Analysis as Technologically-Mediated Musical Experience

by

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Preface

Although it has not been possible to include full scores of the music, the reader is

encouraged to have scores on hand, if possible. Every work discussed in this study is in the

public domain and is widely available. Individual measures and groups of measures are indicated

by m. and mm. respectively, with specific beats named separately (i.e. beat 4 of m. 5).

Throughout the dissertation, capital letters are used to denote major chords (i.e. C = C major).

Minor chords are indicated with a lowercase m (i.e. Cm = C minor). Roman numerals are

assigned based on chord quality, with uppercase numerals indicating major and major-minor

chords (i.e. IV, V^7), while lowercase letters designate triads and seventh chords that are either

minor or diminished (vi, ii^7, vii^0). The one exception occurs in chapter four, where I follow

William Caplin's practice of using all capitals. At times, jazz or "pop" chord symbols, such as

B^7/E, are used instead. All other specialized terms and symbols are defined within the individual

chapters.

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Abstract

This dissertation takes as its starting point a heuristic orientation to analysis as a dynamic between three things: analyst, music, and the conceptual tools—what I call "technologies"—that one brings to the music. Its goal is to explore how the use of technologies affects or mediates one's analytical experience—the actions, thoughts, decisions, and conclusions that obtain as one analyzes. The various ways in which our tools affect what we do, I argue, has not sufficiently been explored. Although scholars have begun to recognize the personal, non-objective nature of analysis, and have continued to interrogate the tools themselves, there have been no sustained attempts to consider the various effects of implementing these tools in analysis. How might adopting a particular technology encourage certain analytical actions over others, while altering the written product (the finished analysis) these actions leave behind? Although questions of this sort are often explored by examining written analyses, I intend to complement these approaches by personally doing and reflecting upon my own analytical activities.

Following an introductory chapter, I undertake five case studies that attempt to foreground some effects of using the chosen technology. In each, I perform and reflect upon my own analyses of music by Haydn, Mozart, Brahms, Rachmaninov, and Bizet. Among the technologies implemented in this study are: paradigmatic analysis, Sonata Theory, form-functional theory, as well as approaches informed by the work of Leonard Ratner and Donald Tovey. Each chapter unfolds in three stages: 1. A preliminary analysis of the selected music that does not draw upon the particular technology but rests upon more traditional tactics, 2. Familiarization with the technology to be applied, 3. An analysis with and through the lens of the

technology constructed in part two. Comparing the first and third stages reveals how the technology affords new insights that had initially gone unnoticed or unexplored. Furthermore, we get a sense of which aspects of any given technology have the greatest potential to alter analytical outcomes/experience, as well as those whose effects are less pronounced or superficial. The approach consciously draws on subjective experience, positing that experiments in musical analysis must utilize insights gained through practice.

Chapter 1

Analysis, Technology, and Analytical Experience

In her book, *A Theory of Music Analysis*, Dora Hanninen states that "to analyze a piece of music is to advance an interpretation of its characteristic, distinctive, and significant features, drawing on and sometimes extending the body of music theory in the process."[1] The definition recognizes three components: a piece of music, an analyst who advances an interpretation, and the body of music theory that the analyst draws upon. Figure 1-1 heuristically represents analysis as a dynamic between these three entities, replacing music theory with "technology," a term I will use to designate the conceptual tools one uses to do analysis. Although each component has received ample scholarly attention, their relationship to one another in music-analytic practice demands further investigation. Until recently, music analysts privileged the first of these components—the "piece of music"—while neglecting the individual who conducts the analysis.[2] Even as scholars have begun to focus on the situated human implicated in analytical work, the specific tools or technologies that one utilizes are often absorbed into the notion of the analyst's labor. Meanwhile, modern day reflections on specific analytical technologies tend to address the properties, concepts, and assumptions

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[1] Dora Hanninen, *A Theory of Music Analysis: On Segmentation and Associative Organization* (Rochester: University of Rochester Press, 2012), 3.

[2] Consider Ian Bent and Anthony Pople's definition of analysis as "that part of the study of music that takes as its starting-point the music itself, rather than external factors." Ian D. Bent and Anthony Pople. "Analysis." *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed January 29, 2017, http://www.oxfordmusiconline.com.proxy.lib.umich.edu/subscriber/article/grove/music/41862pg1.

embedded in these approaches rather than the effect they have when implemented by an analyst. The manifold ways in which our conceptual tools impact both our analytical actions as well the conclusions that emerge, warrant more extended treatment.

Figure 1-1: Three Components of Analysis
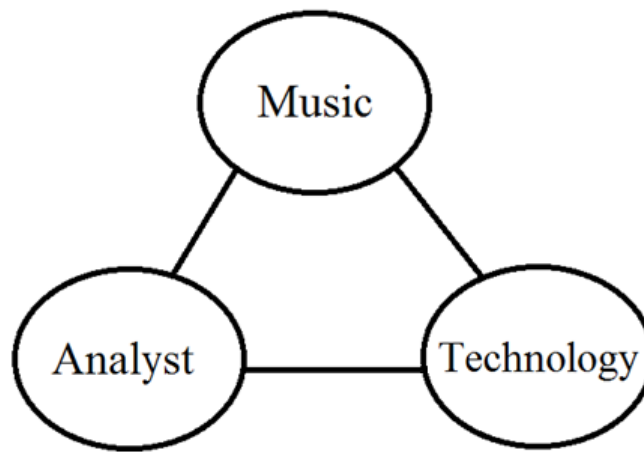
The aim of the current study is to explore how using music-analytical technologies shapes both the process and product of analysis. Specifically, I offer five self-reflective case studies in which I bring various technologies to bear on musical works. Taking a first-person, experimental approach shines new light upon some familiar questions. How do technologies promote certain actions and insights, encouraging us to ask different questions about the music and about ourselves? To what extent are the "characteristic, distinctive, and significant features" of a work codetermined by the tools one brings to the task? While issues of this sort are often probed by studying existing analytical texts, I submit that a complementary and potentially fruitful approach may consist in trying out some technologies ourselves, performing and reflecting upon our own analytical endeavors. Published analyses suggest but do not make explicit the ways

in which technologies inform our analytical experience—the thoughts, actions, decisions involved in doing analysis. To put it another way, technology's influence on the practice of analysis is underdetermined by the written trace that is left behind.

Attending to the effects of our technologies is important for two reasons. Following Kofi Agawu, I believe that analysis is itself a rewarding activity, a unique means of exploration and discovery.[3] Music analysis is a mode of human experience no less important than that of performance, composition, and listening. It follows, then, that we may want to examine how technologies serve to mediate this experience. Of course, I recognize that not everyone will embrace this perspective. For some, analysis has no intrinsic worth, but accrues value to the extent that it usefully contributes to some other activity. Frequently cited goals for analysis include informing performance and composition, producing knowledge about musical styles, and affording new ways to hear and appreciate a piece of music.[4] Attitudes of this sort, while familiar, should not be taken to discourage further inquiry into the effects of our analytical tools. For whatever one believes to be the rightful ends of analysis, these goals are ultimately pursued by individuals who rely on analytical tools in some shape or form. If technologies alter how we conceptualize, respond to, interrogate, or otherwise engage with music—that is, if they affect our analytical experience—then these effects would seem to trickle down to matters in which analysis often plays a role, such performance or stylistic understanding.

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[3] In Agawu's estimation, "the materiality of analytical proceeding serves as its own reward." Kofi Agawu, *Music as Discourse: Semiotic Adventures in Romantic Music* (New York: Oxford University Press, 2008), 320.

[4] Carl Schachter remarks, for example, that "analysis has value only insofar as it helps us to hear." Carl Schachter, "Rhythm and Linear Analysis: A Preliminary Study," *Music Forum* 4 (1976): 311. Nicholas Cook's remarks on music theory are also worth noting. "Music theory acquires validity not, like scientific knowledge, from being verifiable, but from serving some useful purpose - in enabling the analyst to arrive at an interpretation, communicate an insight, or resolve a problem." Nicholas Cook, "Music Theory and 'Good Comparison': A Viennese Perspective," *Journal of Music Theory* 33 (1989): 136.

The remainder of this chapter unfolds in three sections. First, I engage with select literature in an attempt to situate the current project in a wider conversation about music-analytical tools. I then go on to elaborate upon two notions central to this study: technology and analytical experience. Technologies are defined as conceptual tools that are used in doing music analysis—whatever the form of transmission (e.g. through text books, commentaries, program notes, etc.). Implementing them affects what I will term "analytical experience"—that is, the thoughts, decisions, actions, and responses that occur while analyzing music. In the final section, I lay out the overall strategy I will take in my five case studies. In each succeeding chapter, I work through the selected music both with and without a particular technology introduced in that chapter. By comparing aspects of these engagements, I believe, we can begin to grasp the often-tacit ways in which technologies function in music analysis.

I. Review of Literature

It will be helpful to preface our discussion of analysis and technology by considering some significant literature that touches upon these ideas. Although this section cannot exhaust the manifold ways in which scholars have talked about the analytic enterprise, it will be instructive to define a few trends in the scholarship that have most influenced my work. These include Hanninen's aforementioned theory of music analysis, studies and critiques of individual methods, and analytical essays that foreground one's personal experiences of music.[5] Such efforts have yielded important

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[5] Still other approaches are offered by music cognition. To take one such study, Elizabeth Hellmuth Margulis has recently asked whether or not program notes enrich or detract from one's musical experience. Participants were given either a structural or dramatic description of the piece they were about to hear, and

insights into how the components of Figure 1-1 relate to one another. But they also

suggest the need to investigate more closely how technology achieves its effects. By

self-consciously participating in analysis, taking a personal journey with some analytical

tools, I hope to gain insight into issues that scholars have pursued from other

perspectives.

For anyone interested in matters of music analysis, Dora Hanninen's work on

analysis and segmentation offers a rich starting point. The culmination of decades of

research, her study *A Theory of Musical Analysis* as she says, "provides analysts with a

conceptual framework and metalanguage for *looking* at or *thinking about* music."[6] Her

model, reproduced below (Figure 1-2), lays out her theory that music analysis occurs

across three domains: sonic, structural, and contextual. The sonic domain is

characterized by its disjunctive orientation, a "perceptual or cognitive strategy" that

tends toward difference. To segment a passage based on difference—such as a sudden

change in texture—is to take a disjunctive orientation. One may also attend to

similarities between musical objects. Adopting this associative orientation, one may

employ contextual criteria that acknowledge the relational properties between groups of

notes. Analysis often involves orienting oneself to both disjunctions and associations,

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were asked afterwards to rate their enjoyment of the music on a scale from one to seven. Margulis
concludes that prefacing listening with a program does not increase enjoyment, suggesting that perhaps the
impulse to conceptualize sounds hindered subjects who simply wanted to be "swept away by the music."
In thinking about how a body of information (program notes) impacts musical experience, Margulis's
study, though differing in scope and methodology, resonates with my interest in the relationship between
technology and doing analysis. See Elizabeth Hellmuth Margulis, "When Program Notes Don't help:
Music Descriptions and Enjoyment," *Psychology of Music* 38 (2010): 285–302.
[6] Hanninen, *A Theory of Music Analysis*, 4.

marking boundaries between sections (as in analysis of form) and grouping like events together (such as noting recurring motives, chord progressions, or pitch-class sets).[7]

Figure 1-2: Hanninen's Schematic of Music Analysis
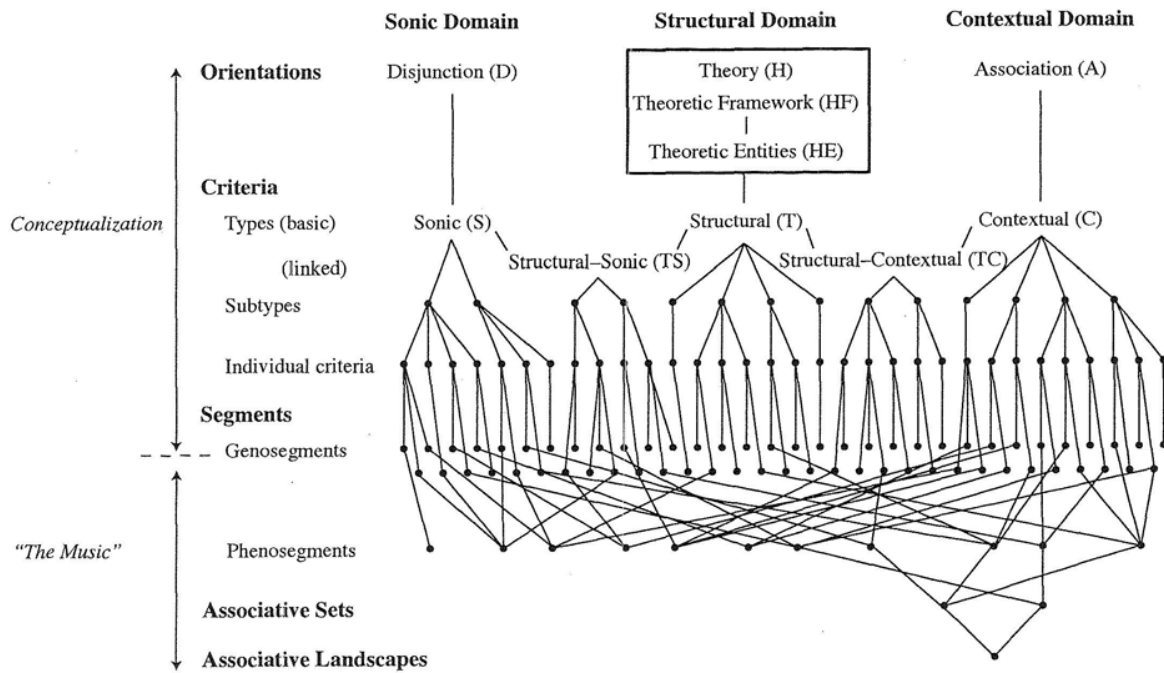
Particularly important for the present study is Hanninen's discussion of the structural domain, in which the analyst adopts what she calls a theoretic orientation toward music analysis. Hanninen states, "To adopt a theoretic orientation is to refer, explicitly or not, to a theory of musical structure (H), an orderly system of concepts and rules that guides or governs the recognition, interpretation, and organization of

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[7] Although Hanninen's rich concepts of associative sets and landscapes are worth examining in detail, I must let them pass in the interest of exploring more fully those ideas most pertinent for thinking about the role of tools in mediating analysis.

significant musical units."[8] Theories provide both a conceptual framework (HF) and theoretic entities (HE). For instance, Schenkerian theory defines concepts such as the *Ursatz and Urlinie* (HF), while appropriating fundamental axioms regarding keys, scale-degrees, and octave equivalence. The Schenkerian analyst may then identify specific theoretic entities (HE) in the piece under consideration, such as the particular *Urlinie* that is expressed or an important structural motive.

Adopting a theoretic orientation may open new lines of investigation by providing a conceptual space for engaging musical works.[9] Hanninen addresses this issue in the closing pages of her book, where she considers some possible applications of her theory. She concludes that her theory can be used to investigate musical styles, such as the prominence of sonic and contextual criteria in different periods of Beethoven, or be purposed toward comparing music analyses themselves. Turning to the analytical process, Hanninen speculates as to how the analyst might navigate the concept-object continuum of Figure 1-2. What is the relationship between adopting, say, a theoretic orientation and selecting objects of analytical interest? Do we begin at the top, equipping ourselves with HFs and HEs and then work downward in search of concrete instantiations of these concepts? Or do we take musical surfaces as departure points, and then work upward toward a theory of structure that might account for them? Hanninen believes the process is bi-directional, with analysts moving back and forth along the schematic as different forces inform and shape one another.[10] For example, she recounts

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[8] Structural theories "can influence the course of analytical interpretation in many ways. Hanninen, *A Theory of Music Analysis*, 20–21.
[9] Ibid., 21.
[10] Ibid., 430.

that her analysis of Beethoven Op. 2 No. 2, i, began in the contextual domain, before

adding Schenkerian insights at a later stage.

In one sense, my project aims to build on some of Hanninen's observations, not

by proposing a theory of analysis, but by undertaking a series of first-person, analytical

explorations. Equipping oneself with a given technology—that is, adopting a certain

theoretic orientation—allows and promotes different experiences and discursive

products, and that process is worth attending to in detail. Hence, our enterprises differ

regarding both scope and method. In the first place, my concern is neither with

distinguishing sonic and contextual aspects nor with the cognitive processes by which

humans segment musical surfaces into units. Moreover, I propose no theory of analysis,

no general account of technological mediation in music-analytical practice. Instead, my

goal is to sketch some effects of implementing selected technologies. Second, I am

utilizing the concept of technologies in a more general sense than Hanninen's theories of

musical structure. For Hanninen, theories (H) are bound by a "reference requirement,"

which holds that "H must clearly reference sounding aspects of a composition through

its HEs [theoretic entities]."[11] She contrasts those approaches that meet the reference

requirement with those that provide "aggregate snapshots" of the musical surface, as

well as certain post-structural theories that rarely deal with issues of segmentation.[12]

Rather than divide approaches in this way, I prefer to think of technologies as conceptual

tools able to be applied in analysis. In this view, Hanninen's approach, despite its

relatively neutral language, itself constitutes a technology since it has the potential to

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[11] Ibid., 8.
[12] See the discussion in Hanninen, *A Theory of Music Analysis*, 437, n. 14.

inform how one goes about analyzing a piece of music. I will return to this last point in the following section.

Third and most importantly, I attempt to bring out the personal engagement that is downplayed in Hanninen's model. The analyst, in her work, is often treated as an abstraction, someone assumed but not made explicit. Consider, for example, her description of how an analyst may work up and down the schematic of Figure 1.2:

> Traversals can proceed "downward" on the schematic, from concept to musical object (HE -> T Criteria -> Segment), or "upward" from object to concept (segment -> T criterion -> HE).[13]

In both this passage and that with which this dissertation began, the analyst is omitted from consideration. It is not a question of a human subject who acts, but rather a traversal that proceeds. As a counter-move, we might attend to the person who draws on technology in making these decisions, asking how they settled on a particular segmentation, or assigned weight to various parameters.

Writing several decades earlier, Nicholas Cook authored *A Guide to Musical Analysis*, in which he summarized and applied several techniques including Schenkerian, set-theoretical, and psychological approaches.[14] He begins with a chapter on "traditional methods" of analyzing the form and harmonic content of a piece of music. At one point, Cook discusses two common ways of representing harmonic relationships: figured bass and Roman letter (Roman numeral) analysis. Originally intended to aid performers, figured bass indicates what notes appear above a given bass but does not relate these notes to an overall tonic. Roman numerals, on the other hand, relate notes not to the bass

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[13] Ibid., 237.
[14] Nicholas Cook, *A Guide to Musical Analysis* (New York: W.W. Norton and Company, 1987).

but to the root of the chord, which is then situated against the tonic. For this reason, Cook declares Roman numeral analysis to be the "more powerful analytical tool."[15]

While this primer may not strike us as especially new or interesting, it briefly touches on the question of technology's impact. Roman numeral analysis puts one through a two-stage process of identifying roots and chord members, and then relating the resulting structure (the chord) to a governing tonic. More interesting is when Cook demonstrates to the reader how to apply and think with this technology. Speaking on the opening to Beethoven's "Waldstein" sonata, Cook puts himself in the shoes of an analyst equipped with Roman numeral technology:

> The first phrase spells out IV – V^7 – I of G. And the second phrase spells out the same chord series, only in F. What are we to make of this? Does it mean that there is a modulation between bars 4 and 5? If we say this, then as we continue we will find that the music is a patchwork of different keys and the piece will come out of the analysis looking a complete muddle. Then should we regard everything as really being in C, and so analyze the first eight bars as I – H̶^{7} – V – ^{b}VII – I^{b7} – IV? But this is not sensible, because the chord-symbols no longer demonstrate the similarity of harmonic pattern between the first two phrases.[16]

Cook decides that the best way to proceed is to apply Roman numeral analysis hierarchically, as shown in Figure 1-3. For example, the notation V (IV – V^7 – I) indicates that, within the key of V (G major), we have the chords IV – V^7 – I, a progression that is repeated in IV (F major) starting in m. 5. His comments on this figure speak directly to the benefits and limitations of this technology. The advantage of Roman numerals, of course, is that unlike figured bass notation, they account for the harmonic context in which any chord appears. Or, to reframe things from the analyst's perspective, the user quickly realizes the technology will not work unless they take this

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[15] Cook, *A Guide to Musical Analysis*, 18.
[16] Ibid., 18–19.

context into consideration. Cook believes that Roman numerals capture well our

experience that the C-major chord in m. 1 sounds different from the one in m. 5. But the

technology is limited in that it does not account for the fact that listeners in real time are

unlikely to perceive the opening chord as IV of V. In stating that Roman numerals may

cause one to misrepresent their musical experience, Cook is acknowledging the potential

of technologies to work for and against us, enabling us to communicate intuitions but

perhaps at the risk of overstating them.

Figure 1-3: Nicholas Cook's Roman Numeral Analysis of Beethoven's "Waldstein" Sonata

Bar	1	V	$(IV - V^7 - I)$
	5	IV	$(IV - V^7 - I)$
	9	V	
	14	V	$(IV - V^7 - I)$
	18	VI	$(IV - V^7 - I)$
	22	~~III~~	$(\text{IV} - V^7 - I)$

What I want to do in this project is pursue this inquiry further, by implementing

additional tools and offering more extended demonstration of their effects. Although

Cook's journey through the beginning of the "Waldstein" is suggestive, his didactic aims

differ from what I hope to accomplish in my analyses. The excerpt just quoted is

intended to inform the reader about some common methodologies (hence the title of his

book.) Cook adopts the persona not of an explorer, curious as to where these tools might

take her, but of a teacher imparting his knowledge to students by way of guiding

questions. By contrast, I attempt, to the extent it is possible, to position myself as a

student exploring and experimenting with newly acquired tools. Whether or not this is

feasible or persuasive is taken up in part three, which lays out the strategy taken in the remaining chapters.

In recent years, some of the most widely used, and frequently discussed, technologies have arisen in conjunction with the so-called *New Formenlehre*. This term refers to the renewed interest in theories of musical form, led by William Caplin's theory of formal functions and James Hepokoski and Warren Darcy's Sonata Theory. (These technologies are described and implemented in chapters four and five respectively.) Much of the discourse generated within this burgeoning subdiscipline of form studies concerns the different priorities, concepts, and terminologies of these two theories— investigations which supplement the countless analytical essays that employ these techniques in studying a wide range of compositions. Among the issues that continue to spark debate are the necessity of an expositional subordinate theme, the relative importance of thematic content in musical form, and whether the closing theme is a viable category.[17]

One recent effort to unpack some of the underlying conflicts between different approaches to form, in light of debates within the *New Formenlehre*, comes from Joel Galand, who observes how theories of form often center on one or more governing parameters. He invokes Roman Jakobson's concept of the "dominant" to refer to that factor—whether it be harmony, grouping structure, cadences, or caesuras—that is

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[17] Some of these concerns are addressed in Nathan Martin, review of *Musical Form, Forms, and Formenlehre: Three Methodological Reflections* by William Caplin, James Hepokoski, and James Webster, *Notes* 67 (2011): 559–563. Martin concludes his review-essay by enumerating some unsettled questions, including "what aspects of music are truly form defining?"

emphasized.[18] I find this notion especially suggestive for reframing theories of form as technologies that actively guide our analytical pursuits. Having identified the dominants of a particular technology, we can explore the implications of privileging this factor in analysis. Rather than enter the debate by proclaiming my own stance—say, by arguing which dominants any adequate theory of form should recognize—I want to consider the implications of adopting the theories as they currently exist. That is, *if* we absorb the nomenclature, apparatus, and dominants of a given technology, what does it do for us as analysts? What kinds of experiences, insights, and readings does it make possible?

I submit that even though form scholars—indeed, most musicologists nowadays—acknowledge the potential of their tools to impact analytical experience, they rarely offer glimpses into their own experiences as tool-users, often choosing instead to generalize about the impact that rival technologies have on others. Commenting on Hepokoski and Darcy's technology, James Webster asks "whether the new analytical and hermeneutic (meta-)language and the associated apparatus [of Sonata Theory] yield comparably rich analytical benefits."[19] In believing dialogic form—a central concept of that technology—to be "scarcely necessary" for confronting even the most formally problematic movements, Webster is declaring a non-relationship between technology and analysis. In a telling footnote, Webster recognizes that equally serious charges could be lobbied against himself, and just as easily defended by way of anecdote:

> The same objection has been made against my 'multivalent' method. And in fact, my results could also be obtained by 'normal' methods, given a sufficiently attentive

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[18] Joel Galand, review of *Elements of Sonata Theory: Norms, Types, Deformations in the Late Eighteenth-century Sonata,* by James Hepokoski and Warren Darcy, *Journal of Music Theory* 57 (2013): 383–418.

[19] James Webster, "Comments on James Hepokoski's Essay 'Sonata Theory and Dialogic Form,'" in *Musical Form, Forms, and Formenlehre: Three Methodological Reflections*, ed. Pieter Bergé (Leuven: Leuven University Press, 2009), 99.

observer. Nevertheless, as I say regarding a non-congruity in the *Jupiter* that I hadn't noticed until I applied the method, "this is the kind of thing the multivalent method encourages one to see" [>134]. Obviously, Hepokoski has available the analogous argument in favor of 'dialogic' formal thinking.[20]

Hence, the reason these authors can speak freely against their opponent's technology while touting the strengths of their own: there exists no systematic or empirical study of how users directly benefit from the application of a given method. Webster's multivalent approach—which, he insists, is a method and not a theory—allowed him to recognize an observation that had previously eluded him. Unfortunately, he does not offer a before-and-after perspective on his experience that could illuminate how the technology guided him to this discovery. What method, if any, had he applied the first time around? How else was his analytical pursuit altered, enhanced, or complicated once he equipped the multivalent technology?

Lastly, this project is animated by the belief that analysis constitutes a personal experience between music and the people who engage with it. Writers such as David Lewin, Marion Guck, and Joseph Dubiel have written about their own music-analytical engagements, in which they speak candidly about their thought processes, intuitions, and bodily responses. Here, I mention just a few essays whose approaches resonate in significant ways with the present study. In her seminal article "Analytical Fictions," Marion Guck argues "that musical analyses typically—necessarily—tell stories of the analyst's involvement with the work she or he analyzes."[21] She examines analyses by Edward T. Cone, Allen Forte, and Carl Schachter, paying special attention to their use of language in constructing stories or "fictions" about music. She observes how the technically precise writing in Forte's analysis of Brahms' *Alto Rhapsody* mirrors that of a technical report. Forte, she observes, attempts to minimize his visibility as a

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[20] Webster, "Comments on James Hepokoski's Essay," 117 n. 9.
[21] Marion Guck, "Analytical Fictions," *Music Theory Spectrum* 16 (1994): 217–30.

participant in the analysis by writing in the passive tense, and by avoiding the word "I" through various substitutes.[22] Guck argues that music analysts—whether consciously or subconsciously—choose different kinds of language depending on the story they want to tell about their involvement with music. In the chapters that follow, I attempt to bring out, rather than downplay, my own involvement with music and technology. Yet instead of reconstructing my experience from an after-the-fact examination of scholarly writing, I attempt to explore this issue during the process of working through the analysis.

Here, a more recent essay by Guck, "Analysis as Interpretation," more closely models the kind of self-reflective prose style that I had found suggestive in Cook's pedagogical writing. Toward the end of her article, Guck talks the reader through her own experience with two passages from Haydn's piano music. Her aim is not to demonstrate a particular analytic method in action, but to reflect upon what the music does to her and for her as she performs it. Describing her experience of the suspensions that open Haydn's Sonata in Ab, Hob. XVI: 46, Guck writes:

> The melody's suspensions, curiously, seem to secure each step for me as much as they make me wait for the next. Each resolving step holds my attention in the trill, but then the move back up to the prior suspension note turns away from the line's tendency. The return downward, even if now a suspension, secures my place while I think ahead to the next resolving step down. If strings of suspensions typically direct one's attention always ahead in the line toward the resolution and next step, Haydn's trills and decorations counteract that inclination—I'm caught up as I play each step.[23]

In this excerpt, Guck narrates her own personal involvement with the piece, describing the sonic, conceptual, and tactile effects of this engagement. She reports being struck by the

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[22] Guck observes how noun phrases like "the essay" or "the example" serve as proxies for the analyst. Expressions like "harmonic configurations arise" resemble Hanninen's locution "traversals proceed." Guck, "Analytical Fictions," 221.

[23] Marion Guck, "Analysis as Interpretation: Interaction, Intentionality, Invention," *Music Theory Spectrum* 28 (2006): 205.

opening turn figure and F appoggiatura, detailing her experiences with both the full score as well as with an outer-voice reduction. But even here we are told little about the analytical tools that guided her experience, despite her use of theoretical terms such as tonic, dominant, and suspension. Instead, the technology is subsumed under the first part of what Tia DeNora calls a "human-music interaction"[24] or, in Guck's terms, a "meeting between some individual and some music."[25] Instead, I heuristically conceive of technology as a separate node of influence, a conceptual tool that mediates how we do analysis, and what we take from it.

The analyses in this dissertation also resemble David Lewin's extensive—and recently published—analytical essay on Schubert's *Morgengruß*.[26] This essay, spanning over 100 pages and richly illustrated with graphs and musical examples, highlights some phenomenological implications of music analysis, many of which Lewin introduced in his well-known article from 1986.[27] In the full essay, Lewin guides the reader through the twenty-four movement song, helping them refine, contextualize, or rethink their aural intuitions.

Lewin shows a willingness to think critically about each step in the analytical process, to interrogate how one's intuitions motivate analytical statements, and to consider alternative readings. In his introduction to Lewin's essay, Richard Cohn notes how Lewin "draws the reader into his deliberate processes" and "shines a persistent light on the analytic process itself."[28] Lewin constantly tests out the various reductions and sketches against his ear, noting how they affirm or destabilize earlier aural impressions. Although I place less weight on aural perception

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[24] Tia DeNora, *Music in Everyday Life* (Cambridge: Cambridge University Press, 2000), 22.
[25] Guck, "Analysis as Interpretation," 191.
[26] David Bard-Schwarz, Richard Cohn, and David Lewin, *David Lewin's Morgengruß: Text, Context, Commentary* (Oxford: Oxford University Press, 2015).
[27] David Lewin, "Music Theory, Phenomenology, and Modes of Perception," *Music Perception* 3 (1986): 327–92.
[28] Richard Cohn, "Introduction," In *David Lewin's Morgengruß* (Oxford: Oxford University Press, 2015), 2.

than Lewin does, I find this experimental impulse attractive for thinking about the effects of our tools. Moreover, Lewin is aware of the potential for language to inhibit the potential meanings of musical events.[29] To claim, for example, that a chord "is" F# or "is" the dominant may inappropriately shut down other meanings this event may have for a listener. This point (which has been made by others) is relevant to the current project is that different technologies have their own terminology. As such, using them affects which aspects of music we attend to (and how) as well as the words we enlist in doing so.

Third, our analytical essays take interest in the same imagined persona—that is, an analyst with basic, but not extensive, knowledge of music theory. Lewin imagines his readers as having "exposure equivalent to an academic semester's work in a basic harmony course," and who can also perform the musical examples that populate the text. In this project, I draw a distinction—about which I will have more to say in part three of this chapter—between a preliminary analysis and one that is technologically mediated. The preliminary analysis adopts the vantage point of someone familiar with concepts such as cadence, dominant, and scale degrees, akin to the sort of reader Lewin envisions. In the latter scenario, the analyst has now acquired the concepts, techniques, and language of a particular technology.

Yet in many respects, our outlooks upon music analysis diverge considerably. About two-thirds of the way into his analysis, Lewin presents a "methodological rule-of-thumb:"

> Every valid analytic statement is of the basic form "I hear this about this specific piece," as qualified by an implicit "and I think you can too."[30]

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[29] "A large part of the conceptual problem arises from the fact, I think, that the logic of the musical experience is not completely congruent to the logic of (the English) language." Lewin, *Morgengruß*, 50.
[30] Ibid., 97.

He goes on to give several examples of non-analytic statements, such as "there must be a pulse at the two-measure level somewhere between measure 153 and 157," along with claims that begin with "In *Lieder*…" or "Conventionally, …."[31] These are not valid analytic statements because they do not meet what Brian Kane calls the "evidential criterion," which requires statements to "describe some impression that was immanently heard by the analyst."[32] An analysis such as *Morgengruß* is intended to help one "hear the piece better," although Kane rightly points out how Lewin also uses the essay "to develop and expand his methodological views concerning analysis generally."[33] My personal stance toward analysis is that it is an intrinsically rewarding activity, whether or not the analyst's actions, observations, statements correspond to aural impressions. Furthermore, I am not interested in classifying statements as either analytically valid or invalid. Instead, I care about how different analytical tools enable us to say new things, to make new statements about a piece of music, regardless of whether they are deemed analytical, descriptive, theoretical etc.

Consequently, my analyses in these chapters are not aimed at enriching one's hearing—though they may certainly have that effect—but at foregrounding the potentialities of some select analytical tools. Thus, although Lewin and I envisage a reader with similar capabilities, we imagine them doing different kinds of work. Lewin asks his reader to consider how their initial aural impressions are enhanced or challenged upon working through the analysis. By contrast, my reader (analyst) is asked to consider how their initial analytical experience is enhanced or

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[31] Lewin, *Morgengruß*, 98.

[32] Lewin's second criterion is called the "communicative criterion" by Kane, which holds that valid analytic statements "must be intelligibly communicated through some manner of presentation, since it makes a claim on the other to hear it as well." Brian Kane, "The Madeleine and the Rusk," In *David Lewin's Morgengruß* (Oxford: Oxford University Press, 2015), 134.

[33] Kane, *The Madeleine and the Rusk*, 132–133.

challenged upon reanalyzing the same music using different tools. Each chapter thus constitutes a journey whose starting and ending points are analysis.

To summarize, what distinguishes this project is not its suggestion that music theories—whether conceived in terms of language, conceptual tools, frameworks etc.—significantly affect analysis. Rather, I take this to be a truism that can serve as a springboard for a novel method for exploring certain instances of technology's impact. In other words, given that our choice of technology matters, how might we go about probing own experience with some familiar tools? One way of approaching this question is to experiment with bringing different tools into dialogue with music analysis. I discuss this strategy, which applies to remaining chapters in this dissertation, in part three. Before proceeding to methodological issues, it will be helpful to define several key terms, and clarify some additional assumptions that animate the project.

II. Technology and Analytical Experience

Let us recapitulate several assertions made about analysis in the preceding section. First, analysis is productively thought of as a multidimensional activity or experience involving an analyst, some music, and some technology. Second, our conceptual tools or technologies have a notable effect on how we analyze, and this influence is not fully recoverable from examining published analyses. I will devote this section to fleshing out these statements and clarifying what I mean by technology and analytical experience. As a way of framing this discussion, I begin with a brief musical example. Example 1-1 shows the first ten measures of the first movement of Mozart's Piano Sonata in Bb, K. 333. Brief commentaries on this passage by Scott Balthazar and myself follow.

Example 1-1: Mozart Sonata in Bb, K. 333, i. Measures 1–10.

    I may begin with a few of my own observations about this excerpt. The piece is written for solo piano, the tempo is marked Allegro, and the key is Bb major. Melody and accompaniment are easily distinguished, respectively occupying the upper and lower portions of the staff. The opening gesture is a stepwise descent from G to Bb, a figure that repeats down a step on beat four of m. 2. Contrasting these descents are figures that reverse the direction of the scale, moving leapwise in m. 1 and stepwise in m. 3. The melodic downbeat of each of the first five measures is not a member of the accompanying chord (C against Bb major in m. 1, F against C minor in m. 2 etc.). Moreover, these non-chord tones constitute the first sounds heard in each of the first four measures, the left hand entering with accompaniment after an eighth rest. I also observe that the first eight

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bars lie within a range of less than one octave, expanding into a higher register via a rapid

ascending scale in m. 8.

Scott Balthazar's analysis of this movement, along with his comments on Mozart's

Symphony No. 35 in D, "Haffner," are intended to show the advantages of taking a

"processive" approach to studying sonata-form movements. Instead of focusing on the

supposed polarization of tonic and dominant within sonata expositions, Balthazar suggests

a view "in which references to the tonic become progressively weakened and less

proximate while references to the dominant become stronger and more proximate."[34] He

cites theorists contemporary to Mozart such as Kollman, Riepel, and Koch, arguing that

thinking in terms of gradual changes, rather than emphasizing overarching tonal conflict,

allows us to better account for the diversity of eighteenth-century sonata practice.

Responding to a more "traditional analysis" by Robert Batt, Balthazar says:

> Although the exposition of the B-flat Sonata lends itself to a traditional analysis,
> many of its features are better illuminated within a continuous tonal process. Each
> of its sixteen thematic segments, based directly or indirectly on the first, plays a
> distinct role in rebalancing tonic and dominant. In my terms, Batt's "first theme"
> consists of two thematic segments—A and A1 (mm. 1–4 and 5–10)—the second
> elaborating the motive that begins the first, a descent from scale degree 6 (treated
> as an appoggiatura) to 1. Although these melodies serve primarily to establish and
> confirm the tonic, both contain unstable elements. Segment A consists of an
> additive, rhythmically open-ended series of one-measure motives, its cadence is
> metrically weak and melodically inconclusive, and the *gruppetti* heard at its start
> and in m. 2 hint at later passage work. A1 ends more emphatically, yet shows even
> stronger signs of forward motion. Like segment A it involves an additive series of
> motives (three two-measure units). It begins the process of departure by
> alternating tonic- and dominant-function chords and by introducing the leading
> tone of the dominant (m. 6). M. 5 makes the opening motive more restless by
> exaggerating its syncopation and in mm. 6 and 8, it elongates the prior sixteenth-
> note flourishes into quasi-transitional scales. Thus, two "transitional" features
> appear prior to that section: A1 begins weakening the tonic by giving it a mildly
> unstable context; and it signals the shift from "motivic segments" to "grouplets"

[34] Scott L. Balthazar, "Tonal and Motivic Process in Mozart's Expositions," *The Journal of Musicology* 16 (1998): 434.

by giving increasing prominence to passagework, which in prospect has little apparent motivic significance and weakens the rhythmic closure of motives in mm. 5 and 7.[35]

Comparing these two statements reveals differences in language, style, and focus while also suggesting the different priorities of the authors. Intentionally, the majority of my statements would be obvious to most musicians with even rudimentary theoretical training. This is less true of Balthazar's account, which points to things like the appearance of the "leading tone of the dominant" (E naturals in m. 6) and quasi-transitional scales in mm. 6 and 8. Furthermore, these observations are then marshalled as evidence for reading mm. 1–10, not as polarized from the material that follows but as already beginning the "process of departure." By contrast, my observations do not coalesce into a larger point about Mozart or methodology.

