PHENOMENON AND ABSTRACTION:

COORDINATING CONCEPTS IN MUSIC THEORY AND ANALYSIS

Benjamin Hansberry

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ABSTRACT

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Benjamin Hansberry

This dissertation explores the habits of thought that inform how music analysts conceptualize the music they study and how this conceptualization affects the kinds of claims they make and the discursive practices adopted to express them. I attempt to clarify these issues in music-theoretical conceptualization with an eye toward mediating analytical disagreements by tracing the influence of two types of concepts used in contemporary music analysis. I differentiate what I call *theoretical concepts*, which refer to abstract theoretical objects, from *phenomenal concepts*, which refer to elements of felt, musical experience. Drawing on theories of concepts from philosophy of mind I argue that these concepts have a complex structure, featuring both a reference and mode of presentation. The musical concept *Dominant*, for instance, might be used as a phenomenal concept, referring to the conscious experience of hearing a dominant, or it might be used as a theoretical concept, referring to a kind of abstract object, presented as either the triad the leads to the tonic or the triad built on scale degree five. In analysis, the kinds of concepts that analysts use will determine the scope of their analyses as well as define what sorts of critiques are best deployed against them.

I explore four different ways that these conceptual types are used. These case studies include conceptually simple theories that attempt to foreground one type of concept or another (from the formalized model proffered by Eugene Narmour, to the drawing-analyses of Elaine Barkin) as well as more common analytical strategies that rely on both kinds of

concept in concert, such as Schenkerian analysis and transformational and neo-Riemannian theory. I enrich my study of analytical approaches with insights drawn from my own analytical practice, including a wide range of styles and composers, though foregrounding the complexity of tonal analysis especially, and close readings of various authors in different analytical traditions. In general, I am concerned less with testing the soundness of any given approach than with understanding what ways of conceptualizing music underlie them and how analysts coordinate these concepts in practice. I find that while most approaches rely on both types of concept in some combination, their differences come in the roles these concepts play in analytical methodology and the degree to which each type of engagement is foregrounded in practice.

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Introduction

0.1 Two Analyses

The opening measures of "Gebet," the final *Lied* from Schumann's *Gedichte der Königin Maria Stuart*, op. 135, permit multiple readings and hearings. These different interpretations come from different ways of thinking about the music, different criteria to justify music-analytical claims, and different perspectives on what music analysis is or ought to be. Two distinctions central to this kind of meta-analytical reflection is the oft-argued dichotomy between abstract, theoretical, or systematic approaches to the study of music on the one hand and experiential or phenomenological approaches on the other. These different ways of engaging music have different goals and, in turn, call for different methodologies. In this dissertation, I explore how these two modes of engagement are used and coordinated in contemporary music-analytical practice by tracing the ways that these kinds of engagement are conceptualized as well as the imperatives that lead theorists to make some analytical choices over others.

Let me begin with the harmony at the beginning of "Gebet." The *Lied* is fairly chromatic and withholds a clarifying authentic cadence in the apparent key of the piece, E minor, until

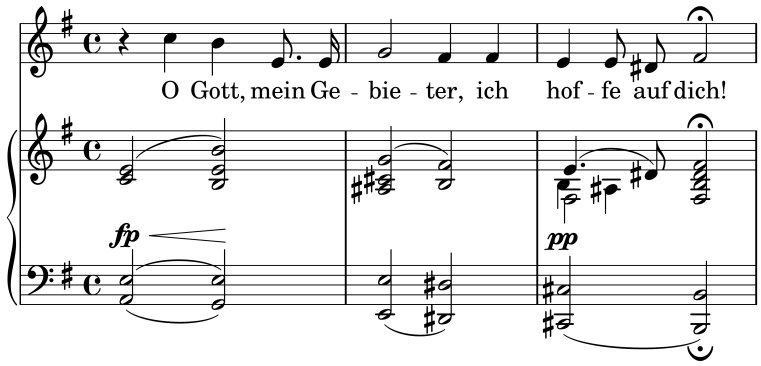

Figure 0.1: Schumann, "*Gebet*" from *Gedichte der Königin Maria Stuart*, op. 135, mm. 1–3.

the final measure of the piano accompaniment. Over the course of the short *Lied*, the mediant is briefly tonicized (mm. 6–8) and a tonicization of the subdominant spans nearly half of the song (mm. 9–18). In short, while a number of features weaken the hold of E minor as the organizing key of the piece, music-analytical norms for selecting keys (the scale collection indicated by the key signature and the final cadence) are not grievously violated, making it difficult to seriously assert any key other than E minor. The first three measures, shown in Figure 0.1, present the short phrase that opens the *Lied*, the main harmonic action of which is to tonicize V for an extended half cadence.

$$\text{E min: iv } \text{i}^6 \mid \text{vii}^{\circ}{}^4_3 \rightsquigarrow \text{V}^6 \mid \text{V}^4_3 \rightsquigarrow \text{V}$$

This harmonic analysis of the first three measures points to formal possibilities (and in turn, interpretive possibilities) that reinforce an E minor reading. The root-position B major triad is the only chord emphasized with a fermata in the entire piece, effecting a strong break afterward. And one might even describe these measures as an antecedent phrase to a much longer consequent (almost seven times as long), making the entire song a single—if

grotesquely proportioned—period.[1]

This analysis, I expect, is what many trained theorists would come up with when first examining this passage. It conforms to the norms that analysts use to determine the key, and the roman numerals account for all of the notes present in the score. More importantly, it asserts large-scale relationships and provides an image of the piece as chromatic but still tonally coherent and explicable.

But this reading fails to describe the experience I have when I listen to this passage. Without relying on the score and attempting to use only my experience of the passage—that is, bracketing as best I can my theoretical expectations—my phenomenology has a quite different profile than the one implied by the E minor analysis. The E minor analysis gives a i^6 for the second chord, so one would expect listening to this passage to feature the experience a first inversion tonic harmony. But I find the E minor triad in the first measure to play a much weaker role, not as a statement of tonic at all, but as part of an entirely different gesture in a different key. As I play and sing through the first few measures, introspecting my experience of the harmonies, I hear instead a truncated progression in *A minor* followed by a tonicization of B major. Thus,

$$\text{A min(?): } \{\ \text{i } \text{v}^6\ \} \ //\ \text{B maj(?): } \{\text{vii}^{\circ\,4}_{\ 3}\ \text{I}^6\ \text{V}^4_3\ \text{I}\}$$

To my ear, the harmonies in the first measure sound as if they are setting up a lower-voice accompaniment for what might have been a $\hat{3} - \hat{2} - \hat{1}$ descent in A minor in the voice.

[1]In this case, the formal function of the half cadence is fulfilled already in m. 3, but the closure-producing final cadence is delayed to m. 23. This fits William Caplin's form-functional definition of an asymmetrical period—all the necessary pieces are there, even if they do not unfold with the symmetrical proportions one would expect. Caplin (1998), 57.

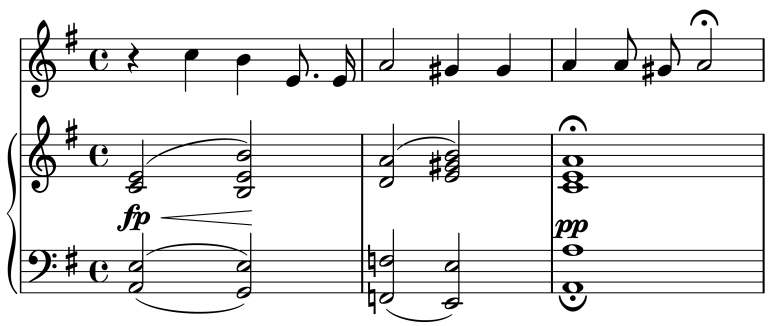

Figure 0.2: Re-composition with descending bass line.

When listening to the first measure, the crying out, "*O Gott,*" accompanied by the descending motion in the bass, gives the experience not of a plagal motion in E minor (i.e., from iv to i^6) but a sense of initiating a descending, stepwise progression bound for V of A, implying—for a moment anyway—something like the re-composition shown in Figure 0.2.

But this A minor progression is cut short after the v^6, with the A♯ diminished seventh chord on the downbeat of measure two. It is not immediately clear from my experience where this seventh chord is pointing. At the very least it disrupts my sense of A minor, curtailing the anticipated progression and causing some harmonic disorientation. My impression of this moment is of being in a sort of suspended space as if I were some thrown object at its apex; the fall is coming, but I do not yet know where. The resolution to and prolongation of B feels foregone (thought apparently it was not) and the tonicization of B thereafter follows in a relatively unmarked fashion. My sense of this passage is as though the weight of the presumed A minor with which the prayer began is lifted as a major mode shines through. Incidentally, this A-minor/B-major analysis also provides some striking interpretive options. At the beginning of the prayer Mary calls out, perhaps to demand something of God, before quieting down by m. 2, remembering her manners and adopting a more humble disposition. This is reinforced, also, by the dynamics, with the root position

A minor triad that starts the song emphasized by the forte-piano marking while the rest of the phrase fades and slows.[2]

The processes and justifications for these two analyses make use of the two different conceptual categories explored in this dissertation and represent different approaches to music theory and analysis. They use the same music-theoretical vocabulary (i.e., roman numerals), but what these terms stand for and the criteria that guide their use differ. I categorize these two types of concepts as *phenomenal concepts* and *theoretical concepts*. Phenomenal concepts, featured in the second analysis, derive their utility from referring to musical experiences, whereas theoretical concepts, featured in the first analysis, are used in abstract theories and place a higher premium on consistency. Using one kind of concept or another entails thinking differently about the music, and to properly understand an analysis, readers must make use of the correct concepts and accept the related correctness criteria.

The first analysis assigns roman numerals based on the overall coherence and efficiency of the explanation within the context of a single tonal system, as well as its conformance to traditional analytical norms. The analysis was generated—or at least could be generated—from the score alone. Interpretive decisions come from knowledge of the best or most widely accepted analytical practices instead of the what the passage sounds like (in these first couple measures, anyway). And though there is something it would be like to hear this analysis,

[2]Taking stock of what I have done so far, something does not seem quite right. I tried to faithfully translate my experiences, but I see a number of defects that ought to concern any music analyst. Most concerning, it is unclear what kind of relationship should exist between the semi-prolonged A minor and the B major prolongation. Conforming to my phenomenology, any explanation for this relationship is more-or-less absent. The A♯ diminished seventh tears me out of A minor and deposits me in B major, but at this level of analysis, I do not have any good story to tell about their underlying relationship. How they should be related is unclear in the phenomenology, so it is unclear in the analysis.

its value comes not from reflecting or prescribing an interesting phenomenal experience, but from asserting large-scale claims of tonal and formal structure. All of these ideas are graspable without hearing or mentally recreating the experience of hearing so long as the reader understands the music theories from which this conceptualization of these terms gains its purchase. In short, what the roman numerals stand for is not *necessarily* a certain experience, but is rather an abstract object with particular formal properties.

I drew the second analysis, conversely, as directly as possible from my phenomenal experience of the passage. Only once I had a sense of the phenomenal story that I wanted to tell did I try to affix labels to these experiences as a means to communicate them. The criterion for assigning harmonic labels in this case was just that the phenomenal experience that they can stand for featured in my phenomenology. This kind of analysis could not be done without listening. This analysis is a little messy; I assert key areas that are brief and unconnected. But this analysis also better grasps what the passage sounds like to me. Moreover, not only must I use concepts that refer to my phenomenal experience to create the analysis, but the reader must either play or mentally recreate the experiences for themselves to get at what the roman numerals and accompanying descriptions are meant to represent.

Of course, the way that I have cast this distinction, with respect to this analysis, is too tidy. Real analyses are much more complicated than this. It is just as possible to assert an E minor analysis based on phenomenology (one might really hear it that way) or to assert the A minor/B major analysis from abstract, analytical preference rules. In the former case, one would need to hear the E major sixth chord as the tonic, setting up the prolongation of B major, and experience the final progression not as an imperfect authentic cadence in B, but a half cadence directed back toward E minor. This is a plausible experience, but not the

one that I had.[3] Conversely, one could assert the A minor/B major case by weighting the preference rules for determining the key of the piece or passage differently. One can imagine caring less about the final cadence or key signature and more about the first harmony to determine the tonal context for the passage. Since "tonic begins compositional section" is among rhetorical techniques for asserting harmonic function, and the harmony that ends the piece is so absent from most of the song, one can imagine asserting A minor for this passage on this basis.[4] Some of the theories examined in this dissertation are like this, combining both ways of thinking into a single methodology instead of locking into one perspective or another. As we will see, attempts to use *only* a single kind of concept are rare because, as a general rule, music analysts tend to want methodologies that engage both parts of their musicality.

I want to be clear. It is not my goal here to make normative judgments about these approaches. I am not especially concerned, at this juncture, with saying that one approach is, on the whole, superior to another or that music theory ought to be properly concerned *only* with experience or with abstract or formal properties. Different approaches flow from different motivations and beliefs about music and about discourse, from different axioms about what music theory should be. This discussion is not about arguing for one position or another but rather about understanding the practices that manifest once these axioms are adopted. Analysts all must decide for themselves which approaches they prefer, and it is my hope to make the fallout of this decision clearer. When normative language is used, it is aimed

[3]I can *cause* myself to have this experience, and might do so if I decided that I wanted to hear this piece as coherent overall. But this experience does not usually happen for me spontaneously.

[4]Harrison (1994), 79.

at methodological or validity problems, not meta-theoretical, musical values. Studying the conceptual vocabularies of different approaches reveal the scope of their claims and analytical approaches run into problems when they overreach the limits posed by conceptual resources.

0.2 Outline

The chapters of this dissertation can be divided into three groups: the first chapter lays out and contextualizes the conceptual distinction, the second and third chapters treat what I call simple theories, and the fourth and fifth chapters treat what I call complex theories.

The first chapter presents the basic distinction between theoretical and phenomenal concepts which informs my latter studies of various analytical approaches. Chapter one draws a good deal of its theory of concepts in philosophy of mind and other branches of cognitive science, primarily the theory of concepts advanced by Christopher Peacocke. I argue that theoretical and phenomenal musical concepts differ both in the kinds of things they refer to (abstract objects and phenomenal contents, respectively) and in modes of presentation available to them. The structure and scope of these conceptual types, when put into practice, will limit the kinds of claims that can be made while engaging each type. In this chapter, I also compare the extension and structure of my conceptual distinction with other accounts of music-theoretical concepts and other theory-versus-experience distinctions. Finally, I present a collection of analytical imperatives that I take to underlie—either explicitly or implicitly—most of the analytical decisions that are made using these two types of concepts.

Chapters two and three explore simple theories, while chapters four and five investigate

how both conceptual types can be coordinated into complex theories. This simple/complex division is based on how diverse the approach's conceptual resources are. I call approaches that rely on only a single type of concept simple theories, and there are two subcategories of simple theories. *Theoretical approaches* rely only on theoretical concepts and are the topic of chapter two. I examine two different ways that analysts engage music on this level, first using Damon Scott and Eric Isaacson's fully formalized interval angle, then using quasi-formal, psychological models with Eugene Narmour's implication-realization model as an exemplar.

Phenomenal approaches rely only on phenomenal concepts and the topic of chapter three. Here I examine different strategies to communicate the richness of musical experience, providing commentaries on the work of Elaine Barkin, Benjamin Boretz, and J. K. Randall. Each simple theory faces certain pragmatic challenges flowing from the conceptual framework it embraces. And, as it turns out, the realities of communication and practice often preclude any truly simple theory. Contamination by the other conceptual type in conception, description, or interpretation is nearly always inevitable. Because they rely only on a single conceptual type, chapters treating simple theories focus primarily on the motivations for deploying particular conceptual types and the sorts of music-theoretical and -analytical practices that are best suited for that type of concept.

Complex theories, conversely, rely on a combination of both conceptual types. Chapters that treat complex theories focus on a single analytical tradition and attempt to tease out *how* the two conceptual types are combined in that tradition. These approaches attempt to benefit from the strengths of each conceptual type while also mitigating their complications. I explore two ways that this combination can occur in chapters four and five. Chapter four

presents what I call the *segregated approach*. Segregated approaches, like transformational and neo-Riemannian theory, engage both theoretical and phenomenal aspects of music, but do so in a disciplined manner, separating the usage of each kind of concept into different phases of the analytical process. Chapter five explores the most common and most difficult kind of conceptual coordination, what I call *mixed approaches*. In mixed approaches the central analytical concepts themselves have both theoretical and phenomenal aspects (like the roman numerals used in the analysis above) and can be asserted using either kind of criteria. My primary exemplar of this approach is Schenkerian analysis.

My primary sources will be contemporary theoretical and, especially, analytical texts. I provide a number of close readings of texts in these different traditions and analyze the explicit and implicit conceptualizations implied by their language, focusing on the kinds of concepts they deploy and how they shape the analytical argument.

The aim of this dissertation is to develop a better understanding of the ways that contemporary music analysts think and speak about music and to analyze the habits of thought and conceptual resources that underlie different kinds of engagement. The majority of work done in the following pages is more reflective on how music theory has been done and, hopefully, provides a guide to how to think more carefully and consciously when doing analysis or criticism. Understanding these different ways of thinking is tremendously important for many facets of music theory. My final, concluding chapter briefly explores two of these applications.

First, I examine how developing an understanding of music-analytical concepts can help analysts to have more productive disagreements. Often, it seems, when analysts disagree they constantly point back to the music to settle their debates, but usually their disagreement

comes not from misunderstanding the musical features but from understanding those features in a different way. In this sense, aesthetic debates like those in music analysis are analogous to ethical debates, where the debate is not about what an action is but rather about what it means and the latter judgment always issues from a particular perspective that consists of certain habits of conceptualization.

Second, understanding more clearly the various ways that we as analysts conceptualize musical features can help us to better teach these ideas to students. The conceptual framework of a trained theorist will be quite robust and consist of a web of concepts, all of which bear relationships to each other. Students approaching this material for the first time however, may only understand the material in one way—instead of the multiplicity of ways already available to the professional—and they will also lack the rich web of connections from which many concepts derive their importance. Crucially, the more comfortable one is with this web of concepts, the more transparent this perspective becomes, making it more and more difficult to imagine the perspective of a new student who lacks this perspective. Analyzing the varieties of conceptualization that inform our practice and make this perspective visible to us again. It permits us both to disagree more productively and teach more effectively.

Chapter 1

Phenomenal and Theoretical Concepts

1.1 Introduction

The two analyses of "Gebet" given in the introduction relied on different ways of conceptualizing the musical objects they presented. This chapter outlines the structure of these two types of concept. Each conceptual type, I will argue, is best suited for certain kinds of discourse and tends to produce particular sorts of claims. Moreover, the decision to use one type or another depends on oftentimes-tacit beliefs about the nature of music theory and analysis.[1] Analyzing music-theoretical claims in terms of these concepts and being aware of how we use them when crafting analyses clarifies some of the foundational notions that

[1]To be clear from the outset, I do not think that these are the *only* types of concepts available to music analysts, nor are the criteria and procedures outlined here meant to represent the only or even the best way to go about the business of music theory. Other analytical projects, which may invoke history or some political goal, will inspire different procedures and rely on concepts with quite different valences than those discussed here. Furthermore, while the kinds of conceptual distinctions I am concerned with apply to analysis of any kind of music in principle, in practice the relationships between them are easiest to see and most analytically productive when applied to tonal music.

underlie much of our work as theorists and analysts.

This chapter has two goals. The first is to distinguish phenomenal and theoretical concepts in terms of their conceptual structure. Understanding this distinction involves some background in general theories of concepts from philosophy of mind and other branches of cognitive science. As will become quite clear, there are very many different approaches to the study of concepts, and different disciplines study concepts for different purposes relying on different methodologies. While the resulting theories are sometimes treated as at odds, I think it is probably more productive to construe them as merely incommensurate.[2] Because adherents to one approach or another may be motivated by different methodological commitments, they often talk past each other. But each perspective reveals something different about how concepts work or how we relate to them. My understanding of concepts is drawn mainly from philosophy of mind. I will construe concepts as structurally analogous to Fregean senses, considering both what they refer to and the *way* that they refer. I select this theory of concepts because it provides a strong account of re-conceptualization and recognizes the complexities of conceptual structure.

The second task is to place my conceptual distinction into an intellectual context. I show how the theory of concepts adopted here relates to other accounts of musical and music-theoretical concepts, particularly those of Mark DeBellis and Lawerence Zbikowski. While DeBellis's and my understandings are largely cut from the same cloth, some small distinctions are worth noting. Zbikowski's work on musical concepts, by contrasts, originates from cognitive psychology and linguistics instead of philosophy of mind and the differences

[2]Laurence and Margolis (2014) presents the best introduction I have found comparing different stances on concepts and highlighting the strengths and weaknesses of different positions.

between our approaches and underlying theories are as a result quite stark. Our eventual goals, however, remain aligned, even if we take different paths to get there. The distinction between theoretical and phenomenal concepts also participates in a long history of theory-versus-experience distinctions. I examine a few of these in detail, showing how my way of parsing these two kinds of music theory differs from previous approaches, foregrounding the motivations that lead to a different way of making this distinction.

1.2 Theoretical and Phenomenal Concepts Defined

Concepts in General

Concepts concern a diversity of fields across all of cognitive science, including linguistics, psychology, and philosophy of mind. Each of these disciplines has different assumptions about what concepts ought to be and what kinds of evidence ought to count toward claims concerning them. For psychology and psychologically influenced fields, the criteria of scientific methodology exert a tremendous influence. Any theory of concepts that comes out of these intellectual traditions places a high premium on explaining various experimental results. For many philosophically influenced traditions, by contrast, more concern is placed on analysis of theories of concepts or on how these theories conform with concepts' phenomenology. I will try to avoid interdisciplinary debates about conceptual structure and ontology as best I can (my concerns do not go as deep as understanding the underlying nature *of* concepts). My interest is just in how different types of concept are used in music theory.

In this section I make some basic claims about concept differentiation and structure that

are useful when doing the sort of conceptual analysis of music analyses that occupies the rest of this dissertation. If the reader is disinclined toward philosophy of mind, these ideas should still be translatable into linguistic or cognitive-psychological equivalents. It should be possible to adopt my latter, more substantive claims about how concepts work in music theories while disagreeing with some of my underlying assumptions about the nature of concepts.

Concepts are sometimes referred to as the constituents of thought; they are the sub-propositional makeup of intentional states (mental states of belief, judgment, and so on). The sentence "It is raining" describes a proposition (a statement which is evaluable as either true or false), and it consists of a number of concepts including one for *raining*. Propositions such as this one feature in our intentional states, which is to say we have thoughts *about* them. I may *believe* the proposition "it is raining" is true and so bring an umbrella or, based on the sunlight on my desk just now, I may *doubt* it, and so on. Similarly, I may believe the proposition "that F is a suspension" and, for this reason, affect my performance in a way that I deem characteristic to suspension (e.g., laying into the dissonance a little bit).

The theory which underlies my account of phenomenal and theoretical concepts in music theory takes concepts to be structured more-or-less like Fregean senses. In Gottlob Frege's theory of meaning, presented most famously in "*Über Sinn und Bedeutung*" (usually rendered "On Sense and Reference"). In this well known article, Frege asks, among other things, in what way the terms "morning star" and "evening star" are distinct. They both *mean* the planet Venus, after all, but then it should not be informative to learn that the evening star and morning star are the same thing—just as it is uninformative to learn that Venus is Venus. Frege's solution is to argue that a word's meaning consists of both a reference and a sense.

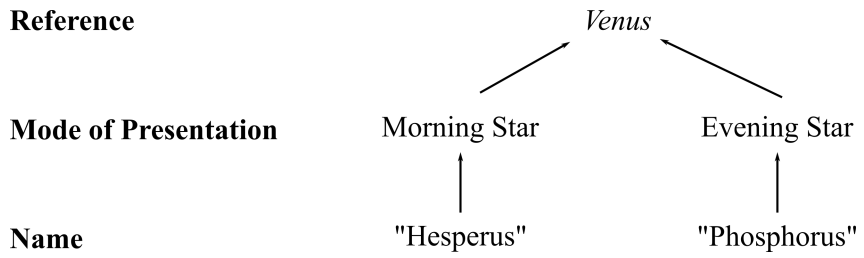

Figure 1.1: Analysis of *Hesperus* and *Phosphorus*

A word's reference is the thing that it names while its sense is the *way* that the reference is referred to. A word's sense is sometimes also called its mode of presentation. As illustrated in Figure 1.1, Hesperus and Phosphorus (the proper names for the morning and evening star) both *refer* to the planet Venus, but they do so under different *senses*, as the evening star and the morning star respectively.[3] This distinction allows words to "mean" the same thing (that is, to *refer* to the same thing) while simultaneously and without contradiction "mean" different things (that is, refer to the same thing but in different *ways*, under different modes of representation).

Concepts, like terms, have a similar two-level structure. We take them as referring to a particular entity and doing so in a particular way. We do not just conceptualize *things*, but conceptualize them *as something*.[4] For instance, I have the concept *the author of Der freie Satz,* this concept refers to a particular man, Heinrich Schenker, and does so with a particular mode of presentation, that is *as* the author of *Der freie Satz*.

This two-level structure recognizes that concepts can be distinguished either by referring to different things or by referring to the same thing under different modes of presentation.

[3]Frege (1892 [2012]). It should be noted that here Frege only uses the terms "morning star" and "evening star." The proper names were added by later philosophers, notably Kripke (1980), to make further points about proper names which are beyond our scope.

[4]Peacocke (1992), Zalta (2001).

Thus the concept *the composer of "Gebet"* and the concept *the husband of Clara Wieck* both refer to the same man, Robert Schumann. but can be distinguished by the mode of presentation.

We can recognize whether two concepts are distinct or not by their degree of "cognitive significance." Christopher Peacocke defines this distinctness criterion as follows:

> Concepts C and D are distinct if and only if there are two complete propositional contents that differ at most in that one contains C substituted in one or more places for D, and one of which is potentially informative while the other is not.[5]

It should be clear why concepts that refer to different things are distinct under this criterion,[6] but this way of distinguishing concepts also provides a test to distinguish different concepts which refer to the same thing. The concepts *the composer of "Gebet,"* and *the husband of Clara Wieck* are distinct concepts for the same man, as is his name *Robert Schumann.* We can test this by noting that the following three sentences are informative:

1. Robert Schumann is the husband of Clara Wieck.

2. Robert Schumann is the composer of "Gebet."

3. The husband of Clara Wieck is the composer of "Gebet."

Whereas learning that,

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[5]Peacocke (1992), 2.

[6]Rehearsing this may be unnecessary, but working out an easy test case might help clarify how the cognitive significance criterion works. Suppose, we have two concepts: *brown* and *table.* Now consider the following propositions: "Brown is brown," "The table is brown." Under this criterion, these concepts are distinct because "table" replaces "brown" in one place in the second proposition and while the first is an uninformative tautology, the second is potentially informative. In this case, this is so because the two concepts refer to different things, namely to the color brown and to the table.

1. The husband of Clara Wieck is the husband of Clara Wieck.

is not.[7] Theoretical and phenomenal music-analytical concepts also are differentiated both in what they take as references and in how they refer to these references.[8]

Theoretical Concepts

What I will call *theoretical concepts* encompass the majority of concepts that are implicitly or explicitly *defined* in music theories or analytical methodologies. Theoretical concepts refer to their abstract objects via a sense or mode of presentation, as described in the previous section. This means that, like the different names for the planet Venus, we can refer to the abstract objects of music theory using different concepts, each of which relies on a different mode of presentation. For a musical example, consider the multiple ways to conceptualize the dominant. We might conceptualize it as a triad built on $\hat{5}$ or as the triad which most commonly precedes the tonic. While conceptualized differently, both concepts

[7]The discussion so far has been couched in philosophical terms that some readers may find grating. I said above that the important parts are translatable into terms befitting other cognitive-scientific fields. The theories of concepts which I have drawn from so far (especially Peacocke (1995)) consider concepts to be abstract entities and not mental representations. However, we need not necessarily adopt this aspect of Peacocke's theory in order to recognize the distinctness criterion or the two-level structure of concepts. Considering instead a prototype theory of concepts, we might say that to conceptualize something is to recognize that thing (the reference) as belonging to whatever family is represented by the prototype (the sense).

[8]This argument for conceptual structure implies certain things about conceptual ontology. Namely that concepts are abstract objects instead of, e.g., mental representations or particular abilities. See, ibid., 99ff. for Peacocke's metaphysical theory of concepts. Construing concepts this way permits them to be shared across thinkers, to participate in the constitution of propositions, and to serve as the bridge between thinking and speaking and their referents. Margolis and Lawerence (2014) provide a brief summary of the alternative options for conceptual ontology and give the typical responses to each position. In section 1.4.1, below, we will see that this difference in conceptual ontology results in different approaches to the analysis of music-analytical concepts by theorists with different commitments, specifically between Zbikowski and myself.

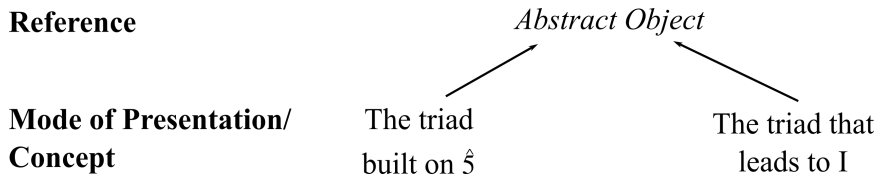

Figure 1.2: Various sense for the abstract object Dominant.

share a reference; they both refer to the same triad and we know that these are, in fact, different concepts because it is potentially informative to learn that the triad built on $\hat{5}$ *is* the triad that most commonly precedes the tonic. While these concepts have the relatively straightforward structure described above—they have both a sense and a reference—they refer to abstract objects. Abstract objects are difficult to define but we can start with a negative definition. They are *not* concrete; they exist in no specific time or place, but we can still think about them, typically as types. Mathematical objects are commonly cited as the prototypical class of abstract objects. The concept *Triangle*, for instance, refers to an abstract object–the reference is no single extant triangle but some abstraction of all triangles, and our knowledge about the abstract object *triangle* (and other attitudes taken toward it) will apply to all concrete examples of the same.[9]

Understanding theoretical concepts as referring to abstract objects allows two important elements into music-theoretical discourse. First, it allows us to group various kinds of concrete musical objects as tokens of the same type. One can talk about whole-tone scales, say, and general features that they possess without needing to invoke any given, concrete

[9]The exact nature of this abstraction is unclear and philosophical debates about it are ongoing, and I'll try to stay out of the ontological weeds here. There are a number of plausible accounts for the abstract/concrete distinction (Lewis (1986) famously gives four: the Way of Negation, the Way of Example, the Way of Conflation, and the Way of Abstraction). The exact ontology of abstract objects is not important for my purposes here, though, and I'll just assume that they exist in some form.

whole-tone scale. More importantly, taking theoretical concepts to refer to abstract objects broadens the scope of music theory beyond only perceptual phenomena, allowing us to possess theoretical concepts for inaudible aspects of a composition that we may still want to invoke in analysis.[10]

Theoretical concepts have a variety of epistemological and discursive roles in music theory and not all of them behave in the same way. I'll define two subcategories of this conceptual type that are especially common: *formal concepts* and *representational concepts*. Unlike the distinction between phenomenal and theoretical concepts, which occurs at the level of reference, this distinction is best placed at the level of sense. That is, both formal and representational concepts refer to abstract objects, but the manner by which they refer, their mode of presentation, is different. Each, moreover, is associated with different sets of analytical practices.

Formal concepts are those which are classically structured and usually explicitly defined; their application is *always* governed by a set of individually necessary and jointly sufficent conditions and typically have a single definition within a theory. The necessary and sufficient conditions for formal concepts usually obtain outside of perception, meaning that one can determine whether the concept applies based on the score, sound, or other objective measure alone without consulting a listener's experience (one *may* consult experience, but it is not required).

We find these kinds of concepts mostly on the very abstract levels of music theories or in

[10]There is an argument to be made that this only concerns concepts for types. Token concepts might instead refer to actual sonic events, instead of abstract objects. While this is sometimes the case in specific analysis, the approaches that rely on these kinds of concepts typically favor methodologies that can be repeated, and applied to various pieces, not just to specific sonic events.

theories that hold to a kind of "scientific," mathematical, or logical paradigm which require formal, logical validity in its arguments. But we also find them in more audible situations. Hepokoski and Darcy's concept of the essential exposition closure, or EEC, is an example of a formal concept, even though their theory does not have the discursive style of a mathematical treatise. EEC is a formal concept because it is defined explicitly as the first satisfactory PAC in the secondary theme zone (which is to say after the medial caesura).[11] What makes the PAC "satisfactory" is also defined explicitly. The PAC is rendered unsatisfactory when there is a "retrospective reopening" of the second theme (a return of that theme's motivic material) or when the cadence is weakened in specific ways.[12] Thus, the concept's application takes on an "if-then-except" form: *if* a cadence is the first PAC after the medial caesura, *then* it is the EEC, *except* in cases X, Y, and Z.[13] Because this concept does not rely on experience for its application, it refers not to something that is necessarily heard but to an abstract set of relationships in a sonata exposition, it counts as a theoretical concept.

What I call representational concepts, by contrast, need not each be explicitly defined, but they still refer to abstract objects and constitute a much broader category. Representational concepts are those that are deployed in mental representation but are are distinguished from phenomenal concepts, discussed presently, by not referring to phenomenal content and lack the phenomenal richness of actual experience. This subcategory of theoretical concepts is

[11]Hepokoski and Darcy (2006), 18.

[12]Ibid, 151-152 and 163-170, respectively. One should note that not all "weak" cadences fail as EEC's, Hepokoski and Darcy, in fact, make a point of saying that the EEC needn't be the strongest sounding cadence in the exposition (Ibid., 124). Only those ways of weakening the cadence described by the authors count as exceptions.

[13]I discuss this "if-then-except" structure at greater length in the following chapter in the context of Eugene Narmour's implication-realization model.

named because of its use in mental representations. In a mental representation one takes the world to be a certain way, so the concepts are not about utterly abstract properties, but about categories of real things, and, in some cases, refer to actual objects in the world, represented via a certain mode of presentation. However, one can use this variety of concept *without* needing to grasp any phenomenal contents whatsoever. It is difficult to grasp this distinction without a fuller understanding of what *phenomenal* concepts are, so I will return to a deeper discussion of representational concepts in section 1.2.4, after defining phenomenal concepts in the following section..

Phenomenal Concepts

Phenomenal concepts, by contrast, are deployed in music theory whenever we conceptualize a musical entity (note, term, sonic event, etc.) in terms of the phenomenal content of those experiences which feature that entity. Phenomenal content is first-personal sense of "what it is like" to have that experience.[14] Phenomenal contents include things like the feel of tension toward resolution from experiences of tendency tones like $\sharp\hat{7}$ or $\flat\hat{6}$ or the characteristic timbre of instruments. By using phenomenal concepts, one can conceptualize these experiences, and by conceptualize them one can think about these experience and use them in analysis.

Of course, the notion of phenomenal concepts reaches well beyond musical experience. The sensation of the color red when you see a ripe tomato is phenomenal content and so is the unpleasant sensation of pain when you stub your toe. One can distinguish these

[14]Elsewhere I and others have discussed "phenomenal contents" under the banner of "qualia," Hansberry (2017), discussed also in Rings (2011), Huron (2006), and Dowling (2010). The term "qualia" has fallen out of fashion in philosophy of mind, though, and the phrase "phenomenal content" is used to talk about more-or-less the same thing.

qualitative, felt aspects from other parts of the more complex, general concept denoted by the word for that concept. In the case of *red*, the phenomenal content of a red experience and a belief that red is *that* color is distinct from a belief that, say, red is opposite green on the color wheel or that it is the color is of a matador's cape or that it is typically caused by a certain wavelength of light entering the eye. Importantly, the latter three red-concepts *do not* invoke phenomenal experience of red, one could hold those beliefs, using those concepts, without ever needing to have experienced the color.

The notion of phenomenal concepts originates in philosophy of mind as a response to the "knowledge argument," a famous anti-physicalist argument that invokes intuitions about the nature of phenomenal and physical knowledge. Physicalism is the ontological position that asserts that only physical things and physical properties exist. In a famous thought experiment, Frank Jackson challenges this position with a counterexample. He asks us to imagine a vision scientist, Mary, who is narrowly omniscient to matters involving color and color perception but has lived her whole live in a black-and-white room. According to strict physicalism she ought to know everything that there is to know about the physical objects and properties involved in color perception. Yet when she is released from her room and sees a ripe tomato for the first time, most people intuit that she would learn *something*, namely *what it's like* to see the color red. So, the argument goes, there must be *something* besides just physical facts and properties that is responsible for this "what-it's-like"-ness.[15]

There are a number of good physicalist responses to the knowledge argument. The simplest is to deny the intuition that Mary would learn something. Daniel Dennett, for

[15]Jackson (1982). Jackson has since changed his mind about the validity of this argument (Jackson 2004), but despite the argument's author no longer buying it, it remains extremely influential.

instance, argues that, when you look closely, it is in fact *not* conceivable that Mary could have all the physical facts without having any grasp of what colors are like. Either Mary knows everything physical and *must* know what they are like, or there is some gap in her omniscience; our intuition is simply deluded.[16]

The phenomenal concepts strategy provides a more nuanced response.[17] This rebuttal supposes that what Mary gains when she is released from the room is not knowledge concerning non-physical entities or properties—one need not adopt dualism—but rather a capacity to form new kinds of knowledge that depends on a new way to *conceptualize* the facts she already has. She gains the ability to conceptualize color phenomenally, and this does not entail that there must be anything extra-physical added to the scenario. Such a conceptualization, the argument goes, can only be gained through acquaintance and so was not available to Mary in her black-and-white room. This strategy gives us a way to have our cake and eat it too. We can believe our intuition that Mary learns something, namely what it's like to see colors, but we do not have to reject physicalism. This knowledge becomes possible because of the new *concepts* at her disposal that she could not possess while confined to her room.[18]

Like most debates in philosophy, whether or not the phenomenal concepts strategy in fact provides an effective response to the knowledge argument remains controversial.[19] But the

[16]Dennett (1988).

[17]As far as I can tell, this strategy was first proposed in Stoljar (2005) and a good summary of its application is found in Chalmers (2010).

[18]David Chalmers calls this position "Type-B Materialism." A Type-B Materialist believes in epistemic dualism but is an ontological materialist. Chalmers (1996), 41.

[19]Chalmers proposes a "Master Argument" against phenomenal concepts. Chalmers (2010), 312-320. He tests some replies himself, further responses to this argument are found in Papineau (2007), 136-143.

ubiquity of phenomenal concepts among philosophers of consciousness has led to a number of further debates about just what phenomenal concepts are, how they differ from traditional concepts, and how they are structured.[20] There are two features that persist through most theories, however. First, such concepts *refer* to phenomenal content, that is, *what it's like* to undergo that conscious experience. Second, phenomenal concepts refer to their content *directly*, without any intervening mode of presentation or with a minimally transparent one. Probably the simplest theory for this sort of direct reference is to consider phenomenal concepts to act like a sort of demonstrative. Under this theory, the concept simply "points at" the relevant phenomenal content and we might formalize it as containing the content "that (such-and-such experience)."[21] So when we talk about the phenomenal concept $\hat{7}$ we will say that what it refers to is the experience of what it's like to hear scale degree $\hat{7}$ and it refers to it with some minimally thin sense, making the concept something like "that (experience of $\hat{7}$)."[22] Lacking a mode of presentation means that there cannot be distinct phenomenal concepts that refer to the same phenomenal content. There can be only one phenomenal concept for $\hat{7}$ since the concept refers in a direct fashion.[23]

[20]See Levin (2006), Papineau (2006), Levine (2006), Hawthorne (2006), and Nida-Rümelin (2006), among others.

[21]Though, as I mentioned above, some philosophers still take issue with this construal. See Papineau (2007).

[22]Because there is not a mode of presentation for such concepts, they are also not taken to involve non-phenomenal parts of conscious experiences, affordances or emotions, for example. These aspects of experience have their own phenomenology, certainly, but they do not structure phenomenal concepts, which are meant to grasp something more basic.

[23]More precisely, there can be only one phenomenal concept for each phenomenal content that is part of the $\hat{7}$ experience. In my discussion of scale-degree qualia, I argue that there are actually a variety of distinct but associated phenomenal contents in one's experience of a scale degree, including a sense of its relationship to tonic, a pressure to resolve (or not) in a particular fashion,

Theoretical Concepts Revisited: Representational Concepts

With an understanding of phenomenal concepts in hand, we are in a better position to understand what representational theoretical concepts are and how they differ from phenomenal concepts. Representational concepts include David Papineau calls *perceptual* concepts. Perceptual concepts and phenomenal concepts are both used to think and talk about perceptual experience, but perceptual concepts are *non-demonstrative.*[24] Like phenomenal concepts, representational or perceptual concepts have a perceptual origin (we have to have the perceptual experience before we can think about it), but they differ in the "direction" of the concept's intensionality; phenomenal concepts are directed "inward," toward the subjective, phenomenal experiences, while perceptual concepts are directed "outward," toward an external object.[25] This distinction is worth making because perceptual concepts, once gained, can become independent of the originating experience. We can think about perceptual concepts without needing to undergo any particular kind of experience. We can talk about perceiving a leading tone, say, without having to imagine the phenomenal experience of a leading tone. This perceptual concept of the leading tone has its origin in perceptual experience, but our

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etc. Hansberry (2017).

[24]Papineau (2007) discusses the relationship between phenomenal and perceptual concepts at length.

[25]This follows David Papineau's suggestion that "phenomenal concepts are simply special cases of perceptual concepts...being used to think about perceptual experiences themselves rather than about the objects of those experiences." (Papineau (2007), 122.) This is only a rough account of their difference. In this version of Papineau's account of phenomenal concepts he no longer considers them to be demonstratively structured, as I suggested in chapter 1 and Papineau himself argued in Papineau (2002). These are quite fine distinctions regarding about the internal structure of phenomenal concepts which are not crucial for the argument I make here. All we need is to recognize that a distinction exists between phenomenal concepts (which deal in experiences) and perceptual concepts (which deal in the objects of perception).

concept refers to the leading tone without re-invoking the phenomenal experience.[26]

Moreover, while phenomenal concepts refer to actual experiences, representational concepts are use to think and talk *about* these phenomenal experiences but they do not themselves refer to the phenomenal content of those perceptual experiences. We might discuss *that* a stop sign is red, for example, without instantiating the phenomenal experience of redness. Recognizing representational, theoretical concepts is an important way of tying theories that rely on theoretical logic back to perception, even if the phenomenal content of perceptual experience need not actually be required in understanding those claims. That is, it is possible to have thoughts about perceptual, phenomenal experience without needing to know what that experience is like. This is how, for instance that Mary could think about color perception *before* escaping the room. She just could not do so using phenomenal concepts.[27]

Representational concepts exist in a difficult place between how we normally think about experience and theory. They are supposed to be *about* experience, but they do not actually require experience in order to be used. Because they do not refer to actual phenomenology, I take them to be a kind of theoretical concept.

[26]This is why psychological theories count, by and large, as theoretical approaches instead of phenomenal ones. The concepts with which they are concerned originate in perceptual experience, but need not include phenomenal experience.

[27]This is the view that phenomenal content is not reducible to mere representations. See Loar (2004), Peacocke (1983), Chalmers (2004), Block (1990), and Raffmann (2008).

1.3 Conceptual Types in Theory and in Practice

The Complexity of Music-Theoretical Terms

The distinction between phenomenal and theoretical concepts cashes out both in analytical application and in the way we think about basic music-theoretical concepts. In his 1965 essay "The Structure and Function of Musical Theory," Milton Babbitt argues that meaningful communication of music-theoretical claims requires a common, formal language.[28] In the course of the discussion, he makes the following distinction:

> There is, then, this close analogy between interval and whatever we wish to call the concept represented by the sum of pitch-class numbers [i.e., index of inversion]. And yet, in some musically important sense, these two concepts would seen to require differentiation at some level. Surely interval is an "observation concept"; does the other concept require categorization as "theoretical," in the usual sense of the term, since it is not apparently translatable into perceptual terms? Until, if ever, an ultimate disposition is made of this terminological differentiation, this latter concept, for all of its hierarchical implications, will be formulable only in theoretical terms.[29]

While I do not propose to serve as that ultimate disposition, the distinction sketched above is of some use here. As a formal, mathematical definition for interval, Babbitt posits the difference between pitches ($a - b$) or pitch classes ($a - b \; mod \, 12$). This definition is meant to formalize a clear part of musical experience: pitches seem to have an experientially ascertainable distance from one another, this distance does not change under transposition, etc. The formalization of the observation concept of interval allows it to be comprehensible when it enters the discursive space that Babbitt imagines best befits music theory. But

[28] Babbitt (1965 [2003]), 191–201.

[29] Ibid., 197.

while the quotidian term "interval" can denote both "theoretical" and "observation" concepts, this is not the case for all concepts used in music theory. Babbitt also discusses what he calls the "arithmetic extension" of interval-as-difference: inversion as a *sum* in pitch-class space ($a + b \ mod 12$). This formal definition, by contrast, lacks an observational analog; it is is solely theoretical. These two types of concepts, "observation" and "theoretical," are analogous to my phenomenal and theoretical concepts.[30]

I ought to note, before getting deeper into this analysis, that Babbitt's rhetorical style and bibliographic commitments are, like all scholarship, situated in a particular context. My sharpening of the terminology puts a finer point on the distinction that I take Babbitt to be making, but is probably best understood as an interpretation or extension of his original point instead of an attempt to clarify it. I am forcing an interpretation about presence or absence of phenomenal content, when the closest Babbitt gets is comments about perceptual understanding and the like. Given the aims of his overall argument, this distinction is not necessarily the point he is trying to make, nor is it especially nuanced by the intellectual context Babbitt was participating in.[31]

[30]Depending on what one takes as observation, some argue that theoretical ideas are already implicit in any concepts deployed such perception. This position is strongly argued in theories of perception in philosophy of science, notably by Hanson (1958) and Kuhn (1962 [2012]). For such philosophers of science, as well as some music theorists, the distinction between observation and theoretical concepts would be a false one. It seems to me, though, that the relationship between theories and perception is more complicated than such accounts allow. For arguments in favor of such a relationship which permits some kind of perception or observation without implicit theories, see Peacocke (1984) (chapter 3) or Dummett (1976). By and large, I think these disagreements are mostly definitional; that is, the crux of the debate often stems from how expansive the particular thinker's idea of theory is. Following Babbitt, I assume a narrower definition of theoretical which makes the observation/theoretical distinction meaningful.

[31]Historiographies of this moment in the history of music theory are extremely important to contextualize how the field developed into the practices engaged in now. Gleason (2013) explores the philosophical underpinning of Babbitt and Princeton Theory more generally, and examines

In the terms I have developed here, inversion exists only as a theoretical concept. The concept refers to a particular kind of abstract formal transformation, namely addition; it is conceptualized in terms of adding numbers that represent pitch classes. Interval, however, is more complex because it can be conceptualized *both* phenomenally and theoretically. In the latter case, we have something analogous to the case of inversion, where interval refers to a particular kind of mathematical relation: subtraction. But specific intervals also have a phenomenal conceptualization. The phenomenal concept for any given interval will refer to the phenomenal content of hearing that interval.[32]

These different conceptualizations of interval are distinguished not just on the level of sense, but also on the level of reference. It is not just a matter of representing the same musical idea in multiple ways; they also differ in the kind of content. The theoretical concept for interval refers to the subtraction relationship, while the phenomenal concept refers to what it's like to hear this relationship. In music-theoretical practice, this distinction is often complicated as both types of concept may be denoted by the same term.[33]

Babbitt's writing on theory and experience in pp. 116ff. Girard (2010) presents a reading and critique of Babbitt's seemingly apparent methodological commitments (as well as the later interpretation thereof) from the context of the institutional climate at Princeton.

[32]Though, it is hardly news to understand Babbitt's thought (both here and in general) as having a close relationship to musical experience, despite some of his discursive decisions which seem so far from contemporary experience-talk. See, for instance, Guck (1994) for discussion of Babbitt in particular as well as Scherzinger (2002) similarly aimed accounts of other branches of Princeton Theory.

[33]To be more precise, interval would in fact denote a set of phenomenal concepts, since the phenomenal content of hearing different constructions of that interval (say hearing them in different registers or compounded with an additional octave in between) would each have its own phenomenal content.

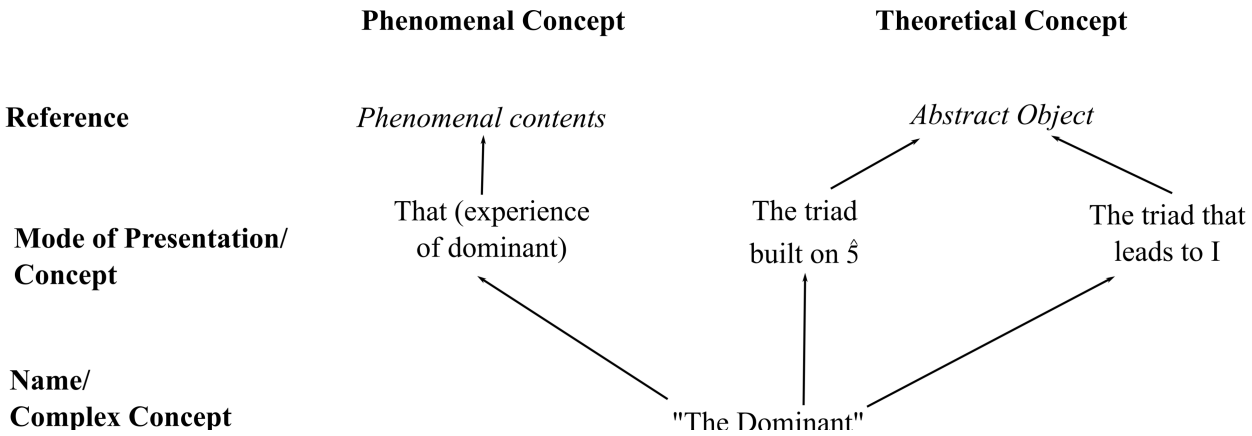

Figure 1.3: Conceptual analysis of "Dominant."

For an even more complex case consider the concept (or concepts) denoted by the term "Dominant." The word denotes not a simple lexical concept (like "cat") but rather a complex amalgam of different conceptual types and different specific concepts within each type. We can distinguish the phenomenal concept of a dominant, that is the concept that refers to what it's like to hear a dominant. And we can can also distinguish concepts that refer to an abstract object divorced from any phenomenal experience. This latter option is itself composed of a number of concepts that, while referring to the same thing, differ in sense. The theoretical concept of dominant that presents it as that triad with $\hat{5}$ as the root is distinct from the concept which presents it as that triad which functionally resolves to the tonic. And we know that all of these concepts are distinct because it is potentially informative to learn that they are equivalent. In the case of the two theoretical concepts, one can *learn* that the triad that most often precedes the tonic is that triad that takes $\hat{5}$ as its root. Likewise, a musical analog to Mary in the black-and-white room could possess both theoretical concepts but could *learn* that those concepts were associated with *that* sound when she was let out of her silent room and allowed to listen to music.

This complicates music-theoretical discourse because most often we just make the simple claim, "This chord is a dominant," but our readers may not know how best to evaluate our claim; in what *sense* is it a dominant? I call this a complication, but it is exactly this complex nature which permits the most valuable kind of music-theoretical task: connecting the phenomenal experiences of music to our theoretical thoughts and musings. The complex concept denoted by terms like "Dominant" acts as this bridge, permitting our experiences to be expressed in theoretical terms and permitting theoretical claims to shape our experiences.[34] In the analyses presented in the introduction, I caricatured the A minor/B major in "Gebet" as occurring chiefly in phenomenal terms. I recognized the harmonies and relationships solely based on what they sounded like—deploying phenomenal concepts—without any conscious recourse to non-experiential theory. This phenomenology, of course, was influenced by the array of phenomenal concepts I had at my disposal, some of which was sharpened by ear training, but all the analytical decisions remained firmly on the basis of phenomenal criteria and any all of the broader concepts deployed were deployed only on the basis of their phenomenal sub-concepts. The analysis also meant to illustrate the disconnect I heard at the A♯ diminished seventh chord. This disconnect was not tied to any specific harmony but was a general sense of disassociation when experiencing the harmony prospectively. Separating the passages into distinct prolongations with curly braces was meant to indicate this indirectly. The E minor analysis relied on theoretical concepts. When doing this analysis I focused more on large scale coherence and conformance to normative harmonic grammars. As a result the ways the music-theoretical concepts were deployed relied on the sub-concepts

[34]The ways that terms or analyses coordinate these two conceptual types are the topics of chapters four and five.

which showed these features. When coming up with this analysis, I didn't need to hear it to know what relationships it drew between the harmonies. These relationships were chiefly theoretical and did not rely on phenomenology. We also saw the invocation of ideas outside of harmonic theory to argue for the second reading; I argued that we ought to read the final progression as a half cadence not necessarily because I happened to hear it that way but because it provides a tidy account of the form of the entire song.

