♯ comes back to it in m. 18 (hinting at a return to the E in m. 33). Finally, the E appears once more to initiate the return of the A section. Register unites these tones, and the tessitura accords it saliency, but in this instance, these tones are of only secondary rank.

Another case of inner-voice tones superposed above more structural tones appears at the end of Schubert's *Valse Noble* Op. 77, No. 1 (Figure 2–31). A few measures from the end, the inner-voice line G–A–B–C rises up to a climactic finish, but as Schenker's graph (Figure 2–32) shows, the structural descent of the deepest-level melodic tones occurs below that rising line. A depiction of the next deeper level of structure would likely either normalize that line below the structural melodic tones or perhaps remove that line entirely from the representation.

Grouping:

The tones of a melodic line frequently group together, either in the same band of register, as in the case of Bach's chorale harmonization from Figure 4–2, or as an unbroken line that is spread across more than one register, as with the Brahms Waltz in Figure 5–2. Two other types of grouping by register are also common: grouping tones as separate from any melodic lines, and grouping non-juxtaposed tones within a single melodic line.

Sometimes tones are highlighted and grouped by register but remain separate from any specific melody—or at least do not reside on the same level of structural depth as a particular melodic line. Looking back at the analytical rhythmic reduction of the Air from Handel's "Harmonious Blacksmith" (Figure 2–63), we can see how certain tones from the score (Figure 2–62) have been eliminated. The high Es in the third bar are mere covering tones, residing at a lower level than the tones preserved in the rhythmic reduction, yet they are also not a part of any other melodic line. In similar fashion, the high E–D♯ succession from measure 4 only leads into the deeper-level melodic tones that follow them, as these tones reside on a lower level of structure.

At other times, tones grouped by register may appear some distance apart temporally, yet they are part of the same melodic line. Schenker's graph of the Menuetto from Mozart's K. 331 (Figure 4–4) illustrates how register *itself* highlights the grouping of the upper-voice tones C♯–D and beyond, even though that register is silent on the musical surface for several measures.

Structural Levels:

From time to time, we encounter *two* melodic lines that spring from the *same* initiating tone, each melody residing at a different level of depth. As we saw previously in the graph of Mozart's Menuetto (Figure 4–3), register has the ability to unify a melodic line, even when the tones are not directly juxtaposed; when the high B reasserts this upper register, it helps the listener make a longer-range melodic connection. Our next example adds another layer of melody to this type of structure, denoting the involvement of two melodies, instead of just one.

Figure 5–3: Mozart, Piano Sonata K. 545, I, mm. 14–28

Figure 5–4: Schenker, graph of Mozart's Piano Sonata K. 545, I, mm. 18–26

In bars 18–21 of the opening movement to Mozart's Piano Sonata K. 545 (Figure 5–3), it is easy to recognize and track the progress of the slower-moving melodic descent D–C–B–A–G, shown in quarter notes in Schenker's graph (Figure 5–4).[8] Here the D may at first appear to resolve conclusively down to the C in bar 19, but the upward arpeggiation and thirty-second note flourish of mm. 22–23 reestablish this upper register, with the arrival on the high C once more (not unlike the way the quick upward arpeggiation illuminates the high B in m. 11 of Figure 4–3). This return to the upper register highlights an even deeper-level melodic resolution, before continuing the structural descent down to the G in bar 26. In this case, register reassertion signals melodies on different levels of structure.

[8] Schenker, *Free Composition*, Figure 88c.

5.3 Aspects of Reaching Over: What They Bring to A Schenkerian Graph

The second type of melodic aspect I would like to discuss is the phenomenon of *reaching over*. In addition to Schenker's somewhat terse definition stated earlier, Ernst Oster adds some clarity of his own in a footnote to Schenker's text: "*Übergreifen* means literally reaching over, or across, the top voice, in order to get hold of the following higher tone."[9] Like Schenker, Oster conceives of reaching over as a confluence of melody, register, and (to a lesser extent) voices.[10]

Tones:

According to Oster, a reaching-over motion may appear in two basic types, along with several forms of variations. We begin with Type A, as defined by Oster: "The first tone of the top voice descends one or more steps, whereupon an inner voice crosses above, in order to establish the new pitch of the top voice. Here the main tone … *generates* the lower tone."[11]

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[9] Schenker, *Free Composition*, 48, Oster's footnote, emphasis original.

[10] It seems that even this clarification is up for debate. For another interpretation, see Nicolas Meeùs, "Übergreifen," conference presentation material, accessed 20 December 2013, nicolas.meeus.free.fr/Uebergreifen/Uebergreifen.swf.

[11] Schenker, *Free Composition*, 48, Oster's footnote, emphasis added.

Figure 5–5: Beethoven, Symphony No. 5, II, opening

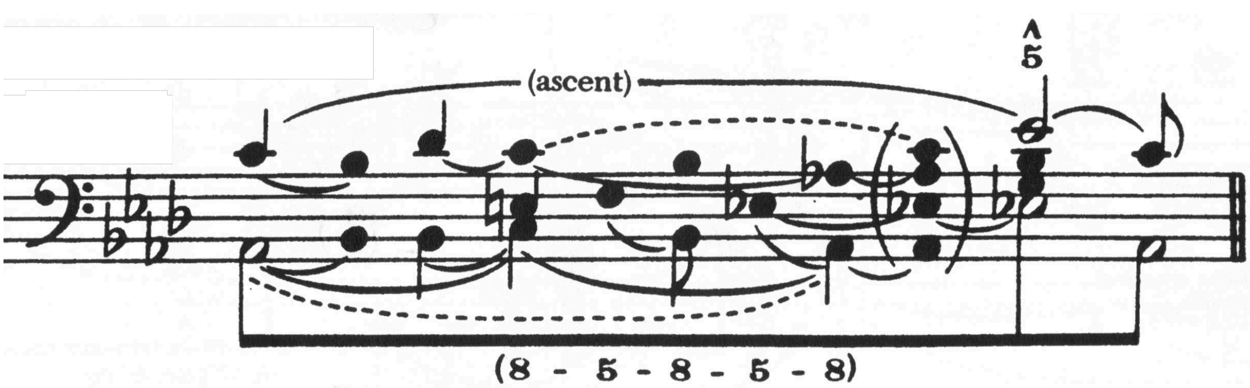

Figure 5–6: Schenker, graph of Beethoven's Symphony No. 5, II, mm. 1–8

Schenker's graph of Beethoven's Symphony No. 5, II (Figure 5–6), shows an example of Type A reaching-over motion, along with some additional, commonly encountered elements associated with it.[12] The melodic progression in the top voice (C–B♭–D♭–C–E♭) illustrates how the C generates the B♭ before the D♭ reaches over and subsequently generates the C that follows it, and then the final motion reaches up to the E♭. In this case, though the initial C is considered a part of the reaching-over motions, it does not arrive as a result of an inner voice having been placed in this higher register (as the definitions would suggest); also, the E♭ at the end represents a general type of addition to the total span of this type of reaching over succession, even though it would not appear to generate (or be generated from) another melodic tone. When describing this type of reaching over *chain*, I refer to the segment as Chain A–A–X, the "X" denoting a final tone (or more) that has been appended to the other reaching-over motions leading up to it.

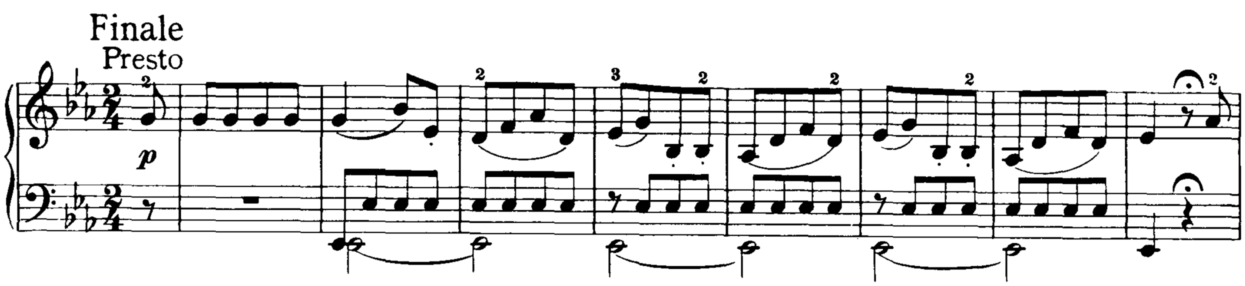

Figure 5–7: Haydn, Piano Sonata, Hob. XVI/52, III, mm. 1–8

[12] Schenker, *Free Composition*, Figure 41,2.

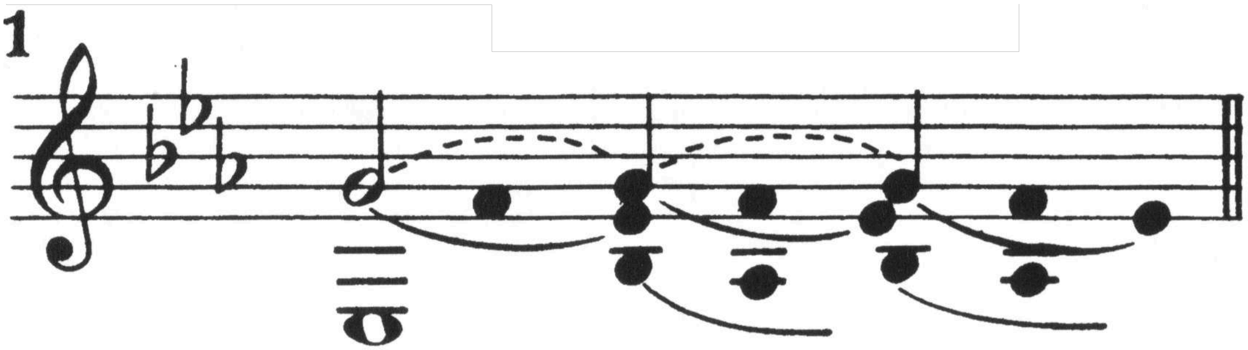

Figure 5–8: Schenker, analysis of Haydn's Piano Sonata, Hob. XVI/52, III, mm. 1–8

Schenker's analysis of the opening of Haydn's Piano Sonata, Hob. XVI/52, III (Figure 5–8), illustrates two additional variations regarding reaching-over spans.[13] In this example, three Type A reaching-over motions (G–F–E♭) appear, and for the first two cases, the final tone of one motion appears directly under the initiating tone of the next one. Oster labels this kind of figure a *contraction* of Type A: "The last tone of the first group and the superimposed tone of the inner voice [of the next group] appear simultaneously."[14] I refer to this span as Chain $A^+/A^+/A^+$, where the "+" indicates that more than the requisite two tones are involved, and the "/" indicates that the adjacent types are elided in some way. Since the final segment also incorporates reaching over, no finishing X needs to appear.

The other type of reaching-over figure is Type B. As Oster says: "In this form, the lower tone is the main tone and is *introduced by* the upper tone."[15] Looking back at Schenker's graph of Chopin's Mazurka Op. 17, No. 3 (Figure 4–8), we can see the Chain B–B–B in mm. 41–46. Here the melodic line F♯–E–A♯–G♯–C♯–B helps to highlight and expand an arpeggiation of the underlying E-major triad. Here we can see the difference between reaching over and other types

[13] Schenker, *Free Composition*, Figure 101,1.
[14] Schenker, *Free Composition*, 48–49, Oster's footnote, insertion added.
[15] Schenker, *Free Composition*, 49, Oster's footnote, emphasis added.

of musical expansion. As Schenker tells us: “The freedom in the choice of intervals between the individual entries distinguishes reaching-over from other related prolongations: from a linear progression, where all the passing tones must be present, and from an arpeggiation, which rests on chord tones alone.”[16] In this case, the reaching-over motions work in conjunction with arpeggiation, expanding it accordingly.