Now what can we deduce from these statements about our experiences analyzing this passage? Presumably, we each listened to this movement, looked through the score, and jotted down some observations. We then attempted to communicate those ideas that seemed most relevant to our own ends, excluding those that did not serve these purposes. Speaking for myself, much of my experience was not recorded in writing. For example: I noticed that there are no half notes in this passage as well as the clef changes in the left hand that caught me by surprise in m. 3. I suspect Balthazar's analytical engagement included numerous attempts to square the musical details with this processive model, though it is not possible to know without asking him. If we did, we might discover whether the processive outlook actually helped him draw connections between

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[35] Balthazar, *Tonal and Motivic Process*, 453.

transitional features of these measures and procedures that one typically associates with formal departure.

Such questions concern what I have been calling "analytical experience," a term I use to comprise all of the things that go on throughout the course of analysis, including: listening, observing, thinking, deciding, and writing.[36] To say that technology affects analytical experience is simply to claim that using it affects how one attends to music, makes decisions, weighs observations, and formulates conclusions. Crucially, this is not equivalent to the experience of listening—what is sometimes called aural or "musical experience."[37] These terms typically refer to an individual's physiological or psychological response to music as it sounds in time. [38] At the risk of bracketing off an incredibly rich literature on listening and phenomenology, my primary interest lies in the analytical process, rather than how analysis affords new ways of hearing.[39] Or to put it another way, I am less interested in the relationship between analysis and musical experience, as I am with analysis *as* experience. Although multiple factors converge in

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[36] Other acceptable terms might include analytical activity or process, though the latter tends to connote a higher degree of objectivity than may be characteristic of how analysis is normally done. On the other hand, the term process correctly suggests that analysis is an activity that happens over time, whereas experiences may sometimes be thought of as fleeting and momentary.

[37] Cook employs the term "analytical experience" in reference not to the analytical activity, but to those hearings that have benefited from prior analytical engagement—what might be called "analytically-informed experiences."

[38] Kendall L. Walton conceives of musical experience in terms of appreciating, relishing, and listening to music. "One function of an analysis specifying what we hear in a piece may be in this way to induce awareness of causes of certain elements of our musical experience in order to incorporate them in the content of other elements of it. The analysis at one and the same time explains the listener's experience and extends it." Kendall L. Walton, "Understanding Humor and Understanding Music," *Journal of Musicology* 11 (1993): 44. Again, I wish to think of analysis not as something that can explain or alter listening experience, but as an experience in its own right.

[39] Steven Rings, for example, seems more concerned with the latter. "A GIS or transformational statement...might instead help to shape a new experience (an apperception), or alter an old one, through analytical mediation." Steven Rings, *Tonality and Transformation* (Oxford: Oxford University Press, 2011), 18.

analysis, this study is especially concerned with the efficacy of our tools in mediating

that experience.

In this dissertation, an analytical technology denotes a set of conceptual tools that

informs how one analyzes a piece of music.[40] I intend it as analogous to terms such as

theory, approach, system, or method, with the advantage that it does not connote a

particular aim or scope, or suggest a level of sophistication.[41] Technologies can be

simple or complex, and can range from systematic methods for analyzing any type of

notated music to assorted suggestions for approaching a specific musical style. They may

contain unique symbols and terminology, or they may not. What matters is that use of

the technology guides the analytical process, regardless of whether it has the properties

of what we normally call a theory or method.[42]

As Figure 1-1 makes clear, technology is only one aspect of analysis, along with

the unique disposition of the analyst and the music under consideration. Even this

illustration oversimplifies matters, underrepresenting the fluidity of three components by

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[40] I am hardly the first music analyst to use the term technology in this way. Rings, for example, uses the term throughout his study of *Tonality and Transformation*, which he describes as "an exploration of the ways in which transformational and GIS technologies may be used to model diverse tonal effects and experiences." Rings, *Tonality and Transformation*, 1.

[41] Despite the heuristic intentions of this definition, one may problematize using the terms "technology" and "conceptual tools" interchangeably. Henry Klumpenhouwer observes a distinction between "technology" and "methodology" in Lewin's *Morgengruß* essay. Technology, Klumpenhouwer writes, denotes "the formal apparatus of an analytical approach: its objects, its symbols, its protocols and policies for application." Methodology is "something like the philosophy of music analysis…matters that extend beyond the technical apparatus of analysis." Although certain theories tend to associate with particular technologies, they are not the same thing. He goes on to say that "analytical technology is conceptually empty," since one must "transfer the general concepts of a theory to particular musical contexts." While conceding the reasonableness of such distinctions, I find them less useful for the present purposes, which is to compare how different approaches—all of their techniques, language, symbols, and concepts included— mediate the activity of analysis. Henry Klumpenhouwer, "Technology, Methodology, Theory, and Analysis," In *David Lewin's Morgengruß* (Oxford: Oxford University Press, 2015), 182.

[42] Recall also Webster's claim that his multivalent approach is not a theory but a method. In my view, all three of the approaches explored in *Musical Forms, Form, and Formenlehre* constitute analytical technologies.

assigning them separate nodes in the diagram. Analytical experience, then, is not only

"technologically mediated," but depends on a confluence of factors—physiological,

psychological, cultural, and otherwise—that are beyond the purview of this study, with

its narrow concentration on certain tools used in analysis. Nonetheless, I hope that these

practical maneuvers will help us interrogate how these aspects may work together.

Beyond its pragmatic advantages, the term technology is especially suggestive in

light of its usage within sectors of the field of communications studies. While I cannot

summarize here the vast literature devoted to the study of technology, even familiarizing

ourselves with one perspective from outside of musicology may be suggestive. Here, I

summarize some ideas by Neil Postman, a prolific and influential writer on technology

and society. His views should not be taken as representing any disciplinary consensus,

but as providing some food for thought in thinking about music-analytical tools.

In contrast to the view that humans use technology for their own purposes, Postman

argues that such purposes are largely determined by technology. He says, "Embedded in every

tool is an ideological bias, a predisposition to construct the world as one thing rather than another,

to value one thing over another, to amplify one sense or skill or attitude more loudly than

another."[43] This viewpoint is expressed by the adage "to the man with a hammer, everything

looks like a nail." Postman puts it more strongly: "New technologies alter the structure of our

interests: the things we think *about*. They alter the character of our symbols: the things we think

with."[44] Without going so far as to assert an entirely deterministic view, in which technologies

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[43] Neil Postman, *Technopoly: The Surrender of Culture to Technology* (New York: Alfred. A. Knopf, 1992), 13.
[44] Postman, *Technopoly*, 20.

exert *total* control over society, Postman makes it clear that technologies have serious

ramifications—both positive and negative—that must be acknowledged.

Postman details how technologies have historically, and to varying degrees, influenced

the social worldviews of the communities that use them. On one end of the spectrum are ancient

"tool-using cultures," whose inventions did little to alter the prevailing ideological climate. The

Roman aqueduct provides an example of a technology that, while sufficiently advanced and

successful, functions to serve, rather than undermine, the interests of that society.[45] By contrast,

the mechanical clock fundamentally altered conceptions of time and production in ways that

could not have been imagined by their inventors—thirteenth-century Benedictine Monks—

whose modest ambitions were to more regularly adhere to daily hours of devotion within the

monastery. Before long, the clock had become a primary means of regulating human labor,

which, paradoxically, most benefited those who devoted themselves to capitalist rather than

spiritual pursuits.[46] Once unleashed into a culture, technology's influence cannot be controlled

by its inventors.

Inventions such as these may provide useful metaphors for characterizing music-

analytical approaches. Perhaps, as with the aqueduct, our tools help us accomplish our analytical

aims whatever they may be. For example, in *Music as Discourse*, Kofi Agawu seeks to provide

listeners with "a mechanism for organizing their intuitions" as well as criteria that "capture

salient features of Romantic repertoire and can therefore convey their truth content."[47] Such

comments bring to my mind the analogy of a metal detector, alerting us to musical insights that

lurk beneath the surface. This view conceives of technologies as relatively neutral, or at least

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[45] Ibid., 24.
[46] Ibid., 15.
[47] Agawu, *Music as Discourse*, 11.

minimally intrusive upon one's 'own' analytical approach. Hanninen, for example, devotes

several paragraphs to defending the neutrality of her theory:

> As for matters of philosophy, the theory is equally committed to precise language and to the interpretive autonomy and imagination of the individual analysts who use it. First and foremost, it is an interpretive tool. The theory is not a methodology, but a multidimensional conceptual space within which one does analysis and thinks about music analytically; its purpose is to support, not guide, the analyst's thought process. The theory does not tell the analyst what to think or hear, nor does it predict or prescribe particular analytical results…what it does do is provide a relatively neutral but precise and highly flexible language and conceptual framework that supports rigorous analysis across a wide range of musical applications. Instead of leading the analyst toward a particular interpretation, the theory offers means to develop and express the analyst's own interpretation […][48]

Hanninen repeatedly contrasts her theory with methodologies that guide the analyst, or,

still worse, instruct them what to think. Zachary Bernstein, in a review of Hanninen's book,

seems to agree with her assessment, concluding that "the theory's effect is not instructive as

much as it is consciousness-raising."[49] Indeed, there is much to admire about Hanninen's, as

well as Agawu's, respect for the reader's ability to formulate their own interpretations.

Nonetheless, I maintain that even Hanninen's theory is best thought of as a technology to the

extent that it necessarily mediates one's analytical experience. Its potential for "consciousness-

raising" is itself an effect with implications for how one proceeds. It is easy to imagine readers of

Hanninen's book, having interrogated their own criteria in light of her technology, finding

themselves analyzing in new, perhaps more self-aware or critical ways. In any event, such

speculations are outside the purview of this dissertation, with its interest in concrete acts of

analysis. The bulk of this project is comparative and empirical, rather than theoretical or critical.

Its aim is not to criticize existing approaches or propose new ones, but to explore how the analyst

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[48] Hanninen, *A Theory of Music Analysis*, 38.
[49] Zachary Bernstein, review of *A Theory of Music Analysis: On Segmentation and Associative Organization*, by Dora Hanninen, *Music Theory Online* 19 (2013).

makes use of, responds to, and is guided by certain technologies. If Agawu is correct that "analysis may bear a complex relationship to technology," than we may as well begin by considering our own relationship with these tools.[50] The remaining pages of this chapter lay out one method for examining the effects of technology on analytical experience.

III. Method

Formulating a strategy for assessing, in a general, non-scientific way, the impact of technologies on analysis proves to be a difficult task. For how can we distinguish between the various factors that contribute to one's analytical experience, foregrounding technology's impact over that of the other components of Figure 1.1? While the three nodes are in reality inseparable, we can nonetheless draw the following practical distinctions in order to help bring technology's impact into focus. Music, in both its physical sound and its visual representation in the score, provides the fundamental materials for any analytical investigation. There is also a person who carries out the analysis, whose experience is circumscribed by their particular knowledge and abilities. Since I perform each of the analyses in this study, it is important to be clear about my own position, the baseline skills that are then augmented by acquiring a new technology. To the extent possible, I try to enter each chapter—and each analytical task—in a technologically-naïve state, aware that this is but a useful fiction. In this state, I draw on traditional methods, recognizing the presuppositions, skills, and techniques I have acquired for analysis, but positing that they are nonetheless distinct from those that comprise the particular technology. I make no claims of naiveté in the ethnomusicologist's sense. Any language—whether vernacular or specialist—that is used in analysis cannot pretend to capture some musical reality. This

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[50] Agawu, *Music as Discourse*, 6.

realization is observed by Ferdinand Saussure, discussed in chapter two, and put succinctly by

Kevin Korsyn who reminds music scholars that "language does not merely report prelinguistic

experience."[51] Since analysts necessarily bring their own knowledge and experience into any

musical encounter, there can be no truly naive listeners nor naive analysts.

Preliminary vs. Technologically-Mediated Analysis

In each of the following five chapters, I undertake two analyses of the same piece of

music. One is technologically-mediated, a process of attending to and formulating some

conclusions about music based on the particular technology discussed in that chapter. The other

is "preliminary," in that it does not work with that chapter's technology. Instead, it takes the

vantage point of someone with a basic literacy in Western tonal music and some theoretical

training apart from the specialized tools considered in that chapter. In my preliminary analyses, I

rely frequently on notions of tonic, dominant, cadence, seventh-chord, motive, modulation, as

well as scale-degree and Roman numeral technologies. Here, I do not mean to suggest that these

ideas are not themselves conceptual tools (technologies), but that relying on them in an initial

analysis can help set the specific technologies into relief. The goal of this preliminary work is to

provide a baseline from which to assess the effects of each technology. Having performed a more

'traditional' analysis of each work, we then explore the efficacy of applying a new technology,

considering its potential to bring out salient aspects of the music, or engender insights that may

not have occurred to us the first time around.

I aim at transparency in my analytic movements and, although not every statement

correlates to an aspect of hearing, I try to avoid maneuvers that are unlikely to correspond to how

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[51] Kevin Korsyn, *Decentering Music: A Critique of Contemporary Musical Research* (Oxford: Oxford University Press, 2003), 36.

a reasonable person listens to, thinks about, or otherwise appreciates this music. Neither I nor

Balthazar, in our comments on K. 333, pointed out how pitch class C occurs 23 total times, a

prime number, and in fact no commentator on Mozart's sonatas has made this observation, of

which I am aware. Fred Lerdahl and Ray Jackendoff have argued that certain relationships such

as comparing every tenth note, are perceptually irrelevant, which suggests certain constraints to

the kinds of relationships with which analysts are concerned.[52] This shared commitment to the

"music itself" informs our analytical decisions, guiding us toward certain actions and away from

others. Although there is an infinite variety of actions one could take (and therefore, infinite

experiences one could have), I am primarily concerned with those analytical behaviors that relate

in some capacity to the music, in either its sonority or visual representation.

Outline of Chapters

Each chapter is organized around a particular technology and a single musical work, in

most cases a single large movement. Although I make a concerted effort to learn each

technology well, so as to not misrepresent its tenets or apply it haphazardly, there is always an

unbridgeable chasm between how inventors and users understand technology. To equip a

technology is to construct, for oneself, a version of the original framed in terms of the user's

knowledge and experience. Whenever possible, I give the authors who invented these tools

opportunities to speak for themselves. As my interest is in the present-day ramifications of these

technologies for analysts, I summarize only briefly and incompletely the history of each

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[52] "One can imagine some mathematical relationship to obtain between every tenth note of a piece, but such a relationship would in all likelihood be perceptually irrelevant and musically unenlightening." Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (1983): 2.

approach. This project is about how the tools affect the doing of analysis, not the historical process through which these technologies emerged.

For this reason, these chapters should not be taken as critiques of the tools but as reflections on the nature of the insights toward which these tools contributed. My aim is not to question the theoretical foundations on which these technologies may rest, but rather to explore the plurality of ways they work on us and for us in analysis. Even in such cases where a technology is difficult to apply or square with the musical facts, the resulting friction, I found, often provided a springboard for useful inquiries. Productive queries emerged: "What is it about using this technology that does not permit me to express what I find salient about this piece? What questions does this music seem to be asking that this technology does not help me answer?"

The five technologies I will use, in addition to the preliminary approaches, are Hepokoski and Darcy's Sonata Theory, Agawu's Paradigmatic Method, Caplin's Form-Functional Theory, and approaches suggested by Leonard Ratner and Donald Tovey. Each of these technologies dates from within the last one hundred years, while several are associated with the study of musical form.[53] Since each of these technologies have been applied to Western tonal music, I draw all of my musical examples from this repertoire. Generally speaking, I have tried to bring appropriate technologies into dialogue with apt musical examples that instantiate some of the concepts of the applied tool. At the same time, I felt that some variance between the tools and the musical examples would be beneficial. For example, I analyze the opening of Rachmaninov's Third Piano Concerto, which, while in dialogue with sonata form, dates much later (1909) than

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[53] In a recent paper, Meghan Naxer and Richard Devore propose that undergraduate students of sonata form benefit from exposure to multiple approaches. Four out of the five technologies in this dissertation are common to Naxer and Devore's study, which replaces Agawu's approach with that of Charles Rosen. Meghan Naxer and Richard Devore, "Choose Your Own Sonata Form: Adventures in Analysis" (paper presented at the Ninth European Music Analysis Conference, Strasbourg, France, June 28 - July 1, 2017).

most of the repertoire in *Elements of Sonata Theory*. In each chapter, my aim has been to pair technologies with music that, while amenable to that approach, differs enough so that the analysis does not become formulaic. Indeed, some of the most interesting experiences occur when a musical moment seems to resist the application of the conceptual tool. What follows is a brief summary of these technologies, along with the repertoire analyzed in each chapter.

Having acknowledged the influence of Kofi Agawu on my attitudes toward analysis, it seems appropriate to begin with his formulation of the "paradigmatic method" as it appears in his book *Music as Discourse*. Each of the analytical chapters is organized the method described above: preliminary analysis, introduction of a technology, and a re-analysis. In chapter two, I begin with a preliminary analysis of Brahms' Intermezzo in E minor, Op. 119 No. 2, reflecting on the process it puts me through as an analyst. Next, I introduce the "paradigmatic method," the technology to be used for this chapter. This method has its origins in structuralist thought, and finds music-analytical precedents in the writings of Nicholas Ruwet and Jean-Jacques Nattiez. The paradigmatic approach claims to be fairly neutral, allowing the analyst to identify units of repetition according to whatever criteria they find meaningful. In part three, I attempt my own paradigmatic explorations of Op. 119 No. 2, reflecting on the insights the method makes possible. I then contrast my analyses with Agawu's own analysis of this music in order to highlight the interpretive flexibility of this approach, and to foreground the personal agency of the analyzing subject.

Influential with respect to Agawu's thinking is the work of the musicologist Leonard Ratner, a number of whose ideas are mobilized for analysis in chapter three. Three of Ratner's books: *Classic Music, Romantic Music*, and *The Beethoven String Quartets*, are examined and then brought to bear on the first movement of Georges Bizet's "Roma" Symphony. Although no

single approach touches upon every aspect of Ratner's thought, I focus especially on his notions of harmonic form, sound and syntax, topic, and texture.

Chapters four and five implement the two leading theories of the *New Formenlehre.* In chapter 4, I deploy William Caplin's form-functional theory to offer a number of refinements to a preliminary analysis of Mozart's C-minor Mass, K. 427. In chapter five, I broach possibilities afforded by thinking with and through James Hepokoski and Warren Darcy's Sonata Theory. With its emphasis on long-range narrative motion, Sonata Theory helps dramatize a formal idiosyncrasy involving the cadenza in Rachmaninov's Concerto in D minor Op. 30, i.

Chapter six brings the discussion of analytical technologies full circle by considering the work of Donald Tovey. Serving as the dissertation's conclusion, this chapter investigates how his ideas, by standing in relief to current analytical methods, may offer something of an "antimethod" for music analysis.[54] Taking an approach based on Tovey's bar-to-bar analyses of Beethoven's Pianoforte Sonatas and drawing together some of his core values, I consider the benefits of a mode of analysis that favors real-time listening and musicality over theory and technique. In attending to the first movement of Haydn's Sonata in G, XVI: 27 from a Toveyan angle, I found myself acutely aware of the weight of interpretative material that had accrued in the preceding chapters. Adopting Tovey's analytical practice forces one to assess the means by which the community of analysts attempts to help listeners experience music anew.

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[54] I owe this suggestion to Kevin Korsyn (personal communication).

Chapter 2

Exercises in Paradigmatic Analysis

In the last chapter, I reframed analysis as a personal activity in which the analyst attends to some music using analytical tools or *technologies*. Using technologies affects how we do analysis, and this "doing" inevitably shapes our claims about musical styles, composers, and individual works. Rather than continue to theorize about these matters in the abstract, I argued for the need to have an analytical experience, to thoughtfully engage with music and technology. The remaining chapters respond to this need, then, not by discussing analysis in general terms but by performing and reflecting upon specific analytical acts.

In this chapter, I analyze Brahms' Intermezzo in E minor Op. 119 No. 2 using what is known as the "paradigmatic method." First, I present a preliminary analysis that relies on traditional analytical tools—Roman numerals, scale-degrees, and rhythmic reduction. In part two, I outline a version of the paradigmatic method used by Kofi Agawu for analyzing Romantic music. In addition, I offer some brief remarks on musical structuralism, in order to situate the paradigmatic method in a wider historical and philosophical context. Finally, I attempt my own analyses using this approach, noting how it affords certain actions and interpretive paths. I then summarize Agawu's own paradigmatic analysis of Op. 119 No. 2, so as to give an idea of the flexibility with which any technology can be applied. I conclude this chapter by reflecting on all three readings in light of this dissertation's central argument: that

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analytical tools, by changing how we attend to music, alter the insights and claims we make in our analyses. Wielding the paradigmatic method affects one's analytical behavior, encouraging one to attend to the musical surface, generate large amounts of data, and to graphically illustrate the relationships that obtain. At the same time, the contrast between Agawu's paradigmatic reading and my own highlights the personal nature of analysis, reminding us that technologies are suggestive, but never fully determinative of music-analytical experience.

I. A Preliminary Reading of Brahms Op. 119 No. 2

Before experimenting with the paradigmatic method, it will be instructive to approach the Intermezzo using some basic analytical tools. As will become clear, I rely upon several basic concepts of music theory—Roman numeral analysis, motives, key relations, and notions of tonic and dominant—while commenting aloud as to how these tools contribute to my actions and thought process. This reading will then serve as a baseline against which to situate the experience of paradigmatic analysis in the final section of this chapter.

Measures 1–35

The prelude begins in E minor with a recurring figure comprised of two sixteenths and one eighth note. The opening melodic interval from B to C, scale-degrees 5 and 6, sounds at the beginning of each of the first four measures and will continue to persist as an important motive throughout the piece. In measure one, the move from B to C dislodges the would-be E minor triad (i) and replaces it with a first-inversion C-major chord (VI^6). As a result, we do not hear a

complete tonic triad, since by the time B arrives on beat 2, the remaining notes, E and G, have already moved away.

Meanwhile, the bass line resembles a familiar cadential paradigm: scale-degree motion from 1, 4, 5, 1. These notes suggest a chord progression something like i ii°6 V i in the key of E minor. I decide that a rhythmic reduction will be useful for contextualizing these salient non-chord tones, and so I produce one in the form of Example 2-1. Notes that are not part of the chord are circled in the example.

Example 2-1: Rhythmic reduction of Op. 119 No. 2

Example 2-1 reveals the extent to which accented dissonance saturates the Intermezzo. In m. 1, when C resolves to B on beat 2, the underlying harmony has already changed to a ii$^{6/5}$ chord, thus rendering B itself as a non-chord tone. This trend continues into measure five, where

a downbeat B occurs over a B minor triad in first inversion. Up until now, C has occurred on the downbeat of each measure as a non-chord tone: here, it finally resolves to B, but not in a particularly convincing manner. The ascending fourth interval in the bass (A-D) emphasizes D as the root of the first chord in m. 5, in which case B becomes yet another non-chord tone that resolves to A as part of a D^7 harmony. In any case, the bass immediately ascends to D♯ and the melody soon follows suit, mimicking the B-major activity in m. 2. Only this time B major is extended (mm. 5–7) and emphasized via the bass, which alternates between local 5 and 1 (F♯ and B).

After a brief sojourn through B major, the initial motive resounds in E minor in its initial register. Although mm. 5–7 hovered around the notes D♯5 and F♯5, we never hear E5 in the upper voice until m. 8, where it sounds over a non-tonic chord. There have been many opportunities for D♯ to resolve upward, including mm. 2, 5, 6, 10, and yet no tonic chords coincided with scale-degree 1 in the melody. The chromatic ascent in m. 12 hints at a long-awaited climax, as if E5 will coincide with a strong cadence in E minor. Instead, an E^7 chord emerges, which brings about changes in rhythm, harmony, and dynamics. The recurring rhythm gives way to a new triplet pattern, which obscures the obvious fact that the bass line is articulating the same scale degrees, 1-4-5. Moreover, the new key of A minor is obscured by the frequent presence of F, scale-degree 6, just as C had undermined the sense of E minor in the opening bar. As the music proceeds, the tonality shifts toward major, the bass notes C, F, and G in m. 15 instantiating the 1-4-5 bass paradigm in C major. Two measures later, the music briefly

comes to rest on the dominant of C major, but not before an ominous Ab (local b6) intrudes in an inner voice.

Once again, Brahms avoids the expected resolution to the local tonic, resolving instead to Ab on beat 3 of m. 17. The prior two key areas, E minor and A minor, featured no root position tonic triads, due in part to the appearance of localized scale-degree 6 (C and F). Even though the presence of only C and Ab could suggest both Ab major and F minor, most of the melodic utterances so far have begun on scale-degree 5. As a result, I hear the C on beat 3 of m. 17 as 5 in F minor.

What follows is a rhythmically altered two-bar statement of the opening motive, first in F minor, and then in tonic. The material from mm. 22–28 resembles that of mm. 5–6, where a brief sojourn in B-major was bookended by the E minor theme. Although, B major occupies more space this time around, it seems to be more fully bound up with E-minor material. For example, a scalar descent from B to E occurs between mm. 23–24 as the bass leaps from B to E, and then continues up by step. As shown in Example 2-2, consideration of just the outer voices strongly implies the tonic.

Example 2-2: Outer voices of mm. 23–24

But the inner voices suggest otherwise. G does not represent the tonic triad but rather belongs to the family of b6s that have appeared throughout the Intermezzo, this time adding minor color to the B-major sonority. It is not until beat 3 of m. 28 that E minor is restored, as A natural recontextualizes the other notes (B-D♯-F♯) as dominant functioning. This intuition is confirmed in mm. 29–32, as the main theme spins forward with increasing intensity, landing squarely on a root-position tonic chord on the downbeat of bar 32. Once again, however, the tonic chord does not feature scale-degree 1 in the melody. By the time a melodic E arrives on beat 2 of m. 32, the tonic has been undermined via scale-degree 6 in the tenor, turning a would-be E major chord into an augmented triad (E-G♯-C).

Earlier tensions are also revived in these final bars. The conflict between major and minor is brought into focus in mm. 32–33: the E-minor climax is immediately followed by tonic major, only to revert back to minor the subsequent measure. Moreover, the melodic descent from G♯-G-F♯ and harmonic conclusion on B^7 recalls the earlier situation from mm. 24–28, in which E and B compete for tonic status. Did we modulate from i - V, in which case the G-F♯ resolution is just one last reminder of the 5/b6 motive? Or does the A natural in bar 35, like its forebear in m. 28, signal the retaining of E minor, despite its inability to end on scale-degree 1?

Measures 36–105

Following the B^7 chord, a quarter note B introduces the next section. The announcement of E major, rather than E minor, is first made apparent by the C♯ on the downbeat of m. 36. Prior to this, I was uncertain both as to the upcoming key, as well as the direction in which the

music was proceeding. The lone B on beat 3 of m. 35 gives no advance notice of the shift to E major, and since it occupies the same register as the pickup that began the piece, could easily have signaled a repeat of the initial section. For these reasons, as well as the significance of scale-degree 6 up to this point, the C♯ is particularly salient as an indicator of modal shift and forward progress.

Measures 36–39 resemble the opening theme, now in major and rhythmically elongated so as to occupy twice the amount of measures. The plodding sixteenth-note rhythms from the opening are no longer present. Instead, this passage, marked *molto e dolce*, has a steadier and more lyrical rhythmic profile. The arrival of D♯ on the downbeat of m. 39 seems far less intrusive than when it appeared in m. 2. The passage is more open than its minor version; it breaths a little more. Instead of remaining trapped within the octave from F♯4 and F♯5, this melody leaps up to G♯5 in bar 40 and even higher in the measures that follow.

Despite this registral expanse, the music seems unable or unwilling to articulate scale degree 1, except in non-tonic contexts. In leaping up to G♯5, the melody overshoots the tonic, only to step down to it in the next measure, by which point C♯m has now been tonicized via the preceding chord ($V^{4/3}$/vi). Thus, by the time we hear scale-degree 1 in the melody, an accompanying vi chord alters its sound from below. In retrospect, the C♯ minor chords at m. 41 and 49 can be heard as initiating a modulation from E to B, functioning as a predominant ii chord in the new key. In its first instance, the ensuing V^7 (F♯^{7}) chord in m. 42 is not followed by its local tonic (B) but by an A major chord. Once again, it is a melodic C♯ that prevents the tonic from being articulated, grating against the B that resonates in the bass. When the C♯ minor

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chord appears in m. 49, now up an octave, it is immediately followed by V^7-I, emphasizing B harmonically and melodically. Indeed, m. 51 is one of the only measures that consists exclusively of chord tones. I am reminded of B major's earlier appearances in m. 2 and in mm. 5–6, which preview this strong arrival in m. 51.

The next phrase contrasts with the preceding measures in several ways. First, it reverses the upward contour of the previous section, moving downward from B to A in the upper voice. Second, the C naturals in the left hand simultaneously undermine the authority of both E major and B major, moving flatward toward the key areas articulated earlier in the piece (E minor, A minor, and C major). The clash between the bass C and melodic B on the downbeat of m. 52 verticalizes what has become a prominent motive. Only this time, it is B that is the non-chord tone, suspending the root of an A minor triad. In terms of phrasing, the melodic idea repeats every two measures, as it did at the beginning. I experience mm. 56–59 as cascade of downward momentum toward C♯ minor, the final two notes of m. 59 (B♯ and A) sounding as the leading tone and local b6 respectively.

Thus, we can trace the evolution of C♯ in this middle section from its initial role as a melodic embellishment (m. 36), to a functional harmony (ii of B in m. 49), to a tonic in its own right (m. 60). As with the earlier key areas, C♯ major is colored by its own local b6 (A) in mm. 59–60. In retrospect, one can hear the C♯ chord in m. 60 as a V/ii, preparing the return of the E-minor tonic. The remainder of the phrase most closely resembles mm. 44–51, but seems to combine elements from various parts of this major section (mm. 36–59). It begins in the register of the first phrase (mm. 36–43), then shifts up an octave like the second phrase (44–

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51), while the bass sounds a downward cascade of eighth notes like the third phrase (52–59). The D♯ from m. 40 and 48, though filtered out from the rhythmic reduction, is replaced by D natural in the corresponding m. 64, recalling the Neapolitan tinge from m. 59.

It is at this point of synthesis that we finally attain a tonic E-major chord with scale-degree 1 firmly in the melody. Upon hearing mm. 68–72 (first two beats), it appears the piece might be coming to rest in the tonic major. However, the intrusion of G natural on beat 3 of m. 72 signals that this is not the case, ushering in a return to the E-minor theme. I find myself comparing this moment to two events that occurred between mm. 33–36. In m. 33, a melodic G♯ was displaced by G natural over a fully-diminished seventh chord. More subtly, however, is the way in which the ensuing E-major theme was preceded only by an isolated B on beat 3 of m. 35, and it was not until C♯ one beat later that the major mode arrived. By contrast, the E-minor reprise has already been suggested by the G natural in m. 72, one beat before the C natural arrives.

The music that follows restates much of the material from the first section (mm. 1–35). Thus, I find myself constantly shifting between the first and last few pages of the score, looking back and forth as if watching a tennis match. The first observation that emerges from this kind of comparison is that the music is now slightly truncated, omitting the material from mm. 4–11. Instead, we hear an 'early' arrival of the theme in A-minor, without the brief emphasis of B major. The A-minor utterance has changed slightly, the triplet rhythm now replaced by the eighth-note, two-sixteenth note pattern that has dominated much of the piece. Otherwise, few changes have been implemented: mm. 83–99 are identical to the corresponding mm. 18–34.

As the Intermezzo nears its end, I eagerly await the resolution of the modal question that has interested me since the appearance of tonic major m. 36: will E minor or E major have the final say? The fact that I am invested in this outcome is surely due, in part, to expectations formed through frequent exposure to minor-mode pieces by Brahms and other canonical composers. That is, I'm aware that minor-mode pieces often modulate to the relative major, and sometimes conclude in the parallel major. Conversely, it is exceedingly rare to find major-mode pieces that end in minor, although it does occur.[1] So even before encountering the specifics of Op. 119 No. 2, I am already preconditioned to attend to the interplay between E minor and its possible major correlates (G and E major).

Once again, we hear the E-minor climax, followed by a juxtaposition of G♯ and G natural in m. 98, the vii^{o7}/V resolving to B^7, which readies the music for an arrival on either E major or E minor. Before the chord can resolve however, the alto sounds a C♯, tipping us off to the shift to major. It is ironic that scale-degree 6, which continually obscured the local key areas, is now an agent of clarity. The second ending of B returns here without the interruption of G natural. This time, G♯ is tied from mm. 104–105, helping to secure an E-major ending to this piece.

Reflection on Preliminary Analysis

This reading makes extensive use of scale degrees and Roman numerals, two elements often found in the basic toolkits of most music analysts. As a tool that describes the relationships between pitch classes with respect to a governing tonic, scale degrees afford me

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[1] In fact, Brahms employs this strategy in Op. 119 No. 4, which begins in Eb major but ends in Eb minor. An earlier example can be found in Chopin's B-major Nocturne Op. 32 No. 1, which, in most editions, concludes in B-minor.

possibilities for doing analysis, and I use this technology to form ideas about both local and long-range happenings. I am especially drawn toward scale-degree 6 and find myself asking questions about its appearances. What harmonies does it tend to suggest/obfuscate? Where does it show up metrically? Thinking in terms of scale degrees necessarily involves attending to other musical criteria. Having accorded significance to the interplay between scale-degrees 5, 6, and b6, I become sensitive to individual instances of these entities. Thus, I find the C♯ in m. 100 especially salient not only in relation to m. 35, but also in light of the many other instances of 6/b6 from which it differs in purpose.

Roman numeral analysis also played a central role in constructing this reading. It strikes me, for instance, that scale-degree 1 rarely occurs in the melody over a tonic chord. Why I am so concerned with the inability of the music to accomplish this I am not sure, but in any case, this fixation is made possible only by combining these analytical tools. I also observe that there are no E-minor triads between mm. 1–12 that do not feature accented dissonance of some kind. Here I am reminded of Chopin's Prelude in E minor, Op. 28 No. 4, which also eschews root position chords in favor of those in first inversion. This piece is also similar in terms of its emphasis on scale-degrees 5 and 6 in the melodic line, and its seeming inability to reach and sustain a higher plateau. Although such intertextual relationships could be explored further, the preliminary analysis is sufficient for the present purposes. Having brought some traditional tools to bear on the Intermezzo, we are ready to explore the possibilities of introducing some new technology: that of paradigmatic analysis. The following section is intended to familiarize ourselves with this method.

II. Structuralism and Paradigmatic Analysis

The paradigmatic method grows out of the rich tradition of structuralism within the history of ideas, rooted in good part in the seminal study of linguistic structure by the Swiss thinker Ferdinand de Saussure (1857–1913).[2] In his *Course in General Linguistics*, compiled from many of his lecture notes, Saussure proposed a distinction between *parole* (speaking) and *langue* (language).[3] Whereas *parole* denotes the act of speaking, *langue* constitutes "an abstract system of structural relationships inherent in language."[4] Language, as a system that makes speech possible, has both form and content. Prior to Saussure, form was conceived as the physical medium—sound waves—through which language was produced.[5] In Saussure's model, new attention is given to the content that these sounds convey, called meaning. Thus, any word has both a physical and a conceptual dimension—the actual sound produced in articulating a word and the meaning of the word.

Building upon this dichotomy between form and content, Saussure introduces the notion of a *sign*. He defines the sign as a "two-sided psychological identity" that combines a sound image with a content. Saussure replaces the term "form" with *sound-image* to emphasize the "psychological imprint of the sound" rather than the physical sounds of spoken word.[6] Next, this binary of sound-image and concept are referred to as *signifier* and *signified*

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[2] This survey has benefited from many conversations with Somangshu Mukherji, whom I thank for his numerous insights into matters of structuralism and linguistics.

[3] Ferdinand de Saussure, *Course in General Linguistics* (New York: Philosophical Library, 1959).

[4] Frederick J. Newmeyer, *Linguistic Theory in America: the First Quarter-century of Transformational Generative Grammar* (New York: Academic Press, 1980).

[5] The dominant view prior to Saussure was established by Aristotle, particularly through his views on substances. See Aristotle, *Metaphysics*, trans. Arthur Madigan (Oxford: Clarendon Press, 1999).

[6] The editors add "for F. de Saussure language is essentially a depository, a thing received from without…The sound-image is par excellence the natural representation of the word as a fact of potential language, outside any actual use of it in speaking." See Saussure, *General Linguistics*, 66.

respectively. The sign "tree" contains both a signifier (the sensory imprint of the word "tree") and a signified (the concept of "tree"). Crucial to Saussure's thought is that this relationship between signifier and signified is arbitrary. That is, there is no necessary relation between the sound "tree" and the notion of tree: the word "book" could just as easily have come to represent this idea. Indeed, the very existence of multiple languages proves Saussure's point: the same signified "tree" can be represented by a variety of signifiers (arbre, Baum etc.). The arbitrariness of signs constitutes Saussure's first principle of linguistic semiotics.

His second principle holds that the signifier is linear, that it only exists in time. The noun phrase "a tall tree" unfolds temporally, constituting a linear chain. This observation leads Saussure to construct two classes of relationships between words, which he terms *syntagmatic* and *associative*. Syntagmatic relations are those between words within a discourse, such as those between "a" and "tall" and "tree." They acquire meaning in relation to one another, as when the adjective "tall" modifies the noun "tree." This sequence of linguistic units is called a *syntagm.* By contrast, words that are grouped together in one's mind as having similarities are said to relate associatively or *paradigmatically.* Thus, the word "tree" has a paradigmatic relationship to concepts such as "plant," "bush," and "forest." Saussure argues that these relationships exist "outside discourse […], part of the inner storehouse that makes up the language of each speaker."[7] The distinction between syntagms and paradigms is a cornerstone of structuralist analysis, and has widely influenced the study of literary texts.

Structuralist ideas have been seen to afford possibilities for thinking about music, as described by Harold Powers in 1980. In a 1966 article, as Powers notes, Nicolas Ruwet took

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[7] Saussure, *General Linguistics*, 123.

the step of conducting paradigmatic analyses of four secular monodies, "segmenting them

strictly according to internal repetition and recurrence."[8] Some years later, the semiotician

Jean-Jacques Nattiez would make, in Powers' estimation, a more "ambitious" attempt to apply

linguistic notions of the sign in his influential book *Music and Discourse.* Although Nattiez

takes Saussure's definition of the sign as a point of departure, he ultimately finds this

conception static and inadequate, choosing instead to build his theory upon the definition of

the sign offered by Charles Sanders Peirce.[9] More specifically, Nattiez adopts several working

definitions which the philosopher Giles-Gaston Granger had extracted from Peirce. Three of

these definitions were especially relevant for Nattiez:

> [1] A sign [...] is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I shall call the *interpretant* of the first sign. The sign stands for something, its *object*.[10]

> [2] A sign is anything which is related to a second thing, its *object* in respect to a quality, in such a way as to bring a third thing, its *interpretant*, into relation to the same object, and that in such a way as to bring a fourth into relation to the same object in the same form, ad infinitum.

> [3] In the consequence of every sign determining an *interpretant,* which is itself a sign, we have sign overlying sign.