The nature of the concepts used in these sample analyses introduced a further wrinkle. Roman numerals are among those complex music-theoretical concepts that consist of both phenomenal and theoretical sub-concepts. It is entirely possible for both analyses to be conceptualized under the same paradigm (both in terms of their phenomenal content or as flowing from a non-phenomenal theory) or even for their conceptualizations to be flipped.[35] This is why I gave a narrative as to how the analyses were generated. When considering these kinds of complex music-theoretical concepts, it is importation to be clear about your criteria and your methodology if clarity about what the concepts represent is important.

Why Concepts?

The conceptual distinction I have outlined clarifies (or at least allows more precision about) Babbitt's statements about transposition and inversion. But, one might ask, why construe this distinction as conceptual at all? Instead of thinking that the concept for a dominant-as-heard is distinct from a concept for the dominant as the triad built on $\hat{5}$, we might

[35]The fact that these alternate conceptualizations are possible is why I presented the analysis as a story. It is possible to interpret each analysis under different conceptualizations, but that is not what I did when I first wrote it.

understand the distinction just one of context, as akin to Lewin's analysis of m. 12 of Schubert's "Morgengruß" presented in his "Music Theory, Phenomenology, and Modes of Perception."[36] In this essay, Lewin presents a formula for musical perception, in the style of artificial intelligence, which has the structure of an ordered quadruple.[37]

$$p = (EV, CXT, R - P - LIST, ST - LIST)$$

Following this formula, changes to the CXT argument—representing ConteXT—are critical. In Lewin's example, the perception of the g^6 triad in m. 12 of "Morgengruß" will differ depending on what context is considered relevant; it is read as a minor dominant in C major when considering mm. 9–12, but as a iv chord in d minor when considering mm. 12–13. Lewin cycles through nine additional readings each of which invokes a different context for the percept. Figure 1.4 shows Lewin's entire set of CXT arguments and the various analyses they imply.[38]

Recall the two analyses given for Schumann's "Gebet" in the introduction. It would be easy enough to craft an analogous chart of changing contexts for my two proposed analyses that opened this chapter. We might consider the context for the E minor analysis to be the entire piece, embracing the final cadence and providing a perspective that takes the tonicization of B major as a a half cadence. The A minor interpretation might arise from a narrower context, I rehearsed as much when describing my experience of m. 1. The first two

[36]This essay was originally published in *Music Perception* 3, no. 4 (1986). I'll refer to the republished version in the collected work *Studies in Music with Text* (2006).

[37]Lewin (2006), 60.

[38]Ibid., 67-79.

p	EV	CXT	Selected P-R Pairs
p_1	m12	m12	
p_2	m12	m9–12	(p_1, terminal inclusion) (V-percept, questioning)
p_{3a}	m12–13	m12–13	(p_1, incipital inclusion) (p_4, implication)
p_{3b}	m12–13	m9–13	(p_2, denial) (p_{3a}, reinforcement)
p_4	m12–13	m12–13 plus expected m14	(p_{3a}, realization) (earlier d tonicization, elaboration)
p_5	m9–13	m9–13 plus expected continuation	(p_4, medial inclusion), (p_4, reinforcement) (p_{3b}, reinforcement), (p_2, virtual annihilation)
p_{6a}	m14	m12–14	(p_4, confirmation and elaboration) (p_{6b}, implication)
p_{6b}	m14	m12–14 plus expected m15 (in d minor)	(p_{6a}, realization), (p_{7a}, modification)
p_{7a}	m14	m12–14 plus expected m15 (seq.)	(p_{6b}, modification), (p_{3a}, sequential expansion)
p_{7b}	m14–15	m12–15	(p_{7a}, confirmation), (p_{6b}, denial) (p_5, confirmation) (via p_{6a})
p_8	m14–15	m9–15	(A♭–G in bass of m9, expanded recapulation), (p_9, support)
p_9	m9–15	m9–15 plus expected m16	(p_2, confirmation), (p_{3b}, denial), (p_8, support), (p_5, qualification)

Figure 1.4: Lewin's Figure 4.7, table of contexts for different analyses of a g^6 triad.

chords set up an expectation of a descending bass line in A minor. From the context of the first measure alone, A minor is the plausible (and, it seems to me, likely) reading. The A minor reading of the opening might also be asserted if the context included mm. 9–18, which feature a long prolongation of A minor and indeed conclude with a stronger cadential gesture than has been encountered in E minor so far. While this interpretation is consistent with the analysis, it does not reflect the processes which generated the A minor analysis, which in part determined its meaning to me. The theoretical/phenomenal conceptual distinction takes the difference to be more than just one of conflicting contexts: it considers a much more fundamental difference in how I conceptualized the elements of these analyses when

crafting them and in what I expect a reader to do to properly understand them.

Considering analyses as relying on different concepts also clarifies where in the analytical process differences arise. The analyses diverge at the moment of conceptualization, when the musical event is converted into some music-theoretical concept. Interlocutors representing each position would agree presumably on descriptions that were more matter-of-fact (which pitches we sung or played, for instance), and in this case both analyses draw terms from the same kind of theory (i.e., roman numerals). By the time one gets to talking about the analyses, though, conceptualization has already happened, the musical experience or abstract entities have been converted into the language of music theory. This is where we notice the disagreement, but they originate on a level lower with what kinds of concepts are brought into play. In the case of "Gebet," an analyst wishing to disagree with, say, the A minor/B major analysis might point to the key signature or to the final cadence as evidence that the E minor analysis ought to be preferred. This assumes that we share the same criteria by which the roman numerals are applied. But the A minor phenomenological analysis relies only on the phenomenology of the harmonies and their immediate context to attribute one of these concepts, while the E minor theoretical analysis relies on a much broader view as well as additional consideration of theoretical consistency and elegance.

I have been situating this distinction as existing at the level of concepts. Methodologies differ because the concepts used in any given approach are epistemologically prior to the techniques of that methodology. Note, though, that this epistemological priority need not describe the motivations a theorist or analyst has for adopting that methodology. That is, a theorist may like a particular technique and then be persuaded to adopt a certain strain of concepts (or even insist that *only* those concepts are appropriate to music theory) because

those are the concepts that suit that theory or analytical strategy. Additionally, I think that placing this distinction at the level of concepts better groups theories which have similar aims instead of grouping approaches based on their methodologies.

1.4 Other Music-theoretical Accounts of Concepts

The distinction outlined in the preceding sections will be used as a framework for investigating the conceptual makeup of analytical practices and habits in contemporary music theory. But, of course, this is not by a long shot the first treatment of the concepts involved in music theorizing or the first time a theorist has distinguished between the experiential and non-experiential elements of music theory or analysis. In the following sections I explore the intellectual context of my conceptual distinction. I review other accounts of how concepts are involved in music theory and music listening, focusing especially on how they differ from my distinction presented above. For the most part, though, I do not see these differences as especially in need of adjudication. Rather, different theories or meta-theories have different goals and rely on different resources from outside music theory. My primary concern has been to develop an account of music-theoretical concepts that foregrounds what happens when a single piece is conceptualized in different ways or when analysts disagree about how a piece ought to be described. These motivations inform how I have cast the distinction and we will see that accounts with divergent goals, produce different conceptual analyses.

Zbikowski's Cognitive Linguistic Approach

In section 1.2.1 above, I alluded to the huge diversity of disciplines that claims the study of concepts as a part of their purview. Nearly every subfield in cognitive science purports to study concepts and each discipline carries different methodological and epistemological commitments. What results is an incredibly diverse set of theories of concepts. These various explanations of concepts' ontology, structure, acquisition, application, and so on are sometimes read as conflicting (especially when a new theory is attempting to make room for itself in the theoretical landscape) but a healthier approach, I think—and one more in line with the putative interdisciplinarity of cognitive science—is to consider these different theories as accounting for the different uses of concepts in different situations.[39] Different subdisciplines will be concerned with different things and as a result, the kinds of answers they give will be honed to those kinds of questions.

An approach to musical and music-theoretical concepts divergent from the one presented here can be found in Lawrence Zbikowski's *Conceptualizing Music*.[40] Zbikowski's theory of musical concepts draws heavily from theories of mind and theories of concepts in cognitive linguistics and cognitive psychology, especially compared to the mostly philosophically-oriented bibliography here. As a result, his definition of concepts are tailored to answer quite different questions about the role of concepts in our musical lives.

Zbikowski considers three characteristics as necessary conditions (and collectively sufficient) for musical concepts:

[39]Lawrence and Margolis (1999) does perhaps a better job of highlighting these sorts of distinctions than Margolis and Lawerence (2014).

[40]Zbikowski (2002).

> First it is the product of a process of categorization. A musical category then is quite literally where our conceptualization of music begins. Second, a musical concept is an essential part of the means through which we guide present and future actions. These actions thus constitute a sort of indirect evidence for a cognitive structure almost as ephemeral as music itself. Third a musical concept can be related to other concepts, including concepts associated with bodily states (both physical and emotional), perceptual categories (including sound, which, after all, is not necessarily music), and linguistic constructs.[41]

Zbikowski's theory of musical concepts draws directly on the theory of concepts developed by psychologist Gerald Edelman. Edelman argues that the most important feature of concepts is that they give people the capacity to generalize, drawing the relationship of "belonging to the same category" across different experiences.[42] But in Edelman's and Zbikowski's characterizations of concepts a further commitment comes out. In his discussion of concepts (quoted by Zbikowski) Edelman says, "An animal capable of concepts...must act *as if* it could make judgments on the basis of category recognition or integrate 'particulars' into 'universals.'"[43] Two ideas are worth highlighting, both of which are found in the assertion that concept possession is closely tied to *actions* that indicate the usage of a given concept. Since we must have a concept before we can use it, the story goes, we can count concept usage—or at least *behaving as if* a subject is using a concept—as a sufficient condition for concept possession.

This emphasis on the actions performed by a given subject or animal instead of the mental "actions" themselves is meant to sidestep the classic problem of other minds. Edelman explains:

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[41]Ibid., 61.

[42]Edelman (1989), 140–141.

[43]Ibid., 141.

> We are confronted with a dilemma. Like intentionality, phenomenal experience is a hallmark of consciousness, but it is a first-person matter—the only external criterion for its is the direct or indirect report of a person. While each of us is sure of having phenomenal experience, it does not seem to be consistent with the formulation of a completely objective or causal account...Is there any escape from this dilemma? There is certainly mitigation: while we cannot be precise about another person's *particular* feelings or sensations, we can *correlate* our own phenomenal experiences with those of others verbally and under certain observational restrictions.[44]

Edelman's "mitigation" of this dilemma is quite common is psychology and, indeed, in everyday life. It lays down an assumption that the sorts of experiences each person has are more-or-less the same as everyone else's. Unless we have a particularly strange way of carrying ourselves in the world, we all make this sort of assumption every day. The theory takes for granted that the actions and verbalizations of others will constitute them as thinking in particular ways.

Zbikowski and Edelman have good reasons for taking this neo-behaviorist path. There are a host of well-known problems with scientific discussions of consciousness, all of which flow from consciousness's inaccessibility to the tools of experimental disciplines and the not very clear connection between brain events (and their associated verbal or bodily actions) and phenomenal states.[45] Since Zbikowski and Edelman are coming out of a tradition that prioritizes experimentation that yields publicly accessible data (not things that are only in the head), they must find way to mitigate the the problems with engaging phenomenal experience.[46]

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[44]Ibid., 22.

[45]This is called the Hard Problem of Consciousness, since it seems that the methodologies of brain science may *never* be able to answer it satisfactorily. Chalmers (2007).

[46]I should say that a less compelling, though just as important reason for Zbikowski's and Edel-

This method has tremendous utility. Bracketing phenomenal experience and allowing the experimentation to go on has yielded a great number of insights into the human mind, even if, due to the not-yet-bridged explanatory gap, we sometime go astray on how to interpret certain experimental results. But while bracketing this Hard Problem is an option for experimental psychologists, it is not clear how to get a good account of disagreement between music theorists or the effect of re-conceptualization of experiences of music without accounting for these experience's phenomenal content (or lack thereof). These sorts of changes in experience may not be manifest as publicly observable behaviors. I might listen to a piece of music and conceptualize it phenomenally but then decide to study the piece and switch to only theoretical concepts with no outward sign that this is what I am doing. As we have seen, the language of music theory (presumably the mode through which I would do my reporting) permits identical descriptions to be given under either conceptualization. But I want to assert that these different kinds of conceptualization are, in fact, different.

Indeed, our ability to alter our own conceptualization of a passage presents exactly a case were we *do* seem to have direct access to a different "person's" mental states. That is, I have access to my own past phenomenal states as mental recreations, and can compare them to occurent experiences. When the different subjects are one and the same person over time, the dilemma—in only this case—dissolves. So in some sense, while these accounts base their methodology on external signs of cognitive structure—a sort of "outside

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man's emphasis on behavior (and not just, say, thinking) is that they want to include other higher animals in the extension of concept-possessing creatures. Concepts have unfortunately sometimes been tied directly to language, the assertion being that you could only have a concept if you have a word for it. (As an aside, I have never quite understood why we think this ought to be the case. Surely there are all sorts of things we think about, all sorts of ineffable states that can figure into propositions, but we can't put into words.) Zbikowski and Edelman assert, rightly I believe, that certain animals in fact *do* possess concepts.

in" approach—my ambitions are to go the other way, to start from what it's like to make certain music-theoretical judgments and consider distinctions in phenomenal content to be of crucial import.

Zbikowski's definition of concepts also emphasizes categorization. Indeed, categorization precedes conceptualization and forms the basis of the development of concepts which seem to need nothing more than categories plus certain relationships between them. Zbikowski's emphasis on categorization in particular allows him to develop a robust analytical framework to describe the relations between musical features. But music-theoretical categories have more complex structures than simple inclusion or exclusion. *How* something is categorized is just as important as the category that it belongs to. When reflecting on categorical types and the way that their constituent concepts are used, one finds that such category types have their own phenomenologies. There is *something it is like* to take a theoretical stance vis-a-vis an experience of music, which is different that what it is like to take a phenomenal stance. Thus while categorization may in fact account for the behaviors of people listening to music, we need phenomenal concepts to think about what it's like when we ourselves are in these states.

Because of Zbikowski's emphasis on categorization, he takes concepts to be low-level cognitive structures. These low-level structures are then embedded into hierarchical networks that build up to theories. Concepts, according to his definition, are categories which bear some relationship to one another. These concepts then exist in "specified relations" and thereby create conceptual models. These models in turn form conceptual domains, these domains, as best I can tell, consist of types of referents of the concepts in question. Finally, conceptual models are coordinated by theories in order to guide inference, provide solutions

to conceptual puzzles, and simplify reality.[47]

Beyond the different relationship to phenomenal content of experience, it is clear that Zbikowski's notion of concepts is much simpler than the one I want to use. To be sure, Zbikowski is careful to point out that his distinctions are meant to be taken as practical. He points out that "recent work indicates that the lines between entities such as concepts, models, domains, and theories are more often blurry than clear and that there are no simple neurobiological explanations for any of them. My distinctions are thus pragmatic ones, intended to reflect the different sorts of cognitive work done at different levels of structural complexity and the compass of conceptual structures that result."[48] I am quite sympathetic to this desire to analyze our usage of concepts in order to better understand them, and in the sense of concepts that Zbikowski is working under, increasing complexity from concepts to models to theories helps to organize where on this spectrum given music-theoretical or music-analytical claims are located. These distinctions serve a practical aim, and here precisely is the rub. My practical aims differ from Zbikowski's. My project is much more concerned with the phenomenology and practice of doing analysis. Because it invokes all sorts of existing theories and practices and habits of the analyst, any examination at this level will not make much use of the much simpler cognitive structures that serve as Zbikowski's primary examples. Moreover, phenomenologically speaking, shifts in conceptualization seem to involve many of what Zbikowski identifies as higher levels of organization. The types of concepts I will mostly be concerned with come preloaded with certain analytical options

[47]Zbikowski (2002), 102–103.

[48]Ibid., 109.

and possibilities, making them seem much thicker than the relatively simple recategorization that would underlie a conceptual shift under Zbikowski's framework.

DeBellis's Three Levels of Conceptualization

In the preceding section I spoke somewhat loosely about concept usage and concept possession. I did so because the theories of concepts in consideration did not make a fuss about this distinction. However, I think it is a distinction we should uphold, for it seems to be possible to use a concept but not to possess it.

Contrasting Zbikowski, Mark DeBellis, in his *Music and Conceptualization*, operates with an understanding of concepts significantly closer to mine. Defining concepts, DeBellis says that they are "a certain psychological capacity, an ability to have beliefs (and thoughts generally) in which one grasps a particular mode of presentation."[49] Thus, the ability that constitutes concepts, for DeBellis, is not just categorization, but extends to a capacity to form beliefs. These beliefs involve modes of presentation and one can test for them by seeing whether a thinker can successfully discriminate between instances where the feature the concept refers to is present or absent. If a thinker *can* reliably sort in this way, its is a good indicator that they possess the relevant concept.

There are certain elements of DeBellis's theory of conceptualization in music theory, however, which run contrary to the sort of images I want to provide for music theory. DeBellis argues for three levels of conceptualization concerning music.

1. Music might be heard conceptually.

[49]DeBellis (1995), 32.

2. Music might be heard "weakly nonconceptually."

3. Music might be heard "strongly nonconceptually."

Understanding music conceptually amounts to the way that a trained music theorist might understand some music, with access to the full gamut of complex music-theoretical concepts with both their theoretical and phenomenal sub-concepts. In the case of hearing weakly nonconceptually, "one can satisfy an attribution [of a music-theoretical concept] without possessing the (music-theoretical) concept contained in the attribution."[50] This means that one hears a musical feature and can take intentional attitudes toward that feature (which requires conceptualizing it in some way), but without having the specific *music-theoretical* concept. Finally, hearing strongly nonconceptually means the listener is unable to attribute the pertinent music-theoretical concept at all.

One sees here a distinction not present in Zbikowski's account. Presumably hearing weakly nonconceptually and hearing conceptually might lead to the same kinds of *action* and thus not be distinct categories.

DeBellis's account is mostly consonant with my approach except for how he characterizes weak nonconceptual hearing. It is misleading, I think, to refer to this kind of hearing necessarily as a kind of nonconceptuality. A weakly nonconceptual hearer may still possess and use *phenomenal* concepts over the course of the experience, though he lacks the explicitly defined theoretical or more complex music-theoretical concepts. Even without the music-theoretical jargon, such a listener can conceptualize certain phenomenal experiences as instance of "that (experience)" in the fashion of demonstratives.

[50]Ibid., 27.

DeBellis agrees that such a listener would have the ability to use what he calls "perceptual concepts." These perceptual concepts, I expect, are different from Papineau's perceptual concepts defined. Papineau makes his distinction in the context of a discussion of *phenomenal* concepts, so his definition is quite precise. DeBellis, on the other hand, is not primarily concerned here with understanding conceptual types, but with understanding the varieties of conceptuality in music theory. The kind of nonconceptuality in play here is weak, in the sense that the only absent concepts are *music-theoretical* ones. Phenomenal and perceptual concepts might still be in play at this level.

If I am understanding him correctly, DeBellis does not admit these concepts into the ranks of music-theoretical concepts. But, as we will see throughout the rest of this dissertation, most music theories engage exactly these types of concepts somewhere along the way, invoking them either as a way to lead to theoretical concepts or using only these kinds of concepts combined with novel attempts to communicate them, as is the case with simple phenomenal approaches discussed in chapter three. Expressing the phenomenal and perceptual concepts that come up when thinking or talking about a musical experience can still be music analysis. Additionally, more traditional complex music-theoretical concepts (like *Dominant*) are not a further step along a spectrum of conceptuality but rather themselves analyzable into phenomenal and other conceptual types, all of which play a role in their possession and their attribution. In short, I agree with DeBellis in the substantive distinctions made between the different kinds of conceptuality involved with thinking about and hearing music; my disagreement is mainly terminological. I would want to include "weakly nonconceptual" hearing in the real of hearing music-theoretically, embracing a wider image of the sorts of tasks that constitute music theory.

1.5 Other Theory/Experience Distinctions

Distinguishing between music-theoretical approaches that rely primarily on musical experience (either of listeners or practicing musicians) and those that rely on some kind of non-experiential, scientistic or rationalistic underpinnings is far from a new project. Indeed, since the very beginnings of Western music theory in Greek musical thought, we see a version of this distinction in place in the Aristoxenean and Pythagorean schools.[51] Moreover, the broader distinction between experience-based and abstract epistemologies is a cornerstone of the history philosophy, starting with Plato and Aristotle, climaxing in the early-modern disputes between empiricist and rationalist thinkers, and continuing today. And while most versions of this distinction may agree on paradigmatic cases, they disagree on how exactly to characterize nuanced admixtures. More importantly, the motivations which lie behind these distinctions are diverse. In this section, I examine three other analogous distinctions between experiential and non-experiential music theories, foregrounding how and why my approach differs and the motivations which underlie these differences.

Nicholas Cook's Psychological and Formal Theories

Nicholas Cook envisions his pragmatic text, *A Guide to Musical Analysis*, Nicholas Cook envisions his book as a sort of primer to the subject, and is frank about its pedagogical orientation.[52] Cook emphasizes the book's practical goals, but we may still find value in studying a pedagogical text for its meta-analytical perspective since the habits of thought

[51]Barker, ed. (1989), 119–189 and 28–45, respectively.

[52]Cook (1987).

presented therein might have a profound impact on how the student understands more advanced theories and analytical approaches. These texts can form a sort of basic scaffolding which often takes a much longer time to overturn than it did to erect. Pedagogical texts are also helpful because they tend not to take too much for granted, explaining exactly what is meant by any basic concepts. And often these basic disagreements about the meaning of fundamental ideas underlie more substantial analytical disagreement down the road.

Cook's *Guide* begins by presenting what he deems "traditional methods of analysis" (including basic harmonic analysis and analysis of form) followed by a quick introduction to the basics of Schenkerian theory.[53] The two chapters which follow present a distinction between "psychological approaches" and "formal approaches" that may seem, at first blush, to approximate my distinction between phenomenal and theoretical concepts.

Adherents to psychological approaches, according to Cook, include those theorists "who have based their work on explicit psychological principles."[54] He ties these explicit principles (the sorts of things recognized by professional psychologists) back to a much broader conception of "psychology," which he also finds in Schenkerian theory. Cook points out that this broader conception of psychology extends to "how musical sounds are experienced, rather than in the sounds themselves."[55] This is to be contrasted with phenomenological ap-

[53]Cook's treatment of Schenkerian theory (ibid., 27-66) draws primarily from the methodology presented in Forte and Gilbert (1982). He reconstructs and explains several analyses including Schenker's own analyses of Bach's C major Prelude and Bach's chorale "Ich bin's, ich sollte bussen" (presented in Schenker (1969)), as well as Mitchell's (1967) analysis of the *Tristan* Prelude and his own analysis of Debussy's Puck's Dance from Preludes, book 1. Along the way he describes the basic elements of Schenkerian theory (*Ursatz*, prolongation, interruption, etc.) and details the differing function of a Schenkerian analysis for different types of music.

[54]Cook (1987), 69.

[55]Ibid., 67.

proaches that use "individual pieces of music as a means of discovering the *general properties* of musical experience *per se*."[56] Obviously, Cook is talking about a quite different notion of phenomenology than I have used so far. The sense of phenomenology Cook means is more specific. Cook defines phenomenology as "the study of the essential qualities of human experience."[57] The key here is that Cook's phenomenology is aimed at a very specific task: distilling essential qualities. Cook takes his cue here from Thomas Clifton, and this understanding of phenomenology is based on the the *tradition* of Phenomenology in Continental thought (specifically that of Husserl).[58] I use "phenomenology" in a much broader sense to refer to a much more general idea as the study of experience from the first-personal perspective, without the specific aim of distilling essential qualities. My concerns also include how to describe phenomenal contents and developing a better grasp of how one thinks about them.

Cook distinguishes this approach from his psychological approaches which, rather than taking their goals from Continental Phenomenology, borrow aims and concepts from psychology. Cook further contrasts psychological approaches with "formal analysis," by which he means "any kind of analysis that involves coding music into symbols and deducing the musical structure from the pattern these symbols make."[59] Cook's primary examples of formal analytical practices include pitch-class set theory and semiotic analysis. Somewhat unchar-

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[56]Ibid., 69.

[57]Cook (1987), 67.

[58]Clifton (1983). Gallagher and Zahavi (2008), 19-28 provide a good, accessible summary of this methodology. See also, Sokolowski (2000), 42–65.

[59]Ibid., 116.

itably, it seems to me, he insists on reading these approaches as concerning *only* musical scores and as utterly divorced from experience.[60]

While at some level my phenomenal/theoretical distinction and Cook's psychological/formal distinction might be read as analogous, the way that we divide approaches ends up to be quite different. This is a result of the different criteria that we rely on when making our distinctions, and ultimately flows from the different motivations we have for making a distinction in the first place. My concern is separating approaches primarily on the basis of the sorts of concepts involved in making and understanding music-theoretical claims. Cook, on the other hand, seems to distinguish the psychological approach based on what it borrows from the discipline of psychology and formal approaches by reliance on scores. While undoubtedly all of the methodologies which Cook casts as formal would fall under my category of theoretical approaches, I also think that many of the "psychological" approaches would as well.[61] In my following chapter, which examines the challenges of simple theoretical approaches, one of my primary examples in the following chapter, Eugene Narmour's theory of melodic expectation, a scion of Meyer's theory that is presented by Cook as a prototypical psychological approach. While Meyer tends not to get as formalized as Narmour's psychological model of melodic implication, Narmour's approach carries some the ideals of Meyer's

[60]It is simply not the case that all set theorists are concerned only with what can be shown on a score. Andrew Mead (2004) presents a strong argument that at least *some* of the claims proffered by set theorists are readily available to experience. And from this point, it may just be a matter of ear-training to hear more substantive relationships.

[61]I explore the relationship between psychology and phenomenal concepts more in the following chapter, but for now I want to point out that psychological theories make liberal use of what I would call theoretical concepts. That is, many of the models for how the mind works are abstract and attempt to reconstruct our psychological states and processes by relying on abstract concepts. This comes, in part, from psychology's commitment to a scientific methodology, where subjective phenomenology is difficult, if not impossible, to measure objectively.

thinking to a logical conclusion, going all in on formalizing the cognitive process.

This is not necessarily to criticize Cook's distinction because it seems to me that the pedagogical goals of his text influence the way that theories are categorized. Cook's distinction helps lay out some of the *methodological* possibilities available to a neophyte analyst; and, by cutting the distinction in the way he does, basically in terms of what sorts of evidence an approach relies on, he presents a starting point for generating new analyses.

This is really the foundation of Cook's distinction—what sorts of things an analytical methodology relies on. Psychological theories rely on the literature in psychology, drawing principles from that bibliography and applying them to musical experiences while formal approaches rely on the score alone for their evidence, not on the way that people react to the score. This is an introduction to the things we might want to do when staring out in analysis and not necessarily an analysis of all of the ways that music theory might be done.

Caroline Abbate's Drastic and Gnostic Musicology

While Cook's distinction is based primarily on analytical methodology and the resources it can draw on, other ways of carving up music-theoretical (and musicological) discourse depends on underlying beliefs about musical ontology, the nature of musicological claims, or the political implications thereof. Carolyn Abbate's distinction between the drastic and the gnostic flows from all three.[62] Her drastic/gnostic distinction is drawn from philosopher Vladimir Jankélévitch's theories on music.[63] Because of music's ineffability, the story goes,

[62]Abbate (2004).

[63]Most importantly, Jankélévitch (1983 [2003]).

implications about specific musical meanings, either in hermeneutic or structural terms, ultimately fail. Abbate proposes returning to live performance as the solution to the supposed vacuity of "formalist" or "hermeneutic" musicology. Moreover, the drastic/gnostic distinction, Abbate points out, means more than just practice vs. theory, with each side of the dichotomy having a number of implications whose necessity are not immediately apparent.

> [D]rastic connotes physicality, but also desperation and peril, involving a category of knowledge that flows from drastic actions or experiences and not from verbally mediated reasoning. Gnostic as its antithesis implies not just knowledge per se but making the opaque transparent, knowledge based on semiosis and disclosed secrets, reserved for the elite and hidden from others.[64]

Nothing is settled and the performance or our experience thereof may unfold in a variety of unexpected ways. By tying the gnostic to live performance, we are meant to find the same desperation and peril as in musical action. Latter in the article Abbate uses the example of a tenor's failure to perform well as a drastic moment: the peril of this situation led to a unique experience that could not be had if considering the music abstractly.[65] On the flip side, Abbate sees gnostic claims as necessarily concerning the discovery of hidden meanings taken to be immanent in some kind of abstract form "The music itself," and, crucially, Abbate sees this "decipherer's habit" as always inhering in any so-called hermeneutic or formalist approach, no matter how much hedging or scope setting is involved.[66]

The hermeneutic project fails, under Jankélévitch's thinking, because there is no specific meaning that can always and necessarily be tied to any music. Music instead is replete

[64]Abbate (2004), 509–510.

[65]Ibid., 535.

[66]Ibid., 527.

with meanings; there is an infinity of things that music can mean. And because music can mean anything it can never mean only one thing in particular. Rings points out the prevalence of these two positions on music discourse, that we can both say nothing and anything about music, as at the heart of Jankélévitch's concerns.[67] The gnostic approaches that Abbate criticizes attempt to affix a single meaning to some abstractly existing musical object, ignoring what actually exists, musical performances. This, moreover, is compounded by the political ramifications of gnostic discourse. This way of engaging music, the argument goes, involves promoting a single perspective above others and, often this it seems to involve someone in a position of scholarly power oppressing the less powerful.[68]

The best way, it seems to me, to understand the gnostic/drastic dichotomy is in terms of engagement. The drastic mode of engagement with music means experiencing and attending to live performances of music and not abstracting away from them, while gnostic engagement involves assuming that there is some abstract meaning or Music Itself to be understood and that one ought to try to make claims about this abstract object instead. Presumably because such claims would be about *the work* (whatever that happens to be) and therefore extend beyond a single performance.

When looking closely at the distinction, however, we encounter a problem. Abbate explicitly ties drastic engagement to live performance, she permits listening to sometimes be drastic, but only when listening to a live performance.[69] Something is missing in an experience of a recording that fails to be drastic (thought it is not clear to me what this

[67]Rings (2012).

[68]Abbate (2004), 527.

[69]Ibid., 506.

is). The problem is that there is not necessarily anything about the phenomenology of an experience that marks its as drastic or gnostic in the terms outlined by Abbate.

Imagine sitting in front of a screen and behind it is either a performer playing a piece or a high quality recording of the piece. Imagine that the recording and playback is of such quality that you cannot tell whether you are listening to the live performance or the recording. How can such engagement be typed one way or the other? If we think that we are listening to a live performance and engage the experience as if it were a live performance can such a seemingly drastic experience be rendered gnostic if it turns out we were only hearing the recording? These questions complicate the nature of drastic and gnostic engagement and seem to indicate that the distinction cannot inhere in whether or not one is experiencing a live performance, as Abbate seems to claim.

This is where the phenomenal/theoretical conceptual distinction comes into play. Thinking of drastic engagement as relying on phenomenally conceptualized experience allows all of the fringe benefits that Abbate claims for gnostic engagement—primarily the reintroduction of engagement with actual performances into musicological discourse. Moreover, conceiving of gnostic engagement as relying on theoretical concepts explains many of the features associated with this type of musical engagement (or some abstract object that is called "music"). Now, I have done a disservice to Abbate's distinction and taken some of the attention away from what I take her primary goals to be, to re-include discussions of and interaction with performance back into music theory and musicology. However, by recasting the distinction in terms of engagement and aligning drastic engagement with phenomenal concepts and gnostic engagement with theoretical ones, one sees how different discursive practices become associated with one approach or the other.

It should be noted, also, before moving on, that there are clear normative claims underlying Abbate's distinction. Aside from her specific examples of gnostic, hermeneutic claims being used in outright racist ways by the likes of Wagner,[70] she sees all this sort of talk as resting on an imaginary foundation and not really engaging what music actually is for the purpose of reinscribing scholarly authority. Overall I would like to hold off on normative claims such as these. My goals in this dissertation are just to understand how these two types of concepts work in music theories, a task I take to be prior to passing judgment on which approaches are the correct ones. Moreover, I tend to think that each mode of engagement has its own costs and benefits and that what mode of engagement, and therefore type of concept, we use will depend on our aims at that moment.

John Rahn's Theory of Piece and Theory of Experience

John Rahn's distinction between "theory of experience" and "theory of piece" is probably closest to my distinction, especially in how it categories theories and analytical approaches.[71] While Rahn's distinction is at the level of theory, my distinction is about much more basic musical concepts which I believe *lead* to these different theories. Rahn's theoretical distinction is the last of a quartet of dichotomies he sees between different types of musical discourse. He distinguishes analyses as analog or digital, time-in or time-out, bottom-up or top-down, and finally as theory of experience or theory of piece. The first and last distinctions are the most pertinent here.

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[70] Ibid., 518–519.

[71] Rahn (1979).

Rahn's analog/digital distinction draws from Nelson Goodman's theory of notation presented in *Languages of Art*.[72] These two descriptors are applied to the "symbol schemes" that may be used in notation. Analog systems are semantically and syntactically dense, but this density implies a problem. It is not possible, according to Goodman, to determine with perfect accuracy whether a specific mark applies to a given object or vice versa. Digital systems, by contrast, are differentiated and laid out according to some compliance class, which one might think of as the resolution of that system.[73] As an example, consider two different electronic tuners: one which displays pitch classes and another which displays cents. Both tools are digital in that they have discrete units, but the latter has a higher resolution than the former. Both are imperfect digital measures of something that is in actuality analog, the frequency of the pitch. Goodman lays out the costs and benefits of each system as follows:

> The real virtues of digital instruments are those of notational systems: definiteness and repeatability of readings. Analog instruments may offer greater sensitivity and flexibility. With an analog instrument we are not fettered by an arbitrary lower boundary of discrimination; the only limit on the fineness of our readings is the (varying) limit on our accuracy in determining, say, the position of a pointer. However, once the maximum fineness of discrimination has been settled, we can construct a digital instrument (if we can construct any instrument) that will give readings that fine. Where the task is gauging or measuring, the analog instrument is likely to play its chief role in the exploratory stages, before units of measure have been fixed; then a suitably designed digital instrument takes over.[74]

It turns out that, in fact, we actually *perceive* music digitally. Various psychological studies have determined the approximate "just noticeable difference" (JND) on various musical

[72]Goodman (1976).

[73]Ibid., 160–161.

[74]Ibid., 162–163.

parameters.[75] Generally, the JND's have a higher resolution than our notation systems do, but they are not dense in the way that Goodman means it.

How does the analog/digital dichotomy apply, then, to my conceptual distinction? While perhaps not actually analog vis-a-vis the real world, the deployment of phenomenal concepts *feels* analog, while that of theoretical concepts seems digital. In phenomenology, we experience the world as analog, even though our perceptual systems cannot actually provide this resolution.[76] Since this is how our experiences actually go, what they are like, phenomenal concepts are analog because they refer to these analog-seeming experiences. Theoretical concepts tend to feel digital in their application, since they tend to be based on abstract music-theoretical objects that have definite definition while phenomenal concepts feel analog because their resolution exactly matches our experience.

While all four aspects of musical discourse identified by Rahn could, theoretically, be combined in any way, they most often occur as sets (e.g., theories of piece are often also digital, time-out, and top-down). This is made most manifest in Rahn's account of the last binary. Theories of experience tend toward the analog, the time-in, and the bottom-up, while theories of pieces tend toward the digital, the time-out, and the top-down.[77] There are thus a number of distinct practices of music theory which are contingently related. I might reframe Rahn's distinctions as discursive tendencies that flow from conceptualizing music in

[75]Justin London discusses JND in meter extensively. See especially, London (2012), 33–35. London (2009) discusses aesthetic and artistic implications of JND's on other parameters.

[76]This is rather like how we experience film. While the actual frame rate is only 24 frames per second we pass that threshold that the images appears to be contiguous with only a couple of artifacts (like motion blur) to clue us into the illusion. Watching an object move across the screen has the phenomenology of analog measurement.

[77]Rahn (1979), 218.

certain ways. That is, when we think of music phenomenally, we are apt to reach for analog discourse or describe our experience in a "time-in" fashion (as Rahn says, such explanation is "a chronicle or diary of the explainer's journey through the piece"),[78] while when we conceptualize the music theoretically, we are apt to reach for digital description or describe relationships as top-down. The important thing to point out, though, is that these discursive habits, while wont to coalesce into unified methodologies (or at least we are wont to think of it that way), can come apart and possibly recombined in interesting ways. While Rahn discusses theory of experience and theory of piece as tending to be the output of the most common combinations of discursive styles, each discursive habit tends to flow from a certain conceptualization. Rahn's theory-distinction exists as the sort of aggregate distinction across the discursive practices while the conceptual distinction between phenomenal concepts and theoretical concepts is the *ur*-distinction which motivates the different tendencies and their collection into distinct theoretical styles.

1.6 Other Preliminaries

Motivations of Each Conceptual Type

Different kinds of concepts are used for different reasons. Before starting an analysis, music theorists have some implicit or explicit vision about the shape an analysis should take or the sorts of claims that are appropriate, or, at least, what sorts of claims are proper for the theoretical context of the analysis. As we will see in the following chapters, some analysts

[78] Ibid.

share their ideas about what constitutes proper music theory, while others leave it implicit. I will organize these motivations as a set of analytical imperatives held by the analyst. Some of the imperatives, presumably, will be satisfied only by the use of a particular kind of conceptualization, while others could go either way, depending on the kind of analysis in question.

The first of these imperatives is a desire to respect the phenomenology of the musical experience. I will call this the *phenomenological imperative*. Analysts engage this imperative when they see the goal of their work to be to communicate their experience of the piece. This experience can be some kind of original experience that the analysts simply attempts to translate into music-theoretical terms or it may be a newly minted experience, flowing from the analytical process. Either way, this imperative primarily guides the use of phenomenal concepts.

There are two imperatives which guide theoretical concepts. First, there is the desire to create a valid formal system. It must be internally consistent, with propositions logically flowing from its axioms. I will call this the *validity imperative*. Usually the systems that theoretical concepts work in are expected to be internally consistent (this is especially true for formal theoretical concepts). Analytical claims that rely on this imperative are concerned with maintaining the logical coherence of the system. This imperative applies mainly to formal theoretical concepts because the explicit definitions of this conceptual type permit this rigorous approach. Finally, there is also often a desire for the formal system (or our conception of that system) to have certain quasi-aesthetic qualities. The way that the system develops must make some intuitive sense (in the everyday sense of the word "intuitive") with meta-formal analytical decisions following from previous ones. This imperative also

motivates a desire for explanations that have a sense of elegance and symmetry in addition to "working" correctly. While these features concern the formal aspects of the analysis, they are essentially qualitative in nature and they are often sought because grasping them involves a particular phenomenology. I will call this the *formal-aesthetic imperative*.[79]

Analytical Narrative

In my analyses of analytical methods that follow, I will sometimes make use of the phrase "analytical narrative" to talk about the structure of the creation and reception of an analysis. Analytical narrative might refer to a variety of things:

1. The process the analyst goes through to generate the analysis (e.g., doing an analysis).

2. The process by which the analyst tries to convince the reader of the analysis (e.g., the argument given in an analytical article).

3. The process by which a reader comes to understand an analysis (e.g., reading an analytical article).

Importantly, these are not narratives presented in the music but rather the story that the analyst tells (or the reader recreates) when working through an analysis. Clearly these are all processes of some kind: they will occur over time and the order is usually important (especially in (2), not especially in (1)). These three processes are all similar in that they

[79]Invoking these imperatives creates an unmistakably ethical air. And, indeed, I think it is appropriate to consider these imperatives as structurally analogous to ethical imperatives. Bryan Parkhurst (2013) had argued that many music-analytical claims are analogous to expressionist ethical claims and Scott Gleason (2013) has highlighted ethical aspects of the Princeton school. I present my own perspective on this issue in the conclusion.

they track the development of an understanding of a piece. The first is generative, the second is pedagogical, the third is receptive. All three are active processes but active in different ways.

In some instances, (1) and (2) collapse into a single narrative: when the analysis is presented as a description of the process of generating the analysis. Lewin's essay on Stockhausen's *Klavierstück III* is one such example.[80] Since the article is meant to serve an example not just of transformational analysis but also the process by which one creates a transformational analysis, the story that Lewin tells about how he came up with the analysis mirrors the process by which he generated the analysis.

What would a maximally complicated case look like? I imagine an analytical methodology that has a number of false starts (which, for me anyway, is typical). In this case, (1) and (2) would come apart. As I do the analysis I might try different ways of thinking about the music. I might start by just reading through the score and producing a roman numeral analysis, formal analysis, or parts of a voice-leading reduction based just on the score alone. I might start instead by listening or playing through the piece attending to the phenomenology of listening or playing and start my analysis from the things I notice there. All of these are ways of getting into the music for me at the start of an analysis.[81] Sometimes I might only

[80]Lewin (2007), explored in depth in chapter four.

[81]Another possibility might be to read other theorists' analyses of the piece first. I, personally, tend to save this phase of the analysis until *after* I have formed my initial impressions so that my perspective is not narrowed to the concerns that they focus on. Of course, for many analysts the feeling that some other analyst did not get it quite right motivates them to undertake their analysis (this seems to be case for Lewin's analysis of Stockhausen, explored in depth in chapter four). One suspects, though, that even in this case, there was some understanding of the piece that preceded engaging with others' work, or else there would not have been a context under which to suspect that they did not get it quite right.

kind of hear something that upon closer inspection of the score turns out to be easier to tease out non-phenomenally and then can be reconverted into phenomenology. The reverse is also possible, that I may have a hearing and then generate a Schenkerian graph (say) which highlights this hearing. Most often though, it is a combination of all of these things. If I then turn to the second kind of narrative, I begin building an analysis out of the aspects of my work with the piece that seem most productive. I certainly will not include everything that occurred to me and I will put some thought into the way that I present my findings and the order I present them in. What results is a new, probably more linear narrative in the written analysis, organized to hopefully allow the reader to easily understand my claims. The third kind of narrative happens when someone comes to read my analysis. As they work through the article, if I have done my job well, an understanding of the piece (or an understanding of my understanding of the piece) will develop for them.

At all of these phases, different types of concepts will come into play and influence the development of this narrative. Understanding how the different types of concepts work in these different analytical narratives and how different analytical approaches engage them is the aim of the following chapters.

Chapter 2

Simple Theories I: Theoretical Approaches

2.1 Introduction

Simple Theories

Music analysts use the conceptual categories described in chapter one in various ways. Sometimes they seem to reach for whatever tool best suits their style or suits the type of claim that they want to make, paying little attention to concepts' structure, epistemological status, or the methodological ramifications. At other times, the decision to use one conceptual type or another is intentional, motivated by explicit, meta-theoretical concerns. The rest of this dissertation examines how the conceptual types defined in chapter one are used in practice: the sorts of strategies and techniques that suit each conceptual type, the motivations which underlie their deployment, and their benefits and pitfalls.

This chapter examines simple, theoretical approaches, which use—or attempt to use—*only* theoretical concepts, eschewing phenomenology in their conceptual framework. "Simple" here ought not to be taken as pejorative. Simple phenomenal and theoretical approaches are simple in that they rely on only a *single* conceptual type. This conceptual monism is often the result of serious engagement with fundamental meta-theoretical issues. Much of music theory faces a dilemma: how can one be maximally precise and clear while also expressing what is most musically important? Going all-in on one conceptual type or another involves accepting this dilemma and embracing one horn over the other.[1] Understanding these music-theoretical approaches, therefore, begins with an understanding of the goals of a given approach: what it clings to and what it lets go of.

Authors of phenomenal approaches are often quite clear about their methodological and epistemological commitments. While their analyses can create a messy task for a reader, they take pains to point out *why* this messiness is inevitable. Boretz is probably the most explicit:

> The ultimate act of musical creation is the auditory-mental activity by which alone a musical identity is brought into being, in the only way in which, epistemically speaking, it has being: as a consciously experienced determinate feel; that is, as an awareness-state of the perceptual consciousness of some experiencing person, an awareness-state which is cognized by that person as a distinct experienced-sound entity within a certain range of such entities, and which is retrievable in principle and therefore in principle—though not necessarily in practice—intersubjectively sharable.[2]

[1]Brown and Dempster make this point as well. Their aim is to "heighten the contrast in order to reveal the costs and benefits of each view" while also proposing that their away from "particularist" phenomenalism in favor what they take to be a more scientific approach not a painful a sacrifice as is often supposed. Dempster and Brown (1989), 98-99.

[2]Boretz (1989) 107.

For Boretz, music ultimately *is* phenomenal experience and any methodology that does not deal in phenomenal consciousness does not have much to do with music. A merely abstract or theoretical treatment of the score or sound events is at best a distraction. Boretz's belief that music is or ought to be construed as entirely phenomenal indicates that the only way to study this music as music is to use phenomenal concepts.

But this strong commitment to phenomenal ontology does not come for free. The reference of phenomenal concepts is phenomenal content, which is by its nature ineffable and subjective. Since one has no access to others' conscious mental states, one can never really know for sure if the analysis is properly understood. They are only "retrievable in principle" because one can retrieve one's own phenomenal experience from an earlier time. This makes the phenomenal contents sharable in principle, because our past selves can share their phenomenal experience with us, not in practice between two different people.

For phenomenal theorists, this is just the price of doing business, but for others this situation is intolerable. Eugene Narmour presents a different image of music theory, one that motivates him to rely instead on theoretical concepts.

> [M]usical analysis is partly a rationalistic act, a paltry attempt to recover the ephemeral. The recalcitrance of the temporal aesthetic to theoretical explanation—as created by the complexities of sound and synthesized in their perceptual and cognitive mechanisms of the brain—is well recognized. While being heard, the transient parts of a musical composition recede in time, precluding ordinary empirical introspection and the capture of unchanging empirical data. Having been heard, the fleeting musical artwork lodges strangely in one's memory, as a transcendental unity, defiantly resisting analysis.[3]

In this passage, we see Narmour describing a fundamental issue with studying music *only*

[3]Narmour (1990), 14.

in terms of its phenomenology. There are two problems. First, it is reasonable to think that *any* systematic analysis or study of this phenomenology will fundamentally alter it, causing it to no longer be that experience one wanted to study in the first place. Second, the short-lived nature of musical experience prevents us from approaching it in a slow and deliberate manner. By the time we come to study music, it is already gone; we are barred from using the exact experiential tools that permit our sciences to advance. The only way forward, Narmour argues, is rational reconstruction: to try as best we can to model the experience to provide some aphenomenal insights.

At the same time, one's choice of conceptual resources might also be influenced by the discursive styles that best suit them. As we will see in the next chapter, the approaches that rely on phenomenal concepts require some artistry to do well and put a great deal of faith in the reader's capacity to understand the experience the author is trying to communicate (if this is even their goal). By contrast, theoretical approaches place a higher premium on precise discourse and clear communication. Since the references of theoretical concepts *are* abstract objects—which really are sharable—then there is at least the possibility of real communication between interlocutors. We need not take it on faith that we are talking about the same thing. Approaches built upon theoretical concepts permit logical analysis, clear guidelines for their deployment, and even allow for non-human analysts (i.e., computers) to do analytical work. Most theorists who use simple theoretical approaches are aware of their challenges, but consider the cost of fully engaging music phenomenology, at least via phenomenal concepts, too high.

Theoretical Approaches

Theoretical approaches aim to rely only on sharable, definable theoretical concepts to do their main analytical work. In general, they tend to be explicit about their motivations, and any given analytical claim can be traced back to the primitives of the abstract system that generated it.

Since these approaches reject overt reliance on experience, the aims that underlie them will be limited to validity and theoretical-aesthetic motivations. Recall that validity motivations are a desire for the given analytical system to be formally coherent, and the rules must be constructed such that any analyst will generate the same reading given the same input. Constructing a theory that meets these criteria opens up the possibility for properly scientific theories, since it makes falsifiability plausible. And when this is the case, analytical counterexamples can carry more weight. The validity imperative also provides an additional benefit. If the system is internally coherent, then it is relatively easy to follow the development of any given claim through the system. There is no black box of consciousness to go through, and each step in the process can be scrutinized. This makes it easier to track its claims and prevents analysts from arriving at an impasse simply by hearing a passage differently.

While it is easy to determine whether a methodology is valid or not (assuming its terms are well defined) it is much more difficult to determine whether a given feature of an approach issues from formal-aesthetic motivations. Unlike the well-formedness rules of validity conditions, formal-aesthetic motivations are more like preference rules. All things being equal, *prefer* the theory or methodology that is simplest or most elegant. Defining elegance here can

be quite difficult; it has a know-it-when-you-see-it kind of quality. While theorists probably derive some satisfaction purely from building an elegant explanation or model of a feature, elegance also has a rhetorical function. A simpler claim is often easier to communicate, and easier to convince readers of, than a more complex one.

The least controversial version of a simple theoretical analytical methodology would be one that uses computer instead of human analysts, as in the first stages of a corpus analysis.[4] Consider, for example, David Huron's use of the Humdrum toolkit.[5] This software system is a means to encode a variety of musical data into representations suitable for computer-assisted analysis. Users can define relationships or features that they wish to count, cross-reference, or identify examining a vast collection of scores.[6] The analytical work can be done mechanically and automatically by the computer once the basic terms are defined.

One might encode, say, augmented 6th chords with a representation, and send the computer off to find instances of this representation in given score.[7] This is encoded as a UNIX command, augmented with representations that tells the computer how to determine the tonic (either from meta-data in the score representation or through a different program that uses similarly well-defined terms to identify a key) and a representation of the augmented

[4]Cook (2004) surveys a number of these practices, including the Humdrum toolkit discussed below.

[5]Huron (2002) provides a good introduction to the functionality of this software. The software itself and tutorials are available at http://www.musiccog.ohio-state.edu/Humdrum/.

[6]A sample of recent studies which use this took includes London (2013), Huron and Ommen (2006), and Jan (2004).

[7]This is one of the introductory examples on the Humdrum toolkit website.

6th chord's relevant scale degrees.[8]

The "concepts" in this case are these well-defined representations. There are theoretical concepts in the purest sense. This conceptualization of an augmented 6th chord requires *no* phenomenal content whatsoever. This is not quite what we usually mean by an augmented 6th chord. For conscious analysts it is a mixed concept and would include a phenomenal representation. It is *only* a formal definition, and it must be so if one is to conscript a computer to search a database. The aims of this kind of approach are different than those which seem to engage musical experience, of course. Software such as this has the utility of being able to address a vast library of scores relatively quickly, and if the definitions are well-wrought, then the relationships identified by the software will be free from analyst's biases (at least those that do not figure into the programming) and more statistically meaningful.[9]

In the following sections I trace two, more complicated ways of invoking theoretical concepts, highlighting the costs and benefits of conceptualizing music this way, while tracing the analytical practices developed to use these concepts.

2.2 Formalized Systems: The Interval Angle

My first case study is Damon Scott and Eric Isaacson's "interval angle," a similarity measure for set classes.[10] The interval angle between two set classes is the angle made in six-

[8]In the syntax of Humdrum, this appears as solfa input | grep '6-.*4+'. This representation can be further expanded by additional arguments for the scale degrees which determine the chord's nationality.

[9]This is a rare example that actually follows what Cook referred to in section 1.5.1 as "formal theories," which *only* concern themselves with addressing the score.

[10]Scott and Isaacson (1998).

dimensional space between the interval class vectors of two set classes and the origin, [0 0 0 0 0 0]. A simplified, two-dimensional example is show in Figure 2.1.[11] The interval angle

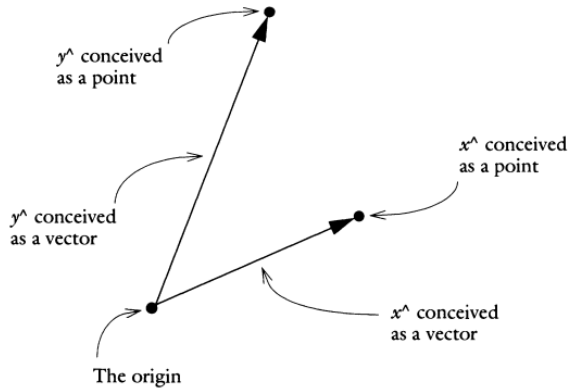

Figure 2.1: Scott and Isaacson's two-dimensional depiction of an interval angle.

presents a single abstract reference under a number of modes of presentation and it is defined and explored using explicitly mathematical and quasi-mathematical rhetoric. However, it also gains much of its appeal from a sort of conceptual and metaphorical elegance, while the latter is a sort of aesthetic bonus, formal elegance is a result of the concept's structure and plays an important role in its plausibility.