[16] Schenker, *Free Composition*, 48.

Figure 5–9: Beethoven, Piano Sonata Op. 14, No. 2, I, mm. 1–26

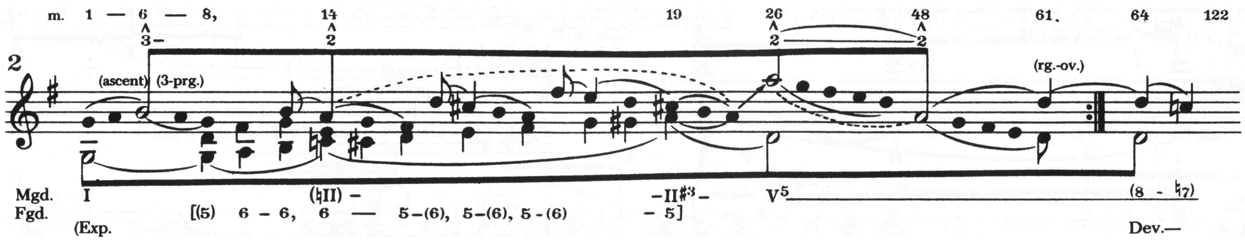

Figure 5–10: Schenker, graph of Beethoven's Piano Sonata Op. 14, No. 2, I, mm. 1–122

Schenker's graph of Beethoven's Piano Sonata Op. 14, No. 2, I (Figure 5–10), provides us with an example of reaching-over figures that contain a little more detail than we have previously encountered.[17] On the one hand, the arpeggiation A–C♯–E in mm. 14–18 is highlighted by a reaching-over Chain B–B–B; on the other hand, the primary tones could also be said to generate the tones after them, forming a kind of A/B elision hybrid, with the primary tone as a sort of fulcrum.

As we have seen over the past few figures, reaching-over motions can appear in quite a number of forms and combinations, and they also have a great deal of freedom, in terms of interval content. As Schenker notes: "A reaching-over has obligation only to its goal. Thus, the individual entries are permitted complete freedom with respect to interval; from the final tone of one entry to the first tone of the next this interval can be a third, fourth, fifth, or whatever."[18]

[17] Schenker, *Free Composition*, Figure 47,2.
[18] Schenker, *Free Composition*, 47.

Ranking:

Reaching-over motions may emerge over the course of various span of music, and they may help differentiate tones in rank to a small degree. In each of Schenker's analyses in this section, the primary tone nearly always receives a higher-ranking (longer) durational value than the adjacent tone(s). Additionally, reaching-over figures may reside on different levels of depth. For example, as we just saw in Schenker's graph from Beethoven's Op. 14, No. 2 (Figure 5–10), he also displays the longer-range, deeper-level reaching over depicted by the motion A–D–C♮, marking off the detonicization of the dominant along the course of the development section.

Alternate ranking schemes may be possible, in certain cases, and these changes would also affect the grouping of tones. For instance, in Schenker's graph of Beethoven's Symphony No. 5, II (Figure 5–6), hearing a reaching-over Chain A–B–X (instead of Schenker's assertion of a Chain A–A–X) would highlight the chordal skip C–E♭ (the B♭–D♭ constituting a double-neighbor figure between the Cs), rather than the melodic progression C–D♭–E♭. In either case, however, these two alternate groupings serve to reinforce the larger grouping governed by tonic harmony (along with its upper fifth).

Grouping:

Reaching-over motions help organize other musical structures in various ways. In many cases, reaching-over figures serve to amplify a contrapuntal element, which is in turn grouped by some harmonic agent. For example, as we previously saw in the graph of the opening of the second movement from Beethoven's Symphony No. 5 (Figure 5–6), Schenker shows how reaching-over motions highlight the melodic progression from C to E♭, all within an expansion of tonic harmony. Also, the graph of Beethoven's Op. 14, No. 2 (Figure 5–10) depicts how reaching over highlights an arpeggiation of the II harmony.

Figure 5–11: Mozart, Piano Concerto No. 23, K. 488, I, mm. 1–10

Figure 5–12: Schenker, graph of Mozart's Piano Concerto No. 23, K. 488, I, mm. 5–8

Now and then, the number of elisions in a grouping scheme that involves reaching-over figures may be substantial. In his graph of Mozart's Piano Concerto No. 23, K. 488, I (Figure 5–12), Schenker uses arrows to highlight the contraction of the succession of reaching-over motions.[19] Here Mozart's clever arrangement of tones displays elision seemingly at every turn. The reaching-over motions for the first three measures could be described as Chain (A/B)/(A/B), the half-note C♯ in the middle being part of a contracted form (A/B) on *both* sides.

In all of the reaching-over cases that we have encountered thus far, reaching over has served to draw attention to other musical structures, always remaining congruent with the controlling harmony; sometimes, however, a musical grouping set apart by reaching-over motions may attempt to contradict or compete with the underlying harmony.

[19] Schenker, *Free Composition*, Figure 101,5.

Figure 5–13: Willson, "Goodnight My Someone" from *The Music Man*, opening

Figure 5–14: Two-level analysis of Willson's "Goodnight My Someone" from *The Music Man*, mm. 5–13, highlighting grouping by reaching-over motions

In Figure 5–14, I have sketched a two-level analysis for Meredith Willson's "Goodnight My Someone" from *The Music Man* (Figure 5–13).[20] While the melodic progression could be read as C–B–D–C, with the harmony moving I–V–I^6 (forming a Chain A–B–X, with the E added to the end), I have interpreted this segment somewhat differently. Instead of hearing a return to tonic harmony in m. 11, I have depicted the V harmony as governing all the way from measure 9 to measure 12, subordinating the subsequent (inverted) tonic. This reading forms the Chain A–A–X. In this case, the structural melody would be C–D–E, harmonized by I–V–I. I find this reading at least plausible because of two surface elements in particular. First, the subordinate tones in the reaching-over motions are placed in a lower register, residing an octave lower than would normally be expected. Second, the tonic harmony that may signal a return in m. 11 appears in inversion, depriving that scale degree of some of its governing power. Together, these two factors enable the listener to pick up the smooth melodic ascent C–D–E, subordinating any return to C and tonic harmony in bar 11, favoring the melodic D and dominant scale degree in their place. In this instance, the superior grouping agent is the *reaching-over motions*, not the harmony—at least at this level of structure. The entire span, though, is still organized by a deeper-level tonic expansion.[21]

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[20] Meredith Willson, "Goodnight My Someone," in *The Definitive Broadway Collection: 142 Songs* (Milwaukee: Hal Leonard, 1988), 114.

[21] The parallel to this number, "Seventy-Six Trombones," returns to tonic harmony in *root* position at the spot analogous to bar 11 here, but in that number, the flourishes from the "big parade" provide the necessary extra attention to the tones of the rising third, it seems, to override a return to tonic harmony there.

Structural Levels:

As we have just seen, reaching-over figures often appear in conjunction with surface-level musical structures of various lengths, amplifying and expanding them. In addition, reaching-over motions may appear at much deeper levels of structure.

Figure 5–15: Bach, French Suite in E major, BWV 817, Courante

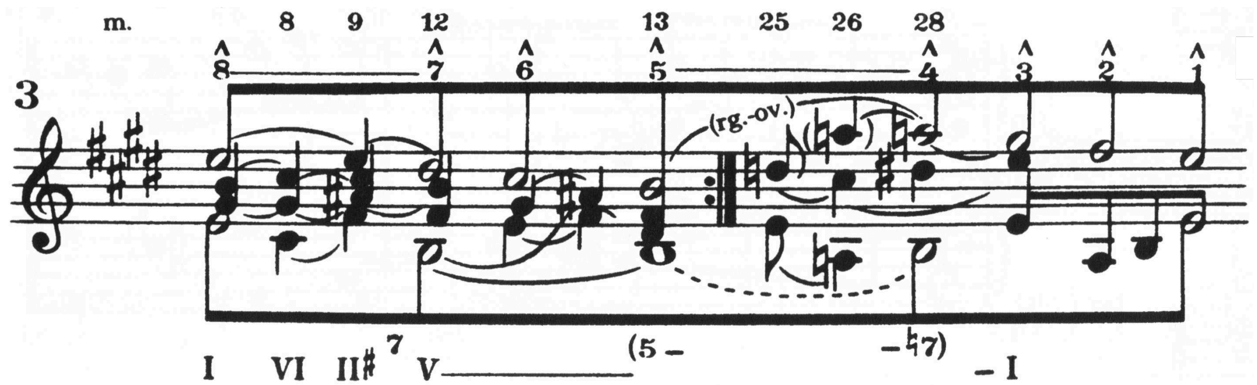

Figure 5–16: Schenker, graph of Bach's French Suite in E major, BWV 817, Courante

In his graph of the Courante from Bach's French Suite in E major, BWV 817 (Figure 5–16), Schenker shows reaching-over motions at near opposite ends of the spectrum, in terms of structural levels, yet both are governed by the same harmonic scale step (V) in mm. 13–29.[22] The first reaching-over figure groups the content of bars 25–26, with the melodic motion D♮–C♯ at just under the musical surface. Interlocked with the end of this figure is the second reaching-over motion (A–G♯), residing at the deepest level of structure, in mm. 26–29.

Put simply, according to Schenker: "The purpose of reaching-over is either to confirm the original pitch-level or to gain another."[23] Endowing this definition with minimal trappings and requirements allows for a great number of possible formations. Sometimes these reaching-over motions intensify musical structures, and sometimes they compete with them, especially, in the case of governing harmonies, as we saw in the analytical sketch of "Goodnight My Someone" (Figure 5–14).

[22] Schenker, *Free Composition*, Figure 47,3.
[23] Schenker, *Free Composition*, 47.

Now that we have examined the three most general aspects of music: counterpoint, harmony, and melody, looking for how these disciplines may bring information of value in the creation of a Schenkerian graph, it is time to begin stretching the boundaries of the categories of graphing—the categories of tones, ranking, grouping, and structural levels—in a similar fashion to the way we stretched the boundaries of the categories of rhythmic reduction in the first two chapters.

Our final two chapters in this study examine some aspects of *twentieth-century theory*, in order to discover what—if any—information these aspects might bring to a Schenkerian graph, and to determine if the resulting graphs are practical and sensible in some way.

Part III

Twentieth-Century Relation: Investigations for Inclusion

Chapter 6

Basic Triadic Transformations

> Is it not true that a system must be strong enough to explain,
> without exception, all phenomena within its range?
> And is not that system always to be considered
> the better one which covers more individual cases?
> –Schenker[1]

Part One of this project examines ways that rhythmic reductions may be *in relationship* with a particular piece of music. Several of these relationships also find parallels with those of Schenkerian graphing, mirroring its mindset. For example, in the arena of making music, rhythmic reductions in the performance venue are often the most traditional, striving to represent and even imitate the original work in the most reverential of ways, as evinced by Katz's Mozart reduction (Figure 1–2) and Brahms's reduction (along with those by Keller and Goetschius) of his Symphony No. 3 (Figure 1–7). Some performance reductions also contribute additional material or interpretation to the original work, as in the case of those by Gounod (Figure 1–8, showing his added, improvised melody), Dvořák (Figure 1–14, with his allusion to Janissary bands), and The Swingle Singers (with their Jazz accompaniment and beatboxing). Rhythmic reductions in the personal venue mirror Schenkerian graphs in the way they add clarity and

[1] Heinrich Schenker, *Harmony*, trans. Elisabeth Mann Borgese (Chicago: University of Chicago Press, 1954), 76.

approachability, this simplicity often realized through a lower level of difficulty. In this manner, they foreground the most significant aspects of a piece, as exemplified by Brahms's simplified piano reduction of his Waltz Op. 39, No. 15 (Figure 1–22), Bergerac's simplification of Chopin's Nocturne Op. 9, No. 2 (Figure 1–24), and the note charts of rhythm games like *Guitar Hero* and *Rock Band* (Figure 1–25). In the rehearsal venue, rhythmic reductions capture only what is necessary, the rest filled in by the performer, as shown in the singer's reductions of Chausson's "Chanson Perpétuelle" (Figures 1–30 through 1–33), Berlin's arrangement of "Blue Skies" (Figure 1–27), and modern guitar tabs (similar to the one in Figure 1–28). Graphs often act in a comparable manner: simplifying by reading the diminutions or clarifying deeper relationships through the stratification of structural levels.