As Nattiez observes, Peirce's "sign" is analogous to Saussure's signifier. Recall that

Saussure had used the term to denote the combination of signifier (sound-image) and signified

(concept). Throughout this chapter, I will use the Peircian definition of sign, since it is the

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[8] Harold Powers, "Language Models and Musical Analysis," *Ethnomusicology* 24/1 (1980): 10.
[9] Jean-Jacques Nattiez, *Music and Discourse: Toward a Semiology of Music*, trans. Carolyn Abbate (Princeton: Princeton University Press, 1990), 5.
[10] Nattiez, *Music and Discourse*, 6.

notion adopted by both Nattiez and Agawu.[11] This relationship between a sign, its object, and

its interpretants is illustrated visually by Granger, and is reproduced here as Figure 2-1.

Figure 2-1: Chain of Interpretants
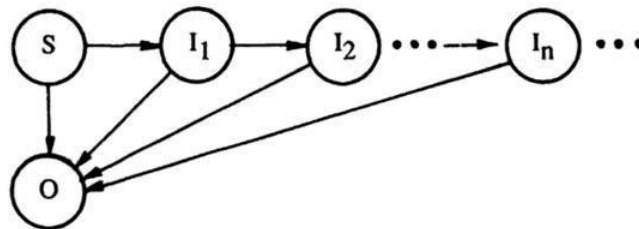
As shown above, a sign (S) comes into relation to an object (O), and in doing so

triggers an infinite chain of interpretants (I_1, I_2, I_n). To use our earlier example, the sign "tree"

relates to its object (an "actual" tree) so as to trigger other concepts in one's mind (woods,

forest, bush etc.) Although Figure 1 organizes the various interpretants as a linear chain (with

woods as I_1, forest as I_2 and so on), Nattiez argues that a more accurate illustration would

arrange these interpretants spatially, as though "caught in a web of multiple interactions."[12] It

is this endless process of referring that is termed *semiosis*.

Nattiez goes on to propose a definition of meaning in music, which highlights the

personal nature of the referential process. Music cannot be reduced to a single unequivocal

meaning. Rather, it is the subject who, by situating music with respect to a horizon, determines

their own meaning.

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[11] Nattiez denies the existence any single Peircian doctrine, arguing that the definitions provided here are extracted from Peirce's varying thoughts on the matter. Hence, this formulation does not constitute the definitive Peircian viewpoint but rather a workable synthesis of his thoughts, as organized by Granger.
[12] Nattiez, *Music and Discourse*, 8.

An object of any kind takes on meaning for an individual apprehending that object, as soon as that individual places the object in relation to areas of his lived experience— that is, in relation to a collection of other objects that belong to his or her experience of the world.[13]

The choice of the word "apprehending" rather than producing or receiving, is deliberate, and paves the way for Nattiez's notion of three semiotic levels. Drawing on Jean Molino's theory of *tripartition*, Nattiez terms these levels the poietic, esthesic, and neutral (trace). The *poietic* dimension concerns the meaning generated through a process of creation. In the case of music, this may include the meaning the composer intends to convey, though it is also possible for the creative process to be devoid of any intended meaning. Listeners (or receivers) of music construct meaning at the *esthesic* level. In contrary to earlier structuralists like Roman Jakobsen, Nattiez denies any necessary connection between poietic and esthesic meaning. Listeners do not simply "receive" a message conveyed by a composer, but instead produce their own meaning from a musical encounter.

The process of creation results in a material trace, consisting of the object's "immanent and recurrent properties."[14] This dimension recognizes that an object contains a physical and material form independent of the processes of production (poietic) and reception (esthesic). Upon apprehending the trace, the receiver constructs meaning as the object comes into relation with his or her lived experiences. Figure 2-2 below, taken from Nattiez, illustrates this situation.

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[13] Nattiez, *Music and Discourse*, 9.
[14] Ibid., 12.

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Figure 2-2: The Neutral Level (Trace)

Poietic Process   Esthesic Process

"Producer" ⟶ Trace ⟵ Receiver
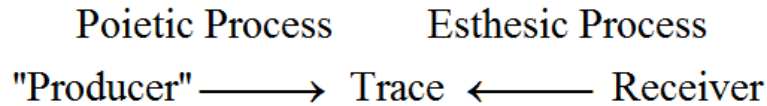
Molino refers to the trace as the *neutral level*, and it is at this level where Nattiez conducts his semiotic analyses. Whatever else a work of music may mean for the composer or for the listener, it possesses a certain immanence that can be described. Nattiez makes it abundantly clear—and this is where he departs from "pure" structuralism—that the neutral level is only one part his music-semiotic program. For the neutral level, Nattiez says, "is not sufficient: the poietic lurks under the surface of the immanent; the immanent is the spring-board for the esthesic. The task of semiology is to identify interpretants according to the three poles of the tripartition, and to establish their relationship to one another."[15] Both Nattiez and Molino believe that an analysis of the neutral level of a work is intended to be brought together with insights gleaned from exploring the other dimensions. At the same time, the work cannot be exhausted by its relations to production or reception, which is why he sets out to explore its internal configurations from a neutral perspective.

Moreover, as Nattiez says, it is important to distinguish "an analysis of the neutral level" from "a neutral analysis." The former designates a strategy for analyzing music, in which the material trace is singled out for examination. It does not mean "the musicologist is neutral with respect to his or her object" but rather that "he or she *neutralizes*, for

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[15] Ibid., 29.

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methodological reasons, the poietic and esthesic dimensions *of the object*."[16] One is free to explore a work's material trace rather than probe its genesis or reception history, but is always operating from a subjective vantage point—hence "a neutral analysis" is a fiction. The biases that shape our interpretations of compositional intent and listening habits are no less active when engaging the neutral level.

The paradigmatic method constitutes one such means of analyzing the neutral level. In this chapter, I will restrict my formulation of paradigmatic analysis to that proposed by Kofi Agawu.[17] For Agawu, a musical work constitutes a system of signs in the Peircian sense. A paradigmatic reading attempts to understand the configuration of signs by observing patterns of repetition. In keeping with the structuralist program, the approach does not depend on stylistic and historical "externals," but concerns itself only with the musical materials themselves. Agawu states that "the paradigmatic approach, in principle, minimizes—but by no means eliminates—such knowledge [of basic tonal idioms] in order to engender a less mediated view of the composition."[18] Furthermore, unlike technologies centered around specific musical parameters, no one aspect of music is foundational in the paradigmatic method. It is the analyst who selects what features to keep track of—pitch, contour, harmony, rhythm, timbre etc. Agawu tends to work with "surface-level" features of music that are aurally perceptible, rather than with "deeper" elements of structure such as ones that are often

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[16] Ibid., 174.

[17] There have been numerous attempts to analyze music according to patterns of repetition, each reflecting the personal idiom of the user. Nattiez's use will differ from that of Agawu, Ruwet, etc. Hereafter, I will use term "paradigmatic method," to denote Agawu's particular formulation of this approach.

[18] Kofi Agawu, *Music as Discourse: Semiotic Adventures in Romantic Music* (Oxford: Oxford University Press, 2009): 163.

privileged in Schenkerian analysis (e.g. Head tones). Whatever elements one chooses, the

analyst may illustrate their occurrences graphically by means of a paradigm or "summary"

chart. Agawu's analysis of the first few bars of "God Save the King," can serve as an

illustration. His Examples 5.3 and 5.4 are shown together as Example 2-3.

Example 2-3a: Measures 1–6 of "God Save the King" based on pitch identity
(From Agawu's Example 5.3).

Example 2-3b: Paradigmatic analysis of "God Save the King" based on pitch identity (From Agawu's Example 5.4).

In this analysis, Agawu has selected individual pitches as his criteria for segmentation.

Arabic numbers denote "syntagms"—that is, the sixteen different events that unfold in time.

Events that belong to the same paradigm class, such as all of the Fs, are lined up vertically in the score. The distribution of paradigms is also shown in the accompanying summary chart. All Fs belong to the first column, the Gs appear in the second column, and so on. The total number of instances of each paradigm are then tallied at the bottom of the chart.

At first glance, this exercise might appear trivial. Example 2-3b simply states the obvious, giving us a needlessly precise rundown of the exact pitch distribution. One might further question the relationship between this chart and one's aural experience of the music. It seems unlikely for a listener to group together the Fs that comprise events 5 and 16, given that the former quickly passes between E and G while the latter marks the decisive end of the phrase.[19] One quick response to these objections is that the emphasis on pitch reflects only the didactic intentions of the author. It is easy to imagine other, more complicated situations where such precision would be necessary to make some analytical point.

Agawu clearly believes there is value in applying the paradigmatic method even to short excerpts such that of "God Save the King." Using this tool brings out the succession of events 2–4 and 5–7 and shows them to exhibit more diversity, as evidenced by the fact that they span three columns in as many notes. At the same time, the sense that this piece is saturated by tonic F is confirmed by its six occurrences in the summary chart, more than any other note. Furthermore, we need not restrict ourselves to a single criterion, and thus could supplement Example 2-3b by exploring others parameters beyond pitch. Segmenting the passage into, say,

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[19] Hence, Lerdahl and Jackendoff's assertion, quoted in the previous chapter, about the perceptual irrelevance of counting every tenth note.

rhythmic units would thus group measures 1 and 3 together (3 quarter notes) and measures 2 and 4 (dotted quarter, eighth, quarter).

Finally, for Agawu, an analysis need not directly correlate to anyone's actual intuitions, but holds value to the extent it may suggest possible interpretations. He posits that an incredibly rich opportunity occurs when the paradigmatic approach engenders a reading that grates against our own intuitions. In such a case, we are invited to interrogate our own musical values, to ask why we might have gravitated one way or another.

III. Two Paradigmatic Approaches to Brahms' Op. 119 No. 2

We are now positioned to apply this technology through an analysis of Brahms' E-minor Intermezzo Op. 119 No. 2. My aim is not to reveal anything unknown about Brahms' mature style, or make a broad claim about late-nineteenth century tonality. Instead, I am interested in the activity of analysis itself, and the way in which the paradigmatic method contributes to this activity. In discussing my experience with this technology, I include information that is normally excluded from music-analytic writing. This is especially evident in the beginning, in which numerous "unsuccessful" attempts at analyzing the piece are chronicled. But rather than erase these attempts from the discourse, I wish to highlight them as important first steps in doing analysis. It is exactly this sort of experimentation—testing out different criteria, pursuing and abandoning possible leads—to which I want to call attention. As I hope to show, the paradigmatic encourages one to experiment by leaving open the question of which musical elements (or combination of elements) are relevant for analysis.

Following my own exercises in paradigmatic analysis, I summarize a reading of this same

music by Agawu himself.[20] Despite the fact that we use the same technology, and thus share a

concern with local patterns of repetition, the differences in our readings attest to the broad

range of applications that the paradigmatic method can support.

Since paradigmatic analysis involves the identification of recurring patterns, I begin by

listening to the piece several times with the entire score, keeping my eyes and ears open for

any local-level repetition. Some of my initial observations include the predominance of the

opening motto, a sense of forward-driving momentum, and an overall three-part (ABA)

design. My interest in the opening motif (m. 1) motivates my first two attempts at

paradigmatic analysis. It consists of three repetitions of the rhythm "two sixteenth notes

followed by an eighth," which I will use as a criterion for analysis. Since the music briefly

pauses on the third beat of m. 17, I decide to analyze the music up to this point with the

criterion "melodic rhythm at the level of 1 beat." This means that I will be segmenting just the

upper-most line and that each event will last one quarter note. Example 2-4 annotates mm. 1–

17 of Op. 119 No. 2 in this fashion. Example 2-5 arranges the first seven events

paradigmatically and provides a summary map of the first fifty-one.

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[20] The title of this chapter references Agawu's characterization of *Music as Discourse* as "an exercise in music analysis." Agawu, *Music as Discourse*, 3.

Example 2-4: Brahms Intermezzo in E minor, Op. 119 No. 2. Measures 1–17.

m. 16

Example 2-5: Paradigmatic structure based on melodic rhythm at the level of 1 beat

In Example 2-5, events 1–5 consist of the "two-sixteenth eighth" rhythm that proliferates throughout column one in the summary chart. All but two of the first 14 events belong to column 1, events 6–7 momentarily suspending the plodding rhythm in the second bar. Event 6, an offbeat quarter note, foreshadows events 15–19, in which several of these paradigms are strung together to produce a hemiola effect. The contrast between rhythmic fluidity on the one hand, and syncopation turned hemiola on the other, is represented by columns 1 and 2 respectively. As shown by Example 2-5, events 15–25, most of which appear in column 2, interrupt the vertical line of events in column 1. In gazing at this chart, column 2 strikes me as "broken off," like a strand of puzzle pieces separated from the rest of the shape. This visual metaphor resonates with my aural impression of events 15–25 as somehow out of place, both rhythmically and harmonically, with their emphasis on B major.

Yet in many ways, this analysis fails to account for what I feel to be salient aspects of the passage. For example, events 1 and 7 initiate the same material (measures 1 and 3), and yet are classified as different paradigms because the latter begins with a single eighth note, rather than two sixteenth notes. In focusing exclusively on the top line, this reading ignores the fact that the rhythmic motive sounds in the alto, yielding a similar effect. We might also question the notion of a rhythmic "disjunction" observed after event 35. For the overall shape of the initial gesture is preserved, only now in A minor and with slight rhythmic alteration. Listening to events 1–4 and 37–40 suggests more commonalities than the summary chart, by assigning them different columns, would have us believe.

Attempt 2

Perhaps the situation can be improved by switching our focus to scale-degrees at the same level of a single beat. This requires an extra layer of interpretation, since scale degrees refer to relative positions within a particular key. I decide to analyze events 1–36 within the context of E minor, 37–44 in A minor, and 44–51 in C major. As with the previous attempt, the units comprise a length of one quarter note, beginning with the anacrusis to bar 1. Example 2-6 shows the paradigmatic analysis that results when "melodic scale-degrees at the level of 1 beat" are selected as the criterion.

This reading more closely represents the extent to which the first 3 paradigm classes, first heard in measure 1, provide much of the material that follows. Adding up the first 3 columns reveals that 28 of the 51 events tracked in Example 2-6 are derived from a paradigm from the opening measure of the piece. For the most part, groups of events that I hear as similar, such as 1–3 and 38–40 are grouped into the same column by virtue of their shared scale-degrees. Looking ahead, this criterion should also work well for analyzing mm. 18–21 and 29–32. However, one problem with both of the first two analyses is the overwhelming amount of data produced, a lot of which seems to go to waste. At a rate of 3 events per measure, we are on pace to chart more than 100 events for just the A section alone. The second analysis involves 18 separate classes, 12 of which contain only a single event. In terms of economy and simplicity, both analyses leave me wanting. The most pressing challenge may not be selecting the right criteria (rhythm or scale-degrees) but determining the appropriate size of the events.

Example 2-6: Paradigmatic structure based on melodic scale degrees at the level of 1 beat

```
                Summary

Scale degrees:   5/6  3/5 4/2 #7  4/6 4/5  2   6 5/7 6/1  7  #6/7  5  2/1  2/4 3/1  3/2  1

                 1    2   3
                 4    5       6
                 7    8   9
                 10   11          12
                      13              14
                              15
                              16
                              17          18
                                          19
                 20                            21  22  23  24
                                               25
                      26  27
                 28   29      30
                 31   32  33
                 34                                            35
                              36
                 A Minor
                                                          37
                 38  39  40
                 41  42  43                                         44
                 C Major
                      45  46                                   47   48  49  50
                              51

         Totals  10  11  7    7   1   1   2   2   1   1   1   1   1   1    1   1    1   1
```

Attempt 3

Let's go back to our first attempt, which focused on melodic rhythm. What if we extend the size of the event from 1 beat to 1 measure, beginning on the downbeat of the first bar? This will cut down the number of events from 51 to 17, given the 17 measures of music under consideration here. Example 2-7 shows the resulting summary chart.

Example 2-7: Paradigmatic structure based on melodic rhythm at the level of 1 measure

```
Summary
   1   2
   3
   4   5   6   7   8
   9  10
  11  12              13  14  15  16  17

        _____
Totals  5   4   1   1   1   1   1   1   1   1
        _____
```

Although this chart drastically reduces the amount of data (and took considerably less time to make), it still leaves me unsatisfied. For although it deals with a manageable 17 events, it contains nearly twice the number of paradigm classes from Example 2-5 (from 6 to 10). Within the "triplet" portion of the section (mm. 13–17) we have as many paradigms as measures. This seems undesirable given the repetitious nature of this passage. Before making Example 2-7, I would have expected at least three paradigm classes to have more than one event. Furthermore, this analysis suffers from the same problem as Example 2-5, in that it obscures the contour and scale-degree relations between mm. 13–17 and the opening bars.

Attempt 4

Having focused exclusively on aspects of the melody, this next attempt considers harmony as a criterion for analysis. More specifically, I attempt to track the last chord in each of the first 17 measures, resulting in Example 2-8. In constructing this chart, I made number of practical concessions. First, each event is analyzed in its local harmonic context, combining a Roman numeral with a pitch class. Hence, the chart labels event 12 as V/a rather than V/iv, and remains agnostic as to whether events 5 and 6 (V/B) sound in the key of E minor or B

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major. Second, I consider all instances of V and V^7 simply as "V" chords. Each of these decisions is based on my personal desideratum for simplicity—namely, to reduce the number of paradigms. Finally, all of the decisions rest upon my prior knowledge of Western harmony, which enables me to differentiate chord tones from non-chord tones. Event 5 (F♯, E, A♯, D♯) is thus categorized as V/B, considering the D♯ to be a 6-5 suspension.

Example 2-8: Paradigmatic structure based on the final harmony of each measure

Summary

V/e	ii°7/G	V/B	vii°$^6_5$/E	V/a	V/C	ii/C
1						
2						
3	4	5				
		6				
7			8			
9						
10						
11				12		
				13		
				14	15	16
					17	

Totals	7	1	2	1	3	2	1

Roughly half of the opening 17 measures end on a V chord of E major, and all but two end on some kind of dominant harmony. Each measure concludes by looking ahead to the next for resolution. This observation helps support an earlier impression regarding the "forward momentum" of the piece. Both the plodding rhythmic motive and harmonic fluidity between measures help drive the music forward.[21] Even the ii^{ø7} chord of event 4 resolves upward by 4th, in keeping with much of the bass motion between adjacent bars. The only other exception

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[21] We might also mention the absence of scale-degree 1 in the melodic line, an insight gleaned from Example 2-6, as a contributing factor.

occurs in event 16, where ii is the final chord of the measure (a D-minor triad in a C-major context). The half cadence in C on beat 2 of m. 17 is thus preceded by 2 predominant chords (ii and ii^{65}). Prior to this, successive predominants had been largely avoided (compare the single instances in m. 1 and 13) except for beats 2 and 3 of m. 4. This observation might support an early intuition I had regarding the segmentation of the A section into two units (1–17 and 18–35). While I had initially cited the rest on beat 2 of m. 17 as a rationale, the expansion of predominant activity before the half cadence reinforces this moment as, in some sense, closing.

Measures 18–35

Having tested out a few criteria, I must now decide which of these strategies to pursue further into the music. Glancing ahead to mm. 18–35 reveals that many of these scale-degree patterns return yet manifest in a variety of rhythmic and tonal contexts. Measures 18–22 and 29–32 can clearly be heard as repetitions of earlier material. Whereas adopting the first criterion of melodic rhythm would involve constructing even more paradigms to account for the "new" material at bars 18 and 29, focusing on melodic scale-degrees looks to be the more fruitful analytical route. Example 2-9 shows the paradigmatic analysis of the first 35 measures.

Example 2-9: Paradigmatic structure of mm. 1–33 based on melodic scale degrees at the level of 1 beat

Summary

5/6 3/5 4/2 #7 4/6 4/5 2 6 5/7 6/1 7 #6/7 5 2/1 2/4 3/1 3/2 1 7/2 5/3 3 5/4 5/7 6/2 4 3/7 6/4 1/7 2/7 4/3 7/1 #4/5

Summary

```
1    2    3
4    5         6
7    8    9
10   11             12
     13             14
               15
               16
               17        18
                         19
20                            21  22  23  24
                              25
     26  27
28  29         30
31  32  33
34                                          35
          36
A Minor
38  39  40
41  42  43                          44
C Major
     45  46                                    47  48  49  50
          51
F Minor
52  53  54
55  56         57
E Minor
58  59  60
61  62         63
          64
               66
          71
          74
A Minor
```

(chart continues with events, including:)

```
                                              65
                                          67  68  69
                                          70
                                              73
72
                                              75  76
77
                                                  78
79
                    80
               81   82
83  84  85
86                                                      87  88  89
                                    90                          91  92  93  94
                                                                    95
```

Totals 16 16 10 11 1 1 5 2 1 1 1 1 1 1 1 1 3 3 1 2 2 2 2 1 1 1 1 1 1 2 1 1

One advantage of this illustration is that it shows the distribution of the opening scale-degree motive throughout the first 33 measures of the piece. Events 1–3, which comprise the 5-6-3-5-4-2 motive, dominate this opening section, making up a combined 42 events; roughly half of this section. Once again, however, the resulting paradigm chart continues so much data as to be overwhelming. Moreover, by grouping events at the level of 1 beat, this analysis

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produces pairs of scale-degrees whose relationship is unclear. Consider that scale-degree 2 appears in 8 different paradigm classes: 4/2, 2, 2/1, 2/4, 3/2, 7/2, 6/2, and 2/7. This strikes me as an unintuitive way to approach the question of this scale degree's role in the piece, and it is unlikely that I will continue this line of inquiry further.

Instead, let us try and extend our earlier analysis of "melodic rhythm at the level of 1 measure" to the remainder of the A section. Example 2-10 contains the summary map. Listed across the top is the measure in which a rhythmic unit first occurs. For example, the rhythmic pattern of m. 1 is "eighth, 2 sixteenth, eighth, 2 sixteenth, eighth, 2 sixteenth." All of the units in the first column contain this rhythm and are thus members of the same paradigm class.

Example 2-10: Paradigmatic structure of mm. 1–35 based on melodic rhythm at the level of 1 measure

Summary

Measure 1	2	6	7	8	13	14	15	16	17	18	19	21	22	24	27	29	33	34
1	2																	
3																		
4	5	6	7	8														
9	10																	
11	12				13	14	15	16	17	18	19							
										20		21	22					
			23											24				
			25	26											27			
			28													29		
																30		
																31		
																32	33	34
																	35	
Totals 5	4	1	4	2	1	1	1	1	1	2	1	1	1	1	1	4	2	1

Comparing these last two examples corroborates an earlier remark that "scale-degree patterns return yet manifest in a variety of rhythmic and tonal contexts." The opening motive, which occupies the first three columns of Example 2-9, sounds throughout most of the A

section. By contrast, Example 2-10 reveals that the initial rhythmic motives (columns 1–3) disappear from the melody after m. 12. Interestingly, the rhythm that comprises event 7 (first heard in m. 7), returns 3 additional times in the second half of this section (event 23, 25, and 28). Along with event 8, it is the only event that occurs in both halves of the A section (mm. 1–17 and mm. 18–35). Events 7 and 8 first sounded in mm. 6–8, a passage which contrasts rhythmically and harmonically with the surrounding bars (the corresponding events from Example 2-9, 20–24, feature 4 new paradigms consecutively).

Another observation is that only twice do we find back-to-back instances of the same paradigm. This occurs between events 3–4 and 29–32 (shown in Example 2-10 as consecutive numbers in the same column). The second instance involves a melodic sequence which ascends to a high A in m. 31. The intensity of this line results from both an increase in register and dynamics, as well as the consecutive instances of the rhythmic paradigm "6 eighth notes." I am immediately reminded of Bach's A-minor invention, which opens with a rhythmic idea that is sequenced toward the end of the piece with a similar effect. Unlike the Bach however, the material that begins the sequence in m. 23 is not rhythmically identical to m. 1 but technically belongs to a new paradigm. Nonetheless, it is closely related to paradigm 1 in its embodiment of forward momentum.

My last attempt at mapping the paradigmatic activity of the A section, presented in Example 2-11, extends Example 2-8, which had tracked the final chord in each measure through the first 35 bars.

Example 2-11: Paradigmatic structure of mm. 1–35 based on final harmony in each measure

Summary

	V/e	$\mathrm{ii}^{\circ}7/\mathrm{G}$	V/B	$\mathrm{vii}^{\circ}{}^{6}_{5}/\mathrm{E}$	V/a	V/C	ii/C	V/f	i/e	$\mathrm{vii}^{\circ}7/\mathrm{B}$	V/G
	1										
	2										
	3	4	5								
			6								
	7			8							
	9										
	10										
	11					12					
						13					
						14	15	16			
						17			18	19	
	20										
	21		22								
	23									24	
	25									26	
	27										
	28										
	29										30
	31										
	32									33	
	34										
	35										
Totals	18	1	3	1	3	2	1	1	1	3	1

What this exercise reveals is that more than half of the measures end on a V/e chord. Although my initial hearing sufficed in impressing upon me a deep sense of tonic minor, the degree to which the tonic is continually reinforced at the local level is made clearer by Example 2-11. Moreover, this analysis visually suggests a tripartite division of the opening section. Events 1–11 introduce E minor, followed by a contrasting area comprised of multiple key areas (events 12–19), and then events 20–35 reestablish the tonic. This differs from our earlier interpretation of the A section into two halves (mm. 1–17 and mm. 18–35).

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Measures 36–105

As mentioned at the outset, the Intermezzo seems to group into three large sections: A: mm. 1–35, B: 36–72, and A': 73–105. The middle section sounds predominantly in the tonic major, and traces the outline of the main melodic idea (5-6, 3-5, 4-2). Measures 73–105 constitute a reprise, restating most of the A material with some alterations. Whether further paradigmatic analysis supports these intuitions remains to be seen, but it seems worthwhile to retain these same criteria in investigating the remaining sections. Although the B section does make use of the initial scale-degree motive, the fact that the notes are spread out over 2 measures instead of 1 makes it difficult to apply our second criterion of "melodic scale degrees at the level of 1 beat." So I decide instead to adopt the criterion of "melodic rhythm at the level of 1 measure" in constructing a paradigmatic analysis of the entire piece, the results of which are shown in Example 2-12.

Example 2-12: Analysis of Op. 119 No. 2 based on melodic rhythm at the level of 1 measure

Summary

```
Measure 1   2  6  7  8   13 14 15 16 17 18 19 21 22 24 27 29 33 34  35    36   51 53 56 58 70 72   76  78 79 80 81    105

       A 1   2
         3
         4  5  6  7  8
         9  10
         11 12          13 14 15 16 17 18 19
                                       20      21 22
                   23                             24
                   25 26                             27
                   28                                   29
                                                        30
                                                        31
                                                        32 33 34  35  B 36
                                                                        37
                                                                        38
                                                  39                    40
                                                                        41
                                                                        42
                                                                        43
                                                                        44
                                                                        45
                                                                        46
                                                  47                    48
                                                                        49
                                                                        50  51
                                                                            52 53
                                                                            54 55 56
                                                                                  57 58
                                                  59                    60
                                                                        61
                                                                        62      63
                                                                        64
                                                                        65      66
                                                                        67
                                                  68                    69          70
                                                                        71             72
       A' 73 74
          75                                                                        76
             77                                                                        78 79 80 81
                              82 83 84
                                 85    86 87
                   88                     89
                   90 91                     92
                   93                            94
                                                 95
                                                 96
                                                 97 98 99 100 101                   102
                                                 103
                                                 104                                        105

Totals 9  6   1  7  3   1  1  1  1  2  4  2  2  2  2  2  9  7  2  2   22   3  2  4  1   2  1  1   1  1  1  1    1
```

Event 36 initiates a new rhythmic idea (dotted quarter, eighth, quarter) that will become the most frequently heard event of the movement (22 occurrences). This helps give this section a smoother and more even character, which Brahms marks "grazioso" instead of "un poco agitato." Indeed, none of the syncopated paradigms from the A section (columns 2, 6, 7, 22, 24) sound here, and in fact only 2 paradigms (columns 29 and 33) are common to both A and

B. Event 33 (half note, quarter) serves as a link between sections, slowing down the pace in preparation of the grazioso theme.

Column 29 contains those events whose rhythm is 6 consecutive eighth notes, a string of which occurred from mm. 29–32. Earlier, I noted the effect of forward momentum produced by these measures, helping bring the first section to its climax. The single occurrence of this paradigm within the B section, event 59, marks a similar period of intensity. The B section can itself be divided as follows: a (mm. 36–43), a (mm. 44–51), b (52–59), a' (60–67). B and A' are then repeated, eliding with a second ending (mm. 68–72) that leads into the reprise. Event 59 occurs during the b section of the larger B: a contrast within a contrast. At the phrase level, it sounds at the end of a quasi-sentential phrase. Rhythmically speaking, measures 52–59 resemble the 2+2+4 format of the classical sentence (see Example 2-13). As a sentence, it exhibits an increase in surface-rhythmic activity, culminating with 10 successive eighth notes between measures 58 and 59, the latter closely resembling the rhythm and contour of event 32. If we supplement Example 2-12 with some observations on key area, it is easy to hear the B section as an inverse microcosm of the movement as a whole. The B section comprises a brief, waltz-like passage that offers a respite from the forward-driving outer sections of the Intermezzo (A and A'). Within the B section itself, the flowing "grazioso" exterior sections (a) are interrupted by a tumultuous, forward-driving passage (b).

Comparing the A and A' sections in terms of Example 2-12 lends further credence to this characterization. Indeed, there are many rhythmic similarities at the 1 measure level between mm. 1–35 and 73–105. We have already mentioned the parallels between the climactic build-up of events 29–32 and 94–97, illustrated as vertical groups of 4 on the chart. In general, vertical groups (such as events 29–32) signify repetition, whereas horizontal groups

(such as events 13–17) represent difference. The similarities between events 18–27 and 83–92 are made apparent in that each group forms a descending staircase in Example 2-12. The staircase, comprising both horizontal and vertical steps, represents the musical balance between repeated paradigms and new ones. Other observations include the uniqueness of 13–16, which supported the modulation from A minor to C major in the A section. The corresponding moments in A', 78–81, are replaced by a different rhythmic paradigm. It is also worth looking at the only two paradigms to occur in all three large sections, columns 29 and 33. Recall that paradigm 29 featured in the local climaxes of all three sections, whereas 33 was the "link" that calmed the waves for the arrival of the placid B section. Ultimately, the movement ends with the more peaceful events of 99–105, major-mode utterances of B-like rhythmic paradigms.

Example 2-13: Sentential organization of measures 52–59

Much more could be said about our analytical engagement with this music using the paradigmatic method. We could investigate patterns of repetition among other musical parameters (bass line, cadences, contour) or fashion the existing insights into a more complete

narrative about the Intermezzo. Nonetheless, the work we have done thus far tells us much about the relationship between the paradigmatic method and the activity of analysis.

Adopting this technology puts the analyst through a process of identifying paradigms and syntagms (events), and constructing summary maps to illustrate their distribution across various musical spans. It required me to become a builder, to construct visual heuristics that I hoped would stand up to my self-imposed standards. Indeed, there are at least two desiderata that informed my decisions: 1. that any paradigmatic analysis should be feasible and 2. that the analysis should be musically insightful. By feasible, I mean that the analysis is both doable and presentable—it would be difficult to produce and to interpret a graph that featured 150 paradigms and 400 events. Additionally, I want the analysis to yield insights that would have been harder to attain or illustrate via some other method. Thus, a paradigmatic analysis based on "instrumentation at the level of 1 measure" would result in an uninteresting, though perhaps comical, chart containing 105 events in the "piano" column.

Aspiring to these desiderata in undertaking a paradigmatic analysis necessarily involves some element of trial and error. Deciding what things should be considered as paradigms is not straightforward, nor is determining their optimal size (1 beat? 1 measure?). Based on my knowledge of Western tonal music, I chose from a standard pool of features (surface rhythm, harmony, cadence, contour etc.) that commentators often point to in this repertoire. The preliminary attempts at analyzing mm. 1–17 were thus a necessary part of discovering how this music responds to paradigmatic thinking. And while I experienced some frustration in dealing with (and constructing) some of these examples, I was ultimately pleased with the findings that this technology made possible.

Second, paradigmatic analysis tends to encourage working from the bottom up, in that the analyst begins with small objects (syntagms and paradigms) and then examines how they interact throughout the piece. For example, I began by looking for instances of two sixteenth notes followed by an eighth, accumulating the findings in producing Example 2-5, and then reflecting on mm. 1–17 as a whole. Other actions, such as dividing the piece into ABA', were made without the aid of this technology. Thus, the analysis combined insights derived paradigmatically and non-paradigmatically. This was especially clear when discussing the full-movement rhythmic analysis in Example 2-12, in which specific references to rhythmic events were occasionally supplemented by more casual remarks about the corresponding key area. That is, no concept of paradigms was necessary to determine the central key areas of the piece. While key areas themselves could have taken as paradigms, I felt there were not enough data points to warrant a paradigmatic analysis of key relations.

Third, I found myself comparing musical patterns with the visual shapes formed in the summary map. At first, I resisted the idea of representing this music as a patchwork of numbers, looking for pockets of activity as on a spectrogram. Yet, many times these shapes vividly capture parallels within the music, such as that between 17-32 and 82-96 in Example 2-12, or the "staircase" that captured the play of repetition and difference. In other instances, however, the way the chart displays events grates against how I hear the music. For example, I strongly hear paradigm class 2 (column 2) as attempting to reach upward, yet always falling down to the middle of the treble clef. Events 76 and 77 strike me as belonging to the same class, the latter seeming to "retry" the failed attempt of the former. Yet Example 2-12 isolates

event 77, assigning it to its own column, all because of a minor rhythmic difference (ending

with 2 sixteenths instead of 1 eighth).[22]

Kofi Agawu's Analysis of Op. 119 No. 2

In *Music as Discourse*, Agawu explores this same piece using the paradigmatic

method.[23] This reading is one of several analytical vignettes that he uses to highlight the

effectiveness of the paradigmatic method for analyzing Romantic music.[24] As will become

clear, there are significant differences between our analyses, which relate to our personal

impressions of this music and how we understand this technology. Before going any further, I

should address the issue of whether this comparison contradicts an argument made in the

previous chapter—that written analysis is not necessarily indicative of one's analytical

experience. What, if anything, can we learn from comparing my sprawling autobiographical

account, which attempts to foreground the active role played by analytical tools, to a succinct

analysis written with didactic intentions? Agawu offers no accompanying prose that details his

experience with this technology, no thorough account of his actions, thoughts, or the emotions

he experienced as he worked on the analysis. While I maintain that the central question of how

technologies influence analytical behavior cannot be answered solely by examining written

texts, the comparison of outcomes, one accompanied by an account of the path taken toward it,

is nonetheless useful. Although there is no published record of Agawu's preliminary attempts,

if in fact he made any, his analysis in *Music as Discourse* reveals certain interpretive decisions

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[22] To be sure, the "upward reaching" quality is independent of the rhythmic pattern (eighth, 2 sixteenth, eighth, quarter, eighth) that unites these events. In terms of contour, event 76 also differs from the others in jumping down from the eighth note D to the quarter note A.

[23] The analysis is from pages 229–239 of *Music as Discourse*.

[24] The method provides "another path to the construction of musical meaning, one that complements rather than replaces existing approaches."Agawu, *Music as Discourse*, 279.

against which I may examine some of my own. Perhaps Agawu applies the method in ways that had not occurred to me or successfully adopts criteria for analysis that I had thought to be infeasible.

Agawu begins by acknowledging a three-part (ABA') design for the movement. He then draws a distinction between the "speech" mode of the A sections and the "dance" mode that characterizes B. The A sections are verbose and dense, composed of short bursts of speech, whereas the B section proceeds in a more leisurely fashion, featuring a tuneful melody and regular pacing that invites one to waltz. Although the criteria for segmentation are not explicitly stated, it becomes clear that units are distinguished based on their motivic-harmonic profile. Throughout his analysis, Agawu uses the term "units" instead of events to denote syntagms. He derives the "main idea" in measure 1 from a series of background progressions (shown here as Example 2-14). Brahms' elaboration of this progression via embellishments and "temporal displacements" constitutes "the kind of thinking that lies behind the material of the work." That harmony is privileged over rhythm is made clearer in that Agawu employs a rhythmically-reduced score to mark out the various units (see Example 2-15). The resulting summary map is shown in Example 2-16.

Example 2-14: Origins of the main idea in Op. 119 No. 2 (From Agawu's Example 7.1)

Example 2-15: Units of structure in Brahms Op. 119 No. 2 (From Agawu's Example 7.2)

Example 2-16: Paradigmatic chart of the units in Brahms Op. 119 No. 2 (from Agawu's Example 7.3)

```
1    2
3         4    5
6    7
8              9
10
11                        12
13   14
15        16              17   18   19
20
21                                  22   23   24
                                         25   26   27
                                         28             29   30
31   32
33             34
              35
36
37            38
39   40
41        42              43   44   45
46
47                                  48                  49
```
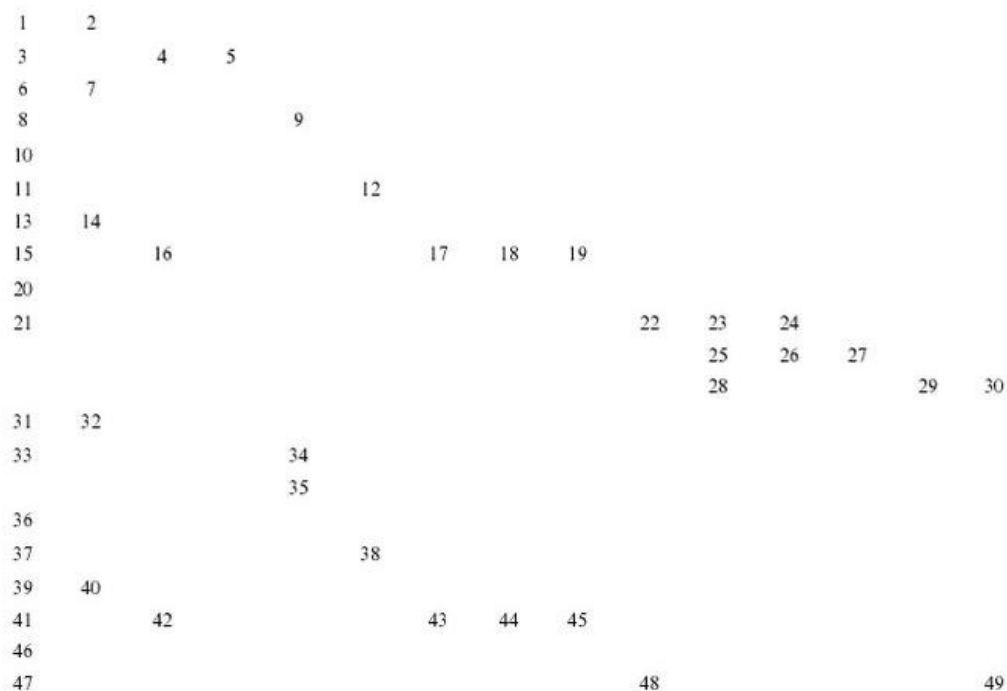
With Example 2-15 as a reference, Agawu proceeds through the piece unit by unit, discussing internal relations (i.e. what units group together) and commenting on salient aspects of the units themselves. Unit 1, a "tentative utterance" that moves from tonic to dominant, will come to dominate the entire work.[25] Unit 4 pushes toward B major, recalling the brief B-D♯ exclamation of unit 2. Units 6–8 repeat 1–3 until a chromatic ascent in unit 9 prepares for a subdominant restatement of the opening material (units 10–11). The music eventually comes to rest on C major in bar 17 via a linear intervallic pattern between bars 15–17. From here the main idea passes through F minor (unit 13) and E minor (unit 14) suggesting a process of variation. A "big cadence" on B follows in unit 16, which eventually leads to tonic climax in units 20–22.