Defining and "Proving" the Interval Angle

Formally, the interval angle between two set classes is equivalent to the angle between the vectors of unit length that point the same direction as the interval class vectors of those set-classes and the ICV origin in six-dimensional space. In formal notation:[12]

[11]This figure is presented in Ibid., 109.

[12]I will be using a slightly different, but I think clearer, notation than Scott and Isaacson. For the equations and definitions in their original notation, see Ibid., 110ff. The main difference is that I will denote the interval class vector of a given set class x with the symbol ICV_x while Scott and Isaacson use $x\hat{}$.

$$ANGLE(X,Y) = \angle ICV_x, ICV_y$$

We can review the equations used to calculate the interval angle by working through an example. Consider the angle between (0, 1, 3) and (0, 2, 3, 4, 6). The interval class vector of (0, 1, 3) is <1, 1, 1, 0, 0, 0> and the interval class vector of (0, 2, 3, 4, 6) is <2, 3, 2, 2, 0, 1>. The formula for determining the interval angle is

$$\angle ICV_x, ICV_y = arccos(\frac{ICV_x \cdot ICV_y}{mag(ICV_x) \times mag(ICV_y)})$$

To compute this angle we need two functions: one that defines the dot product of two vectors (symbolized as "$\cdot$" in the formula) and one that defines vector magnitude.[13] The dot product of two vectors is the sum of the products of corresponding arguments in each vector. Thus, for (0, 1, 3,) and (0, 2, 3, 4, 6):

$$ICV_x \cdot ICV_y = (1 \times 2 + 1 \times 3 + 1 \times 2 + 0 \times 2 + 0 \times 0 + 0 \times 1)$$

$$ICV_x \cdot ICV_y = 7$$

The magnitude of the vectors, their geometric length, is the square root of the dot product of a vector with itself. Thus,

$$mag(ICV_x) = \sqrt{ICV_x \cdot ICV_x}$$

$$mag(ICV_x) = \sqrt{(1 \times 1 + 1 \times 1 + 1 \times 1 + 0 \times 0 + 0 \times 0 + 0 \times 0)}$$

$$mag(ICV_x) = \sqrt{3}$$

$$mag(ICV_x) = 1.732$$

[13]Ibid., 110.

and

$$mag(ICV_y) = \sqrt{ICV_y \cdot ICV_y}$$

$$mag(ICV_y) = \sqrt{(2 \times 2 + 3 \times 3 + 2 \times 2 + 2 \times 2 + 0 \times 0 + 1 \times 1)}$$

$$mag(ICV_y) = \sqrt{22}$$

$$mag(ICV_y) = 4.690$$

We now have everything we need to determine the interval angle.

$$\angle ICV_x, ICV_y = arccos(\tfrac{7}{1.732 \times 4.690})$$

$$\angle ICV_x, ICV_y = arccos(\tfrac{7}{8.123})$$

$$\angle ICV_x, ICV_y = 0.862°$$

The result is given in degrees. Set classes with identical interval-class vectors (e.g., Z-related sets) and those with proportional vectors return a result of 0° and maximally different sets return 90°.

The authors also provide a second way to calculate the interval angle which involves "normalizing" the ICV's. In this context, normalization means computing the unit length vectors first with an additional normalizing equation. The interval angle is then between these two unit length vectors, not the proper ICV's themselves. The unit length vectors are calculated by dividing each component of an ICV by the previously calculated magnitude of the ICV. We can therefore define an equivalent way to calculate the interval angle as

$$\angle ICV_x, ICV_y = arccos(norm(ICV_x) \cdot norm(ICV_y))$$

These two equations are equivalent because in the first formulation the normalization of each vector is baked into the equation. The difference between the two is a matter of order in which you do the operations. Essentially, do you calculate the product of the magnitudes and the dot product of the ICV's first, and then normalize the results through division; or do you normalize first, dividing the ICV by the magnitude and *then* finding their dot product? These two definitions give different modes of presentation for a single abstract object. Unlike the difference between the different theoretical modes of presentation for the *dominant*, these mathematically equivalent sense, they could be derived from each other. They are not precisely the same, and therefore are different modes of presentation, but this difference is not as stark as sense differences explored so far.

Scott and Isaacson follow their definition of the interval vector with a series of "demonstrations" of its features. These demonstrations are quasi-formal in their organization. Each begins with a statement about the features or qualities of interval angles (like a theorem in mathematics or logic) that is then "proved" with either an informal discussion or explicit mathematical demonstration of that feature. This organization borrows some institutional legitimacy from mathematics and logic, and—more importantly—it provides a systematic approach to discussing the interval angle.

Some demonstrations are informal comments about the measure.

> Statement 2: ANGLE produces the kind of numbers one would expect if measuring an actual physical object, such as length, mass, or electromotive potential. The work involved in calculating ANGLE is similar in to that which goes into measuring physical quantity.

This is not a deductively provable statement, or at least it is not meant to be here. Instead, Statement 2 gives rhetorical reasons to adopt the interval angle from a rhetorical perspective.

In particular, the authors take the opportunity here to point out that the interval angle can sometimes produce an irrational number, just as if one was measuring a real object. This accords a certain reality to interval angles—they seem more likely to be of the music or the real world than just a result of an analytical system. It makes it easier to think of the interval angle as a realistic aspect of set-class relations.

Other statements are formally provable.

> Statement 7: ANGLE (x, y) returns its maximal value, namely 90°, exactly when the pitch-class sets x and y have no intervallic contents in common

In this case, we could construct a mathematical proof showing that no common ICVs results in a 90° or we could calculate the interval angles for all possible set-class combinations with no common ICVs to find the same result.

The Interval Angle's Modes of Presentation

The interval angle demonstrates a theoretical concept that has multiple modes of presentation that refer to a single abstract object. Understanding all the terms, one can determine one equation from the other, the only difference is whether you determine the unit vector in the same step as you calculate the angle (the first formulation) or if you do it in separate steps (the second formulation). But these are still two different presentations of a single, abstract object.

The interval angle closely approximates the results of other similarity measures with the added benefit of being able to relate set classes of different cardinalites. And Scott and Isaacson review a number of different similarity measures comparing how well the results of

each system match and noting how efficient different systems are. They find that they are able to achieve a high degree of correlation between their measure and others'. One ought to, then, prefer their measure to other similarity measures because of its simplicity, that is, for formal-aesthetic reasons. The measure is about as effective as others, but gives us the answers in a more elegant package.

The authors also give a substantially different, non-mathematical conceptualization. In recounting their conception of the interval angle, they present a metaphor for their measure as analogous to the way distance between stars is measured by an earthbound observer:

> Angle measures the difference in apparent sound of pitch-class sets in much the same way that arclength in spherical trigonometry measures the difference in apparent position of stars in the sky.[14]

This metaphor gives us a three-dimensional, embodied analogy that allows one to imagine the same operation in a six-dimensional space. The metaphor helps conceptualize the measure in a non-mathematical way, and, ironically perhaps, makes it *seem* more real. The abstract object is the same, but the comparison allows us to think of measuring this angle as as something that we can physically do. We can imagine actually turning our heads a certain angle to look at different stars.[15] Conceptualizing the interval angle this way makes it easier, especially for non-mathematicians, to understand what it is and how it works.

This analogy to astronomy also activates a number of other associations that benefit the interval angle. The star metaphor asks us to consider set classes as stars in the sky,

[14]Ibid., 112.

[15]This involves attaching in image schema to concept of interval angle. The importance of image schemata in music theory is discussed more in the context of the transformational attitude below.

as beautiful objects in their own right. It allows us theorists to consider ourselves as astronomers, with all of the positive associations that implies. Astronomers are in awe of the night sky, they cannot help but study it and the object of their study appears both beautiful and profound. It takes them beyond the human realm toward some kind of transcendental, universal understanding. This metaphor allows us to consider ourselves as participating in the same kind of endeavor when we use the interval angle to study music.[16,17] Importantly, however, the metaphorical conceptualization does not help one *use* the interval angle. It is only an analogy to wrap one's head around what the mathematics represent.[18]

The abstract reference of the interval angle is still difficult to grasp since it exists in a hard-to-imagine six-dimensional space. The multiple conceptualizations of the interval angle—its different modes of presentation—help us to approach it from a number of vantage points. This, I think, is a prime benefit of theoretical concepts. We can reformulate the concept but still refer to the same thing, giving us multiple paths through which to understand the object.[19]

The interval angle also has a sort of formal elegance. Even despite the complexity of

[16]Looking even deeper into the metaphor, it allows us to view ourselves as carrying on the tradition of ancient music theorists who drew a much closer connection to that secret knowledge. This is an appeal via the aesthetic of agnosticism, of secret knowledge of the music that is unlockable by we theorists because we have the secret music-theoretical training not available to others. See Abbate (2004).

[17]All of this said, it is important to remember that while these analogies may be disposed to favor the interval angle, they are all just cosmetic features, results of a contingent way of conceptualizing the interval angle and not at all essential to it.

[18]This is unlike the multiple concepts of *Dominant* discussed in the previous chapter, where the phenomenal concepts could actually be used in analysis.

[19]Recall that phenomenal concepts refer *directly* without a mode of presentation, so any alteration of the concept entails altering the phenomenal contents it refers to.

six-dimensional space, computing the interval angle is relatively simple way to understand what this means derived from simpler scenarios. One can easily understand what it means to find the angle between the vectors of defined points and an origin on a plane. And it is relatively easy to understand how this scales up to three dimensions. To put it into a six-dimensional space, one just adds more dimensions but the basic operation remains the same.

As a theoretical concept the interval angle displays some of the most important benefits of using theoretical concepts in analysis, namely, elegance and rigor. The rigorous nature of the interval angle derives primarily from its mathematical nature. This angle is something that can be measured using precise numbers, allowing us to relate set classes with finer detail than our perceptual systems allow. Moreover, because the concept refers to an abstract object, the meaning of this concept really is sharable. This allows us to have real communication in a way that is much more difficult—if not impossible—to obtain when working with phenomenal concepts. Additionally, because it is simple relative to other similarity measures, we have reasons to prefer it even if it is does not explain more properties.[20]

But the interval angle also introduces the problems with theoretical concepts in music theory and analysis. It is difficult to argue that the most important aspects of music are not the ways that it is experienced. Music is most fundamentally an aesthetic object, it is something apprehended by the senses. But simply by virtue of dealing in objectively sharable, abstract objects, the interval angle fails to actually grasp at this aesthetic phenomenology.

[20]Scott and Isaacson also argue that this measure gains a certain sort of plausibility from being similar in presentation to other kinds of measuring tools. "ANGLE looks and feels very much like a measure taken from physics, particularly in physics" Scott and Isaacson (1998), 108.

If, like Boretz, one takes a strong position on music ontology then the interval angle is not really about music at all.[21] The best way to counter this critique is to realize that the interval angle, and other similarly structured tools, are not meant to measure the music itself, but to serve as a model for the workings of the perceptual system. In the following sections, we see this sort of theoretical modeling of phenomenology become more explicit.

2.3 Theoretical Models: The Implication-Realization Model

The interval angle derives some of its practical utility (though not formal validity) by serving as a more extensive and precise stand-in for a perceptual ability. It produces the same results as our perceptual judgments in basic scenarios; when we can phenomenally identify sets as more or less similar, the interval angle makes the same judgments we do. Because its predictions map onto our perceptual judgments at this level, we feel secure extending it to situations where we cannot identify similarity with the same precision or accuracy.[22] We use all sorts of tools this way. I might perceive that one sound is louder than another, but use a decibel meter to see exactly *how* much louder it is. Given this relationship to our perceptual

[21] As an alternative we might consider music to have features that are artistically valuable without actually being perceptible. Justin London makes such a distinction between artistic and aesthetic appreciation in London (2009). Scott and Isaacson are silent on what it's like to perceive the similarity measured by the interval angle, though the scope of their project does not require them to.

[22] This, as I stated above, is not unique to the interval angle. *All* valid similarity measures will similarly extend this perceptual ability. What makes the interval angle special is how well its structural simplicity fulfills formal-aesthetic criteria and the rhetorical power of its metaphorical description.

systems, we can understand the interval angle as a kind of model for that system. It is not a model of how the system works, but a model that produces the same—or better—results.[23] It models the judgments we make when we are able to assess set-class similarity but goes beyond those relationships that are easy to hear.

The interval angle is just one way of modeling one aspect of our perceptual system. The aim of this type of model is to limit the subjectivity involved in music-theoretical measurements, thereby allowing our analyses to be both more easily communicable and, in some ways, more precise, even if the theoretical concepts involved in working the model take us far afield from the phenomenal concepts that convinced us of its utility in the first place. But besides modeling the *judgments* of our perceptual systems, we can also model the *workings* of said systems. This is the domain of psychological models. Eugene Narmour's implication-realization model of melodic expectancy (hereafter the I-R model) is one such psychological model and serves as my second case study in theoretical approaches.

Narmour's theory is complex and dense, stretching over two volumes and hundreds of short analytical examples.[24] While Narmour posits that his approach is a testable scientific theory of melody perception, I will be concerned primarily with the analytical tools it offers. Some of the psychological criticisms leveled at his theory may not apply when it is considered

[23]We might call this a functional model, drawing from the functionalist theory of mind. The interval angle, when given the same input generates the same output as our perceptual system, even if the means by which it arrives at this judgment, its internal constitution, differs.

[24]Narmour (1990) and Narmour (1992). This theory was promised at the end of Narmour (1977) and further groundwork was laid in Narmour (1983). Lawrence Zbikowski's review of *The Analysis and Cognition of Basic Melodic Structures* provides a good summary of how Narmour's theory developed from its inspirations in Meyer (1973) through to its final presentation. Zbikowski (1993), 177-179. A third volume, which was meant to show yet larger-scale structures, was planned but never published.

as an analytical tool, though other critiques may come to the fore.[25]

An Overview of the I-R Model

The following account of Narmour's theory is both condensed and abridged, focusing only on the aspects required for a short analysis, but I cover all of the parts of the theory required to understand how it works and the kinds of concepts it relies on.[26] The largest omission is the set of tools Narmour develops for his theory of transformational levels and musical structure.[27] I will also only briefly summarize Narmour's many critiques of style-based analytical approaches.

Narmour's approach is motivated by a desire to create an analytical system that is testable and does not fall prey to "ad hoc" generalizations. The lack of a properly scientific methodology is among Narmour's central critiques of Schenkerian theory, particularly the unfalisfiablility of its analytical claims, and he lays out his I-R model as an alternative.[28] Building upon Leonard Meyer's work in *Explaining Music*, Narmour's model means to formalize the sorts of implicative structures present in a melody.[29] Under the I-R model, melodies consist

[25]The most robust of these experiments is conducted by E. Glenn Schellenberg, who, on the basis of his experimentation, recommends a pared down version of the model. See Schellenberg (1996).

[26]Many reviewers have outlined and explicated Narmour's theory including Gjerdingen (1992) and Zbikowski (1993), and Narmour himself provides a summary of the basic theory as the first chapter of Narmour (1992).

[27]Explicating these tools forms the lion's share of the latter half of *The Analysis and Cognition of Melodic Complexity*, the second volume of the the I-R model. Narmour (1992).

[28]Narmour's critique of Schenkerian theory are found primarily in Narmour (1977) and Narmour (1990) is largely the positive contribution meant to serve as an alternative to Schenkerian theory.

[29]Meyer (1973).

of "style shapes," small, surface-level "simplexes" of only a few notes.[30] The overall implications of any given melodic gesture are a combination of the bottom-up implications generated by style shapes and the top-down implications generated by style structures. In practice, style shapes are collections of usually three pitches (two intervals) in sequence that do not include their metrical status or their rhythm. The interval between the first two pitches produces some expectation and the third either confirms or denies this expectation. The I-R model is concerned only with modeling the small style shapes, not the larger, stylistically contingent structures.

The I-R model defines two types of expectation: "process" and "reversal." In a process, sameness or similarity implies further similarity; this is sometimes formalized as $A + A \rightarrow A$, with the letters standing for some quality on a given musical parameter. Pitches are judged to be similar if the interval between them is small. Thus, a small melodic interval, implies another small interval and in the same direction. Reversal is the opposite; when the first two elements of a style shape are different, they imply further difference: $A + B \rightarrow C$. Since large leaps feature very differentiated pitches (they cannot be easily perceived as a single line) they imply continued difference, which Narmour defines as motion by a smaller interval in the opposite direction.[31] Narmour justifies these two implicative structures by appealing to Gestalt principles, indicating that these expectations may be a kind of cognitive universal.[32]

Formally, the I-R model divides the realization of an expectation into two parameters: the intervallic parameter (notated as "I" in analyses) and directional or registral parameter

[30]Narmour (1990), 9.

[31]The concept of melodic reversal owes much to Meyer's notion of gap-fill. Meyer (1973), 146ff.

[32]Narmour (1990), 66.

(notated as "V" for "vector"). Any given implication can be realized on both, either, or neither parameter.[33] On the intervallic parameter, a process, implied by a small interval, generates the implications of other, similarly small intervals while reversal, generated by a large interval, implies intervals of a different magnitude, and since reversal is only implied by large intervals the difference always means smaller.[34]

The strength of the implication depends on the size of the interval. Smaller intervals have the weakest overall implication and large intervals have the strongest (excluding the octave). However, as Figure 2.2, Narmour's "intervallic parametric scale," shows, intervallic implications are complex.[35] Any given interval will have two implications, here called "dominant" and "recessive" implications. The relative strengths of the implications are inversely proportional. The minor second implies process much more strongly than reversal. The major third still has a net implication of process, but this implication is weakened by a slight contrary implication of reversal. Conversely, a major seventh strongly implies reversal while a minor sixth does so less strongly and so on. Perfect fourth, tritone, and perfect fifths are deemed "threshold" intervals where the two implications basically cancel each other out, implying no particular realization very strongly.[36]

The other parameter is interval direction, called the registral parameter, and is simpler than the intervallic. Sameness (A + A) is defined by lateral to lateral motion (i.e., repetition),

[33]The division of melodic features into the various parameters betrays the influence of a modular theory of mind, see Fodor (1983).

[34]Ibid., 79.

[35]Narmour's Figure 5.1, Ibid., 80

[36]Ibid., 79.

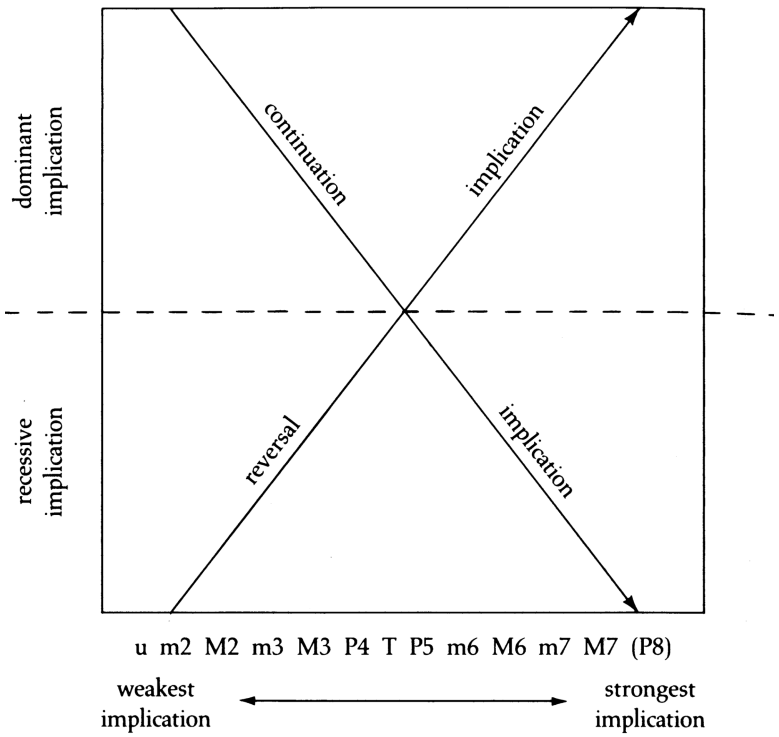

Figure 2.2: The intervallic scale, after Narmour.

similarity (A +A′) is motion in one direction followed by motion in that same direction (i.e., ascent to ascent or descent to descent), and difference is defined as any change in direction. Notice that at the level of style shapes, the model generates no implications on the registral parameter. Implications are generated by interval size alone since a single interval has nothing to be similar to or different from. The similarity and difference measures are only used in realization.

To summarize, implication is generated by the first interval of a style shape. If it is a small interval then the similarity between the two pitches implies process, and realizing this implication means another small interval in the same direction. A large interval, conversely, due to the difference between the two pitches, implies reversal or a smaller interval in the opposite direction. When these implications are realized, the system identifies three "melodic

archetypes," process, reversal, and duplication (i.e., repetition, just a special case of process) notated as P, R and D respectively.

Real melodies, of course, are not limited to only these options and implications may be realized on either parameter independently or denied altogether. A leap followed by a step in the same direction realizes a reversal on the intervallic parameter but not the registral parameter (this is called an intervallic reversal, or IR). Conversely a step followed by a leap in the same direction realizes a process on the registral parameter but not on the intervallic parameter (this is called a registral, or vector, process, or VP). The special case is duplication, which cannot be realized *only* on the registral parameter. If the registral implication (lateral motion) is realized, then the intervallic implication (repetition) must also be realized. Thus, there are five additional "archetypal derivatives" when an implication is realized on only one parameter.

In addition to these shapes, Narmour also identifies monads and dyads: cases where one or two pitches produce no implications because their implication is interrupted by a strong closure (discussed below).[37] Performing an I-R analysis involves identifying these different archetypes in a given melody, and such an analysis is meant to model the way that our perceptual system process such a melody. Figure 2.3(a) shows all eight shapes: the archetypes (P, D, and R), their archetypal derivatives (IP, VP, ID, IR, and VR), and the non-implicative monad and dyad. Also featured in Figure 2.3 is the "registral return," an additional shape that Narmour defines for a-b-a and a-b-a' patterns that occur independently

[37]Another of Narmour's basic archetypes is registral return (notated "aba") but it does not have the same implicative profile as process and reversal and does not figure into the analysis below.

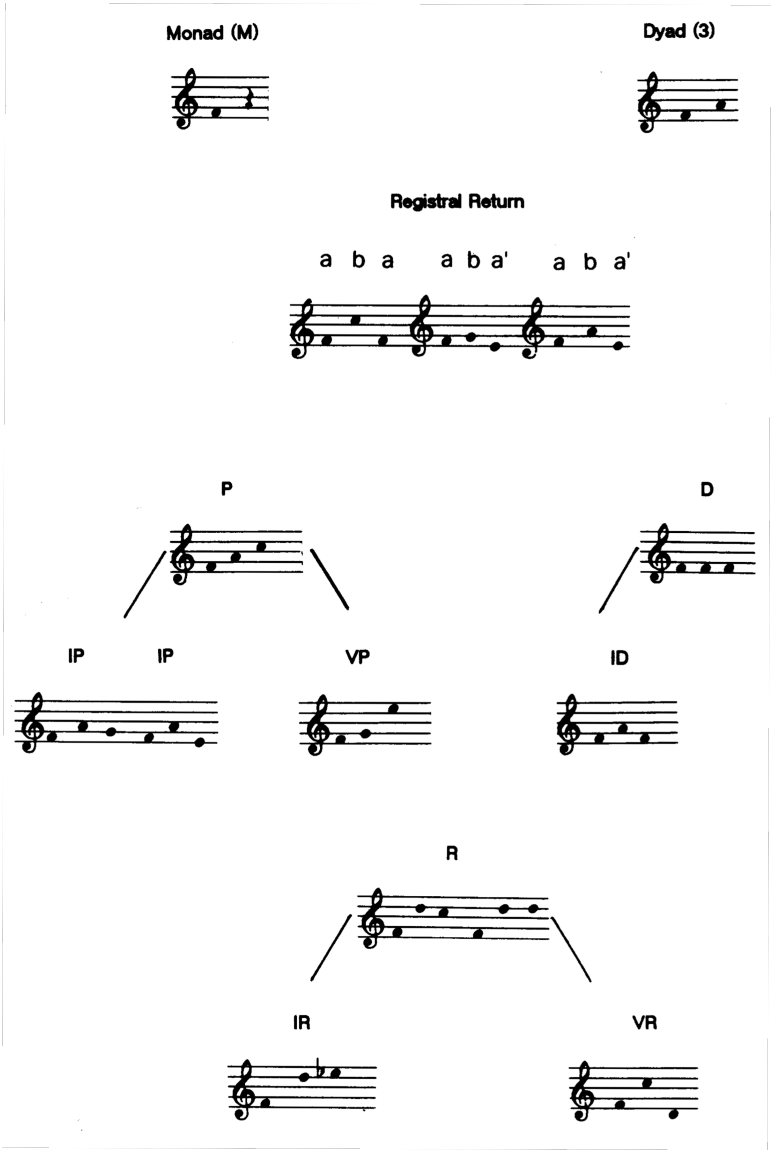

Figure 2.3: The style shapes of the I-R model.

from the archetypes.[38]

Narmour's notion of melodic "archetypes" is drawn directly from Meyer's work on what he called "archetypal schemata," which includes both "archetypal patterns" and "traditional schemata."[39] These melodic patterns are not, as we might assume, the most typical versions of their class, but abstractions that define a class. As Meyer describes them,

> [P]articular events are invariably understood as members of some class. Archetypal patterns and traditional schemata are the classes—"the rules of the game," in Koestler's phrase—in terms of which particular musical events are perceived and comprehended.[40]

Meyer distinguishes archetypal patterns from traditional schemata based on how listeners are meant to come to possess them. The former (like Narmour's style shapes) are innate to human psychology while the latter are learned through exposure to a style.

The archetypes that form the basic vocabulary of Narmour's model, then, are meant to be the total list of these abstract categories. They are not archetypes in the sense of being typical examples. Instead, if the model is successful, they are the means by which we are meant to categorize and understand melodies. The archetypes are not the specific gestures shown in Figure 2.3, but the abstractions that classify melodic gestures in by their interval size and direction and by how their implications are realized.

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[38]Unfortunately, it is unclear why Narmour requires an additional symbol for registral return in addition to the more specific archetypes and derivatives. If I had to guess, I would suppose that this additional symbol allows him to make non-hierarchical claims by combining multiple symbols for the same gesture. A commitment to non-hierarchical description underlies much of Narmour's critique of Schenkerian theory. See Narmour (1977), ch. 8.

[39]Meyer (1973). The latter are the focus of Robert Gjerdingen's work, particularly Gjerdingen (2007).

[40]Meyer (1973), 213.

Melodic and derivative archetypes can occur discretely but more often they chain together, with the realizing interval of one shape forming the implying interval of the following one. Style shapes are chained together whenever the gesture lacks closure.[41] The I-R model includes six conditions under which closure obtains. These conditions are (1) rests, repetitions, or new structures which interrupt an implicative pattern, (2) a strong metrical emphasis, (3) resolution of a harmonic dissonance, (4) a relatively long duration (twice as long as the preceding note), (5) when interval size becomes smaller (a large interval followed by a smaller interval) and (6) a melody changes direction.[42] When one or more of these conditions occur, the implicative group can become closed off. If some element of the music interferes with closure—usually by de-emphasizing an accented beat—multiple implications chain into a complex structure.[43] Notice that conditions (5) and (6) will obtain whenever a reversal is realized, making reversals naturally closural while processes require other, non-parametric conditions for closure.

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[41]Ibid., 10.

[42]Ibid., 11. Avoidance of these condition, thus, creates the five low-level conditions that avoid closure and cause chaining: (1) a dissonance on a metrical accent (denying the second condition of closure), (2) the presence of an ongoing meter (which is most common in triple, this also denies the second condition of closure by delaying metrical emphasis), (3) envelopment of metrical accents by processes (the non-closural nature of the process negates the metrical emphasis) and "counter-cumulative rhythm" (the inverse of closure condition four), (4) placing metrical accent within a series of duplications, and (5) loss of metrical accent in a harmonic process.

[43]These complex structures are technically infinitely variable, Narmour's second volume (Narmour 1992) focuses exclusively on this sort of melodic complexity.

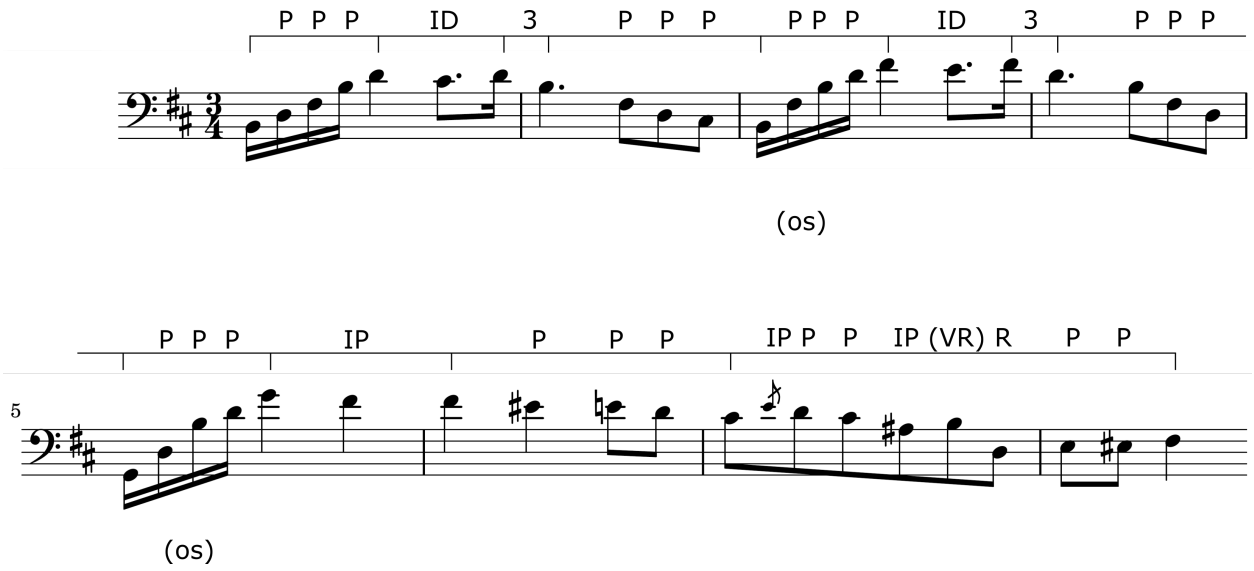


Figure 2.4: Surface level I-R structures.

Example Analysis: Chopin, Prelude, op. 28, no. 6 (mm. 1-8)

The melody from the first phrase (mm. 1-8) of Chopin's Prelude Op. 28, no. 6 demonstrates several features of the I-R model, showing how it works in practice while foregrounding some analytical challenges. Figure 2.4 shows my completed analysis following the guidelines of the I-R model. The opening gesture of the melody is a string of processes. Each melodic interval is less than a tritone, and while the size of each interval increases slightly, so they all imply similarly small intervals in the same direction, and both of these intervals are realized in each case.[44] These three processes chain together because the gesture lacks any of the six closure conditions defined in the previous section. The group closes at the D of beat two following condition (4); the quarter note is more than two times the duration of the preceding sixteenth notes, and no chaining conditions interfere with this closure (e.g., harmonic dissonance). The next implicative structure is an archetypal derivative: intervallic

[44]While successive intervals are actually larger since the difference is less than a minor 3rd, the difference is not considered great enough to break the tendency toward process. Ibid., 99.

duplication. The small step downward from D to C♯ implies additional small, descending intervals. We get an identical interval, realizing the intervallic implication, but the registral implication is not realized since the direction of the step changes. This ID does not chain with any other shapes because the C♯ is dissonant against the harmony in the right hand (a B minor triad) and the resolution of dissonance effects closure, condition (3) (there is also a change in direction condition (6)). The following dyad does not generate an implication because the downbeat B closes the group by landing on a metrical accent, following condition (2). Measure 2 ends with another chain of processes, this time descending, that close with the metrical emphasis on the downbeat of m. 3.

Before continuing the analysis, let me pause to comment on the analytical process. All of the claims made so far flow directly from the rules of the model. I have not needed to listen to the passage or imagine what it sounds like. This analysis could have been (and basically was) generated mechanically. The next measures complicate this story, but in situations like these two measures, where there is no interference, the predictions flow directly from the proposed features of our perceptual and cognitive processes. Here, the analytical approach is cleanly theoretical.

In the next two measures, I assert a process whose implication structure is similar to that found in m. 1 on the basis of interfering, top-down style considerations. The string of sixteenth notes on beat 1 are labeled as a chain of three processes, but the first of these shapes begins with a large leap, normally implying reversal. However, I read it as a process because the piece's "intra-opus style" (denoted by the "(os)" symbol) interferes with this apparent failure in realization. As the name implies, intra-opus style refers to the characteristic style of the piece in question. In this prelude, an ascending arpeggiation figure on a downbeat

becomes an important motive. Recognizing this as an instance of that motive results in invoking the same implicative structure. If I think I am listening to the same motive, then I ought to expect it to go in a similar way. Even with the large leap at the beginning, I am meant to expect processes here and a continuation of the ascending motion. This kind of style interference overrides the "raw" expectations defined by the model.

An alternative might be to consider the processes to be realized as form of *extra*-opus style (the annotations would be the same except with a "(xs)" symbol replacing the "(os)"). The rationale in this case comes from the phrase form of these eight measures. They are a sentence, implying that the third and fourth measures will be similar or identical to the first and second. By anticipating this formal structure, we expect the two presentations of a basic idea, and we expect them to have approximately the same implicative structure.

Both of these interpretations invoke a maverick, top-down expectation disrupting the even processing shown by the I-R model. This feature of the model is the least defined and, it turns out, creates some serious problems for both the model itself and its status as a simple theoretical approach. Top-down style interference in I-R analyses depends on the familiarity the listener has with the styles in questions, both of the piece and of the surrounding musical context. There is no hard and fast rule for when to invoke style-based conflicts. However, the basic model can also provide an analysis of his measure as a "retrospectively realized" process. Recall from the intervallic scale (Figure 2.2) that fifth's dominant implication is toward reversal. Neither parameter realizes this reversal when the next note ascends by a similarly sized leap, but the fifth also has a recessive implication that *is* realized. Any of the melodic archetypes or archetypal derivatives may be realized retrospectively in situations where a recessive implication is realized *instead* of a dominant implication. The entire

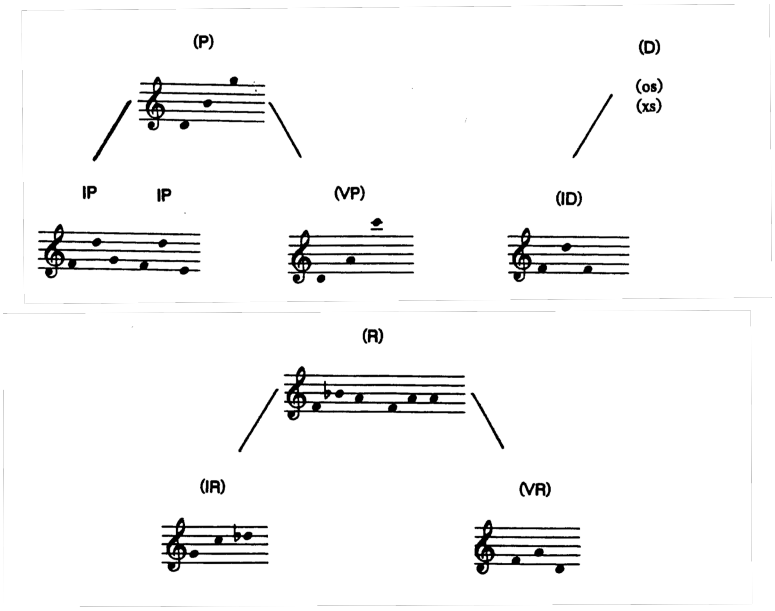


Figure 2.5: Retrospectively realized archetypes and derivatives.

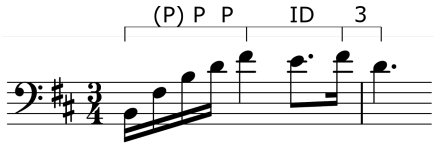


Figure 2.6: Alternative analysis for m. 3 with a retrospectively realized process.

collection of retrospective archetypes and derivatives is shown in Figure 2.5. In an analytical overlay, retrospectively realized shapes are notated with parentheses as in the "(P)" in Figure 2.6.

Similar considerations underlie the processes shown in m. 5, though now the situation is even more extreme. Again, my primary analysis has identified this as a series of processes resulting from intra-opus style. While according to the basic version of the model, the reversal implication for this lick should be even stronger, there has also been a second iteration of the ascending arpeggio gesture that reinforces its motivic function. The bottom-up chain of structures would read (P) IR VP: another retrospectively realized process is followed by an intervallic reversal. The implication generated by the sixth for reversal is realized on

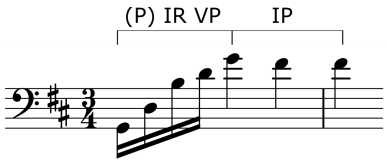


Figure 2.7: Alternative analysis for m. 5.

the intervallic parameter, but not on the registral, which is then followed by a registral process, the implication for process generated by the third between B and D is realized in the directional parameter, but not in the intervallic parameter. This chain includes no prospective processes at all. This alternative analysis is shown in Figure 2.7. The rest of mm. 5-6 have the same implicative structure as mm. 1-2.

Whether one uses intra-opus style in mm. 3 and 6 depends on how familiar with the piece one assume the listener to be. The first time through, a listener might simply take in the bottom-up process as is, without top-down interference but once this ascending 16th-note pattern is recognized as a motive in the piece, top-down interference begins to read it as an arpeggio that implies continued ascent. Thus, if the analysis is meant to bear some relationship to what an actual listener actually perceives or experience, the simplicity of the approach begins to be sacrificed. I explore these issues in more detail in section 2.4 below. As I completed this analysis, my decisions to invoke style considerations came from formal-aesthetic motivations, outside the scope of the I-R model. In general, one prefers analyses that read similar gestures similarly. Since it is easy to recognize mm. 1, 3, and 5 as instances of the same motive, one generally prefers an analysis that shows this similarity.

Now, we *might* choose to use the phenomenal contents of our experience to make this decision. We might identify the motivic similarity of intra-opus style by consulting our experience of what the passage sounds like, and I think that this is also probably the easiest

way to hunt for these kinds of similarities. But permitting this kind of analytical process would be antithetical to Narmour's systematic aims. Unfortunately, he gives no alternative; indeed he indicates that a similarly rigorous system of top-down, style implications might be impossible to construct.[45]

Returning to the Chopin passage, m. 7 is another straightforward chain of processes, again closed by the downbeat accent in m. 6. The final two measures create a single long chain of implications. The chain opens with an intervallic process (a leap of a third that implies a process only realized on the intervallic parameter). This is followed by a series of descending processes which end with another IP. The A♯, B, and D that follow from another retrospectively realized registral reversal. The dissonance on the downbeat of m. 8 overrides the metical closure, preventing the chain from ending. It continues until the F♯ on beat 2.

Continuing this analysis would involve defining the structural features of the piece by tracking the kinds of closure that occur, resulting in a number of transformational levels, but we can leave the analysis here. As is, it demonstrates the analytical methodology of the theory and the sorts of complications that arise when trying to incorporate style. With this introduction to the basic terms of the theory and how they cash out in practice, let me turn to a meta-analysis of its constituent concepts.

The I-R model brackets many salient aspects of melodic perception. Perhaps the most conspicuous absences are the implicative elements of meter, rhythm, and especially harmony. Narmour's theory does not consider how any of these features may themselves create impli-

[45]Among Narmour's first arguments in *Basic Melodic Structures* is an *ad absurdum* counterexample. Narmour (1990), ch. 2. This ends up limiting the utility of Narmour's model *qua* theory of perception; I discuss this more in the following section.

cations limiting his inquiry to how these other parameters constrain the officially sanctioned ones through chaining and closure. Narmour brackets these features as well as top-down style considerations from the basic model for the sake of systematic precision. The variety of styles and our failure to nail down exactly what a style is and what its implications might be make a style-based implication-realization model (based on what Narmour calls "style structures") very difficult to construct.[46] More troubling is the fact that such implication claims usually result in tautologies, with stylistic implications being hedged by so many exceptions that the claims simply becomes "a implies b, except in cases where a does not imply b."[47] The lack of informativeness of this kind of claim makes a scientist-theorist like Narmour uncomfortable. It would be a disservice, though, not to point out that Narmour is well aware of the way that style influences our expectations in real music. Within his system, he permits intra-opus and extra-opus style considerations only as interference with the basic model, as in the Chopin example above. While the invocation of style structures ruins the systematic nature of the basic model, it recognizes the possibility of contradictory expectations and complex experience, depending on where and how an implication was generated.[48]

Psychological Models as Theoretical Approaches

Since its aim is to explain the psychology of melodic expectation, one might wonder if Narmour's model should be considered a phenomenal theory instead of a theoretical one. After

[46]Narmour (1990), ch. 2.

[47]Ibid., 15ff.

[48]Creating a system that allows for this kind of complexity is one of the laudable reasons that Narmour originally looked for alternative to Schenkerism. Narmour (1977).

all, Narmour explicitly wants his theory to be predictive of listeners' experience, so might his model also engage phenomenal concepts instead of only theoretical ones? Following Meyer, he proposes the fulfillment or lack of fulfillment of expectations to be at the heart of the emotional content of musical experience.[49] All this may be true, but while the aim of the theory may be to be predictive of experience, the model itself deals only in theoretical concepts. An approach is categorized as phenomenal or theoretical on the basis of the concepts it uses, not on its ultimate aims. While the I-R model is meant to be a model of musical experience, the way that it purports to get at this experience is with an abstract, theoretical model. The vocabulary of the model itself is (mostly) limited to assuming certain abstract objects ("implications" and "realizations") and exploring their relations. The underlying assumption is that this model, which consists wholly of theoretical concepts, maps onto our cognitive processes thereby purporting to explain phenomenology. But it is never made clear exactly what the experience of these realizations or their denial is like. Put another way, it is difficult to know *how* to test the theory if it is about experience since it is not clear which experiences would count as the phenomenal correlates of the theoretically defined concepts.

Several features of the I-R model further indicate its theoretical character. It is meant to be a model of the way that our perceptual system parses and understands melodies from the bottom up. But Narmour defines this system in opposition to the "conscious," top-down structuring provided by our knowledge or style. The I-R model is not a model of conscious phenomenology but of *unconscious* processing. This makes it safe from the contingencies of conscious thought, but it also makes it anti-phenomenal. By definition, features of an un-

[49]See also, Huron (2006).

conscious cognitive process are *not* given in phenomenology; they are unconscious after all. So, the references of the concepts that constitute Narmour's theory cannot be phenomenal contents, and the concepts it uses, not phenomenal concepts. Moreover, these unconscious cognitive processes, while their workings may influence the character of our phenomenology, cannot be singled out phenomenally. That is, in experience we cannot separate out the bottom-up influence predicted by the I-R model from top-down implication, much less separate out implications into the various parameters that Narmour implies. We experience an amalgam that is difficult to parse reliably.

Consider, for instance, the implications involved in the intervallic duplication in m. 1 of the Chopin example above. According to the I-R model the descending semitone ought to imply further descent, however, the tonal context clearly marks this as a lower chromatic neighbor to the D, acting as a sort of applied leading tone. To my ear, this implication is so strong that I fail to hear *any* implication of descent, yet, according to the model, that implication is still there and its lack of realization is meant to somehow inform my experience. Since this interaction is phenomenally opaque, I have no sense of what this influence might be like.

The development of Narmour's theory also betrays its theoretical nature. Narmour sets up the I-R model as building upon a set of axioms. Early in his treatise, he lays down three hypotheses that serve as axioms to the theory. The first is the Gestalt principle that underlies the process ($A + A \rightarrow A$), the second is the principle that underlies reversal ($A + B \rightarrow C$), and the third is that the first two hypotheses are subject to the parametric scales (i.e., the

intervallic and registral scales discussed above).[50] The model works out the consequences of these axioms systematically, specifically *not* relying on what it is like to experience these expectations. The different melodic archetypes result from the combination of these axioms and their application is meant to be defined by the consequences of these hypotheses as well.

There may be phenomenal concepts for some of the implications that Narmour is talking about (I think that there probably are), but this phenomenal content does not fall within the scope of the model. Instead, the reference of the concepts used by the I-R model is the abstract objects defined by these hypotheses and their consequents. These abstract objects have different modes of presentation in the theory; sometimes they are cast as analytical tools while at other times they are cast as psychological processes. However, the important point is that whether a tool or a process, they are not meant to be immediately present in phenomenology and their reference does not *depend* on phenomenal content.[51]

The analytical methodology of the I-R model also reinforces its theoretical nature. Analysis with the basic model does not invoke phenomenal experience at all; the Chopin analysis above does not come from the sound or experience of the music, but from the rules of the system. In fact, it is in the places where there rules are ambiguous, like the case of style influence and retrospectively realized implications, that the analytical process becomes problematic or ambiguous. Narmour's system gives us a relatively straightforward, if dense, system of rules to apply to the melody that deliver a well formed analysis. In fact, it might be *preferable* to do this sort of analysis without listening since it will prevent your analysis

[50]Narmour (1992), 1.

[51]Put a different way, it is possible for a philosophical zombie to still process music in the fashion described by the I-R model, thereby demonstrating that phenomenal concepts are not a requirement for the model. See Chalmers (1996) for discussion of philosophical zombies.

from being contaminated by interference from top-down style structures.

In practice, however, we run into problems. Narmour's model formalizes only the bottom-up implications because only these are thought to be general to all listeners. In theory, it ought to be possible also to construct theoretical concepts that also define these style features, perhaps using some kind of corpus analysis. But doing so would probably weaken the model's predictive potential, since which style features are well grasped would vary from individual to individual. Narmour himself sketches some of the problems with this in chapter two of his first volume. In any given analysis, he leaves it up to the analyst to decide whether a style feature is influencing one's experience of implication and realization. He does so, presumably, as a kind of pressure release valve, which permits analyses to get back on track if they stray too far from any given listener's actual perception by limiting their scope to bottom-up implications. In practice, therefore, I-R model analyses *do* engage phenomenal contents, because they ask analysts to consult their experience before finalizing the analysis, partially undercutting its attempt for a scientifically rigorous demonstration.

The analyses that the I-R model produces are not meant to be all that there is to the implications of a melody, but it does mean to lay out one of the factors that plays into the net implications that we experience. And it is exactly *because* these implications are generated by perceptual systems to which we have no conscious access that an approach consisting of theoretical concepts is required.

2.4 How Simple Are They?

Psychological models complicate the distinction between theoretical and phenomenal approaches because they often seem to be attempts to describe phenomenology using theoretical concepts. The approaches described in this chapter, and simple methodologies generally, face a fundamental problem. It is difficult to both communicate cleanly and precisely while also dealing in the aspects of music that make music compelling. For the simple phenomenal approaches described in the next chapter, the problem becomes about how to communicate phenomenally inspired analyses accurately without being restricted by theoretical language. Since one cannot communicate phenomenology directly to others language is required, which often ends up relying on abstract objects and compressing the richness of experience into limited resources provided by language.[52] In the following chapter, I discuss some strategies around this dilemma.

A committed simple theoretical approach faces a different, more existential problem. Without engaging what the music sounds like, how could such studies actually be about *music* at all? How could these be *music* theories if they fail to engage with, as Boretz said, "the only way in which, epistemically speaking, [music] has being?" Ultimately, I doubt that any meaningful work could be done with a actually pure theoretical approach. A pure mathematics of music would not really be about music at all, but about abstract relations. Sometimes formalizing these abstract objects can give us a better understanding of the music, but analysts who take this road still need to find a way to make their theories engaging for

[52]Raffman (1993) provides an account of the perceptible nuances that lie below the level of conceptuality and, therefore, language.

their audience, while preserving the formal criteria that motivated their inquiry in the first place.

The approaches discussed here used two different strategies. Scott and Issacson are aware of how little, formally speaking, the interval angle adds to discussions of set-class similarity. They point out, after all, that the interval angle measures the same relationship as extant measures with similar results. It is merely more conceptually elegant, i.e. more observant of the formal-aesthetic criterion, and not necessarily more informative. But this elegance allows them to make a compelling argument for the tool. Phenomenal concepts are used metaphorically as a means of selling the interval angle to the reader. The comparison to astronomy exalts the analytical act and provides a way to imagine what kind of action one is engaged in when measuring the interval angle that makes it seem a more real and engaging experience. But these concepts are not required at all for actually using the tool. They are an extra feature, added on top of the formal tools to make them more palatable to the user.[53]

The implication-realization model takes a different approach. Here, the attempt to engage phenomenology takes the form of predictions that the theory is supposed to make. In practice, this means bracketing the actual experience of the analyst in favor of the rules laid out by the model, and deferring any engagement with experience to a later stage when testing predictions. It is unfortunate, then, that Narmour undercuts this by invoking the un-formalized notion of style interference in analyses. Permitting this kind of top-down interference in the analyses produced by the theory certainly makes the analyses seem more

[53]These metaphors serve a similar function as the transformational attitude in transformational theory, discussed in chapter four.

intuitively plausible. Without any systematic way of relating the theoretical concepts of the theory to the phenomenal concepts of experience, we still intuit what an experience of process or reversal might be like, and look for the analyses produced by the system to match these intuitions.[54]

If we excise style interference, however, the approach's relationship to theoretical and phenomenal concepts is clarified. The model, such as it is, uses only theoretical concepts. Ideas like process and reversal do not refer to actually experiencing these gestalt qualities, but to abstract objects defined by the model. To use these ideas *as if* they were also experience—within the scope of the model—is to misuse them.

We might get a better sense of this by imagining that the primitives of model had no associated phenomenal concept, or that our experience of the music was not at all well described by the claims of the model. If this were the case, the model would still *work*. It would still be internally coherent and could still analyze a melody following its own rules without engaging experience at all. Since the structure and formal validity of the model is preserved in such a case, we can realize that the fact that it sometimes *does* seem to describe our experience is outside of the scope of the model *per se*.

In both cases, though, eventually these theories will want to engage experience. Perhaps not as a part of their actual methodology, but this experience, presumably (and certainly in Narmour's case) is what the they are crafted to explain. One way to do this is to invoke phenomenology either as the sources of the primitives of the theory, another is to take the goal of the analysis to be to create new experiences. While not within the scope of

[54]I find Narmour's permitting top-down interference to be basically devastating for his theory, contaminating the experiment, if you will, with listener bias and undercutting its original aims.

the theories I presented here, chapter four examines how the systematic nature of simple theoretical approaches might inform and be informed by phenomenology more explicitly.

Chapter 3

Simple Theories II: Phenomenal Approaches

3.1 Introduction

While theoretical approaches had the benefit of clearly defined terms, they often had to compromise on phenomenal engagement. These theories and analytical methods tended to have explicitly defined terms, formal or quasi-formal logical arguments, and shied away from overt appeals to subjective phenomenal experiences. I argued that plausibility of these analyses rested on exactly these sorts of features, sometimes exploiting a desire for rigorous scientistism that some find appealing (if not epistemologically then at least institutionally). While working with these approaches, one has the sense that the progression of ideas is easy to track, one can follow exactly why a given claim is made, but many of the vital experiences that draw us to the music seemed left out.

This chapter explores methodologies directly opposed to those in chapter two, what I

call "phenomenal approaches." Instead of theoretical concepts, they feature phenomenal concepts; they are concerned less with explaining the action of abstract, theoretical objects, but derive their plausibility from engaging phenomenal, subjective experience using concepts that refer to just these phenomenal contents.

Phenomenal approaches flow from different motivations than theoretical ones and use language differently (when they use language at all).[1] Consider the following description of the prelude to act III of *Parsifal* given by Benjamin Boretz:

> What does it mean to draw deeper into a self-multidimensionalizing weavery of snakeslithery slithers, slithering on no ground with no snakes but leading on, sliding into further denseentagled nevertouching unmaterial multidimensioned slimy ooze with no slime no ooze.[2]

It is difficult to say exactly which measures of the prelude this description refers to, somewhere after the beginning and before the statement of the Grail motive in m. 20, but locking down some specific analytical references for this passage is not really the point. Further, the style here is quite different from the theoretical approaches. Instead of using music-analytical concepts to clarify ideas with rigorously defined terms, Boretz's language is much more slippery. His description seems at first self-contradictory (e.g., both "denseentangled" *and* "nevertouching;" I will come back to this in section 3.3.3.1 below) and features various level of figurative language to describe his experience. But despite this, and probably *because of it*, I find this description more compelling than a putatively clearer one of the same passage. The vagueness of the figurative language and compound words seems to capture the

[1] I hesitate to call these approaches "theories." While one might still consider them theories in the sense that they are some of the things that music *theorists* do, they lack many of the features required for scientific theories.