In the arena of studying music, rhythmic reductions in the discussion venue often provide only the information required to advance the discourse; this information may also appear at various levels of abstraction. Reductions at lower levels of abstraction include Ratner's melodic examples (Figure 2–1) and thematic reminders (Figure 2–4); along with Rosen's compressed (textural) quartet reduction (Figure 2–6) and examples of gesture (Figure 2–10). More abstract reductions appear in the form of Palisca's Monteverdi examples (Figure 2–2), Ratner's harmonic figure (Figure 2–3), and Rosen's illustration engaging hermeneutics (Figure 2–12). In the analogous way, graphs may appear as more simplified or more abstract, depending on the goals of the analyst and the structural level represented. Rhythmic reductions in the pedagogy venue focus on highlighting aspects of music in the service of teaching, as we can see in the examples from Aldwell and Schachter's textbook (Figures 2–14, 2–15, 2–16, 2–18, and 2–20). We can see how Schenker accomplishes this same goal in Figures 2–44 through 2–47, where he examines Haydn's "Emperor Hymn" from several different viewpoints, for several different purposes. Part

One finishes with a discussion of analytical rhythmic reductions, focusing on types of content that may more directly inform the creation of a Schenkerian graph.

By considering rhythmic reductions from so many angles, by stretching the boundaries of broad categories—occasionally in extreme directions and amounts, as in the style reductions by Freddie Mercury ("Crazy Little Thing Called Love"), Tom Lehrer ("The Masochism Tango"), Al Yankovic ("Dare to be Stupid"), and Richard Cheese ("Only Happy When it Rains")—by thinking in such abstract terms, we have better prepared ourselves to take on the challenges of examining how various other types of material may also provide content, raw material that may be expressible in the form of a graph.

Part Two of this study examines Schenkerian graphs as depictions of tones in relationships, a grand synthesis of any number of pieces of information. This portion of our investigation considers how the three common disciplines of counterpoint, harmony, and melody may bring content that may assist in the construction of a graph, in the categories of tones, ranking, grouping, and structural levels.

This final part of our investigation considers how we might begin to stretch the boundaries further, just as we expanded the categories of rhythmic reduction in Part One. In light of Poundie Burstein's statement, "What I find most attractive about Schenkerian analysis is that it offers a powerful model that allows one to effectively relate subjective interpretations of nuances in a tonal composition, and for me this is reason enough to recommend it as a useful analytic tool,"[2] it is easy to focus on the reference to "tonal composition," but I find it equally satisfying to focus on the reference to "a useful analytic tool." Thinking of Schenkerian analysis and graphing as a tool in a more comprehensive analysis—rather than as dogma or even

[2] L. Poundie Burstein, "Schenkerian Analysis and Occam's Razor" *Res Musica* 3 (2011): 121.

theory—seems to open up an abundance of pathways to us; we might choose to examine such abstract topics as gesture, program, hermeneutics, timbre, politics, or even aleatoric elements. The possibilities are as exciting as they are limitless, but within this vast array of potential topics, we must start somewhere.

I have decided to begin this form of category stretching by probing two types of musical content from the twentieth century. The content chosen here is somewhat less abstract and more approachable, allowing us to set the tone and direction of what further study might entail. But how are we to judge the results from this kind of study? This question brings us full circle, in a way, and makes us contemplate the results based on the goals of rhythmic reduction study, with which we began: Does the graph produced sound like the piece, preserve its essentials, and enhance the representation of these elements in this environment of fit?

This contemplation of elementary twentieth-century materials will address two types of content. The first type engages with the basic elements of transformation theory, focusing on neo-Riemannian transformations. The second type works with some foundational aspects from set theory. Continuing the methodology of Part Two of this project, we will examine the CORE (context, objects, relationships, and effects) of each discipline before examining how certain aspects may inform a Schenkerian graph, in our well-travelled categories of tones, ranking, grouping, and structural levels.

6.1 The CORE of Transformations: Context, Objects, Relationships, Effects

As in the case of melody, transformations may appear in any musical context and take any number of forms. The focus of this study will engage with basic triadic transformations within a neo-Riemannian context. The beauty of these transformational relationships—and transformations, in general—is their level of flexibility and autonomy, as these connections are free from dependence on a background of tonality (or any other type of proposed musical system). As Yosef Goldenberg reminds us: "Neo-Riemannian transformations do not require a clear tonal context."[3] The drawback of these relationships is that they contain relatively little information, no matter what the musical context happens to be.

The main *objects* participating in the transformations studied in this chapter are consonant triads. Although Julian Hook tells us: "One of the most glaring deficiencies in neo-Riemannian theory is its fundamental restriction to consonant triads. Neo-Riemannian theory is, in its basic form, a theory all about Forte class 3-11"; looking at the situation another way, this seems to be less a *deficiency* than an *advantage*, as these relationships are able to describe a vast number of musical events, covering more cases—if only in the small.[4]

[3] Yosef Goldenberg, "Schenkerian Voice-Leading and Neo-Riemannian Operations: Analytical Integration without Theoretical Reconciliation," in *Journal of Schenkerian Studies* 2 (2007): 67.
[4] Julian Hook, "Uniform Triadic Transformations," *Journal of Music Theory* 46, 1/2 (2002): 58.

Figure 6–1: Beethoven, Piano Sonata Op. 57, II, "Appassionata," mm. 1–5

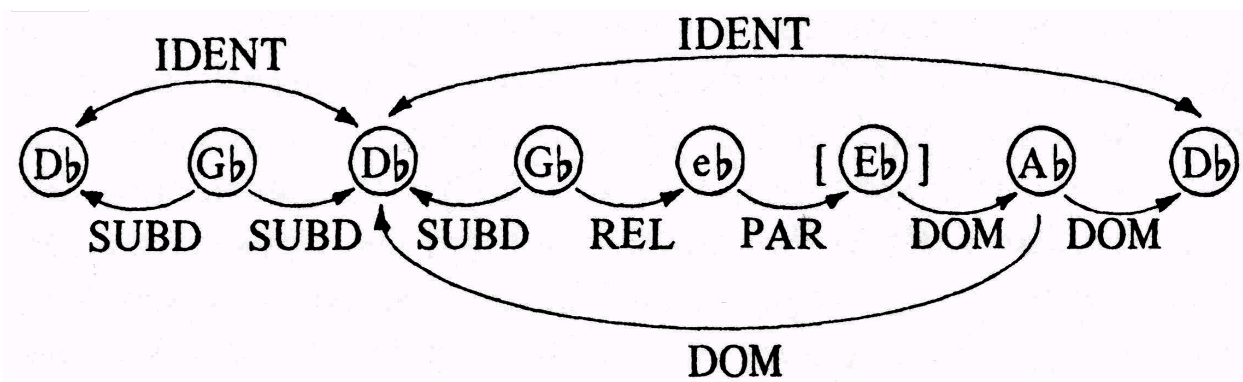

Figure 6–2: Lewin, transformational analysis of Beethoven's Piano Sonata Op. 57, II, mm. 1–5

Three other frequently encountered objects also deserve mention: *nodes*, *arrows*, and transformation *labels*. Nodes simply surround one or more objects, and arrows show a relationship between two nodes. Transformation labels adjacent to arrows usually denote the particular relationship between the nodes. In David Lewin's analysis of Beethoven's Piano

Sonata Op. 57, II (Figure 6–2), we can see how these objects may appear in an analytical representation.[5]

For this look at some of the basics of transformation theory, especially triadic transformations, we will mainly consider three of its most common *relationships*: L, R, and P, plus a few others as necessary. The L transformation, often called the *leading-tone exchange*, acts in one of two ways, depending on the mode of the triad to be transformed. If the triad is major, then the L transformation shifts its root up a major third and changes its mode to minor (for example, a C-major triad would become an E-minor triad). On the other hand, if the triad is minor, then the L transformation shifts its root down a major third and changes its mode to major (for example, an E-minor triad would become a C-major triad). The R transformation, also known as the *relative*, toggles triads as if they were tonics of relative keys. For example, a C-major triad would become an A-minor triad (or the reverse). The P transformation, or *parallel*, simply switches the mode of a triad between major and minor. As we can see, performing any one of these transformations twice would yield the original entity. In addition, if we wished to make use of the smallest number of transformations in this group, the P transformation would be superfluous. As Ramon Satyendra notes: "When it comes to finding *generating elements* of the group, P can be set aside since all elements of the group can be expressed in terms of L and R. Specifically, P = R*L*R*L*R*L*R."[6] In other words, it is possible to navigate between any two consonant triads using only combinations of L and R. In addition, other relationships featured or intimated by neo-Riemannian transformations may include: voice-leading motions, changes of mode (chord quality), or distances between chord roots.

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[5] David Lewin, *Generalized Musical Intervals and Transformations* (New York: Oxford University Press, 2007), 213.
[6] Ramon Satyendra, "An Informational Introduction to Some Formal Concepts form Lewin's Transformational Theory," *Journal of Music Theory* 48, 1 (2004): 118, emphasis original.

Although the L and R transformations have the ability to relate any two consonant triads (without the need for arrows, since they function in either abstract "direction"), other transformations or relationships are defined and used for various reasons. In Lewin's analysis of Beethoven's Op. 57, II (Figure 6–2), he specifically employs arrows for some of his transformations, because two of them, *SUBD* and *DOM*, do not simply toggle triads when employed successively. Here Lewin's SUBD transformation defines the first triad as "the subdominant" of the second (the one at the point of the arrow), and each triad shares the same mode, either major or minor. Similarly, the DOM transformation defines the first triad as "the dominant" of the triad at the point of the arrow. His REL and PAR transformations are identical to R and P, respectively, as defined earlier.

Lewin's use of transformational labels of this type seems to show a link to tonality, but that does not mean that they are meant to apply only to tonal pieces. In addition, these labels refer to *transformations* not *harmonic function* or even *triads*. As Richard Cohn tells us: "Although Lewin … had identified his triadic transformations with Riemann's work, he had affiliated them with the theory of harmonic functions introduced by Riemann in the 1890s, while acknowledging that Riemann did not conceive the functions in transformational terms."[7] In this regard, Lewin states: "An even more basic problem for Riemann was that he never quite worked through in his own mind the *transformational* character of his theories. He did not quite ever realize that he was conceiving 'dominant' … as something one does to a [consonant triad], to obtain another [consonant triad]."[8]

[7] Richard Cohn. "Introduction to Neo-Riemannian Theory: A Survey and a Historical Perspective." *Journal of Music Theory* 42, 2 (1998): 173.
[8] David Lewin, *Generalized Musical Intervals and Transformations*, 177, emphasis original.