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[25] In Agawu's account, all instances what I called the 5-6-3-5-4-2 motive belong to the same paradigm class, regardless of their rhythmic profile.

Agawu describes the opening section (units 1–22) as "prose rather than poetry," a discourse with "no regular periodicity."[26]

By contrast, the B section is "serene, settled, and in dance mode [...] less troubled [...] nonurgent." The units are longer now, most of which constitute 4-measure phrases. Units 25–26 restate 23–24 up an octave, and, in ending on a B triad rather than B[7], suggest being *in* rather than *on* the dominant. Unit 27 (mm. 52–59) contrasts tonally with its surrounding units, while units 28–29 "round off the intermezzo's self-standing middle section."[27] The B section ends with a 4-bar phrase (unit 30) that slows things down, restating the 5-6 motive in E major before abruptly shifting to tonic minor via G natural in an inner voice.

The A' reprise serves to "reproduce the content of the first A section with slight modifications."[28] Although much of the material from A is restated, there are a few moments to which Agawu draws our attention. Unit 36 constitutes a rhythmic variation of unit 10, in which the triplets are here replaced with eighth and sixteenth notes, durational values "more in line with the original rhythm of the main theme." Much of the remaining material is equivalent to that of the A section up until the final unit (49). Initially, it is somewhat ambiguous whether the music will return to unit 23 (the beginning of B) or 30 (the second ending of B). In the end, it is the second ending that reappears with two crucial differences: the G♯ sounds until the very end and a low E in the bass helps confirms its status as an "ultimate closing gesture."

The resulting summary map (Example 2-16) provides further "insights into form and meaning." Agawu notes the "sheer numerical supremacy of the paradigm class headed by the main motive, unit 1." Not only do 18 of the 49 units belong to this class, but two additional paradigms (2 and 23) closely resemble this motive. Adding the units of these two columns bring

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[26] Agawu, *Music as Discourse*, 234.
[27] Ibid., 235.
[28] Ibid., 236.

the total to 26. Second, the summary chart reveals the extent to which this motive acts as a

springboard for new material. Novel ideas (2, 4, 5, 7) appear gradually, in tandem with

repetitions of the main motive. Similarly, column 23 (itself based on the head motive) serves as a

point of departure for the gradual emergence of new ideas (24, 26, 27). Finally, this analysis

helps confirm Agawu's earlier distinction between speech and dance mode. With 41 combined

units, "much is 'said'" during the prosaic outer sections. By contrast, the B section contains only

8 units, supporting Agawu's assertion that "fewer 'words' are spoken in the B section, where the

song mode dominates."[29]

Comparing our analyses reveals that we have chosen different criteria for analysis. In the

first place, Agawu's reading grants less priority to rhythmic activity. In discussing unit 10 (mm.

12–13), Agawu notes that "Unit 1 (and its repetitions) is heard here in the key of the

subdominant, A minor, with a slight rhythmic/textural differentiation featuring triplets."[30] My

scale-degree-based analysis (Examples 2-4, 2-5, and 2-6) also grouped these units together while

the rhythmically-focused Example 2-12 did not. Agawu assigns the passage from mm. 52–59—

what I had called a quasi-sentence and a "contrast within a contrast"—to a single unit (27). In

Example 2-12, I had commented on m. 59 (event 59) as both a unique instance of 6 eighth notes

within the B section, and a reminder of the agitated A section. Agawu's comments on this

passage instead reflect a penchant for harmony and voice leading:

> A characteristically Brahmsian modal shift involving 5-b6 in the bass initiates a strongly
> directed linear motion in the treble, providing the tonal contrast we normally associate
> with the beginning of the second reprise in a classical minuet form.[31]

Moreover, Agawu's criteria for identifying paradigms are more flexible than mine.

Consider my first attempt to analyze "melodic rhythm at the level of 1 measure," which denotes

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[29] Ibid., 239.
[30] Ibid., 233.
[31] Ibid., 235.

a specific parameter (melodic rhythm) and exact time span (1 measure). Agawu, meanwhile, allows for a degree of variability. For instance, his "main idea" from m. 1 is characterized primarily in terms of its scale-degree content (5-6-3-5-4-2) and underlying harmonic progression (i - iv -V). However, a later unit, he indicates, need not correspond exactly to these specifications in order to be a member of the paradigm class. He considers Unit 21 (m. 29-30) as belonging to column 1, even though it differs from unit 1 with regard to both properties.[32]

Related to this is that Agawu's units (events) are not all of equal length. Thus, units 1–3 are each a measure long, whereas unit 4 comprises 3 1/3 measures. This practice opens up some new interpretive options for Agawu. For example, he is able to comment on the numeric distribution of units without merely comparing the number of measures in each section. Thus, he observes a "striking difference in population of units: 22 in the A section, 19 in the A' section, and a mere 8 in the B section."[33] In my analyses, the "population" of units in each section is directly proportional to the length of the section. Admittedly, I was cautious in my application of this technology, insisting upon strictly defined criteria and equal sized units, which, as just observed, may have limited insights that may have emerged had I exercised more leniency.

But most important, this comparison reveals an important characteristic of the paradigmatic method. The simple fact that Agawu and I made these different choices is a testament to its flexibility. Although this technology does encourage certain behaviors—attending to musical details, conceiving repetition and difference as visual shapes—many important decisions are left up to the analyst.

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[32] If analyzed in G major, it contains scale-degrees 3-4-1-5-4-2. In E minor, the scale-degrees would be 5-6-3-7-6-4.
[33] Agawu, *Music as Discourse*, 230.

Conclusion

Several points of contact exist between each of the three readings advanced in this chapter. For example, none of them rely on any formalized treatment of cadence. Breaks in the music were occasionally pointed out, but "cadence," as a parameter, was never made a criterion on which to base a paradigmatic analysis. Moreover, neither Agawu nor I referred to specific cadence types (perfect authentic, imperfect authentic etc.) My first reading casually mentioned the half cadence in C in m. 17, noting how this moment was prepared by consecutive predominant chords. Similarly, Agawu treats cadence in very general terms, using the phrase "big cadence" to discuss the downbeat of m. 32. Meanwhile, my preliminary reading spoke of key areas being "emphasized" (such as the emphasis of B major in mm. 5–7) rather than established through cadences.

The first reading also reveals a penchant to situate musical elements in terms of narrative. Certain scale degrees are meaningful to me, and I want to convey this meaning by framing them not as abstract numbers, but as living personae who occupy this musical world. Abstract objects are treated as active subjects who have their own objectives and desires. Thus, scale-degree 6 "impedes" the emergence of the tonic triad, and the music "seems unable" to secure a root position E-minor chord. Such thinking has a teleological bent, in that it conceives of musical events as leading toward or perhaps thwarting some desired goal. Yet, the participants in this narrative are purely musical, and do not refer to an external program. That is, the analysis embodies what Agawu calls "introversive" rather than "extroversive" semiosis.[34]

All three sets of readings, then, are primarily concerned with internal relations. Although my final reading acknowledged certain generic expectations and intramusical associations, it mostly dealt with relations within the piece itself. At one point, I broach the possibility of

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[34] Agawu, *Playing With Signs*, 132.

hearing beat 3 of m. 17 (melodic C accompanied by Ab and C) as either scale-degree 5 in F minor or 3 in Ab major. In deciding for the former, I made recourse to the previous melodic occurrences of scale-degree 5 in similar metrical positions throughout this piece (pickups to m. 1 and 11 for instance). Of course, there is no inherent music-theoretical reason why it could not be otherwise: we could just as easily be heading to Ab major, regardless of what has happened before. But here, knowledge of earlier patterns within the piece conditioned my interpretation of the present moment.

Each of the three analyses contributes to our understanding of how the paradigmatic method may impact the activity of analysis. I began part three by asking "what is it like to do analysis using the paradigmatic method?" Armed with this technology, I attended to small units and their repetitions, assembling visual aids from which to draw some conclusions. Meanwhile, Agawu's reading shows that paradigmatic analysis, while it encourages methodological singularity, opens up a variety of interpretive paths. Regardless of what parameter is under investigation (harmony, rhythm etc.) the method remains the same: account for all instances of the chosen paradigm and organize the results graphically. Nonetheless, comparing Agawu's reading to my own attests to the diversity of stories one can tell about music using the paradigmatic approach.

In closing, in must be restated that any analysis relies on some kind of technology, however informal, and that this technology necessarily affects how we analyze. I have chosen to begin this series of analytical explorations with an application of the paradigmatic method because, on the surface, it would seem to be the most stylistically neutral of the technologies in this study. The method does not rest upon any specific music-theoretical premise. The analyst, therefore, is not obligated to privilege any element of musical style, even those purported to be

essential to the study of late-Romantic instrumental works. Yet despite Agawu's claim that the paradigmatic method helps capture our intuitions, the above ventures have shown that no method truly captures and transports our own intuitions without doing much more. Embracing a paradigmatic attitude influences our thoughts and actions, affecting the kinds of objects to which we attend and characterize. As we will see in later chapters, every approach offers certain tradeoffs—if there is something is to be gained by employing paradigmatic analysis, then something must also be lost. By the same token, as one interpretive pathway is blocked, another one opens. Perhaps situating one's analysis in terms of broad, harmonic trajectories may open the analyst to insights that elude one who follows a strictly paradigmatic approach. Or conversely, by attempting to grapple with local-level paradigms, one may get a better sense of how the units sound in actual time.

Nonetheless, we must also acknowledge the great degree of freedom the paradigmatic approach affords the creative user. In the hands of a gifted and musically sensitive analyst, it can be used to generate observations and effectively communicate one's ideas to others. This is surely true of Agawu, whose analyses throughout *Music as Discourse* show the tremendous potential of this tool when wielded by skillful hands. On the basis of my own experience, I echo Agawu in believing that the value of paradigmatic analysis resides not in any one "chart," but in the overall activity toward which this approach contributes. No single account can be taken as *the* paradigmatic analysis. Rather, it is in doing and reflecting upon multiple acts of analysis that we learn the most about music, technology, and ourselves.

Chapter 3

Topic, Texture, and Sound: Suggestions by Leonard Ratner

In the first chapter, we considered a music-analytical technology to be a tool that informs the activity of music analysis. The paradigmatic method clearly fits this description, encouraging the analyst to identify, take stock of, and visually illustrate the distribution of surface-level musical features. Taking this approach to Brahms Op. 119 No. 2 promoted thoughts, intuitions, actions, and conclusions that differed from those cultivated in the preliminary, "non-paradigmatic" reading. However, analytical technologies are not limited to the precise and methodical. Vehicles such critical commentaries, composer biographies, or even program notes may suggest technologies with the potential to change how we go about analysis.

This chapter deals with the writings of musicologist Leonard G. Ratner, a scholar who wrote voluminously on Western music of the eighteenth and nineteenth centuries. Following a preliminary analysis of the first movement of Georges Bizet's Symphony in C "Roma," part two provides some historical background on Ratner and underscores some of the themes that appear throughout his work. Since Ratner at no point laid out a single, reproducible method, I construct a provisional analytical approach based on three of his books: *Classic Music* (1980), *Romantic Music* (1992), and *The Beethoven String Quartets* (1995). I then reconsider this movement in light of the Ratnerian technology defined in part two. Having absorbed some of Ratner's musical knowledge and analytical techniques, we are afforded new possibilities for engaging the selected music.

I. Preliminary Analysis of Bizet Symphony No. 2 in C "Roma," i

Upon a first hearing, the first movement of "Roma" seems to be divided into three sections according to tempo, exhibiting a slow-fast-slow format. The cornets begin the movement in rhythmic unison, with cornet 1 sounding the pentatonic melody before handing it off to cornet 3 in m. 4, an observation I could not have noticed without the score. By contrast, the handoff from horns to woodwinds at m. 17 is aurally distinguishable on account of their differing timbres. Between these two thematic statements, a four-note motive (5-6-7-5) sounds three times, each with different harmonic accompaniment. In mm. 8–10, Cornet 1 in G plays the motive over a V-ii^7-V progression. The second time, the motive participates in a tonicization of iii. Analyzing the harmony of the third utterance (mm. 13–14) is a bit tricky since, at this point, G now sounds to me like the tonic. In that case, the chord progression starting at m. 13 moves from vi to iv, under a G-B pedal, to an enharmonically respelled vii$^{06/5}$/V (#4/b5 in the cornet in F, 6 and 3 in the cornets in C, and 1 in the cornet in G). In all three instances, flutes and clarinets reinforce the final harmony by localizing the 5-1-2-3-5 motive. Example 3-1 shows the opening three measures while Example 3-2 provides the first appearance of what I will call the 5-1-2-3-5 motive.

Example 3-1: Bizet Symphony in C "Roma." Opening Melody

Example 3-2: Bizet Symphony in C "Roma." 5-1-2-3-5 Motive
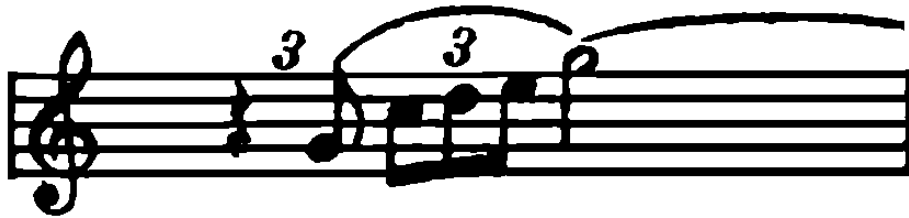
Beginning at m. 30, the music gains in energy: thematic material is broken down into fragments while longer durational values are gradually replaced with shorter ones. Measure 53 marks the climax of this section, as a fully diminished arpeggio cascades downward over a G bass, before a rising minor scale brings the music to rest on the dominant of C minor in m. 60.

Measures 61–215

The minor theme that begins in m. 61 (Example 3-3) is characterized by its scale-degree content (5-1-2-3-5), a repeating rhythm in 6/8 time, and the prevalence of scale degrees b6 and #4. Although one can clearly discern a minor version of the 5-1-2-3-5 motive, closer scrutiny reveals that both Examples 3-3 and 3-2 can be traced back to m. 3 in Example 3. (The motive also occurs, somewhat hidden, on the downbeats of mm. 23–24.) The minor theme in mm. 69–76 removes the initial leap of a fourth, while transposing the first several notes up by step (2-3-4-6). The diatonic stability of the opening bars is now replaced with the chromatic instability of this allegro theme, which emphasizes scale degrees b6 and #4. These appear in the German augmented sixth chords in mm. 65 and 83, and receive melodic emphasis in mm. 65, 70 and 71. This sense of agitation is further heightened by the off-beat accents in the bass.

Example 3-3: "First Theme." Measures 61–64

The recurring rhythmic pattern endures all the way until the cadence on G in m. 76. From here, the music passes through the non-chord tones b6 and #4, (cello in m. 76, strings in m. 79 and 81–82) without emphasizing them metrically. As the music ascends, we seem headed toward a cadence in the major tonic. Instead, a downward minor arpeggio, ornamented by b6 and #4, leads to a triple forte cadence in C minor at m. 88.

In some respects, mm. 61–88 are structured in a way that resembles the opening twenty-four bars. Recall that two statements of the opening melody (the first played by cornets, the second by woodwinds) were interrupted by a series of feints to E minor. Similarly, mm. 61–88 comprise two agitated passages in C minor separated by a brief major-mode respite. In both cases, the middle areas are initiated with a figure that revolves around scale degrees 5, 6, and 7 in G major (cornet in m. 9 and strings in m. 76).

At this point, I wonder if I can refine my earlier assertion that this piece is divided into three large groups, defined by tempo. How specifically do these groups relate to one another? From what has sounded thus far, it is reasonable to assume we are dealing with a sonata form, and in fact this format would be for opening a multi-movement work. In this case, what I had called A and B constitute an introduction and exposition respectively. The introduction connects to the exposition via an accelerating passage from mm. 41–60, at which point an allegro theme begins in C minor and cadences in m. 88. What follows is a new melody, beginning with a

descending natural-minor scale that begins to tilt toward other keys. At m. 95 the cornet moves

from local 5 to 1 in G, but maintains a sense of C minor by walking up and down the upper half

of the natural minor scale (scale degrees 5, b6, and b7). However, its next iteration pushes even

more strongly toward G major, as these scale degrees are raised so as to fit comfortably in a G-

major context. Perhaps G major is the goal of this passage, or else the music may shift to the

parallel mode to articulate an overall i to v modulation, which, at this point, seems like a viable

option. Minor-mode sonata expositions do occasionally go to the minor dominant, such as the

finale of Beethoven Op. 2 No. 1, which modulates from F minor to C minor.[1] In fact, its second

theme resembles Bizet's melody from m. 88. Examples 3-4 and 3-5 compare these passages.

Example 3-4: Beethoven Sonata in F Minor, Op. 2 No. 1, iv. Measures 33–36

Example 3-5: Bizet "Roma." Measures 88–90.

The music arrives at the dominant of G minor beginning at m. 104. Pervaded by the

recurring rhythmic motive and by local #4 and b6, the music makes two attempts at establishing

G minor: it first sounds a deceptive cadence at m. 108 before achieving a perfect authentic

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[1] Another instance of the i to v exposition, in addition to the finale of Op. 2 No. 1, is the first movement of the E-minor sonata, Op. 90.

cadence at m. 112. The passage that follows brings to my mind another Beethoven movement: this time the Scherzo of the Ninth Symphony. The dotted quarter, eighth, quarter rhythm that begins each statement of Example 3-6 resembles the rhythmic figure that pervades mm. 104–128 of "Roma." Both passages have a driving, unceasing quality to them, increasingly steadily in dynamics. Yet, while the Beethoven example occurs at the beginning of the movement—and is thus an opening, rather than finishing move—the passage from "Roma" follows the arrival of the new key of G minor.

Example 3-6: Beethoven Symphony No. 9, ii. Measures 9–18

Despite momentarily backtracking to C minor in m. 116, the music arrives at a dominant pedal in G minor at m. 120, the main rhythmic motive guiding the action toward a half cadence in m. 128. This is followed by a distorted version of the transition theme from 128–133, with registral and timbral shifts obscuring the fact that this compound melody articulates the same rhythm as Example 3-5. This dissolves into a more characteristic transition theme, which paves the way for an *espressivo* clarinet melody in m. 136. The melody descends stepwise from Eb to Bb, the same notes that began the transition theme, only now representing different scale degrees (1-5 in Eb vs. 3-7 in Cm). It also possesses an aria-like quality, featuring large leaps to and away from the tension tones 4 and 7. Upon cadencing in Eb, the melody is followed by statements of

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the transition motive, which push forward to a climax on the dominant of Eb in m. 168. The strings, in addition to providing timbral consistency, begin a gradual ascent to a high C from mm. 160–168. But the leaps on beat two of each bar between mm. 161–163 resemble the leapwise action of mm. 128–133.

Then, a surprising twist: the music jolts abruptly to E minor at m. 188, sounding the 5-1-2-3-5 motive with authority.[2] The music staggers chromatically around local scale-degree 5 between mm. 194–197 and again from mm. 198–201, each instance resulting in an emphatic cadence in E minor. In the same abrupt manner in which this key was achieved, the music regains Eb major, as the staggering rhythmic figure lurches all the way to a perfect authentic cadence in this key at m. 210. The exposition comes to a close in a celebratory flourish, confirming Eb major as the harmonic destination of this section.

Measures 214–406

What I will call the development begins at m. 214, with Eb major continuing from the previous section. Several measures later, a solo cornet sounds the 5-1-2-3-5 motive in the same key. Yet a Db bass (b7) unsettles the sense of Eb major, drawing parallels with the Bb that had undermined the tonic back in m. 38. In the prior instance, Bb served as a catalyst for harmonic destabilization (via fully-diminished seventh chords) and increased tempo. Here, Db undermines the mediant not only from below, but within the melodic counterstatements in the winds. Indeed, no less than four key areas sound between mm. 214–252: Eb major (mm. 214–225), C major (226–234), F minor (235–242), and Db major (243–256). Moreover, the passages in C and Db

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[2] The relation between Eb major and E minor is known as the Lewin "SLIDE" relation, which denotes the relation between a major and minor triad that share the same third (i.e. Ab major and A minor share the note "C").

are palpably infused with mode mixture, such as the especially salient ii$^{\theta}$7 chord that supports

scale-degree 4.

At m. 250 the clarinet enters with a melody that resembles that of the opening, sounding

it in both Fb major and again in Ab minor. Although the harmony is far from tonic, the use of

opening material may suggest that a reprise is near. In addition, the key signature changes at m.

250 to C major while the time signature reverts back to simple rather than compound meter

(2/4).[3] A large portion of the introduction sounds in E major from mm. 274–298 before the

music accrues energy over a dominant pedal in E. Like the earlier intrusion of E minor toward

the end of exposition, E major takes over the thematic material that belongs to the tonic. And yet,

as with E minor, it is suddenly abandoned, the music staggering to Db major in m. 310, followed

by a bevy of solo instrumental gestures from mm. 329–344 (flute, oboe, clarinet, and harp) in the

same key. With the return of the introduction in C major in m. 348, we must reconsider our

interpretation of this movement as a sonata form. What is recapitulated is not the first theme of

the exposition (Example 3-3) but rather the introductory material mm. 1–34, restated exactly in

mm. 348–402.[4] Earlier, in m. 38, a Bb in the cello had undermined what would have been a

perfect authentic cadence in tonic. However, the Bb does not reappear in the corresponding m.

401, allowing the harp's tonic arpeggio to sound consonantly. The relationship between these

two events strikes me as one that might obtain between expositions and recapitulations. Here, A'

recomposes that moment in A that had steered the music away from C-major toward its parallel

minor, retaining not only the original mode but the initial tempo. In this view, the movement is

organized as an ABA', in which the outer sections resemble slow introductions of sonata form,

while the middle section constitutes the exposition and development.

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[3] Although the strings' rhythm continues to suggest 6/8, even after the time change.
[4] That the latter comprises significantly more measures results not from added material but rather from the final section being in 2/4 time instead of common time.

<center>*</center>

Before moving on from this preliminary analysis, I would like to advance a complementary reading that understands this music as a symphonic poem that unfolds in three stages. This alternative is worth considering on two counts. First, the word "Roma" graces the opening page of the score, not as a subheading for a numbered symphony, but as a stand-alone title. This places it in more relation to the symphonic poems of Rachmaninov (e.g. *The Rock* or *Isle of the Dead*)—than to something like Haydn's Symphony No. 45 in F# minor "Farewell."[5]

Second, the musical details themselves seem to reward extra-musical interpretation in terms of a symphonic poem. Imagine that the A, B, and A sections represent three stages of a musical plot: an initial setting, a conflict, and its resolution. There are many stories we could tell about this movement. Here is one:

The opening paints a picture of ancient Rome, whose might and imperial presence is depicted with the opening horn chorale. Along with the lush string melody at m. 25, these themes, with their major sonority and full texture, and secured by perfect authentic cadences, musically celebrates the strength and prosperity of the Roman empire. Beginning in m. 40, the Barbarian enemy can be heard in the distance, getting louder as it approaches the city walls. This is represented by the Bb in the bass, triple piano, which causes a minor disturbance to the C major sonority. As the opposing forces become visible, the celebration is immediately suspended: the Roman troops mobilize while the crowds, depicted by the rapidly undulating upper strings, quickly disperse. The kingdom hushes at m. 60, waiting for the general's orders to engage the enemy. With the minor theme at m. 61, the army moves forward. The battle ensues throughout the allegro B section from mm. 61–273.

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[5] Although the "I" under the title suggests the first movement of a multi-movement work, which are often written in sonata form.

The return of the horns, then, signals the preservation of Rome's power and stability. The harp trails off into the evening, bring the drama to a close. Considering the overall form to be ABA captures the sequence of stability-conflict-stability outlined in the above narrative. This reading could then be expanded to include additional details. For example, the final event in mm. 467–469 may be seen as summarizing the dialectic of peace and unrest that characterized the overall form. The tumult of the B section is reflected by the dynamic intensity achieved in the middle of the gesture.

Reflection on Preliminary Analysis

The first portion of this analysis adopts many of the same criteria as in the preliminary analysis of Brahms Op. 119 No. 2. Specifically, it draws several motivic-thematic connections, analyzes important chords using Roman numerals, tracks modulations between keys, references other pieces and genres, and treats various musical elements as agents. Two motives were singled out for their scale-degree content: the opening, pentatonic horn motive, and the 5-1-2-3-5 motive that persists throughout the movement. Splashes of minor were analyzed in otherwise major contexts–the "feints" to E minor in the introduction, the intrusion of E minor at the end of the exposition, and the mixture that colored the major utterances of the main theme in the development. Finally, my penchant for ascribing agency to musical elements—including particular instruments (horns) and key areas (the ever-intruding E)—is once again on display in this analysis.

Among the differences include a heightened sensitivity to the criterion of timbre, a quality virtually ignored in my reading of the Brahms. Given the prevalence of timbral contrasts in this piece, it is reasonable to emphasize timbre as a significant parameter. Woodwinds, strings,

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brass, and percussion are given separate opportunities to speak; it is hard not to notice when one enters and another ceases.

I also compare the music encountered here to principles of sonata form as well as to specific repertoire, such as the Beethoven Ninth and the Sonata Op. 2 No. 1. These points of reference are, of course, related to the extent that my knowledge of Beethoven's music informs my understanding of sonata form. Owing to frequency with which one encounters this format within the first movements it seemed "viable" to approach this movement as a sonata. Many analytical insights surface through the comparison of the musical details to this framework: it is my previous understanding of sonata norms that allows me to describe modulations as more or less common, to label passages as transitional, and to assign the opening sixty bars the role of introducing. Although this framework makes certain insights possible, I felt compelled to offer an alternative, programmatic reading of this movement as depicting a battle. In particular, the fact that the minor theme at m. 60 does not return—but instead interrupts the more peaceful major themes that bookended this movement—prompted me to seek out an alternative framework, one that matches my initial intuition about this movement in three large sections.

II. A Ratnerian Approach to Analysis

Leonard G. Ratner (1916-2011) was a musicologist, composer, and teacher of music. Having completed a PhD in musicology under Manfred Bukofzer at Berkeley in 1947, he spent his entire teaching career at Stanford, until his retirement in 1984. Among his core beliefs was the view that classical sonata form is "fundamentally harmonic," rather than thematic in structure, that music finds analogies in language, and that the writings of eighteenth and nineteenth century theorists are crucial for understanding music of these eras. His notion of

musical "topics"—which are "subjects of discourse," characteristic figures or styles that would have been understood by contemporary audiences—have influenced such writers as Robert Hatten, Wye Allanbrook, and Kofi Agawu. Agawu in particular affirms his indebtedness to Ratner in his well-known book *Playing with Signs* (1991). Unlike Hatten and Agawu, however, Ratner's project is non-theoretical, despite characterizations of him as the first "topic theorist." Although Ratner believed in the importance of topics as recognizable musical features, he did not propose a theory that systematically explains how they function syntactically. Recognizing this, Agawu took a more structured approach to topical analysis, grounding his study of topics and syntax in Schenkerian theory. More recently, William Caplin has considered whether topics can affect form-functionality, ultimately concluding that such relationships are tenuous.[6]

A Ratnerian approach involves consideration of topic, but that is only one of several aspects of music that interested Ratner. The challenge then, is to decide which of his many ideas we should concentrate on in doing an analysis. While by no means an easy task, it seems necessary and reasonable to attempt a piecing-together of what may be called a Ratnerian technology. It is necessary because Ratner does not provide a ready-to-go analytical method that we can imitate. Jane Stevens, in her review of *Classic Music*, points out "the absence of any but the most rudimentary scholarly apparatus to facilitate the confirmation and further investigation of the many new approaches that are opened up here."[7] While this should not dissuade us from thinking about how Ratner's ideas might apply to analysis, we should recognize the provisional nature of the blueprint we construct, acknowledging the possibility of alternatives. The goal is not to capture every nuance of Ratner's thought but to be able to reflect upon what it is like to adopt his desiderata and criteria for analysis. There is value in taking a brief walk in his shoes,

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[6] William Caplin, "On the Relation of Musical Topoi to Formal Function," *Eighteenth-Century Music* 2/1 (2005): 113–24.
[7] Jane Stevens, *Review of Classic Music, Journal of Music Theory* Vol. 27/1 (1983): 121–127.

even if those shoes can never be identical to the ones he wore, discolored and worn out during the decades that separate this essay from Ratner's own work. Thus, the enterprise is reasonable to the extent that it reflects how many of us, including our students, engage with new analytical tools. We are not "ideal" analysts, we do not have a perfect understanding of technology—its properties, genesis, reception history etc.—but nor do we need to in order to experience the benefits they offer. The purpose of this section is to be as explicit as possible about what "it" is, to make clear those Ratnerian ideas that have been studied and mobilized for analysis in part 2.

The technology has been assembled using material from three of Ratner's mature writings: *Classic Music, Romantic Music*, and *The Beethoven String Quartets.*[8] Each of these extensive books—averaging 300 pages in length—reveals aspects of Ratner's musical thought, despite their focus on different repertoire. I have chosen to take three analyses, one from each book, as departure points for exploring Ratner's musical values and criteria for analysis. Relevant concepts are explained as they come up in the analysis.

The first study is Ratner's analysis of Haydn's Sonata in Eb, Op. 53, found in *Classic Music*. Ratner dedicates all of chapter 23 to exploring this multi-movement work, drawing on many of the concepts explored in the preceding chapters: Topic (ch. 2), Harmony (ch. 4), Rhythm (ch. 5), and Sonata form (ch. 13) all play a role in this analysis. Ratner describes the opening movement as a sonata form that bears traces of the fantasia, possessing a "mosaic-like phrase structure" in which topics and key areas glide from one to another. Ratner identifies several topics within the opening bars of Op. 53: the French overture (dotted rhythms, mm. 1–2), stile legato (contrapuntal passage with suspensions, mm. 6–7), and brilliant style (rapid thirty-

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[8] A comprehensive list of Ratner's work can be found in Wye Allanbrook, Janet M. Levy, and William P Mahrt, *Convention in Eighteenth- and Nineteenth-Century Music: Essays In Honor of Leonard G. Ratner* (Stuyvesant, NY: Pendragon Press, 1992), xviiii.

second notes, mm. 9–10). Ratner's annotations on the first eighteen measures of this movement

are shown in Example 3-7.

Example 3-7: Haydn Sonata in Eb, Op. 53, i. Measures 1–18. From Example 23-2 of *Classic Music*.

Ex. 23-1. Haydn, Sonata in Eb major, H.V. XVI, No. 52, 1795, 1st movt.

The accompanying prose is heavily descriptive, with large sums of information packed into each sentence. Ratner shifts between moment-to-moment analysis and synoptic assessments of large spans. These latter assessments are often supported by statistics revealing the numerical frequency and distribution of a certain feature. We learn, for instance, that over the course of the entire movement "topics change, frequently, at least three dozen times; no topic is maintained for more than six measures continuously."[9] This, along with the sparseness of formal cadences and irregular *scansion*, contributes to the perceived sense of fluidity and fantasia. Scansion is a term that denotes the grouping of rhythmic units into duple or triple arrangements. In this movement, half-measure units are typically grouped into twos while measures group into threes. Ratner concludes that the combination of fluid phrase structure and scansion with rapidly changing topics, casts a fantasia-like shadow over the sonata form.

Contrasting this bird's-eye-view approach is a style of bar-by-bar analysis that has since fallen out of favor.[10] The following passage reflects the experience of a first-time listener hearing the music as it unfolds in time:

> The first two measures represent a cadence, a complete statement anchored to a tonic pedal point. This is a powerful gesture, but it is very short, too short for even the briefest of normal periods. To extend it, Haydn uses an echo, itself varied and reechoed again and again until it gathers momentum to become an agent for continuation in m. 5. The melody arrives at the tonic for the first time at m. 6; we could easily imagine a dominant under the descending parallel thirds in the second half of m. 5, so that the tonic of m. 6 could represent an authentic cadence and the end of the period. But Haydn changes the sense of the tonic twice […][11]

One can imagine a listener, familiar with the conventions of "normal periods," experiencing the music in the manner described above. In other analyses, the confirmation or

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[9] Ratner, *Classic Music*, 412–413.
[10] Although we will encounter it again in the writings of Donald Tovey, examined in chapter six.
[11] Ibid., 413.

denial of musical expectations takes the form of hypothetical recompositions, intended to graphically illustrate alternative directions that the composer might have taken.

Ratner also observes some relationships that obtain throughout the entire three-movement sequence. Of particular interest is the journey of E major, which first appears in m. 68 of the first movement as the "point of furthest remove."[12] E major is also used to open the second movement, which Ratner hears as a deceptive resolution from Eb major to Fb major. This "striking juxtaposition" is enhanced by the chordal texture and adagio tempo which "allow the sound of E major to resonate."[13] Texture is an important parameter for Ratner, considered in most of his analyses. It denotes "the relationship of the component voices in a composition," and includes "the number of voices heard," "the action assigned to them," and "the effects of sonority created."[14] Whereas the fullness of texture allowed the E major sound to flourish in the adagio, the sparse texture that opens the final movement, a repeated G natural, suggests an *interchange of mode* from E major to E minor.[15] As the remaining voices enter in the next measure, so does the sense of Eb major as tonic. Ratner sums up the journey of E major, shown here as Example 3-8.

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[12] The point of furthest remove is a key station in the development, often VI or V/VI, in which the harmonic trajectory begins to move toward tonic. Ratner, *Classic Music*, 416.

[13] Ratner, *Classic Music*, 416.

[14] Ibid., 108.

[15] Interchange of mode denotes the substitution of a major-key chord with its minor-mode equivalent, what is often referred to as "mixture."

Example 3-8: E major in Haydn's Sonata in Eb, Op. 53 (From Example 23-4 of *Classic Music*)

1st movt: true E major (modal cadence, m. 68)

2nd to 3rd movt: true E interchange major of mode implied by G# (E minor)

1st to 2nd movt: enharmonic— E major is actually Fb major (deceptive cadence)

sideslip of perfect fifth produces Eb major

In *The Beethoven String Quartets*, Ratner analyzes each of Beethoven's sixteen string quartets, as well as the *Grosse Fuge*, separately published as Op. 133. At the encouragement of his students, he published expanded versions of analyses that he had used in classroom instruction.[16] Here I will restrict my comments to the analysis of Beethoven's "Harp" quartet Op. 74. Ratner describes the introduction to the first movement as "an amazing, bewildering set of elusive motions" and as a "wandering journey." In support of this description, he lists the "fragmentary topics" (arioso, singing, and ombra styles) that chart a path through several key areas. Despite this apparent lack of focus, Ratner illustrates how the introduction is connected by the stepwise motion of the structural line. He then compares this section to the Allegro that follows:

> Texturally and topically, the Allegro is a violent counterstatement to the gentle Introduction. Four *coups d'archet*—"the music with the axe after the music with the silk brush" (Jean Cocteau)—utter a peremptory command, as if Beethoven were to say, "No more of this wavering: let's have some old-fashioned music—bold chords, a musette, some schoolish counterpoint, a bit of march and of song, *bombe* (repeated notes), and a few ordinary pizzicati.[17]

Most of the analyses begin with these sorts of "plain English" descriptions of the music. These remarks are then supported by further inquiry into the specifics—the harmony, scansion,

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[16] His analysis of Op. 59 No. 1, which also appeared in *Classic Music*, derived from a course he taught at Stanford, which the editors of *Convention in 18th-Century Music* describe as "legendary." Allanbrook et. all, *Convention*, xv.
[17] Ratner, *Beethoven String Quartets*, 169.

phase structure etc. For this, Ratner often employs more technical terms and concepts, many of which are defined in an extensive glossary at the end of the book. The relationship between "old-fashioned music" and the specific techniques that support such a characterization are typical of the book as a whole. In proceeding from general impressions to technical description, Ratner's strategy resembles—indeed, may have influenced—Agawu's paradigmatic method.[18]

Yet while both authors tend to proceed from general intuitions to particularities, they employ different methods for making these connections. The paradigmatic approach, as we observed in the previous chapter, is one of methodological singularity. Meaningful units are identified as syntagms, whose totality of appearances can be represented by a paradigmatic chart. Ratner's support, by contrast, takes a variety of forms. At times he methodically details the distribution of key areas, the number of authentic cadences, and the percentage of measures that feature a certain texture.[19] Nonetheless, these findings are not presented as systematically as they would be in a paradigm chart.

In other instances, the support Ratner provides for his musical impressions is less quantitatively precise. Consider his comments on the third movement of Op. 74. Ratner calls the trio section "a wild parody of third-species counterpoint." He then shows how the "school master conventions" of counterpoint (correct intervals, clear descending structural line) are distorted by a number of other factors. He points to the fast tempo and erratic range of the instruments as contributing to the "bizarre effect" of this music. Ratner continues:

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[18] Recall Agawu's suggestion that "the real value of paradigmatic analysis may well lie in its ability to illuminate compositional features and strategies sensed intuitively." Agawu, *Music as Discourse*, 175.

[19] Examples of the first two can be found in his analysis of Beethoven's String Quartet Op. 59 No. 1, on page 423. A "plan of keys" is given on pg. 430.

The self-containment and the sobriety of the *stile legato* calls for a centripetal sense of melodic action, a control from a melodic center, which is ignored here by the skittery, roller coaster lines of the quarter-notes![20]

Among the criteria for analysis are topic, form, range, harmony, rhythmic scansion and mode. Ratner points out several instances of major-minor opposition in Op. 74, including the interchange of mode in m. 18 of the first movement, and the "life history of the A flat minor sound" in the second. On a larger scale, he begins each analysis in this volume with a chart showing the "harmonic form" of each movement. Example 3-9, which gives the form of the first movement of Op. 74, reveals the prominence accorded to harmony. Nowhere do the terms "subject" or "theme" appear in this example, while special attention is given to the "point of furthest remove." These reflect his long-held conviction that form is "fundamentally harmonic," which he argued for in his early article "Harmonic Aspects of Classic Form."

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[20] Ratner, *Beethoven String Quartets*, 176.