[2] Boretz (1992), 278.

richness of musical phenomenology in a way that eludes clear and self-consistent theoretical analyses.

Phenomenal Concepts and Motivations

Recall from chapter one that phenomenal concepts *refer* to phenomenal experiences and do so *directly* without an intervening sense or mode of presentation. Recall also that phenomenal concepts are distinct from representational, perceptual concepts. The latter refer "outward" toward the object of perception, while the former refer "inward" to subjective, phenomenal experience.[3]

I argued in chapter one for a demonstrative theory of phenomenal concepts, where one might consider the structure of the concept to be "that (experience)" meaning that the concept simply points toward the experience without couching it in a certain sense (this is what I mean when I say that phenomenal concepts refer *directly*). Part of the fallout of this is that in order to use a phenomenal concept we must *actually have* (or have had) the experience.[4] Thus, any approach that explore experience *taken as experience* relies on phenomenal concepts which in turn necessarily engages their phenomenology. And since these concepts refer directly—without an intervening mode of presentation—they cannot be altered at the level of sense while preserving their reference (as is the case for theoretical

[3]The origin and use of these concepts in philosophy is recounted in sec. 1.2.3 above.

[4]Of course, large chunks of this chapter are devoted to phenomenal concepts as an idea, without the expectation that the reader imagine them at every turn. This is possible because not only do we have phenomenal concepts themselves, but we have the *concept of* phenomenal concepts, both as a general type of concept and instantiated in particular tokens. That is, we have both the phenomenal concept of the particular pressure of a leading tone, and also a non-phenomenal meta-concept which takes the phenomenal concept as its reference. This makes it possible to talk and think about phenomenal concepts without necessarily deploying them in each instance.

concepts like the *interval angle* or mixed concepts like *dominant*).

Phenomenal approaches invoke different kinds of concepts and use different kinds of language than other approaches because they have quite different motivations. In general, phenomenal concepts attempt to grasp, capture, or create musical experience (instead of, say, creating discourse about music or developing a theoretical understanding of a piece), but specific reasons to lean on phenomenal concepts are as diverse as the musicians who use them. I see at least three main motivations underlying phenomenal approaches all of which fall under the broader phenomenological imperative discussed in chapter one.

1. Sharing the author's phenomenal musical experience with the reader.

2. Creating a new phenomenal, musical experience for the reader.

3. Creating a new, non-musical, phenomenal experience in some other aesthetic domain.

These motivations need not be distinct or singly applied; it is quite possible for an author to attempt all of them at once, or for a reader to, at any given time, engage their phenomenology toward different ends.

If these are an analyst's aims, then phenomenal concepts permit her to conceptualize the experience that she wishes to communicate. In order to write such analyses, the author must introspect her own phenomenal experiences, which will be rife with phenomenal concepts of various sorts. Likewise, readers must deploy their own phenomenal concepts in order to truly understand such an analysis. In lieu of recreating their own experience for the reader, an analyst might also write poems about a piece or draw pictures depicting it to create a new experience for the reader. The author might have a sense of the sort of experience such

alternative discursive styles are meant to create, but the ability of the reader to create this experience for themselves will be limited by the stock of phenomenal concepts at her disposal. Under both of these motivations, the reader walks away with a new musical, phenomenal experience, but in the first case the author was trying to describe an experience she already had with the music.

The second and third motivations have no analogous success conditions. The only goal is to give the reader a new way of experiencing the music, whether or not any specific experience was intended by the author. Both of these motivations usually treat the analytical text (be it prose, poems, or images) as a commentary on the musical experience, but one might also conceive of these texts as free-standing aesthetic objects (the third motivation), with artistic, aesthetic, or phenomenal content only accidentally related to the musical experience they are associated with. The analysis is successful under these terms if such a new experience was created, regardless of whether it was the experience intended by the author.

The common thread that runs through all of these "motivations" is that they are concerned with creating some kind of phenomenal experience for the reader, either recreating the author's or creating a new one altogether, and not merely with the transmission of statements about music or music theory or the preservation of (contextual) truth-claims.

The Challenge of Ineffability

For phenomenal approaches, language is an imperfect medium. We usually think of language as a means to communicate ideas, to transfer idea or meanings from the mind of the

author to that of the reader.[5] When talking about phenomenology, however, we run into a particularly tenacious challenge: the phenomenal content of our experiences is descriptively ineffable. Experience is just too fine-grained to be fully captured by language. When dealing in phenomenal experience, eventually one has to assume that shared language refer to the same sorts of private experiences.[6] In order for ideas to really be transferable—and for us to know that such a transfer has taken place—they must be in some sense public. In order to share an idea, interlocutors must at least have access to that same idea. But this is not the case for subjective, phenomenal experience; phenomenal contents are not susceptible to this kind of objective definition.

Theoretical approaches, like those discussed in chapter two, refer not to experiences, but rather to abstract objects. Abstract objects are sharable; if they are not objective "things," then they are at least intersubjective. Abstract objects have exhaustive definitions, and if one understands these definitions then one can use the concepts that refer to them. But this is not the case for phenomenal concepts, which are understood by acquaintance instead of by definition. As a result, the way we communicate about abstract objects must be substantially different from the way we talk about phenomenal states. This does not mean that regular old language is useless for communicating *about* phenomenal states, is just cannot do the same kind of work as directly. We can, for instance, communicate about phenomenal states, in which case what I rely on is an intersubjective concept *the phenomenal concept red*. We can

[5]Indeed, one of the conceptual metaphors (discussed in greater depth below) which shapes the structure of our concept of language is as a *conduit* for meaning. This is true in general, as in Lakoff and Johnson (1980) and in music theory in particular, Hasty (2010).

[6]This is why, for instance, inverted spectrum thought experiments present such a pernicious problem. See, for instance, Shoemaker (1982). One can never know *for sure* that one's language to describe an experience describes the exact same experience for others.

communicate theoretically about phenomenal states but only on the second order (we have to do so *via* phenomenal *concepts*). The approaches I investigate is this chapter, however, take a different path, circumventing language in order to do first-order work with phenomenal experience.[7]

Any approach that means to grasp or communicate phenomenal concepts faces this challenge of ineffability. One might frame this challenge as follows: given the discursive habits of music theorists, how can we best communicate an experience with the same level of detail that we have when we experience it? I understand the approaches discussed in this chapter as strategies to answer the challenge of ineffability. While not communicating experiences directly (an impossibility that we still wait for science-fictional mind-melds to solve), these approaches create contexts for us to create certain phenomenal experiences for ourselves.

The rest of this chapter explores two possible reactions to the challenge of ineffability. The first eschews language altogether and relies on pictorial representations of music (or experiences of music) to create a context for musical or meta-musical experience. The second approach, instead of electing not to use language at all, uses poetic metaphors, which I construe as deliberate *mis*uses of the referring potential of language in order to cause a reader to have a particular kind of *experience*, thereby activating phenomenal concepts.

[7]One way of doing this, perhaps the par excellence way, is through performance itself. In performance we create a space to experience a piece of music for our audience, allowing them to experience directly what we wish to or are capable of doing in a performance.

3.2 The Anti-linguistic Strategy: Barkin's *Igor's Goriest Tune*

One way around the challenges posed by phenomenal ineffability is to avoid language altogether. If something can not be expressed in words, why not turn to some other medium to try to express it?[8] This section examines the ways that particular types of images, what I call *score-like pictures*, engage phenomenal concepts making these pictures a viable solution to the challenge of ineffability.

Score-like pictures take advantage of the habits of conceptualization developed for interpreting musical scores *qua* instructions for music making. Most observers who encounter these pictures come into the exchange with some kind of previous training in music notation. At the very least, this may mean that they know how to *read* musical scores, but simply having reading knowledge of the music is not sufficient to activate phenomenal concepts. Observers of score-like pictures must also be used to *making* music from these scores, they must have some idea what it would mean, upon encountering that score, to convert it into a musical experience, both aurally and bodily. To the degree that scores can serve as an opportunity for phenomenal experience, manipulation of these score can serve as a manipulation of phenomenal experience.[9]

Score-like pictures can engage multiple different types of phenomenal concepts as well:

[8]Of course, one could turn to alternative analytical strategies anyway, even if an analytical claim was clearly expressible with normal language.

[9]At this juncture, I am primarily concerned with what engaging with score-like picture is like from the first-personal perspective and the ways that this kind of engagement is used to communicate phenomenal concepts. I am less concerned here with the cognitive processes that might permit score-like pictures to fulfill this role.

concepts that refer to heard experiences, concepts that refer to bodily sensation, and concepts that invoke the phenomenology of certain emotions, and so on. As long as these concepts refer to subjective, phenomenal experiences, then they are still phenomenal concepts, even if they extend beyond the concepts involved in *musical* experience as such.

Elaine Barkin's *Igor's Goriest Tune*, gives a series of score-like pictures that are all interpretations of and/or commentaries on (and/or whimsical musings about) the second instance of the famous bassoon solo from Stravinsky's *Rite of Spring*.[10] Each of these pictures casts the music slightly differently, activating different phenomenal concepts. In the following sections, I reflect on the pictures I find most compelling and describe the phenomenal concepts that bubble up when I try to interpret them. As noted above, there is usually no single "right" interpretation for phenomenal approaches, since so much of what any given analysis means is dependent on the proclivities of the interpreter (this is especially true for the picture entitled "Bound" discussed below).

Notation

The first of Barkin's images is simply the notation for the solo bassoon line clipped from the score (Figure 3.1). This score-like picture gains special significance by being the first in the series. It does not so much engage with musical phenomenology for me (at least not by itself) but rather serves a guide for how I might understand the rest of the pictures.

I can imagine (at least) two ways to read this image. The first, and probably most obvious, is as analogous to a theme at the beginning of a variations movement: "Notation" is

[10]Barkin (1982 [2013]).

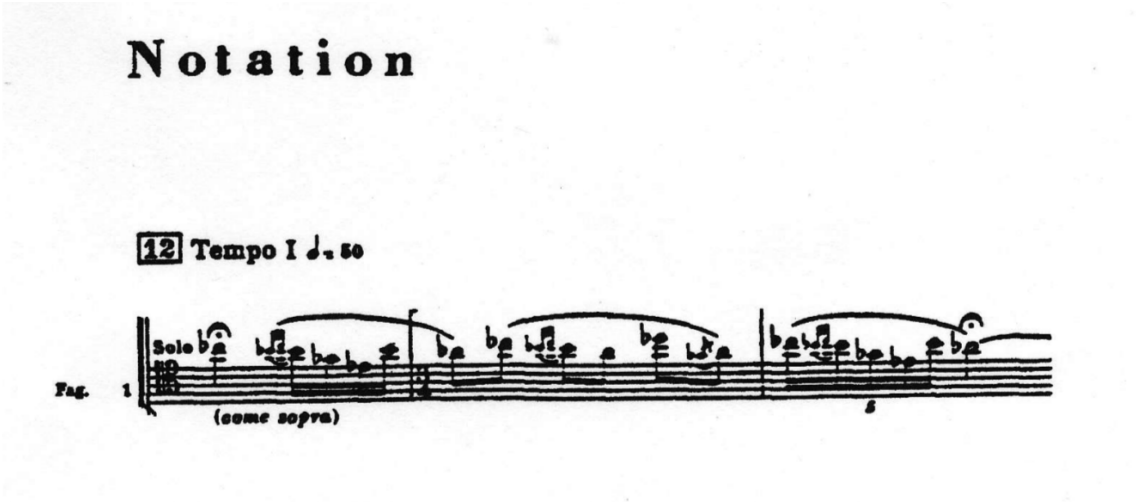
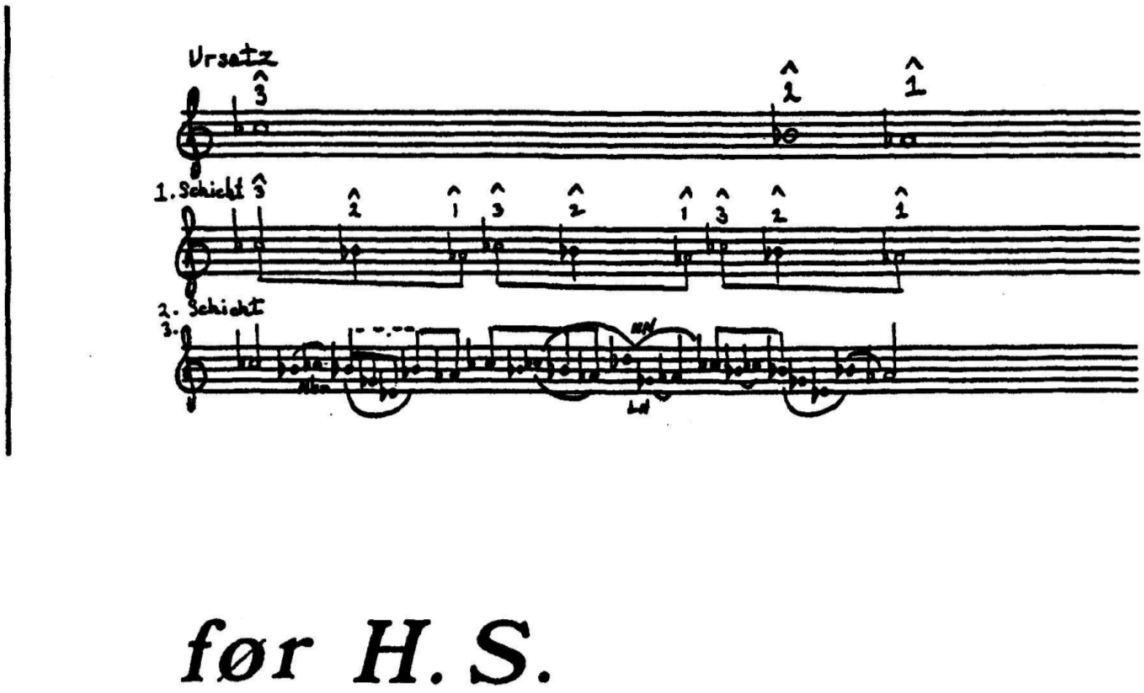


Figure 3.1: "Notation" from *Igor's Goriest Tune.*

just an uninterpreted score and functions as the baseline upon which all of the other images are developments. Of course, the notion of an "uninterpreted score" is problematic on its own (particularly in a context as rich as this), and when read this way the entire exercise is simply a matter of visual manipulation—ways of manipulating *only* the score instead of manipulating experience.

But by singling this out as one of the score-like pictures and not just the score itself, though, "Notation" points to a second, more compelling interpretation. The image's title, "Notation," foregrounds, for me, the general distinction between music and score. "Notation" is *merely* notation, its appearance is not meant to be a phenomenal experience, but draws my attention to the fact that the real subject of the collection, the tune, *is not* notation, but the music. Under this reading, "Notation" is not just a theme for the rest of the pictures, but already a commentary in its own right. Musical experiences bear an important relationship to their notation, of course, but notation itself is not the music. "Notation" relates (and distinguishes) the notation to (and from) my phenomenal recreation of the actual music, of an experience of the *Rite's* bassoon solo. While not functioning as a "theme" *per se*, this



før H. S.

Figure 3.2: "før H. S." from *Igor's Goriest Tune*

first image lays the groundwork for how to view the rest of the images: they are not just mutations of the notation of the music (which we certainly *might* think, given the nature of the rest of these images) but rather commentary on the phenomenal experience of the music.[11]

før H. S.

The fifth image presents a three-level, Schenkerian reduction of the tune, labeled "før H. S." (Figure 3.2). Whether a Schenkerian reduction counts as a phenomenal analysis depends on

[11]I have left open another possibility, that the "something else" that relates to the notation is not some phenomenal musical experience, but a more obscure metaphysical object: "The Music Itself." But since I am not sure what sort of object this might be, I am ignoring that possibility here. In any case, Barkin's images *can* be read as relating to phenomenal experience, and that is enough for now.

the attitude with which the reader approaches the graph. Are the slurs, say, meant to just represent the theoretical concepts of passing motion or arpeggiation, or do they represent some richer phenomenal experience? I will discuss these issues further in chapter five. As a preview, my hypothesis is this: one might indeed read the graphs from a theoretical perspective, as representing theoretical concepts laid out in some textbook of Schenkerian analysis (the appendix to Cadwallader and Gagné's textbook, which gives explanations for every symbol, comes to mind),[12] or one might read the graphs more intuitively, letting experiential knowledge of scores and music-notational symbols, and how to play them, guide one's understanding of the analyses. When I see a slur in a performance score, I have a certain phenomenal experience of connecting two endpoints across intervening notes, making them seem like a single gesture and I know what it is like to experience and perform this connective phenomenology. If I use this interpretive frame, phenomenal concepts become the vocabulary of Schenkerian graphs. Modern Schenkerian practice, as we will see in chapter five, can include both possibilities.

Barkin's picture takes the underlying structure of the tune to be a 3-line prolonged with two motions to inner-voices in the middleground. The content of the graph that engages phenomenology most is in the foreground. Consider the relatively large slur that wraps the descending arpeggio of the E♭ minor triad into a prolongation of B♭, $\hat{2}$ of the first descending third. The slur has an official meaning in Schenkerian notation. The neophyte Schenkerian finds in Cadwallader and Gagné's textbook that "slurs group *related* tones...slurs correspond to either intervals belonging to a chord of the imaginary continuo—intervals horizontalized

[12]Cadwallader and Gagné (2007), 351–368.

through arpeggiations and passing tones—or to step-wise (and often nonadjacent) connections between chords."[13] This is all well and good, but I suspect that most musicians do not need this definition in order to get a sense of what the slur is doing. We are quite used to seeing slurs and thinking, "I need to play these notes as connected somehow," and then creating a performance—a phenomenal experience—that features this kind of connection. We are primed to experience things slurred together as eventually belonging to the same unit in the phenomenal experience and the Schenkerian notation uses this habit of conceptualization to make its analytical notation more intuitive.

Full Score

The image entitled "Full Score" (Figure 3.3) while still using traditional notation, communicates a quite different phenomenology than the first. Unlike "Notation," which is typeset—as if it were clipped from the actual score—"Full Score" is handwritten. This allows one to see the entire array of instruments surrounding the solo bassoon (since most printed scores cut back the number of instruments at reh. 12).[14] Seeing the score for a full orchestra arrayed around the single bassoon line gives it a context that is absent in "Notation." For me, it creates feelings of loneliness and empty space. The melody is played in a large orchestra hall, its smallness in a pregnant and expansive space, especially compared to the complex and huge layers of sound that have just been withdrawn, still echoing. I recognize these feelings

[13]Ibid., 352–355.

[14]The Dover Edition of the *Rite* only features staves for clarinet, bassoon, first violin, and bass here. A dramatic drop form the entire orchestra with multiple divisi on the facing page leading up to reh. 12.

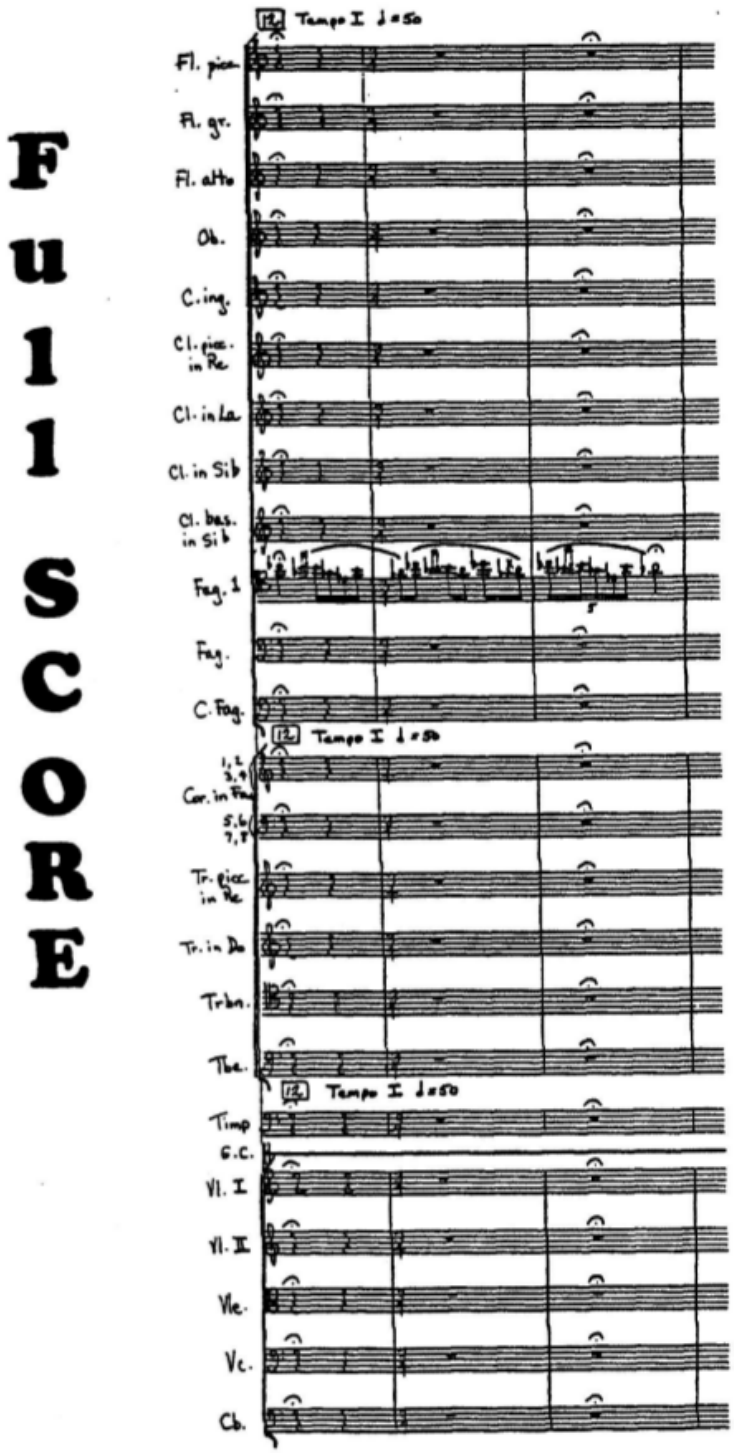


Figure 3.3: "Full Score" from *Igor's Goriest Tune.*

by the phenomenal concepts they employ.

The way the image is constructed borrows bodily and emotional phenomenal concepts from other experiences: from the phenomenology of feeling alone—and the emotions that go with it—and that of spatial phenomenal concepts that refer to what it is like to be surrounded by a great, empty space. The empty staves which surround the bassoon line involve these phenomenal concepts in my mental recreations of the tune, I hear difficult-to-describe nuances in the way the timbre, as I imaginatively experience it, is affected by the echoes in this fictional space.

Long Stemmed

"Long Stemmed" is the least score-like of the pictures I examine here, but the inclusion of these fanciful examples in the midst of the more score-like representations encourages me to read it as *some kind* of score.[15] In this image the tune is represented as a series of flowers (shown as asterisks) with very long stems, punning, no doubt, on the stems of noteheads. In the midst of the orchestrational and structural imagery explored so far, "Long Stemmed" foregrounds the programmatic elements of the tune. The melody heralds the arrival of *spring*, here represented by flowers. Of course, this kind of spring, one from "pagan Russia," involves human sacrifice and is quite divorced from the paschal associations I have with the season. But using flowers to stand for the melody encourages me to make this connection and put some of this experience onto my phenomenal image of the tune.

The stems of the flowers, highlighted by the title of the image, also give me a sense of the

[15]Barkin uses pictures and words elsewhere in actual scores meant to be played. See "play it AS it lays," Barkin (1979 [1997]), 45–52.

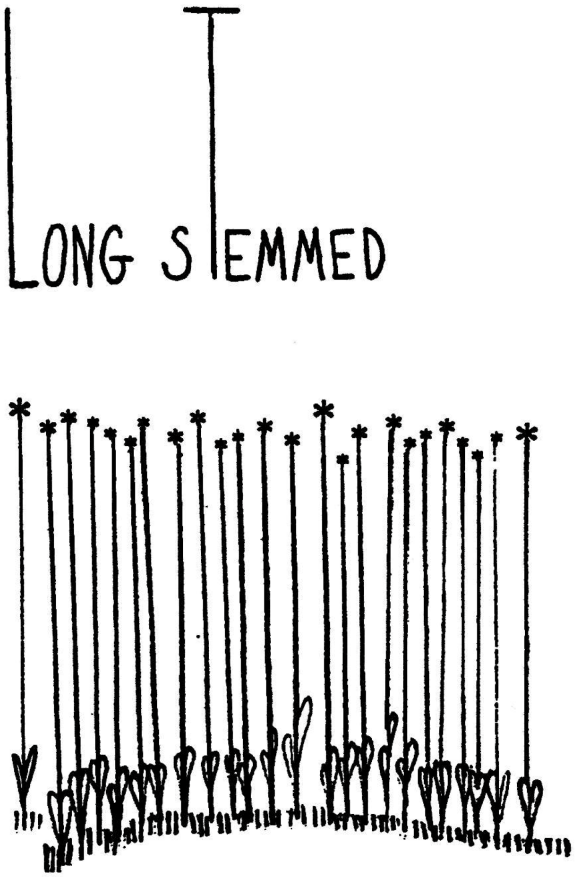


Figure 3.4: "Long Stemmed" from *Igor's Goriest Tune.*

tune as being deeply grounded. If the asterisk-noteheads were placed on the actual score, the stems of the flowers would sink down well below the bassoon line, rooted several staves below. The floral imagery, particularly with reference to stems, give me a sense that the melody carries something deep and profound earthiness with it that reaches down into the root system, enhancing the brutality later in the ballet as part of a natural expression.

Bound

The image I find most compelling is entitled "Bound" (Figure 3.5). This image presents the tune transcribed into a variant of 4-line chant notation. The clef indicates that the second-

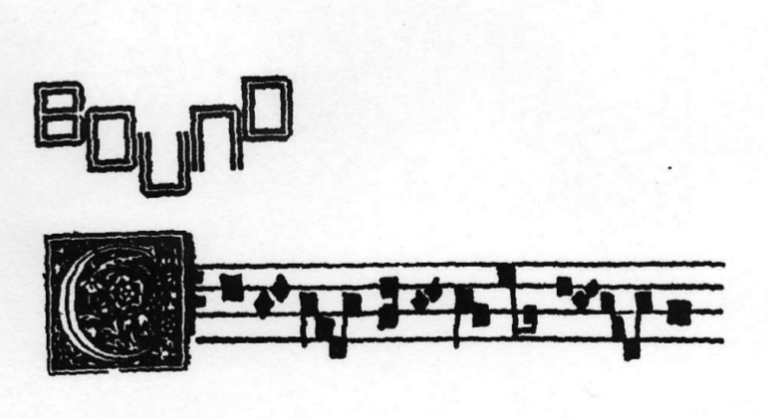


Figure 3.5: "Bound" from *Igor's Goriest Tune.*

to-top line is the pitch C, and I suspect that the decorated initial is meant to be just a part of the clef (there is no text, of course). This picture, shows the original version of the tune (instead of the one that returns at reh. 12, referenced above). This is one of several pictures in the series that seem to equivocate about which instance of the tune the series of score-like pictures is about. I do not take this to carry much of a deep meaning about how I take the image in this case, though the absence of the loud, orchestral sections preceding the original statement of the tune, does color the context somewhat. In this case, I suspect that we get the first version so that the music would not be full of ficta, ruining its look as an imitation of Gregorian chant.

More than any other image in this set, my previous performance training, specifically in chant music at a Catholic monastery, influences my reaction to this image. Dressing the tune up this way places the melody into the context of sung music, and I have developed an extensive array of phenomenal concepts triggered by the notation alone. Seeing the tune arrayed in this way—meant just for singing—I can not help but *start* singing it, or at least begin to imagine (phenomenally) how it would go. This score-like picture, thereby, enforces an even stronger phenomenological engagement with the tune. The chant notation creates a

context in which the tune is meant specifically to be sung and allows me to take ownership over it in a way I could not when conceived as *only* for bassoon. Traditional notation can be used for any instrument (like that in "Notation" though even that line was labeled for bassoon), but chant notation is *only* for voices. "Bound" claims the tune for the human voice, for *my* voice, in some ways taking it away from the instrument with which it is associated.[16,17]

Of course, none of this is "the" or even the best way to understand these pictures, and "Bound" in particular is informed by my own performing history. But the image, by using chant notation, gets me to summon up the phenomenal concepts that are associated with singing chant myself giving me a context to deploy them in creating a new understanding of the *Rite*'s tune.

The different score-like pictures that make up *Igor's Goriest Tune*, all cause me to address myself toward the tune differently and expand the kinds of experiences I can have with it. Each of them causes a shift in my relationship to the music. Sometimes this draws on my history as a performer (as in "Bound"), sometimes on my general understanding of musical scores (as in "full score"), sometimes on my experience as an analysis (as in "før H. S."), and

[16]If I were a bassoonist, I might balk at this. How *dare* some singer take the most famous bassoon solo for themselves. A valid pointer perhaps, but for me, a singer, this makes it more real.

[17]So, what ought I to take "Bound" to mean? My immediate reaction is that it invokes a certain image of church music and monasticism as restrained or even repressed. The abandon that the *Rite* is famous for is meant to be *bound* in this image to a strict code of Christian monasticism, running exactly counter to the original context of the tune. Donning our phenomenal attitude there are phenomenal concepts that we can use when considering the tune in either way.

While this is not at all my experience, either of monasticism or chant music. This gives us moment to realize the importance of the observer's eye (or the thinker's mind) in constructing the phenomenal reality of the mental recreation of the music and the meanings that inhere in the image on the page. It is specifically my own musical history which causes me to read the chant version in this way, as more real and without the connotations of it being bound, even though it is called such. In fact, I find the title "Bound" to be a little offensive, advancing on a caricature of what monasticism is and of what chant music can do.

sometimes on more general associations (as in "Long Stemmed"). Each picture colors the way that I understand the tune, and because none of these pictures make explicit claims, the phenomenology of interpreting them is personal and invovles phenomenal concepts. One imagines that Barkin intends to engage some of these concepts, while others come out of my own history with this tune, with music notation, and with music in general. Importantly, the kind of experiences I gain are not theoretical ones, they do not refer to specific abstract objects and my descriptions of them here are imperfect.

3.3 The Poetic Metaphor Strategy

A second response to the challenge of ineffability is to ignore the clarificatory function of language and speak figuratively. In the following sections, I explore the use of poetic metaphors in music analysis and description. The metaphors I am concerned with here are those *in descriptive discourse about music* (usually analysis) and not situations where the music itself is considered to be metaphorical; that is, I am interested in descriptions that use metaphors to describe the music, and not descriptions of music that take the music to be a metaphor for something else.

Moreover, for reasons detailed below, I am concerned only with poetic metaphor and not the much more commonly cited cognitive metaphor. Poetic metaphors have a variety of features and functions but the most crucial is that they are still alive; they have not (yet) entered into the everyday meaning of words, at least not in the context of musical discourse. Living metaphors have a distinctive phenomenology and this phenomenology is what allows them to function as a vehicle to engage phenomenal concepts. This metaphorical

phenomenology includes a sense that the thrust of the metaphor is not immediately clear, you have to figure it out. This action on the part of the interpreter makes the specific meaning that they carry or the sense that they communicate more personal because it relies on the conceptual arrays that the interpreter already possesses. Finally, because the meaning is unclear and personal, poetic metaphors remain semantically replete, they are experienced as being open to interpretation and having an unstable, changeable meaning.

In this context, I do not enforce a distinction between proper metaphors and other comparative (though usually considered semantically distinct) linguistic structures, like similes. There mere insertion of "like" or "as," (while it has superficial effects on the theory of metaphor I eventually adopt), often result in the same sort of phenomenology and can deploy phenomenal concepts just as effectively.

A Critique of Cognitive-linguistic Theories of Metaphor

Most recent music-theoretical work that employs the notion of metaphor relies on the theory of cognitive metaphor developed by George Lakoff and Mark Johnson in *Metaphors We Live By.*[18] Lakoff and Johnson's account comes out of a branch of cognitive science referred to as cognitive linguistics and posits that analysis of linguistic structures, supplemented by psychological experimentation, provide the best insight into how the mind works. Looking ahead, we can already predict some ways that this theory will clash with phenomenal concepts, since phenomenal concepts are concerned with phenomenal content that is not easily expressed with language, and does not accord much importance to the psychologically real

[18]Lakoff and Johnson (1980).

but phenomenally absent processes that are said to underlie them. Nevertheless, it is prudent to examine how this useful theory of conceptual metaphor is structured and how it differs from the account I argue for in the next section.

In *Metaphors We Live By*, Lakoff and Johnson argue that metaphors are not primarily linguistic, but conceptual; any use of metaphorical language presupposes an underlying metaphorical concept. "The essence of metaphor," according to Lakoff and Johnson, "is understanding and experiencing one kind of thing in terms of another thing."[19] For example, one metaphor that serves as an early example is "Time is Money," which structure locutions like "I've *invested* a lot of time in her" and "You need to *budget* your time."[20] In this metaphorical structure, we conceptualize time as a valuable commodity, as something we can invest or save. Obviously we cannot save time in a piggy bank, but the conceptual metaphor structures how we think about time in our lives, as a valuable commodity.

These metaphorical structures, moreover, are said to be systematic, meaning that a basic metaphor can spawn a broad set of locutions that engage that metaphor somehow.[21] "Time is Money" is the basic metaphor, but we can invoke different aspects of the way we relate to and use money (we save it, we invest it, we budget it) to conceptualize how we relate to time.[22]

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[19]Ibid., 5.

[20]Ibid., 8.

[21]Ibid., 7ff.

[22]Lakoff and Johnson go on to argue that most of the metaphors we use fall into certain categories like orientation metaphors (more is up), ontological metaphors (abstract concepts are entities), or personification (inanimate objects or animals are people). (Ibid., chapters 4, 6 and 7 respectively.) Lakoff and Johnson continue their analysis, breaking the ways that we think about the world as being metaphorically shaped down to what they consider to be the most basic concepts: those

The most prominent music theory influenced by Lakoff and Johnson is the work of Lawrence Zbikowski.[23] In his *Conceptualizing Music*, Zbikowski provides a number of analytical and theoretical tools based on research in cognitive linguistics. One of the central analytical tools developed in the text is the notion of conceptual blending and cross-domain mapping, whereby the aspects of two different domains become blended such that the way we understand how each other domain influences the other. Zbikowski develops these basic psychological ideas into a method for song analysis which systematizes the relationship between features of the poem and features of the music to create a blended meaning for their combination.[24]

In a similar fashion, Lakoff and Johnson's theory of metaphor underlies Steve Larson's theory of musical forces.[25] While Zbikowski's theory of cross-domain mapping in music is quite broad, though it is most extensively worked out as tool for song analysis, Larson is concerned primarily with the ways that we conceptualize music as an object in Newtonian space, adopting the conceptual framework we have for understanding physical motion and energy to our conceptualization of music.[26]

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which rely on how our bodies are related to the world. These ecological concept arrays, called image schemata, provide our primitive conceptual frameworks with other concepts almost entirely structured according to these basic metaphors. This emphasis on the embodied origin of basic frameworks, and by extension the entirety of our concept systems serves as one of the primary concerns of the authors in later books. See, for instance, Johnson (2007).

[23]Zbikowski (2002).

[24]Ibid., 65ff.

[25]Larson (2012).

[26]Similar work exploring the ways that musical features can be conceptualized in physical terms is found in Malin (2008).

Despite the amount of traction that Lakoff and Johnson's theory has gained in the music-theoretical community (and its popularity in general), this way of understanding poetic metaphors does not encourage any greater understanding of how or why metaphorical language might be better at grasping non-bodily phenomenal concepts. In fact, relying *too* heavily on the structural emphasis of Lakoff and Johnson's theory can take our focus away from what I consider to be a crucial part of the experience of metaphor.

Since, under this theory, the primary action of metaphors occurs at the level of concepts, one's theory of concepts will have a profound influence on how the theory of metaphors as concepts works. Unsurprisingly, as cognitive linguists, Lakoff and Johnson assume that our habits in communication reflect underlying structures in how we think.[27] This involves a tremendous assumption: that the lion's share of what goes on in our minds—the conceptual systems and experience we have in our day to day lives—is translated and translatable into linguistic structures. But the challenge of ineffability, and the reality of ineffable mental states, throws a wrench into the gears. Ineffable mental states are exactly those states which do not permit translation into linguistic terms placing examination of descriptively ineffable phenomenal content beyond the reach of cognitive linguistics.

A second problem I find in Lakoff and Johnson's theory of metaphor is that its primary examples deal in dead metaphors. Indeed, they seem not to make any distinction between live and dead metaphors; their very first example, and one they return to throughout the

[27]Put another way, they are committed to using language to find insights into how our cognitive processes work. See, Lakoff and Johnson (1980), 3. It is important to recognize that this does not imply that an animal needs to have linguistic faculties in order to possess concepts or to structure them metaphorically. Rather, the presence of such a system is implied by using language in that way while such linguistic abilities are not required for its use. While at one point a controversial decision in cognitive science, most literature from most facets of the field have converged on the opinion that language is not required for concept possession.

book, is just one of these dead metaphors: "Argument is War." Lakoff and Johnson see this conceptual metaphor as manifest in the following locutions:

> Your claims are *indefensible*.
> He *attacked* every weak point in my argument.
> His criticisms were right on *target*.
> I *demolished* his argument.
> I've never *won* an argument with him.
> You disagree? Okay, *shoot*!
> If you use that *strategy*, he'll *wipe you out*.
> He *shot down* all of my arguments.[28]

While all of these sentences seem plausible to me, none of them activate the rich sort of experience associated with a poetic metaphor. This is because the "Argument is War" metaphor is long dead. Perhaps there was a time when one did not literally "win" an argument, but these days I utter sentences like these all the time without meaning them metaphorically. One really can literally win an argument and that such arguments really do have weak points which are susceptible to being actually attacked by one's interlocutor. The phenomenology is one of literal use, and in this sense the words meaning expands to include these (formerly) metaphorical meanings.

A similar, pervasive, and very dead metaphor in musical discourse is the metaphor that maps our understanding of vertical space onto pitch. We speak of some pitches being higher or lower than others; a scale can ascend or descend. But this metaphor, because of its ubiquity, starts to lose its punch. It no longer has the characteristic force that more colorful metaphorical expressions possess.

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[28]Ibid., 4.

How do we distinguish a live metaphor from a dead one? By and large it is by whether or not understanding the locution in question has the right phenomenology, that distinctive experience that we have when we confront a living metaphor. I consider this metaphorical phenomenology, which requires that metaphors be alive, to be an essential feature of metaphors whose goal is to communicate or encourage phenomenal experience. Thus, a different theory of metaphor, one which examines the particular features of live metaphors, is required to understand how poetic metaphors might engage phenomenal concepts.

In general, it is exactly the explicitness with which Lakoff and Johnson's theory tries to treat metaphors that causes it to fail to be useful in the deployment of phenomenal concepts. Working in this explicit fashion brings out relationships between concepts that arise from dead metaphors, but trying to break down living metaphors in the same way—trying to pin down what they "really" mean—ends up destroying the sense that they *are* metaphors. If we can paraphrase the explicit things that a metaphor means to say, then why use a metaphor at all? Once we think we have pinned down a single meaning for a metaphor, and that metaphor becomes merely a code for the *real* thing we want to say, the effect of the metaphor is diminished. It no longer has that feel that is distinctive to metaphorical phenomenology. While the cognitive-linguistic conceptual metaphor theory is extremely valuable in helping us to understand how we conceptualize certain things, it fails to give us an account of what makes overt metaphors appealing and why such metaphors can prime us to deploy phenomenal concepts.

An Alternative: Davidson's Theory of Metaphorical Meaning

While Lakoff and Johnson's theory primarily regards metaphorical structure and ways to understand conceptual metaphors, other approaches to metaphor concern themselves with metaphor semantics, that is, how and why metaphors can *mean* what they do.

These approaches, however, suffer some philosophical problems. Donald Davidson, in his tremendously influential "What Metaphors Mean," details the difficulties of any semantic theory of metaphor that proposes a specialized *meaning* for the metaphors.[29] Specifically, any theory which attempts to provide a paraphrase of a metaphor, i.e., contrast metaphorical *meaning* with literal meaning, seems inevitably to leave something in the metaphor unsaid while at the same time losing the force of the metaphorical assertion.

The alternative that Davidson proposes is that metaphors do not *mean* anything beyond their literal meanings. So when I say, "music is the food of love," all I really mean is literally the false assertions that "music is food and love eats it." The point of this understanding of metaphor is just to say that their importance lies not in what they mean, but rather in the effect they have on readers. Metaphors, according to Davidson, exactly by meaning something preposterous, cue us to make a comparison between the two things ourselves. Thus, the specific meaning of any given metaphor, by which I mean, what thoughts that metaphorical statement create in the mind of the reader, is partially constructed by the readers themselves. This accounts for the fact that any actual paraphrase *always* seems lacking. No finite number of non-metaphorical sentences can draw all of the possible connections that a well-wrought metaphor could cause us to notice.

[29]Davidson (1978).

This theory of metaphor predicts the features that I have attributed to the phenomenology of metaphors, namely the sense that they seem to be semantically replete—there is no end to the possible things they could express or cause a listener to notice or how finely they could cut. And, because one has to *figure it out*, one gains a sense of ownership over the meaning and a sense of satisfaction at having come to understand something that was at first confusing.

When poetic metaphors are used to describe with experience, it allows for phenomenal concepts to come into play in a way that is simply not part of Lakoff and Johnson's theory of metaphor. Since we must create the comparison for ourselves, using metaphors that involve phenomenal experience must also involve recreating those experienced for ourselves, both of the music and of the source domain of the metaphor. Since we the readers are an active party in the *creation* of metaphorical "meaning" (not a meaning inherent in the words, but one that we assume to be there on the basis of our thinking) we have an opportunity to use phenomenal concepts.

Poetic Metaphors in Musical Description: Two Examples

The latter work of J. K. Randall and Benjamin Boretz provide good examples of poetic metaphors that engage phenomenal concepts in diverse ways. Poetic language can be used to describe the effect of an entire passage or piece, with the metaphorical imagery reflecting general impressions of the entire experience, or metaphorical language can be used to describe very fine details. Both authors create new metaphors invoking novel phenomenal concepts and resurrect dead metaphors by using them in novel contexts, allowing them to again trigger

phenomenal concepts as they regain the characteristic metaphorical phenomenology.

In the course of my discussions of the poetic descriptions of Randall and Boretz, I will do some paraphrasing of their metaphorical language, trying to be clear about *some* of the things that these metaphors allow me to experience. But this is not meant to exhaust all the ways that the metaphor might change one's phenomenology; these analyses below are meant to provide some specific examples of phenomenal concepts that are triggered for me by these metaphors.

Boretz's Metamusical Description of *Parsifal*, Act III Prelude

In Boretz's article "Experiences with no Names,"[30] he reflects on the role of discourse in the construction of musical experience. He is concerned that the way analysts describe music is often not descriptive but attributive, *creating* a new musical idea or experience instead of describing an extant one. In particular, Boretz is concerned about instances in which the "experiences" created are formal or structural ones, ones that ascribe only theoretical concepts, causing their reader to no longer experience the music *as* music but as a kind of abstract structure.[31]

As an alternative, he follows Randall's "metamusical writing," which have a certain aesthetic appeal of their own.[32] Boretz's own metamusical writing in this article, a description of the prelude to the third act of *Parsifal*, is packed with poetic metaphors (first mentioned

[30]Boretz (1992).

[31]Ibid., 274.

[32]In particular, Boretz refers to Radndall's description of Tchaikovsky's Sixth Symphony. Ibid., 276-277.

in the introduction to this chapter). Boretz marks his shift from meta-analytical discussion to metamusical writing by changing the typographical style. Several of Boretz's metaphors are especially juicy and rely on the deployment of phenomenal concepts for their effect.

Boretz begins his poem-description with the following lines:

> what does it mean, Wagner's Act III Parsifal Prelude beginning with spindly stringlines in fakecanonic pseudoserialist mode spreading out bighollow widespace with thinedged boundwalls, & only a shadowy soundtrickle exhaling within?[33]

In the previous section, I complained about music theorists' discussion of metaphors tending to focus on the "Pitch is Vertical Space" metaphor, despite it being mostly dead. Usually, saying that a melody "ascends" does not *seem* metaphorical at all; I do not experience it *as* a metaphor because it lacks the phenomenology of a metaphor and presents itself just as a literal description. The fact that one can be *reminded* that this language is metaphorical (or at least can be construed as metaphor) is a sure sign that the formerly metaphorical meaning has become a literal one. Boretz's novel compound words that brings this metaphor back to life, specifically "bighollow" and "widespace." Since these words are not part of our everyday language, upon first seeing them they take a moment to decode as if encountering a neologism. By causing us to focus our attention on these words we re-experience the relevant concepts *as* metaphorical.[34] When the metaphor is revivified by these words, it primes us to reengage phenomenal concepts as we search for the relevant associations between the music

[33]Ibid., 227.

[34]In fact, this is often just the sort of experience one can have when looking over Lakoff and Johnson's examples of metaphors. Things that may not have seemed metaphor until you think about them reveal a metaphorical origin that can cause you to, for a moment, experience the locution as a metaphor, even if they often regress back into the background of literal (or seemingly literal) language.

and the idea of a "bighollow widespace."

Like Barkin's score-like picture "Full Score," an imagined empty space (and a phenomenology of being in this space) develops around the sounding music. Listening to the prelude again, the things I hear that "bighollow widespace" alerts me to are in part pitch-based (the contrary leaps to a wide, empty span between the F of the first violin and the low G♭ of the cello with not much in between) but it also causes me to attend (again, like "Full Score") to the relatively light orchestration at the very beginning.[35] Unlike, "Full Score" there is no sense of immediate orchestrational disjunction: hearing this prelude I would be coming from an intermission, this is a new beginning and while there is potential for a large, loud sound, it is not realized yet in this act.

The pitch-is-space metaphor becomes further reactivated by phrases like "thinedged boundwalls," which cause me to feel as though the melodic lines are ready to leap farther than they actually do; the boundwalls are also bindingwalls. But the lines do not ricochet off sharply, instead the feeling I get is a sort of elastic tension as if the walls, being thinedged, are prone to bending and absorbing some of the blow. Thinking of boundaries also causes me to attend to the lack of easy formal divisions in the prelude. The spinlystring lines flow into the slithers that begin around m. 12 without a thickedged boundary between them. The boundwall are present but also not, their thinedges are there but can also be traversed. This creates a sort of permeability across the movement, with phenomenal associations attributed to some of the gestures bleeding into others.

One can conceptualize all of these ideas in theoretical terms and I have used language

[35]Contrary motion become something of a structuring principle at the beginning of the prelude, making the all ascending, all similar motion at the arrival of the Grail motive so striking.

to try to describe them, but in these sorts of musical descriptions, language is meant to help communicate some of the, in this case embodied, phenomenal concepts that inhere—for me—in this passage. The experience is of the tightness of anticipation, retroactively included in the melodic lines before they leap and the deceleration and change of momentum felt when hitting something rubber or jumping on a trampoline; while also engaging multiple musical parameters at the same time.

Compound words do more work for Boretz a little bit later in the description:

> what does it mean to draw deeper into a self-multidimensionalizing weavery of snakeslithry slithers, slithering on no ground with no snakes but leading on, sliding into further denseentagled nevertouching unmaterial multidimensioned slimy ooze with no slime no ooze.[36]

This pile of quasi-contradicting descriptions is fascinating. What sort of thing could a snakeslithery slither without the snake be? What is slithering then? What does "slimy ooze with no slime no ooze" refer to? When encountering this passage, I am at first confused. Everything seems contradictory because the language is not meant to be taken referentially. Davidson's theory of metaphor is particularly useful in sussing this out. Remember that, for Davidson, metaphors mean only what they *literally* said, nearly always a blatant falsehood, but by fostering obvious falsity they achieve their function, to make their reader draw the connections themselves. Boretz passage achieves a similar effect. I count at least four contradictions:

1. "snakeslithery slithers...with no snakes"

2. "denseentangled nevertouching"

[36]ibid., 278

3. “slimy...with no slime”

4. “ooze with...no ooze”

By creating a number of apparent contradictions Boretz *means* nothing in particular, indeed there is no way for these phrases to have any *referential* meaning. But they do have an effect, they draw the reader into placing certain concepts in proximity to the music, and challenge us to hunt for connections between the phenomenology of the music and the sorts of concepts that accompany our experiences of snakes, dense tangles, slime, and ooze. Highlighting the absence of the snake or slime, foregrounds the metaphorical phenomenology of the descriptions (they *mean* something false, but point toward something more interesting).

These ideas are specifically not to be located in the score, and Boretz gives us very few clues about what gestures in particular (if any) these descriptions are meant to apply to. Instead we have to introspect our experience of the music ourselves. Hunting for things that could be described this way, I notice the repeated descending lines in the cello, perhaps “self-multidimensionalized” by the contrary motion in the violins and knit together by the viola’s zig-zaging line. I also find that my introspection engages additional phenomenal concepts not only of the the phenomenal contents of music but also of slime and ooze and snakes and slithering, not least of which is an experience of dread at the thought, made more horrifying perhaps by the image of them being denseenganged. Boretz’s description causes me to start drawing comparisons between these phenomenal concepts and the phenomenal concepts I deploy when listening to the prelude.

Randall's "depth of surface in Beethoven op. 22, III"

Boretz's description of the prelude from Parsifal was purposely designed to be noncommittal about which musical gestures each descriptor refereed to, though one can hazard a guess and, definitely, I pointed to specific gestures that resonated with the metaphors for me. J. K. Randall takes a different strategy in his analysis-poem of the first phrase of the Menuetto from Beethoven's Piano Sonata, op. 22.[37] Randall's analysis is not written in prose but as a poem. In his introduction to the poem he discusses that the underlying theme of the analysis: the concept of elision, which he chooses to interpret as "when the last note of one musical unit serves as the first note of the next."[38] This concept is extended in a couple of ways in the analysis of the music and presented in the poem. The very first work is "Graceflesh," a compound (or elision) of two of the primary metaphors of which develop over the course of the poem.

The introductory stanza of the poem, lays out how we ought to interpret the claims Randall makes, and is among the best outright statements of a phenomenal attitude.

> Herein, the expression "...is..."
> may be profitably construed as
> "...may, from the point of view herein emerging,
> be profitably construed as...".[39]

[37]Randall (1971).

[38]Randall points out that this is not technically correct, though the common parlance in music discourse. In the traditional sense of the word, the space between the words is elided to make the compound, whereas in Randall's usage the musical gestures themselves are elided. Randall points out that while this usage is incorrect, its meaning is still clear. Ibid., 240.

[39]Ibid., 242.

Randall is preparing us to adopt a state of mind where we allow his claims to be momentary interpretations instead of truth-claims. This allows him to go over some passages or ideas more than once, saying different, and possibly contradictory, things each time.[40]

By teasing out multiple ways to relate notes to each other, Randall's poem, even when read with a more traditional, theoretical attitude—i.e., the poetic descriptions are just regular analytical description in fancy clothes—by exploring measures over and over again, piling relationship upon relationship, my representation of the music begins to thicken, approaching the analog nature of actual musical experience.

The analysis/poem has three large parts, the first two consist mostly of poetic description in verse while the last consists exclusively of snippets of scores and musical examples. The third section, argued only with musical examples with little to no explanation, is quite revealing and may very well be the best solution to the challenge of ineffability, but my study of Randall's text will focus on the first part and specifically on two metaphors which permeate it: "flesh" and "ladder." Like the earlier analyses in this chapter, I will unpack some ways that these metaphors work for me and explore the sorts of phenomenal concepts (both musical and otherwise) that they activate. Again, following Davidson, my analyses of Randall's metaphors should not be construed as presenting *the meanings* or paraphrases of these metaphors, but just part of some of the things that the metaphors get me to notice.

Randall's poem is presented without a score, but the specificity of his claims is sometimes difficult to track, a difficulty compounded by the poetic language of the analysis-poem. I hope that the effect is not entirely ruined by presenting the score for the relevant passage

[40]Near the end of part two of the poem Randall even makes note of this: "SCHENKER SAYS NO," Ibid., 247.