Though many relationships are adequately characterized by these kinds of transformations, this theoretical approach does have certain shortcomings. As Hook informs us: "A number of … objections to the neo-Riemannian approach have also been raised. Its application to standard diatonic progressions is awkward."[9] That is to say, when the musical situation is not described by a single or small number of transformations (as exemplified by a simple harmonic motion like IV–V), the notation system becomes more cumbersome, less intuitive, as entities are implied that are not strictly present in the score. For example, glancing back at Lewin's Beethoven analysis in Figure 6–2, he adds a PAR transformation, linking the E♭-minor triad with the E♭-major triad in parentheses (meaning it is not in the score); this allows the use of the subsequent DOM transformation to yield the A♭-major triad that follows. Also, the E♭-minor seventh chord at the end of bar 2 is modeled in the transformation network by *two* triads, the G♭-major and E♭-minor triads being represented as somehow fused together.

Another shortcoming of transformations, according to Hook, especially when applied in the tonal arena: "The theory is said to disregard the concept of [harmonic scale steps], which has long been fundamental to tonal theory and is surely relevant even in the repertoire favored by neo-Riemannian theorists. The theory is said to be insufficiently attentive to the distinction between chord and key area, and to hierarchical distinctions in general."[10] As noted previously, this need not be seen as detrimental; this level of flexibility has the advantage of defining many small relationships at numerous levels of structural depth, because they are not ascribed hierarchical rank at the outset or by definition.

[9] Hook, "Uniform Triadic Transformations," 59.
[10] Hook, "Uniform Triadic Transformations," 59.

Generally speaking, the *effects* of the transformations become more noticeable when appearing in some sort of pattern or cycle. These patterns frequently recognize and characterize root motion by third or smooth voice leading among triads. In analysis, this type of information could be congruent with or compete with other types of contrapuntal, harmonic, melodic, or any other type of elements. This is the same kind of analytical problem that we experienced in regard to reaching-over motions in Chapter 5, where the reaching-over groupings proposed in Willson's "Goodnight My Someone" (Figure 5–14) brought the analyst to a forked path for representation, an "either/or" moment in the analytical process.

6.2 Aspects of Transformations: What They Bring to a Schenkerian Graph

Transformations bring a different sort of paradigm to a Schenkerian graph. The closest thing to a transformation (and its accompanying label) in a graph is perhaps the 5–6 shift. For example, the appearance of $\text{I}^{5\text{–}6}$ in a graph denotes the alteration of a tonic sonority through 5–6 contrapuntal motion, yet it still retains its identity as the tonic harmonic scale step—even though the sixth does not belong to the tonic triad. Other transformations present in a graph are not necessarily foregrounded in any direct way; we have no symbol for "motion by fifth," even though a graph may show a slur connecting the dominant and tonic harmonic scale degrees. In other words, a graph displays some connections and leaves the reader to fill in numerous others, connections that are often obvious to the experienced viewer. Thus the type of mobile, untethered relationships that transformations supply represent new possibilities for content that could inform a Schenkerian graph.

Tones:

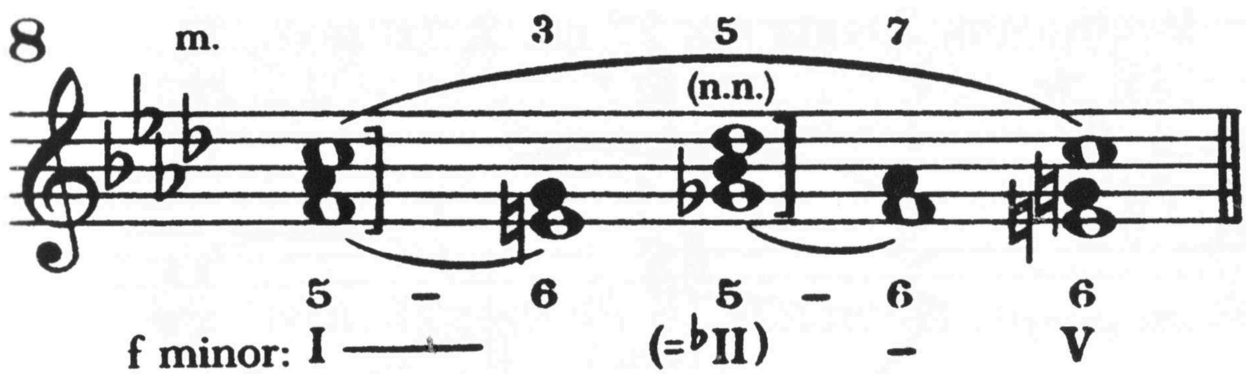
Looking at the neo-Riemannian transformations L, R, and P, we find that they denote consonant triads being morphed into other consonant triads, this morphing relationship defined in a specific manner, as described earlier; other transformations could be constructed and implemented at any stage of analysis and for any number of musical reasons, but L, R, and P are perhaps the most widely used. In general, the tones in question, these consonant triads, take on less significance than the transformations that connect and relate them.

Looking back at Lewin's analysis of Beethoven's Op. 57 (Figure 6–2), the chords are seen as subordinate to the transformations, as well as to the network of relationships designated by the nodes and arrows. Here even the manifestations of these tones (the objects in the nodes) lack all musical qualities (register, duration, and so on) other than their triadic designation (letter name and quality). This type of illustration assists in amplifying other relationships, especially root motion, and we could easily imagine his system of nodes an arrows incorporated underneath the score (above it in Figure 6–1) or as part of a graph. By juxtaposing the transformation network with the score (or a rhythmic reduction or a graph), we could regain some of the unrepresented musical aspects, and this would help us form a more comprehensive analysis.

Ranking:

Neo-Riemannian transformations do not rank the triads that they relate in any systematic way. For any particular case, the triads could be of similar rank, or one triad could rank higher than the other.

Figure 6–3: Beethoven, Piano Sonata Op. 57, I, "Appassionata," mm. 1–10



Triad to triad:	PLR		PRPR	LR	LRLP
Harmony to harmony:		LRL		RPRP	

Figure 6–4: Schenker, analysis of Beethoven's Op. 57, I, mm. 1–7ff, with transformations layered on underneath at two levels of depth

In Figure 6–4, I have added two layers of transformational relationships onto Schenker's analysis of the opening of Beethoven's Op. 57, I.[11] For the top layer, the transformations connect each chord in the succession, and for the bottom layer, the transformations connect only the slower-moving harmonies, those residing at a slightly deeper level of structure. In both layers, the designations only describe motion between the particular triad pairs chosen by the *analyst*, based on other elements of information in the synthesis of this musical work, since the transformation labels themselves are unable to connote any differentiation of rank on their own.

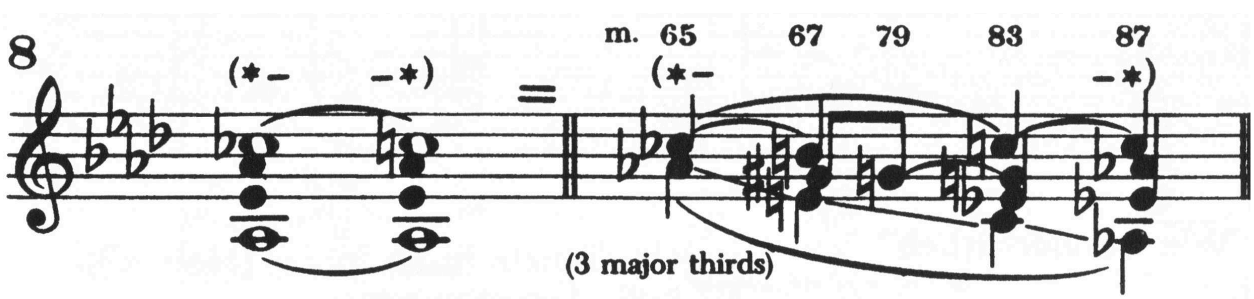
Grouping:

As we have seen, transformations group pairs of triads. Other grouping formations would rely on interactions with other relational domains. For example, in Lewin's transformational network, representing the opening of Beethoven's Op. 57, II (Figure 6–2), the arrows with IDENT, as well as the longer-range DOM transformation, highlight slightly deeper-level groupings of harmonic entities.

[11] Heinrich Schenker, *Free Composition*, translated and edited by Ernst Oster (1979; repr., Hillsdale: Pendragon Press, 2001), Figure 54,8.

Figure 6–5a: Beethoven, Piano Sonata Op. 57, I, "Appassionata," mm. 65–81

Figure 6–5b: Beethoven, Piano Sonata Op. 57, I, "Appassionata," mm. 82–87



Literal:	P	PLPLP	P	LP	L
Enharmonic:	P	"L"	P	LP	L

Figure 6–6: Schenker, analysis of Beethoven's Piano Sonata Op. 57, I, mm. 65–87, with transformational overlays

Schenker's analysis of a portion of the development section of Beethoven's Op. 57, I (Figure 6–6), shows the long-range change of mode from measure 65 to measure 87.[12] From there, he depicts a lower level of structure, where the roots move by major third. In this illustration, no Roman numerals are given, and each of the chords is represented in mostly quarter notes, implying relatively equal structural weight. Beneath this analysis, I have added two layers of transformations. In the top layer, the transformations are labeled based on the actual spelling of the chords in the score, while the bottom layer represents the "absolute" motion of the chord roots, disregarding the spelling. In other words, the "enharmonic" line captures Schenker's "3 major thirds," instead of a diminished fourth and two major thirds, as denoted in the "literal" reading. From this "enharmonic" perspective, a pattern of transformations emerges, an alteration of L and P motion between triads. These simple, flexible transformations help bring out a set of relationships in this part of the piece, highlighting a larger grouping unit, based on the observed pattern, similar to the way elements of a linear intervallic pattern pair up and repeat in certain contrapuntal passages. This type of reading would be completely congruent with Schenker's analysis and would appear to be easily integrated into a graphical representation.

Thinking in quite different terms, we can see how the transformational labels in the analysis of Beethoven's Op. 57 (Figure 6–4) highlights another type of potential grouping relationship. In this case, the transformational analysis illustrates a large amount of raw material, each transformation slightly different from the others, each one a potential element in other groupings at some later stage, in conjunction with still more relationships. This type of content is new in a sense, as it is not strictly (though it is implicitly) captured by any other symbology in a Schenkerian graph.

[12] Schenker, *Free Composition*, Figure 114,8.

Structural Levels:

Transformation labels have the freedom to appear at any level of structure. These labels have no specific ties to harmony or even spelling, and their level of simplicity means that they often add little information toward making decisions about relationships of structural level.

As we have just seen, transformation labels generally carry little musical information, denoting some of the most simple relationships between triads. Though this may give them an advantage in uncovering new relationships, ones perhaps obscured by the notation or other symbology, and though they are easy to find—any two triads may be linked by a transformation—in the end they might have little to add to an overall analysis, unless they form a pattern or interact with some other musical element. Perhaps the most unique quality of transformations is the fact that they are *relationships*, not mere *descriptors*. This type of information is difficult to illustrate, if graphs are considered as ranked tones in groups spread across various structural levels, where most of the relationships are implied rather than foregrounded through the notation. Such readings could lead to alternate hearing pathways or new types of relationships, but any of them could be represented by traditional Schenkerian notation—at least in the tonal environment.

Our last collection of musical aspects explores the field of *set theory* and the arena of nontonal music, in hopes of integrating some of this information in a way that may be able to be represented in a Schenkerian graph.

Chapter 7

Basics Elements of Set Theory

> I think one searches for the reading that will encompass all of the important aspects of the piece in a satisfactory way.
> –Carl Schachter[1]

The field of set theory is vast. A formidable number of relationships have been codified over many decades of theorizing, granting this type of study an incredibly rich history. For the present study, we will merely scratch the surface of this discipline, focusing on some of its more common aspects, as a more complete study lies beyond the scope of this type of introductory investigation. We will, however, uncover some of the problems and profits of attempting to use Schenkerian analytical notation to illustrate the types of relationships described by aspects of set theory.