Example 3-9: Harmonic Form of Beethoven Quartet Op. 74 "Harp," i. (From *The Beethoven String Quartets*)

Op. 74, First Movement

Tempo: *Poco Adagio; Allegro*   Meter: $\frac{4}{4}$ Sonata form

Harmonic form

Introduction mm. 1-24		E flat major
Exposition mm. 25-77	Key-area 1, mm. 25-39	E flat major
	Shift to second key, mm. 39-49	
	Key-area 2, mm. 50-77	B flat major
Development mm. 78-138	Point of furthest remove, m. 78	V of VI
Recapitulation mm. 139-203	Recall of key-area 1, mm. 139-149	E flat major
	Shift to key-area 2, mm. 150-175	
	Rhyme of key-area 2, mm. 176-203	E flat major
Coda mm. 204-262		E flat major

I draw the third analysis from *Romantic Music: Sound and Syntax*. In this book, Ratner argues that profound changes in sonority that occurred during the nineteenth century shaped traditional elements of music—everything from melody, to phrase structure, to large-scale form. He writes "The effect of these changes—of this new climate of sound—was pervasive. It affected every aspect of musical form and expression."[21] The first section of the book is dedicated to exploring these new sounds, including changes in texture, timbre, harmonic color

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[21] Ratner, *Romantic Music*, xiii.

and orchestration. These vertical dimensions contrast with what Ratner terms "syntax," which denotes "horizontal, or time-lapse, configurations" such as phrase structure and form. After discussing traditional syntax in part two, Ratner devotes the final two sections to exploring how these two dimensions interact. His analysis of the first movement of Mahler's Symphony No. 2 occurs during the final portion of the book "Sound and Form."

Ratner's comments on this movement are consistent with his larger goal of providing, in this book, "an approach in which sound figures as a factor in the analysis of this music."[22] In sizing up this symphony, Ratner highlights the influence of sound, scoring, and topic on the unfolding of sonata form. The movement "is itself a parody of sonata form; it retains many important configurations of the form, but puts them into odd places and proportions."[23] Among the traditional features are the extended closing section that confirms the second key of the exposition, a typical development section, and a final coda that confirms the tonic. However, the exposition modulates not from C minor to the diatonic mediant, Eb major, but rather to the remote key of E major. These two triads share no common tones, but are linked through a technique Ratner calls "pivoting" or "turning on a note." As shown in Example 3-10, the notes C and G of the C minor triad pivot around Eb, moving outward by half step. The resulting Cb, Eb, Ab, triad connects to the following E-major triad as Eb ascends chromatically and the outer notes are reinterpreted enharmonically. Such modulations, which we might describe using transformational technologies[24], are understood by Ratner as devices intended to focus the listener's attention on the prevailing "sound climate." As with the notion of musical topics, such

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[22] Ratner, *Romantic Music*, xiii.
[23] Ibid., 292.
[24] In Neo-Riemannian terms, the move from C minor to E major can be accomplished by a parallel transformation (P) from C minor to C major, followed by a Leittonwechsel (L) that transforms C major to E minor, and then another parallel transformation from E minor to E major.

concepts are enlisted not as part of some encompassing theory but as aids to describing the music one encounters.

Example 3-10: Turning on a Note (From Example 19-5a of *Romantic Music*)

a. Link between first and second keys of the exposition—C minor to E major. Contrary half-step motion pivoting on E flat, mm. 45–46; chromatic rising half step, mm. 47–48. Note second inversion of E major.
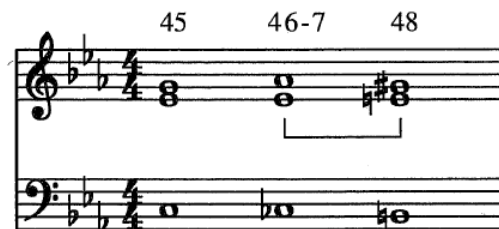
Ratner sorts these and other formal features of the symphony into three categories: those in keeping with Classic formal treatment, those belonging to Romantic practice, and modifications that are unique to Mahler. The harmonic variety of the development section and its dominant preparation of the home key belongs to the Classic style, whereas the modulation from C minor to E major has precedent in Romantic music.[25] However, Mahler's decision in the recapitulation to recall the second theme material in E major—instead of the tonic major or minor—constitutes a personal touch on the composer's part. This highlights Ratner's belief, which he elsewhere makes explicit, that knowledge of eighteenth-century conventions are essential for understanding form in Romantic music.[26] The four major analyses in his chapter on sonata form—including those of works by Schubert, Mendelssohn, Liszt, in addition to Mahler—highlight the diversity of ways in which nineteenth-century composers grappled with

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[25] Ratner locates examples of this "third-related key scheme" in the first movement of Beethoven's "Waldstein" sonata and in the *Leonore* Overture. Ratner, *Romantic Music*, 312.

[26] "Form in nineteenth-century music is based principally on eighteenth-century models, adapted to incorporate elements of sound and syntax during the Romantic era." Ratner, *Romantic Music*, 239.

sonata form.[27] Since Mahler's symphony was composed roughly two decades after "Roma,"

Ratner's comments on this idiosyncratic movement are especially instructive for assembling a

blueprint for reexamining Bizet.

But perhaps most characteristic of Ratner's approach throughout this volume is his

insistence that aspects of sound—timbre, harmony, orchestration, spacing—are integral to the

syntax. Ratner calculates that approximately 300 of the 445 measures, including the opening

concitato on G, involve pedal points that provide a backdrop against which other figures enter

and exit. The opening sound climate is also defined by the pervasiveness of the C-minor chord,

whose emphasis on the fifth, G, produces a "hovering effect." Another statistical observation

notes a lack of authentic cadences, numbering "only about a half dozen." Ratner contends that

such features highlight the moment over the long-range unfolding of the forms:

> The effect of these characteristic scoring, harmonic, and rhythmic features on the form of
> the movement is to shift structural priorities away from the large-scale harmonic
> movement of traditional sonata form (although this form clearly was Mahler's model) to
> the individual shapes and local effects that seem to be Mahler's principal concern.[28]

The ability of the moment to deemphasize the sense of "goal directedness," represents a

key difference between Romantic music and its classical precedents.[29] In Ratner's words,

"Sound, by compelling attention through color or mass, can slow down action."[30] To be sure, not

all Romantic sonata forms are non-teleological nor does sound constitute the chief element of

importance, dominating its relationship with syntax. Ratner's point, however, is that this

interaction itself needs to be taken seriously in analysis of this music, with both sound and syntax

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[27] Ratner describes the second movement of Mendelssohn's "Scottish Symphony" and the first movement of
Schubert's Quintet in C, Op. 163 as "standard" layouts of sonata form that display novel approaches to orchestration
and proportion. By contrast, Liszt's B-minor sonata and Mahler 2 are considered to be "drastic adaptations of the
traditional layouts." Ratner, *Romantic Music*, 283.

[28] Ratner, *Romantic Music*, 288.

[29] As we will see in chapter 5, Hepokoski and Darcy also emphasize the goal-directed nature of classical sonata-
form movements.

[30] Ratner, *Romantic Music*, 273.

treated as elements that "act on each other reciprocally."[31] Note also that the above quoted

passage shows a concern for the thought process of the composer. This engagement with the

poietic differentiates Ratner's approach from the paradigmatic method and its focus on the

neutral level.

From this brief exposition, we can reasonably speak of a Ratnerian approach to music

analysis that can be imitated. His's analyses show a concern for the "immediate musical

experience" of an informed listener who is not necessarily a music scholar. They often begin

with some overall musical impressions, which pave the way for more extensive inquiry into the

compositional details. This inquiry can be carried out in various ways: noting the frequency of

certain events, charting the distribution of key areas or important markers, considering rhythmic

scansion or phrase structure and so on. In addition to parameters such as harmony and rhythm,

the analyst can consider the interaction of sound values—timbre, orchestration, texture—with

elements of syntax, reflecting upon how their interplay produces expressive effects. Ratner

concludes the introduction to *Classic Music* as follows: "For analysis, the recognition of these

expressive qualities, explicit or implicit, is illuminating, often providing a clue to a striking

aspect of structure."[32]

I should also mention a technique that, while not explicitly used in the three analyses

discussed, features elsewhere in Ratner's writing. He devotes a short chapter in *Romantic Music*

toward explaining and defending two categories of what he terms "rhetorical reduction." First,

melodic reduction "isolates the commonplaces of melody, harmony, and rhythm...reducing most

of the sound values to melody and accompaniment." Second, harmonic reduction "exposes a

simple two-part framework modeled on traditional harmonic counterpoint of the eighteenth

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[31] Ratner, *Romantic Music*, 153.
[32] Ratner, *Classic Music*, 30.

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century." These techniques allow one to hone in on certain aspects of a passage—its topical content or voice leading—and are intended to supplement, rather than replace, the reality of the full score.

III. Bizet Symphony in C "Roma," i, in Ratnerian Terms

Having put together a provisional model in part I, let us now reconsider the "Roma" symphony with the aid of the Ratnerian technology developed in part 2. We will take seriously many of Ratner's criteria for analysis: topic, texture, orchestration, timbre, harmony, phrase structure, and form. Additionally, we might attempt a melodic reduction, map out significant key areas, or engage in recomposition. In addition to thinking in Ratner's musical terms, we should aim to adopt his values and mode of presentation. To that end, the analysis should be indicative of musical experience, with general impressions supported by descriptive prose, and should be approachable to general readership. If we can employ some of these values, and musical criteria, then we can approximate something of a Ratnerian analytical approach.

This movement is arranged into three large sections, constituting a ABA format. The A section and its reprise are predominantly in the major mode, unfolding in duple meter and at a slow tempo. Between them lies an Allegro in the parallel minor, whose harmonic journey resembles that of a sonata exposition and development (i-III, x-i). This section has about a dozen cadences, several of which emphasize important key areas. The principal keys of sonata form, C minor and Eb major, are confirmed via authentic cadence at m. 88 and m. 210. Between these are several points differing in terms of degree of punctuation and expressive effect. With the arrival in Eb major in m. 104, the listener is offered two possibilities for the ultimate trajectory of this section: i-III or I-v. However, a strong cadence in G minor at m. 112 suggests a large-scale modulation not to III but to v. The material from mm. 142–160 features two more authentic,

though melodically weakened, cadences in Eb before veering off suddenly to E minor in m. 180. In using elements of the *ombra*, tutti, and triple forte dynamics, Bizet jolts the listener with a harmony that, while retaining the third, remains distantly related from any of the keys sounded up to this point. In the wake of this expressive deflection, the recovery and confirmation of Eb major is heard as all the more triumphant.

Harmonically, the A section progresses from tonic to dominant, in preparation for the C-minor march theme in m. 60. This journey is distinguished by numerous topical shifts: pastoral (mm. 1–24), singing style (mm. 25–30), *Sturm und Drang* (mm. 42–55), and dance (mm. 56–59) give this section its kaleodoscopic quality. Bizet directs our attention to the sonority of the horn, a quartet of which open the movement with a chorale-like melody played in rhythmic unison. Opening with a pentatonic gesture, and remaining almost entirely within the diatonic scale, the horn chorale evokes a bucolic simplicity that forestalls a sense forward motion. By contrast, m. 42 introduces a *Sturm und Drang* passage, which, through an increase in tempo and chromaticism, urge this section toward its structural conclusion.

This play of action and inaction is enhanced by contrasts in texture: each of the five phrases up to m. 39 have their own climate of sound. Horns feature exclusively in the opening eight bars before joining with the winds in a call-and-response dialogue in mm. 9–16, a passage that casts a modal shade on C major, while setting the instrumental groups into relief. Measures 17–24, a restatement of the opening bars, blend winds and brass together in rhythmic unison.

The sweeping melody in m. 25 begins a series of firsts. Beginning with a descending thirds sequence, this passage calls attention to the melodic capabilities of the strings, and yet affords them only five measures to speak, a timespan that is both truncated and irregular with respect to the established eight-measure phrasing. Measures 30–34 reverse the contour of the

sweeping string melody, sounding an ascending stepwise sequence beginning on V. This musical action is further accelerated by the continuation of the quarter, two-eighth motive in the viola and the appearance of triplets in the flute. This kind of textural fragmentation is also an important linking element between the andante and allegro sections. The dissonance created by a bass Bb in m. 34 serves a springboard for harmonic experimentation via consecutive diminished seventh chords. Instruments enter with different melodic ideas, creating a variegated texture that contrasts with the rhythmic unity of the opening bars.

Bizet has composed the B section (mm. 61–273) as a parody of sonata form, combining traditional aspects of sonata practice with several structural anomalies. The preceding A section resembles a slow introduction that prepares the C-minor "exposition" that follows. However, several factors should lead us to question a sonata form plan for this movement. Instead of recapitulating the Allegro exposition at the end of the B section, we get a return of what I had called a slow introduction in m. 274 instead. The C-minor march theme echoes in and out in a short development-like passage from mm. 226–273, but is not otherwise restated, nor are any of the important themes from the Allegro.

Instead, the symphony seems to be driven by elements of texture, timbre, and instrumentation, which define important musical sections. Richly scored passages for horns and strings reinforce the harmonic assurance of the opening bars, the timpani guides the music forward at the start of the Allegro, and the fragmenting of instrumentation in the development section coincides with the breaking down of formal structure. Bizet calls upon the harp at m. 401 as a means of preventing the tumult that gradually emerged out of the parallel moment in the A section (m. 38).

Conclusion

The above reading is the outcome of a process of reconciling some of Ratner's ideas with the specifics of a particular piece of music. Among the differences between this analysis and our earlier, preliminary reading are the amount of attention given to scale degrees and motivic connections.

Earlier, I pointed out how Ratner's method of supporting general observations with more technical description mirrors Agawu's approach, in which paradigmatic analysis provides illustration of aspects of the music "sensed intuitively." The difference is that Ratner relies on multiple strategies, none of which approach the systematicity of paradigmatic analysis, to offer support for his characterizations. Appropriating this strategy encouraged certain actions, including mapping out key areas, charting cadences, identifying topics, comparing orchestration etc. Furthermore, thinking about patches of musical activity in more descriptive terms, for example by attending to their topical characteristics, better helped capture certain intuitions that may have been obscured had we jumped into a more detailed examination immediately.

Indeed, there is great value in forestalling detailed examination—at least initially. In the preliminary analysis, I meticulously labeled scale degrees so as to be able to note with great precision instances in which a motive reappeared. A Ratnerian approach shifts the priorities, foregrounding the theme's topical profile over motivic resemblances in terms of pitch-class content. By resisting the urge to draw such motivic parallelisms, one can better appreciate the topic discontinuities between themes. The presence of the 5-4-3-2-1 motive throughout all three sections of the movement may, in a sense, constitute a sort of unity, but it cannot dispel the obvious topical, textural, and temporal shifts that the technology helps bring to the fore.

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Ratner's technology also encouraged me to attend to the sound-climate in which the theme appears. More importantly, I felt free to explore these moments of sound without feeling compelled to assign them certain temporal roles—first theme, concluding theme etc. While I did supply that information anyway, such knowledge was more of an accessory than it was in the earlier reading, which defined thematic material in terms of its function in the sonata discourse. Several of the formal problems I grappled with in the preliminary analysis were less pronounced through the Ratnerian lens. It was no longer a matter of assigning the C-minor theme to a sonata-form category (e.g. first theme, transition) but attending to its own character, its own unique sound.

Finally, it is important to remember that any observation—aural or otherwise—is just that—something observed based on a particular experience. If measure 61 sounds like the beginning of an exposition, then that is what it sounds like—no after-the-fact analysis of the score can delegitimize that impression. Nor is the war narrative proposed at the end of part two undermined by investigation into the piece's genesis and composition. In fact, Bizet composed this work over an eleven-year span, inspired by his travels through several Italian cities.[33] Such information functions as part of a historically-informed technology, that may help us produce a certain kind of analysis, perhaps centered on Bizet's own motivations and thought process.[34] An analysis of this sort might answer questions that this chapter did not address, such as to what extent does this music show the influence of Bizet's life experience? One could then consult the various resources available—biographies, personal correspondences etc. But these are different

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[33] Winton Dean, *Georges Bizet, his Life and Work* (London: J.M. Dent, 1965).
[34] Bizet lived in Rome between 1858–1860, winning the prestigious Prix de Rome in 1857. We should also note that Bizet himself gave this movement the title *Une chasse dans la Forêt d'Ostie* ("A Hunt in the Ostia Forest"). This realization may help explain the pastoral aspects of the opening. Such added information would perhaps help paint a more historically accurate picture of the work's origins, but it does not delegitimize the interpretations advanced here without its aid.

questions than those posed in this chapter, making use of different technology. The war narrative interpretation, by contrast, emerged through the interaction of different factors: the music, score, and an analyst with a basic understanding of Western music and cursory knowledge of a period of ancient history. The goal was not to uncover the historical facts surrounding Roma's origins but to interrogate our own, present-day experience of this music. This was further evident in part three, in which Ratner was invoked not to "set the record straight," but to encourage different actions than those taken previously, opening ourselves to new analytical experiences.

Chapter 4

Grappling with Form and Function

The past two decades have witnessed a revival in the study of musical form, a phenomenon now known as the *New Formenlehre*. Indeed, Steven Vande Moortele has called this renewed interest "one of the most remarkable developments in recent North American music theory."[1] Two approaches to the study of form have been especially influential: William Caplin's theory of formal functions and James Hepokoski and Warren Darcy's Sonata Theory.[2] Not only have these approaches transformed our understanding of classical form, but they have been applied successfully to nineteenth-century compositions, including those of Schubert, Mahler, Wagner, and Bruckner.[3] The following two chapters are devoted to exploring the work these approaches are able to do when implemented in analysis.

In my opening chapter, I mentioned some recent efforts to engage critically with modern methodologies focused on form. There it was suggested that these discussions might be supplemented by the sort of personal, self-reflective approach I have tried to sketch in these chapters. For although scholars of form seem acutely aware of the potential of these technologies

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[1] Steven Vande Moortele, "In Search of Romantic Form,"*Music Analysis* 32 (2013): 404.

[2] Other important contributions to this subject have been made by a number of scholars, including: Janet Schmalfeldt, James Webster, William Rothstein, Michael Spitzer, Nathan Martin, Marcus Neuwirth, and Vande Moortele himself.

[3] Examples include Seth Monahan, "Success and Failure in Mahler's Sonata Recapitulations," *Music Theory Spectrum* 33 (2011): 37−58; Julian Horton, "Bruckner's Symphonies and Sonata Deformation Theory," *Journal of the Society for Musicology in Ireland* 1 (2005): 1–13; Steven Vande Moortele, "Form, Narrative and Intertextuality in Wagner's Overture to Der fliegende Holländer," *Music Analysis* 32 (2013b): 46−79; and Janet Schmalfeldt, *In the Process of Becoming: Analytical and Philosophical Perspectives in Early Nineteenth-Century Music*, New York: Oxford University Press, 2011.

to enrich (or hinder) musical engagement, none have offered sustained demonstrations of how this happens. Recall James Webster's comments on Hepokoski and Darcy's Sonata Theory and the concept of "dialogic form."[4] Webster finds both the notion of dialogic form and its "associated apparatus" (Sonata Theory) dispensable for approaching Beethoven's overture to *Die Ruinen von Athen*. Hepokoski, for his part, finds neither Webster's nor Caplin's technology especially suggestive, warning that overdependence on the latter "can lead to counterintuitive conclusions."[5]As I mentioned in ch. 1, one way to support these kinds of claims would be to conduct analyses both with and without the technology in question. Instead of evaluating an approach based on its use in published analyses, we can assess its impact on our own analytical experience. The present chapter applies Caplin's theory of formal functions to Mozart's Mass in C minor while chapter five uses Hepokoski and Darcy's Sonata Theory to analyze Rachmaninov's Piano Concerto in D minor. The decision to employ these technologies separately is a practical one: each theory is sufficiently nuanced and sophisticated to warrant extended treatment. Indeed, I believe that the approaches can be productively brought together.[6]Again, my aim is not to offer refinements or corrections to these technologies but to think about their impact on analytical experience. Working with one technology at a time is useful toward this end.

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[4] "The issue is not whether 'dialogic form' (and all that it implies) is a viable analytical-critical stance; of course it is. Rather, it is whether the new analytical and hermeneutic (meta‑)language and the associated apparatus yield comparably rich analytical benefits. I am not persuaded that this is so. Certainly no concept like 'dialogic form' is required to grasp the formal problematics of Beethoven's overture." James Webster, "Comments on James Hepokoski's essay "Sonata Theory and Dialogic Form," 99.

[5] James Hepokoski, "Comments on William E. Caplin's essay "What are Formal Functions?," 45.

[6] One recent endeavor that draws on both theories is Edward Klorman's study of "multiple agency" in Mozart's chamber music. I wholeheartedly agree with Klorman that these theories can "offer a rich account when used in tandem." Edward Klorman, *Mozart's Music of Friends: Social Interplay in the Chamber Works*, Cambridge: Cambridge University Press, 2016: 158.

I. Preliminary Analysis of Mozart Mass in C minor, K. 427

The foci of this chapter are three movements from Mozart's Mass in C Minor: Kyrie, Laudamus te, and Quoniam. Here, I rely upon both the full orchestral score and a reduction by Philip Legge.[7] To conserve space, I produce all my musical examples from the reduction. As in earlier chapters, this first analysis relies upon those tools and techniques outlined in chapter one, so as to set the stage for the application of the technology in part three.

Kyrie

Scored for orchestra, four groups of vocalists, and solo soprano, the Kyrie is composed in an ABA' format supporting the three parts of the text. Figure 4-1 provides a formal overview of the movement showing the distribution of text statements and key areas. Among the differences between the middle and outer sections is that the former resides entirely in the major mode, does not modulation, and contains fewer (but longer) statements of text. The third section, which I have labeled A', begins off-tonic, returning to C minor around m. 77, at which point earlier material is recomposed so that the movement ends in the home key.

Figure 4-1: Formal Overview of the Kyrie

	A		B		A'
Measures:					
1–6	Instrumental motto in Cm	34–58	Christe in Eb	71–77	Kyrie from Eb -> Cm
6–9	Kyrie in stretto	58–71	Christe in Eb	77–85	Kyrie in Cm (corresponds to mm. 18–26)
9–13	Kyrie in Cm			86–91	Kyrie in Cm (corresponds to mm. 27-32)
13–18	Kyrie on G			91–94	Additional four bars following deceptive cadence
18–26	Kyrie from Cm -> G				
27–32	Kyrie in Gm				
33	One-bar transition to Eb				

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[7] Legge's reduction can be accessed at:
http://www.cpdl.org/wiki/images/3/32/Mozart_427_Great_Mass_VS_PML.pdf

The A section begins with a downward tonic arpeggio played by the strings. The melody then alternates between repeated notes and rapid turn figures, gradually returning to its initial note C5 in m. 6 as part of a PAC. Harmonically, this passage sounds a series of applied chords with suspensions, supported by a chromatically-descending bass.

The cadence at m. 6 elides with the first utterance of the words *Kyrie eleison*, the first of five statements of this text within the A section. The first statement is supported entirely by tonic harmony, as each of the four groups of singers imitate one another every two beats. Beginning in m. 9, the descending chromatic bass is transferred to the soprano while the initial motto is sounded by continuo and strings. The soprano fills in the chromatic line by sounding Ab in mm. 11, which had originally been omitted in m. 4. In addition, the harmony now proceeds around the circle of fifths, substituting applied chords with diatonic ones. In the third statement, the motto then enters on the dominant and requires an additional measure (17) to reorient to tonic. All four voices participate in the fourth, transitional statement of the text between mm. 18−26, with each accorded their own material. At the point we might expect a cadence—the conclusion of the circle-of-fifths progression on beat 4 of m. 21—the music presses forward, reaching an IAC in G minor at m. 23. Following a HC in this key in m. 26, the final statement of the Kyrie sounds in the minor dominant, closing the A section with a PAC in m. 32.

Several features suggest that Mozart has modeled this section on a much earlier idiom. The *cadenza doppia* or double cadence in m. 5 has its origins in fifteenth- and sixteenth-century music, and was rarely used by composers of the high classical period.[8] Moreover, the G-minor statement of the chant beginning in m. 13 resonates with the fugal practice of following an initial

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[8] Robert Gjerdingen, *Music in the Galant Style* (Oxford: Oxford University Press, 2007), 169.

subject with a "tonal answer" on the dominant. Chant statements overlap with one another and only the final G-minor statement closes with a PAC (m. 32).[9]

Following a one-measure link, the B section begins with a lyrical theme in Eb major, sung by solo soprano. The B section resembles a Mozart aria: clear phrasing, songful melody, dramatic pauses and climaxes, displays of virtuosity, and a cadenza-like flourish elicit stronger associations to opera than to the mass genre.[10] Indeed, it is easy to divide this section into two parts, each punctuated by PAC. The first section, mm. 34−57, begins with three utterances of *Christe eleison* that undulate up and down the scale, resting gently on scale-degree 3. The music from mm. 46−57 introduces several leaps, including a tritone jump in m. 53 that marks the registral apex of this section. This journey is extended by no fewer than five fermatas, two of which pause on applied chords to V (vii/V in m. 49, $V^{6/5}$/V in m. 56), before finally arriving at the PAC in m. 58.

Measures 58−71 constitute the second passage of B. The soloist sings in unison with the strings, articulating three consecutive scalar ascents, the last of which (mm. 60−62) rises and falls in a manner similar to that of mm. 40−41. This phrase is repeated by the soprano group in m. 62, accompanied by the remaining singers whose long tones resemble the soprano's material from m. 9–12. The melody ascends higher than the previous phrase, reaching G5 several times before reaching an emphatic PAC in m. 71.[11] Harmonically, mm. 66−71 follow the strategy of mm. 54−58: beginning on I^6, the music passes through a chromatic chord highlighting b6 and #4

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[9] Statement 3 ends with an IAC in m. 18, while statement 2 ends with a non-cadential V-I^6 resolution in m. 13. It is important to note that Legge's reduction takes the timpani's C in m. 13 (rather than the organ and basso continuo's Eb) to be the bass. In this view, statement 2 would conclude with a PAC.

[10] For one example, compare the beginning of "Dies Bildnis ist bezaubernd schön" from the Magic Flute, which contains both the singing scalar melodies and accented dissonance exhibited here.

[11] Although the registral ascent and subsequent trill add to the excitement, the G5 in m. 69 does not represent the melodic apex, which, having been established by the orchestra in m. 33, is reached by the soprano in mm. 45 and 53.

on the way to IV, ending with a cadential six-four that concludes the two large portions of this section. The cadence in m. 72 elides with the return of the Kyrie and the beginning of A'.

The A' section begins in m. 72 with an altered Eb statement of mm. 9−13. In the first place, the circle-of-fifths progression never really gets off the ground. Following a V^7/IV in m. 72, the music quickly tonicizes F minor in preparation of the melodic F in the solo soprano on beat 4 of m. 73. The two-measure pattern is repeated up a step before a G-minor statement, initiated by the alto on beat 3 of m. 75, recalls the music from mm. 13−14. Although mm. 76−77 are connected by a PAC, their thematic contents have been rearranged with respect to the A section. The material from mm. 15−17 has been removed, skipping the earlier modulation to the dominant that occurred in m. 16.

The remaining music is almost identical to the corresponding mm. 18−32, but with some textural and harmonic changes that ensure that the movement will end in tonic. Although mm. 77−79 preserve the vocal material of mm. 18−20, the violins, though they still outline the soprano melody, add trills and turn figures that recall the soloist's embellishments from the B section. But the crucial change comes in m. 82, where A and D from m. 23 are replaced with Ab and Db respectively. Example 4-1 compares the two passages, illustrating how Mozart uses the Neapolitan (bII) to achieve a PAC in C minor in m. 86, after which the corresponding measures are now restated in tonic. Yet, I cannot help but notice how the deceptive cadence in m. 91 not only extends the movement by a few measures, but provides the missing note from the chromatic descending bass line. Whereas Ab had been omitted during the bass descent from mm. 1−6 (and subsequently mm. 27−32), this note receives full articulation in m. 90, even as a $V^{6/5}$/V prevents it from immediately passing to the final dominant chord.

Example 4-1: Mozart Mass in C Minor, K. 427. Kyrie. Measures 23−25 and 82−85

Laudamus te

In K. 427, Mozart divides the Gloria into eight movements as shown in Figure 4-2. The second of these (the third movement of the mass) is the Laudamus te, which is scored for solo soprano and orchestra. Formally, the piece resembles a sonata-form movement with a brief development section, while operatic elements (graceful melody, coloratura) are once again present.

Figure 4-2: Eight-movement setting of the Gloria

Gloria	Gloria in excelsis Deo. Et in terra pax hominibus bonæ voluntatis.	Qui tollis	Qui tollis peccata mundi, miserere nobis. Qui tollis peccata mundi, suscipe deprecationem nostram. Qui sedes ad dextram Patris, O miserere nobis.
Laudamus te	Laudamus te; benedicimus te; adoramus te; glorificamus te.		
Gratia	Gratias agimus tibi propter magnam gloriam tuam.	Quoniam	Quoniam tu solus Sanctus, tu solus Dominus, tu solus Altissimus,
		Jesu Christe	Jesu Christe.
Domine	Domine Deus, Rex coelestis, Deus Pater omnipotens. Domine Fili unigenite Jesu Christe. Domine Deus, Agnus Dei, Filius Patris.	Cum Sancto Spiritu	Cum Sancto Spiritu in gloria Dei Patris. Amen.

The orchestra begins the movement with two phrases, each containing important melodic ideas. The first of these is a songful melody that hovers around scale-degree 5 before descending to articulate a PAC in m. 7. Contrasting this tune is a rapid instrumental "vamp" from mm. 7−14, ending on a HC in preparation of the soloist's entrance in m. 14. Both the descending bassline and harmonic progression (I - V^6- $V^{4/2}$/IV) resemble the opening of the Kyrie.

The soloist enters with a twelve-bar version of the opening theme. Instead of cadencing in m. 21, the soloist jumps up to D and repeats the preceding four bars, reaching a PAC in m. 25. Following this diatonic statement of the first two lines of text, the orchestral vamp returns and is extended to include a scalar ascent from Bb in m. 28. This subdominant emphasis is enhanced by the soloist, who descends stepwise from F to Bb (mm. 27–28) in singing *adoramus te*. As with the original vamp, Bb is raised chromatically as part of an applied chord to V in m. 29, which resolves deceptively in the following measure. With the modulation to C underway, the soloist repeats and extends *glorificamus te* via a melismatic passage that concludes with a PAC in C major at m. 45. All four verses of text are sung throughout the journey to this cadence: the first two lines sound in a diatonic context, while the third and fourth verses are sung over the subdominant and the dominant respectively. In the second half of the exposition, only the third and fourth lines of text are heard, with *glorificamus te* again receiving extended treatment.

Following the PAC, the soloist and orchestra engage in a call and response that constitutes this movement's second theme. This reverses the arrangement heard in mm. 32−33 and mm. 35−36, the orchestra now asking the initial question to which the soloist responds. Interestingly, the soloists response in m. 47 resembles the stepwise descent from mm. 27−28, only now in a C major context. In both instances, *adoramus te* does not begin with the phrase but sounds only after two instrumental measures. Following one more statement of the opening vamp (mm. 61−66) the exposition comes to a close in C major.

Although I decide to label mm. 66−87 as belonging to the development section, several observations invite us to question this interpretation. Proportionally, the twenty-one-measure development is less than one third as long as the outer sections. Instead of charting new harmonic territory, this music resides entirely within the key of C major until the final few bars.

It is comprised of six statements of the text, five of which are no more than two measures in length. For these reasons, it might be preferable to label this music as the closing theme of the exposition, acknowledging that this movement simply lacks a development. The situation, then, would resemble the slow movement of Beethoven's Op. 10 No. 1, whose exposition and recapitulation are separated by only a single, transitional V^7 chord.

Although both readings have merit, I am inclined to think of this passage as a development for two reasons. First is the fact that this material does not return in the recapitulation. If mm. 66−87 belonged to the exposition as a closing theme, we would expect some sort of tonic restatement of these bars. Second, there are precedents in Mozart's own music for short developments that do not venture beyond the dominant key. The first movement of the Sonata in G, K. 283 contains a relatively brief development that stays within the key of the dominant (D major).[12]

The recapitulation begins by restating the soloist's first theme, with mm. 88−102 corresponding exactly to mm. 15−29. At this point, Mozart rearranges some of the materials as detailed in Example 4-2. By juxtaposing mm. 102−103, Mozart has cut some of the intervening material. The music that follows (mm. 109−114) is relatively new, although the stepwise ascending trills recall those from the instrumental vamp. Measures 115−143 are, in effect, an expanded version of mm. 43−66. The expansion arises from a deceptive cadence in m. 132, which allows for one last statement of the *glorificamus te*. Here, each of the first four syllables are accorded an entire half note before the music rises and falls (in the manner of mm. 37−40) in reaching a PAC in m. 138. Rounding out the movement is a final statement of the instrumental vamp.

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[12] We might also note the similar means in which the tonic is prepared by the retransition. Compare mm. 83−86 here to mm. 58−61 in K. 283.

Example 4-2: Mozart Mass in C minor, K. 427. Alterations in the Recapitulation

Exposition

Recapitulation

mm. 30-31 ommitted

Glo – ri – fi – ca – –

from m. 37

Quoniam

The Quoniam contains the sixth portion of the Gloria, and is the seventh movement overall. Scored for orchestra and three soloists (2 sopranos, 1 tenor), this movement is also productively read in terms of sonata form as shown in Figure 4-3. I choose to divide the opening theme into two motives: a "drop" from E to B in whole notes, followed by a descending line from mm. 3−7. The former manifests as a leap of either a fourth or fifth, usually between scale-degrees 1 and 5 of the sounding key. By contrast the contrapuntal descending line (hereafter CDL) features stepwise motion ornamented by a chain of 4-3 suspensions. Whereas the initial drop from E to B establishes the tonic, the CDL obscures it by modulating to B minor in m. 7.[13] Although, in retrospect, the melody can be read as descending from 6-1 in B minor, in real time I

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[13] The immediate modulation to minor V, which occurs again at m. 32, recalls the situation observed in the A section of the Kyrie (C-minor statement followed by "tonal answer" in G minor).

hear the G in m. 4 as scale-degree 3 in E minor. In other instances, the apex of the descent

sounds more like scale-degree 3 depending on its initial harmonic support.

Figure 4-3: Formal Overview of the Quoniam

Exposition		Development		Recapitulation	
Measures:					
1−36	First theme in Em	82−106	New Material from	107−117	First theme in Em
37−44	Transition		G->Am->Em	118−127	Transition
45−72	Second theme in G			128−155	Second theme in Em
72−82	Closing theme in G			155−171	Closing theme in Em

Three closely related keys—A minor, B minor, and G major—are important in this

movement. The first two are established by authentic cadences at the end of the CDLs in mm.

3−11, before two additional CDLs in E minor (the second occurring in the bass) conclude the

orchestral opening in tonic. The first line of text, *Quoniam tu solus sanctus*, is begun by Soprano

2, who sings through both motives unaccompanied. Soprano 1 and tenor join at intervals of five

and ten measures respectively, as the three lines of the chant move from voice to voice, in some

cases split up so that one voice finishes a line started by another. As the texture becomes

increasingly complex, the drop motive is filled in by quarter (m. 37) and eighth notes (mm.

38−41) that anticipate the accelerated rhythm of the second theme.

Several features distinguish the second theme from the preceding music. Harmonically,

this section is mostly diatonic, alternating exclusively between tonic and dominant chords until

m. 57, at which point begins an ascending 5-6 pattern. The CDLs, with their tendency toward

modulation, are no longer present, while the drop motive sounds on the downbeat of the first four

measures of this section. The surface rhythm has increased, as streaming eighth-note runs pass

between all three voices and orchestra between mm. 49−65. Starting in m. 65, all three voices

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unite rhythmically in pushing toward a potential cadence in m. 68. However, Mozart undermines the would-be cadence with a $V^{6/5}$/V, allowing for the final portion of text *tu solus altissimus* to sound. An orchestral codetta concludes the exposition in G major.

The melodic idea that opens the development in m. 82 borrows from each of the two motives. Its opening interval from 5-1 resembles the drop motive, while the following leap by sixth and syncopated rhythm are characteristic of the CDL. Moreover, the two-measure interval between vocal entrances balances the five- and one-measure gaps between thematic entrances in the exposition. Bits and pieces of expositional motives are combined throughout several key changes, as the development moves away from the second key toward Am, and then returning to tonic around m. 101. The recapitulation begins in m. 109 with the full drop gesture that opened the movement, providing a momentary respite from the frantic activity of the development. A series of CDLs, altered and expanded from those in the exposition, leads to a tonic statement of the second theme in m. 128. Similar to the non-resolution of m. 68, m. 151 resolves the preceding V chord to V^7/iv, once again extending the phrase so that the text *tu solus altissimus* can articulate the tonic PAC. Two unison statements of *altissimus* lead to a closing instrumental passage, whose emphases on A minor (mm. 164−165) and B minor (mm. 166−167) refer back to some of the key areas explored in this movement.

Reflection on preliminary analysis

The preliminary account advanced in these last pages resembles those that began the previous chapters. It describes mostly surface-level events as they unfold from beginning to end, considering them on their own terms as well as in relation to other repertoire. Recall, for example, that I support reading a development section in the middle of Laudamus te not by appealing to some theory of developments, but by citing a similar case in K. 283. Objects of

interest include key areas, melodic motives, text statements, and cadences, the latter concept largely guiding my division of this music into formal units.

Absent from this reading is an attempt to situate the many observations within a coherent narrative along with serious engagement with text-music relations. To be sure, I observe how portions of text overlap with one another and are transferred mid-verse between singers. Yet, I make no attempt to draw connections between the meaning of the words and their musical expression. Investigating such relations would be one possible avenue for expanding the above reading. Another option might be to further explore Mozart's choice to mix early and contemporary styles in the Kyrie or speculate more broadly on the relationship between opera, sonata, and mass in this music.[14] Our focus in this chapter, however, is on how this analysis might be expanded by employing technology that has been widely used to study form and phrase structure: William Caplin's theory of formal functions.

II. A Theory of Formal Functions

In acquiring the form-functional technology to be used in part three, I draw from three writings that lay out the central concepts and attitudes contained within this approach. Caplin's groundbreaking treatise *Classical Form* in conjunction with his recent textbook *Analyzing Classical Form* provide a detailed account of his analytical method.[15] Building upon the ideas of Arnold Schoenberg and Erwin Ratz, Caplin proposes a "new theory of classical form," one which, it is claimed, establishes the once venerable *Formenlehre* tradition on "more secure and

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[14] Lawrence Schenbeck discusses the mixture of Baroque and Classical style in Mozart's late masses, noting how Mozart's participation in concerts at the home of Gottfried van Swieten in the early 1780s sparked an interest in the music of Bach and Handel. Further investigation of this synthesis of styles might benefit not only from new analytical tools, such as form-functional theory, but also from historical perspectives. See Schenbeck, "Baroque Influences in Mozart's Masses: Later Works" *American Choral Review* 20 (4) (1978): 3–16.