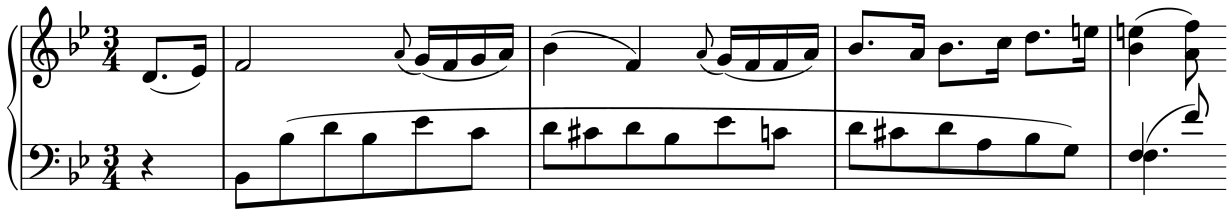

Figure 3.6: Beethoven, op. 22, III, mm. 1–4.

in Figure 3.6. Whenever possible, I encourage the reader to play through the passage, or listen to it, or at least *imagine* listening to it when reading either Randall's poem or my interpretation of it, as it is only in approaching the music this way, that is, with a phenomenal attitude, that phenomenal concepts themselves are deployed.

The first poetic metaphor we run into involves the notion of "flesh."

> IB. From and opening dotted figure which ascends scalarly
> through the 3rd from D to F
> is derived a turning figure, whose rhythmic and melodic contour
> fleshes a dotted figure which ascends scalarly
> through the 3rd from G to Bb[41]

The theoretical claim that I take Randall to make is that by following up a dotted, ascending third figure with this turning figure, the rhythmic "gap" between the first and second note are filled in—fleshed out—with a lower neighbor. Randall even provides a little musical example showing this (reproduced here as Figure 3.7) though he does not *say* that this is what the figure is meant for.[42]

Randall could have just as easily said, as I did just now, that the turning figure "fleshes *out*" the dotted figure. This usage is so common in fact, that I suspect that if the figure

[41]Ibid., 243.

[42]Ibid.

Figure 3.7: Randall's "fleshed (out)" figure.

were "fleshed *out*" instead of just "fleshed" I would not have taken notice of this metaphor at all; it would have joined the dead spatial metaphors used to describe the passage. But, as it is, the strange usage attunes me to the metaphor, makes me take notice and *feel* it as a metaphor in a similar fashion to words like "bighollow" and "thinedged." As in Boretz's writing an unusual usage revivifies the metaphor and allows it to inform the phenomenal concepts I bring to the interpretation of the poem and, by extension, to the music. As I continue to read the poem, I am aware of fleshy metaphors and associations primed by the first statement about the two gestures' rhythmic relationship.

The next two stanzas develop this idea of "fleshing."

IC. To this derivative turning figure
is appended an F,
    whose accompaniment
    restores the configuration
    in which the F of the opening figure ended.

ID. Such a peeling off of F
    from the opening figure
is prefigured in the configuration
in which the tune's turning figure's fleshing F
concurred with the accompaniment's D-Eb-D neighbor note unit;
    which was prefigured in the succession,
    within the opening figure,

from D-Eb unaccompanied to F accompanied[43]

There are three different F's Randall refers to: the half note in m. 1 ("the F of the opening figure"), the 16th note lower neighbor ("the fleshing F"), and the quarter note on beat 2 of m. 2 (the F appended the the turning figure, peeled off). However, Randall takes pains to draw ontological connections between the three: each is prefigured in the ones that preceded it. The quarter-note F in m 2 is a return to the half-note F in m. 1, and you can tell because the accompaniment on the second beat of each is the same, D then B♭. This return to F at the end of the figure is "prefigured" by the lower neighbor, turning figure (the "fleshing F"). And this F is in turn connected to the first F because it is accompanied by an upper neighbor figure D-E♭-D, the same pitches that *preceded* the F of the (skeletal?) opening figure.

This theoretical analysis could be read as an argument for motivic coherence, with a number of motivic ideas meshed together in a dense framework. But then the last F is called "peeled off." Such close proximity to the "fleshing" metaphor has a painful connotation to me. The F is first fleshed to the skeletal passage, and then peeled off. This charges the passage with phenomenal concepts associated with this kind of experience. For me it is not the feeling of the flesh but rather a sense of disgust at it that ends up becoming a part of my experience of the passage.

I am willing to admit that this may be taking it too far, that my reading of metaphors into metaphors has carried me to associations that do not really fit the music, and perhaps was not intended by the poet-analyst. Unlike Boretz's description of the *Parsifal* prelude, Randall's metaphors do not reflect an experience I seemed to already kind of have, but they create a

[43]Ibid., 243–244

new and quite distinctive experience, one which I never would have come up with without the metaphorical language and that also seem dissonant with my actual experience. In some ways, this showcases a downside of this analytical approach, the phenomenal concepts associated with the metaphors, particularly when they comes in a series like this, playing off of each other, can overshadow claims about the music.

A second important metaphor for the poem is a ladder metaphor.

> While the accompaniment repeats this simultaneous three-figure elision,
> the tune starts to climb a 7th-spanning ladder of conjunct 3rds
>
> whose bottom 3rd is the derivative figure's G-Bb
> and whose to 3rd is the opening figures D-F
> up one octave,[44]

Why call this a ladder? Why not say it simply ascends (using the dead metaphor) a 7th? There are certain phenomenal concepts that I deploy when I imagine myself climbing a ladder. The most prevalent have to do with balance, what it is like to be placed precariously up on an unsteady ladder, becoming hyper-attuned to your higher than average height and the possibility, unlike being much closer to the ground, that you might lean too far in one direction or another and cause grave injury. The rhythm also participates in this metaphor, with each third serving as one of the rungs of the later, which the music rests upon before climbing higher. The dotted rhythm reinforces this, each dotted-8th is a (relatively) stable step on the ladder where your foot comes to rest with the 16th-note as the quick step as you move to the next rung.

---

[44]Ibid., 244.

The analytical approaches explored here in this chapter all use novel presentations to get me to reactivate phenomenal concepts, without requiring reference to theoretical models. Every step along the way required experiential engagement, i.e., required me to deploy phenomenal concepts. This is a strength of this kind of approach; we must engage phenomenology if we are to take this work seriously and cannot simply bracket this, maybe most important, way of engaging music. But as we also saw, this approach requires a lot of interpretive work from the reader, which makes communication both more difficult and less consistent. The next two chapters explore strategies which try to coordinate both kinds of concepts into a single analytical methodology.

Chapter 4

Complex Theories I: Segregated Approaches

4.1 Complex Theories

An Introductory Example

Relying only on a single conceptual type—either phenomenal or theoretical—allows for the scope of the theory to be relatively straightforward. The kinds of claims a simplified approach is interested in making and the sorts of evidence it accepts are usually clear. And since the motivation for using only one conceptual type often arises directly from epistemological, ontological, or discursive commitments, these motivations tend to be coherent. But the simple theories discussed in the preceding chapters are mostly special cases. Most of music theories and analytical procedures rely on *both* phenomenal and theoretical resources and are motivated by combinations of the the concerns explored for phenomenal and theoretical

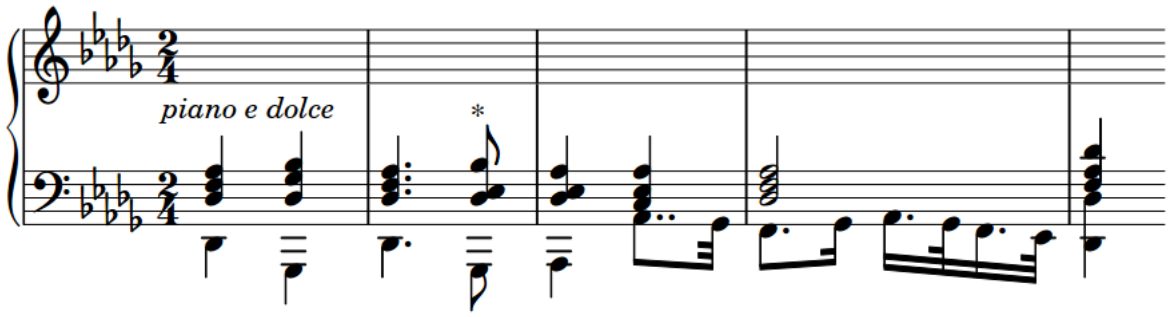

Figure 4.1: Measures 1-5 of Beethoven's *Appassionata* Sonata, Op. 57, ii.

approaches.

An example of this sort of conceptual complexity in analysis is found in Lewin's analysis of the opening measures of the second movement of Beethoven's *Appassionata* sonata, presented in his *Generalized Musical Intervals and Transformations* (*GMIT*). The score for this passage is shown in Figure 4.1. In his analysis, Lewin pushes back against the intuition that an analytical model ought to mirror a passage's temporal sequence, instead presenting a model that foregrounds certain transformational relationships instead of their chronological sequence. He argues for a temporally abstract representation of the passage (shown in Figure 4.2b) that reveals a conception of "precedence" different than just chronological order.[1] Because the model turns away from the basic phenomenological conception of temporal precedence, one must understand it theoretically. The resulting graph is as a geometrically elegant description of the passage through not necessarily directly traceable back to the passage's phenomenology.

[1]This conception of precedence is defined in section 9.7.3 and proved as "ordered" in theorem 9.7.4. Lewin is explicit that this ordering may, but need not, conform to our quotidian sense of chronology "A precedence-ordered system is at least potentially compatible with our naive sense of chronology. When used for analytic purposes, that system will not have to assert that one musical event both 'precedes' and 'follows' another...There is nothing intrinsically correct or good about avoiding such assertions, but it is useful to have at hand a formal criterion that characterizes those particular node/arrow systems which enable us to avoid them." Lewin (1987 [2007]), 210-211.

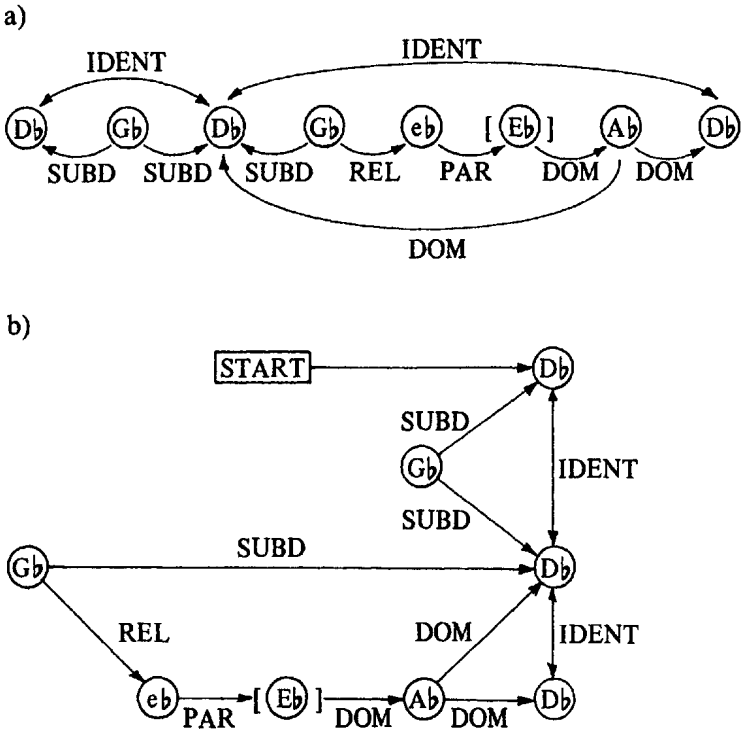

Figure 4.2: Lewin's transformational network.

Notation	Meaning
DOM	"Becomes the dominant of"
SUBD	"Becomes the subdominant of"
PAR	"Becomes the parallel major/minor of"
REL	"Becomes the relative major/minor of"

Table 4.1: Transformations in Lewin's analysis of Beethoven's *Appassionata.*

Transformational analyses of harmonic function (like those in Figure 4.2) usually show a single *Klang*-node for each triad. And these *Klangs* "transform" into each other using a number of different operations modeled by the arrows. In this case, four transformations are in play here as well as an identity (IDENT) operation (the notation for these operations and their meaning is shown in Table 4.1). The analysis models one possible way of understanding the progression of the passage, and further, this understanding is supposed to be experientially graspable.

Mostly, the analysis assigns only one *Klang* to each sounding harmony. There is a D♭ node for the downbeat of m. 1, followed by a G♭ node for beat 2, etc. But there are two ways in which the model diverges from this straightforward assignment of sounded chords to nodes in the upbeat of m. 2. Lewin provides the following explanation:

> The E♭-major Klang is bracketed to indicate that the Klang is not actually sounded but is *theoretically understood.* The fourth sonority heard in the music is modeled by two Klangs. It is first understood as a G♭-major Klang (with added sixth); then it is understood as an e♭-minor Klang (with minor seventh, inverted). This is Rameau's *double emploi.* The arrow goes only one way, from G♭ to e♭ but not back. The operation REL takes a Klang into its relative minor/major.[2]

The first departure is the bracketed E♭-major *Klang.* Lewin inserts this *Klang* into the analysis of measure 2 for the sake of theoretical coherence. There is no E♭ major triad in the passage and no single operation transforms e♭ into A♭. But since the system does not allow a succession of unrelated *Klangs,* Lewin places on two operations in sequence: DOM(PAR(e♭))=A♭. This model is well-formed, but it is not clear what kind of phenomenology (if any) is meant to be implied by the complex transformation. In the graph, the E♭-major *Klang* gets its own node, elevating this "theoretically understood" entity to the same graphical status as those triads that are actually sounded while our actual experience of the passage—that is, our immediately phenomenology of the passage's harmony—leapfrogs this node.[3] However, while it is easy to elevate a node on paper, that is to treat all the

[2]Ibid., 213, emphasis added. By *Klang* here, Lewin refers to a formal object that models "a harmonic object with [a given pitch] p as a root or tonic, an object whose modality is determined by the sign" (Ibid., 176). The formal notation for a Klang (p, sign) is equivalent to the words major and minor following the name p or simply writing the note p in upper or lower case. This conception of *Klang* differs markedly from Riemann's.

[3]We can imagine that Lewin might have had a single arrow could have been given a complex label (i.e. "PAR · DOM") which would have followed more closely our experience of the passage.

Klangs only in their theoretical aspects, it is not exactly clear what effect this elevation is meant to have on the experience of the passage. Are we meant to experience E♭ major triad somehow in this progression, or is it merely a tool to make the transformational model work out correctly? Given what follows, I expect that by including formal elements on the graph and saying that it *ought* to have a certain relatinship to musical experience *encourages* one to hear that chord, or some kind of residue of that experience, in the passage.

Just before this "theoretically understood" *Klang*, we find the other departure from the 1-to-1 mapping of chords to nodes. Here, we are meant to hear a single harmony (the E♭-minor seventh chord, marked with an asterisk in Figure 4.1) as two *Klangs* with an *internal* REL transforming a G♭ into the e♭. Just like the E♭ *Klang*, this transformation is necessitated by the demands of the formal system and pushes the graph further from its most obvious phenomenological description. This transformation provides the formal connection between the G♭ and the implied E♭ via harmonic reinterpretation. Technically, both triads are there, all four required notes are present, so if *Klang* here just means notated triad or some other theoretically conceptualized understanding, then there is no problem. But if one is meant to understand the network not just theoretically but phenomenally, as I think Lewin does, there there is also a kind of phenomenology implied. One is meant, I suppose to engage something like Rings's pivot interval, whereby the phenomenal status of each note shifts to change the harmony during this eighth note.

All this fuss over the upbeat of measure 2 is required to make the analysis logically valid in the transformational system, but it is not clear what would constitute *hearing* these transformations. I am not sure what to do to conceptualize them phenomenally instead of theoretically. One might be tempted to just read this analysis as concerning only those

theoretical concepts. But despite the apparently distant relation to the music as heard, Lewin asserts that the transformational analysis *is* meant to "engage" our musical experience. "We can observe," he argues, "that figure 9.14 [Figure 4.2 here], incomplete as it is for analytic purposes, still does represent a foreground configuration of Klangs *that engages a valid part of our musical experience*."[4] So what can be made of this? What kind of engagement might be in play? How can one make phenomenal sense of elements of the analysis that seem to be only theoretically conceived? These are the sorts of questions explored in the next two chapters.[5]

In the previous two chapters, I discussed theoretical methodologies which—more or less—went "all in" on one type of concept or another. In Lewin's analysis of the Beethoven passage, both theoretical and phenomenal concepts are, apparently, meant to be in play. I call theories or analytical approaches that properly invoke both kinds of concepts *complex*. The following chapters explore specific ways that music theorists combine both theoretical and phenomenal concepts into a single analytical framework. The present chapter treats "segregated" approaches, and chapter five treats "mixed" approaches. Briefly, in a segregated approach both theoretical and phenomenal concepts play essential roles in the analytical narrative, but each conceptual type is limited to particular phases of the analysis. The overall goal is often to phenomenalize an analysis developed primarily with theoretical concepts. In a "mixed" approach, on the other hand, the central theoretical concepts are themselves

[4]Ibid., 214. Emphasis added.

[5]In this case in particular, Lewin says that the network reveals something like a "carriage return" on a typewriter, when the music departs from the tonic and returns to the G♭ triads, restarting the harmonic motion. Ibid., 214–215.

complex, consisting of both theoretical and phenomenal elements.[6]

The Segregated Approach

This chapter explores two segregated approaches: transformational theory and neo-Riemannian theory. These theories deploy the logical and conceptual resources of both conceptual types, but do so at distinct points in the analytical narrative. The motivations that underlie each kind of concept (as shown in the previous chapters) have strong intuitive draws. On one hand, the richness and power of musical *experience* motivates music theorists to investigate it. On the other, the premium on consistency and methodological cleanliness in theoretical approaches makes reliable communication easier. Segregated approaches attempt to do both in a systematic way.

The idea of an analytical narrative is central to segregated analysis since each conceptual type comes into play only in specific parts of the narrative. Recall that "analytical narrative" may denote the story that an analyst tells of their analysis's creation or the stream of ideas that support the analytical claims or the way that a reader comes to understand the logic of the analysis. The analytical narrative is the flow of ideas that, taken sequentially, create the meaning of the analysis.[7] The steps of an analytical narrative can be confusing when aspects of that narrative are omitted from a published analysis. To minimize this, I focus on

[6]These two possible relationships do not, of course, exhaust the ways that different types of concepts can interact but are just two common options.

[7]One must be cautious, however, not to assume that flow of argument in the finished product is the same as that which generated the analysis. Musical analysis rarely happens in the orderly way that appears in print; in actuality it consists of various dead-ends, trial and error, and intuitive leaps. Dressing up the analytical notes and giving them a teleological drive can facilitate communication between analysts, but in organizing the stream-of-consciousness nature of the analytical process we lose some insight into the commitments of the author.

methodologically self-conscious analyses. By curating my examples this way, I hope to find moments when analysts are transparent about how they are thinking about their analyses.

This rest of this chapter consists of three parts. The next section deals with the way that transformational analysis is segregated, and presents a commentary on Lewin's analysis of Stockhausen's *Klavierstück III*. I then turn my attention to neo-Riemannian theory—in many ways conceptually consequent to transformational theory—and consider it as segregated in a similar fashion. Finally, I present my own neo-Riemannian analysis of the recitative that starts act II of Verdi's *Macbeth*, tracking the types of concepts used over the course of the analysis.

4.2 Transformational Analysis as Segregated

In Theory and Practice

Transformational theory was developed by David Lewin over the course of his oeuvre with the most influential work appearing in the 1980s.[8] It is formalized in the second part of *GMIT* and serves as the prototypical example of a segregated approach. The theory is usually presented as a counterpoint to interval-based analysis (e.g. Lewin's GIS) and considers musical "transformations" as elements of mathematical groups. Two features of transformational theory—its meta-theoretical conception of analysis, sometimes called the "transformational attitude," and its group-theoretical analytical methodology—are worth especially close at-

[8]Transformational theories first appeared in Lewin (1982) which were extended in *GMIT* (Lewin (1987 [2007])). The seed of the "transformational attitude" is found in Lewin (1977) and the analyses presented in Lewin (1993 [2007]), including the analysis of Stockhausen below, act as a sort of handbook for the practical application of the formal concepts laid out in *GMIT*.

tention here. While neither of these ideas is bound to the other necessarily, they become associated in practice. And while neither idea necessarily categorizes transformational analysis as segregated, what makes the approach segregated is how these two ideas are used. Transformational theory (and by extension neo-Riemannian theory) is not segregated by necessity but by contingent practices.[9]

The "transformational attitude" is a stance vis-à-vis the object of analysis. Under this attitude, transformational analysis downplays conceiving of musical objects (pitches, harmonies, or rhythms) as related in terms of distance and focuses on the characteristic actions that "transform" one musical object into another. Most accounts of the transformational attitude invoke the following statement from *GMIT* regarding his often-cited Figure 0.1: "[I]nstead of regarding the i-arrow on figure 0.1 [Figure 1.3 below] as a measurement of extension between points s and t observed passively 'out there' in a Cartesian *res extensa*, one can regard the situation actively, like a singer, player, or composer, thinking: 'I am at s; what characteristic transformation do I perform in order to arrive at t?'"[10]

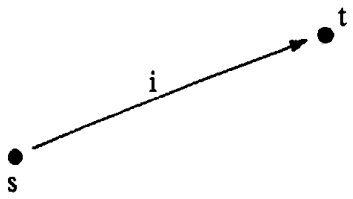

Figure 4.3: Lewin's figure 0.1 from *Generalized Musical Intervals and Transformations.*

[9]I have taken this approach throughout this dissertation, because I have found that theorists are sometimes unclear about their motivations or how to communicate the theoretical beliefs that underlie them. In order not to get mucked up at this level of *theorizing* I come down to the level of analysis where actual claims on music and experience are made.

[10]Lewin (1987), xxxi

It is important to be clear about what the transformational attitude is and what exactly follows from it. It is a meta-analytical position that conceptualizes analytical tools in a particular way. It is not clear what is "Cartesian" or "passive" about non-transformational attitudes or why transformations themselves are necessarily anti-Cartesian (or at least non-Cartesian) or active, but at least when invoking the transformational attitude we are meant to "take" transformations in this way, as characteristic actions, imagined as embodied.[11] The kinds of concepts that flow from the transformational attitude, as things you *do*, express a certain phenomenology and we are thereby meant to relate to the analytical concepts phenomenally.[12]

The primary analytical technology of transformational theory is the group-theoretical transformation, which Lewin (formally) defines as "A function from a family S into S itself."[13] Usually a transformation maps something into something else of the same type (defined within the same family) and most often this amounts to rhythmic sets transforming to rhythmic sets, pentachords transforming into pentachords, members of a set-class transforming into other members of that set-class, and so on. Such transformations are usually

[11]Lewin's usage of the idea of "Cartesianism" is a little mysterious, despite seeming to be at the heart of his conception of the transformational attitude. Henry Klumpenhower argues that Lewin's ideas about Cartesianism stem from his father's psychoanalytic work (Klumpenhouwer (2006)). Klumpenhower's argument, while appealing and extremely virtuosic, is slightly more subtextual than I am comfortable with, particularly in the sense of "Cartesianism" that it takes to inform Lewin's perspective. The fact is, Lewin is unclear about what Cartesian means in this case and by my reading it is just as likely to refer to a Cartesian plane rather than anything having to do with Cartesian dualism.

[12]This claim is not based on anything that is stated explicitly about the transformational attitude, but rather about the ways that it is talked about (metaphors about singing and playing) and what it is defined against (static, "Cartesian," or observer-based methodologies).

[13]Lewin (1987), 3.

also *contextual*, meaning that they are defined anew in each analysis based on the features of the given piece.

Much is made of the idea of a transformational theory being action-focused and anti-spatial—that is, invoking the transformational attitude—but this is not a necessary feature of Lewin's invocation of group theory and, as Julian Hook points out, is a bizarre assumption to make from a mathematical perspective. For a mathematician there is nothing particularly active about transformations and speculating on what it "means" to call something a transformation does not really make sense.[14] They are simply mathematical devices whose meaning does not extend beyond their definition. Even in *GMIT*, Lewin's definitions of transformations are in terms of ordered pairs.[15] Transformations and the arrow-node graphs are—most essentially—just these sets of ordered pairs. This is a quite different conception from that usually proffered by the phenomenologically focused transformational theorist. Reading group transformations as somehow active sets up a new mode of presentation, but one not essential to the formal definition. There is nothing wrong or incoherent with enforcing this conceptualization of transformations, but it is important to remember that this is something extra—it does not come along for free with mathematical group theory.

It turns out that this separability of the meta-theoretical attitude of transformational theory and its analytical technologies is what permits this theory to be segregated. Choosing when and how to invoke different aspects of transformational theory permits the unique sorts of claims segregated theories can make. But the phenomenologies brought along by

[14]Hook (2007).

[15]Lewin (1987), ch. 9.

the transformational attitude are often imposed on the very idea of doing transformational analysis at the level of theory, quite apart from what goes on in actual analyses. What results is confusion about what is implied by using these analytical devices. Should we always conceive every transformation under this phenomenological lens? This might seem to be what the transformational attitude implies, but it also runs contrary to the formal definitions of transformations and the practice of transformational theory.

Since the transformational attitude is supplemental to transformations themselves, it is likewise possible to create a transformational analysis *without* a phenomenal aspect, that is, without relying on the transformational attitude to make phenomenal sense of the analytical claims. A self-conscious transformational analyst should ask, when are the phenomenal resources of the transformational attitude invoked and when am I working with only formal concepts? By only insisting on the transformational attitude (and its phenomenal concepts) at particular points in the analytical narrative, it becomes possible to invent purely theoretical analyses that are only phenomenalized after the fact.

Lewin tends to do this in three distinct steps. One can trace the deployment of the phenomenalizing transformational attitude by considering transformational analysis to consist of a three-phase narrative.

1. First the analyst introspects their phenomenal experience looking for things which catch his ear. These are taken as the analytical primitives and "translated" into formal terms.

2. The formal terms are then worked-out algebraically (or using whatever method is appropriate).

3. The results of the formal analysis are then "re-translated" back into some kind of phenomenal experience.

In this narrative, only phases 1 and 3 invoke phenomenal experience. The act of "translating" the phenomenal experience into more rigorously defined terms insulates phase 2 from the phenomenology, and phase 2 is done mostly without referring to the experience it draws from allowing it to develop the theoretical concepts in unheard or even unhearable ways. The transformational attitude is then activated upon the resulting theoretical analysis, translating its theoretical concepts to phenomenal ones.

This three-phase analytical methodology has been noted and theorized by several other commentators on Lewin's work. Scott Gleason argues that Lewin's general approach takes experience and formal considerations to exist in a dialectical relationship. When understood as a Hegelian dialectic, this also implies a similarly structured three-phase analytical methodology. The approach, he says, "acts as a kind of pendulum swinging gently between mathematical speculation and analytical experience. In this sense the two mediate and transform each other."[16] Gleason provides an historical context for this dialectic as a part of a larger problematic about how Princeton theorists relate to experience. His reading and mine share many broad strokes, but to understand the what I take to be happening in the third phase, the "re-translation" of theoretically determined analytical structures into phenomenal contents, does not seem quite like a proper synthesis, conceptually speaking. The final product is (or ought to be) fully phenomenal, not a synthesis between the two conceptual

[16]Gleason (2013), 140. I am indebted to Gleason for clarifying and confirming many of my intuitions in particular about the structure of the Stockhausen analysis discussed below.

types.[17]

Joshua Banks Mailman's notion of cybernetic phenomenology is closer to what I am describing for Lewin. Mailman describes this analytical methodology as involving "computational analytic procedures prompted by [one's] hearing, procedures whose output in turn enhanced [one's] experience as a listener."[18] Mailman's concept of cybernetic phenomenology follows more or less the three-phase analytical methodology described above and, importantly, he foregrounds the creative potential of such a methodology as part of the performative turn in music analysis.[19] I am basically in agreement with Mailman's theory here. He also foreground the use of this methodology in Lewin's work, especially for relationships in nontonal music.[20] The analysis of Lewin's work and later neo-Riemannian theory below both extends this work by seeing this process as flowing from shift in conceptualization and extends it to neo-Riemannina approaches.

In the three-phase model, we find three all three imperatives discussed in chapter one motivating Lewin's analytical decisions: the phenomenological prefers to respect the phenomenology of the musical experience (in Lewin's terms, the "intuitively present" aspects

[17]We do, however, find this kind of conceptual synthesis in mixed approaches, like Schenkerian theory, discussed in the following chapter. But these approaches lack the convenient three-phase structure.

[18]Mailman (2016), 6. The notion of this cybernetic phenomenology as underlying analytical practice is common theme in Mailman's work. The definition given here refers to his essay on Carter's *Scrivi in vento* (Mailman (2009)) and another, briefer description of the analytical process that engages cybernetic phenomenology may be found in Mailman (2012).

[19]Mailman (2016), 9-10. Mailman draws on the work of Cook (2002) for his account of this performative turn.

[20]Ibid., 24ff. Specifically, Mailman refers to Lewin's work on a running vector. See Lewin (1981) and (1987).

of the experience); the validity imperative prefers to create a formally valid system; and the formal-aesthetic imperative prefers the system to have certain quasi-aesthetic features, namely symmetry and elegance.[21]

Lewin's Analysis of *Klavierstück III*

Lewin's analysis of Stockhausen's *Klavierstück III* is exceptionally self-conscious about its methodology and provides a good example of the entire three-phase process. Lewin's first step is to "go through the score...hunting for pentachord [(0, 1, 2, 3, 6)] forms *by ear*."[22] This is this first phase. Lewin is staking out the basic terms of the analysis by appealing to the phenomenology of the piece. The outline's idealized nature, however, is already on display. While this first analytical act is introspective, Lewin is also already invoking theoretical ideas in the pentachord forms. Moreover, Lewin may have a very un-phenomenological reason to choose pentachord-class (0, 1, 2, 3, 6) as his primary analytical element, providing a counterpoint to Jonathan Harvey's analysis (cited in his first paragraph) that also features this pentachord-class.[23] This motivation combines, I suspect, with elements of Lewin's own experience (including the initiation of the piece with the pentachord's prime and inverted-prime forms) and results in a pentachord-based analysis. These motivations are split between the formal-aesthetic and phenomenological imperatives.

Whatever his motivation, Lewin's accounting of the various pentachord forms *by ear*

[21]These imperatives are discussed in more detail in section 1.6.2.

[22]Lewin (1993), 20. Emphasis added.

[23]Harvey (1975).

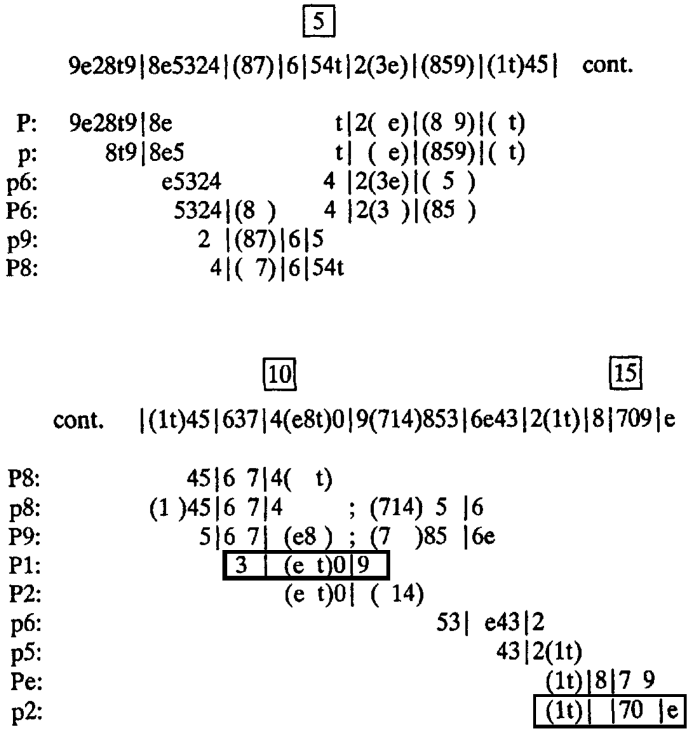

Figure 4.4: Lewin's pentachord catalog.

indicates that he is able to grasp them phenomenally (i.e., hear them).[24] With this catalog of phenomenally-defined pentachords in hand (which included all but two notes), Lewin begins to turn away from pure phenomenology: "Intellectually, I decided I should assert pentachord forms to embed those pitch classes [not included in the phenomenal accounting]."[25] Lewin's final catalog includes two intellectually determined pentachords (the P1 spanning mm. 9-11, and the p2 spanning mm. 13-16, boxed in Figure 4.4) along with the phenomenally determined ones.

[24]One wonders exactly what type of task Lewin did to identify the chords "by ear." I suspect that he probably played the piece a number of times (he refers to playing it later in the analysis), so it is conceivable that Lewin is being generous in saying that he identified pentachord forms by ear alone, likely the score as well as the physical act of playing also informed his original "hunt" for pentachord forms.

[25]Lewin (1993), 20.

This is the seam between phases 1 and 2. Lewin's motivation for including these pentachords is no longer only phenomenological but comes from additional formal-aesthetic considerations. He apparently does not hear these forms as clearly as the others, but he includes them so that his account of the piece is exhaustive. This is a formal-aesthetic move because there is nothing about the musical experience which require that a single analytical device encompass the entire piece and there is as yet no formal system to conform to. Instead, I suspect that Lewin is motivated by a meta-theoretical belief that a good analysis should exhaustively account for every note of a piece and rely on as few analytical primitives as possible (e.g., a single pentachord-class). This premium on efficiency of explanation flows from the formal-aesthetic imperative.

Lewin then "checks" his phenomenal reckoning of the piece with a formal metric that measures how "tightly packed" instances of the pentachord are; that is, how close the occurrence of each element is to being strictly consecutive. He discovers (*ex post facto*) that all of the pentachords he identified phenomenally have a "deficiency" of 0 or 1 on this metric (lower is tighter, no extraneous notes intervene in the presentation of pentachord or there is only one). The two chord forms he added "intellectually" rate deficiency 2.[26] The formal-aesthetic imperative likewise underlies Lewin's desire to find a "logic" (his word) to justify his phenomenal identifications. As much as possible, one ought to have a systematic (theoretically conceptualized) way of determining what we are looking at, and while the phenomenal intuitions created the conditions for defining this metric, it is the metric that formally justifies

[26]This contrasts with Harvey's pentachords that Lewin did not include which are of higher deficiency. Ibid., 21–22.

the pentachordal analysis.[27]

With his collection of pentachords completed, Lewin turns his attention to the collection's formal interrelationships, bringing us fully into phase 2 of the analysis. Figure 4.4 now functions as the new "score." The elements on this figure—not the music or the notation—are the subject of the analysis. Anything in the music that did not make it onto this list (duration, dynamics, registers, other pitch relations) does not figure into the rest of the analysis.[28]

Lewin starts with an informal look at the relationships present on the list. He finds himself immediately taken in by the compactness of what he calls the "0/6 complex" consisting of P, $I_7(P)$, $T_6(P)$, and $I_7(T_6(P))$, shortened to P, p, P6, and p6, respectively. The relationships between these elements form the model which organizes the remaining pentachord types into a transformational network. Lewin makes the network symmetrical by defining a transformation J as that inversion of the pentachord that preserves its chromatic tetrachord (since the transformation is 1-to-1 and onto, it is also an operation). This transformation/operation and the rules for its use are then formally defined following the rhetorical paradigm of a mathematics or logic text, with theorems worked out formally.

What motivates Lewin to define a new operation? If we are asking why Lewin defines a new transformation instead of using the already established group of inversions all with different index numbers (i.e., "Why define a *new operation*?"), we might look again to formal-

[27]From another perspective, if we were embarking on a fully formal analysis, this metric might have been one of the axioms, along with the pentachord-class, assumed at the outset.

[28]Later Lewin says as much: "In general, my pentachord-analysis is dissatisfying... with regard to all other aspects of the piece that it does not address." (Ibid., 55). And the fact that it does not address these other features is not a problem from the theoretical perspective, since these features are beyond the scope defined at its outset.

aesthetic considerations. If he were a less creative analyst, Lewin might have chosen to simply refer to an *ad hoc* group of transformations that preserve the chromatic tetrachord, or even just note that a given series of transformations preserves the tetrachord without formalizing it with a label. But by defining a new operation instead of using extant ones, he keeps the elements of his group as small as possible relying on only J instead of a battery of different inversion operations. If we take the question to mean, why does Lewin define it with definitions and theorems (i.e.,"Why *define* a new operation?"), then we are considering validity imperatives. The formal definitions allow him to work with the new transformation in a way consistent with the rest of the system and following a predictable logic. Notice too, at this phase in the analysis there is not (and need not be) anything that it is like to hear a J transformation, it is just a formal technology insulated from phenomenology.

With the space of his transformational network and the groups of transformations settled, Lewin undertakes a long discussion to determine a suitable arrow-node graph to map the pentachords and transformations. At this stage, all decisions are made using only theoretical concepts, and mostly following formal-aesthetic motivations (he has left phenomenology behind for now and the system is already formally valid). Decisions are not between theoretical and phenomenal conceptualizations of the piece. They are between different theoretical conceptualizations, between different modes of presentation for the same, newly defined, abstract objects. Note also that decisions about the structure of a transformational graph are not made on only formal grounds. Formal relationships do not care how they are arranged on the page, just as long as the same relationships obtain. But because arrangement on the page is apparently a live issue here, we must be engaging formal-aesthetic considerations.

Lewin considers both a chronological arrow-node graph and a spatial one, the latter or-

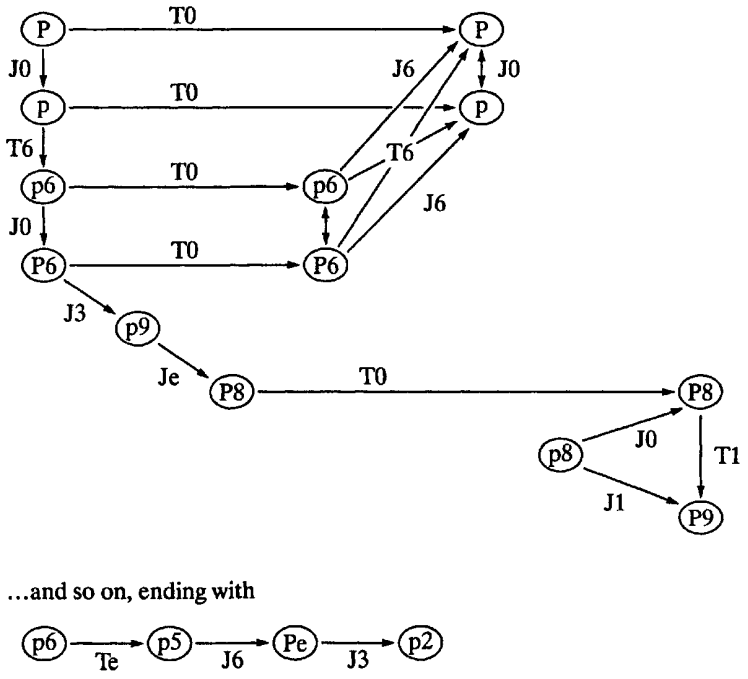

Figure 4.5: Lewin's Example 2.4, the chronological network.

ganized by the "0/6 complex." Figures 4.5 and 4.6 (Lewin's Examples 2.4 and 2.5) show both of these options, respectively. These conceptualizations cut different ways, and he eventually settles on the spatial graph, arguing that the chronological graph fails to "represent the considerations and procedures which led to its creation," i.e., *theoretical* conceptualizations instead of phenomenal ones.[29] The structure of the graph (visually, apparently) does not highlight the importance of the 0/6 complexes of which Lewin was so enamored a few pages earlier.

Lewin expresses his preference for Figure 4.6 in the following passage:

> Precisely because of the strongly narrative temporality, each arrow on the example [Figure 4.5] has to bear enormous weight in asserting some sort of phenomenological presence... Furthermore, the structure of [the example] does not bring out well the proportional relations involving pentachord forms that led to our developing the T-and-J group in the first place... [T]he structure of of the

[29]Ibid., 33.

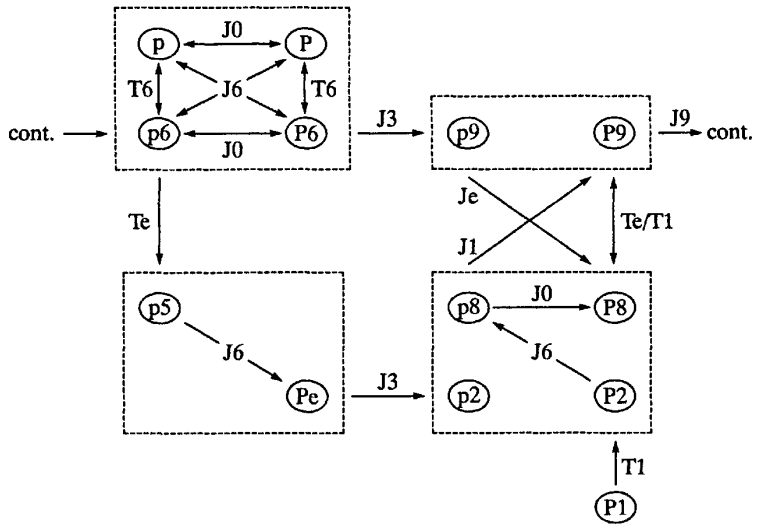

Figure 4.6: Lewin's Example 2.5, a "spatial" network.

> example does not draw our attention specifically to these proportions. To focus such attention, while we are telling the "story" of the example, we must interrupt the narrative drive. In this respect the example does not reflect well the considerations and procedures that led to its own creation. The group structure theorem is not a list of immediate aural intuitions or intentions; rather it arose from our pondering the logic of global proportionings that emerged from careful reflection upon our overview. To be sure, we can ultimately try to refer these proportionings to "presences," or at least observables in the music... However, this sort of a posteriori ear-training is not at all the sort of "immediate aural intuition" we were discussing above. Rather than trying to make out transformations denote phenomenological presences in a blow-by-blow narrative we can more comfortably regard them as a way of structuring an abstract space of P-forms through which the piece moves.[30]

There is a lot to unpack here. First, continuing the thread that brought us to this rich passage, Lewin's reasons for preferring the "proportional" network to the "chronological" one is clarified. Yet another formal-aesthetic consideration: latter analytical decisions should reflect the same values that motivated earlier ones. In this case, the relationships that

[30]Ibid., 32-34.

generated the T-and-J group of transformations were draw from the "proportioning" of the pentachords. When placing them in a network, this reasoning goes, we ought to follow the same values, to stick with the same relationships (the "proportionings") that got us to where we are now. It is inappropriate—at this phase of the analysis—to shift from caring primarily about proportion to caring about chronology. The chronology of the pentachords played little to no role in our defining our group of transformations so it should likewise play no role in organizing them into a network. Lewin admits that Figure 4.5 shows better promise to reflect the chronology of the piece, but this is not the sort of thing we are after.[31] "Immediate aural intuitions" are in the domain of phase one—the pre-algebraic preliminaries—those considerations do not belong in this phase of the analysis.[32]

Second, it is not clear exactly *why* a temporally inflected model must bear the weight of asserting "phenomenological presence," that it must some how directly and easily model our phenomenology. Lewin's decision not to follow the piece's chronology may have more

[31]Ibid., 31.

[32]Another implicit reason that under-girds Lewin's preference for Figure 4.6 is its tidiness. It shows certain symmetries not shown in Figure 4.3, and realizing that these formal symmetries exist (a formal-aesthetic claim) is an important part of the analysis. An interesting counterpoint to this is given in Lewin's later remarks about where to "cut off" the space given in Figure 4.6. The only complex explored fully is the 0/6 complex, whose prevalence in part determines the basic features of the group. We could, Lewin admits, expand the example further giving us a "space of 'potentialities' rather than 'presences,'" (Ibid., 35) showing that we could imagine the complete spaces of the 3/9 complex, the 5/e complex, and the 2/8 complex to just be unexplored. Lewin's sudden concern for only showing presences rubs against his reasoning for selecting Figure 4.6 over Figure 4.5. But, it turns out, it is mostly practical matters which dictate his decision. For, he ask, if we were to fill out those complexes, shouldn't we also fill out the complexes which neighbor them? And so on, ad infinitum? To prevent this, Lewin decides to cut off the arrows and chord forms shown to those which fall within the T-and-J group and are present in the piece. Given some of Lewin's other analytical commitments, it may be that had he asserted these elements as being part of the space the would exert a "pressure" on analysis for that completion, and since the piece doesn't go there, and Lewin probably doesn't want to think of the piece as unfulfilled, he leaves the graph as it is.

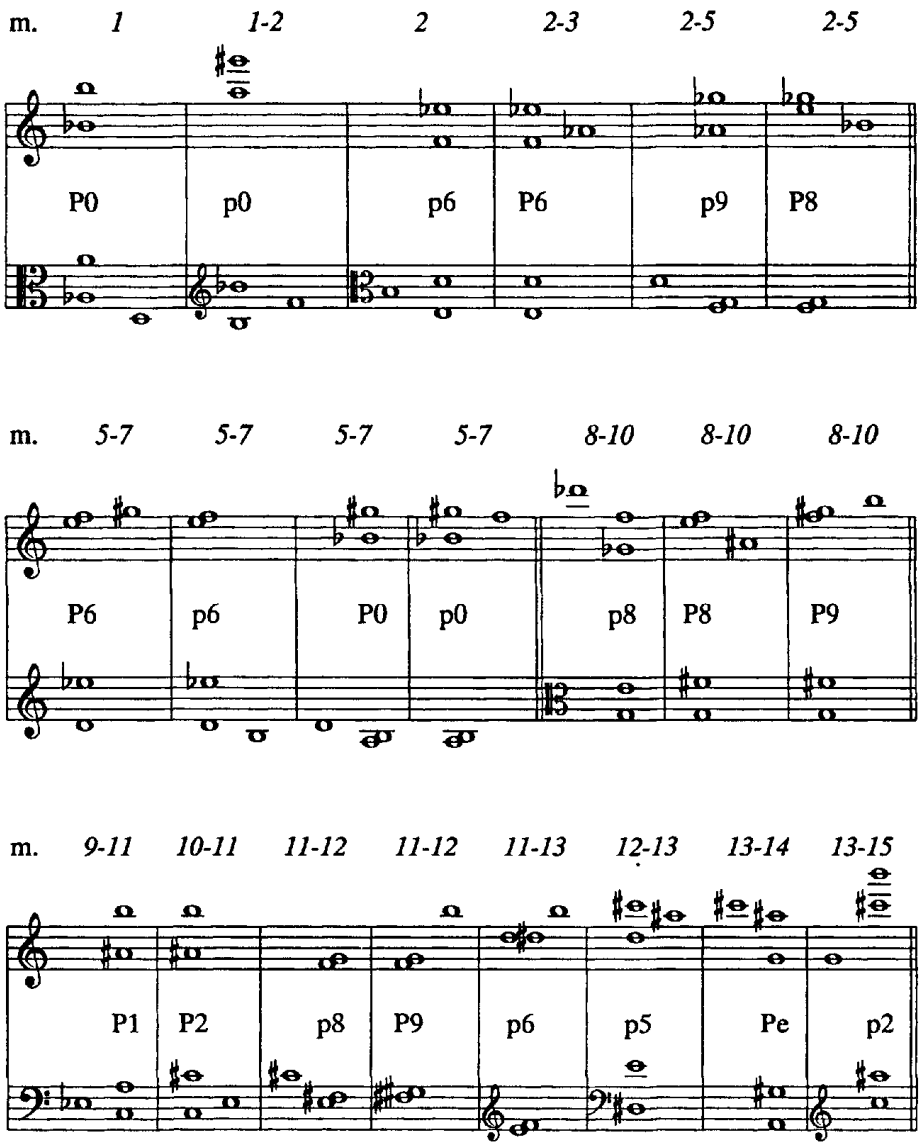

Figure 4.7: Lewin's ear-training exercise.

to do with providing a mind- (or ear-) expanding exercise, getting readers to accept a more abstract structure of the piece that demonstrates desirable formal-aesthetic properties rather than one that sticks so closely to its phenomenology.

Lewin follows his transformational graph with an ear-training exercise meant to get the reader to hear the analysis, and this constitutes the third phase of the three-phase process. In this phase, Lewin turns his attention away from generating an analysis which is formally

well-defined and whose form flows from the idea which generated it—the main preoccupation explored above—to question how the network staked out by the analysis can be heard. Lewin takes the question "Can you hear it?" to mean "do you find it possible to focus your aural attention upon aspects of the acoustic signal that seem to engage the signifiers of that analysis?"[33] It is unclear exactly what constitutes the engagement of these signifiers by an acoustical signal. Put another way, it is difficult to check whether one is in fact hearing the analysis when one is unclear what it would be like to hear the analysis.

As I reflect on the analysis and play through the ear training exercise, comparing it to the piece, it highlights certain relationships in the music, presumably those that are are meant to flow from the analysis. I gain from it a new array of phenomenal concepts existing in relationships analogous to those present in the formal model. These phenomenal concepts gain analytical relevance when I attach them to the theoretical framework developed over phase 2 of the analysis. The result is a new phenomenal conceptualization of the piece informed by phase 2 of the analysis consisting, in my case, of newly created phenomenal concepts. In future hearings, I can now—but still with some effort—hear these relationships and begin to hear the meta-relationship with is modeled by the transformational graph. In this sense, the three-phase process of segregated analyses is hearing-generating. Instead of *accounting* for a spontaneous hearing of a piece, the three-phase process generates novel hearings, by developing the basic features of a hearing using theoretical concepts. The phenomenal experiences during the first phase arise spontaneously, given in an immediate fashion, while the phenomenology of section three has to be cultivated consciously.[34] And,

[33]Ibid., 44.

[34]Obviously, what we hear "spontaneously" is determined by what we are primed to hear, both

it turns out, exactly this—the development of novel hearings—is Lewin's explicit goal.

4.3 Neo-Riemannian Theory

Operators and Maps

In his analysis of *Klavierstück III,* and in transformational theory in general, Lewin is relatively explicit about his goals and methodology. But this clarity of motivation and execution is not always present in analyses. More often convincing analyses are less clear about exactly what types of concepts generate them or what kinds of concepts one is meant to deploy to properly understand them. Such is often the case in neo-Riemannian theory. In this section I argue that we can interpret neo-Riemannian analyses as following a similar analytical process that serves to phenomenalize certain theoretical concepts, allowing neo-Riemannian theory to have some relationship to phenomenology while not limiting use of rich spatial networks.

Neo-Riemannian theory grew out of Lewin's general theory of musical transformation applied to harmonic language of the heavily chromatic but triadic music of the late nineteenth century. Analysts found that where tonal harmonic descriptions began to fail, neo-Riemannian theory provided a more convincing—or at least more normative—account of these passages. Neo-Riemannian theory, according to Richard Cohn in his introduction to a special issues of the *Journal of Music Theory*, provides a different account of the music that

by the short term context, and larger aspect of our cultural and musical training. But the music isn't given to us in this way—the input these aspects have on the experience are phenomenologically transparent.

allows it to still be read as coherent.[35]

The theory, of course, is named for nineteenth-century German theorist Hugo Riemann, and found an early development in the contextual transformations in *GMIT*.[36] Lewin introduces Riemannian functions not as chord labels, but as kinds of transformation such that, for instance, the DOM (for dominant) function means that the chord "becomes the dominant of" the argument triad.[37] In addition to the DOM and SUBD functions, which preserve only a single chord tone, Lewin also defined three other transformations, each of which leave two pitch classes invariant: parallel (PAR), relative (REL), and *Leittonweschel* (LT) transformations. These labels are likewise borrowed from Riemann's harmonic theory and these transformations in particular are the primary analytical technologies of modern neo-Riemannian theory.

The Lewinian reading of these latter three operators conceptualizes them as inversions about two notes of the "input" triad. These transformations map these two pitches into each other and the third note into a pitch class not present in the input triad. Figure 4.8 shows

[35]Cohn (1998), 169. While falling out of fashion nowadays, that an analysis should provide an account of a piece that explains is coherence—explains how it is possible for the passage to exist given certain harmonic rules—is still an implicit motivation for many analysts, neo-Riemannians included.

[36]Lewin (1987 [2007]), 175 ff.

[37]See the Beethoven example at the start of this chapter. Brian Hyer (2011) discusses many of the possible interpretations of "function" for Riemann, settling on a mostly mathematical conceptualization—following the influence of Frege—for historical Riemann. While a similar story might be told about modern harmonic functions, the neo-Riemannian ones in particular, I think the tonal functions in particular have a sort of complex conceptualization, being read as either a mathematical function or in the sense of what the chord is meant to do depending on how it suits the analysis.