7.1 The CORE of Set Theory: Context, Objects, Relationships, Effects

The *context* of set theory is most frequently nontonal composition. For many composers, the rules of tonal composition do not merely "cease to apply," as composers often actively contradict or countermand these established principles, cultivating new ways of working with tones in relationships.

[1] Carl Schachter, "A Dialogue between Author and Editor," in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 12.

The *objects* of nontonal composition are still tones, as we would expect. Along with the familiar labels of interval, register, contour, and so on, we also encounter monikers such as interval *class*, pitch *class*, row, aggregate, order, integer, normal form, and twelve-tone operations, just to name a few. As with many of the objects in previous chapters that had seemingly simple names, these objects also quickly take on the characteristics of relationships.

The *relationships* of set theory are especially open; not only is dissonance "emancipated," so is nearly every other relationship in music. Indeed, consonance and dissonance have no default ranking or grouping agency. No inherent preference is given to stepwise—let alone descending—motion, and voice leading is often better represented by proximity, rather than by a proposed harmonic background of any kind. As a result, context is everything, as pieces frequently generate their own internal relationships, each one new, vital, waiting to be discovered. Common relationships among individual tones come in the form of sets, set classes, rows, row classes, aggregates, and such. Common relationships among groups of tones are the four basic operations known as transposition, inversion, retrograde, and retrograde inversion.

One of the main *effects* of twelve-tone, nontonal music is the continued presence of the total chromatic, each of the twelve pitch classes circulating frequently, being touched upon routinely and in various ways. As always, the composer is responsible for highlighting effects, forging relationships, for making music, and the degree of freedom in this environment is extremely high. In other words, effects are there to be *forged*, in contrast to tonal composition, where effects are there, in many respects, to be *controlled*.

7.2 Aspects of Set Theory: What They Bring to a Schenkerian Graph

As stated at the outset of this chapter, this elementary study of some basic aspects of set theory seeks merely to open the door to deeper study in this area. In the coming pages, I will attempt to offer some basic analogies and paradigms, ones that will lead to a more productive relationship between musical works profitably analyzed by using set theory and Schenkerian graphs. In many instances, theorists have attempted to analogize aspects of tonal composition with aspects of nontonal composition, searching for parallels in the areas of voice leading, harmony, prolongation, and so forth.[2] My investigation takes a somewhat different approach. Instead of searching for resemblances or similarities between tonal and nontonal music that may end up being tenuous at best, our current line of inquiry looks for ways to codify tones according to inclusion, location, ranking, grouping, and levels of structural depth, with the hope that, as a result of knowing some of these relationships, a coherent Schenkerian graph might be constructed around them. Using these criteria may open possibilities that may be foreclosed when searching for parallels between tonal and nontonal composition. This task, however, may be easier said than done, but in the end, we should have some defensible reasons as to why we can or cannot come to conclusions in these matters of codifying relationships that are pertinent to creating graphs.

[2] See James M. Baker, "Voice Leading in Post-Tonal Music: Suggestions for Extending Schenker's Theory," *Music Analysis* 9, 2 (1990): 177–200; Joseph N. Straus, "Uniformity, Balance, and Smoothness in Atonal Voice Leading," *Music Theory Spectrum* 25, 2 (2003): 305–352; Joseph N. Straus, "Voice Leading in Set-Class Space," *Journal of Music Theory* 39, 1 (2008): 45–108; Edward R. Pearsall, "Harmonic Progressions and Prolongation in Post-Tonal Music," *Music Analysis* 10, 3 (1991): 345–355; and Joseph N. Straus, "The Problem of Prolongation in Post-Tonal Music," *Journal of Music Theory* 31, 1 (1991): 1–21, just to name a few.

Tones:

According to our in-depth study of rhythmic reduction in Part One, sorting tones usually entails making decisions about inclusion and location, normalizing, and reading the diminutions, among other things. In Part Two, the category of tones also engages with some basic relationships of the discipline under scrutiny. In many nontonal works governed by set-theoretical tenets, analytical representations could conceivably contain *all* of the pitches from the score; they would only need to be placed into various relationships, ranked and grouped accordingly. Some common, basic relationships in this type of music include interval, set, row, order, register, operation, and so on.

Intervals may take several forms in this type of music. They may be represented as in tonal music, with designations such as perfect fifth or minor second, or they may be given more generic, integer representations. Integers, in this case, stand in for individual half steps, a minor second denoted as 1, a major second denoted as 2, and so forth. When deemed musically significant, direction may be indicated with + or – signs, and the order of tones may or may not be taken into consideration. Moving up the ladder of abstraction, an analyst might choose to illustrate an interval relationship in terms of interval *class*, the shortest possible distance between two tones, measured in half steps along a scale from 0–6.

Groups of tones are frequently referred to as *pitch-class sets* (or *sets*). According to Joseph Straus: "Pitch-class sets are the basic building blocks of much post-tonal music. A pitch-class set is an unordered collection of pitch-classes. It is a motive from which many of the identifying characteristics—register, rhythm, order—have been boiled away. What remains is simply the basic pitch-class and interval-class identity of a musical idea."[3]

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[3] Joseph N. Straus, *Introduction to Post-Tonal Theory*, 3rd Edition (Upper Saddle River, NJ: Pearson Prentice Hall, 2005), 33.

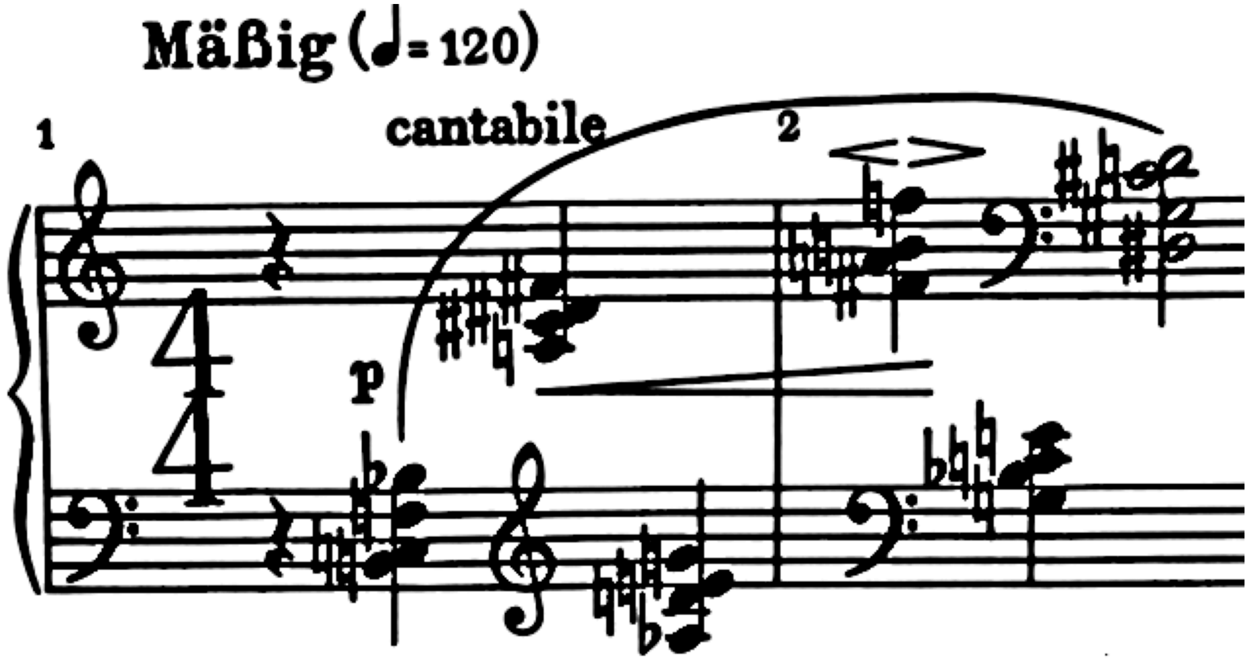

Figure 7–1: Schoenberg, Piano Piece, Op. 33a, opening

Depending on how the elements are notated and arranged, sets may be more or less abstract. At the opening of Schoenberg's Piano Piece, Op. 33a (Figure 7–1), if the first chord is considered as a set of pitches, it may take on several designations. One unordered form of the elements, using traditional letter names, would be {B♭,F♮,C♮,B♮}. Since the specific letter names and accidentals often have less significance in this environment than they have in a tonal piece, as they stand apart from any particular tonic or tonal structure, integers may be substituted for the letter names, producing the set {t,5,0,e}.[4] Moving up the ladder of abstraction, we could arrange the set into *normal form*, resulting in [t,e,0,5], brackets being commonly employed to denote this type of representation. As Straus describes it: "The normal form—the most compressed way of writing a pitch-class set—makes it easy to see the essential attributes of a set

[4] Or {A,5,0,B}, using an alternate notation standard to integers 10 and 11.

and to compare it to other sets."[5] The top rung on the ladder of abstraction for sets is perhaps their *prime form*. In this form, a set is chosen as "the 'most normal' of normal forms," as Straus tells us, adding: "This optimal form, called the *prime form*, begins with 0 and is the most packed to the left."[6] Continuing with the set from our example, we would write it as (0127). While this designation lacks certain characteristics from the score, it allows the analyst to compare various entities for similarities of interval-class content quickly and easily. For example, the chord at the end of bar 2, {D♯,G♯,C♯,D♮}, is also a member of set class (0127), merely residing at a different pitch level, and the pitches appear in inversion by comparison. As we can see, this type of abstraction relates tones without regard to register, (effective) duration, (effective) location, and so on, similar to the way Lewin's transformational network referred to triads found at the opening of Beethoven's Op. 57, II (Figure 6–2).

[5] Straus, *Introduction to Post-Tonal Theory*, 35.
[6] Straus, *Introduction to Post-Tonal Theory*, 57, emphasis original.

Figure 7–2: Schoenberg, String Quartet No. 4, Op. 37, I, opening

Concerning twelve-tone theory in particular, a few other elements also deserve mention. Sets may be *ordered*; an ordered set is a called a *series*. As Straus tells us: “A series can be any length, but by far the most common is a series consisting of all twelve pitch classes. A series of twelve different pitch classes is sometimes called a … *row*.”[7] He also notes: “The series is the source of structural relations in a twelve-tone piece: from the immediate surface to the deepest structural level, the series shapes the music.”[8]

[7] Straus, *Introduction to Post-Tonal Theory*, 182, emphasis original.
[8] Straus, *Introduction to Post-Tonal Theory*, 182.

The “basic harmonic unit in twelve-tone music,” Straus informs us, is the *aggregate*: “a collection of all twelve pitch classes.”[9] An aggregate differs from a twelve-tones series, in that the twelve tones have no specific *order* assigned to them. At the opening of Schoenberg’s String Quartet No. 4, Op. 37, I (Figure 7–2), the first violin presents what may be called a *prime* form of a twelve-tone row (series); all twelve pitch classes of the aggregate are stated in a particular order. Also, all of the tones in the first measure, plus the A♮ on the downbeat of bar 2, constitute another aggregate, but they do not appear in the same order as the original series.