[15] William Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*. New York: Oxford University Press, 1998. William Caplin, *Analyzing Classical Form: An Approach for the Classroom*. Oxford: Oxford University Press, 2013.

sophisticated foundations.[16] Supplementing these books is Caplin's essay "What are Formal

Functions?," which explains the more general framework in which formal functions are

understood.[17] I will begin with this essay before moving into some of the specifics of his theory,

restricting my account to the fundamental theme types—sentence, period, hybrids—and concepts

associated with sonata form (main themes, subordinate themes, tight and loose-knit organization

etc.) This overview concludes by summarizing Caplin's analysis of the first movement of

Beethoven's Sonata in F minor, Op. 2 No. 1. Observing how Caplin does analysis will be

suggestive for thinking about how to apply form-functional ideas to the C-minor mass.

Formal Functions and Formal Types

In his recent essay "What Are Formal Functions?," Caplin posits an intimate connection

between musical form and temporality. He states "central to our experience of time in general is

our ability to perceive that something is beginning, that we are in the middle of something, and

that something has ended."[18] Musical time-spans have the ability to express themselves as

beginnings, middles, or endings. The main theme of a sonata recapitulation, for example, has a

unique temporal position: it constitutes the beginning of the recapitulation, which is itself the end

of the movement. If this movement occurs in the middle of a three-movement work, then we can

further describe the theme as the beginning of the end of the middle. Any musical time-span,

then, is nested within a hierarchy of temporalities. Formal functions, such as main theme, are

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[16] Caplin, *Classical Form*, 3.
[17] William Caplin, "What are Formal Functions?," in *Musical Forms, Form, and Formenlehre*, ed. Pieter Bergé (Leuven, Leuven University Press, 2009). This essay appears alongside those of James Hepokoski and James Webster, which have their origins in a plenary session from the 2007 EuroMAC conference.
[18] Caplin, "Formal Functions," 23.

musical manifestations of the general temporal functions of beginning, middle and end.[19] For

Caplin, "it is precisely the attempt to differentiate just how such spans express their temporality

that is the goal of a theory of formal functions."[20]

In contrast to formal functions are what Caplin refers to as formal *types*. Unlike formal

functions, types, such as the "sentence," are not themselves associated with a temporal position

in the piece. A sentence could appear at the end of the exposition, in the middle of the

development, or in the coda. By contrast, consider the three functions of a sonata exposition:

main theme (beginning), transition (middle), and subordinate theme (end).[21] These categories are

functions since they express their own temporality: a main theme is, by definition, something

that begins an exposition. Some common functions and types are given in Figure 4-4, which

reproduces Caplin's Table 1.1 from his essay.

When analyzing classical form, Caplin finds it advantageous to focus on function rather

than type. Doing so encourages us to concentrate on the relations between these constituent

temporal units, rather than on whether the overall theme "belongs" to a particular theme type.

Moreover, this practice is especially useful when encountering theme types that deviate from

received categories. As Caplin says, "the standard formal types defined by historians and

theorists have not accounted for all of the syntactical arrangements of functions that arise in the

repertoire."[22] Caplin's theory takes a bottom-up approach to analysis, beginning not with full-

movement types but with the functions that comprise them.[23] For this reason, I will approach this

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[19] In addition to beginning, middle, and ending functions are several "framing functions" such as before-the-beginning and after-the-end.

[20] Caplin, "Formal Functions," 25.

[21] Ibid., 25−26.

[22] Caplin, "Formal Functions," 27.

[23] "I see classical form arising out of a common set of formal functions, which are deployed in different ways to create multiple full-movement types." Ibid., 32.

technology in the same manner, using eight-bar themes to illustrate central concepts, before

discussing the larger units that make up sonata form.

Figure 4-4: List of Formal Functions and Types (From Caplin's Table 1.1)

FORMAL TYPES	FORMAL FUNCTIONS
Full-Movement Types	
SONATA	Introduction
	Exposition
	main theme
	transition
	subordinate theme
	closing section
	Development
	Recapitulation
	Coda
FIVE-PART RONDO	Main Theme
	Subordinate-Theme Complex
	Main Theme
	Interior Theme
	Main Theme
	Coda
LARGE TERNARY	Main Theme
	Interior Theme
	Main Theme
CONCERTO	Opening Ritornello
	Exposition
	Subordinate-Theme Ritornello
	Development
	Recapitulation
	Closing Ritornello
Theme Types	
SENTENCE	presentation
	continuation
	cadential
PERIOD	antecedent
	consequent
SMALL TERNARY	exposition (A)
	contrasting middle (B)
	recapitulation (A')
HYBRID THEME	antecedent [from period]
	continuation [from sentence]
	cadential [from sentence]

Table 1.1   Formal 'types' versus formal 'functions'

<u>The Sentence</u>

The *sentence* is a normatively eight-measure unit comprising a presentation phrase and a continuation phrase.[24] Presentations, which make up the first four bars, prolong the tonic and do not end with a cadence. Consider the presentation phrase of Example 4-3, where tonic harmony is prolonged by two $V^{4/3}$ chords in mm. 2−3.[25] Crucially, the resolution from $V^{4/3}$ to I does not constitute a cadence because the dominant harmony is inverted. A central axiom in Caplin's theory is that authentic cadences require that both harmonies be in root position.

Presentations also have a characteristic grouping structure. In Example 4-3, a two-bar "basic idea" from mm. 9−10 is immediately repeated in mm. 11−12.[26] Its repetition is altered so as to align with the underlying harmonic progression: the descending scale is transposed down by step in m. 3, and the descending arpeggio is raised by step so that it articulates tonic chord tones in m. 4. When the basic idea is repeated by a "dominant version," as occurs here, we have what Caplin terms a statement response presentation, one of three ways in which basic ideas can be related harmonically.[27]

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[24] William Rothstein reserves the term "phrase" for only those musical spans that end with a cadence. Caplin, on the other hand, uses the term to refer generally to four-bar units, regardless of whether or not they end with a cadence. Schoenberg, who defined the phrase as the "smallest structural unit," considers the average length of the phrase to be two measures. Many of his examples of the phrase would, in Caplin's terminology, be labeled as "basic ideas." See Arnold Schoenberg, *Fundamentals of Musical Composition*, ed. Gerald Strang and Leonard Stein (London: Faber & Faber, 1967), 3−5.

[25] It is worth noting that Example 4-3 shows the second half (mm. 9−16) of a larger theme type known as a compound period (mm. 1−16). Compound periods are prototypically sixteen-bar themes comprised of an eight-bar antecedent and eight-bar consequent, each of which may themselves be organized as a period, sentence, or hybrid. In the case of K. 485, both the antecedent (not shown) and consequent (Example 4-3) are eight-bar sentences, which together form a sixteen-bar compound period that opens the movement. Nonetheless, isolating Example 4-3, as Caplin does in *Analyzing Classical Form*, effectively shows the basic properties of the sentence. See the illustration in Caplin, *Analyzing Classical Form*, 38, as well as the discussion of compound themes from 166−190.

[26] Basic ideas are characteristic gestures that constitute the fundamental building block in music of the classical style, capable of combining with other units, but also divisible into smaller motivic units. They include not only the melodic-motivic content, but everything that occurs within the bracket. See the discussion in Caplin, *Classical Form*, 37.

[27] The first arrangement, exact repetition, occurs when the second basic idea retains the harmonic progression of the first (I , V or I V, I V). Basic ideas can also related sequentially, such as the progression I , II. Note that Caplin uses capital Roman numerals to label all harmonies, including minor and diminished chords.

Example 4-3: Eight-bar sentence from Mozart Rondo in D, K. 485. Measures 9−16

The continuation phrase (mm. 13−16) expresses two formal functions: continuation and cadential.[28] Caplin identifies several features that are typical of continuations: fragmentation, increase in harmonic rhythm, increase in surface rhythm, and the destabilizing of tonic through sequential progressions.[29] With the exception of sequential progressions, each of these features can be observed in Example 4-3.

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[28] As Caplin makes clear, the term "continuation" can be used in two ways: (1) to denote the second phrase of the sentence (continuation phrase) and (2) to refer to the second, medial formal function. Note that functions receive brackets (basic ideas, cadential idea) but not the two phrases (presentation, continuation). Caplin, *Analyzing Classical Form*, 35.

[29] Caplin, *Classical Form*, 40−42.

Fragmentation involves the reduction of the grouping structure so that shorter units are repeated. Whereas the presentation combines a two-measure basic idea with its repetition (2+2), the continuation often repeats one-bar fragments (1+1). We can indicate fragmentation using small brackets: in Example 4-3, the smaller brackets (frag.) indicate that a one-measure unit (m. 13) is immediately repeated (m. 14). By contrast, the presentation phrase is organized according to a 2+2 grouping structure (the two-bar basic idea in mm. 9−10 is repeated in mm. 11−12). The second characteristic is the acceleration of harmonic rhythm—that is, the rate at which the harmonies change.

Continuations feature a faster rate of change than presentations. In Example 4-3, the presentation sounds only one harmony per measure, whereas the continuation features two harmonies per measure. Continuations often show an increase in surface rhythm, using rhythms of shorter durational value and with more frequency than presentations. In Example 4-3, the presentation contains half notes, dotted quarters, quarters, and eighth notes. The continuation uses more sixteenth notes and eighth notes, and contains no half notes whatsoever. Finally, continuations often use harmonic sequences which destabilize, rather than prolong or confirm, the tonic key. Example 4-3 does not feature a harmonic sequence.[30]

Following the continuation function, sentences end with a cadential idea as shown in mm. 15−16 of Example 4-3. The cadential idea serves a closing function, and comprises all the material within the upper bracket.[31] The specific moment of closure, the punctuation that occurs on the downbeat of m. 16, is called the cadence type, in this case a perfect authentic cadence

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[30] Caplin observes that, among these four characteristics, harmonic sequences are the most rare in eight-measure sentences. Due to the limited space between the end of the presentation and the beginning of the cadential idea, harmonic sequences, Caplin argues, are well suited for sentences whose continuation function "is extended beyond its normative four-measure limits." Caplin, *Classical Form*, 42.

[31] Caplin draws a distinction between complete cadential progressions, which proceed from tonic, to predominant, to dominant, to tonic, from incomplete progressions such that of Example 4-3, which omits the initial tonic function. Caplin, *Analyzing Classical Form*, 5.

(PAC).[32] It is customary to indicate the cadential progression (II^6, cadential six-four, I) with square brackets around the Roman numerals. Cadence types are placed in square boxes directly below the moment in which the cadence arrives.

The Period

The *period* is a prototypically eight-measure theme that contains two phrases: antecedent and consequent.[33] As a rule, the second phrase (consequent) must end with a stronger cadence than that of the first phrase (antecedent). In Example 4-4, the antecedent ends with a half cadence (HC), while the consequent closes with a perfect authentic cadence (PAC).[34] Moreover, antecedents do not repeat the basic idea but contain a second, contrasting idea that presents differing material. In Example 4-4, the melodic-motivic content of the basic idea (neighbor note + leap of a third) is not repeated in mm. 3−4 but instead returns in m. 5 to begin the consequent phrase.[35] Between them lies a contrasting idea whose melody, a stepwise ascent, has a different rhythm and harmonic support. The consequent phrase repeats the antecedent, but veers off toward the end so as to end with a PAC. This motivic symmetry, in addition to the parallel cadences, gives the period a sense of balance and repose unlike the sentence, which is characterized by forward momentum.[36]

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[32] Note that this cadence terminology is common to both preliminary and form-functional tool kits, though it assumes a different status in each. Caplin accords greater significance to cadences, encouraging one to carefully attend to the different syntactic strengths of each type. See also, footnote 56.

[33] Caplin follows Schoenberg in defining the period as comprising two phrases that begin with the *same* material. This more restrictive formulation differs from more general usages of the term *periode* in the 18th and 19th centuries. Caplin, *Analyzing Classical Form*, 75.

[34] The three cadence types, arranged in ordered of strength are: PAC, IAC, and HC. Although the HC, PAC arrangement is most frequently encountered, both HC, IAC and IAC, PAC preserve this ordering of weak to strong.

[35] This example is used in *Classical Form* as Example 4.6 and in *Analyzing Classical Form* as Example 3.17. In the former, Caplin omits the brackets below the cadential progressions in m. 4 and mm. 7−8.

[36] Note that periods lack a medial function, containing only an antecedent (beginning) and consequent (ending).

Example 4-4: Eight-bar period from Mozart, Sonata in A, K. 331, i. Measures 1−8

Hybrids and Phrase Deviations

Caplin recognizes that most of the themes in the classical repertory do not fall neatly into either of these two categories. Thus, he establishes a typology of *hybrids* that combine aspects of the period and sentence. Here, I will focus on just two of these types in conveying the general idea. Example 4-5 shows an *antecedent + continuation* hybrid, in which the first part of a period (antecedent) is followed by the second part of a sentence (continuation). The theme begins like an antecedent, in that it sounds a basic idea followed by a contrasting idea that comes to rest on a HC in m. 4. However, the next phrase does not restate the antecedent but sequences the melodic material from m. 2, destabilizing tonic, accelerating the harmonic rhythm, and fragmenting the grouping structure.[37]

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[37] Note, also, that the continuation phrase modulates to the dominant.

Example 4-5: Antecedent + continuation hybrid from Beethoven, Rondo for Piano in G, Op. 51, No. 2. Measures 1−8.

Many themes begin with an initiating function that mixes aspects of presentation and antecedent. Example 4-6 begins with a basic idea followed by a contrasting idea, but does not reach a cadence in m. 4, coming to rest instead on a II chord. The term *compound basic idea* denotes phrases whose grouping structure resembles that of an antecedent (basic idea +contrasting idea) but, like presentations, lack a cadence. Compound basic ideas or CBIs can combine with either continuations or, as in Example 4-6, consequents. The resulting formal type, *compound basic idea + consequent*, resembles a period that lacks a weak cadence in m. 4. In this example, the basic idea that begins the consequent is changed slightly, sounding over the II chord retained from the previous measure.

Example 4-6: Compound basic idea + consequent hybrid from Haydn, Symphony No. 87 in A, iii. Measures 1−8.

Although each of the above themes has been discussed in terms of an eight-bar model, the actual repertory is considerably more varied. Example 4-7 begins like a typical eight-bar period, featuring a basic idea followed by a contrasting idea ending with a weak cadence, in this case an IAC. The consequent begins by repeating the basic idea, slightly ornamented, promising to secure a stronger cadence to end the theme Yet instead of cadencing II-V^7-I, the bass line resolves up by step in m. 8, resulting in a deceptive cadence (II-V^7-VI). This necessitates an *extension* of the theme to allow for a stronger cadence to emerge—namely, the PAC in m. 12.

Example 4-7: Twelve-bar sentence from Haydn, Piano Sonata in F, H. 2, i. Measures 1−12

In addition to extension, Caplin describes three other techniques through which themes deviate from the eight-bar model. Expansion occurs when a formal function is enlarged from within, as occurs in the technique known as an *expanded cadential progression* (see Example 4-8 ahead, m. 33). Here, a typically two-measure cadential progression is expanded over a span of four measures. A composer can also interpolate unrelated material between two formal functions, such as adding a new idea between the two basic ideas so as to form a five-measure presentation (basic idea +interpolation+basic idea). Finally, a formal function may be compressed to fewer bars than would be typical (such as a sentence with proportions 2+2+3).

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Central for Caplin is what he calls "tight-knit" and "loose-knit" organization, terms which he draws from Schoenberg and Ratz.[38] The themes in Examples 4-3 to 4-6 are tight-knit in that they clearly establish the home key, contain symmetrical phrases of four bars each, and express their formal functions with maximum efficiency. For instance, Examples 4-4 and 4-6 are form-functionally efficient since they take the minimum number of measures to express their functions (exactly 4+4). Conversely, Example 4-7 is less efficient at expressing closing function, requiring eight measures to complete the consequent phrase. Caplin provides a table of factors that contribute to tight-knit and loose-knit organization, reproduced below as Figure 4-5. Attending to these features provides a key to understanding the components of larger formal types such as sonata form, the final topic to be covered in this overview.

Figure 4-5: Aspects of tight and loose-knit organization (From Figure 7.2 of *Analyzing Classical Form*)

	TIGHT-KNIT	————	————→	LOOSE
tonality	home key (I)	subordinate key (V)	distant keys (III, ♭VI)	modulating
harmony	prolongation of I	prolongation of I⁶	prolongation of V	sequential
	diatonic		modal mixture	chromatic
cadence	PAC	HC	cadential evasion	no cadence
grouping structure	symmetrical (4 + 4)	symmetrical (6 + 6)		asymmetrical (4 + 3 + 5)
functional efficiency	efficient	redundant (via extensions, etc.)		ambiguous
motivic material	uniform			diverse
thematic conventionality	period	sentence		nonconventional types

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[38] The terms *fest* and *locker*, are rendered in English by Schoenberg as "stable" and "loose."

Sonata Form

Having discussed the fundamental theme types of sentence, period, and hybrid, Caplin turns his attention to full-movement types.[39] Examples include minuet, rondo, sonata form, theme and variations, and concerto, some of which appeared in Figure 4-4. Here I will limit my discussion to sonata form and its constituent formal functions.

In many regards, Caplin's views on sonata form are compatible with general ideas on the subject that have informed the preliminary analyses throughout this study. Broadly viewed, sonata form movements contain three sections—exposition (beginning), development (middle), and recapitulation (end)—each of which has certain characteristic thematic and harmonic features. The exposition introduces the primary melodic-motivic content and articulates a "*dramatic conflict* of tonalities, namely between the home key and a closely related subordinate key."[40] Next, the development "brings about a high degree of tonal and phrase-structural instability." And finally, the recapitulation restates expositional material in the tonic, thus resolving the tonal conflict in bringing the movement to a close.

The exposition itself contains three interthematic functions: main theme (beginning), transition (middle), and subordinate theme (end). Main themes are relatively tight-knit units that establish and confirm the tonic key with a cadence, usually a PAC. For this reason, main themes exhibit both tonal and phrase-structural stability.[41] From there, a transition section serves to "destabilize the home key" and "loosen the formal organization." The transition, as a medial function, may exhibit characteristics of continuations such as phrase and cadential extensions, and harmonic sequences. Most, but not all, transitions modulate to a new key—usually the

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[39] Another important theme type not explored here is the small ternary, which is sometime referred to rounded binary form. This theme type exhibits an ABA' format, and expresses the formal functions exposition, contrasting middle, and recapitulation.

[40] Caplin, *Analyzing Classical Form*, 263.

[41] Ibid., 286.

dominant, if in major—in order to prepare for the new theme. This subordinate theme, which I

had called the "second theme" earlier, is tasked with securing the new key with a PAC. It is

usually longer and more loosely organized than main themes, often delaying this final PAC for

dramatic effect. Although theorists have long recognized that sonata form sections exhibit

different lengths, Caplin's theory allows us to identify the specific procedures that contribute to

these proportions.[42] In most cases, the subordinate theme contains new thematic content,

although exceptions do occur, such as in the so-called "monothematic" expositions one finds in

the music of Haydn. Expositions may also include a brief closing section—often a series of

codettas—following the completion of the subordinate theme, which serves an after-the-end

function.[43]

Development sections are often divided into what Caplin terms precore, core, and

standing on the dominant. A brief section (precore) leads to a developmental core that

"establishes a relatively large-sized *model* (4−8 mm.), which is *sequenced* one or more times.[44]

Often the music will traverse several keys before reaching HC in the dominant. The prolongation

of this cadence, which Caplin, following Ratz, calls "standing on the dominant," prepares for the

tonic recapitulation that follows.[45] Typically, the recapitulation restates most of the expositional

material in the home key. As Caplin observes, "the basic thematic units of main theme,

transition, and subordinate theme return in order, but they usually undergo a number of

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[42] Joel Galand, while acknowledging that earlier theorists such as Riepel and Koch had observed this tendency, calls Caplin's account "the most thoroughgoing account we have of how subordinate theme groups specifically achieve their often sprawling proportions." Joe Galand, ""Formenlehre" Revived,"*Intégral* 13 (1999): 171.

[43] Caplin's theory does not recognize "closing theme" as a genuine function, preferring the term "closing section" to refer to codettas that follow the final cadence. In the case that such material resembles a more robust theme, this material can simply be considered as a second subordinate theme. See Caplin, *Analyzing Classical Form*, 389 as well as the discussion in "Formal functions," 29−30.

[44] Caplin, *Analyzing Classical Form*, 273.

[45] As Caplin acknowledges elsewhere, this term is a translation of Ratz's "Stehen auf der Dominante" from *Einführung in die musikalische Formenlehre*. William Caplin, "The Classical Cadence: Conceptions and Misconceptions," *Journal of the American Musicological Society* 57 (2004): 90.

significant *structural* changes in harmonic-tonal organization and phrase structure."[46] Among the most important changes is that the transition does not modulate to the new key, but is usually altered so that the subordinate theme can begin in the home key.

Although this view does not represent a radical departure from received notions of sonata form, a few points are worth mentioning. As stated earlier, Caplin's insistence on function foregrounds the temporal aspect of each of the constituent units that comprise a sonata-form movement. By underscoring the importance of functions—which are defined by harmony and grouping structure—Caplin's theory deemphasizes those parameters that lack form-functional significance.[47] Thus, the function of the main theme is to secure a tonic PAC, while the transition's job is to destabilize tonic and prepare the way for the subordinate theme, which is then tasked with closing the movement with a new-key PAC. Although main and subordinate themes often feature contrasting motivic content, their primary function is not to provide thematic variety but to accomplish certain harmonic goals. In this way, Caplin's emphasis on tonal, rather than thematic opposition, resonates with Leonard Ratner's view examined in chapter three.

Caplin's Analysis of Beethoven Op. 2 No. 1

To close this overview of form-functional technology, let us consider Caplin's analysis of the exposition of Beethoven's Sonata in F minor, Op. 2 No. 1, i.[48] In both of his books, Caplin uses this movement to introduce some of his core ideas, which he then elaborates upon in subsequent chapters. His analysis in *Analyzing Classical Form*, shown in Example 4-8, suggests

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[46] Caplin, *Analyzing Classical Form*, 279.
[47] Thematic or melodic-motivic content "plays a minimal role" and is "essentially independent of formal function." Caplin, "Formal Functions," 37−39.
[48] The analysis presented here is from Caplin, *Analyzing Classical Form*, 265−270. This movement by Beethoven is also discussed by both Schoenberg (*Fundamentals of Musical Composition*) and Ratz (*Einführung in die musikalische Formenlehre*).

how the form-functional technology might be applied to an entire movement. Caplin

supplements these annotations with prose, a practice that he encourages when doing analysis.[49]

The exposition opens with an eight-bar sentence in F minor, which serves as its main

theme.[50] Two motives comprise the basic idea: an ascending arpeggio and turn figure, labeled

"a" and "b" respectively. The continuation, comprised entirely of b material, leads to a cadential

idea that concludes the theme with a half cadence. The transition sounds the basic idea in the

minor dominant, which is then fragmented as the music reaches a HC motive in the mediant of

Ab major, followed by a post-cadential standing on the dominant. Loosening procedures are

evident both in terms of harmonic instability and asymmetrical grouping structure.

Harmonically, the transition immediately undermines the tonic by beginning in C minor,

before moving to V of the new key of Ab major. Caplin also observes the following grouping

structure: "2 mm. (basic idea) + 6 mm. (continuation) + 4 mm. (standing on the dominant)."[51]

Although all three functions are present, each is of them deviates in some way: the presentation

contains only one basic idea, the continuation is extended, and the cadential idea is repeated two

additional times.

The subordinate theme begins with a four-bar presentation that, despite the presence of a

dominant pedal, can be heard as expressing tonic prolongation. The extended continuation phrase

begins with the first half of the basic idea before a new motive "x" fragments the grouping

structure into half-measure units. Caplin describes the remainder of the exposition as follows:

> The continuation reaches a climax at m. 33 with a prominent arrival on I^6. At this point
> too, the melodic-rhythmic material changes when motive "x" gives way to a long,

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[49] Caplin, *Analyzing Classical Form*, 68.
[50] Caplin refers to this theme as "perhaps the most exemplary sentence in the entire classical repertory." Caplin, *Analyzing Classical Form*, 34. For criticism of the tendency to measure sentence structure against this supposedly quintessential example, see Matthew BaileyShea, "Beyond the Beethoven Model: Sentence Types and Limits," *Current Musicology* 77 (2004): 5−33.
[51] Caplin, *Analyzing Classical Form*, 267.

descending scale passage, now supported by an expanded cadential progression. But the anticipated cadence is first evaded at m. 37, and the entire *cadential* phrase is then repeated to close with the long-awaited PAC on the downbeat of m. 41. Following its structural closure with the PAC, the theme concludes with a postcadential *closing section*, made up of three 2-m. codettas (mm. 42−48), the final codetta extended by a bar.[52]

Example 4-8: Form-Functional analysis of Beethoven Sonata in F minor, Op. 2 No. 1, i. Exposition (From Examples 9.1, 9.2, and 9.3 of *Analyzing Classical Form*)

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[52] Caplin, *Analyzing Classical Form*, 270.

Our survey of form-functional technology reveals a number of criteria and desiderata that should inform our re-analysis of the C-minor Mass. Chief among criteria for analysis are formal functions as defined by aspects of harmony and grouping structure.[53] Indeed, the first chapter of *Analyzing Classical Form* begins not by discussing formal functions but with "a review of harmony" that introduces students to the three kinds of harmonic progressions: prolongational, cadential, and sequential.[54] These harmonic considerations, as we have seen, are necessary foundations for understanding the functions and theme types presented in the following chapters.

Another important criterion is grouping structure, which Caplin defines as "the organization of discrete, perceptually significant time spans [...] at any or all hierarchical levels in a movement."[55] The sentence, we observed, has a grouping structure of 2+2+4 (bi+bi+continuation). Crucially, this process does not depend on melodic-motivic content, which is why we could speak of fragmentation in Example 4-3, even though mm. 4−5 contains new material. Other parameters such as motivic content, dynamics, articulation, and texture are considered secondary, and do not determine formal function.[56]

As for desiderada, form-functional theory values precision and systematicity, qualities which have been observed by commentators familiar with Caplin's approach.[57] Caplin states "the theory presented here develops a comprehensive set of such functions with the goal of

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[53] Among these, harmony is considered the principal determinant of form-functionality. "In my theory, local harmonic progression is held to be the most important factor in expressing formal functions in themes (or themelike units)." Caplin, *Classical Form*, 4.

[54] Caplin, *Analyzing Classical Form*, 1−29.

[55] Caplin, *Classical Form*, 255.

[56] In discussing cadences, Caplin draws a distinction between "syntactical" and "rhetorical" strength. Although all PACs are of equal syntactical strength, other factors, such as dynamics, metric positioning, and orchestration can impact its rhetorical strength. See the discussion in Caplin, *Analyzing Classical Form*, 80.

[57] Nathan Martin touts the "analytic usefulness" of applying Caplin's ideas to the study of Haydn's arias. He concludes "by adopting his [Caplin's] descriptions of formal functions, or proposing others that are as precisely and explicitly drawn, we can hope to avoid the confusions and cross purposes that have so often deviled analytical descriptions of classical form." Nathan Martin, ""Formenlehre" Goes to the Opera: Examples from "Armida" and Elsewhere," *Studia Musicologica* 51 (2010): 404. Hepokoski offers a somewhat backhanded compliment: "No close reader of the form-functional method could fail to observe (and admire) its rigorous logic and the single‑minded insistences that drive its analytical ramifications." Hepokoski, Comments on "What are Formal Functions, 41.

analyzing classical form more precisely than it has been before."[58] Elsewhere, he provides

specific guidelines for properly annotating the musical score.[59] Cadential progressions (except

for ECPs) are to be labeled using square brackets beneath the Roman numerals, cadence types

are indicated using boxes placed directly beneath the ultimate chord, and so on. Equipping this

technology, adopting these concepts and analytical practices, we can now re-engage with the

selected movements from the C-minor mass, keeping in mind how this orientation affords a

different experience from that of the preliminary approach.

III. A Form-Functional Approach to K. 427

In this section I attempt a form-functional analysis of the three movements from the C-

minor mass. Since Mozart is the composer of this work, I expect to find many instantiations of

form-functional concepts: basic and contrasting ideas, CBIs, hybrids, phrase deviations, and

interthematic functions such as subordinate themes. At the same time, my choice to analyze a

vocal composition, rather than an instrumental one, may complicate the application of the

technology.[60] My aim is not to reveal the inherent formal-functions in this music, but to discuss

some experiences that result from applying this technology. The ensuing dialogue between

myself, the music, and the technology—this attempt to "grapple" with the available resources

suggests that formal-functions do significant work.[61] Having supplemented my earlier analyses

using form-functional technology, I conclude this chapter with some final reflections.

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[58] Caplin, *Classical Form*, 9.

[59] See the section "Guide to Harmonic Annotation" in Caplin, *Analyzing Classical Form*, 24−25.

[60] As indicated by its subtitle, Caplin's book focuses exclusively on "the instrumental music of Haydn, Mozart, and Beethoven." Attempts to analyze vocal music using this technology include Stephen Rodgers, "Sentences With Words: Text and Theme-Type in Die schöne Müllerin" *Music Theory Spectrum* 36 (2014): 58–85, along with Martin's essay on operatic music.

[61] To be sure, general notions of phrase structure have informed my preliminary analyses throughout. In chapter two, for instance, I pointed out the "sentential" design of a passage in Brahms Op. 119 No. 2. However, equipping form-

Kyrie

      The opening orchestral motto presents some challenges for interpreting its beginning, medial, and ending functions. In the first place, only five measures elapse between the first note and the PAC in m. 5, making it difficult to invoke any of the eight-measure theme types. Example 4-9 suggests how the theme might look as a prototypical, eight-measure sentence.[62]

Example 4-9: Recomposition of measures 1−6 as an eight-bar sentence

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functional technology not only expands the taxonomy of recognizable types (to hybrids and deviations therefrom), but proposes that we conceptualize an entire movement as a hierarchy of nested temporal functions.

[62] Readers will recognize that the melodic ascent from C to G from mm. 1–7 resembles that of Beethoven Op. 2 no. 1, i.

Mozart's actual theme departs from the above recomposition beginning in m. 3. There, the basic idea is not repeated in full, but is immediately fragmented, with m. 2 serving as the model for the sequenced fragments in mm. 3 and 4. Caplin points out instances in which this lament bass is used alongside other features, such as "uniform textures and regular harmonic rhythm," to project the High Baroque.[63] Moreover, the lament bass, though most strongly associated with being-in-the-middle, is in fact capable of expressing all three temporal functions. When the lament bass begins by descending chromatically to the leading tone, as it does in the Kyrie, it may suggest the beginning of a tonic prolongation, such as the I, V6, V6, I progression of the normalized version above. Thinking in form functional terms, I generate two possible ways of analyzing this passage, shown in Example 4-10.

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[63] William Caplin, "Topics and Formal Functions: The Case of the Lament," in *The Oxford Handbook of Musical Topics*, ed. Danuta Mirka (New York: Oxford University Press, 2014), 415–52.

The first attempt tries to reconcile the irregular five-measure phrase by ignoring the first bar, acknowledging four-bar sentence from mm. 2−5 with proportions 1+1+2. Here, a one-bar basic idea in m. 2 is restated in the following measure, before a short continuation in m. 4 drives the music toward a cadential idea in mm. 5−6. However, the problem with this strategy is it leaves the opening bar uninterpreted. Although we could label m. 1 as a before-the-beginning framing function, it is difficult to hear the piece as truly beginning in bar 2. Considering that this theme recurs again and again through the movement, often aligning with the beginning of a text statement, it seems counterintuitive to deny these entrances the status of a "beginning." Moreover, basic ideas are, by definition, two-bar ratherthan one-bar units. Although Caplin acknowledges that four-bar phrases sometimes exhibit a 1+1+2 grouping (what he terms "mini sentences"), he cautions one not to employ this label too liberally.[64]

Perhaps instead we can begin by bracketing mm. 1−2 as the initial two-bar basic idea. Instead of repeating itself in full, the two-bar idea is instead immediately fragmented in m. 3, which repeats m. 2 a step higher. Further fragmentation occurs in m. 4 (along with a characteristic acceleration of surface rhythm) and the theme closes with a cadential idea in mm. 5−6.[65] Despite having accounted for all three functions—beginning, middle, and end—it is unclear whether to call the theme a modified sentence or instead a unit that resembles some aspects of the classical sentence. Here, I will elect for the latter, describing mm. 1−5 as merely sentence-like or "sentential."[66]

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[64] Caplin, *Analyzing Classical Form*, 89.

[65] As noted in the preliminary analysis, the various statements of this motto conclude by eliding with vocal entrances. Thus, Examples 4-9 and 4-10, along with that of future iterations, elide their endings with the beginning of another statement, which may problematize our attempt to treat mm. 1−6 as a complete theme. At the same time, the clear PAC in m. 6 seems sufficient to distinguish this theme from the music that follows.

[66] "It is more useful for a comprehensive theory of form, however, if we distinguish between a *sentence-like* (or *sentential*) structure and a genuine sentence, the latter being a specific tight-knit theme with the characteristics described in the previous chapter."Caplin, *Classical Form*, 51.

Example 4-10a: Interpretation of measures 1–6 as a four-bar sentence preceded by before-the-beginning function

Before-the-beginning? Basic idea Basic idea

Cm: I II^4_2 V^6 $\text{VII}^{\circ 4}_3/\text{IV}$ V^4_2/IV

Continuation frag. frag. frag. Cadential idea

$\text{VII}^{\circ 6}_5/\text{V}$ I^6_4 V^6_5/V $\text{V}^6_4 - {}^5_-$ 3 I

PAC

Example 4-10b: Interpretation of measures 1–6 as a five-bar "sentential" unit

Presentation (truncated) Continuation

Basic idea frag.

Cm: I II^4_2 V^6 $\text{VII}^{\circ 4}_3/\text{IV}$ V^4_2/IV

Starting in m. 9, the statement is harmonized by a circle-of-fifths progression and given a countersubject in the soprano based on the chromatic descending bass from the opening bars. Caplin associates circle-of-fifths motion, along with other sequential progressions, with medial functions. Mozart's use of this progressionhelps pushthe theme forward,while truncating the continuation and cadential function prevents any sort of dramatic build up that might signal a structural ending. Our earlier deliberation (footnote 9) on whether to consider the timpani as providing the bass line now seems beside the point. Regardless of whether m. 13 counts as a cadence, the effect of the cello combined with the splintering of functions is to prevent clear boundaries from manifesting.

Next, we can reconsider the interthematic functions of mm. 1−32. While analyzing the functions within the recurring sentential theme proved challenging, identifying boundaries between themes is rather straightforward. Measures 1−18 constitute the main theme, which ends with the IAC in m. 18. From there a transition loosens the sentential theme, modulating to the dominant en route to a HC in m. 26. The subordinate theme, based entirely on the main theme, follows in the minor dominant and concludes with a PAC in this key at m. 32. Curiously, this

subordinate theme is briefer and more tightly-knit than the main theme, but it does accomplish its primary function of securing the new key.

The first analysis pointed out several recognizable features that distinguish the B section from the preceding measures: its sounding exclusively in the major mode, the lyrical quality of the solo soprano, and its replacement of fugal-contrapuntal writing with classical phrasing. Attending to formal functions offers even more finely-grained observations that supplement those already discerned. As mentioned, the section divides into two portions that each close via PAC. Caplin's technology encourages us to attend to their internal organization, which reveals affinities with the notion of subordinate theme. Example 4-11 shows the resulting form-functional analysis.

Example 4-11: The B section as subordinate theme group

Subordinate theme 1 resembles a large sentence whose initiating function is extended to twelve bars (CBI1, CBI2 plus its repetition). Its continuation phrase, also twelve bars in length, begins with characteristic fragmentation in mm. 46−48. Yet its momentum is stalled by a number of fermatas, one of which pauses on an internal half cadence in m. 50. In addition, the whole notes from CBI2 are repeated in mm. 51−52, which, along with the half notes that begin the ECP, cause an uncharacteristic decrease in surface rhythm. Subordinate theme 2 begins with a four-bar CBI whose grouping structure suggests that of a "mini sentence." The CBI repeats, fusing with an expanded cadential progression beginning with the I^6 chord in m. 66.

Having done a form-functional analysis of this movement, we can use the technology to produce a new formal outline, shown in Figure 4-6. Compared to our preliminary overview of

this movement (Figure 4-1), this outline more clearly defines the relations between A and A'

statements, while fleshing out the two statements that comprise B. Whereas our previous analysis

pointed out the existence of two Eb-major statements terminated by PAC, a form-functional

reading reveals the distinct intrathematic profile of the two themes. Although each theme extends

beyond its prototypical length, this lengthening is applied to different functions in each.

Subordinate theme 1 extends presentation function through a repetition of CBI2, while

subordinate theme 2 is elongated during its medial and concluding stages (which are themselves

fused).

Figure 4-6: Form-functional Overview of the Kyrie

A	B	A'

Measures:

1–18	Main theme in Cm	34–58	Subordinate theme 1 (CBI1+CBI2+CBI2+continuation)	71–77	Main theme from Eb to Cm
18–26	Transition			77–85	Transition
27–32	Subordinate theme in Gm	58–71	Subordinate theme 2	86–95	Subordinate theme in Cm
33	One-bar transition to Eb		(CBI+CBI+continuation⇒cadential)		

Laudamus te

The orchestral introduction to Laudamus te begins with a six-bar theme ending with a

PAC. As with the Kyrie, determining the intrathematic functions is no easy task (see Example 4-

12). The basic idea, *expanded* to three measures, prolongs the tonic via a subdominant neighbor,

all over a tonic pedal. And yet this expansion does not prompt a lengthening of the remaining

formal functions (we could imagine a grouping structure 3+3+6). In the first place, the basic idea

is not repeated, as m. 4 brings new and, in my opinion, unrelated material. For this reason, I label

this material as *interpolation*, signifying that it belongs to neither of the surrounding functions.

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Measures 5−6 sound a two-bar cadential idea, concluding what I will call a basic idea + cadential idea with a one-bar interpolation. Following is what I had termed the "vamp" motive, which launches a series of one-bar scalar fragments over a descending bass. This figure reaches a HC in m. 11, followed by a post-cadential standing on the dominant.

Example 4-12: Mozart Mass in C minor, K. 427. Laudamus te. Measures 1−7

With the pickup to m. 15, the soloist begins the main theme in F major. Like the opening bars, this theme comprises a three-bar basic idea and a three-bar cadential idea, separated by a

one-bar interpolation. Only now the authentic cadence that we except in m. 20 is evaded when the soloist jumps up to D in the following measure, prompting the music to repeat the cadential idea "one more time" in order to secure a PAC in 25.[67] Curiously, the interpolation is also included in this restart, causing me to wonder whether I should have included it as part of the ending function, rather than as an unrelated insertion into the form-functional fabric.