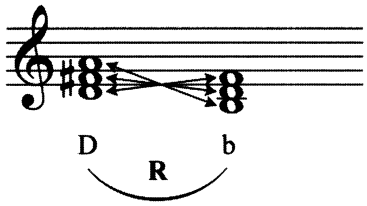

Figure 4.8: Inversional conceptualization of R operator. (Siciliano's example 4a)

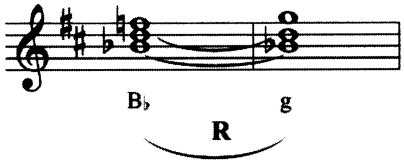

Figure 4.9: Parsimonious voice-leading conceptualization of R operator. (Siciliano's example 5a)

this mapping for the R (for REL) function.[38] Other writings, notably those of Richard Cohn, operate under a different conceptualization of neo-Riemannian operators. Cohn conceptualizes these as labels for the smallest units of "voice-leading work" in a progression. The voice-leading work of a progression is the total number of semitone displacements from one chord to another.[39] Neo-Riemannian operators are conceptualized as two *held* pitch-classes with a single triad member moving the shortest possible distance. Figure 4.9 shows this conceptualization of the same R function. So a P (for PAR) operator which turns C major into C minor as only a single unit of voice leading work, E to E♭. The R operator, conversely, requires two units of voice-leading work, shifting the fifth of the input triad up two semitones to become the root of the output triad. Progressions which do small amounts of voice-leading

[38]Figure 4.8 and 4.9 are drawn from Siciliano (2005).

[39]Cohn (2012), 6.

work are called parsimonious and are privileged in Cohn's and others' analyses.[40]

While the different conceptualizations of these functions provide identical labels to identical passages, this difference in conceptualization concerns how one pitch is conceived as moving to another. The parsimony conceptualization is closer to traditional voice-leading rules (preserve common tones, move voices by step), while inversional conception usually involves all voices moving. We might prefer one conceptualization to another when the voices move to the ones which they map to in actual music. This gives us a way to hear what was otherwise only theoretically conceptualized; i.e., points toward a particular phenomenalization of the theoretical concept.[41] Lewin's and Cohn's contrasting interpretations also serve as another example of different modes of presentation for the same reference. These concepts of P, say, are distinct, but are distinct at the level of sense, not at the level of reference.

Under either conceptualization of its primary operators, neo-Riemannian practice is marked by a concern with "mapping" musical space. These maps amount to Cayley graphs showing which elements of the given space are connected by defined operators. These maps show a space of possibilities for harmonic motion. We saw similar maps developed in transformational theory in both of Lewin's analyses above (of Beethoven and Stockhausen), but these graphs were contextual, mapping only those pieces. In neo-Riemannian theory, maps usually mean to show general connections between triads and are meant to apply to a variety of pieces.

The most prevalent of these maps comes from Riemann himself. His *Tonnetz* of functional

[40]Siciliano (2005) also offers an especially cogent description of these different conceptualizations.

[41]Most often, theorists tend to approach neo-Riemannian theory from one perspective or the other. Ibid., 88–92.

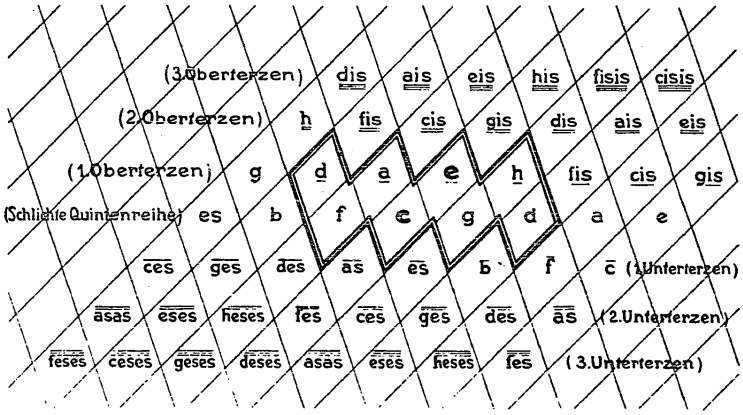

Figure 4.10: Riemann's *Tonnetz*

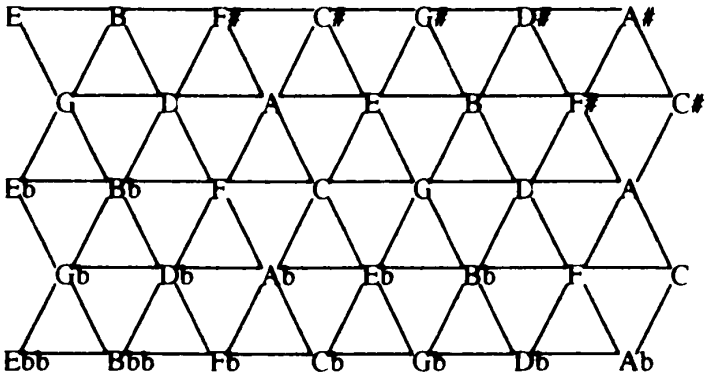

Figure 4.11: Hyer's realization of the neo-Riemannian *Tonnetz*.

relations is shown in Figure 4.10. Contemporary neo-Riemannians more often refer to a reformulation of this figure created by Brian Hyer.[42] While functionally identical, the modern *Tonnetz* is a tessellation of equilateral triangles instead of diamonds which clarifies how triads, the triangles, move through this space. The *Tonnetz* maps musical space by perfect fifth/perfect fourth relations on the horizontal axis, major third/minor sixth relations on the northeast/southwest axis, and minor third/major sixth relations on the southeast/northwest axis.

[42]Hyer (1989).

Neo-Riemannian Theory and Phenomenology

Despite its origin in transformational theory, the persistent concern for mapping promotes a conception of analysis in neo-Riemannian theory which runs exactly counter to the transformational attitude. Mapping harmonies in one of the various neo-Riemannian spaces fosters hearing chords as being certain *distances* from each other and not necessarily as connected by enacted gestures. The connections are supposed to be transformations, but often it seems that there is more concern with charting these spaces than with understanding what it means to move through them, and a wide variety of maps generated not from the specific elements of a particular piece but from the abstract properties of a set or transformation.[43]

This concern with mapping and symmetry foregrounds the theoretically conceptualized aspects of neo-Riemannian theories, compounded by the relatively few analyses that reach beyond but a few measures.[44] All this leads some critics of neo-Riemannian theory to question the degree to which it invokes musical experience. An entire section of *The Oxford Handbook of Neo-Riemannian Music Theories* is devoted to these issues. In his contribution to this volume Steven Rings argues that

> Surely a prime reason for the success of neo-Riemannian theory is that it al-

[43]This seems to be the case, in part, because the maps are usually defined with reference to these abstract properties instead of distilled from the harmonic progressions of a particular piece, though this does not mean that the maps were not sought after because of the features of a particular piece and justified by abstract properties after the fact. See, for instance Douthett and Steinbach's (1998) chicken-wire torus, cube dance, torus towers, and power towers; Cohn's (2012) water bugs, Weitzmann regions, and Boretz spiders; and Siciliano's (2005) LPR map. The presentation of each of these maps is given with a handful of short examples, but only the *Tonnez* seems to have found wide use as a general analytical tool.

[44]Siciliano points out that at the time of his writing that Richard Cohn's analysis of Schubert's B♭ Sonata is the only other example of an entire piece analyzed with neo-Riemannian tools (Cohn 1999)).

> lows analysts to dwell on the most remarkable sounding passages in a chromatic work...But it is not the remarkable sound of those passages which is analyzed, it is their coherence. One thus begins to wonder what the relationship is between the sound and the analysis. Is the "coherence" that the method detects responsible for what makes these disorienting passages so aurally captivating? Or are the two unrelated? In other words, do we value the analysis for the same reasons we value the music?[45]

In the same collection, Daniel Harrison is concerned also with the phenomenological status of neo-Riemannian theory,

> Neo-Riemannian theory seems happiest operating in an apparently tonic-free, zero-gravity state, as its analytic products are transformational labels that have no sensuous-functional significance.[46]

By "sensuous-functional significance" I take Harrison to be talking about some kind of phenomenal conception—that neo-Riemannian theories often skirt what it is like to hear the motions through the spaces that they propose, in particular disregarding aspects of a passage's tonal phenomenology.

And yet, neo-Riemannians, in the midst of their algebraic and geometric models, insist that the theory is, at its heart, experiential. Taking neo-Riemannians seriously, how does one respond to the claims of absent phenomenology from Rings and Harrison? Reinterpreting neo-Riemannian analyses as following a three-phase rubric similar to the one outlined for Lewin's transformational theory and considering neo-Riemannian theory as conceptually segregated, one can make use of the rich formal concepts in neo-Riemannian theory while still interfacing with musical experience.

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[45]Rings (2011a), 499.

[46]Harrison (2011), 564.

In neo-Riemannian theory, the influence of the three-phase process is more difficult to track since the first and final phases are often absent from the published analysis. In Lewin's Stockhausen analysis, the reader is present for the crafting of all of the pertinent analytical technologies, most notably, the J transformation. The motivation for creating this transformation flows form the original reckoning of the piece into pentachords, which was done by relying mostly on phenomenology. In neo-Riemannian theory the pertinent transformations are a given before the analysis gets going. Instead of developing new contextual transformations for each piece of music, standard transformations are baked into the analytical system. The reader is then left to speculate on how the operators relate to experience. Likewise, the final phase of the three-phase process is also absent. This is also often the case for transformational analyses as well. Lewin's analysis of Stockhausen is unique in that he gives an ear-training exercise to help re-translate the results of the formal analysis into a phenomenal experience. Much more often, however, this phase is left for readers to do on their own. The fallout from omitting these two phases is that the phenomenally-insulated second phase—working out the formal analysis—is often all that a reader sees. For those without a preexisting phenomenal image of the neo-Riemannian operations, or who do not take the time to learn to hear them, the analysis becomes only about the formalities of the second phase.[47]

[47]Before we look at a neo-Riemannian analysis, it is worth taking a moment to discuss the influence of history on neo-Riemannian theory. Like Schenkerian theory (and unlike, say, roman numeral analysis) the fact that the theory and analytical approach bears the name of an historical theorist often leads those theory's students to study the work of that theorist for insight into how the theory and analysis work, despite changes in context, epistemology, etc. This is especially true in the work of Cohn, who often appeals to historical precedent to justify his models (see Cohn (2012)). Tied in with this appeal to history is a more general analytical concern with sensitivity to historical context in analysis. Sometimes this anxiety leads theorists and musicologist to insist that contemporaneous analytical modes are best for any given music. Thus, because of neo-Riemannian

Siciliano's Analysis of Schubert's "Der Jüngling und der Tod"

To get a feel for how we might interpret a neo-Riemannian analysis under the three-phase framework, I examine Michael Siciliano's analysis of Schubert's "Der Jüngling und der Tod."[48] Siciliano's analysis is given as a kind of pedagogical example (like the Stockhausen analysis) and is clearer than usual about exactly what kinds of concepts are being deployed when. The analysis turns on a fully theoretical concept, the idea of chord *orientation* in the space of abstract voice-leading parsimony. My commentary focuses on how Siciliano first presents a fully theoretical sense of this concept and then coaches readers on how to listen for this feature. While Siciliano's analysis is not as methodologically self-conscious as Lewin's, I interpret this analysis under the same three-phase process. This shows one way that we might take neo-Riemannian analyses to engage our experience, relying the same sort of conceptual shifts as in transformational analyses.

Siciliano's analysis starts with an old-fashioned question: what makes this piece cohere?[49] It is is particularly pressing in this *Lied* since it begins and ends in different keys

theory's origin—however far removed—in the work of a nineteenth-century theorist, his work is often cast as having some extra insight into nineteenth-century music. I tend to think that the domain of music theory is the experience of theorists *today* (whenever that happens to be) and that any charge of conceptual anachronism relies on an assumption that any interaction with historical music is necessarily limited to the concepts available at that moment in history, and this assumption is one that we by not means are *required* to take (though, of course, we may want to). However, I take discussion of such historically-informed concepts as beyond the scope of this investigation. I am concerned only with the motivations for theroetical concepts and phenomenal concepts in modern theorists' reaction to music.

[48]Siciliano (2005).

[49]I do not mean this to have a negative connotation, just to say that it is a common concern for earlier theorists which—for better or worse—has fallen out of analytic vogue. Recall that providing an alternate account of harmonic coherence beyond only tonal grammars was one of the mandates of neo-Riemannian theory (Cohn (1998), 169). Of course, these days we tend not to insist on coherence as a necessary condition for aesthetic value.

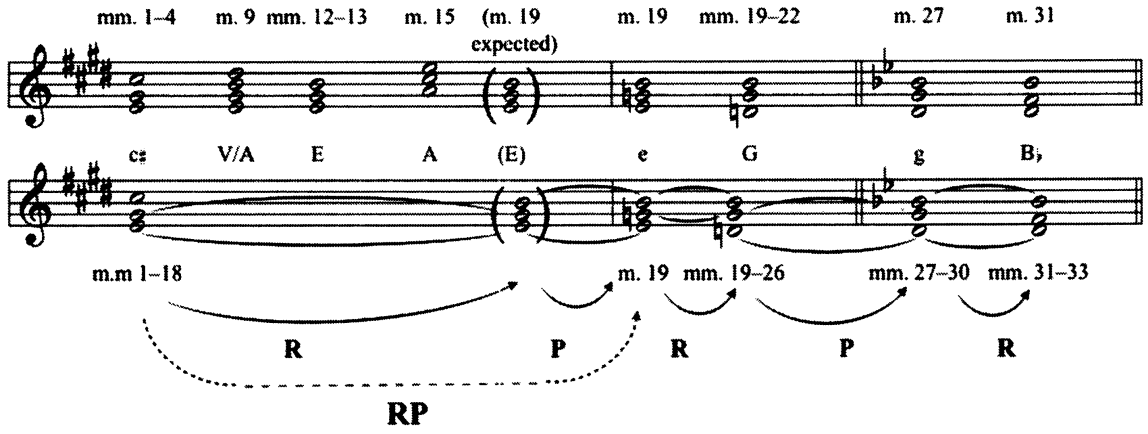

Figure 4.12: Siciliano's Example 9: Reduction of "Der Jüngling und der Tod."

(C♯ minor and B♭ major), nullifying a traditional criterion for tonal coherence. Siciliano's primary argument is that the structural harmonies of the piece follow a chain of PR transformations connecting the opening sonority, C♯ minor, to the closing one, B♭ major, (spelled out: RPRPR). Coherence is obtained through the predictability of this single gesture in the structural middleground. Instead of leaving the piece seeming random, meaningless, or unexplanable adopting a neo-Riemannian framework allows it to "cohere" as a single conceptual entity guided by a specific rule. Siciliano's reading is summarized in his Figure 4.12 (his Example 9).

The second large claim of the analysis is that despite never returning to a home key, the piece obtains a specifically neo-Riemannian type of closure by regaining the *orientation* of the opening harmony. "Orientation" here denotes the structure of the harmonies, idealized in a graph showing parsimonious voice-leading, roughly analogous to the inversion or position of a chord. The first structural harmony of the piece is spelled with the root, C♯ sounding in the highest voice, and the next time we hear this orientation in a structural harmony is at

the end with a B♭ in the highest voice. The return to the starting orientation is supposed to act like a return to a tonic key in a tonal composition, releasing tension created by moving away from this orientation that allows the piece to end.[50]

The theoretical concept of orientation is introduced on an abstract, theoretical level, but Siciliano devotes half of his analysis (two of the four total pages of text) to showing how the "displacements," each middleground gesture, are audible. This usually means that in each instance of a participating chord the right-hand position of the piano matches the orientation in Figure 4.12. The implicit ear-training exercise here is to hold in our mind's ear the previous triads in the PR cycle, retaining not just their content, but their exact intervallic profile.[51] The shifts themselves are sometimes highlighted by the voice, but it is always the piano that realizes the abstract structure.

However, just as we can clarify the PR cycle in our hearing by focusing on these elements, we must also aurally bracket the elements of the music which could distract us. Consider, for instance, what should be the most easily audible shift (that is the shift closest to the surface of the actual music), the R from E minor to G major in m. 19. On this displacement, Siciliano says:

> As mentioned above, e- moves to immediately by R to G+, a move accomplished

[50] Siciliano defines neo-Riemannian orientation for the sake of this analysis, but its use is not limited to this piece.

[51] The attentive reader is no doubt aware of the large number of Schenkerian concepts which have slipped into the analysis, chief among them being this idea of "holding in the mind's ear" (prolongation) and the idea of a structural middleground. While both ideas are originally Schenkerian concepts, they have become so pervasive in modern analysis (tonal and non-tonal) that they no marked seem particularly *Schenkerian*. Moreover, neither is tied to other essentially tonal features of Schenkerian analysis (specifically the *Ursatz*) which make the theory problematic for this sort of music.

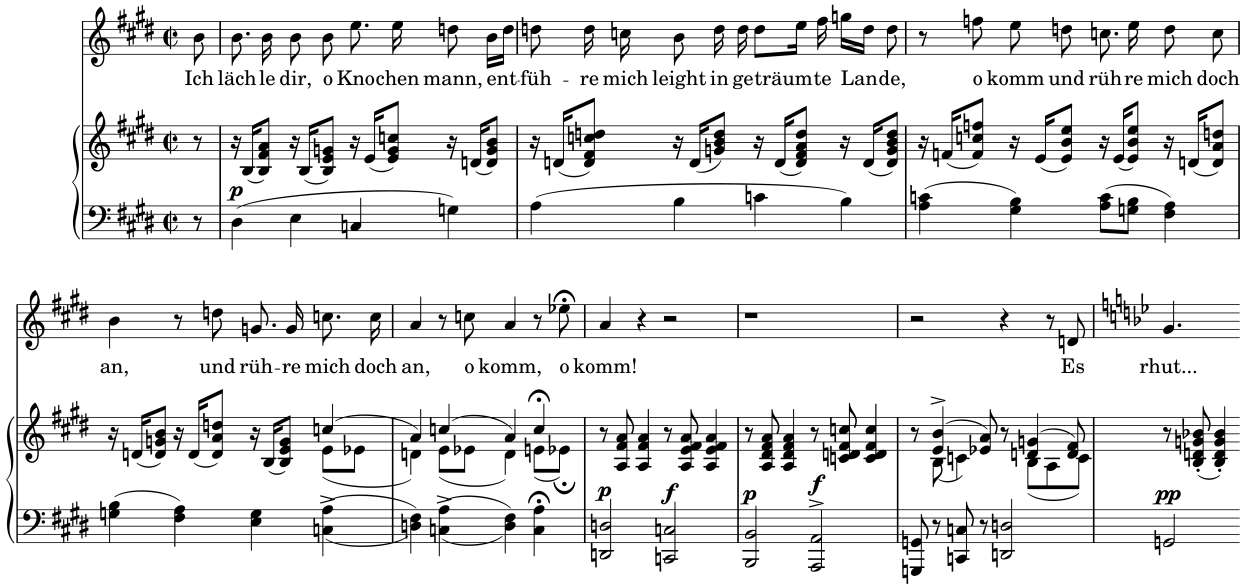

Figure 4.13: Schubert, "Der Jüngling und der Tod," mm. 19–27

> by the displacement of E to D. This occurs between the third and fourth beats of measure 19, and is doubled for emphasis as cover tones in the melody. The correct orientation of the G+ triad is presented in the piano right hand on beat 4. As in the E+ section, the voice returns to B (m. 22) and the piano echoes it (m. 26). The B in m. 26 reminds us of the correct orientation (original registers) of the voices, in preparation for the confirming cadence in measure 27.[52]

So, what kind of hearing are we presuming here? Figure 4.13 shows the measures in question (mm. 19-27). In m. 19, we need to bracket both the melodic and bass motion to hear the correct orientation of the inner voices and grasp the appropriate step in our PR cycle. The doubling of the E-to-D motion might highlight the R in pitch-class space, but it does so at the cost of obscuring the orientation of the triad. While the voice does in fact settle on a B in m. 22, perhaps viewed as a delay of the appropriate upper voice, the bass doesn't give us a confirming D until the end of the phrase (in preparation for the cadence).[53]

[52]Ibid., 98.

[53]These might be read as weaknesses of the analysis—that the bits it highlights are cherry picked for the analysis without respect to their spontaneous salience—but its important to realize also

While not as obvious as Lewin's analysis of *Klavierstück III*, aspects of the three-phase narrative are still in play. Siciliano's attention to the occurrence of triads of the appropriate structure in the right hand of the piano can function like a phase 3 ear-training exercise, phenomenalizing the abstract analysis in Figure 4.12. By learning to attend to these moments and learning to *hear* the theoretically defined middleground in this way, we develop a phenomenal image of the theoretical concepts that shape the analysis. This is particularly true for the idea of orientation. Returning to our starting orientation is supposed to give a kind of closure, or at the very least, provide a kind of off-ramp from the PR cycle. This idea exists at first only in theoretical terms as the position of an idealized triad but by focusing our attention in the way Siciliano helps us make the abstract, theoretical progression phenomenal.

Absent from Siciliano's analysis, and neo-Riemannian analyses more generally, is the first phase of the narrative: introspecting the spontaneous phenomenology of the piece to define the formal transformations used in phase 2. For a neo-Riemannian analysis, this work is already done; the analytical system comes pre-loaded with the P, L, and R parsimonious transformations and there is rarely a need to define new contextual transformations in an analysis, and when one does, they are almost always conceptualized as a combination of P, L, and R.[54]

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that this critical reading is itself full of analytical commitments. Specifically the idea that the most important relationship to understand at any given time is that between the outer voices. These voices may well be the most salient when listening, but if we follow the commitments highlighted in Lewin's analysis, the point of neo-Riemannian analyses is not to account for what is heard spontaneously (e.g. "immediately intuited") but create a hearing of the piece as coherent under the neo-Riemannian system that creates closure by returning to a specific orientation.

[54]See, for instance, Krumhansl (1998).

4.4 A Segregated Analysis of Verdi's *Macbeth*, Act II, scene 1

We can trace the three-phase methodology in the development of a neo-Riemannian analysis of the recitative that opens the second act of Verdi's *Macbeth*, taking note of when and how phenomenal and theoretical concepts are used.

I was drawn to this piece as a possible example of neo-Riemannian principles when attending the opera. I noticed what seemed like a surprising relationship between the tonal grammar of the introduction and the D♭ major and G♭ minor triads in m. 22-24. I do not have perfect pitch, I did not have the score in front of me, and I was not listening especially closely for harmonic relationships. I am not even sure why I did not write this off immediately as a run-of-the-mill deceptive cadence. I might not have been able to articulate this at the moment, but something about the major third relationship between the anticipated tonic resolution from the dominant C chord and this D♭ triad surprised me and this was compounded by the G♭ minor triad. Whatever the specific relationship, I heard something that activated a phenomenal concept, something that sounded like a neo-Riemannian operation, even if I did not have an explicit neo-Riemannian concept to label it with just yet. Hearing this relationship primed me to listen for more neo-Riemannian-sounding things relationships and I also took note of the passage that follows the F♯ minor sequence (which ended up being mm. 50-54).

To hunt down and formalize these progressions, I turned to the score to tabulate their relationships. Like most longer passages, not every relationship from chord to chord is best read in a neo-Riemannian context. Instead, it is more beneficial here to trace neo-

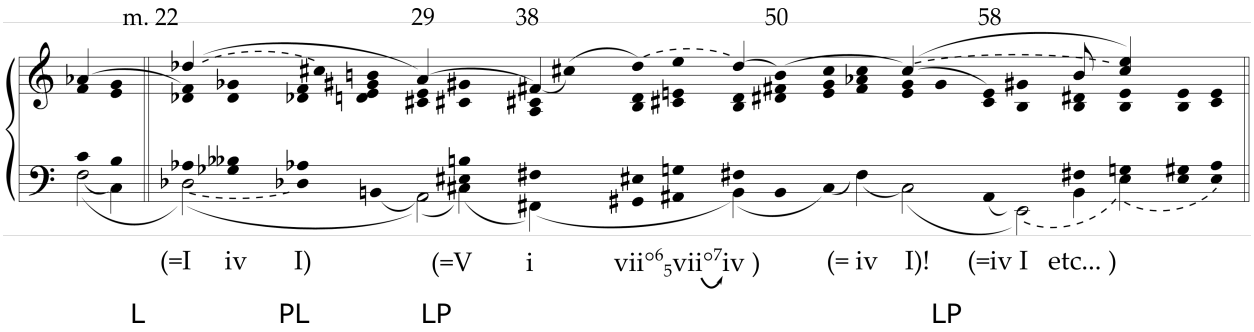


Figure 4.14: Harmonic Reduction, Verdi, *Macbeth*, Act II, scene 1.

Riemannian operators—and the recit's motion through the *Tonnetz*—on the middleground. Measures 19-38 unfold a descending major third cycle starting with the introduction in F minor, a prolongation of D♭ major in mm. 22-24, and a tonicizaion of A major in mm. 28-35.[55] The *Leittonwechsel* relationship provides the theoretical concept for the phenomenal relationship heard between the F minor of the prelude and the D♭ in mm. 22-24, which is then prolonged by its minor subdominant. This then moves to a tonicization of A major, another major third down the cycle in m. 29.

But before completing the cycle with a return to F minor, the cycle reverses in m. 37 to D♭, now written C♯, where it gains a chordal 7th leading it to tonicize F♯ minor, breaking the neo-Riemannian major third cycle, in favor of more traditional tonal relationships. The following progression is more-or-less a tonal sequence ending on the subdominant of F♯, B minor in m. 50. The triad B is then transformed through roughly parsimonious voice-leading (excepting the parallel progression from B major to C major) ending in F minor. This moment effects a major articulation in the recit. *Now* the cycle is complete, returning to the F minor it started on.

[55]Not just this recitative, but much of the opera is built around this F-D♭-A cycle. See Budden (1973).

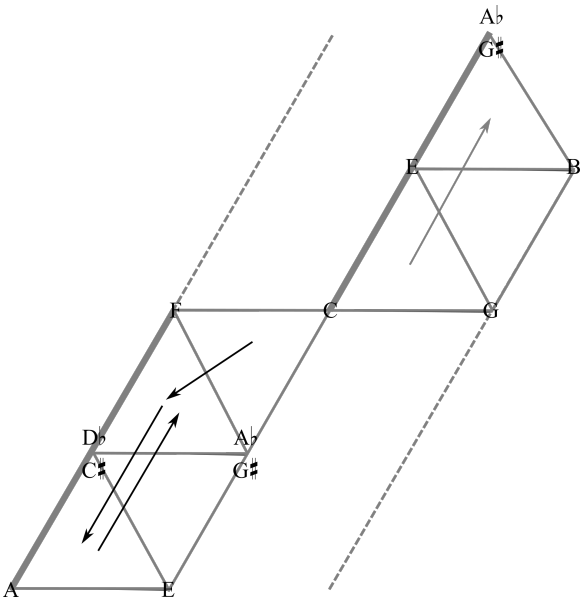


Figure 4.15: Path through the *Tonnetz*. Verdi, *Macbeth*, Act II, scene 1.

But the following measures imply a different interpretation. As Lord and Lady Macbeth prolong the C major triad, assumed to be the dominant of F minor, in m. 58 the E of Lady Macbeth's line becomes not the third of a C major triad, but the fifth of A minor, which then functions as the minor subdominant to E major, which is further tonicized in the following measures. This suggests a different analysis for the preceding F minor and C major triad pair. Instead of analyzing them as a return to F minor with a tonic-to-dominant gesture, one could conceptualize them as a minor-subdominant-to-tonic in C, mirroring the following progression and prepared for by the minor subdominant prolongation of D♭ way back in m. 23. This reading allows the C major and E major to also participate in a major third cycle, though moving in the opposite direction in the cycle in a different alley of the *Tonnetz*, shown in Figure 4.15.

When looking at the recitative as a whole, there are some dramatic possibilities in this reading. The first progression through the major third cycle occurs while Lady Macbeth tries

to get the attention of her husband, demanding an explanation for his pensiveness, since he is now King, as foretold by the three witches. As Macbeth takes over in m. 35 and following, explaining that his concern is the second half of the prophecy, which foretells his eventual downfall at the hands of Banquo and Fleance, we enter into the F♯ sequence, breaking the cycle of descending thirds and returning to tonal grammar. As the tonal sequence ascends, Lord and Lady Macbeth realize that they must also slay Banquo and his son. Yet, Lady Macbeth is concerned that her husband may not have the intestinal fortitude to go through with it and in mm. 54-55, at the return of F minor, she presses Macbeth for details, "Where? When?" As Macbeth's resolve solidifies, the pattern of the major third cycle returns, but shifts direction and becomes transposed, as if responding to the apprehension with which the characters came to the scene with resolve.

The charts and reductions show all these relationships. Notice that after the original motivation to look at the piece from a neo-Riemannian perspective, where I was led by phenomenal concepts, this analysis has been done without reference to what the music or relationships sound like. My decisions have been made on the basis of theoretical consistency, mostly concerning the structure of chords and their abstract relationships without relying at all on what the progression sounds like. With phase two complete, what can we do to phenomenalize this reading?

In Lewin's analysis, the network was phenomenalized with an ear training exercise. In the case of this recitative, I suggest something similar. Listen or imagine the first few minutes of the recitative, from the introduction through the arrival of F♯ minor: one can focus aural attention on the middleground of my harmonic reduction (shown with open noteheads). We might prime our awareness of the appropriate phenomenal relationships, by playing the

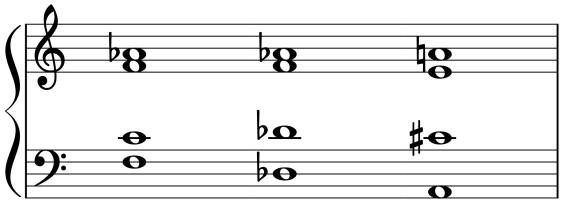


Figure 4.16: Harmonic background mm. 1-35, played before second listening.

chords themselves so that their phenomenal content—what they sound like—is clear from the outset (shown in Figure 4.16). When turning back to the piece, one should keep the sound of this middleground in mind—retaining the phenomenal concepts involved in hearing it. This allows us to begin to phenomenalize the neo-Riemannian aspects of the analysis. In order to do this, we will need to deploy some Schenkerian training to hear the prolonged harmonies as persisting over tonal interjections.

It is difficult, for me anyway, to describe what these relationships sound like without reverting back the theoretical concepts I am trying to distance myself from, but I do think I hear a difference. Perhaps it is best described as if all of the harmonies in this first bit of the recitative participating in a single gesture, all a part of a descending thirds cycle instead of the more unstructured progression we might expect from a recitative. I hear this with a new phenomenal concept which maps onto the theoretical concepts that guided the analysis.

This brings us to the end of the entire three-phase process. The analysis given here developed from a phenomenological kernel into a broad narrative for the entire recitative with little reference to the *sound* of the music once the analysis got going. Following the theoretically based neo-Riemannian analysis, I gave some guidance on how I thought one might develop the phenomenal concepts to hear the new formal relationships. I tried to be clear both about what sorts of concepts I was using and when and where I was concerned

with experience or formal relationships. We do not usually get this explicitness when we read analyses, but we can *choose* to interpret them *as if* they followed this three-phase model. This permits us to make use of the rich and independently elegant formal apparatus of neo-Riemannian analysis while giving a way for those apparatuses to engage phenomenology.

While exactly how the three-phase process is implemented has varied in each analysis, the core idea is the shift from phase 2 to phase 3. Through analysis a theoretical concept comes to have phenomenal meaning. In Lewin's analysis, the ear-training exercise allows us to hear the important relationships which made the transformational analysis possible, giving us the ability to trace the different passes through the transformational space. In Siciliano's analysis, focusing on the concept of abstract orientation gave us new way to hear phenomenal closure in a which which does not participate in the tonal methods of achieving closure. Finally, in my own analysis of the *Macbeth* recitative, we have seen that abstract theoretical concepts can also be phenomenalized again by invoking a kind of ear-training exercise that sensitizes us to phenomenal aspects of the middleground.

4.5 Toward "Mixed" Approaches

The three-phase conception of transformational and neo-Riemannian analysis that I have argued for over the course of this chapter is not the only way to understand the neo-Riemannian analytical process or the analyses they beget. While, for me anyway, a three-phase narrative is the best way to understand the broad relationships between phenomenal and theoretical concepts in these theories, when considering well-worn concepts (like the neo-Riemannian functions), things are hazier. Indeed, my motivation for making a *neo-Riemannian* analysis

of the Verdi recitative was my hearing something that *sounded* like a neo-Riemannian operation. That is, relying on a phenomenal conceptualization of those operations. For some theorists neo-Riemannian analysis may not fall under the rubric of segregated approaches, but rather *mixed* approaches, the subject of the next chapter. Mixed approaches rely on both types of concepts—phenomenal and theoretical—but their admixture is much messier.

The most important difference of the mixed-variant, neo-Riemannian analysis is that it is motivated by different goals. While the segregated approach is aimed at creating *new* hearings by phenomenalizing theoretical concepts, mixed approaches are usually concerned with communicating extant phenomenologies in the theoretical terms under consideration. I suspect that this motivation seems much more natural to most analysts. Again, we are in the business of analysis to understand our own experience and communicate the experiences we have with others. But, as we will see in the following chapter, we must make certain methodological accommodations in order to pull this off. How theories which rely on such mixed concepts and the strengths and weaknesses thereof is the subject of the next chapter.

Chapter 5

Complex Theories II: Mixed Concepts

5.1 Understanding Mixed Concepts

The previous chapter examined one way to coordinate phenomenal and theoretical concepts into a complex analytical methodology. The primary aim for those segregated approaches was to create a system that could invoke both kinds of concept while maintaining the validity of each type of engagement. Such systems did so by limiting the interaction between conceptual types to the "phase changes" of the analysis. This allowed for the shift from one way of thinking to another to be tightly controlled, heading off accidental conceptual cross-pollination. But segregated approaches to analysis are perhaps even rarer than the so-called simple approaches of chapters two and three. By far the most common ways of doing analysis neither focus on a single conceptual type nor have a rigorous, consistent system for coordinating different types. Instead, the majority of analytical approaches—particularly for tonal music—invoke both kinds of engagement by relying on concepts which have phenomenal *and* theoretical elements. I call these mixed concepts. As we will see, these concepts' looseness

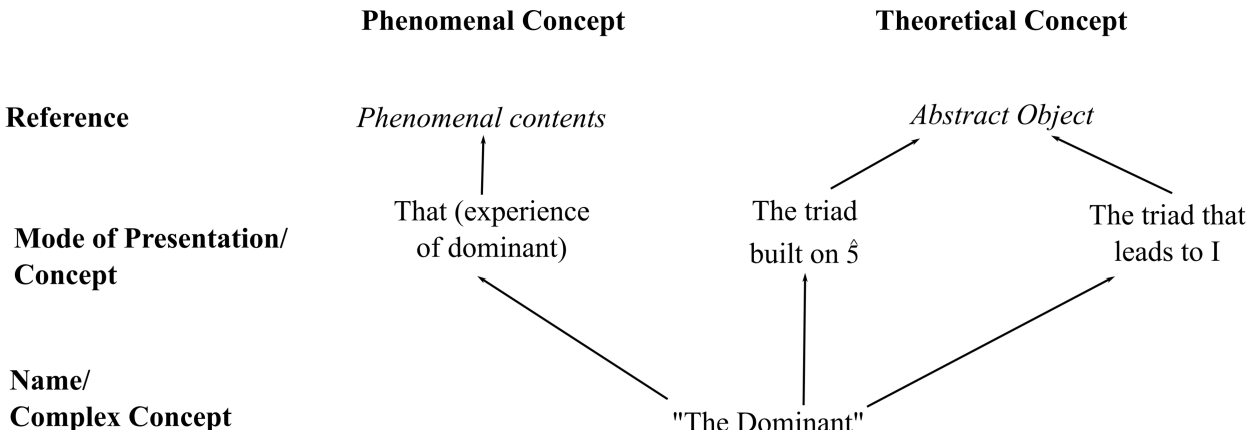


Figure 5.1: Analysis of "Dominant."

of reference creates new analytical problems while also permitting more flexible analytical systems.

In this chapter, my primary example of a mixed approach will be Schenkerian analysis, but by no means is this the *only* analytical system which uses mixed concepts. Indeed, early in chapter one I provided a conceptual analysis of the common mixed concept *dominant*. There my aim was to show that the word "dominant" can stand for multiple concepts, differentiated at levels of sense and reference.[1] Here I will focus on the complex concept denoted by the word "dominant," which includes both phenomenal and theoretical conceptualizations. As we turn toward a more detailed account of mixed concepts, two important complications come to the fore. First, there is a methodological danger built into using mixed concepts. One might apply a mixed concept based on one's experience and then draw analytical conclusions from its theoretical aspect, or vice versa. We employ mixed concepts using different

[1]If you are in need of a refresher, "Dominant" may stand for a concept which refers to what it is like to hear a dominant (a phenomenal concept) or it might stand for one of a number of concepts that refer to an abstract object. These latter, theoretical concepts are in turn differentiated by their modes of presentation, which include *the triad built on* $\hat{5}$ and *the triad that usually leads to the tonic* (both theoretical concepts). We may even wish to go so far as to say that in these cases "dominant" does not actually stand for a single thing at all, but is instead is a sort of homonym with itself.

types of criteria leading to different implications—quite aside from the different discursive styles that befit each type of concept. Treating a single music-theoretical idea as a mixture of these two concepts permits a kind of slippage between the two ways of engaging with music. Without a methodological system like transformational theory in place, there is nothing preventing me from, for example, asserting that a given chord is a dominant on the basis of pitch structure, then going on to argue that the phenomenal profile of the dominant influences the passage in some way. Believing that a chord is a dominant on theoretical grounds does not imply that one will hear it, nor does hearing some phenomenal content necessarily imply that the right theoretical elements are present. Mixed concepts obscure this. In a mixed approach, both aspects of the concept are used freely; we constantly pivot back-and-forth between the two, with fewer explicit or universal goals to guide our conceptual usage.

Given that mixed approaches are so easy to misuse if the analyst is not especially careful, why not avoid this epistemological mess altogether, working either in a conceptually pure environment or insisting on a strict methodology for preventing conceptual contamination? The fact is that the messiness of the analytical process rarely follows such strictures. Using mixed concepts can generate new or different ways of thinking about and hearing the music precisely from the bridge they form between theory and experience. This permits a variety of important analytical strategies, and opens up many opportunities for creative analyses. But the flexibility that mixed concepts provide analysts is paid for by their readers. Because the narratives of mixed analyses are so complicated, readers rarely see precisely how analysts come to use a given concept. This makes the conceptual resources of a mixed analysis difficult to parse, thereby making these analyses more difficult to clearly understand and critique.

The second thing to consider when looking closely at mixed concepts is more technical.

In chapter one and throughout this dissertation, I have invoked the conceptual structure described by Peacocke, according to which concepts conceptual structure is analogous to the structure of words' meaning in Frege's theory of language.[2] This theory of concepts is useful because it allows us to conceptualize the same thing, or reference, differently by taking it under different modes of presentation. But this is not quite the way that we use mixed concepts like *dominant*. Usually, when talking about a mixed concept, we act as if the level of conceptualization were the *lexical* level, not the level of sense. This tendency is why many theories of concepts take lexical concepts to be the most basic and simple examples.[3] If one adopts the concepts-as-sense hypothesis, however, then one finds that there might be multiple distinct phenomenal and theoretical concepts that are all denoted by the same word. This confuses what the conceptual "units" are. *Dominant* is not itself a concept but a kind of *complex* superconcept, a *set* of concepts, with each subconcept having a sense and reference but all called by the same word. Put another way, our language has a lower "resolution" than our thinking, there are many different things that we can identify—intellectually and experientially—all of which we *call* "dominants." This can tempt us into thinking that all of these concepts are in fact a single concept, and that all of the different concepts denoted by that word are invoked whenever that word is uttered. While being extra precise about our conceptual usage might make for a more careful claim, this fails to match the habits of thought and discourse that surround mixed concepts in music theory. Instead our analyses tend to treat these as simple lexical concepts, defined any way you please. This might seem

[2]See Section 1.2 above.

[3]This is the case, for example with Ray Jackendoff's so called "neoclassical" theory of concepts (Jackendoff (1999)), seeing words as signs of basic concepts also underlies theories like Lakoff and Johnson (1980).

like a sloppy methodology, but, as we will see, it is often precisely this tension, revealed in theory, analysis, and analytical disagreement, that provide some of the most important insights of mixed approaches.[4]

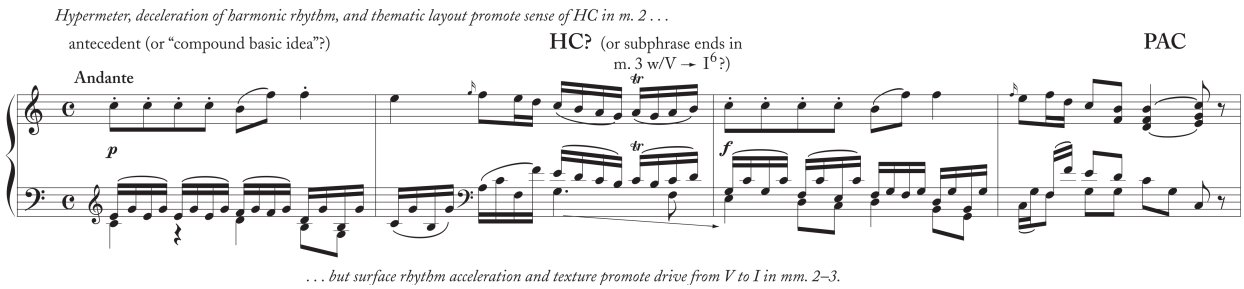
Half Cadence as a Mixed Concept

We can develop our understanding of mixed concepts—and especially of the challenges that come with using them—by seeing them deployed in analysis. The concept *half-cadence* is an extension of the mixed concept *dominant*, invoking a number of additional sub-concepts, but it remains among the most basic concepts in tonal theory. L. Poundie Burstein's recent work exploring the complexities of half-cadential identification serves as a good case study for the complexity of half-cadence-concept attribution in practice.[5] Despite their ubiquity and seeming simplicity, half cadences resist a simple definition and Burstein finds a number of counterexamples that undercut any given theoretical conceptualization.

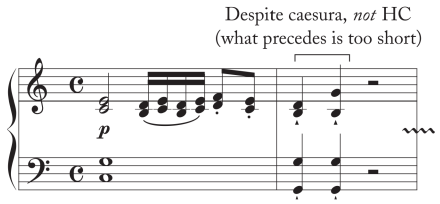
Burstein's article provides a large array of musical examples (nearly forty). Figure 5.2 reproduces two of them to highlight some specific complications we might run into in identifying half cadences. Figure 5.2(a) shows Burstein's analysis of the opening measures of the second movement of Mozart's Sonata for Piano in G, K. 283. As his analytical commentary shows, the hypermeter, harmonic rhythm, and thematic content are all consistent with a half cadence at the end of m. 2, but the accelerated surface rhythm makes it difficult to hear

[4]I want to be very clear that it is not my aim to propose a radically altered or more formally valid analytical methodology aimed at preventing conceptual cross-pollination. Carrying the botanical analogy one step too far, it is exactly *through* cross-pollination that plants produce fitter offspring. My aim here is merely to account for how concepts are used, not to legislate how they *ought* to be used.

[5]Burstein (2014).



(a) Mozart, Sonata for Piano in G, K. 283, II, mm. 1-4. *After Burstein*



(b) Beethoven, Sonata for Piano in C, Op. 1, No. 3, I, mm. 1-2. *After Burstein.*

Figure 5.2: Two of Burstein's slippery, half-cadential(-esque) events.

this as a moment of closure befitting a cadential arrival.[6] Example 5.2(b) shows a different kind of problem: the harmony is right and the textural break would normally imply a half cadence, but because there has not been a real phrase before this point, it does not seem to make sense to consider this as a cadence. We usually think of cadences as being ends of phrases, and there is not really a phrase here to end. In both of these examples some theoretical definition is satisfied, but we are hesitant to actually call these moments half cadences. The cadential arrival is complicated by conflict between different musical parameters, which in turn causes conflict in concept attribution. A general definition is undercut either by formal elements or by phenomenology. We think of half cadences as obtaining under specific circumstances that are not just harmonic but also thematic, metrical, rhetorical, etc. etc. We may recognize that the sufficient conditions of some definition for "half cadence" are met,

[6]Notice that in Burstein's analytical commentary, all of the terms used for and against the half-cadential hypothesis are mixed—they can refer to an abstract, theoretical idea or to a certain experience.

but the moment in question just does not *sound* like a half cadence. Moreover, because we assume that such a basic concept could not cause so much analytical trouble, we may be unprepared to judge situations where some features of the mixed concept are present while others are not.

Burstein's numerous analyses show that the half-cadence concept we use in analysis is not as simple as just "a cadence on V." We might break this down into two different points. First there is unclarity about what kind of V counts as supporting a half cadence. Second, it is also unclear what we mean when we call something a cadence.[7] William Caplin has tried to make some headway on this latter point, differentiating the various parameters which might participate in a cadential function. He defines a cadential arrival, the moment when we have the actual end of a structural unit, as distinct from the cadential idea, the span of the music leading up to the cadence which causes us to anticipate the cadential arrival, from the cadential progression, the actual harmony at the cadential arrival that confirms a tonality.[8]

Both Burstein's analysis and Caplin's terminology offer fixes for the inconsistencies in our *theoretical* conceptualization of half cadences. Caplin sees analysts fusing several theoretical concepts into a single term, creating confusion between analysts when the definition of that term is assumed. Burstein's numerous examples point to places where our concept of half-cadence breaks down but his explanations (both of the problem and of the reasons behind

[7]On the former point, Burstein points out that some theorists nowadays have a very small, but well-defined scope of what kind of V can support a half cadence: a root position triad. Contra this position, Burstein argues that this definition of the half cadence conforms neither to the history of the term nor to several moments which seem, otherwise, to be half cadential. Burstein (2014).

[8]Caplin (1998), 42-43.

each conceptualization) rely on theoretical concepts and tend to be *ad hoc*, addressing each complexity as it arises and not trying to provide a new general definition. Addressing these complications and offering a more nuanced or specific way to think about these analytical bugaboos is important work, and more detail is rarely detrimental to analytical clarity. But while clarifying these terms can make our analytical claims more precise, ultimately it does little to differentiate phenomenally attributed cadential arrivals, ideas, or progressions from theoretically attributed versions of the same.

In practice, we do not just identify cadences on the basis of their formal properties; more often than not we use our ears—that is, we deploy phenomenal concepts. Indeed, Burstein points out that when the features determined by the score are ambiguous, recordings can sometimes provide some insight into how we might identify one cadential gesture or another, or, at least, identify how that particular performer understood it.[9]

We might imagine that this involves two steps. Upon hearing the excerpt we think something like, "I heard the performer pause a little bit more there, so I deduce that this moment was a half cadence." That is, first we pick up on the performer's interpretation of the music, as they use unnotated nuances to push our perception toward one hearing or another.[10] Then we quickly convert these heard nuances into some theoretically conceptualized category or linguistic terms. Under this reading, the concept of *half cadence* need only be theoretically conceptualized; it need not have any phenomenal image since the phenomenology is translated into formal properties before the concept is applied. But this seems likely not the

[9]Burstein makes this argument in reference to, for instance, the second movement of Mozart's Sonata for Piano in G, K. 283, mm. 1-4, citing recordings by Gabor Antalffy and Sharona Joshua and making them available online. Burstein (2014).

[10]Raffmann (1993) provides a sound theory of the experience and ineffability of musical nuance.

case. It is much more common, I think, that we simply allow our phenomenology to guide our analytical judgments without always passing through a theoretical conceptualization. Instead, we identify the cadence based on what the music *sounds like* and then find things in the notation or explicate things in the recording which support our reading *ex post facto*.

This makes the process of identification more streamlined (there is just one step now), but it makes the half-cadence–concept more complex. Over the course of his study, Burstein makes few explicit references to cadences identified on the basis of their phenomenology, but he does mention the "sense" or "impression" of a half cadence or authentic cadence a number of times, and I take these as references to the phenomenal contents associated with half cadences.[11]

The conference presentation version of this research supports this reading. During the talk, Burstein makes extensive use of recordings, often asking the audience to judge the cadence based on hearing alone before showing the score or detailing the ways that the elements presented in the scores push back against a traditional, theoretical conceptualization of the half cadence.[12]

Understanding the complexity of mixed concepts, both in their structure and attribution, is crucial for understanding how they behave in analysis. Continuing with Burstein's study, he comments on the importance of seemingly low-level interpretations like cadence identification for broader analytical claims. Cadences often play an important role in determining

[11]Ibid.

[12]Indeed, the fact that in presentations and teaching we often use recordings to illustrate theoretical points is indicative of the mixed nature of these concepts, of our belief that to *really* understand whatever the point happens to be, we must grasp it not just theoretically but phenomenally also. Burstein (2010).

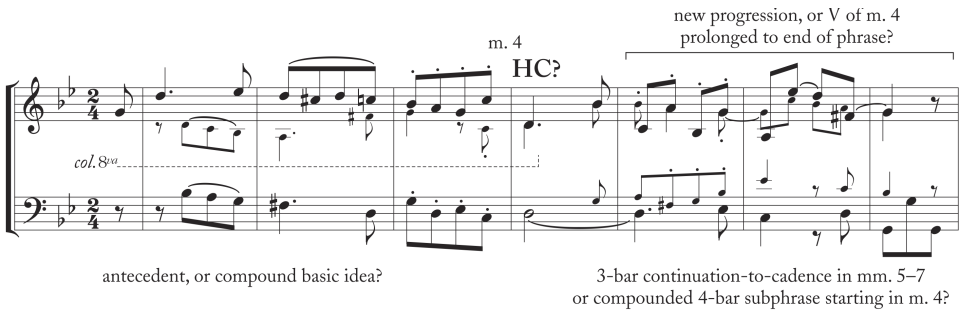


Figure 5.3: Haydn, String Quart in G minor, op. 20, no 3, I, mm. 1-7

the bounds and shape of deeper structures. As Burstein points out in reference to one of his examples, "[D]etermining the background voice-leading structure of this movement may well depend on the fragile decision of whether [a] V...*really* ends its phrase and is only sort of attached to the tonic [that follows it], or whether this V *really* resolves to the tonic...from which it is only kind of separated on the musical surface."[13] In the context of Schenkerian analysis, the differences in structure can be quite extreme, as often half cadences imply interrupted structures, whereas authentic cadences would just continue a tonic prolongation.

Not only do the complicated theoretical aspects of cadence type attribution discussed by Burstein complicate analysis, but, because mixed concepts can be attributed on the basis of theoretical or phenomenal criteria, our analyses may slide from one to the other, as a result, sometimes attempting to support phenomenal assertions with theoretical evidence or vice versa. Another example presented in Burstein's article, though one not discussed in depth, is the opening of Haydn's string quartet, op. 20, no. 3.[14] The curious moment is the downbeat of m. 4. Is this a half cadence, implying a period structure for the phrase, or does it resolve to the I in m. 7? My own experience of this moment is slightly confusing,

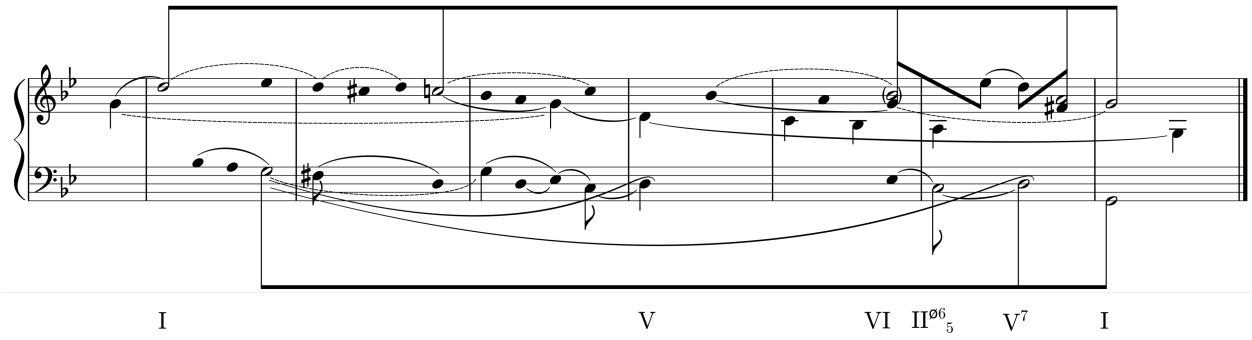
[13]Burstein (2014), 205.

[14]Ibid., 212.