	I_2	I_1	I_9	I_{10}	I_5	I_3	I_4	I_0	I_8	I_7	I_6	I_{11}	
P_2	D	C♯	A	B♭	F	E♭	E	C	A♭	G	F♯	B	R_2
P_3	E♭	D	B♭	B	F♯	E	F	C♯	A	A♭	G	C	R_3
P_7	G	F♯	D	E♭	B♭	A♭	A	F	C♯	C	B	E	R_7
P_6	F♯	F	C♯	D	A	G	A♭	E	C	B	B♭	E♭	R_6
P_{11}	B	B♭	F♯	G	D	C	C♯	A	F	E	E♭	A♭	R_{11}
P_1	C♯	C	A♭	A	E	D	E♭	B	G	F♯	F	B♭	R_1
P_0	C	B	G	A♭	E♭	C♯	D	B♭	F♯	F	E	A	R_0
P_4	E	E♭	B	C	G	F	F♯	D	B♭	A	A♭	C♯	R_4
P_8	A♭	G	E♭	E	B	A	B♭	F♯	D	C♯	C	F	R_8
P_9	A	A♭	E	F	C	B♭	B	G	E♭	D	C♯	F♯	R_9
P_{10}	B♭	A	F	F♯	C♯	B	C	A♭	E	E♭	D	G	R_{10}
P_5	F	E	C	C♯	A♭	F♯	G	E♭	B	B♭	A	D	R_5
	RI_2	RI_1	RI_9	RI_{10}	RI_5	RI_3	RI_4	RI_0	RI_8	RI_7	RI_6	RI_{11}	

Figure 7–3: Matrix for Schoenberg’s String Quartet No. 4, Op. 37, I

According to Straus: “In studying a twelve-tone piece, it is convenient to have at hand a list of all forty-eight forms of the series.”[10] Figure 7–3 represents all forty-eight forms of the row possibilities, based on the opening form stated in the first-violin melody from Schoenberg’s String Quartet No. 4, Op. 37, I. This is often called a *matrix*, *row table*, or *Babbitt square*. We could have used integers in place of the letter names, if that proved more useful in a particular

[9] Straus, *Introduction to Post-Tonal Theory*, 222.
[10] Straus, *Introduction to Post-Tonal Theory*, 186.

analysis. On the edges, we see four different categories of row forms; the *prime* orderings are listed from left to right, the *inverted* forms (of the prime form) are given from the top down, the *retrograde* forms are read from right to left, and the *retrograde inversions* (the retrograde of an inverted form) run from the bottom of the chart up. Naming conventions for the forms vary, based on the preference of the analyst. Sometimes the prime forms are noted with the letter *S* instead of *P*, and sometimes the subscript is set to zero for the "most prime" form, all other prime forms related by a transposition number, while other times, the subscript is set by the integer designation of the first element, as in the case of Figure 7–3. Another basic twelve-tone transformation under scrutiny here, one not made completely explicit by the row labels of the matrix, is that of *transposition*. A transposition level merely refers to how many integer steps one form is above another. For example, P_8 is six semitones above P_2, so P_8 is gained by performing T_6 (transposition up six half steps) on P_2.

Figure 7–4: Lester, representing twelve-counting for the prime form of the row in Schoenberg's String Quartet No. 4, Op. 37, mm. 1–6

At times, it will prove handy to assign a number to each ordered element of a specific row form in the score. This type of numbering is called *twelve-counting*. When twelve-counting, the analyst identifies the pitches based on the row ordering from the matrix chart. For example, in Figure 7–4, Joel Lester has marked the prime from of the row present in the first violin of Schoenberg's Op. 37, I, mm. 1–6, with the numbers 0–11.[11] In addition, he has labeled each of the other notes in those measures, so that other relationships may be easier to notice, such as the aggregate formations discussed previously that appear, in a sense, to accompany the main melody.

Ranking:

In many cases, aspects of set theory have little or no inherent ranking agency. When considering row forms, one prime ordering will frequently be granted higher rank than the others, as in the case of the initial row form in the first violin line from Schoenberg's Op. 37 (Figure 7–4). Other row forms, including their T, I, R, and RI transformations, will usually be considered of lower rank in general, and the ranking remains undifferentiated, contextual factors having the ability to elevate some over others. In other words, distance from some analogous "tonic" form of the row may mean nothing to any ranking structure, and the piece need not begin and end with a given row form.

[11] Joel Lester, *Analytic Approaches to Twentieth-Century Music* (New York: W. W. Norton, 1989), 179. Some analysts will also number from 1–12.

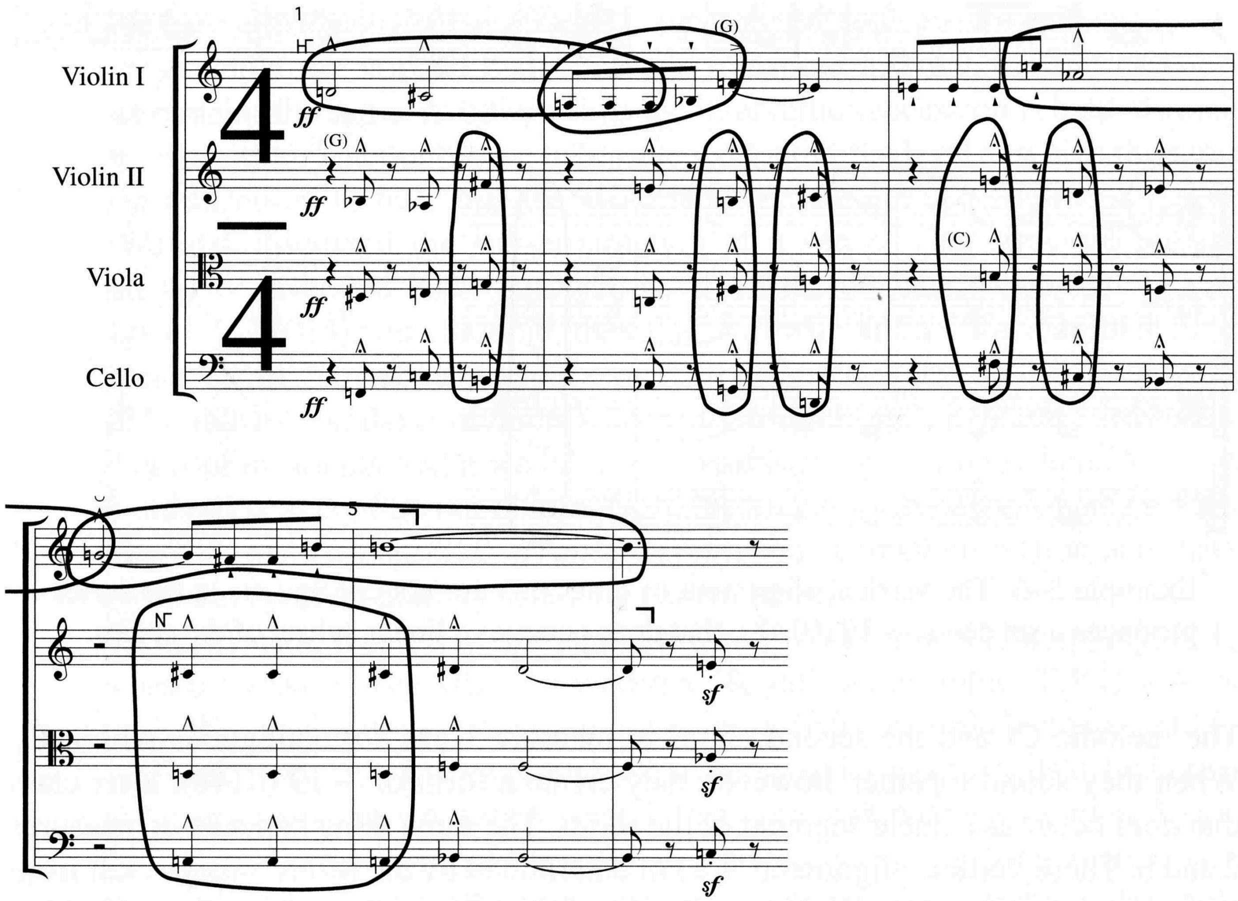

Figure 7–5: Straus, (015) appearances in Schoenberg's String Quartet No. 4, Op. 37, mm. 1–6

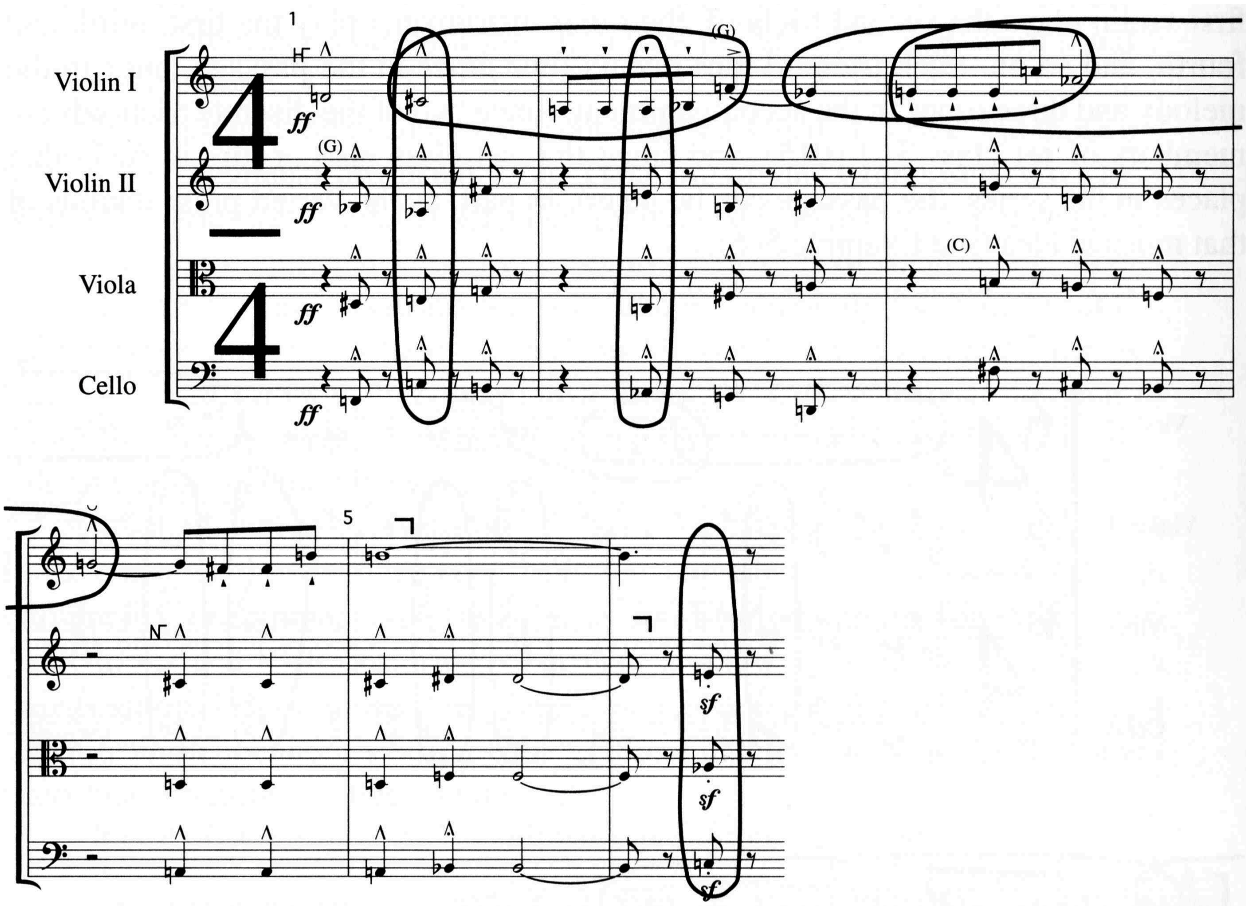

Figure 7–6: Straus, (0148) appearances in Schoenberg's String Quartet No. 4, Op. 37, mm. 1–6

Like neo-Riemannian transformations, aspects like intervals, sets, and twelve-counting relate tones but do not necessarily rank them; any of the tones involved in those relationships could be at any level of structural depth, waiting on contextual factors to identify or clarify any ranking structure. Straus's analysis of Schoenberg's Op. 37 in Figure 7–5 shows how some of the elements of the aggregates in the first few measures may be accounted for, grouping them by inclusion in set class (015).[12] In addition, Figure 7–6 covers a few more notes from the same passage, grouping them into set class (0148).[13] The other implied trichords, (037), (048), and

[12] Straus, *Introduction to Post-Tonal Theory*, 193.
[13] Straus, *Introduction to Post-Tonal Theory*, 194.