On a larger scale, I continue to read mm. 14−25 as a main (first) theme, with the transition vamp beginning in m. 25. Having equipped this technology, however, I now reconsider my original view that the subordinate (second) theme does not begin until m. 45. The passage from m. 32−45 a resembles subordinate theme in two major aspects: its loose-knit grouping structure and its attainment of a new-key PAC. It is structured as a thirteen-bar sentence in which all three functions are noticeably loosened. Measures 32−33 sounds a basic idea, which, like that of the main theme, is followed by aone-bar interpolation in m. 34. In this case, however, we get a second basic idea in mm. 35−36.Measures 37−41 exhibit several features of continuation function: fragmentation into one-bar units, an increase in harmonic rhythm, and the use of a sequential progression (descending fifths). Following a deceptive cadence in m. 41, an expanded cadential progression functions to bring the subordinate theme to a close in m. 45. With this cadence, the subordinate theme has completed its central task of bring about a PAC in the dominant key. From this perspective, the lack of a clear break between transition and subordinate theme is secondary to this tonal fact. Therefore, we can describe mm. 32−61 as a subordinate theme group.[68]

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[67] Janet Schmalfeldt, "Cadential Processes: The Evaded Cadence and the 'One More Time' Technique," *Journal of Musicological Research* 12 (1992): 1–52.

[68] Alternatively, we could deploy the label "transition⟹subordinate theme" to suggest that the transition "becomes" the subordinate theme midstream.

Since Caplin does not recognize closing themes as necessary expositional functions, it is consistent with his theory to proceed straight from the second subordinate theme into the development in m. 61.[69] Recall that these measures posed an interpretive challenge in the preliminary analysis: is this section better understood as the end of the exposition or the development? Revisiting these measures with this technology confirms atypicality of this would-be development. Although we can identify a precore from mm. 61−65 and a post-cadential standing-on-the dominant from mm. 81−87, the intervening material hardly resembles the loose-knit developmental core. Reading this music against Figure 4-5 reveals the lack of loose-knit characteristics (modulation, sequences, absence of cadences, chromaticism). Although I still consider this music to be "the development"—again citing the non-return of this music in the recapitulation—my confidence in this pronouncement has decreased upon this reexamination. A competing interpretation might label mm. 67−87 as subordinate theme 3 (preceded by before-the-beginning instrumental vamp). The overall form, then, could be described as a sonata without development. In this view, the recapitulation is more significantly altered: subordinate theme 2 has been extended by several measures, while subordinate theme 3 is omitted entirely.

The other significant differences in the recapitulationoccur in the first subordinate theme, the beginning of which is shown in Example 4-13. First, the material from mm. 30−31 have been omitted. In addition, Mozart reverses the order of basic ideas so that the tonic version sounds first in mm. 104−105. Third, the interpolation between basic ideas is based onthe extended continuation to subordinate theme 1 (m. 37). Each of these observations was made in the preliminary analysis (see Example 4-2). The crucial difference, however, is that our form-functional analysis considers these measures as subordinate theme 1, rather than transition. Thus,

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[69] Recall that, for Caplin, the exposition consists of main theme (beginning), transition (middle), and end (subordinate theme). One alternative would be to read mm. 45−61 as a "closing section," rather than as subordinate theme 2. However, these measures do not resemble a series of brief, codetta-like modules typical of closing sections.

we would expect the subordinate theme in m. 104 to sound in the home key, thus resolving the "dramatic conflict" inherent in the sonata design. Instead, the subordinate theme begins in C major and works its way back to tonic midflight. While this realization lends some credence to my original position (that we are still transitioning), this material nonetheless fulfills the essential subordinate-theme function of securing a home-key PAC in m. 117. Indeed, a similar instance can be found in the recapitulation of Mozart's Sonata in C, K. 330, i, whose relevant portion is given in Example 4-14.In both cases, the leading tone is abruptly neutralized via a downbeat V/IV chord that pulls the music back into the home key.

Example 4-13: Mozart Mass in C minor, K. 427. Laudamus te. Measures 104−109

Example 4-14: Mozart Sonata in C, K. 330, i. Measures 106–112

Quoniam

In my preliminary analysis of the Quoniam, I identified two motives from which much of the following material derives. First is the whole-note "drop" that opens the movement, followed by a chromatic-descending line (CDL). With the technology in hand, we can say that the opening drop comprises a three-bar basic idea supported by tonic prolongation. Continuational aspects of the CDL include repeated fragments of the initial jump, accelerated harmonic rhythm, and the destabilization of tonic, leading to a PAC in the dominant at m. 8. Example 4-15 provides a form-functional analysis of the first seven bars. The continuation phrase repeats several more times until a PAC in m. 21 closes this instrumental introduction.

Example 4-15: Mozart Mass in C minor, K. 427. Quoniam. Measures 1−7

Figure 4-7 provides a form-functional synopsis of the entire movement. Following the instrumental statement of the main theme, the singers take up the theme in m. 22 with a two-bar basic idea, the third measure (m. 3) now eliminated. Moreover, the dominant chord in its second measure is replaced by VI, and is then followed by an applied chord that prepares the IV harmony with which the continuation begins in m. 24. Although continuation and cadential functions are fused together, fragmentation in mm. 34−35 (sopranos 1 and 2) helps distinguish continuation function from the cadential idea in the following bar. This results in a PAC in m. 37, marking the end of the main theme and the beginning of a brief transition that modulates to

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the mediant. Loose-knit aspects of this transition (mm. 37−43) including a sequential

(descending fifths) pattern in the bass and an increase in surface rhythm.

Figure 4-7: Form-functional overview of the Quoniam

Exposition		Development		Recapitulation	
Measures:					
1−36	Main theme in Em	82−94	Core	107−117	Main theme in Em
37−44	Transition		(model sequence technique)	118−127	Transition
45−72	Subordinate theme in G			128−155	Subordinate theme in Em
72−82	Codetta	94−106	Retransition	155−171	Codetta

     Earlier, we had debated whether the subordinate theme begins in m. 44 (with the entrance

of the tenor) or in m. 45 (with the entrance of soprano 1 over a I chord). Let us reconsider this

issue using Caplin's technology. First, recall that the subordinate theme of the Kyrie began, in

our form-functional interpretation, with a dominant version of the basic idea. Following a one-

measure interpolation, the basic idea was then repeated over a tonic chord. Mozart employs a

similar strategy in this movement, beginning the theme by alternating V-I-V-I rather than starting

on local tonic. However, m. 49 seems to initiate another presentation, this time starting on I.

Indeed, the second soprano melody from mm. 48–52 is perhaps the most presentation-like phrase

found in these three movements. In this view, this clear-cut presentation is the second of three

consecutive initiating functions, supported by the tonic-prolongational progression I-V, V-I.

Working backwards, the first of these presentations—and thus the beginning of the subordinate

theme—begins at m. 45. Amidst the diversity of melodic material, it is this harmonic pattern that

signifies the beginning status of this passage.

     With the arrival of scale-degree 3 in the bass at m. 57, we have the beginning of an

"expanded cadential progression" or ECP, which resolves deceptively in mm. 61−62. As

mentioned in the preliminary analysis, though using different terminology, an "evaded cadence" in m. 68 extends the subordinate theme long enough to hear one last utterance of *tu solus altissimus*. The exposition concludes with a short closing section.

Measure 82 marks the beginning of the development, consisting of a core followed by a standing on the dominant. Soprano 1 introduces the model, which passes to soprano 2 in m. 84. This idea is then sequenced in the measures that follow: 88−91 in A minor (soprano 1), 90−93 in E minor (soprano 2), 92−95 in B minor (tenor). It occurs to me this core resembles the opening bars, in that it sequences the same keys highlighted via transpositions of the CDL. Beginning in m. 95, the model is fragmented into two-bar groups, the fifth-drop sounding in the bass, the scalar descent in soprano 1. The development reaches a standing-on-the-dominant of E minor in m. 102, which leads to a somewhat truncated recapitulation beginning in m. 107. Starting in m. 118, the continuation (CDL) is extended, the bass perpetually turning around the note B, refusing to drop (or ascend) to tonic. With the home-key statement of the subordinate theme in m. 128, we can reassess our earlier decision regarding this theme's beginning on the exposition. Here, mm. 43−44 are combined into a single measure (128) as the E-minor subordinate theme begins unequivocally in m. 128 over a tonic chord. This offers additional support for reading the exposition's subordinate themes beginning with local tonic in m. 45. After three initiating CBIS, the continuation begins with sequential activity starting in m. 140, culminating with an evaded cadence in m. 151. A new codetta-module is inserted from mm. 155−158, followed by an extended closing section that rounds out the movement.

Conclusion

In some regards, the application of formal functions does not engender significant analytical-experience changes. It was possible to identify harmonic and motivic connections in

both instances, though different terminology was employed in referring to these events. In both cases, I attended mostly to the musical surface, parsing the music into sections based on cadences and key relations. However, the technology enabled me to specify the internal organization of sections and situate them as temporal units with a full-movement type. Time spans that I had originally called "phrases," "statements," "sections," and "passages, were replaced in part three with more precise categories. Instead of simply referring to two passages within the B section of the Kyrie, I could now speak of two subordinate themes with loose-knit intrathematic profiles. In the Quoniam, I had originally pointed out how the deceptive cadences toward the end of the exposition and recapitulation allowed the music to squeeze in the final line of text. Form-functional theory takes this observation further, situating these deviations as part of a larger process of extending cadential (ending) function.[70]

But in other respects, form-functional technology encourages very different analytical experiences. Having familiarized myself with some classical types and functions, I found myself imagining and seeking out such objects in the score. Thus, I approached the Kyrie expecting to find exemplars of these categories, even though I soon realized that it contained none of the eight-bar theme types discussed in part two. On the one hand, I am partially to blame for, against Caplin's advice, concentrating on formal type rather than on focusing. But at the same time, functions are learned within the context of formal types.[71] It can be difficult to think about presentations without imagining some larger type (sentence, hybrid) for which it functions as a beginning. Nonetheless, once I disentangled my understanding of function specific eight-bar types, it became possible to address most of the passages within the selected movements.

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[70] Form-functional theory also draws a distinction between "evaded" and "deceptive" cadences.
[71] Chapter two of *Analyzing Classical Form*, for example, is not titled "beginning functions," but rather "the sentence."

Producing these examples requires one to attend to two surface-level aspects: harmony and grouping structure. At certain points, I privilege one or other in attempting to make sense of a certain passage. In the A sections of the Kyrie, the latter becomes paramount as the harmony does not differentiate presentation and continuation function. Ultimately, I end up characterizing the A section as a fluid series of sentential units, observing that there exists a two-measure basic idea followed by several bars that exhibit fragmentation. Whereas during my analysis of the Quoniam, I relied on the harmony in applying the label CBI to the series of phrases beginning at m. 45. In these instances in which only one of the two features is clear, I tend to prioritize whatever aspect most closely resembles a form-functional category.

This last realization speaks to perhaps the most palpable effect this technology had on my experience. The resources consulted in part two provide a comprehensive taxonomy of types and functions against which to assess the musical materials of K. 427. I found myself attempting to "normalize" musical details by squaring them against the known categories. Indealing with the opening of the Kyrie, for instance, I asked questions like "what if I ignore the bass or the first measure, or imagine a severely truncated continuation?" These issues did not trouble me during the preliminary work, when I simply described the musical surface without situating my observations within this technological framework.

Whether or not the end readings are convincing, the interpretive struggle is itself instructive for thinking about form and style in the Kyrie. The contrast observed between classical and earlier idioms is manifested in the laborious task of analyzing the intrathematic functions of A and A', compared with the ease of bracketing the B section. Perhaps the success of form-functional technology—or any technology—does not rest upon how well it accounts for the musical details, but in its ability to encourage new actions and provoke different questions.

The visual annotations of K. 427—replete with form-functional labels and brackets—are not always revelatory of some deeper musical insight, but the process of thinking through these concepts can provoke further inquiry into various matters. We might continue our study of this music, combining different approaches, or broadening the purview to explore Mozart's other liturgical compositions. Or we might modify the technology, proposing new categories and concepts especially suited for eighteenth-century masses. And we could even gaze inwardly at ourselves, interrogating our own values that make us more or less amenable to certain technologies and modes of analysis.

Chapter 5

Sonata Theory

As mentioned in the previous chapter, the *Formenlehre* revival has been spearheaded on two fronts. William Caplin's *Classical Form* led the way, influencing nearly two decades' worth of scholarship on form in eighteenth-century music and beyond. Equipping this form-functional technology, it was demonstrated, provides the with a flexible array of paradigmatic tokens, while encouraging closer engagement with the temporality of musical units. Complementing this approach is James Hepokoski and Warren Darcy's "Sonata Theory," which, like the theory of formal functions, aims to rethink and rehabilitate the study of late-eighteenth century form.[1] The implementation of this technology in analysis is the subject of the present chapter.

The work of Caplin, Hepokoski, and Darcy has combined to transform the twenty-first century music-theoretical landscape, spawning countless (re)analyses of individual works and spirited discussions of methodology. Scholars continue to offer assessments of these approaches, ranging from modest pleas for nuance and refinement to trenchant critiques of theoretical positions.[2] These discussions are likely to persist for years to come, as the authors themselves

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[1] As has been pointed out, many of these ideas had been unveiled in articles dating back to the early nineties. Examples include James Hepokoski and Warren Darcy, "The Medial Caesura and its Role in the Eighteenth-Century Sonata Exposition" *Music Theory Spectrum* 19 (1997): 115–54 and James Hepokoski, *Sibelius: Symphony no. 5* (Cambridge: Cambridge University Press, 1993).

[2] The former is exemplified in Matthew Riley, "Hermeneutics and the New Formenlehre: An Interpretation of Haydn's "Oxford" Symphony, First Movement" *Eighteenth-Century Music* 7 (2010): 199–219. Here, Riley finds Sonata Theory's notion of sonata-as-human-action to be suggestive, but "needlessly restricted." More pointed critiques include Markus Neuwirth, "Joseph Haydn's "Witty" Play on Hepokoski and Darcy's Elements of Sonata Theory" *Zeitschrift der Gesellschaft für Musiktheorie* 8 (2011): 199–220 and Paul Wingfield, "Beyond 'Norms and Deformations': Towards a Theory of Sonata Form as Reception History" *Music Analysis* 27 (2008): 137–77.

continue to animate the debate by defending their work and posing counter-critiques of the alternatives.[3] And while my attempts to use these technologies in analysis might be seen as entering these debates (albeit from a more hands-on, personal angle), I submit that such efforts are more exploratory than they are critical. As stated in chapter one, the fundamental questions motivating this project concern how and to what extent technologies affect analysis. I take no issue with the principles underlying each technology, nor do I suggest conceptual or terminological improvements. Instead, taking the technologies as they are, I consider how their applications makes possible new analytical actions and conclusions.

Engaging this matter in three stages, I will begin as usual with a preliminary analysis of the first movement of Rachmaninov's D-minor piano concerto, Op. 30. Although this movement is perhaps best known for the virtuosic demands it makes on the pianist, it can also stimulate the analyst's imagination. Following this initial reading, I familiarize or "equip" myself with the technology of Sonata Theory, in preparation for a re-analysis in part three. In doing so, I hope to explore questions overlooked by most discourses on form. What kinds of actions, experiences, and conclusions are brought about (encouraged) through applying this technology? What does it do for us (and to us) as analysts?

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[3] Consider a recent volume (35/1) of music analysis, which sets form-functional notions of transitions and subordinate themes against sonata-theoretic conceptions. William E. Caplin and Nathan John Martin, "The 'Continuous Exposition' and the Concept of Subordinate Theme" *Music Analysis* 35/1 (2016): 4–43 and James Hepokoski "Sonata Theory, Secondary Themes and Continuous Expositions: Dialogues with Form-Functional Theory" *Music Analysis* 35/1 (2016): 44–74.

I. Rachmaninov Piano Concerto in D minor, Op. 30, i. Preliminary Analysis

Exposition

Following a two-measure orchestral instruction, the pianist begins the exposition with the first theme shown in Example 5-1.[4] The theme consists of a mostly stepwise melody in octaves, alternating between quarter and eighth notes. Rachmaninov deemphasizes downbeats with agogic accents (mm. 6 and 11) and by starting phrases on beat two (mm. 3 and 12). In m. 12, an Eb intrudes upon diatonic space, jolting the music away from tonic and toward G minor. Eventually the theme breaks out of its original register, ascending chromatically in mm. 16−17. The melodic gesture in m. 18, marked *colla parte*, reaches the melodic apex of the theme, before pausing on Bb5 in the following measure. These measures contrast both the tempo and minor harmony established so far, before a series of downward scale fragments pull the music back to D minor with the PAC in m. 27.

Example 5-1: Rachmaninov Piano Concerto in D minor, Op. 30, i. Measures 3−27

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[4] Both analyses rely on the full orchestral score as well as the 1995 recording of the piece by Martha Argerich and the Berlin Radio Symphony Orchestra.

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The first theme is repeated from mm. 27−52, with viola and cornet sounding the melody

while the pianist provides the two-measure introduction and accompaniment throughout. The

first significant change occurs in m. 40, when the clarinet, instead of rearticulating Eb, breaks

upward to G. As the melody descends, the bass line outlines a fifth in Bb major, emphasizing the

submediant several bars earlier than in the soloist's theme. However, the *colla parte* gesture does

not return: the expressive marking disappears and the analogous figure is altered to land on the

root of a D-minor chord in m. 45. When the melody reaches a sustained Bb at m. 47, the

underlying harmony is now Bb minor. As before, a syncopated chromatic descent leads to an

authentic cadence in tonic at m. 52.

Although the passage that follows does not continue the first theme, several traces from

the opening section remain. Complementing the pianist's acrobatics is an accented offbeat figure

in mm. 52−54, answered by a chromatic descent like those that ended each of the first themes.

Even the piano's new rhythmic idea in m. 64 reminds me of the beat-two entrances of the first

theme. Once again, an upward-reaching melodic idea, marked *colla parte*, momentarily grasps

the major mode, this time C major in mm. 67−68. However, the orchestra is not able (or willing) to relinquish the tonic minor, as a dominant pedal in the low strings threaten to pull the music back into D minor. Indeed, a short piano cadenza ends the first theme with a D-minor HC in m. 81.

Following the cadenza, the tempo changes to moderato as the bassline descends to 5 of supporting a V^7 chord of Bb major. Some parallels with the opening theme are worth mentioning. First, this section brings back the rhythmic pattern of quarter notes alternating with two eighth-notes. Furthermore, the modulation to Bb is achieved in a manner similar to mm. 16−19: both passages make chromatic ascents to C6 (violins in m. 87) before descending gradually. Only this transitional passage does not revert back to tonic but remains in Bb major in preparation for the second theme in m. 93. Here begins a conversational exchange between the orchestra and soloist. The march-like theme is played staccato, and lacks the lyricism and sensuousness one associates with Rachmaninov's second themes.[5] Its first measure begins with the same rhythm (and on the same pitch, D4) as m. 1, and the pickup to the second measure borrows an idea heard in the woodwinds from mm. 69−70. After several measures of call and response, the pianist breaks off the conversation to sound a more legato, *espressivo* version of the second theme in m. 93. As shown in Example 5-2, the pianist's version of the second theme also changes the rhythm, articulation, and phrase structure of the orchestra's theme, now grouping into four measures instead of every three. The local submediant (G minor) is suggested throughout, and its tonicization in m. 114 recalls the fleeting senses of Bb from the first theme. Yet these emphases do not undermine the prevailing major mode, as the piano moves even further away from the harmony and register of m. 114 by modulating to Eb major in m. 119.

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[5] One recalls the lyrical secondary theme from the first movement of Rachmaninov's Second Piano Concerto.

Example 5-2: Rachmaninov Piano Concerto in D minor, Op. 30, i. Measures 93−109.

The modulation to Eb major is preceded by material that resembles the lead up to the second theme. In mm. 88−92 (violin 1) and 115−119 (piano), we hear a syncopated descent from Bb5 that concludes with a downward leap from G to C. But the latter is much less jerky compared to mm. 88−92 (and much less so than 54−56). Instead it takes on the singing quality of the lyrical second theme, becoming an important idea for the remainder of the exposition. With the Eb version of the lyrical second theme in m. 124, the piano reaches the highest point of the exposition, unleashing a wave of emotion between mm. 126−131. This soon gives way to rapid passagework over an F pedal, arriving at an IAC in Bb in that elides with the start of the closing theme in m. 151. Thematically, the piano's closing theme sounds like an accelerated version of its second theme, proceeding upward to a high Bb on beat 2 of m. 155, before descending

chromatically to its original register. In m. 163, the melodic emphasis on scale-degree 3 provides a common-tone link to scale-degree 1 of the tonic (D), as the rhythm from mm. 1−2 returns to suggest a repeat of the exposition.

Development

Indeed, the next several measures sound like an expositional repeat. But the first theme stalls after four measures, repeats itself in C minor, and then breaks down into new material in m. 181. The remainder of the development consists of four ideas that, to various degrees, resemble aspects of the first theme. Example 5-3 provides incipits of what I will call the "three-note figure," "distorted first theme," "quasi-invention," and "off-beat rhythm." Following the literal statements of the first theme, the cello and bassoon begin an ascending thirds pattern using the rhythm from the opening two bars. Upon arriving on the dominant of C minor in m. 185, the pianist enters with scale-degrees b6-5-4-b3-4-5. This gesture breaks down into a series of three-note figures, which then passes throughout the woodwinds. The complete statement of ascending thirds + three-note figures is repeated, modulating to A minor in m. 203. Here, a "distorted" statement of the first theme is sequenced up by minor third until the three-note figure returns in full force beginning in m. 219. The pianist's three-note figures are pitted against the dotted rhythm from mm. 1−2, played in unison by nearly every other instrument.

Example 5-3a: Three-note Figure

Example 5-3b: Distorted First Theme

Example 5-3c: Quasi-Invention

Example 5-3d: Off-beat Rhythm
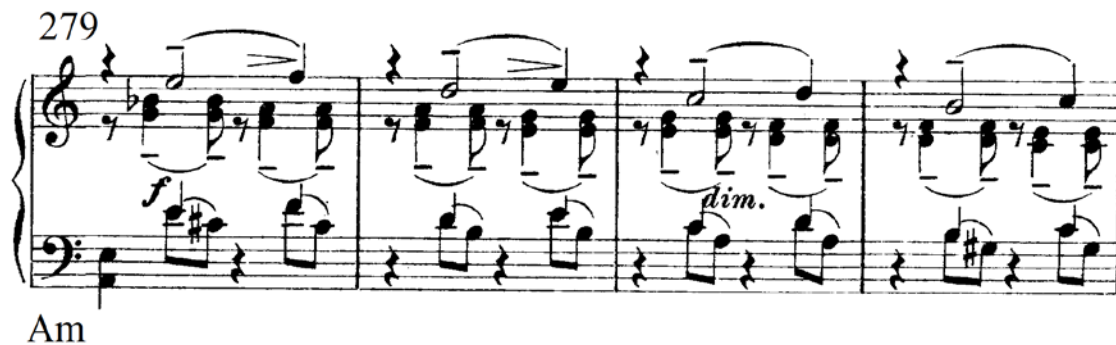
This idea cycles through several keys (Ebm, Bm, F#, Dm) before reaching a triple forte,

alla breve section beginning on a fully-diminished seventh chord in m. 235. Immediately

contrasting the full texture and max dynamics is a piano, invention-like version of the first theme

(Example 5-3c). As with previous developmental ideas, the quasi-invention modulates upward

by minor third. The final idea is a two-note motive that begins on beat two and ascends by step,

often descending each measure as in Example 5-3d. It first appears in tandem with the quasi-

invention, but later assumes a melodic role that it retains to the end of the development. All four

of the ideas in Example 5-3 begin on off beats, a characteristic shared with the first theme. In

addition, both the development and first theme reside primarily in the minor mode, while neither

the thematic nor tonal contents of the second themes appears in this section. Led by a gradually

decelerating series of off-beat rhythms (*poco a poco ritenuto*), the development comes to a stop

on a i$^{6/4}$ chord in D minor at m. 303.

Cadenza and Recapitulation

Although one would expect the recapitulation to begin at this point, the pianist instead

launches upward chromatically in beginning its cadenza. This procedure is unusual, since

cadenzas typically appear at the end of the movement, rather than between the development and

recapitulation.[6] But what is especially striking is that the cadenza appears to sound the

recapitulation with the *scherzando* return of the first theme in m. 329.[7] At first, I am not sure

what to make of the music given in Example 5-4: is this the "real" recapitulation or is it still on

the way?[8] It soon becomes clear that this intensified version of the first theme represents the

structural counterpart to the exposition. All the material up to the *colla parte* gesture is restated

here in an altered form. Starting in m. 346, the pianist stutters over a high A, unable to take the

next step upward to Bb. Instead it tumbles downward, but remarkably manages to secure the

tonic major for the first time in the entire movement in m. 358. The pianist celebrates this major

arrival with arpeggios that move into the upper register. But the sense of D major is weakened by

the introduction of mode mixture (b6 and b2) in m. 362, and further undermined when the flutes

enter with transition material in the next measure. Incipits of the first theme follow, first in D

minor (oboe), then in C minor (clarinet), recalling this tonal succession at the beginning of the

development.

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[6] Two well-known precedents are Tchaikovsky's and Mendelssohn's Violin Concerto. The latter reaches the dominant of the home key in m. 298, at which point the violin begins a cadenza that lasts until the beginning of the recapitulation in m. 335.

[7] In an analysis of this movement, Robert Gaulden observes how the cadenza, formerly "an improvisatory and parenthetical interruption in the closing complex of the Classical concerto," becomes in Op. 30 "an essential formal component of the movement's structure and design." Robert Gauldin, "New Twists for Old Endings: Cadenza and Apotheosis in the Romantic Piano Concerto" *Intégral* 18/19 (2004): 1–23. A similar procedure occurs in the first movement of Arthur Rubinstein's Piano Concerto No. 4, also in D minor. During the cadenza, the pianist sounds the first theme in D minor, signaling the start of the recapitulation. I am grateful to Julian Horton for bringing this movement to my attention.

[8] It is worth noting that Rachmaninov composed two cadenzas for this movement. The original, fast-tempo cadenza is featured in example 4, and is the version played by Martha Argerich. Alternatively, a slower, more thickly-textured cadenza is shown in the full score in smaller staves. Other than having different textures and tempos, there are few structural differences between these cadenzas, and they merge into the same music at m. 342. Still, the fact that Rachmaninov chose to write a second cadenza may suggest the importance he accorded these measures.

Example 5-4: Rachmaninov Piano Concerto in D minor, Op. 30, i. Measures 322−333 (Original Cadenza)

Example 5-5: Rachmaninov Piano Concerto in D minor, Op. 30, i. Measures 358−369

In m. 375, the pianist begins the second theme in Eb major. Compared to its appearance in the exposition, the second theme has been truncated to a two-measure statement, the second of which is sequenced for several measures until m. 384. This idea is then accelerated, much like the material that preceded the closing theme (mm. 137−147). Following this cadenza flourish, the music returns to moderato tempo, the opening dotted rhythm returning in mm. 391−394. This prepares for the literal return of the pianist's first theme, which sounds in full before an accelerating passage closes out the movement in D minor.

Having examined the events of this movement more or less in order, we can turn to the overall formal organization, diagrammed in Figure 5-1. Comparing this to the music of Example 5-1 reveals the extent to which the opening events are a microcosm of the overall tonal journey. The pianist begins and ends in D minor, momentarily passing through Bb major. From mm. 1−167, the music travels between D minor, Bb major, Eb major, and back to D minor for the start of the development. Eb major is also the key of the second theme in the recapitulation, which ultimately proves to be an accessory to D minor, the ultimate key of this movement.

Figure 5-1: Formal Outline of Op. 30, i. (Preliminary)

Exposition

Measures:	1–26	27–51	52–76	81–92	93–106	107–146	147–166
	First theme (piano)	First theme (orchestra)	Continuation of first theme	Transition	Second theme (orchestra)	Second theme (piano)	Closing theme
Key area:	Dm	Dm	Dm	->Bb	Bb	Bb (Eb)	Bb V of Dm

Development

Measures:	167–181	181–202	203–242	243–258	259–299	303–
	First theme	Three-note figure + rising thirds	Distorted first theme + three-note figure	Quasi-invention	Off-beat rhythm	Piano cadenza begins
Key area:	Dm, Cm	Bbm, Cm, Em	Am, Cm, Ebm	Cm, Ebm, F#m	Dm, Am	V of Dm

Recapitulation

Measures:	329–362	362–374	375–394	395–438
	First theme (piano cadenza)	Transition	Second theme (piano)	Coda (first theme)
Key area:	Dm->D	->Eb	Eb	Dm

Reflection on Preliminary Analysis

Our analytical experiences have involved attending to a variety of surface-level phenomena: pitch classes, rhythmic patterns, vertical harmonies, key areas, and instrumentation. Certain pitch classes are signaled out for analytical attention, such as Bb in mm. 19 and 47. The latter occurrence struck me as both skewed (supported by a Bb-minor chord) and belated (occurring two bars after the corresponding moment in the soloist's first theme). As usual, I make a number of connections between rhythmic patterns as well as harmonic references. Several rhythmic motives, such as those of mm. 1–2 and 69–70, prefigure rhythmic aspects of the two second themes. The appearances of Dm, Bb, Dm in the first theme are taken as microcosms of expositional journey shown in Figure 1. But except for some salient harmonies

here and there, most of the individual chords were not analyzed. Large portions of music are quickly summarized without mentioning aspects of harmony or voice leading. This may be partly owed to the tedium of doing Roman numeral analysis for a movement of this length, but it surely concerns the limitations of the preliminary tools, which are calibrated toward common-practice harmonies.

Another tendency is to situate my observations in terms of a musical narrative. From the outset, I divide the instruments into two opposing groups: orchestra and pianist (soloist)—monitoring their actions throughout the exposition. The orchestra acts first, establishing the mode and tempo, while the piano provides the thematic content. I imagine these agents as taking ownership over musical events. It is not simply that a dominant pedal occurs from mm. 69−76 but that the orchestra, intentionally or not, is responsible. Of course, when musical events do not support the hero narrative proposed—solo protagonist striving toward the major mode against a formidable timbral mass—these sections are either omitted from discussion or else the criteria for what counts as "striving," "resisting," etc. are altered on the spot. For example, when the orchestra opens the piece in minor, it acts with malice and intent. But when the soloist ends its cadenza in (or on) the minor dominant, it supposedly acts against its wishes, too fatigued from the struggle to press on toward major. Such inconsistencies notwithstanding, the narrative impulse informs which musical events are addressed, and how they are characterized.

Formal units coincided with significant cadences in mm. 27, 52, 81, 93, and 107, separating the exposition into its constituent parts. Here, I designated thematic units not solely on harmonic grounds but based on their instrumentation (soloist vs. orchestra) and character (march-like vs. lyrical). Within the themes themselves, decisions regarding the a cadential status of certain moments are eschewed, as I instead recognize mere "emphases" of salient keys. While

a case could be made for reading authentic cadences at mm. 19 and 68, the significance of these major strivings does not, for me, not depend on their being proper cadences.

II. A Technology for Sonata Forms

As in the previous chapter, I begin by laying out the basic principles of the technology, before looking at some of the more specific terms and concepts employed. Sonata Theory holds that sonata-form movements were composed, and should be interpreted, in dialogue within a generic backdrop that the authors have reconstructed from a corpus examination. Among the generic features they explore are: dramatic trajectories toward essential cadences and caesuras, thematic zones and "action spaces" (P, TR, S, and C), and what they term the "rotational principle." In addition to discussing these and other components of the theory, I consider James Hepokoski's recent analysis of Beethoven's "Tempest" Sonata in order to exemplify a full-movement application of this technology.

Dialogic Form

Sonata Theory responds to the century-old debate between what Mark Evan Bonds called "generative" and "conformational" form.[9] The latter, which posits that musical works conform in varying degrees to established models, was vehemently opposed by writers such as Charles Rosen and Donald Tovey, who rejected the various schemes and rules established by the so-called "textbook" approaches. Instead, they advocated for a generative approach that sees form as emerging through the motivic and contrapuntal processes within an individual piece. Concurring with this view that previous, conformational models of form were too rigid,

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[9] Mark Evan Bonds, *Wordless Rhetoric: Musical Form and the Metaphor of the Oration* (Cambridge: Harvard University Press, 1991).

Hepokoski and Darcy declare their intent "not to lay down binding rules and invariant laws."[10] At the same time, they argue, classical composers ostensibly wrote for audiences who were familiar with musical conventions of the period. Any approach to form that ignores this generic background against which music was written, is inadequate as a mode of analytic and hermeneutic inquiry.

Attempting to transcend the problematics of generative and conformational approaches, Hepokoski and Darcy posit the concept of "dialogic form." Form is not a property of the work, but rather emerges as a listener interprets a piece in dialogue with a "constellation of normative and optional procedures." [11] From a compositional point of view, an eighteenth-century composer was faced with certain generic choices or guidelines they might realize or override to various degrees. Thus, analysis is "most essentially a task of reconstructing a processual dialogue between any individual work (or section thereof) and the charged network of generic norms, guidelines, possibilities, expectations, and limits provided by the implied genre at hand."[12]

Hepokoski and Darcy's project, then, is to recover this background animating the composition and reception of late-eighteenth-century sonata forms. To do this, the authors construct an informal hierarchy of choices based on their study of hundreds of compositions.[13] Normative options—those choices that were made most frequently—are considered to be "first-level defaults." For example, the decision to modulate from i to III in a minor-mode exposition was the overwhelmingly preferred option by composers in this period. Modulations from i to v,

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[10] Hepokoski and Darcy, *Elements*, 8.
[11] Ibid., 16.
[12] James Hepokoski, "Sonata Theory and Dialogic Form," in *Musical Form, Forms, and Formenlehre*, by William E. Caplin, James Hepokoski, and James Webster, ed. Pieter Bergé (Leuven: Leuven University Press, 2009), 71.
[13] Hepokoski and Darcy derive sonata-form procedures exclusively from the repertory, paying little attention to eighteenth-century theoretical writings, which they believe to be of "secondary importance." In this regard, they differ from scholars such as Ratner for whom these contemporary writings are of great significance. See Hepokoski and Darcy, *Elements*, 605.

by contrast, occur less frequently and are therefore considered second-level defaults. Finally, composers might choose to override all of the common options, resulting in what Hepokoski and Darcy call a "deformation," defined as "the stretching of a normative procedure to its maximally expected limits or even beyond them—or the overriding of that norm altogether in order to produce a calculated expressive effect."[14] An exposition that modulates to and remains in the supertonic exemplifies a deformational procedure. Although the term "deformation" might have negative connotations for some—as ill-formed, defective, or ugly—the authors insist that no such judgment is intended. Rather, deformation is a technical term that denotes "expressive alterations" of standard compositional practices.[15] Regardless of the terminology, the operative point is that the events of a sonata composition can and should be measured against what typically happens within the genre. The remaining pages in *Elements* outline those features that typify sonata form, illustrating the most common procedures, along with those that, to varying degrees, deviate from these conventions.

Overview of Sonata Form

At the highest level, the authors identify five sonata types. I will focus on the most familiar of these types containing an exposition, development, recapitulation.[16] While there is no shortage of literature on sonata form, the authors point to several features they believe to be neglected or inadequately defined. These include "the composer's treatment of *caesuras* (medial and final), the textural drive toward important *cadences*…, the *rotational* aspect of the sonata

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[14] Hepokoski and Darcy, *Elements*, 614.

[15] See the extended defense of this term from 614−621.

[16] This typical arrangement, called Type 3, takes up the largest portion of the book. One chapter each is accorded to Type 1 (sonata without development), Type 4 (sonata rondo) and Type 2 (a sonata whose recapitulation does not begin with the first theme). Four chapters are dedicated to Mozart's sonata-concerto practice, for which the label Type 5 is employed.

movement as a whole (this tendency to cycle repeatedly through large, thematically differentiated blocks), and many other considerations."[17] My discussion will consider the essential, "genre-defining" cadences and caesuras, the rotational aspect of sonata form, as well as provide some details on the local "action spaces" or "zones" within the exposition.

Central to Hepokoski and Darcy's theory is "the recognition and interpretation of *expressive/dramatic trajectories toward generically obligatory cadences*."[18] This teleological view of sonata form recognizes two essential trajectories, shown in Figure 2. Both the exposition and the movement as a whole chart a path toward two musical goals. The goal of the exposition is to articulate a PAC in the new key, an event the authors term essential expositional closure or EEC. This journey is animated by several thematic modules, termed "zones" or "actions spaces," given the labels P, TR, S, and C. The primary-theme zone (P) establishes the home key and presents the initial thematic material. What follows is the transition (TR), which advances an energetic, often modulatory drive toward a textural gap known as the medial caesura (MC). The second half of the exposition begins with a secondary-theme zone (S) tasked with securing a perfect authentic cadence (EEC) in the new key. Following the EEC, a closing zone (C) reinforces this tonal accomplishment.

Harmonically, expositions in the late eighteenth century admitted only a few standard options for modulation. Major-mode expositions almost invariably modulate to the dominant, although exceptions can be found in select compositions by Beethoven.[19] As mentioned earlier, the first-level default for minor-mode expositions was to proceed to the major mediant (III). Less

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[17] Hepokoski and Darcy, *Elements*, 12.
[18] Ibid., 13. The authors note how this view resonates with that of Heinrich Schenker, citing his famous quote on the goal-oriented nature of both life and music.
[19] Two well-known examples include the opening to the "Waldstein" Sonata and the Sonata in G, Op. 31 No. 1, both of which modulate to the major mediant (I to III). Hepokoski and Darcy suggest that this procedure finds precedent in the i to III tonal schemes of minor-mode expositions. Nonetheless, they regard these instances as deformational. Hepokoski and Darcy, *Elements*, 120.

common are expositions that modulate to the minor dominant (v), while the submediant (VI) was employed with increasing frequency throughout the nineteenth century.

Overall, sonata movements articulate a long-range trajectory toward a tonic PAC in the recapitulation, achieving what the authors call essential structural closure or ESC. Sonata Theory's characterization of exposition and recapitulation as structures of "promise" and "accomplishment" respectively, echo similar pronouncements made elsewhere. The view that expositions produce a large-scale harmonic tension, which the recapitulation resolves, resonates with that of Ratner and Caplin. What distinguishes Hepokoski and Darcy's account, however, is the equal emphasis they accord "rhetorical" tasks, a topic to which I will return in discussing developmental and recapitulatory "rotations." For now, let us consider each of the four zones in turn.

Figure 5-2: Essential Trajectories (From Hepokoski and Darcy's Figure 2.1)

a. Exposition only: the Essential Expositional Trajectory (to the EEC)

PAC
EEC

final
cadence

MC ,

Continuation modules
(series of energy-gaining modules)

TR

Energy-gain +
Acceptance of P

Often *forte*

Either modulatory or
nonmodulatory

S

Relaunch

New key
Usually *piano*
Often lyrical, etc.

C

Postcadential Appendix or
set of "accessory ideas"

May be multisectional (C^1, C^2, etc.)
and of varying lengths. Usually *forte*
or gaining in rhetorical force.