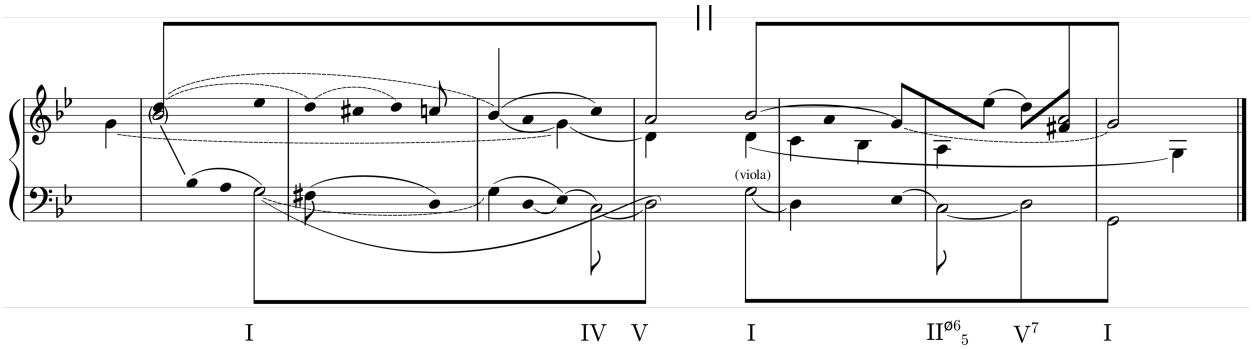
or, at least, difficult to affix a single label to. During the cadential idea and arrival in m. 4, I experience it as a half cadence (that is, I deploy my half-cadence concept on the basis of its phenomenal aspects). Immediately following from this V chord, though, my sense of the half cadence begins to evaporate. A consequence of my half-cadence attribution is a belief that these measures are the antecedent of a period, but then m. 5 does not go as I expect. The prolonged D in the cello weakens my sense of the half cadence. As the note is held, the short articulation that I expected seems stretched out, losing its cadential identity and becoming folded into the following progression to the tonic. This kind of experience, prospecting a moment to be one thing but retrospectively hearing it as another, is notated by Janet Schmalfeldt with a "becoming" sign (⇒) indicating that the one musical element becomes transformed into another, and that neither label alone describes what is going on.[15] Approaching m. 7 I deploy my phenomenal half-cadence concept, but then this moment *becomes* a mid-phrase progression: HC⇒mid-phrase V.

Keeping all this in mind, let me turn to the implications for a broader structural reading of the phrase. Figure 5.4 shows the two voice-leading analyses implied by the different readings of m. 4. The theoretical implications of each attribution are particularly important in a Schenkerian context. Typically, structural half-cadences in Schenkerian theory imply interruptions at some level, usually construed as $\overset{\hat{2}}{\text{V}}$. Given these implications of the theoretical concept, the half-cadential reading seems much less plausible. The upper voice leaps down to an inner voice and there are few valid readings that convincingly give an A, $\hat{2}$, in the upper voice. The implied A over the half-cadence is here asserted entirely on a (theo-

[15]Schmalfeldt (2011), 9.



(a) Voice-leading graph showing asserting an imperfect authentic cadential reading.



(b) Voice-leading graph asserting a half cadential reading.

Figure 5.4: Consequent structure of two cadential readings in Haydn, String Quart in G minor, op. 20, no 3, I, mm. 1-7

retical) belief that it *ought* to be there—particularly with the leap up to the B♭, rejoining the fundamental register. Moreover, a half-cadential reading implies restarting the phrase model and the fundamental line, with the best candidate being the I chord over a dominant pedal on the upbeat before m. 5. This is *technically* possible (the analysis is well formed), but it seems like an implausible reading.

We see from these different analyses that the half-cadence concept can be deployed through either phenomenal or theoretical means. The reasons for attributing the concept differs depending on which aspect of that concept is active at that moment. Multiple ways to attribute this complex concept may lead to chimerical analyses that assert a half-cadence, perhaps on the basis of the phenomenology described above, but then fail to follow through

on the theoretical expectations and consequences of that attribution. Notice that not only is there a major articulation at the half cadence interruption, but the *Kopfton* changes as well, a result of the formal criteria of a grammatical voice-leading graph. These are the sorts of decisions Burstein refers to when citing the importance of these relatively low-level and presumably unambiguous decisions.

With all this in hand we can work though a conceptual analysis of "half cadence," shown in Figure 5.5. Like the dominant, the conceptualization has a fundamental split between phenomenal and theoretical aspects at the mode of presentation. While "half cadence" is a significantly more complicated concept than "dominant" (indeed, it must be by definition because it usually includes the dominant), this complexity only really arises on the theoretical side of things. This is because it is difficult to break down phenomenal contents into simpler contents while maintaining their identity. Analyzing phenomenal content in this way would involve changing what that content is, and it is unclear how what that content is like could be preserved through this process. We may know that having two experiences at the same time might lead to a mixed phenomenal experience, or that the feature that causes a certain phenomenology is technically reducible to component features, but the phenomenology of that experience is not merely the combination of those two constituent experiences.[16]

This is not the case for theoretical conceptualization of the half cadence, where the half cadences is usually *defined* as that cadence which ends on a dominant. While, as Burstein

[16]We can see a straightforward example in considering colors: while of course a mixture of blue and yellow will yield green, our phenomenal experience of green is not merely a sum of our experiences of blue and yellow—even if we know that what we are observing is in fact just a very fine mixture—say the pigments in a paint. In the same fashion, our phenomenal experience of a half cadence is not merely reducible to an experience of a cadence plus a dominant. Their combination produces an experience which while it may have some resemblances to those simpler experiences, does not consist *only* of those resemblances.

Figure 5.5: Conceptual Analysis of "Half Cadence"

shows, the complicated nature of each argument of this definition does not necessarily make half-cadence attribution an easy task, issues tend to arise *either* with the attribution of a dominant or the attribution of the cadence. If we agree that both obtain, then we usually do think we have an instance of a half cadence.

5.2 Methodological Challenges Posed by Schenkerian Theory

The complications implicit in parsing any mixed approach are complicated by the history of Schenkerian analytical practice. Schenkerian analysis is, perhaps uniquely, both broad and diverse in its application and probably the most successful theory for advanced tonal analysis. Different theorists approach Schenkerian theory differently and expect different sorts of things from it, and all these complications are compounded by the structure and content of the theory itself.

Schenkerian analysis draws on multiple traditions each of which carries its own motivations and conceptual structures. The complexity and ubiquity of the theory is well summarized by Drabkin:

> That which is called "Schenkerian theory" is a complex set of regulatory principles that was initially intended to explain the tonal music of the eighteenth and nineteenth centuries; it is at the same time a synthesis of many traditions, embracing Fuxian counterpoint, the thorough-bass traditions of Carl Philipp Emanuel Bach and late nineteenth-century harmonic theory. It is at once a sophisticated explanation of tonality, but also an analytical system of immense empirical power.[17]

[17]Drabkin (2002), 812.

Beyond harmonic and contrapuntal theory, many modern formal theorists invoke Schenkerian concepts in their theories of form, analysts take different positions on the relationship between Schenkerian theory and perception, and the exact practices of graphing are nearly as diverse as the theorists who create them.[18] This diversity and the relative lack of a unifying approach make it all the more difficult to understand the epistemology and methodology of Schenkerian theory's modern incarnations.

I identify four main difficulties in analyzing the conceptual makeup of Schenkerian theory:

1. The bibliography is larger and more diverse than any approach studied so far. It includes not just modern monographs, but historical texts, commentaries, and pedagogical texts.

2. The applications of the theory are practically as numerous as its practitioners with analysts bringing their own motivations and commitments to their work.

3. The influence of the theory's namesake is not so far gone as to be absent, but the theory as practiced today has evolved well beyond "Schenker's theory."

4. As a *lingua franca* of modern (North American) music theory, the concepts that constitute it are assumed to be understood by everyone in approximately the same way.

The store of resources to draw upon is vast in comparison to those of other theories. In chapters two and three, because the specific approaches tended to revolve around a single

[18]See, for instance, Hepokoski and Darcy's Z-PAC (2006) and especially the work of Janet Schmalfeldt (2011) for formal concepts with a Schenkerian parentage. DeBellis (2010) and Temperley (2011) have recently written on the relationship between observation and perception in Schenkerian theory.

theorist's work, the scope was both more manageable and relatively coherent. In chapter four, the requisite bibliography was broader but was still only a small corner of the music theory literature. More importantly, all these approaches tended to have explicit motivations and epistemological frameworks, usually being drawn from theorists from similar contexts working together with similar epistemological perspectives. This is not so with Schenkerian theory.

Moreover, Schenker himself inhabits a sort of nebulous space of influence. Many Schenkerians can trace their pedigree back to Schenker somehow, but at the same time, most of Schenker's own philosophical framework has eroded, either through conscious erasure (as is the case with Oster's appendix to *Free Composition*) or through an unconscious lack of attention to theoretical foundations in favor of analytical tools.[19] As a result, most of Schenker's own reasons for believing in his system have been excised from modern analytical practice and relegated (or promoted) to history of theory. Sometimes this epistemological vacuum is explicitly filled in, but more often than not the analytical tools persist with little attention to what the symbols are supposed to mean beyond their relationship to each other or to some idealized grammar for their use.[20]

But neither are Schenker's original ideas entirely absent from modern practice; and in more advanced scholarship, Schenker's writing and analyses remain important touchstones. By contrast, this is not the case for neo-Riemannian theory. The conceptual and historical distance from Hugo Riemann is enough to make the story quite different. Whereas Schenke-

[19]Rothstein (1986 [1990]) presents an engaging account of the history of Schenkerian theory in America, foregrounding the way it was shaped by its practitioners to suit the American academy.

[20]We will explore the former situation more thoroughly with reference to Brown (2005) below.

rian analysis is mostly a continuous practice from Schenker on down, neo-Riemannian theory was *invented* in the 1990s by a sort of re-discovery and re-appropriation of some of Riemann's terms and methodology, fundamentally changing the concepts that underlie them.[21]

Compounding this diversity of resources and underlying explanations, Schenkerian theory is a standard part of most graduate and advanced undergraduate curricula, thereby becoming a sort of *lingua franca* for tonal analysis. As a result many, many tonal analyses may use the tools of Schenkerian analysis, even if they are not meant to show hierarchies, trace the voice leading, present a fundamental structure, or do other sorts of work typically expected of a Schenkerian analysis. This glut of analyses would seem more manageable, though, if there was a consistent set of principles or guidelines that clearly informed all of them, but no such unifying approach exists. The broad strokes are usually similar, but the intricacies of their execution are idiosyncratic.

In this chapter I address these challenges mostly by limiting the scope of my engagement with the theory. My overall goal is not to present an exhaustive account of all the different conceptual resources used and created across Schenkerian approaches, but to display how the mixture of phenomenal and theoretical concepts occurs. To make this study broadly applicable, I focus on a core bibliography that I think is common to most modern Schenkerians. Generally, I limit my meta-analyses to three types of texts: textbooks, Schenkerian "classics," and colloquia, each of which provides different windows into how Schenkerian ideas

[21]A more faithful re-imagining of Riemann's theory for modern music theorists is found in Harrison (1994). Analyzing the differences and similarities between neo-Riemannian theory and Riemann's own theory has been quite productive in some cases, but when it comes down to it, the conceptual structure of neo-Riemannian theory just is not the same as that proposed by Riemann. See, for instance Rings (2011b).

are conceptualized.

These differences in practice make Schenkerian theory more complicated, but also more productive. Relatively few Schenkerian theorists take terminological or conceptual clarification as their goal, and Schenkerian articles are usually analytically focused: it is assumed that readers will understand the concepts in approximately the same way as the analyst. The ubiquity of Schenkerian theory and its concepts leads to unclarity about the nature of these concepts and assumptions about what terms mean, which may not be shared. Failing to get clear on these features of analytical practice results in unnecessary disagreement later on.

The remainder of this chapter unfolds three strategies to understand how mixed concepts work in Schenkerian analysis. First, I examine the most basic Schenkerian concepts themselves: *effects*. Following this, I trace how a series of texts treats a single more complex concept: the linear progression. Finally, I explore an instance of analytical disagreement between two Schenkerians and show that as the disagreements between the analysts are teased out in greater and greater detail, the underlying reliance on different aspects of the mixed concepts becomes more and more apparent.

5.3 Effects and the Origins of Mixture

Schenker's theory already demonstrated some degree of conceptual mixture in its inception. The best candidate for the basic conceptual vocabulary of Schenkerian theory are *effects*. How effects work in Schenker's thought are clarified in Joseph Dubiel's review-essay on Schenker's *Counterpoint* and further explored in the first chapter of Robert Snarrenberg's

monograph, *Schenker's Interpretive Practice.*[22] This section aims to place the notion of effects described by these authors into the framework explored in this dissertation. I will argue that the way Schenker talks about effects and their functions, described by Dubiel and Snarrenberg, permits this understanding of effects and further that the graphing techniques of modern Schenkerian theory have more thoroughly mixed these effect-concepts than they were even in Schenker's own writings. Effects are conceptually mixed at the most basic level and this sort of foundational mixture results in claims and methodology that is similarly mixed.

In his review-essay, Dubiel first defines effects as "what will (normally) happen—in the mind's ear of a qualified listener, presumably—when certain things are written." Dubiel casts the main aim of *Counterpoint* as accounting for these effects.[23] He argues that, unlike Fux's *Gradus ad Parnassum*, the text is not meant to be taken as a collection of proscriptions and restrictions on composition, but as a study of the consequences of various compositional decisions.[24] It is tempting to understand these effects as basically experiential—Dubiel talks, cautiously, about these effects as being on or perceived by a mind's ear—indicating something like a phenomenal conceptualization. Indeed, we find Schenker himself using the phrase "psychological effects" a few times throughout *Counterpoint.*[25] Based on this, we might think that the most ready-to-hand interpretation is to understand effects as an idealized phenomenology caused by the sound—a sort of phenomenal image of the noumenal

[22]Dubiel (1990), Snarrenberg (1997).

[23]Dubiel (1990), 294.

[24]Ibid.

[25]Schenker (1910 [1987]), 10 and 26

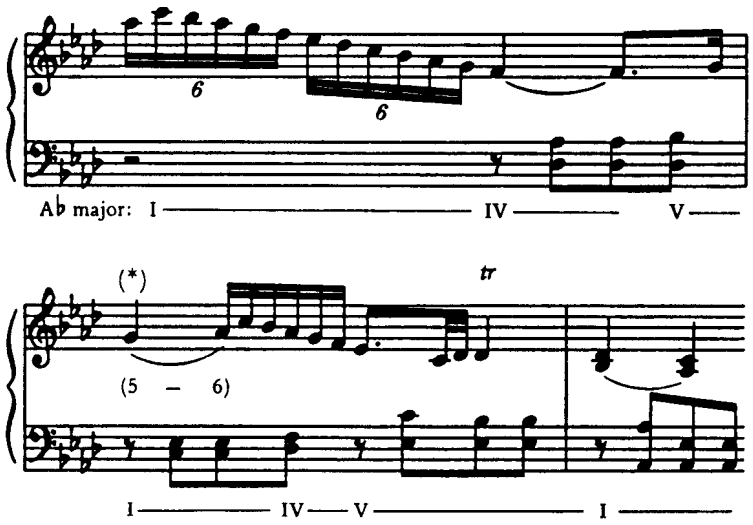


Figure 5.6: Example 1 from Dubiel (1990)

object. But as the theory becomes realized in practice, we find features attributed to effects that makes their proposed identity with phenomenal content problematic.

This tension comes to the fore as Schenker compares his own understanding of the effects of a passage with that of one of his perennial rivals, Hugo Riemann. In *Counterpoint* Schenker sets up a disagreement between himself and Riemann (which is recounted by Dubiel in his review).[26] The debate is over how to understand the perfect twelfth between the C in the bass and the G in the right hand of the second measure of Figure 5.6 (Schenker's Example 420, Dubiel's Example 8). Schenker and Riemann would agree, of course, that twelfths are normally consonant. That is, twelfths communicate the effect of consonance, or—equivalently—cause us to attribute the consonance concept. But in this passage, the G, while making a twelfth with the bass, displaces the A♭ root of the chord. Riemann, it seems, is happy to call this a *local* dissonance, the G may be technically consonant with the bass, but dissonant within the overriding context. The harmony of the passage causes us not

[26]Dubiel (1990), 314-316.

to attribute the phenomenal concept of consonance, even if the notes on the page satisfy a theoretical conceptualization of the same. Schenker, though, has trouble being this flexible; he cannot abide depriving the twelfth of its proper consonant effect. Instead he argues that the consonant effect still obtains and is merely papered over by the retardation.

From this passage, Dubiel points out that "it is possible to infer...that any 'effect' taught in species counterpoint might under the right conditions be 'prolonged' to the point of imperceptibility."[27] This is a serious problem for a theory of effects as phenomenal content. If effects were simply phenomenal content then they would only occur in *conscious* experience. This is a *definitional* feature of phenomenal content—there cannot be any such thing as unconscious phenomenal content because this content is individuated precisely by its conscious experience. And if effects cannot be phenomenal content, then effect-concepts, the main conceptual vocabulary of Schenkerian thought, cannot be only a species of phenomenal concepts. If we want to attribute the effect-concept consonance to this interval at a level so "prolonged" as to be imperceptible, then this attribution cannot be of a phenomenal concept, only a theoretical one.

We have seen in earlier chapters the flexibility of phenomenal content. The contingencies of individual histories can cause what experiences *are like* to differ from person to person. This is another strike against a theory of effects as phenomenal concepts, since effects are meant to always obtain at the occurrence of a given musical configuration. At the very beginning of *Counterpoint* Schenker declares,

[27]Ibid., 316. Dubiel points out earlier in his essay that "prolongation" in Schenker's writing doesn't quite mean what it usually means in modern Schenkerian theory. In *Counterpoint* what is prolonged are not pitches or harmonies but *rules*, not in the sense that they are stretched out, but that they are applied to novel situations.

> [Counterpoint] teaches the most characteristic effect of tones—one might say the properties of their movement...the beginning artist learns that tones, organized in such and such a way, produce one particular effect and none other, whether he wishes it or not. One can predict the effect: it *must* follow.[28]

This runs against the apparent mutability of the phenomenal content. Dubiel explains Schenker's position in more detail:

> Since Schenker is so determined that this particular set of norms not be considered optional (and, very probably, since he himself was unable to get on without them), he finds himself inclined toward an image of them as psychologically inevitable (and perhaps even physically real), and toward an image of contrapuntal (and other) teaching as the awakening of perceptions of what is already there but unnoticed, rather than as the installation of a system that might prove useful for a particular repertory.[29]

The idea of "awakening an unnoticed precept" is problematic in precisely the same way as being prolonged to imperceptibility. Unexperienced phenomenal content is impossible; if effects can be present but unexperienced, then they cannot, at base, be phenomenal contents.

It seems improbable, now, that the effects Schenker describes are, in fact, psychologically immutable. So how should we understand this claim? Are these contradictions merely the result of an outdated understanding of psychology or from Schenker's well-known critical commitments and stylistic conservatism?[30] These are possible interpretations, but, in my

[28]Schenker (1910 [1987]), 14.

[29]Dubiel (1990), 314.

[30]Nathan Fleshner provides, for instance, a specifically Freudian reading of Schenker's understanding of psychology; see, Fleshner (2012). Under this perspective, the norms are not, at base phenomenal but generated by unconscious processes which may consciously manifest or not. Whether or not this where Schenker was coming from, this does not seem to be the way that contemporary Schenkerian analysts think about musical experience. My engagement with Schenker's own text here is motivated less by an attempt to understand what *Schenker* meant, and more about coming to understand how his description of contrapuntal rules has influenced the work of contemporary analysts.

view, they fail to do justice to the way that these tensions have been adopted by Schenkerians. Indeed, it is often by directly struggling with what seem to us now to be contradictory claims of that the theory becomes most productive. Asserting that effects are mixed concepts allows us to have it both ways. At times we may treat effects (and attribute effect-concepts) as the phenomenological/psychological effects that the pitches have on us, how we take them in perception, yet at other times we want these effects, and their structural implications to persist even when *absent* from phenomenology.

Looking more closely at what phenomenal aspects of these effects are like, one comes upon other questions. Are the effects communicated by a passage just the phenomenal image of the sound perceived; are they merely the phenomenal content of the sound experience? Or are they our more complex reactions to these experiences, like emotions or expectations, which *result from* having that experience? If a musical gesture has the effect of a passing tone, does this mean it has phenomenal content similar to a actual passing tone or that the aesthetic meaning, let us say, of the passage is similar? Put another way–is a passing tone *itself* the effect or does it *have* effects?

There is room in Schenker's text, I think, to consider both interpretations. At times, the effect just seems to be some specific note configuration. We see this most often in discussions of the basic dissonances of counterpoint: the passing tone and the neighbor tone. In the course of discussing the prohibition of tritones in a *cantus firmus*, for instance, we find,

> [I]n the context of the large configuration that grows out of the tonic scale degree, the eighth-note G, lying between C♯ and F♯, in reality produces more the effect of a "passing" tone...than that of a tritone.[31]

[31]Schenker (1910 [1987]), 55-56.

In this passage, the effect seems to be of communicating a passing tone note configuration, not some additional musical experience. At other times, the way Schenker talks about effects seems to point beyond note configurations. He discusses, for instance, "similar motion, [which] is to be interpreted in its psychological effect as a kind of agreement between the two voices to strive toward a common goal."[32] The effect is not the similar motion itself, but an aesthetic experience or image or idea that *comes from* similar motion, an effect of striving together which is generated by the note configuration.

Snarrenberg's analysis of the central effects of Schenker's theory also points toward the latter understanding of effects, that they are additional aesthetic attitudes created by the note configurations. Many of these effects, according to his analysis, are complex with constituent effects which compose them. The passing effect is Snarrenberg's first and best example. He calls the effect of the passing tone "transience" which depends on the prior existence of the effect of quiescence or stability.[33] Snarrenberg defines the effect in full as follows:

> "Transience": if tones are configured in such a way as to produce the succession of effects—consonance–dissonance–consonance—the total configuration will produce the effect of "transition" from one place of stability to another. That, in short, is the effect of passing.[34]

So the effect of a passing tone is already complex, consisting of more basic effects like consonance and dissonance, stability, and transition, all of which must be conceptually prior

[32]Ibid., 130.

[33]Snarrenberg (1997), 9.

[34]Ibid., 12.

to "the passing effect."[35] Returning to Schenker's claim about the passing effect of the tritone in a *cantus firmus*, the "effect of a 'passing' tone" is really the effect of transience from consonance/stability to dissonance/instability back to consonance/stability. We might call something "the effect of a passing tone," but this is really a shorthand to refer to the collection of effects which accompany that, usually simpler, note configuration. All this is in favor of the construal of effects as the aesthetic results of note configurations which extend beyond the construction itself.

This release of effects from their prototypical note configuration, moreover is cited as Schenker's crucial insight. As Snarrenberg puts it, "All of the basic concepts [of Schenkerian theory] were a part of the musical discourse that he learned from others...His ingenuity lay in realizing the possibility of extending these concepts to non-paradigmatic tonal configurations, ones more complex than simple passing tones, suspensions, vertical chords, and melodic motives."[36]

These analyses give the correct picture, I think, of what Schenker himself was up to. While some of the language that Schenker himself uses is opaque or inconsistent, the underlying trends, highlighted by Dubiel and Snarrenberg, show an understanding of effects as basically psychological experiences that result from how the music is structured. But this understanding is complicated by Schenker's perspective on psychology, by his belief that a given musical configuration *must* result in a certain psychological effect instead of, say, merely tending to have that result. If this is one's psychological position, then the prospect of

[35]Snarrenberg traces the development of these sub-concepts through Schenker's *Harmony*. Ibid., 10-12.

[36]Snarrenberg (1997), 9.

a regulatory system to encourage the right kind of automatic attributions becomes possible.

Modern Schenkerian theory has changed much since Schenker's founding texts, with the largest shifts being away from *theories* of tonality to a more thorough working out of the analytical system. The often tacit conceptual frameworks that these approaches draw on, however, have different perspectives on psychology and necessity in experience. While there seemed to be some mixture in Schenker's use of the notion of effects, it once was also possible—assuming a certain perspective on psychology—to make the complexity go away. For us, though, this is no longer an option. The reality of perception is that some experiences are not inevitably had by all and in order to make sense of Schenker's still-valuable analytical tools, we need to think about them differently. A result has been an even more thorough mixture of theoretical and phenomenal engagement in practice.

In part, this increase in mixture comes from attempts to accommodate Schenker's claim that some effects will *always* obtain for certain note configurations. Taking this as a given, the analyst must permit both experiential and abstract thinking in their process. This is what allows us to say, conforming with Schenker, that a passage has the effect of a passing tone (say, the entire second theme and development of a sonata) without necessarily having a phenomenology that clearly resembles that of a second species passing tone. The analytical system's recursive structure allows us to extrapolate to levels that are no longer phenomenally graspable. Conversely, we might wish for a theoretical realization of something that sounds like a passing tone, permitting us to create an analysis that matches our phenomenology. In short, and contrary to what Schenker does most of the time, we use effect-concepts freely activating the concepts both from abstract relationships shown in a score (using theoretical concepts) but also from phenomenal experiences.

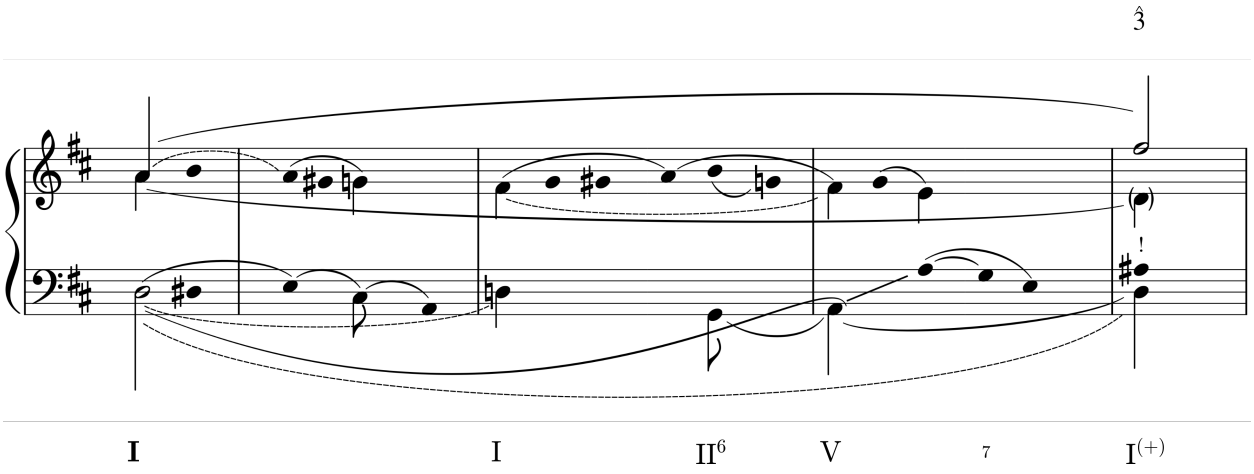


Figure 5.7: Mozart, Minuet in D, K. 355, mm. 1-5, reduction.

This conceptual fluidity also allows Schenkerian theory to sharpen our hearing. The relationship between the theoretical and phenomenal aspects of the mixed concepts is such that invoking any one of these constituent aspects means invoking the effect-concept. Part of what we learn when we learn Schenkerian theory is to broaden the grasp of these effect-concepts, and allow different ways of engaging to *become* mixed. We may already, say, experience a surface-level passing tone as possessing a passing effect, but through Schenkerian theory, we learn to also conceptualize other collections of phenomenal concepts under that effect-concept.

The practice of graphing to communicate effects reinforces this mixture. As we learn to use and read Schenkerian notation we connect otherwise disparate concepts by notating the *effect* of a passing tone literally *as* a passing tone. A single symbol for this diversity of concepts helps us to unify phenomenal experiences and formal definitions under a single, complex concept.

Figure 5.7 presents an example, showing a voice-leading structure of mm. 1-5 of Mozart's Minuet in D, K. 355. The passage is the opening gambit of the minuet, preceding the

entrance of the *Urlinie*. The main action of the passage is an inner-voice descent from A to an implied D. One complication to address up front: the harmony on the downbeat of m. 5 is in fact a D augmented triad, including an A♯ ascends to B after the graph cuts off. If the graph went on, I would have to tell some story about this A♯, probably as a chromatic passing tone to the B, making the harmony a VI^6 chord instead of a I. The tonic resolution shown in the graph (and with it the D which ends the descending line) is completely elided. However, the decisive V^7 in the preceding measure causes me to hear this tonic resolution in *absentia* and the outer voices still provide the resolution. The A♯ is a sort of fly in the ointment that I notice after I get the effect of resolution. I am asserting the effect of an authentic cadence here on phenomenal grounds, and permitting this experience to then inform my formal analysis. A purely theoretical analysis might reject this, insisting instead on a half cadence or inverted deceptive cadence. The phenomenal effects implied by these analyses however fail to respect the strong bass motion accompanied by the soaring arrival of the *Kopfton*, all of which lead me to the effect of an authentic cadence.

These complications, however, are not the effects I want to focus on. Instead, I want to turn to two specific symbols in the notation, two instances of a dashed tie, which communicate the effect of prolongation: the dotted tie in the bass that connects D in m. 1 to to D♮ in m. 3 and the dotted tie that connects the same D in m. 1 to the D in m. 5.[37] By connecting both pairs of D's with the same symbol, I assert some similarity between these relationships: namely that they are both prolongations of a single note. However, my experience of these two prolongations is quite different. The shorter time span of the first makes it easier to

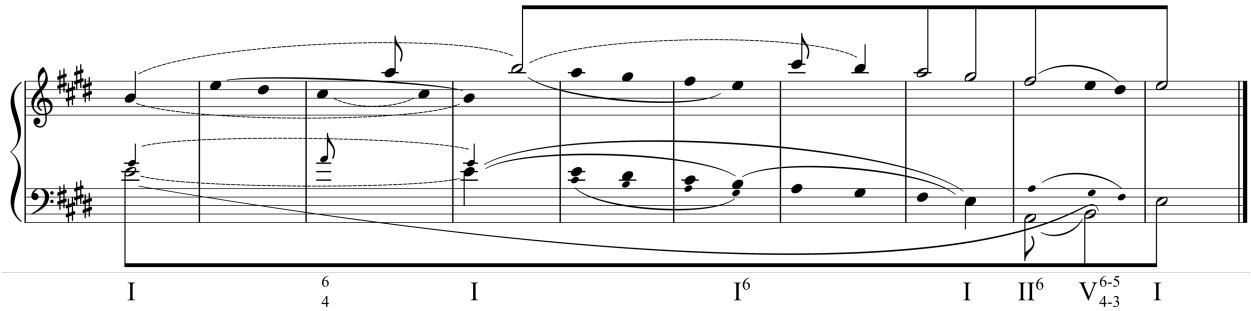
[37]I am using the sense of "prolonged" which is more common in modern Schenkerian discourse, not the sense used by Dubiel and discussed in note 29 above.

phenomenally "hold onto" the harmony over that span. I hear this as a real prolongation—we might think of it as the prototype for prolongational phenomenology, despite the intervening harmony it sounds like we never left. The experience that goes with the longer prolongation is different. It persists over a longer time span and, more importantly, the intervening chords create a harmonic progression. Instead of sounding like something's "stretched out," it sounds as though the music leaves and then returns. I suspect that complications discussed above contribute to making this sound like a less prototypical prolongation. The possibility of hearing the progression as either a half cadence or deceptive cadence introduces some doubt into the analysis.

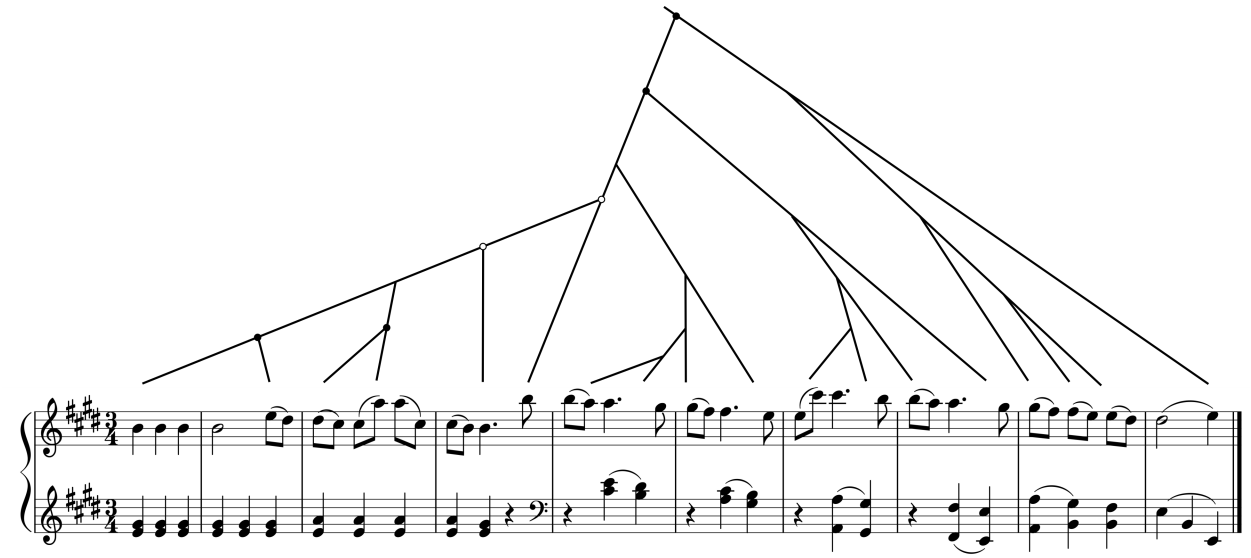
The notation itself plays an important role in merging these two experiences together as well as combining them with the theoretical concept of prolongation. By using the same symbol they lead me to draw an analogy between the experiences. Despite there being two phenomenologies—actually stretching out the harmony and leaving and returning to the harmony—our Schenkerian concept for prolongation contains both, complicating their individual attribution but allowing this broader connection. Even though I hear the prolongation that stretches over the entire passage as a departure-return because of the intervening progression, I also ascribe to it the residue of the "stretched out" phenomenology by labeling it as a kind of prolongation.

Importantly, the choice of notation is not arbitrary. As musicians we all tend to address ourselves toward musical notation such that we not only see it as a set of instructions, but conceptualize it as including some sense of what those gestures sound like. By relying on the symbols of musical notation, Schenkerian analysis encourages us to use experiential concepts.

This becomes especially clear when comparing Schenkerian analysis to other methods that



(a) Schenkerian analysis.



(b) Prolongational reduction.

Figure 5.8: Two analyses of Haydn's Partita in E major, Hob. XVI:13, mm. 15-24 (return of A section).

make similar structural claims but with different notation. Figure 5.8(a) shows a Schenkerian analysis of mm. 15-24 of the second movement of Haydn's Partita in E major (Hob. XVI:13), and Figure 5.8(b) shows the same passage, with the same middle- and background prolongational structures, but realized as a tree diagram, *alla* Lerdahl and Jackendoff's *A Generative Theory of Tonal Music*.[38] The structural similarity is no surprise; *GTTM* was, in part, designed as a formal realization of Schenkerian theory.[39] But while the structural

[38]Lerdahl and Jackendoff (1983).

[39]Ibid., 106ff.

claims are similar, because of their different notational schemes, we—the readers—address ourselves toward them differently; we rely on different arrays of concepts to understand them. The tree diagram makes the structure clear and explicit. But the Schenkerian notation also communicates this abstract structure, and gives us a sense of what sort of experience we ought to have hearing that structure.[40]

Consider the motion to the inner voice in mm. 18-20. On the tree diagram, this gesture is notated as a chain of left branches, indicating that each note is relaxing into the following one. This gives us the sense that the notes are related in a single unfolding process subordinate to the overarching B. The Schenkerian analysis implies a similar structure, but by notating it as a slur, the analysis invokes phenomenal concepts as well as by leaning on previous experiences playing and singing slurs. By building its notation out of symbols we already attach musical meaning to, Schenkerian analysis can communicate the complicated, mixed concepts that constitute effects.

5.4 The Concept of Linear Progression

Let me now focus on the use and structure of a single mixed concept *linear progression* across several Schenkerian authors. Some kind of mixture, it turns out, figures into most versions of the concept, though which phenomenal concepts are used to enrich the theoretical definitions varies.

[40]Lerdahl and Jackendoff also use a quasi-Schenkerian "secondary system" in their treatise, which is generated directly from the prolongational analyses. However, they view this notation merely as another way to present the same (or almost the same) information in a more familiar fashion. The secondary system is only meant to be a tool for learning to read the proper tree-graph that *actually* communicates the analysis. Ibid., 201-203.

Most of the texts examined in this section are somehow pedagogical. While, in general, less critical attention is paid to texts meant primarily for teaching, examining such texts is important for understanding the basic concepts that underlie analytical perspectives. It is from pedagogical texts, and the pedagogues that guide us through them, that beginners gain the basic conceptual lens through which they understand subsequent research. Understanding conceptuality in these texts provides insight into how their readers might understand future work. Additionally, pedagogical texts have the practical benefit of making basic concepts slightly more explicit in ways that texts designed for experts (i.e., monographs and scholarly articles) do not, making them useful for this sort of conceptual analysis.

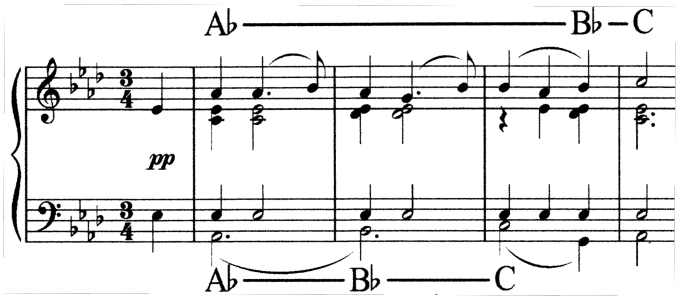
A recent, basic account of linear progressions is found in Schachter's *The Art of Tonal Analysis*. This volume collects lectures given by Schachter in a 2012 graduate seminar at the CUNY Graduate Center. Schachter's discussion provides a useful starting point as it gives us a sense of modern Schenkerian discourse on linear progressions and, since it is a series of *lectures* meant to teach this basic concept, is relatively explicit.

On the very first page, Schachter gives a working definition for linear progression:

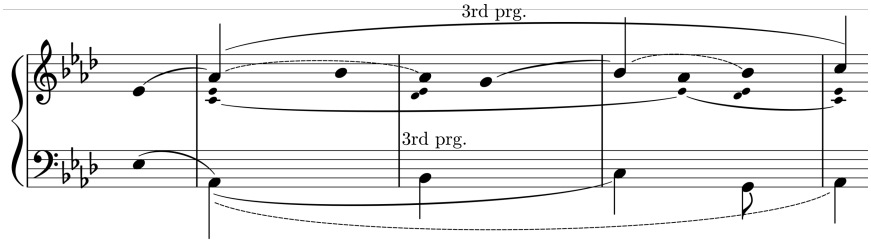
> A linear progression is a stepwise motion in one direction between two tones that are related to each other harmonically. That is to say, at a prior level the two tones form a vertical interval. Very frequently, they are members of the same chord; sometimes they belong to two closely related chords, such as IV and II^6.The linear progression creates a profound connection between line (or melody) and harmony.[41]

This introductory definition is mostly theoretical in scope. It does not rely on any experiential understanding of a linear progression. The notion of being "related at a prior level" is slightly

[41]Schachter (2016), 1.



(a) Full score with Schachter's annotations.



(b) Implied voice-leading graph.

Figure 5.9: Schubert, Impromptu in A♭ major, Op. 142, no. 2, mm. 1-4.

fuzzy, but assuming a basic harmonic understanding of a passage (i.e., what the span of a chord or *Stufe* is), many linear progressions could probably be identified automatically, without relying on phenomenology at all. If I know, say, that a dominant triad persists over a number of measures (depending on the passage, perhaps a large assumption), I could identify any stepwise progression in one direction between chord members as a linear progression without needing to have any idea what that experience might sound like.

Schachter thickens this theoretical conceptualization in two ways. As his first example he presents the first four measures of Schubert's Impromptu in A♭ major, annotating two third-progressions, one in the melody and one in the bass.[42] Describing these linear progressions he says, "The motion A♭–B♭–C in the first four measures of the melody gives a kind of

[42]Figure 5.9(a) is excerpted from Schachter's Example 1.1. Ibid., 2.

aroma, you might say, of the A♭-major chord, diffusing it over the melodic line."[43] I find this olfactory metaphor phenomenally compelling. As discussed in chapter three, metaphors can help communicate certain phenomenologies by pointing toward other experiences and asking the reader to draw a connection between them. The metaphor of an aroma here allows me to consider the phenomenology of these linear progressions as something light and suggestive, not overpowering but indicating the presence of something unseen—a much richer experience than simply noting that A♭ and C form a vertical interval at some prior level and are connected by a passing tone.[44]

Schachter phenomenalizes linear progressions further by drawing meaning from the original German term for them *Züge* (sing. *Zug*).[45] This is a common corollary to English definitions of linear progressions. He says,

> *Zug* in German is a little bit like the word "run" in English, in that it might have 100 different meanings, not all of which necessarily share common features. Many of the meanings of *Zug* are related to *ziehen*, which is a verb meaning "to pull" or "to draw along"...So Schenker's *Zug* is something that is pulling toward some kind of goal. That it is goal-directed is implicit in the word itself, and that's something that "linear progression" doesn't convey very well in English.[46]

Here, Schachter further lends a phenomenal aspect to the concept of the linear progression. What this encourages the reader to do is to put a certain meaning onto the English phrase, to attempt to rehabilitate some of the implicit meaning lost in translation. Part of this

[43]Ibid., 1. Emphasis added.

[44]Going deeper, using an olfactory metaphor distances the effect of the linear progression from language, as smell experiences are usually more difficult to identify and less concrete than visual or even aural ones.

[45]Including Cadwallader Gagne (2007), 73, discussed below.

[46]Schachter (2016), 3.

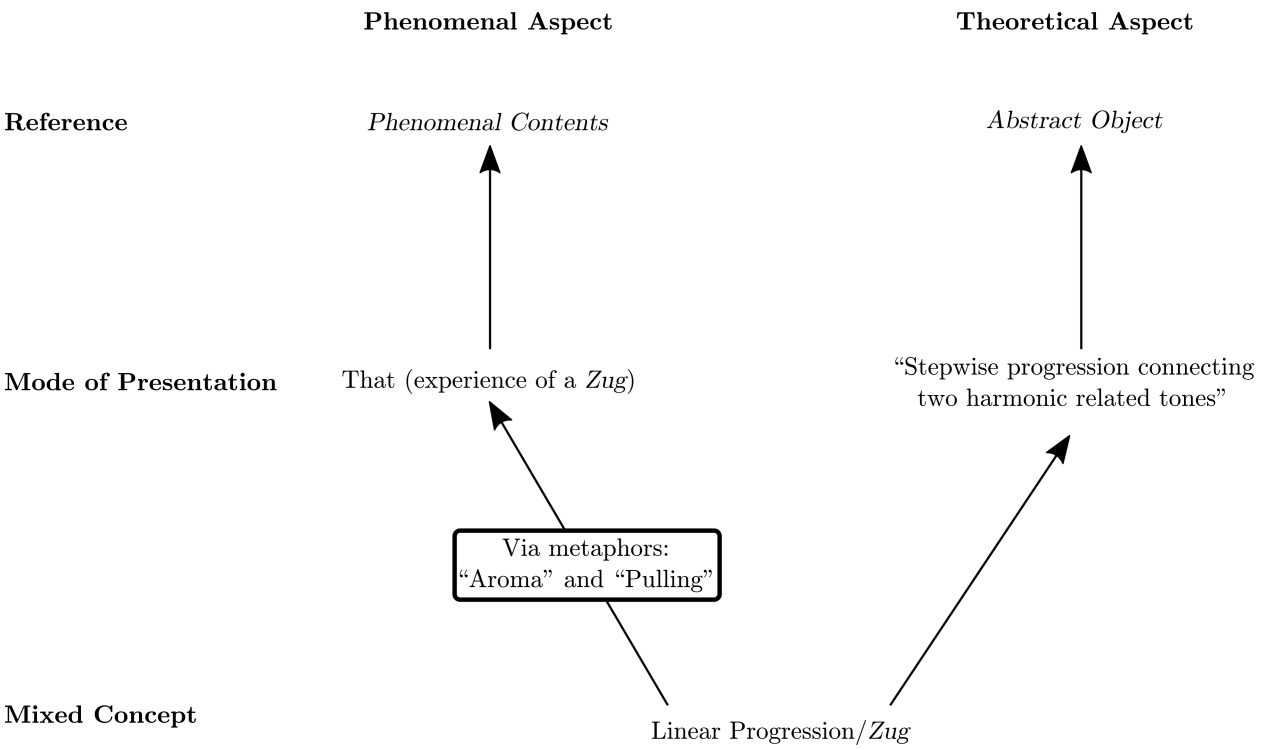


Figure 5.10: Conceptual analysis of Schacther's *Linear Progression*

meaning can be conceptualized theoretically—the notion that linear progressions are goal-directed could be formalized—but Schachter is trying to get us to do more than that.[47] We should not just recognize, believe, or know that the linear progression is pointed toward a goal, but we are also meant to *feel* the pull of it, invoking the phenomenal experience of being drawn toward something or someone.

We can organize the aspects of Schachter's concept of linear progression, as described in this chapter, according to Figure 5.10. Returning to the Schubert passage, the formal definition of linear progressions clarifies the voice-leading structure of the opening measures, shown in Figure 5.9b. The phenomenal aspects of linear progression give the lexical concept a phenomenal aspect. The olfactory metaphor gives the experience of a constant, subtle

[47]Rings (2011a) has formalized the notion of goal-directedness, what he calls "tonal intention" using transformational diagraphs.

presence of the A♭-major chord over the four measures, and the rehabilitation of the dynamic sense of *Zug* gives the quasi-physical experience of being pulled along by the linear progression.

A contrasting conceptualization of linear progression is found in Matthew Brown's epistemological reconstruction of Schenker's theory, *Explaining Tonality.*[48] The context for Brown's monograph is quite different from that for Schachter's lectures. First, this text is less pedagogically oriented than Schachter's lectures or the textbooks discussed below. Brown's audience consists of experts, but the way Brown re-imagines Schenkerian theory is so drastic that he must more-or-less rebuild the theory from the ground up. Brown's monograph attempts to *naturalize* Schenker's theory—to bring its usage under the paradigm of a natural science. He re-imagines Schenker's theory as being explanatory in the sense defined by analytic philosophers of science, most notably Quine. Following this paradigm, Brown identifies a number of prototypes in Schenkerian theory which are developed through a series of recursively applied transformations.[49]

Brown defines linear progressions as one of a number of "horizontalizing" transformations. The scope of Brown's definition for linear progressions is narrower than Schachter's. Brown's concept of a linear progression includes only stepwise motion that "fills in the leap produced by a register transfer or an arpeggiation."[50] At this juncture, Brown's definition for a linear

[48]Brown (2005).

[49]In more traditional Schenkerian parlance, Brown identifies the elements of the fundamental structure, clarifies its relationship to the basic elements of counterpoint, voice-leading, and functional harmony, and taxonomizes the various ways that the elements of these structures can be prolonged. Mark DeBellis (2010) has critiqued the supposed "empiricism" of Brown's project.

[50]Brown (2005), 79.

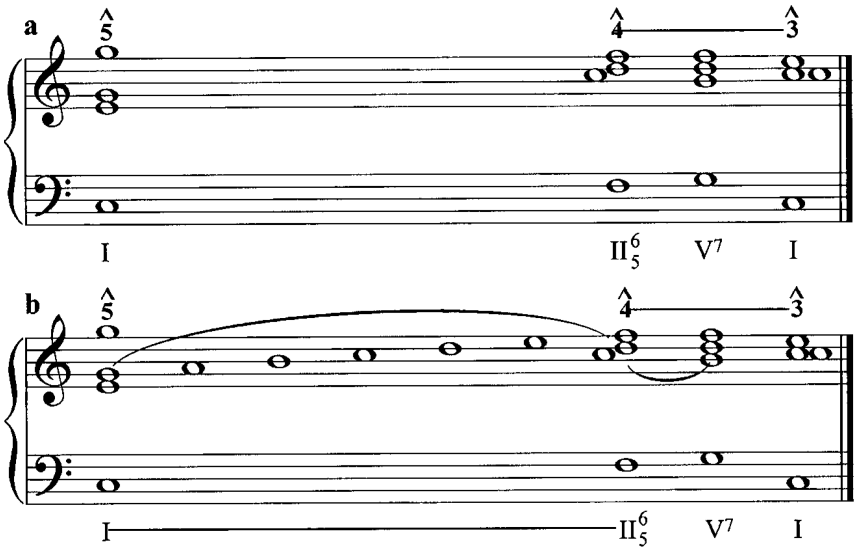


Figure 5.11: Levels (a) and (b) from Brown's Figure 3.19.

progression excludes phenomenology entirely—the linear progression transformation obtains when formal, necessary and sufficient conditions are met. And, unlike Schachter, Brown does not turn to metaphors or alternative translations to impart a phenomenal sense to the concept.

Brown's concept invokes phenomenology in another, more subtle way. In order to grasp this, we need to broaden our scope slightly to see how linear progressions fit into Brown's collection of transformations. Importantly, Brown's concept of linear progression *excludes* motions to or from an inner voice. The latter type of transformation, according to Brown's system, has a different domain, involving a connection between *two* voices instead of prolonging an interval spanned by a single voice. In reference to Figure 5.11, he makes the following point:

> [T]his span is not, in Schenker's terms, a true linear progression; instead of composing out a single line of counterpoint, the span actually connects the alto voice of the opening tonic *Stufe* with the soprano voice of the II^6_5. The span is

> therefore an example of what Schenker termed 'motion from an inner voice.'[51]

This is different from how Schachter seems to think about linear progressions and motions to/from inner voices. Schachter, along with most Schenkerians it seems to me, construes motions to or from inner voices as a *kind* of linear progression.[52]

Unfortunately, Brown's scheme is unclear about how to differentiate between situations when there is an implied voice at the end of the stepwise motion, making a motion to/from an inner voice, and in situations when a stepwise motion is in fact a real linear progression. Brown leans in part on Schenker's authority for this distinction, though, with one exception, Schenker's usage in *Der freie Satz* is likewise unclear. At times, it does seem that Schenker conceived of *Züge* and *Untergreifen* ("reaching under," usually rendered as "motion into an inner voice") as distinct prolongations. The clearest sign indicating this conceptual distinction is Schenker's argument that an initial ascent—a kind of ascending linear progression which terminates at the first tone of the *Urlinie*—cannot be a motion from an inner voice. John Rothgeb clarifies in an editorial footnote:

> [T]he concept of *motion from an inner voice* includes the notion of *reaching-down* from an already established higher register in order to rise back to the original one. Clearly no such reaching down could occur at the first level without the prior establishment of the first tone of the fundamental line.[53]

Obviously, some context will be important—a motion may seem like a proper linear progression on one level but be revealed as a motion to or from an inner voice in a broader

[51]Brown (2005), 126. Figure 5.11 is excerpted from Brown's Figure 3.19.

[52]See for instance, Schachter (2016), 22 and Cadwallader and Gagné (2007), 127-130.

[53]Schenker (1935 [1979]), 49

context—but understanding how our conceptualizations change when we make this shift is important.

Later, Schenker contradicts the *Züge* and *Untergreifen* distinction, seeming to say, in accordance with Schachter, that motions to or from inner voices just *are* linear progressions.

> [A] linear progression is, above all else, the principal means of creating content in passing motions, that is of creating melodic content. The descending linear progression always signifies motion from the upper voices to the inner voice; the ascending linear progression denotes a motion from the inner to the upper voice...In all linear progressions, whether descending or ascending, the principle of the primary tone holds; the mental retention of the primary tone achieves coherence.[54]

The distinction seems to hinge on the notion of mental retention of the boundary notes of the linear progression. Usually this is construed as the initiating tone being stretched out across the progression, a sort of mental echo, but Jonas argues that we can also have mental *pro*tension: "Ascending progressions, incidentally, are to be understood as if the tone toward which the progression is directed...were implied in advance (by virtue of our inborn sense of the overtone series) and 'fetched,' so to speak, from below by an inner voice."[55]

Given all of this, in what sense are these implied or retained tones real? Is this an argument about theoretical concepts or is it an argument about phenomenal concepts? We may consider these tones to be *theoretically* implied, meaning that we imply them in our analysis in order to conform to a sort of theoretical axiom. This, I think, is what Schenker was up to and it seems to follow from Rothgeb's footnote. Schenker had a certain belief about the role of dissonance in free composition so he invented this principle of the primary

[54]Ibid., 73.