(027), appear less frequently, and would seem, at least for the time being, to take on somewhat lower rank, on that account.

In terms of texture, the outer voices still retain their natural primacy, and once more factors unique to each individual work would need to be brought to bear, in order to make a distinction among any possible rankings. For example, in Schoenberg's Op. 37 (Figure 4–2), we can see how the composer marks the first violin line with an H for *Hauptstimme* (primary voice) and the second violin, starting in bar 4, is highlighted with an N for *Nebenstimme* (secondary voice).

Grouping:

The most pronounced grouping agents in set theory, as Straus indicated earlier, are series. Unlike tonal music, where harmonic scale steps serve as an overarching grouping agent, nontonal music has no comparably powerful grouping agent: as we see in the arena of ranking, context is everything. Along with rows, sets associated with a row, as well as aggregate formations in general, often maintain some grouping capacity. Various blendings of these groupings in a piece may be quite complex; some tones may be involved in overlapping groups, and some tones may be left out of more significant groups.

In the opening to the Schoenberg quartet shown earlier, Lester and Straus have asserted a few entities as having notable grouping agency, based on the context of the composition. A twelve-counting of this work, illustrated by Lester in Figure 7–4, highlights groupings by the prime form of the series, along with the grouping of several aggregates. In Figures 7–5 and 7–6, Straus illustrates how set classes (015) and (0148) may be granted some extra structural weight in this section of Schoenberg's quartet, not only by being the first trichord and second tetrachord in the row, but also through repeated actualization in the score.

Structural Levels:

Addressing the problem of structural levels is a tricky business in any piece of music. Since nontonal pieces construct their own contextual relationships, it is difficult to generalize about simplification and abstraction, let alone discrete levels of structural depth. Taking Straus's advice, we may look to see what row forms are used, comparing them to the prime form, noting relationships that are asserted at the surface of the piece. We could also break down the row, examining its hexachords, tetrachords, trichords and search for relationships of similarity through transformation, frequently encountered transformations perhaps indicating a certain level of depth. Other possibilities for abstraction may include prominent transposition levels (of any element), registers, pitches, or even pitch classes, depending on the work under study.

7.3 Some Proposed Analyses: Two Case Studies

"Schenkerian analysis," according to Poundie Burstein, "is best practiced as a part of suggestive theory, and I feel that abandoning pretentions towards empirical aims will help Schenkerian analysts to better focus on the interpretive nature of the analytic process. That is, I argue Schenkerian analytic discussion will benefit by more openly acknowledging that they do not *uncover* hidden musical connections, but rather that they propose them."[14] Following Burstein's recommendation, the final portion of this chapter will take some of the information from previous analyses and attempt to convert it into graphical notation, *proposing* certain musical

[14] L. Poundie Burstein, "Schenkerian Analysis and Occam's Razor" *Res Musica* 3 (2011): 120, emphasis original.

connections. Our critical judgment will be required here, being attentive to whether or not these representations “sound like the piece,” “preserve its essentials,” and “fit this proposed environment” in a sensible kind of way, being aware that mere “correctness” or “well-formedness” may not constitute a *hearable* analysis. As Carl Schachter notes: “In music theory the nonsensical is the unhearable.”[15]

Figure 7–7: Schoenberg, Piano Piece, Op. 33a, mm. 1–5

[15] Carl Schachter, “Rhythm and Linear Analysis: A Preliminary Study,” in *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus (New York: Oxford University Press, 1999), 18.

	I_{10}	I_5	I_0	I_{11}	I_9	I_6	I_1	I_3	I_7	I_8	I_2	I_4	
P_{10}	B♭	F	C	B	A	F♯	C♯	D♯	G	A♭	D	E	R_{10}
P_3	D♯	B♭	F	E	D	B	F♯	A♭	C	C♯	G	A	R_2
P_8	A♭	D♯	B♭	A	G	E	B	C♯	F	F♯	C	D	R_8
P_9	A	E	B	B♭	A♭	F	C	D	F♯	G	C♯	D♯	R_9
P_{11}	B	F♯	C♯	D	B♭	G	D	E	A♭	A	D♯	F	R_{11}
P_2	D	A	E	D♯	C♯	B♭	F	G	B	C	F♯	A♭	R_2
P_7	G	D	A	A♭	F♯	D♯	B♭	C	E	F	B	C♯	R_7
P_5	F	C	G	F♯	E	C♯	A♭	B♭	D	D♯	A	B	R_5
P_1	C♯	A♭	D♯	D	C	A	E	F♯	B♭	B	F	G	R_1
P_0	C	G	D	C♯	B	A♭	D♯	F	A	B♭	E	F♯	R_0
P_6	F♯	C♯	A♭	G	F	D	A	B	D♯	E	B♭	C	R_6
P_4	E	B	F♯	F	D♯	C	G	A	C♯	D	A♭	B♭	R_4
	RI_{10}	RI_5	RI_0	RI_{11}	RI_9	RI_6	RI_1	RI_3	RI_7	RI_8	RI_2	RI_4	

Figure 7–8: Matrix for Schoenberg's Piano Piece Op. 33a

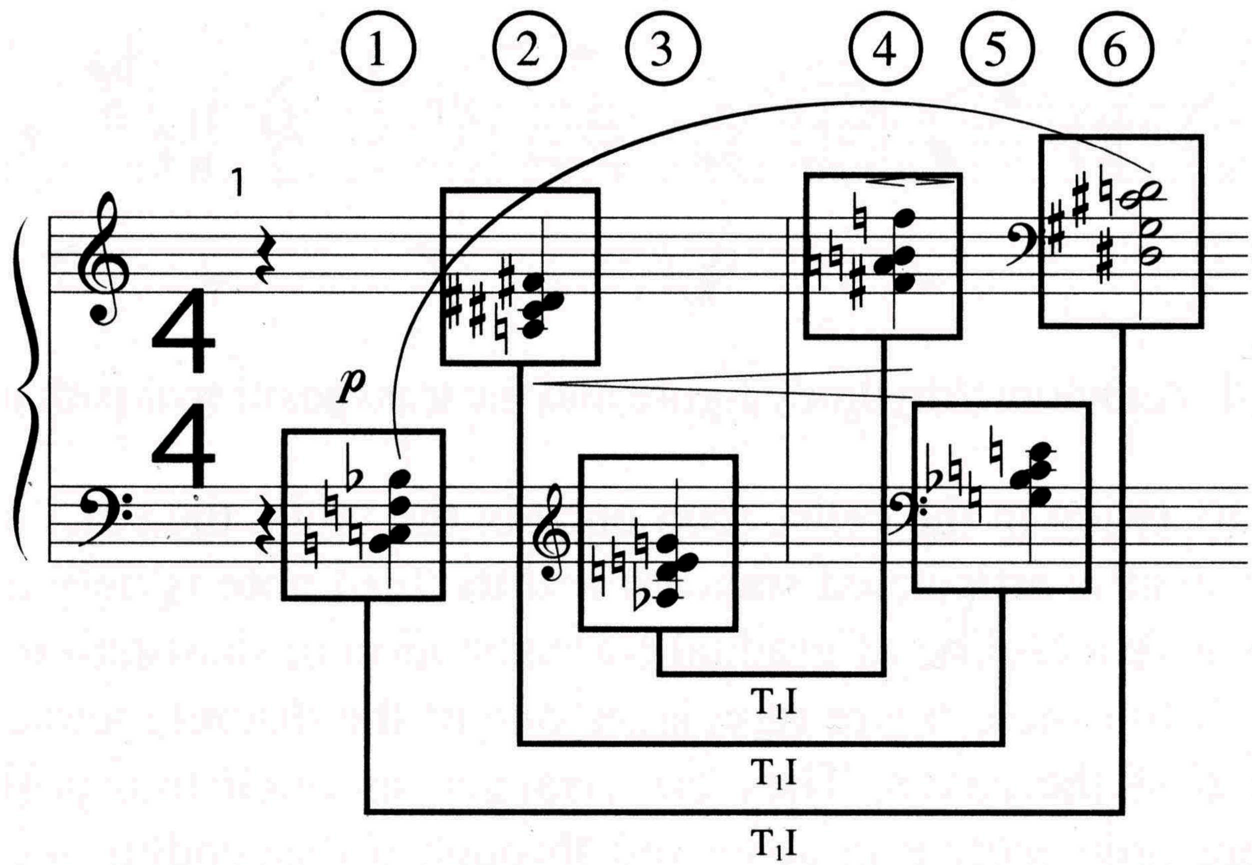

Figure 7–9: Straus, analysis of Schoenberg's Piano Piece, Op. 33a, mm. 1–2, where T_1I = invert around pitch-class 0 and then transpose up a semitone

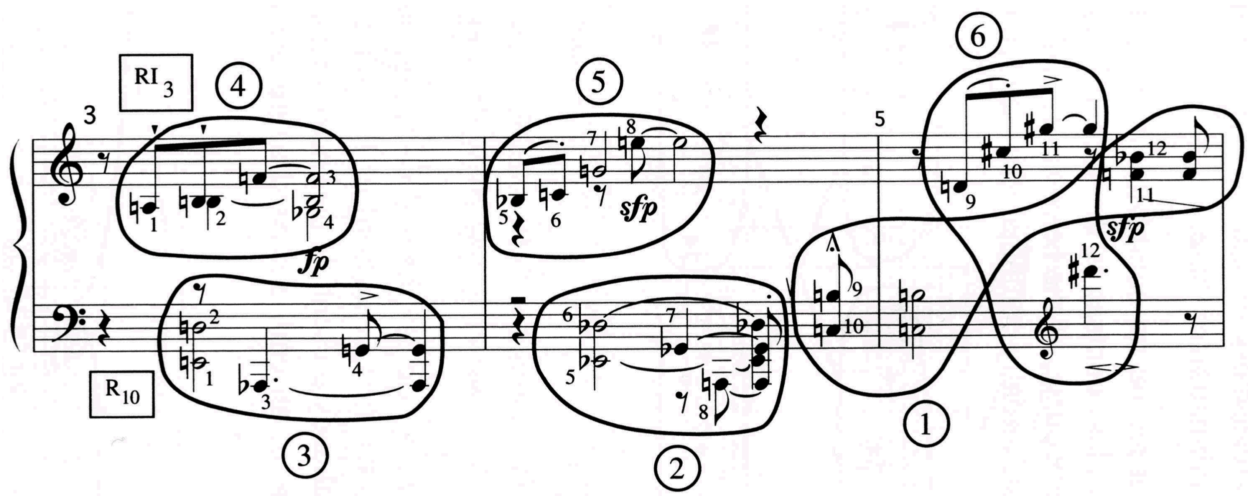

Figure 7–10: Straus, analysis of Schoenberg's Piano Piece, Op. 33a, mm. 3–5

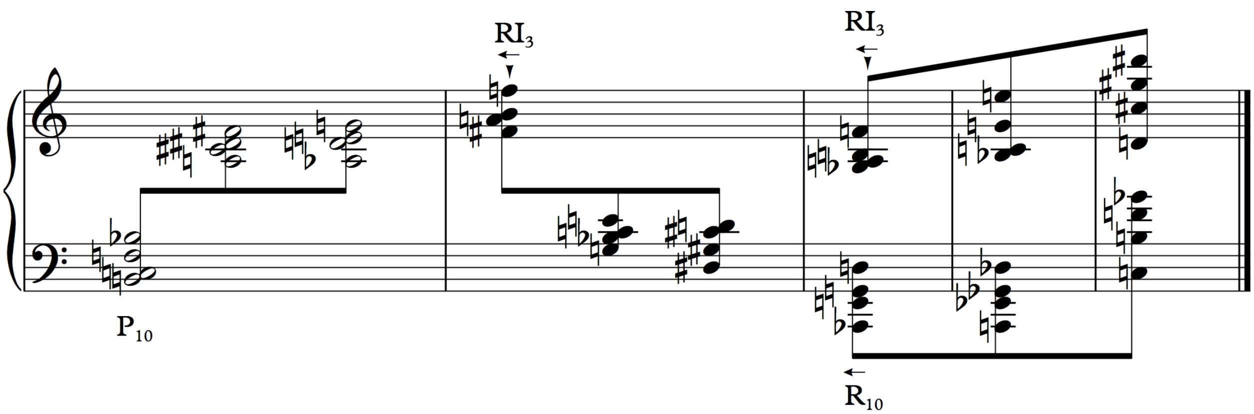

Figure 7–11: Proposed graph of some relationships from Schoenberg's Piano Piece Op. 33a, mm. 1–5

Our first analytical study begins with a consideration of the first few bars of Schoenberg's Piano Piece, Op. 33a (Figure 7–7). Using the information from Straus's analyses (Figures 7–9 and 7–10), I have constructed the proposed graph in Figure 7–11.[16] For this analysis, all of the tones of the score have been included; in addition, I have suggested possible shorthand notation for row forms, using an articulation mark for inversion and an arrow for retrograde.

[16] Straus, *Introduction to Post-Tonal Theory*, 254 and 255, respectively.

Ranking for this first pass gives primacy to the prime form of the row (P_{10}), and the other two forms (RI_3 and R_{10}) are simply granted lower status for the moment. Rows are taken as the salient grouping here and are linked by beam. As we noted in our discussion of transformations in the previous chapter, *relationships* often prove difficult to represent in a graph, and they remain absent here.

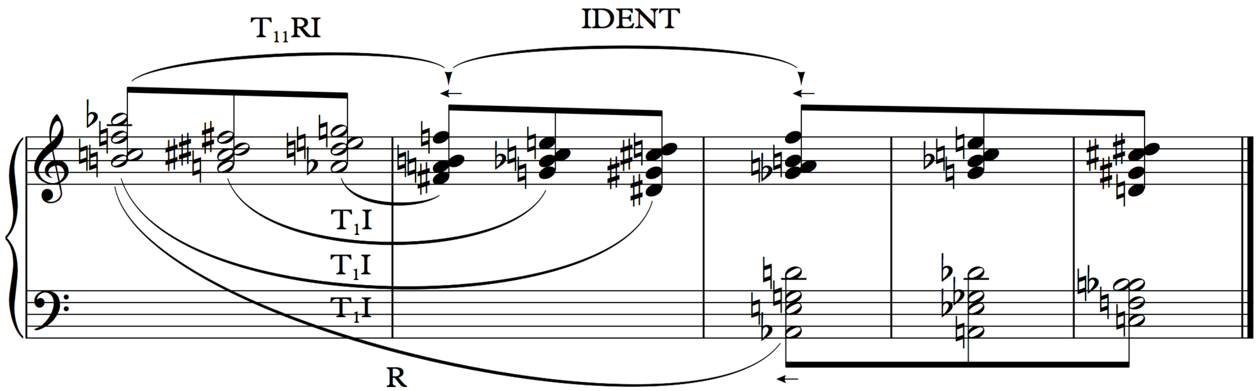

Figure 7–12: Deeper-level proposed graph for Schoenberg's Piano Piece Op. 33a, mm. 1–5, where $T_{11}RI$ = invert, retrograde, then transpose up 11 semitones

The deeper-level representation for the opening of Schoenberg's Op. 33a (Figure 7–12) makes an attempt to normalize tones and represent relationships (rather than merely *entities*). For each tetrachord in the row forms, I have retained the outer-voice pitches and have normalized register, so that the tones are packed closer together. This normalization reveals, perhaps surprisingly, a melodic soprano that is mostly stepwise and often descending. To help facilitate the viewing of other relationships among entities, I have used slurs. The slurs with T_1I under them capture Straus's relationship between tetrachords, proposed in Figure 7–9. In addition, I have depicted three other relationships ($T_{11}RI$, R, and IDENT), in order to show transformations between row forms, leaving the articulation marks from Figure 7–12 to stand for row types.

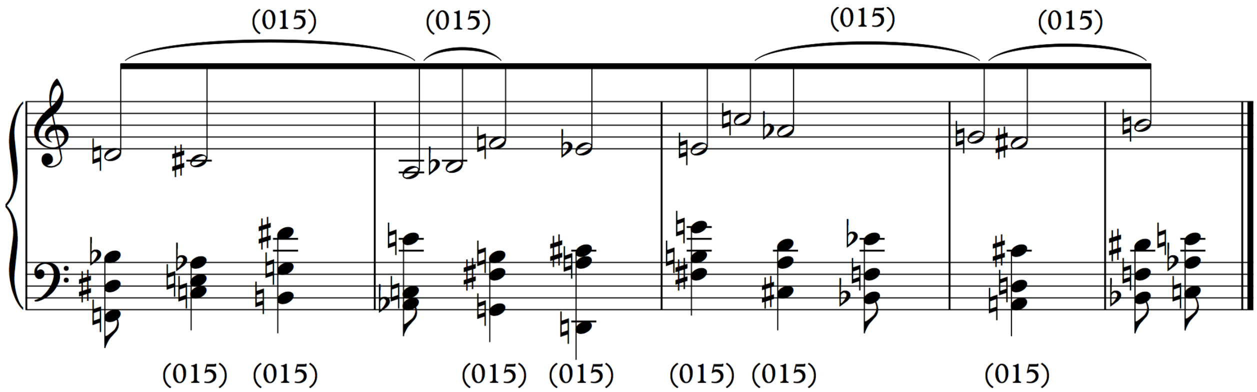

Figure 7–13: Proposed graph of some relationships from Schoenberg's String Quartet No. 4, Op. 37, mm. 1–6

Using the relationship among some of the trichords in Schoenberg's String Quartet No. 4, Op. 37, by Straus (Figure 7–5), I have constructed a tentative reading of this passage as Figure 7–13. Once more, all of the tones are included in this representation; tones have been normalized in terms of rhythmic placement, they have not been normalized in register, so that the voice crossings of the violins are preserved (perhaps to be interpreted at a later stage in the analysis). As in Figure 7–12, slurs show relationships, and I have used quarter notes to show the members of set class (015) as elevated in rank.

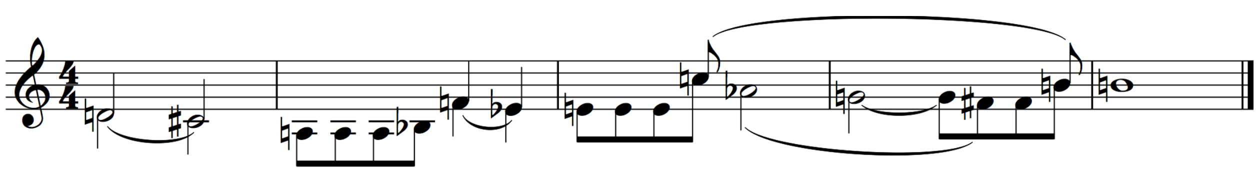

Figure 7–14: Analysis of proposed reaching-over motions for the melody at the opening of Schoenberg's String Quartet No. 4, Op. 37 (two levels shown by upper and lower slurs)

Since melody is present in many musical environments, I have proposed a hearing for the opening melody from Schoenberg's Op. 37 (Figure 7–14), in terms of reaching-over motions. In terms of the Chain types defined in Chapter 5, this melodic segment would be difficult to classify, as we would need help from one or more additional ranking agents. A proposed Chain A–A–B+

for the lower slurs would certainly seem to lay out a hearable pathway for this section of the melody. In addition, the reaching-over motion, denoted by the upper slur, helps us to hear the longer-range melodic motion from C–B.

While these proposed graphs may not "encompass all of the important aspects of the piece," as Schachter might hope, they do possess a certain legitimacy in what they *do* represent. The graphs of Figures 7–11 through 7–14 illustrate analytical relationships in a new way, striving to use the ranking and grouping tools of Schenkerian graphing. Looking at our four categories, we see that all of the tones are often included in twentieth-century music of this type, and certain normalization processes might prove useful. Where grouping is concerned, set classes, aggregates, and series often make for uncontroversial units. Of all the categories, ranking, at any level of structural depth, seems to be the most difficult to characterize with certainty, although asserting particular relationships will define distinct pathways, in many cases. Perhaps the most difficult problem associated with graphing twentieth-century works is the depiction of *relationships*. With the multitude of relationships possible in these works, with so many of them of the non-juxtaposed variety, depiction is often a source of frustration more than fruitfulness.

Further inquiries for this type of categorical study would involve examining different types of relationships, looking for ways that they could rank and group the tones of a musical work—if this even proves possible.

A Final Word:

During the course of this study, I set out to examine two practical types of analysis: rhythmic reduction and Schenkerian graphing. In Part One, we began with a look at the three main goals of rhythmic reduction, those of "sounding like the piece," "preserving its essentials," and "fit a particular environment." In this way, we uncovered of vast number of ways that a rhythmic reduction may interact with, may be *in relationship* with, any musical work, forming a multitude of "perfect products." Beginning with more traditional pieces and relationships, our investigation of rhythmic reduction began to push the boundaries of these categories, extending them, at times, to abstract extremes, as in the case of style reductions like Yankovic's "Dare to be Stupid" or Richard Cheese's cover of "Only Happy When It Rains."

Taking this methodology of expansion, we turned our efforts toward Schenkerian graphing. At the end of Part One, we outlined a set of four categories for Schenkerian graphing: tones, ranking, grouping, and structural levels. Contemplating graphing in this manner helps us separate the tool from the dogma, perhaps even from Schenkerian theory itself. The advantage of this perspective is the freedom it grants; viewing graphing through the lens of broad categories helps us frame what material traditionally fills them, and then we can work on ways to productively expand these categories, without having to hold the tool, Schenkerian graphing, up to some fixed set of standards.

Beginning in Part Two, I examined the three disciplines of counterpoint, harmony, and melody, from the outlook of these four categories. In this way, I recontextualized many of the elements that we already know about these disciplines, shaping them, cautiously, I hope ethically, practically, relating them in new ways to Schenkerian graphs.

Part Three set out to expand our four categories for graphing, similar to the way the categories of rhythmic reduction were expanded, frequently through abstraction. Types of abstraction employed in this environment, however, avoided engaging with analogies between tonal and nontonal music; rather I tackled the categories directly, seeing if the relationships gathered in analysis of these works could be translated into graphical notation. In this way, I was able to make reasonably defensible statements as to why the graphs seem to "sound like the piece" and "preserve certain essentials" of a proposed viewpoint. The process is not without its problems, of course, and we barely scratched the surface of this diverse and rich compositional world.

In light of all this, I would like to close this study with a slight paraphrase of words attributed to Edward Laufer: "Graphing is *easy*. *Music* is hard." Indeed.

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