[55]Jonas (1982), 69.

tone in order to say that the dissonance that we have in a linear progression is precisely the same sort of thing that we have in counterpoint (motion against a stationary whole note).[56]

The other option is that the tone is *phenomenally* implied somehow, meaning that some valence of the tone is present in our phenomenology even if it is sonically absent. This can be a difficult idea to get a hold of. An analogy to visual phenomenology is instructive. Consider observing a cube.[57] From any given position we can directly observe between one and three sides of the cube. But even though we don't *see* the far sides of the cube, the presence of those sides remains a feature of our phenomenology of the object. We can test this just by realizing that we would be surprised if it turned out that there were *no* back sides to the cube at all. Our surprise here indicates that we expected something to be there and the way that we experienced the object would be changed thereafter. When we see something the phenomenology is not just what we see, but includes assumptions about what we take the object to be. If the mentally retained (or protended) notes are like this, then we can say that they are an aspect of our phenomenal experience of the music. The notes influence our phenomenology in a real way even if they are absent in the sonically given experience.

Brown is not clear on this point, but I imagine that this kind of phenomenology will determine whether any given transformation counts as a linear progression or as a motion to/from an inner voice. The sonically-absent-but-phenomenally-present tones exist as an interval spanned by a single voice in the case of a linear progression, while the boundary intervals belong to different voices in the latter. The phenomenology that is invoked will

[56]This relates back to section 5.3 as well, and the discussion of the effects.

[57]This example is drawn from Sokolowski (2000), 17ff.

hinge on the way that the absent-but-present tones are presented: as elements of a single voice or as polyphony.

I should note that these sorts of implied tones are different from what Schenkerians normally mean by "implied tones." Typically an implied tone is a member of a harmony that we take to be present in one voice, even if it actually occurs in another voice or is absent altogether. The surrounding context (most often, a linear progression) implies its presence in that line. Usually this takes the form of a specific step in a linear progression being literally absent in the relevant register but implied because the rest of the linear progression is present; and the tone is usually present somewhere else in the harmony. Figure 5.7 above shows a situation where the $\hat{1}$ that ends the the linear progression is literally absent, but because the rest of the fifth progression unfolds in a typical fashion and the cadence (let us say) implies a tonic resolution, we say that the $\hat{1}$ is implied by the structure of the melody. This is shown on the graph as a D in parentheses. The realization of this implication is necessary for the structure of the melody to unfold in the traditional fashion.

Of course, Schenker, Jonas, and Brown are not typically the first places where novice Schenkerians encounter the notion of linear progressions, and we can get additional insight into the structure of this concept by examining introductory textbooks. These texts usually provide the first working definition for various Schenkerian concepts, and because they inform the original conceptual frameworks, they will likely exert a greater than average influence on further thought which invokes these concepts.

These texts mostly present linear progressions in the straightforward manner, like that of Schachter's original definition, leaning mostly on a theoretical definition without much influence from experience. The most common of these first texts is often Cadwallader and

Gagné's *Analysis of Tonal Music: A Schenkerian Approach.* They describe linear progression in this way:

> Scalar motions...which unfold the interval or intervals of an underlying chord, are known as *linear progressions*...They may prolong a single chord or form a motion that connects related chords.[58]

They go on to mention that the term comes from the word *Zug* but, presumably for reasons of pedagogical clarity, do little to reinforce the phenomenology of this concept.[59] A similar basic, formal definition is given by Tom Pankhurst in his *SchenkerGUIDE.*

> A linear progression (*Zug*) involves stepwise motion in one direction between two harmony notes...Most linear progressions are best understood as the elaboration of a leap between notes that belong to different voices within a single chord...Linear progressions play a central part in Schenkerian analysis because they allow us to show how passages of music of various lengths are elaborations of the sort of stepwise motion favored in species counterpoint; they provide a unifying thread around which complex surface embellishments can be woven.[60]

Unlike Schachter and Cadwallader and Gagné, Pankhurst does not invoke the dynamic character implied by the word *Zug.*[61]

These definitions are delivered in relatively phenomenology-free forms, and this reflects, I think, one of the basic pedagogical techniques of Schenkerian theory: learn to write grammatically correct analyses first and reflect on their subtle meanings later. I do not intend to

[58]Cadwallader and Gagné (2007), 73.

[59]Ibid.

[60]Pankurst (2008), 27.

[61]Another pattern that occurs in many of these textbooks but seems to have fallen out of fashion is to construe descending linear progressions as "reflections" of the *Urlinie* at a lower structural level. This perspective is most prevalent in Forte and Gilbert (1982) as well as Neymeyer (1992). Schenker himself makes this connections as well in *Free Composition*: "All characteristics of a fundamental line...also apply to descending linear progressions of the first order." Schenker (1935 [1979]), 44.

cast this strategy negatively, in fact, this is probably the best way to build up an array of mixed concepts. Start with the theoretical aspects of each concept and learn to identify that musical feature on the basis of its formal characteristics. Over time, after doing many analyses and deploying these concepts over and over, a certain phenomenology becomes reliably associated with each theoretically conceptualized definition. This adds phenomenally conceptualized aspects to the formerly formal concepts and creates thoroughly mixed concepts that can then be attributed either through formal features or phenomenology. I suspect, however, that it is exactly the do-it-yourself nature of this phenomenal enrichment that results in later analytical disagreements. We tend to agree on the basic formal definitions of any central concept and share a belief that experience is somehow important to doing analysis. But we may not yet agree on how these concerns ought to be weighed in analysis and when to give the different aspects of these concepts priority.

It should be clear now that the precise scope of the concept of linear progression will differ from analyst to analyst. My goal isn't to propose a definition or a conceptual structure that ought to replace this diversity but to highlight the ambiguity in the various given definitions and, hopefully, foster reflection on the extension of these concepts and how we use them. What supplementary claims do we make when we call something a linear progression or a *Zug*? Is there a difference between calling something a linear progression and a motion to or from an inner voice? And what constitutes this difference? Exactly how these questions are answered will vary from analyst to analyst. Again, it is not so important that we always come to an agreement on the answers, but that we ask the question in the first place and that we try to come to understand how we coordinate these different ways of thinking and try to understand how our perspective would shift if we had different analytical priorities.

On these points, I think the best that we can do is just report what the experience is like for us and try to lay out what else we invoke besides the relatively widespread theoretical definition of the concept.

For me—that is, under the conceptual array that informs my own Schenkerian practice—there *is* a substantive difference between a linear progression and a motion to or from an inner voice. Linear progressions are not just stepwise progressions connecting two notes, but they are also directed, pulling toward one end or the other, and this is part of what distinguishes linear progression from motions to/from inner voices. This difference inheres in the degree to which I hear the stepwise motion as driving *the piece* forward. Linear progressions, to me, provide direction to the piece. Motions to or from inner voices, while providing some motion, serve mainly as a kind of connective tissue, forging a tighter connection between the various voices in the texture.

Both kinds of stepwise motion are present in Figure 5.8(a) above. The fifth progression that spans mm. 18-20 in the upper voice is a motion to an inner voice. It only serves to stretch out the prolongation of the *Kopfton* by connecting the line to an inner voice; the high B remains active throughout. This contrasts with the octave-progression in the bass, spanning all the way from mm. 18-22. This stepwise motion is a proper linear progression, it pulls the bass line down to the register of the final, structural cadence.

We might imagine this difference between linear progressions proper and motions to/from inner voices as that between the running and standing rigging of a sailing ship. While made of similar materials, they have different functions. Standing rigging—the cordage which holds the mast to the deck under tension—does not itself move. It is fixed in place but provides structure holding the pieces of the ship together. Running rigging—the cordage

which actually controls the sails—on the other hand is the tool used to move the ship one way or another. This metaphor, I hope, helps reinforce both the phenomenal and theoretical distinctions I see between linear progressions and motions to/from inner voices. The latter provide stability and coherence in the piece, while the former give the music much of its dynamic life.

5.5 Analytical Colloquium: Schachter and Rothgeb on Schubert's Moment Musical, op. 94, mvt. I

As an alternative to examining how concepts are defined and used in introductory or pedagogical texts, colloquia present an opportunity to see analysts defending claims against alternatives. These sorts of debates provide us another window into conceptual structure as analysts explicate their process, commitments, and motivations oftentimes more than they otherwise might. This is particularly so with music-theoretical traditions, like Schenkerian theory, whose analytical achievements sometimes overshadow theoretical discussions. With these kinds of approaches, we usually get just enough theory to get started on analysis, and the nuances of the theory are meant to be discovered over the course of doing analyses. This is not to say, of course, that there aren't many good treatments of Schenker's work and Schenkerian analysis at the level of theory. But in most modern discussions of Schenkerian analysis, the theoretical background is assumed and discussion circles around the analyses.

Here, I will focus on a colloquium between Carl Schachter and John Rothgeb on Schu-

bert's *Moment Musical,* op. 94, I.[62] By comparing two approaches with approximately the same methodology, we see how Schenkerian theory deals with different analytical perspectives within its own borders as well as the different ways of thinking that underlie their disagreements.

In addition to Schachter's and Rothgeb's analyses, I make my own analyses a party to the colloquium. Since I will be presenting my own perspective as well, I think it is important to provide context for my analytical claims, and I will try to be as explicit as possible about how various concepts are applied. Before studying Schachter's and Rothgeb's analyses, I produced my own analysis of the movement. The idea was to get familiar with the movement and to develop some thoughts of my own from an as yet unspoiled perspective. I recorded my own impressions of the piece and made my own set of voice-leading graphs Then, when I came to read the analyses, I included my own findings in the piece, making myself an interlocutor in the discussion.

As I worked through my analysis, I tried to be aware of my process and of how I was making analytical decisions. I took note of when I consulted the score, when I listened, when I played or sang, and when I imagined what something might sound like. I tried to be honest with myself about questions that I didn't yet have good answers to and tried to record anything that still seemed unclear after I finished a portion of the analysis.[63]

Schachter and Rothgeb's debate is part of a larger colloquium that begins with two non-

[62]Schachter (1977a) and (1977b) and Rothgeb (1977), in *Readings in Schenker Analysis and Other Approaches*, edited by Maury Yeston.

[63]This itself was an interesting meta-analytical task. Just being honest, admitting to not knowing why something was a certain way or lacking strong feelings about how a passage ought to be construed was an interesting exercise that revealed some of the seams that I try to cover up when actually writing up an analysis.

Part	A			B				A		
Section	a	b	a'	*a*	*b*	*a'*	retrans.	a	b	a'
Measures	1-8	9-21	20-29	30-37	38-50	51-58	59-66	67-74	75-87	86-95

Figure 5.12: Formal analysis of entire movement.

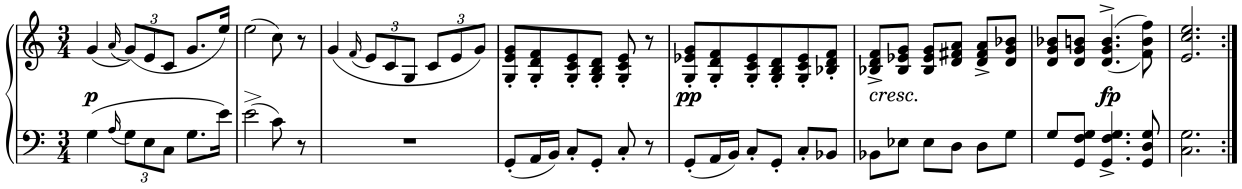


Figure 5.13: Schubert, *Moments Musicals*, op. 94, I (mm. 1-8)

Schenkerian analyses of the piece, "A Quantitative Analysis" by Matt Hughes, which concerns very precise counting of pitch-classes, their relative length, and so on, to produce a variety of statistical analyses meaning to represent the movement's contents; and "A Compositional Analysis" by Lawrence Moss.[64] These are followed by a back-and-forth between Schachter and Rothgeb, with Schachter presenting an analysis of the entire movement, Rothgeb questioning some of his points, and Schachter responding.

An outline of the overall form of the movement is shown in Figure 5.12. The movement consist of three large parts in an ABA form with the B part acting as a kind of trio but ending with a retransition that prepares for the repetition of the A part, transforming the B section's tonicized G back into a dominant. Each large part is in turn divided into a smaller rounded binary form. Rothgeb's first two concerns with Schachter's analysis come in the 8-measure phrase that opens the movement, the score of which is shown in Figure 5.13. This passage serves as the a section of the first large A part.

Rothgeb's first complaint concerns Schachter's claims that the melody of beat 3 in m. 1

[64]Hughes (1977) and Moss (1977).

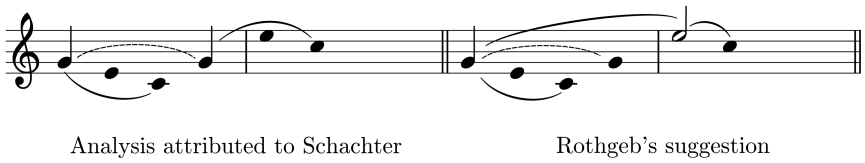


Figure 5.14: Various readings for mm. 1-2.

through m. 2 (the ascending sixth followed by the descending third) is a statement of the arpeggiated triplet motive presented on beat 2 of the first measure, with the first descending third inverted to an ascending sixth.[65] If we consider this to be an instance of the arpeggiation and a development of the first descent, Rothgeb argues, then we must consider the high E to be merely transitory and not deserving of any particular structural weight. If it really is a repetition of the motive, then the constituent notes ought to have the same relative function, but here they do not. This is particularly problematic because this E is thought by both authors (and myself) to initiate both the fundamental structure of this part and the *Urlinie* of entire movement. Figure 5.14 shows these two options. The first analysis shows the reading that Rothgeb believes follows from Schachter's motivic claims, while the second shows Rothgeb's suggestion (which is also more or less the way that Schachter graphed this measure himself).

Schachter counters by arguing that the motivic relationship still obtains despite the change in relative structural importance. Indeed, he says that "changes in melodic or harmonic function often form a large part of the 'significance' of a repetition."[66] Schachter agrees, of course, that this E ought to be accorded structural weight, but disagrees that this hinders identifying this arpeggio as an instance of the descending arpeggio motive.

[65]Rothgeb (1977), 185 and Schachter (1977), 171.

[66]Schachter (1977), 193.

This disagreement highlights not so much the problems with the concept of structural weight, but rather the complexities of the concept of motive in Schenkerian thought. In much of Schachter's writing, it seems, the important constituents of a motive are *tones*. It is the invocation of specific pitch classes in a particular order that makes a statement of a motive important and not their contour or structure (either their intervallic structure or their "functional" structure as here). Following this understanding, the motive is just <G, E, C> in order. This provides a sort of basic element that can then be worked out in various ways including changes in relative structural weight.[67] Schachter makes similar claims about motives being flexible with regard to structure elsewhere, and as far as I can tell from his analyses, he does not identify transpositions of a gesture, for example, as instances of a motive. Motives, it seems, for Schachter are relatively thinly described and in the terms discussed above, various effects may follow from this motive depending on the context it appears in. For Rothgeb, on the other hand, the concept of motive seems to *include* notions of structural functions. A statement of the same pitches doesn't *count* as an instance of that motive if the relative structural weight of those pitches is not preserved.

Richard Cohn has also noted this disagreement. He places Rothgeb's and Schachter's positions on this point into two contrasting camps of analysis. Cohn sees Rothgeb's positions as hewing closely to Schenker's *theory*, under which the structural functions of the motive are crucial, whereas Schachter's account draws more from Schenker's *analytical practice*, which asserts motives more loosely.[68] Another way to distinguish these perspectives on motive is

[67]I imagine, also, by the way, that this motive would be distinct from the rhythmic motive of <quarter note, grace note, triplet-eighth note> which is usually presented in conjunction with the the descending arpeggio.

[68]Cohn (1992), 162-164.

to consider what elements make up each author's concept of motive. Both are mixed, but the kind of mixture is different. In practice, Schachter's concept of motive strikes me as more theoretical in some ways, depending not on how the gesture sounds, but on the pitches that make it up. Of course, any token motive-concept will have a phenomenal experience as well whenever it appears while listening, but as a *reader* of the analysis, the concept I use is primarily theoretical. This hinges on a reliance on the score to locate motives, particularly hidden ones. If one's sense of key location is eroded, by a number of modulations, let us say, one may not be able to tell what pitch classes one is hearing and therefore not be able to attribute Schachter's motive-concept appropriately without the score. The reference for Schachter's concept for this motive are the specific pitch classes and their order, an abstract object that doesn't necessarily manifest in phenomenology nor need to be phenomenally experienced to be identified. Rothgeb's concept, on the other hand, relies on much more phenomenally salient features, including relative structural weight. There is something it *sounds like* to hear a particular pitch as, in this case, the *Kopfton* (or, on a first listening, the most plausible *Kopfton* candidate so far), and for Rothgeb, this overrides the recognition of these two three-note licks as presenting the same motive.

Rothgeb's next critique comes two measures later in m. 4. First, he argues that the G on the downbeat (because of its occurrence with the E) should be read as an appoggiatura to the chordal 7th F and not as a continuation of the G in the preceding measure. He further argues that the E of the tonic resolution does not really arrive until the fifth eighth-note, instead of on the third eighth-note that Schachter indicates.[69] Figure 5.15 shows these two

[69]Rothgeb (1977), 186.

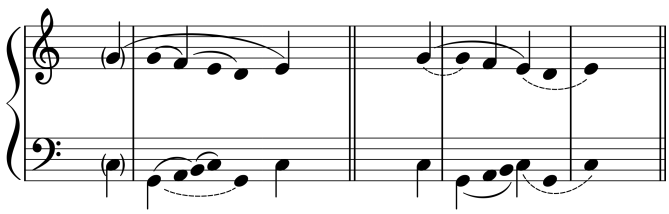


Figure 5.15: Rothgeb's vs. Schachter's analyses.

analyses of the melody with their associated bass lines (both Rothgeb's and Schachter's original graphs only show the right hand). The crucial difference is whether the G on the downbeat is prolonging the initiating pitch of the linear progression or decorating its second step; thus whether the downbeat is more closely related to the preceding upbeat or the following weak beat. On the graph this is shown by where the slur or tie is located.

I'll leave the downbeat for now and focus on the E's. When I worked through the piece myself, I also debated between these two choices, and I eventually settled on Schachter's reading. Rothgeb's analysis allows the right hand gesture to terminate on the last beat of the measure, with the end of the voice-leading motion corresponding with the end of the rhythmic gesture. The best evidence I find in favor of this reading is a kind of tidiness in the symmetry between the voice leading and the rhythm.[70] The melody of the bass ultimately made me decide to select the less elegant treble line. I chose this analysis because the ascending stepwise motion in the bass made the arrival on the first C sound stronger, and the motion away from the G more decisive than the fourth-leaps that follow. That is to say, I decided to follow the phenomenological criterion, to try to express my phenomenology of the measure. And, indeed, this is also Schachter's response:

[70]Rothgeb, unfortunately, gives little justification for why he prefers to read it this way, except to say that "surely" it is so. Ibid.

> Now the bass expresses two motions of a fourth from G to c. The first of these is filled in with passing tones in a rhythm of eighth-sixteenth-sixteenth. The driving force of this rhythm emphasizes the c of the third eighth and makes it *sound like* a goal. The second fourth, presented without passing tones in a more neutral rhythm, *sounds like* an echo of the first.[71]

The operative concept, the one that determines which E gets a stem, is again structural weight, and Schachter and I both relied on the phenomenal aspects of this concept—that certain notes *sound like* structural moments—they sound stronger—while others sound decorative. We can point to the features of the music that caused us to conceptualize the passages this way, in this case the passing tones and their rhythm, but the decision is ultimately made on the basis of the way it sounds, not *because* we noticed the passing tones in the score.

Schachter's next gambit is an interesting one. While he argues for the third-eighth-E primarily on the basis of the phenomenology, he shores up this argument with additional theoretical evidence. He argues that it is difficult to find a good voice-leading role for the C in the bass (dissonant with the prolonged G), while the leap down to a G and back up is a common way to prolong a tonic triad (particularly with the E-D-E motion in the right hand).

Schachter's response to Rothgeb's first point—that the downbeat G is an appoggiatura to the F and not a prolongation of G—is long and a bit convoluted. Schachter invokes a general problem when crafting Schenkerian analyses: "If, in the course of a melodic line, elements of tonic harmony are projected over a prolongation of V, which is the more significant: their function as dependent 'nonharmonic' tones in their immediate context or their power to

[71]Schachter (1977), 195, emphasis added.

represent displaced principal tones in a broader context?"[72] Schachter doesn't answer this question, saying instead that we must judge each instance on a case-by-case basis, permitting us to use either phenomenal or theoretical criteria when making the decision. In the passage under discussion, Schachter finds the V to be "unobtrusive enough to cause little more than a ripple on the surface of the prolonged I" and he cites the G-F-E(♭) third-progression as an important underlying element of these measures, which he believes is foregrounded in his analysis.[73]

The second large disagreement between Schachter and Rothgeb comes in mm. 11-12, at the beginning of the b section. Figure 5.16 shows the the score for these measures as well as Rothgeb's and Schachter's analyses on two levels. The crux of the disagreement comes from the harmonic ambiguity in m. 11. In fact, Schachter admits to the analytical difficulty of the passage in his original essay: "The melody wavers between c^2 and b^1 as if uncertain about the course it should take. In so doing it resembles somewhat the shifting figure-ground patterns of the psychology textbooks; which is the main tone and which is neighbor?...Only reference to a broader context provides us with an anchorage by means of which we can stabilize and order our perceptions."[74] The broader context which Schachter selects is a voice exchange prolonging a C major chord and taking the B as a lower neighbor.

Before turning to Rothgeb's response (spoiler alert: he's going to argue for an E minor chord here), notice the shift in conceptualization underlying Schachter's analysis. When analyzing the bass in m. 3, Schachter built his graph based on the phenomenology of that

[72]Ibid., 196.

[73]Ibid., 197.

[74]Schachter (1977), 174.

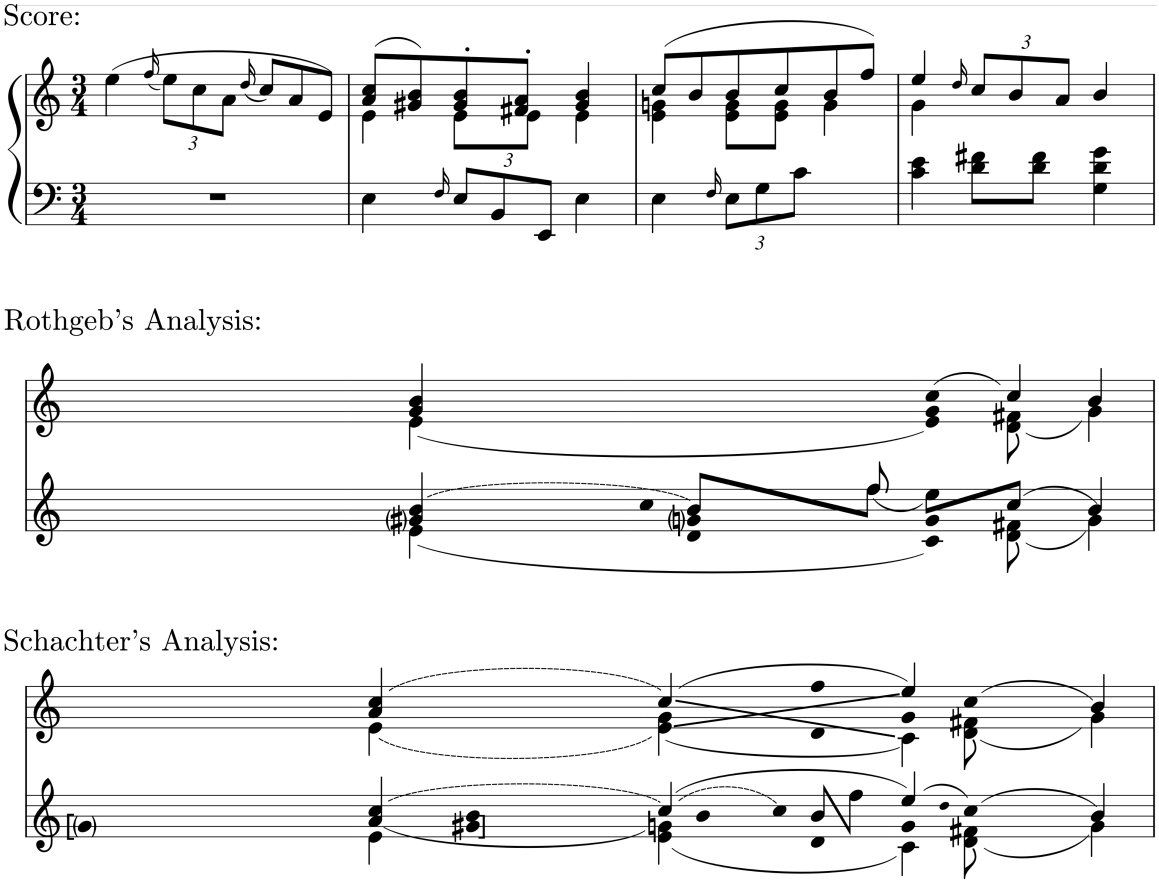


Figure 5.16: Schubert, Op. 94, I, mm. 9-12 with two analyses.

passage—the bass *sounded like* it landed on the C on the third eighth, and that the leap back down to G was a means of decorating this chord. Here, however, Schachter admits that the phenomenology is confusing, so we need to find some other way to understand it, presumably because our graph only permits us to show only *one* analysis. This motivation to produce a *single* reading of a piece is oftentimes an assumed feature of Schenkerian theory and as an axiom it exerts its influence over the theoretical aspects of Schenkerian concepts. With an uncertain phenomenology, Schachter looks in the score for some voice-leading feature whose presumed stability will allow us to make sense of this measure and he find a Schenkerian favorite: the voice exchange.

Rothgeb, by contrast, prefers to read the B as the chord tone with the C as a neighbor.

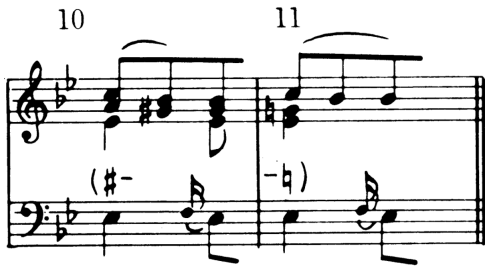


Figure 5.17: Rothgeb's Example 11.4.

While he admits (and he must) that the notes for a voice exchange are there, he argues that the prolongational function of such a reading is inappropriate to this passage: "The mere appearance of a soprano tone in the bass and vice versa does not necessarily define a true exchange: an analogy of function must always be presupposed."[75] This is similar to his claims about motive identification from m. 1. Even though the notes are there, if they do not "function" in analogous ways, one cannot really say that the motive is there. In the terms outlined in this dissertation, I take this to be again invoking a phenomenological imperative, emphasizing the phenomenal aspect of these analytical concepts. Just because we *can* find the relationship on the basis of the notes, does not mean that relationship is worth pointing out. In this case, the phenomenal priority of E minor (for Rothgeb) overrides any C major prolongation implied by the voice leading.

Rothgeb seems to hear the measure as an E^{5}_{3} minor because of its similarity to the clear E major harmony of the previous measure, with some of the surface rhythms even returning to solidify this relationship (Example 5.17 shows Rothgeb's example demonstrating this).[76] Moreover, there is precedent for the modal shift: mm. 4-5. Additionally, though Rothgeb

[75]Rothgeb (1977), 187.

[76]Rothgeb (1977), 189.

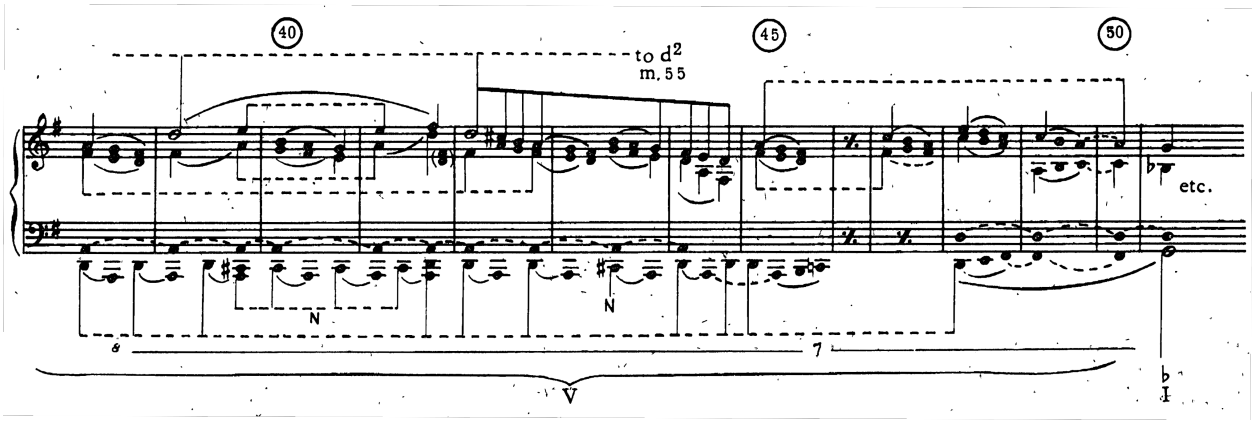


Figure 5.18: Schachter's analysis of mm. 38-50

does not make this argument, this section goes on to prolong E minor, so Rothgeb's reading permits this entire section (mm. 9-19) to tonicize E.

I will close by turning away from the disagreements in the published colloquium to inject more of my own perspective. My original analysis departs most from Schachter's in the overall thrust of part B (mm. 30-66), which is not discussed by Rothgeb. Schachter's analysis casts this entire part as a prolongation of D in the upper voice. (Schachter's middleground graph for the b section is shown in Figure 5.18).[77] My take on this part, on the other hand, shows a good deal more internal structure and descending motion. In fact, the relationship between the a, b, a' sections of the B part seems significantly more interesting than those of the A part, involving a broad descent structured by its own 5-line and featuring an interruption in m. 50. In its final descent in the retransiton, the tonic function with which it ought to close is swapped out at the last second for a dominant function, propelling the music toward the repetition of the A part.

Figure 5.19 shows my own analysis of mm. 38-50, the b section of this part and the place

[77]Schachter (1977), 179.

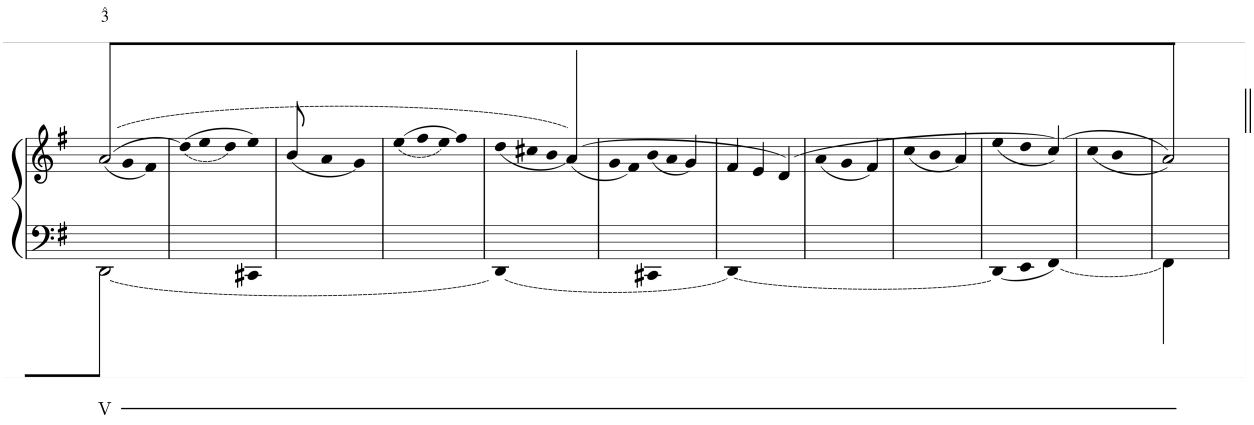


Figure 5.19: Alternative analysis for mm. 38-50.

where the differences between Schachter's and my interpretations are most apparent. Like Schachter, I analyze the entire passage as prolonging V, but while Schachter maintains that the D first stated in m. 34 (not shown in the graph) is prolonged over the course of the entire section, I hear this D as the first instance of a *Kopfton* for this part. This D then begins its descent one measure before the repeat (m. 37) moving from $\hat{5}$ to $\hat{3}$. Schachter's analysis presents this as a relatively minor descent under the still-prolonged D, which is recaptured in m. 39. The difference becomes more pronounced in our analyses of mm. 38-50. Measures 38-39 and 40-41 form sequential pairs, with mm. 38, 40, and 42 forming a A-B-A neighbor figure in the middleground, while mm. 39, 41, and 42 form a D-E-D neighbor figure. Schachter's analysis reads this as a return to the D with the A-B-A figure as an inner voice; my analysis, on the other hand, shows the A-B-A figure as continuing the descent initiated in m. 37, with the D-E-D as ornamental, thereby prioritizing the A and subordinating the D.

The remainder of this little development consists of a number of 3rd-descents, first from A to F♯, which stops short of a fifth-progression to D, but is completed quickly thereafter. The dominant seventh, prolonged through mm. 44-50, is arpeggiated with each element getting

its own third-progression before returning to the A in m. 50 to effect the interruption.

Measures 51-58 present an exact repetition of mm. 30-37 except with the opening gambit in G minor, participating in the now trademark mode mixture of this movement. Following this little recap, we enter the retransition in mm. 59-66. Additional material is needed to bring this part to a close as mm. 51-58 descend only to $\hat{3}$. The retransition continues the descent to G, but just as we arrive, mm. 62ff., the F♯ is swapped for an F♮, turning the G tonic of this part back into the dominant of the movement as a whole. This last-minute chromatic shift undercuts this part's ability to stand on its own (as the A parts do) resulting in the harmonic impulse to return to the A part to complete the movement.

I think the main reasons I have for disagreeing with Schachter are mostly phenomenal, or at least they start out that way. To my ear, the descent initiated in m. 37 is too decisive to subordinate to motion to an inner voice and is followed by a b section prolonging $\overset{\hat{2}}{\text{V}}$, which then leads to a repeat of the a section. My thinking shifts to invoke theoretical concepts at this point. I know that this kind of repetition is often found in interrupted forms and this leads me to be confident in this analysis. If there is an interruption, then the *Urlinie* must descend all the way to $\hat{2}$ beforehand. That is, I justify my reading on both phenomenal and theoretical grounds—mm. 38-50 prolong $\overset{\hat{2}}{\text{V}}$ both because the preceding measures *sound like* they are pointing toward it and because that progression is required for the interruption implied by the repetition in m. 51ff.

Chapter 6

Conclusion: Two Ways Forward

This study of music-analytical concepts has been mostly reflective and after the fact. I have examined how certain modes of conceptualization *have* influenced recent analytical thought, saying less about why, in my view, this inquiry is so important (beyond general claims for methodological clarity). I conclude with two glances forward to how an understanding of conceptualization in music analysis can be used to improve the work of music theory. Understanding the conceptual outlooks that underlie conflicting analyses can help one see what would be required for them to be reconciled, and understanding the complexity of one's own conceptual framework can improve how one teaches parts of this framework to students.

6.1 Reconciling Analytical Disagreement

I have already discussed several situations in which different analysts' conceptualizations result in different analytical judgments.[1] Looking beyond specific music-analytical concepts, one finds that analytical disagreements can come not just from differences in how specific musical features are conceptualized, but also from differences in analytical outlook that both reinforce and result from conceptualizing music in certain ways. Recent disagreements on how best to construe classical form provide a good entry point to this problem

Caplin's and Hepokoski's Readings of Beethoven's *Die Ruinen von Athen*

The debate between William Caplin and James Hepokoski's theories of classical form relies on a difference in their perspectives on what classical form *is*, and we can understand this disagreement as a difference in the underlying concepts that inform their outlooks.[2] Summarizing briefly, Caplin's theory depends on the idea of "formal function," or the experience of a music-segment's status as as beginning, middle, or end in the piece's temporal flow.[3] Segments of music communicate their functions through the motivic and especially harmonic techniques typical of each function. Tonic prolongation, for example, signals a "presenta-

[1]The most sustained discussion is in sec. 5.5.5, on Rothgeb's and Schachter's differing readings of Scubert's *Moment Musicale*, op. 94, I.

[2]This account of this analytical disagreement and the ethical-theoretical analogy was originally presented in Hansberry (2014).

[3]While unclear in the original publication of the theory, the temporal aspects of formal functions are clarified in Caplin (2010b), 23.

tion," or beginning function, while harmonic sequencing is usually found in a "continuation," or medial function.[4] According to Caplin, his theory is concerned less with applying labels like sentence, period, or sonata, than with identifying how formal functions are created and relate to each other. Each formal type (like period or sonata) is said to have an essential form-functional make-up. Each is defined by having the right kind of beginning, middle, and end. Identifying movement forms is a matter of of identifying the low-level formal functions and inferring the large form based on what functions are present and how they relate to each other.

This outlook on formal analysis engages both theoretical and phenomenal concepts. Caplin argues that a collection of the right kinds of stylistic features, used in combination, ought to lead to the *experience* of that function for a listener familiar with the relevant stylistic norms.[5] Formal functions, while in fact *mixed* concepts, find their greatest utility in their phenomenal conceptualization. One can only be sure that a given function applies when the trained listener experiences that function while listening to a given passage. Formal types, by contrast, are a fully theoretical affair, implied by the presence of the right kind of formal functions.

Contra Caplin, James Hepokoski (with his co-author Warren Darcy) considers sonata movements in relation to a set of abstract, historical and rhetorical norms. These norms are determined by the most common characteristics of contemporaneous pieces. Under this paradigm, a sonata is analyzed by comparing its formal features to these informally-

[4]Caplin (1998), 25-29.

[5]Calpin (2010a), 25.

derived statistical norms and taking departures from those norms (called "deformations") as opportunities for hermeneutic interpretation.[6] These norms are organized into characteristic "spaces" (that is, "Primary Theme Space," "Development Space," etc.), which are punctuated by structural cadences. Further, each "space" contains music that has its own set of norms. Hepokoski's reliance on historical context also influences his attributions of formal types. His "Sonata Theory" purports to take the listening position of an historical listener, whose expectations are shaped by the most common formal and rhetorical choices in the repertoire of that time. This is to say that a piece is identified as a sonata when pieces of that genre are usually sonatas, regardless of extreme departures from the formal ideal.

Despite all of Hepokoski's arguments that his analyses, in part, reconstruct historical, dialogic listening, the theory seems significantly more theoretical in its application, to me anyway, than Caplin's. In part, I suspect, this is because an understanding of the vast array of "defaults" (the tiered composition options available in the style) is only readily available to listeners intimately familiar with hundreds and hundreds of sonata movements—an experiential frame that eludes me, but is certainly possible. This is not unique to Hepokoski, though, both his and Caplin's theories invoke plausible listener experience to justify their formal analyses. Caplin just sets a lower bar, requiring only a more general knowledge of low-level stylistic features instead of a broad knowledge of most of the repertoire.

One can see how these two outlooks confront each other by seeing how they respond to a difficult case: Beethoven's overture to *Die Ruinen von Athen*. Categorizing this overture is not a straightforward task under either paradigm. Figure 6.1 shows three formal analyses

[6]Hepokoski and Darcy (2006), 29.

of the movement. In the center is a relatively neutral analysis identifying just the major thematic sections and key areas; above is Hepokoski's analysis and below is Caplin's. The first 28 measures are a slow introduction to the main action of the piece, presented in G minor, the parallel minor of the home key. Measure 29 initiates a new theme in G major which concludes in m. 61.[7] Then new thematic material is introduced in the subdominant C major. Measure 104 marks some kind of articulation, as the exact tonal center becomes obscured, but comes back into focus in m. 128 with the return of the G major material originally presented in mm. 29–60.

Both theorists analyze the opening slow section, mm. 1–28, as introductory to the form. They also agree on the "main theme" in the home key, filling mm. 29–60. Their disagreements begin in mm. 61ff. with the introduction of the C major theme. Caplin sees this section as the beginning of a relatively straightforward interior theme of a large ternary form, whereas Hepokoski argues that the movement ought to be read as a highly "deformed" sonata and that these measures instead contain the secondary theme of the exposition. While sonata form and ternary form are both three-part structures, the boundaries and functions of the forms are quite different in the two analyses. Caplin groups Hepokoski's second theme and the development together as a single medial function, papering over one of Hepokoski essential expositional moments, the closure in the secondary key. The focus of their disagreement is in how to characterize the difference between mm. 61–100 and mm. 101–129. For Caplin, their functions flow together while for Hepokoski there is a strong rhetorical break at m. 100,

[7]I will assume certain criteria for a "theme," opposed to a transitional section, as being relatively "tight-knit," in Caplin's terminology. Meaning that music sticks closely to the expected durational and cadential paradigms. At this level of analysis, Hepokoski usually accepts Caplin's terminology without problem.

Figure 6.1: Competing Analyses of the overture to *Die Ruinen von Athen*

inaugurating the beginning of the development.

Hepokoski faces a number of challenges in arguing that the overture is a sonata. First, there is no obvious transitional section leading the first theme into the second. Measures 51–60 are only retrospectively heard as transitional at the sudden onset of the second theme. Second, Hepokoski's Secondary Theme is in an unusual key, the subdominant (instead of the dominant) and, more importantly, is entirely absent from the "recapitulation." Further, in lieu of a proper development section, the overture has only the briefest working-out of earlier material before returning to the main G major theme in m. 129.

For Caplin, the absence of these features, and, apparently, the phenomenal experience of the right series of formal functions, disqualifies any sonata reading.[8] Hepokoski, on the contrary, insists that the movement should be properly understood as a highly modified sonata form based on historical considerations. He argues that since nowhere in the repertoire does Beethoven use anything but a sonata for an overture movement, departing from this convention would be highly unexpected for historical and historically-informed listeners. This expectation is further compounded by the presence of a slow introduction (a rarity in ternary forms).[9] Thus, for Hepokoski's imagined listener (perhaps Hepokoski himself, even) the fact that this is an overture would lead a listener to *already* employ the theoretical and phenomenal concepts associated with sonata forms, not ternary forms, and failure to characterize this experience as such would ultimately mis-analyze the movement.

Responding to each other's analyses, both theorists admit that their disagreement stems

[8]Caplin (2010a), 93-94.

[9]Hepokoski (2010a), 105. This formal analysis is the basis of Hepokoski's hermeneutic interpretation of the overture, hearing the ruins of Athens themselves represented in the formal degradation of the recapitulation. See Hepokoski (2010b), 85-86.

not from low-level musical facts (themes, keys, etc.), but rather from their differing theoretical approaches. But while acknowledging that they work under different paradigms, they have little more to say about how to confront this problem. Instead they turn back to analysis to hash out their disagreement, reasserting their individual approaches. As a result, they tend to talk past one another, making little progress toward any kind of agreement.

Music-analytical Cultures

Rarely are sustained analytical debates about disagreements in identifying musical features; instead they are about how to interpret the music. Often in the course of such disagreements, one finds oneself invoking history or consistency or experience to try to justify one's analytical claims (indeed, as I have done throughout this dissertation). But this only works if (a) one's interlocutor already thinks about music (and, more importantly, music theory) in the same way or if (b) either party is willing to change their outlook on music and music theory. In short, music-analytical disagreements often have less to do with the music itself and more to do with how that music is conceptualized. Disagreements that lack this kind of cooperation between parties are what ethicist Bernard Williams calls "notional confrontations."[10] Parties do not agree, but at the same time, neither side can be convinced with descriptive evidence alone because each side looks at the problem differently. Williams argues that it is important to understand what the "real options" of any given interlocutor are, because this can short-circuit doomed debates before they begin.[11]

[10]Williams (1985), 160.

[11]Ibid. This is not the only attempt to engaged ethical thought to better understand music-analytical discourse. Parkhurst (2013) argues for a different ethics-informed meta-theory based on

Whether something will be a real option for us will depend on the ways of thinking furnished by the kinds of concepts we deploy. In the context of his meta-ethical theory, and influenced by Gilbert Ryle, Williams calls these *thick concepts*. In the context of ethics, thick concepts have two distinct though interrelated features: (1) they have descriptive content, and (2) they ascribe a culturally-relative pro or con judgment. *Coward*, for example, is a thick concept because it both describes an action—fleeing from danger—and passes a negative judgment.

One can generalize this notion by letting thick concepts be just those which underlie thick description. The general idea of "thickness" originates in Ryle's distinctions between thin and thick descriptions of actions. A thin description only and most basically takes account of the physical facts of the situation, while a thick description includes culturally determined and interpretive satisfaction conditions.[12] This significantly broader understanding of thickness includes more than just those with a pro/con judgment.

Generally, thick concepts gain their thickness by existing in a certain kind of culture. To create a thick-conceptual analog for music theory, we need an understanding of culture that extends to finer contrasts in practices and beliefs than we typically rely on when distinguishing cultures. While we usually use the term "culture" to refer to much larger and much more differentiated populations, the same kinds of features which differentiate cultures broadly—differences in beliefs, practices, histories, artifacts, etc.—are in play, albeit in a more limited fashion, in the field of music theory. Each analytical paradigm consists not only of a set

expressivism.

[12]Ryle (1971).

of beliefs or assumptions about music, but also has a set of practices (its music-analytical techniques), and artifacts (the analyses produced by these methods). Moreover, the groups of analysts who subscribe to these beliefs and practices often trace the history of their ideas from different fonts. Adherents to Caplin's form-functional theory derive their system from Schoenberg's theories of form, while Hepokoski's followers tend to have more interest in hermeneutic analyses than in formal ones. These "analytical cultures" then generate thick concepts that inform how analysis is done and how the analysts—when they unreflectively adopt their culture—perceive the music.

In the Beethoven overture, Caplin's and Hepokoski's use of the concepts "Interior Theme" and "Secondary Theme" are instances of thick music-analytical concepts. They are partially descriptive, that is, guided by the musical facts at hand: harmonies, surrounding themes, etc., charted in Figure 6.1. Caplin's "Interior Theme" contrasts with the main theme in key and has looser implications vis-a-vis tonality, interior structure, and the like, than a Subordinate Theme of a sonata would.[13] Hepokoski's concept "Secondary Theme" invokes a set of descriptive norms (that it is in the dominant, always closes with the first PAC, part of an exposition, etc.), though in analysis, Hepokoski allows these norms to serve only as guidelines. Identifying this music as the Secondary Theme, however, still describes facts about the music, including its coherence as a single theme and its differentiation from the primary theme.

The concepts "Interior Theme" and "Secondary Theme" are thickened by the additional information they bring in about the music-segments they are applied to. They involve a

[13]Caplin (1998). 212-213.

	Coward	*Interior Theme*	*Secondary Theme*
Descriptive features	Flees from danger	Thematic, non-tonic key, differentiated form Main Theme	Thematic, dominant key, differentiated from Primary Theme
Culturally determined aspects	Con-judgement, cowardice is a sign of poor character	Present only in ternary form, generated on the basis of smaller form functions	Present only in sonata form, determined by historical expectations of movement type.

Table 6.1: *Coward*, *Subordinate Theme*, and *Secondary Theme* as thick concepts.

certain kind of judgment, not of the pro/con variety, but a judgment that the movement is of a particular kind, either sonata or ternary form. Both theorists' deployment of these concepts comes along with their decision to describe the movement as either a large ternary form or as a sonata.

The different analytical cultures determine these formal types differently. Perhaps the most important distinction in direction of judgment: bottom-up versus top-down. For Caplin, formal attributions start on the level of small formal functions and larger formal decisions are made on that basis. So, the absence of a particular formal function, notably a secondary theme in the recap, prevents him from reading the overture as a sonata. For Hepokoski, the largest level of formal attribution is made first, namely that the piece ought to be in sonata form on the basis of historical and statistical factors, while smaller analytical decisions (including the application of the concept "Secondary Theme") are guided by these large-scale formal judgments.

Bringing these analyses into alignment would require re-imagining—on the part of one or both parties—how formal-analytical decisions ought to be made. Real confrontation requires reflection on the part of the interlocutors not just about their own position but about the

concepts that underlie them. Agreement about issues that invoke thick concepts comes either through the realization that one's concepts are thick, and therefore culturally contingent or through the realization of some yet unrealized implications of a thick concept or through the adoption of a new thick concept. Reflection is paramount here. When a thinker reflects on a concept and realizes its thickness (and therefore, its contingency) it loses its status as merely descriptive and becomes interpretative. The thinker can no longer hold the assertions made on the basis of that concept as simple facts but rather as interpretations viewed through a certain lens.

6.2 Towards Conceptually Reflective Pedagogy

Beyond guiding us toward real confrontation, and perhaps toward agreement, reflecting on the conceptual apparatuses that underlie analysis can also inform a more effective pedagogy. As conceptual arrays coalesce into outlooks, informed by music-analytical cultures, they slowly become transparent to their user. The more that one engages in a certain kind of analytical practice or studies a particular theoretical paradigm, the more ingrained these ways of thinking become. The transparency of these conceptual frameworks oftentimes creates the analytical disagreements discussed in the previous section and throughout this dissertation. The transparency of these frameworks to their possessor, moreover, can also inhibit effective teaching when the complexity of these frameworks is not adequately controlled when presenting these ideas to students for the first time.

In chapter one, I mentioned Zbikowski's work on coordinating concepts into models and

models into theories.[14] While I disagreed with the simple nature of concepts he proffered, I agree, of course, that one's theoretical perspective depends on the the underlying concepts that make it up and the connections between these concepts. Research in teaching and learning indicates that conceptual organization is a crucial element to effective teaching and foregrounds how expert, instructor knowledge organization differs from novice, student knowledge organization.[15] One's understanding of a given topic is organized by the conceptual frameworks at one's disposal and consists both of concepts and their interrelations forming a complex web of connections and inter-conceptual meanings. To an expert in a given subject area, these frameworks will include many different concepts with a rich mesh of connections between them. These conceptual frameworks help make sense of new data and place it into the context set up by this framework.

Students, however, tend to possess few if any of these connections, and small changes in how these concepts are presented can greatly affect the way that they are organized and recalled later on.[16] While, one hopes, students are constantly learning new concepts in a theory or aural skills class, it is a mistake to assume that they can draw the same kinds of connections between them as their teachers do, since they lack a complicated conceptual framework. In this context, a theoretical conceptualization of a musical feature may develop indepen-

[14]Zbikowski describes several levels of theory, with the major of his discussion focusing on lower level, systematic theories. I am more concerned with what he calls "extended theories," though by his definitions even these are more limited than what I have been calling an outlook in this conclusion. Zbikowski (2002), 132.

[15]Ambrose, et al. (2010), chapter 2.

[16]Ambrose, et al. present several case studies in which changes in course design result in very different recall strategies for students. National Research Council (2001) provides a particularly salient example.

dently of a phenomenal conceptualization. While in the case of simple theories—phenomenal and theoretical approaches—this conceptual monism is not inherently problematic (except perhaps in its tendency to create strong adherents on one side or the other), for complex theories, mixed approaches in particular, the stakes are much more important. Without the conceptual framework to associate the different aspects of complex music-analytical concepts, students' options for understanding will be limited.

Mixed concepts present an especially important case, where we want our students to develop multiple concepts but associate them as aspects of a single complex concept—importantly, not all of these elements imply each other, as they may seem to for us. And we can see this lack of implication when analyzing the concepts. The research from teaching and learning suggests that we develop an understanding of our own outlooks, an understanding of the analytical culture in which we each participate, and cultivate an understanding of other options, so that we can help our students to organize better their conceptual development.

In Burstein's study of half cadences, he makes this point foregrounding the pedagogical importance of getting clear about the conceptuality of basic terms. He asks us to consider a common pedagogical situation: a student seeming to misidentify an apparently obvious cadential progression.

> Although in such cases the teacher usually gently corrects the student's analytic faux pas, perhaps the student is not entirely mistaken, for it may well be that novices sense ambiguities in these situations that can too readily pass by those inured through years of cadential labeling.[17]

For us, experienced music analysts—let us say—our concepts may be over-determined, or, as

[17]Burstein (2014), 225.

described earlier in the article, what ought to be properly considered preference rules have "calcified" into well-formedness rules.[18] They have a veneer of stability precisely because the conceptual framework that contains these rules has become transparent. The way that we conceptualize half cadences, particularly in its theoretical aspects, makes the decision seem straightforward. If we adopt this conceptualization as the definition of half cadence, like a set of necessary and sufficient conditions, we gain a significantly more well-defined concept but at the detriment of our phenomenal experience of half cadences. The student, however, may retain a relatively under-determined concept for half cadences, they have more loosely associated theoretical and phenomenal conceptualization of a half-cadence. This under-determinacy may exist on both facets of the concept—that is, students may not be able to reliably identify half cadences either on paper or by ear—but I suspect that in most situations like the one Burstein describes, the student is relying on her hearing of the passage. The passage fails to give the impression of a half cadence—her experience lacks that phenomenal content—and so she, correctly, attributes a different cadence concept or none at all. In response, one may decide whether such a reading is plausible or not, but because this judgment arises from thick analytical concepts contained in a conceptual outlook, to properly explain oneself to a student requires a sensitivity to how these contingent structures shape one's judgment.

[18]Ibid., 211.

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