P
Launch

Proposes the main
idea for the sonata

Tonic key

in V
(or, if P was in minor, in III or in v)
Nontonic key

Exposition, Part 1

Exposition, Part 2

b. The entire structure: the Essential Sonata Trajectory (to the ESC)

MC ,

EEC

final
cadence

interruption
‖

TR

S

C

Development

Often P- or TR-dominated
Perhaps rotational

MC ,

ESC

final
cadence

P

P   TR

S

C

Coda

Restart

Tonal resolution

Often recomposed
(emph. IV?)

I

V or III

V
as chord

I

I

I

Exposition

One central mission: laying out the
strategy for the eventual attainment of
the ESC: a structure of promise.

Development

Recapitulation

S, as agent, carries out the central
generic task of the sonata—securing
the ESC: a structure of accomplishment.

FIGURE 2.1   The Generic Layout of Sonata Form

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The Exposition

Figure 5-2a gives the layout of expositions that contain four zones (P, TR, S, and C) and a medial caesura that divides it into two parts.[20] The term "zone" is preferable to theme since any region of the exposition might contain multiple themes. For example, if P contains two distinct themes separated by PAC, we can annotate the two themes as P^1 and P^2 respectively.[21] This shorthand is also helpful for talking about thematic resemblances between zones, or between exposition and development. Thus, we can say that the closing zone is "P-based" or that S^2 is severely truncated when it appears in the recapitulation.

The primary-theme zone begins both the local trajectory to the EEC and the overall journey to the ESC. Its job is to establish the tonic key, provide the main thematic material, and otherwise set the mood for the sonata. The authors follow Caplin in recognizing some basic options for P construction (as a sentence, period etc.) while also agreeing with Ratner about some common topics that P often expresses.[22]

Hepokoski and Darcy recognize a number of options for following P with material that leads to the secondary-theme zone (S). This transition (TR) is charged with gaining the energy needed to drive toward the medial caesura that marks the end of the first part of the exposition. Transitions tend to increase dynamically, exhibit new textures and thematic content, and in many (but not all) cases, modulate to the new key. Example 5-6 shows two common options for TR: one that begins independently and one that "dissolves" from P material.

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[20] This subtype, the "two-part exposition," differs from the "continuous exposition" that lacks both an MC and S. Here, TR proceeds through the middle of the exposition to the EEC, without articulating an MC and S theme. Although examples abound in Haydn, Hepokoski and Darcy read continuous expositions as deviating from or "overwriting" the more normative two-part exposition type.

[21] This nomenclature is subject to further customization. Decimals can be used to relate themes that are either not separated by PAC, or else sound similar material (e.g. $P^{1.1}$ and $P^{1.2}$).

[22] Hepokoski and Darcy, *Elements*, 65.

Example 5-6a: Mozart Sonata in F, K. 332, i. Measures 1−26

Example 5-6b: Beethoven Sonata in G minor, Op. 49 No. 1, i. Measures 1−18

III:HC MC

Example 5-6a begins with a primary-theme zone consisting of two modules (P^1 and P^2) separated by PAC. Following the completion of P^2 in m. 22, the transition begins as a separate module, launching new thematic material in the key of D minor. By contrast, the transition in Example 5-6b does not begin as an independent unit, but is instead merged with the consequent phrase of P. This "dissolving consequent" TR leads to a medial caesura in m. 15. The shorthand III:HC MC indicates that, within the key of III (Bb major), a half cadence serves as the medial caesura. Measure 15 also illustrates the use of "caesura fill" (c.f.), which bridges the gap between TR and S.[23]

Hepokoski and Darcy identify four harmonic defaults for MC. The first-level default for major-mode sonatas would be to sound a half cadence in the dominant (V: HC MC). In minor-mode sonatas, the first-level default is the half cadence in the mediant, as in Example 5-6b. Typically, medial caesuras of this type prepare for the new key by "locking on" to the dominant of the upcoming key.[24] The authors detail several lower-level defaults and suggest how to troubleshoot situations in which a clearly articulated MC does not proceed to S or vice versa, when a convincing S theme is not preceded by an MC.[25] Furthermore, if there is no MC—and therefore, by definition, no S—we are looking at what is termed a "continuous exposition." (see footnote 20 above).

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[23] Although literal breaks between TR and S are normative, Hepokoski and Darcy believe that the technique of "plugging the MC gap" known as caesura-fill is almost as common. Hepokoski and Darcy, *Elements*, 40.

[24] The "dominant lock," which is also found toward the end of many developments, is analogous to Caplin's "standing on the dominant" with one minor difference. Caplin considers this function as post-cadential—typically, after an HC—whereas Sonata Theory sees the dominant lock as holding on to or "keeping alive" the half-cadential arrival. See Hepokoski and Darcy, *Elements*, 31.

[25] Lower-level defaults include PAC:MCs, which express a greater degree of separation between the two parts of the exposition.

The secondary-theme zone (S) begins the second phase of the exposition. Often, S begins with softer dynamics, the energy of TR having been released with the preceding MC. In many, but not all cases, S constitutes a distinct theme that may be songful or lyrical in character. Its critical mission is to articulate a PAC in the newly attained key: the moment of essential expositional closure or EEC. Because only S can bring about this essential cadence, analysts should be particularly attentive not only to this expositional zone, but to any future references to S.[26]

Sonata Theory defines the EEC as "within an exposition, usually the first satisfactory PAC that occurs within S and that proceeds onward to differing material."[27] If the new-key PAC is immediately followed by S rhetoric, then we are likely still with S space, and should look ahead to the next PAC that also leads to new material. Once the EEC has sounded, the music that follows belongs to the closing zone (C), a post-cadential space that brings the exposition to a close. Thematically, C may be based on P or (less commonly) TR, or it may consist of codetta modules that cadence in short succession.

Development, Recapitulation, and the Rotational Principle

Hepokoski and Darcy differentiate between an exposition's tonal and rhetorical tasks. The former denotes the obligation for sonata expositions to modulate to a new key (typically V in major-mode sonatas) and to secure this key with an EEC. Expositions also have a rhetorical task "to provide a referential arrangement or layout of specialized themes and textures against which the events of the two subsequent spaces – development and recapitulation – are to be

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[26] Indeed, the authors go as far as to say "what happens in S makes a sonata a sonata." Hepokoski and Darcy, *Elements*, 117.
[27] Ibid., xxvi.

measured and understood."[28] Hepokoski and Darcy use the term "rotation" to denote this cycling through thematic modules. Rotations refer only to the sequence of thematic patterns, irrespective of tonality. The importance placed on rotation—considered to be a "foundational axiom"—and on thematic considerations in general, distinguish Sonata Theory from other technologies that privilege harmonic criteria.[29]

The concept of rotation offers another way to think about development sections.[30] Given an exposition containing P, TR, S, and C, the analyst is encouraged to examine how and to what extent the development rotates through this succession of zones. Although few developments actually sound all four zones in their original order, Sonata Theory recognizes a variety of procedures in dialogue with the rotational principle. In the first place, a development can be considered fully rotational so long as it contains at least one module from each half of the exposition—that is, one zone from before the MC (P or TR) and from after (S or C).[31] These modules can be varied, truncated, or separated by the interpolation of "episodes" (non-expositional material).

The expositional rotation also serves as a template for the recapitulation, which typically sounds P, TR, S, and C in their original order. The recapitulatory rotation differs in that its second half (S and C) are sounded in tonic, driving instead toward a I:PAC that constitutes the overall goal of the movement, the ESC. At this crucial moment, the tonic, which had been provisional, becomes a "stable reality." Analysis should concentrate on how the recapitulation

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[28] Ibid., 16.

[29] Elsewhere, Hepokoski deems thematic content "a central topical feature of the dramatized classical style by any account and one of the foremost attributes that all listeners directly experience." James Hepokoski, "Response to "What are Formal Functions?" *Musical Forms, Form, and Formenlehre*, 42.

[30] Most of the development chapter in *Elements* is concerned with rhetorical procedures. The few pages that discuss tonality express more or less conventional wisdom: developments pass through a variety of keys, before a retransition prepares for the reemergence of the tonic-key recapitulation.

[31] Developments containing modules on only one side (i.e. P and TR, or just P) are considered half-rotational.

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accomplishes this goal. What ornamental or structural changes obtain between the exposition and the recapitulation: have any modules been expanded or truncated? How are P and/or TR modified in order to launch a tonic S that can articulate the ESC? Typically, the most significant changes occur during TR, since it is this zone that had (in many cases) brought about a modulation that is no longer needed in the recapitulation. The remaining zones may be restated exactly (as often happens with P) or simply transposed into the tonic (S and C). However, these zones often undergo not insignificant changes that invite interpretation. Beyond those changes necessitated by tonal requirements, there may be expressive reasons why a composer might recompose, rather than merely restate, portions of the first (expositional) rotation.

Sonata Form and Hermeneutics: Beethoven's "Tempest" Sonata, Op. 31 No. 2

Among Sonata Theory's prominent desiderata is for analysis to lead to hermeneutic investigations. Analysis, the authors write, "should be directed toward the larger goal of a hermeneutic understanding of music as a communicative system, a cultural discourse implicated in issues of humanness, worldview, and ideology, widely construed."[32] This entails moving beyond explorations of how sonata form movements are constructed to engage the "why" and "so what" questions. It is not enough to identify that a recapitulation, for example, does not restate S. Rather we should ask why the composer might have elected for this omission, while probing the implications for listening and interpretation. Doing so requires us to enter "into the more compelling realm of hermeneutics to take the next interpretive step."[33]

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[32] Hepokoski and Darcy, *Elements*, 603.
[33] Hepokoski, *Dialogic Form*, 147.

One suggestion along these lines is to understand sonata form as a "metaphor for human action."[34] Recall that for Hepokoski and Darcy, a sonata unfolds a linear journey toward certain generic goals. The journey toward the ESC, for example, may be dramatized in a way that invokes a human protagonist, who struggles through various challenges before finally accomplishing their goal (ESC). While acknowledging that narrative readings of this sort are underdetermined by instrumental music, the authors believe that attempts to draw reasonable hermeneutic parallels between music and human experience should not be discouraged, so long as they are done thoughtfully.[35] Although most of *Elements* deals with music-analytical concepts illustrated through close readings of musical works, hermeneutics comes to the fore in separately published essays. To close this section, let us consider Hepokoski's reading of the first movement of Beethoven's Sonata in D minor "Tempest," Op. 31 No. 2. In addition to showcasing the hermeneutic potential of this technology, the following summary illustrates how the above-discussed concepts (zones, caesuras, rhetoric and rotation etc.) work in an actual analysis.

Example 5-7 shows the opening of the "Tempest" sonata. Hepokoski prefaces his analysis with an overview of dialogic form as well as some thoughts on the inherent drama of minor-mode sonatas.[36] Sonatas written in the minor mode bear the additional burden of escaping from this troubled (minor) condition and emancipating into the major mode. This first attempt normally occurs in the exposition, when S is sounded in the major mediant. Yet a more permanent liberation can only be achieved by securing a PAC:ESC in the tonic major, at the end

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[34] Hepokoski and Darcy, *Elements*, 251−254.
[35] On this point, the authors caution: "Submitting a work to a responsible reading is not the same thing as uncovering an objective fact. And laying out a metaphorical analogue in human experience is not the same thing as insisting upon a naively programmatic basis for the music." Hepokoski and Darcy, *Elements*, 253−254.
[36] Chapter 14 of elements deals with "Sonata Form in Minor Keys."

of the recapitulation. The possibility for either a positive (major) or negative (minor) tonal outcome, imbues sonatas in minor with unique dramatic potential, which Beethoven exploits in the first movement of the "Tempest."

What is perhaps most striking about mm. 1−24 (which Hepokoski reads as P) is its alternation of slow-tempo gestures (mm. 1−2 and 7−8) and allegro phrases (mm. 2−6 and 9−24). Hepokoski notes several precedents for this "stop-and-go" effect, including the first movements of Beethoven's Trio Op. 1 No. 3 and the Sonata in A, Op. 2 No. 2. In recognizing this dialogue between non-normative P zones, Hepokoski calls into question Carl Dahlhaus's "grand claim" that Beethoven takes here a new, processual approach to form.[37] Instead, the alternation of slow-tempo modules ($P^{1.0}$) with more characteristic, allegro modules ($P^{1.1}$), should be read in dialogue with similar procedures that one finds in other Beethovenian expositions.[38] Hepokoski reads $P^{1.0}$ as a "curtain-raiser" that introduces the dramatic action ($P^{1.1}$) that follows onto the musical stage.

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[37] James Hepokoski, "Approaching the First Movement of op. 31 no. 2 through Sonata Theory," in *Beethoven's Tempest Sonata: Contexts of Analysis and Performance*, ed. Pieter Bergé et al. (Leuven: Peeters, 2009), 184.
[38] This sonata also anticipates the opening of the fifth symphony (which also inserts fermatas into P space), composed just years after Op. 31 No. 2.

Example 5-7: Beethoven Sonata in D minor Op. 31 No. 2 "Tempest," i. Measures 1−26

The two phrases that comprise $P^{1.1}$ loosely resemble a period with a deformational (and greatly expanded) consequent from mm. 9−21. Hepokoski's describes various musical elements as self-conscious "agents," displaying his penchant for situating his analyses in narrative terms. His reading of the entire $P^{1.1}$ complex deserves to be treated at length, so as to gain a sense of his prose style.

> The $P^{1.1}$ antecedent, bars 3−6, starts the fictional musical protagonist ('the music') on a grim existential course, one not foreseen in the ambiguously off-tonic, minor-chord $P^{1.0}$

in bars 1−2. The antecedent's stormy, incessant melodic plunges in the right hand, the recurrent downbeat dissonances, and the ever-growing intensification from bar 3 (*piano*) to the pang of dissonances at the beginning of bar 6 (full realization of the dire situation, *sforzando*) are signals requiring little additional comment: one is caught in the unrelieved grip of a malevolent D minor. The moment of the half cadence brings the *allegro* motion to an abrupt halt (*adagio* and *fermata*, b. 6). One can read this gesture as a representation of indecision or fearful regret: 'Stop! *Must* we proceed?' The $P^{1.0}$ music, now aware of its fated D-minor sonata-course, balks at continuing. Is it possible to abort this beginning, to back up and begin again on more positive terms?

Complying with the long pause and false hope, 'grinning Tragedy' offers up a second major-chord $P^{1.0}$ (bb. 7−8), this time an insidiously gleaming V^6 of F, as if offering $P^{1.1}$ the opportunity of escape by re-beginning on the major mediant. The subsequent *allegro* seizes on this hope, jumping onto an F-chord in bar 9. But this is too little, too late: the major mediant is sounded as only an evanescent flicker of something that we are not permitted to possess. The F-sonority is immediately leveraged via chromatic-6−5 intensifying sequences, *crescendo*, back into D minor, whose reattainment is declared at bar 13 with a *forte* of negative arrival (' captured! no escape!'). Prolonged through several bars of flailing $P^{1.1}$ despair, this is clinched again with the chordal *sforzando* at bar 19 and resolves resolutely, through a triggering V^7, with the *forte* i:PAC at bar 21. This deformational consequent might be metaphorically analogous to a localized, failed struggle of a besieged individual will ($P^{1.1}$) against the inexorable forces of D minor and all that that key might be taken to represent. The intensity of the resistance accounts for the prolonged strain and expansion that Beethoven applied to the normal concept of a consequent. Formal shape—deformational consequent—becomes a central feature of the passage's expressive content.[39]

Moving ahead in the exposition, Hepokoski notes that while some commentators mark S as beginning in m. 41, an even stronger case can be made for reading this exposition as "continuous," lacking both S and MC. Of course, to simply insist on one reading or the other risks underselling the "generic strain" that is Beethoven's "central expressive point."[40] Nonetheless, Hepokoski finds the continuous interpretation to be more convincing than the S reading, which is problematized by several factors. Among the most important is our intuitive sense of this passage as a "midstream moment of panic" rather than the beginning of a new

[39] Hepokoski, *Approaching*, 191−192.
[40] Ibid., 194.

section. This would-be S is preceded by a weakly articulated cadence with no textural separation, and its continued use of the $P^{1.1}$ rhythm strengthens the impression of being midstream.[41]

The resulting impression is that TR does not terminate here but continues to spin forward toward the v:PAC in m. 63. Hepokoski remarks that this moment could very well mark the EEC had it advanced to new material. Instead, the music that follows in mm. 75−87 repeats the previous bars in a manner Hepokoski describes as "inescapable whirlpooling." The EEC sounds with the PAC in m. 87, at which point the first ending leads to a repeat of the exposition.

Following the second ending, the development begins with a D-major $P^{1.0}$ that sets off a second rotation. For Hepokoski, "the D^6 chord offers a tantalizing glimpse of a major-mode, emancipatory outcome that will remain beyond our reach."[42] Indeed, this utopian vision is immediately denied via a $B\#^7$ arpeggio, and, following a series of fermatas, the music speeds forward with TR-based material in F# minor in m. 99. Overall, Hepokoski reads the development as "fully rotational," noting how expositional events return, in various guises, in their original order. The development begins with $P^{1.0}$, then TR, before making allusions to mm. 55−57. In m. 133, the 5-4-3-2-1 figure from the end of the exposition returns as 2-1-7-b6-5 in the tonic. Beethoven uses a diminuendo in order to prepare for the recapitulation, which begins with the pianissimo $P^{1.0}$ in m. 143.

For minor-mode sonatas, the recapitulation marks the last chance to escape from the troubled condition and reach the parallel major. Hepokoski observes how $P^{1.0}$ is now extended to include recitative, much like the oboe solo in Beethoven's fifth symphony. Twice, the weary protagonist asks "must we continue?" and is answered in the affirmative as $P^{1.1}$ charges forward.

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[41] Hepokoski also observes the dominant pedal beneath this A-minor material. While observing the similar procedure in Beethoven's Op. 2 No. 1, the S space of this earlier sonata is launched by a more convincing MC and is more thematically differentiated from what precedes it.
[42] Hepokoski, *Approaching*, 201.

For the most part, the recapitulation mirrors the exposition until m. 171, at which point the

corresponding material is shortened and transposed into the tonic minor. The fatal moment of

ESC occurs with the i:PAC in m. 217, which Hepokoski describes as "the decisive closure of the

grim, iron door of D minor."[43]

Following his analysis, Hepokoski considers some implications this analysis may have

for performers. While there is no single way to perform this sonata, the performer may want to

bring out the many oppositions of tempo, dynamics, texture, and register. Most importantly, it is

through closely attending to this music, considering aspects sometimes neglected by other

methods, that performers can make their own interpretive choices. His closing remarks in this

essay sum up the essence of the Sonata Theory approach:

> The hard part is to be sure that one's analysis is never divorced from the rich impact of
> real musical experience. Analysis should never isolate itself into an abstract, scholastic
> sphere of self-reinforcing separateness or partiality, into an exercise in facile
> categorization and labelling, or into a self-satisfied method eager to explain away
> compelling musical features as yet more instances of well-known technique x or
> technique y. Pieces of music are not puzzles to be solved neatly through the application
> of any external, closed system. They are human statements, personalized interactions
> with cultural genres of the past that are to be thought about deeply and then brought to
> life in performance.[44]

III. Revisiting Rachmaninov Through Sonata Theory

In working through the materials of Rachmaninov's Op. 30 with Sonata Theory

technology in hand, I keep the following aspects in mind. Sonata-form movements convey a

strong sense of goal-directedness, as do their constituent zones. Hepokoski and Darcy thus

encourage us to "experience any sonata form with a strongly "directed" preparatory set, pressing

forward conceptually and anticipating genre-defining events-to-come."[45] Instead of (only)

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[43] Hepokoski, *Approaching*, 203.
[44] Ibid., 209.
[45] Hepokoski, *Elements*, 18.

investigating the particular makeup of a theme, we might anticipate the goal to which it is directed, reflecting on how it strives, succeeds, or fails at accomplishing its task. Second, it may be instructive to cast thematic modules (e.g. the "three-note figure") within the newly acquired metalanguage (P^0, S^1 etc.) and from the standpoint of rotational form. Finally, accepting Sonata Theory's challenge to pursue thoughtful hermeneutic readings, as exemplified by the "Tempest" analysis, should provoke new interpretive means of confronting some of the formal problematics encountered in part one.

The exposition begins with a lengthy, multi-modular, and tonally overdetermined P zone. In order to identify and refer back to important thematic modules, I rely on Sonata Theory's superscript distinctions. Having recognized the preparatory nature of bars 1−2, I will call this material $P^{1.0}$, while using the term $P^{1.1}$ to refer to the pianist's theme that immediately follows. Two factors supporting this decision are: 1. That the first two bars are included whenever $P^{1.1}$ returns and 2. They play an important role in establishing the tempo, harmony, and motivic-content (1-3-2-1 in the first violin) of the P zone. Another decision concerns what to make of the orchestral repeat of $P^{1.1}$ in mm. 29−52. In general, Sonata Theory reserves the term P^2 for music that follows a PAC and proceeds to new material.[46] Although the soloist's and orchestra's themes are separated by PAC, the latter constitutes a restatement of the former, for which reason I will adopt the label $P^{1.2}$. Going through the movement, I produce Figure 5-3, which gives a formal overview of the movement using this terminology.[47] Otherwise, I found no reason to construct examples beyond what exists in parts one and two.[48]

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[46] Note that these requirements mirror those for identifying the EEC and the outset of C.

[47] The symbol V_A means "active dominant," which describes a dominant chord rather than the dominant as a key area. Hepokoski and Darcy, *Elements*, 19.

[48] This contrasts greatly with the paradigmatic and form-functional technologies, which put me through an extended process of making and annotating.

Figure 5-3: Formal Overview of Op. 30, i. (Sonata Theory)

Exposition (Rotation 1)

Measures:	1–2	3–26	27–51	52–76	81–92		93–106	107–146		147–166
	$P^{1.0}$	$P^{1.1}$	$P^{1.2}$	P^2	TR	'	$S^{1.1}$	$S^{1.2}$		C
Key:	i	i	i	i	VI:HC MC		VI	VI (bII)	EEC	VI -> V_A
					m. 92				m. 147	

Development (Rotation 2)

Measures:	167–181		181–202	203–242	243–258	259–299	303–
	$P^{1.0}$ $P^{1.1}$		$P^{1.0} + P^{1.1}$	$P^{1.1}$	$P^{1.1}$	TR	"early" cadenza
Key:	i		vi	v	vii	i -> v	V_A

Recapitulation (Rotation 3)

Measures:	329–362	362–374	375–394
	$P^{1.1}$	TR	$S^{1.2}$
Key:	i -> I	I:PAC	bII -> V_A no ESC!
		m. 358	

Coda (Rotation 4)

Measures:	395–396	397–420	421–438
	$P^{1.0}$	$P^{1.1}$	$P^{1.2}$ ($S^{1.1}$)
Key:	i	i	i

The material that follows the PAC in m. 52 is a bit trickier to situate in Sonata Theory's terms. It begins by restating the chromatic descending line that ended each of the previous two modules. At first, we might be tempted to hear this as a characteristically energized TR that dissolves out of P material, making several feints toward modulation. The pianist attempts an MC at m. 68 in C major, but is unable to produce the necessary textural break. Shortly thereafter, and as previously mentioned, an ominous dominant pedal in the lower strings thwarts the soloist's efforts to escape the minor tonic. Although the rhetorical signals of TR are clear, this music cannot lock onto the dominant of any possible S key area. Notice too how $P^{1.0}$ returns, rhythmically augmented, in mm. 69–70, as if to remind the soloist that this is still minor P

territory. Finally, the soloist takes matters into its own hands, as if to say "Enough of this!" and reaches outside of sonata space to launch a solo cadenza in mm. 77−81.[49]

Deciding whether this section represents TR or something like P^2 is less important than attending to the formal ambiguity produced as the soloist and orchestra struggle for control. That said, I lean toward the latter interpretation for the following reasons. The concluding V:PAC at m. 81 would be an extremely rare MC option for minor-mode sonatas, although the prospect of beginning S in A major (V) has nineteenth-century precedent.[50] Moreover, the cadenza is strongly colored by the pitch class Bb (b2 in A major), which assumes a prominent melodic role in the ensuing $P^{1.2}$ material in D minor. My impression is that the orchestra has prevailed in keeping the music in minor, rendering the cadenza a mere accessory to P space. But the pianist's intrusion has had a ripple effect on the orchestra, who, now at moderato tempo, is unable to muster up the same energy with which it began the exposition. The bassoon and lower string utterances of $P^{1.2}$ are lackluster, descending lazily down the natural-minor scale. Woodwinds and upper strings enter in m. 85, providing the energy (allargando, forte) needed to propel the transition toward the VI:HC MC in m. 92, the bassoon sounding two beats of caesura-fill.

The secondary-theme zone begins in Bb major with $S^{1.1}$, whose march-like rhythm borrows from that of $P^{1.0}$. As observed in the preliminary reading, the rhetorical profile of $S^{1.1}$ lacks the sensuality and lyricism that characterizes many of Rachmaninov's second themes. In spite of the preceding ritardando, $S^{1.1}$ pushes forward steadily to F major, showing little interest in wallowing around in the new key. The pianist, perhaps growing impatient with the

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[49] Sonata Theory considers introductions, codas, and cadenzas as "parageneric spaces" that fall outside of the sonata proper.
[50] See, for example, the first movement of Schubert's Sonata in A minor, D. 784, whose exposition sounds a melodic S in E major in m. 61, following a V:HC MC.

monotonous conversation with the orchestra, again asserts itself in launching $S^{1.2}$ alone in m. 107.

$S^{1.2}$ is marked by its slower tempo, legato articulation, and use of rubato. Compared to the agitated P zone and the forward-marching $S^{1.1}$, this module considerably slows down the narrative action. In calling attention to its own sound, $S^{1.2}$ resists its own teleology, as if it is intentionally putting to one side its mission to articulate the EEC. It soon veers off harmonically, floating upward to Eb major as if in a day dream, proceeding with $S^{1.2}$ rhetoric as if unaware that it has wandered into the wrong key. As it rhapsodizes in the higher register in mm. 126−130, the pianist eventually comes to its senses, gradually working its way to the dominant of Bb in m. 137. Having locked onto the dominant of VI, the music speeds ahead, the pianist taking the lead in m. 143 with another solo cadenza that ends the S complex. And yet the pianist can only weakly secure Bb major with the IAC:EEC in m. 151, a label that Hepokoski and Darcy argue should be used with caution. Not only is this cadence type exceedingly rare for EECs, but the imperative to "proceed onward to differing material" is violated by the elision the EEC with $S^{1.2}$. The continuation of the preceding module is made visually apparent by the tempo marking *Tempo precedente* in m. 151.

While S-based C zones were extremely non-normative in eighteenth-century sonatas, the authors note rare occurrences of what they term "C as S-Aftermath."[51] In these instances, a clear EEC is followed by an S module giving the impression of a "quiet summary" or "back reference" of S space. This pattern often unfolds in three stages: 1. the last module of a multi-modular S drives energetically toward the cadence 2. an emphatic EEC with forte dynamics 3. an immediate

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[51] Hepokoski and Darcy cite the openings to Mahler's Sixth Symphony and Schubert's Quintet in C, D. 956.

drop in dynamics "followed by a (nonelided) quiet recycling of a character theme or motive from S," treated cadentially not melodically.

The circumstances surrounding the EEC in m. 151 resemble this procedure in significant ways. Within S space, the second and final $S^{1.2}$ module concludes by gaining energy (upward contour, rhythmic drive, dynamic crescendo) which is released at the moment of EEC. The following theme certainly qualifies as a "quiet recycling" of $S^{1.2}$ rhetoric, although its elision weakens the sense of expositional closure, repeating itself in shorter, one-measure groupings that distinguish it from the flowing, expansive $S^{1.2}$ proper. One means of interpreting this non-PAC is that the pianist, exhausted from its journey out of the minor mode, has run out of energy necessary to achieve full closure. Perhaps, however, this moment represents a naïve attempt to hold onto S, knowing that to do so jeopardizes the integrity of EEC, and its analogous moment of ESC in the recapitulation. By eliding the beginning of C with $S^{1.2}$, which always begins on scale-degree 3, the pianist is unable to articulate a major-mode PAC. The orchestra seizes this weakness, encroaching upon C space with $P^{1.0}$ and modal inflections (Gbs) as it moves undetected toward D minor.

Viewed overall, the expositional rotation proceeds through the typical thematic modules in order (P, TR, S, C). We might also identify $P^{1.1}$ as a subrotation of the exposition.[52] It is within the lyrical $S^{1.2}$ that the pianist reaches its highest registral point of the exposition, recalling the gesture to Bb major in m. 19 that marked the melodic apex of $P^{1.1}$. Just as the original emphasis of Bb was fleeting, the pianist is here unable to confirm the new key with a perfect authentic cadence, launching the closing theme instead with an IAC. The journey from D minor, to Bb major, and back during $P^{1.1}$ summarizes the large-scale tonal form of this movement, with the

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[52] Subrotations are suggested by thematic-patterning within a full rotation. Hepokoski and Darcy, *Elements*, 611

exception of the pianist's daydreaming in Eb major. Sonata Theory positions these connections, already observed in the first analysis, within a scheme of rotations through thematic modules.

Development

With the reappearance of $P^{1.0}$ and $P^{1.1}$ in m. 167, the developmental rotation is underway. Following this P-based entrance are four "ideas" that we had identified in Example 3. Because these ideas belong exclusively to the first half of the exposition (P and TR), we can say that the development is half-rotational, lacking any references to material that sounded after the medial caesura. More specifically, the development rotates through the thematic modules of part one of the exposition in the original order (P^0, $P^{1.1}$, TR). What I had called the "distorted first theme" and "quasi-invention" are obvious variations of $P^{1.1}$. while the "off-beat rhythm" resembles the syncopated TR rhetoric from mm. 88−90. Although the intensifying passage dominated by the "three-note figure" is not obviously related to any pre-MC module, its contour and off-beat entrance resemble that of $P^{1.1}$. I read this passage as advancing the sonata narrative to its climax—the triple forte outburst in m. 235—rather than an episode interpolated into the storyline.

Not only do S and C not appear, but their associated major mode is absent from this section, which modulates rapidly through a variety of minor keys. Moreover, the soloist is unable to reduce the allegro tempo, as it had done via cadenza prior to TR (mm. 78−81). Hepokoski and Darcy also refer to half-rotational developments as "blocked" rotations, a term suggestive of the pianist's struggle at breaking through the MC. Following the quasi-invention $P^{1.1}$, TR returns as the music retransitions toward G minor and then D minor with the $i^{6/4}$ chord in m. 303. Notice that the characteristic energy of these modules is retained: the forward-driving, intensified P

rhetoric gives way to a more subdued TR, which, as in the measures leading up to MC, slows to a crawl in mm. 299−303. However, unlike the expositional TR, this music fails to launch the return of P, as the pianist shoots upward chromatically, interrupting the orchestra before it can sound $P^{1.0}$.

Cadenza and Recapitulation

The early appearance of the cadenza recalls the pianist's earlier attempt to steer the sonata course, bringing an end to P^2 in m. 81. But here, the cadenza does not simply conclude an expositional zone but actually initiates the third, and most crucial rotation in this sonata narrative. The cadenza represents an area outside of sonata space, the only region over which the pianist has full control. Not only does the pianist distort the thematic contents of $P^{1.1}$ while forgoing $P^{1.0}$, but it alters the tonal direction as well. No longer satisfied with temporarily resting upon Bb, the pianist takes a stand, grasping on to A in m. 350, ready to take the plunge downward to tonic.

At the end of this virtuosic display, the soloist emancipates from the minor-mode, triumphantly securing a perfect authentic cadence in D major. Its tonal goal accomplished, the pianist celebrates with a series of tonic arpeggiations. However, the rhetorical quest is left unfinished, as S has yet to sound in tonic. For this reason, the cadence cannot be considered the ESC, since it punctuates what is ostensibly P space. As mentioned before, the sense of D major is undermined by the chromatic neighbor notes Bb and Eb from mm. 359−361, boxed in Example 5-5. Recall that these notes represent the two major keys sounded during the exposition, as well as significant pitch classes in $P^{1.1}$.[53] Ironically, the Bb that earlier had provided a momentary

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[53] Blair Johnston connects the initial appearance of Eb in m. 12 to the movements climax at m. 235 as part of a fully-diminished seventh. This creates "a structural dissonance that is only resolved at the end of the first movement

reprieve, now serves to undermine D major by leaning toward its parallel minor.[54] Several

individual instruments from the orchestra enter with TR, the pianist now forced into an

accompanimental role, powerless to stop the gradual decay of D major. This intrusion is not

overly forceful or violent, but depicts a tortuously slow reversal of fortune. One last time the

pianist desperately tries to secure the tonic major but falls just short in reaching $S^{1.2}$ in Eb

major.[55] Rhetorically, the material that follows in m. 385 is that which had led $S^{1.2}$ toward the

IAC: EEC. The pianist gets close to articulating this same cadence but stalls out on a sustained

Ab trill at the end of m. 388. Its tonal mission failed, S gives way to the $P^{1.0}$ rhythm, as Eb is

repurposed as a Neapolitan preparation for the return of D minor. With the full return of $P^{1.0}$ and

$P^{1.1}$, the minor mode returns to the stage, launching a fourth and final rotation through P space.

The orchestra gets the final say, its $S^{1.1}$ rhythm accelerated in sending the sonata spiraling toward

its tragic conclusion.

Conclusion

      In recapping my experience using this technology, I focus on three aspects of Sonata

Theory: the notion of dialogic form, the rotational principal, and Sonata Theory's teleological

and hermeneutic orientation. In some cases, orienting to this music dialogically did not

significantly affect either the actions taken or the conclusions drawn. Throughout many of the

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(and which has implications for a point of culmination at the end of the third movement)." Blair Johnston "Harmony and Climax in the Late Works of Sergei Rachmaninoff (PhD diss., University of Michigan, 2009): 114.

[54] Scale-degree b6 had similarly intruded upon C space in the exposition (Gb in m. 160).

[55] In Sonata Theory's view, non-tonic S zones in the recapitulation are considered to be unresolved. However, we might note how recapitulatory S sounds a fifth down from S in the exposition (Bb->Eb), an analogous relationship found in major-mode sonatas. This argument has been made by James Webster, who analyzes the non-tonic return of S in Beethoven's Egmont overture as satisfying some form of Edward T. Cone's "sonata principle," which states that non-tonic expositional material must return in tonic or else "be brought into closer relation to tonic." In the F-minor overture, S had originally sounded in III (Ab), and is then brought back in VI (Db). Hepokoski finds this reading unsatisfactory, as it inappropriately "smooths over" what is an obviously deformational moment. Following Hepokoski's logic in Op. 30, then, we should not look to normalize the Eb $S^{1.2}$ by appealing to fifth relations, but instead consider the expressive impact of this non-resolution on the entire narrative.

preliminary analyses in this study, I often situate unusual musical developments in light of similar compositions that come to mind. The cadenza struck me as unusual precisely because of my inability to think of instances in which the cadenza launches the recapitulation midstream, though I did mention some possible precedents in footnotes 6 and 7. Neither dialogic form, nor the concepts of defaults and deformations, were necessary to recognize this striking moment. Of course, cadenzas are themselves not a central focus in Sonata Theory, since the project deals predominantly with string quartets, sonatas, and symphonies. Had a more general sonata procedure, say the expositional III:HC MC, been subjected to deformation, Sonata Theory's extensive treatment of medial caesuras would have likely made a greater impact on our interpretation. This is precisely what happened when I revisited the Bb IAC at the end of the exposition. Upon recognizing that neither the rhetorical nor tonal requirement of EEC had been fulfilled, I was forced to grapple with the implications of this gesture, the only conceivable candidate for EEC.[56] What was originally a passing comment regarding the cadential status of m. 147 became the object of close analytical and hermeneutic attention. Ultimately, I understood this deformational instance of non-PAC expositional closure within a narrative involving the pianist as perhaps an agent, whose lack of awareness, or maybe unwillingness to pursue closure, leads to these unclosed moments in the exposition. It is precisely this background dialogue that imbues an otherwise unremarkable moment (an IAC in Bb major), with dramatic significance.

Indeed, Sonata Theory's emphasis on certain, obligatory goals and trajectories, lends itself nicely to the construction of narrative musical accounts. Although the preliminary analysis imbued the soloist and orchestra with agency and volition, these ascriptions remained in isolation

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[56] The first action taken was to consult the portion of *Elements* that troubleshoots EEC complications. Measuring procedures against concepts from the book promoted the tendency, also observed in ch. 4, to normalize musical events in terms of token paradigms.

from one another. This technology grants these agents a larger formal purpose, a goal toward which they strive, a desired outcome for which they compete. One of the attractive aspects of the essential sonata trajectory from Figure 5-2 is its insistence on one or two important goals: attaining a major-mode EEC is far more decisive than major-mode emphasis elsewhere in the exposition. It becomes easier to tell when a musical event, such as attaining a cadence, is an example of winning the war or just the battle.[57]

Lastly, how does thinking about Op. 30 rotationally affect how we might go about analysis? Here, I find the rotational principle to have less agency than other sonata-theoretic concepts, having had minimal impact on my analytical experience. This is perhaps due to my interest, one exhibited in all of the preliminary analyses, in tracking thematic-motivic activity. From the outset of part 1, I was already concerned with identifying and tracking these kinds of relationships. Reading the unfolding of expositional events as a "first rotation" framing the developmental and recapitulation, for the most part, did not yield significant analytical changes. Nor did replacing preliminary terms (such as orchestra's theme, quasi-invention etc.) with the various superscript designations ($P^{1.1}$, $S^{1.2}$ etc.) significantly change my analytical approach or the resulting formal diagram. The only substantive difference between Figures 5-1 and 5-3 is that the latter labels significant cadences and caesuras. Otherwise, shifting the terminology (i.e. from "soloist's second theme" to $P^{1.2}$) did little to help organize my ideas about this music. This realization accords with a trend that has been slowly emerging throughout these chapters; that music-analytical technologies affect us less by "altering the character of our symbols," as

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[57] The intersection of form and meaning inherent in Sonata Theory has elsewhere been signaled out as its most compelling feature. Writing about Sonata Theory's pedagogical value, Seth Monahan states that "the theory's greatest asset" is "its capacity for sensitizing us to the drama that inheres in sonata forms and especially in those works in which the execution of sonata form itself seems to be a central dramatic or compositional 'issue.' Seth Monahan, "Sonata Theory in the Undergraduate Classroom," *Journal of Music Theory Pedagogy* 25 (2011): 11.

Postman says of print and digital technologies, but by positing new frameworks through which to engage music. At the risk of overgeneralizing my own experience, it is hard to imagination an occasion in which the substitution of main theme or P for "first theme" would alter one's analytical engagement in any meaningful way. If Sonata Theory provokes interpretive change, it does so not by recasting familiar concepts in a new metalanguage, but by precisely defining and elevating certain genre-defining elements that can serve as springboards for hermeneutic investigation.

Chapter 6

Conclusion (and a Toveyan Approach to Analysis)

Throughout this study, I have characterized the use of conceptual tools as "equipping" analytical technologies. Adopting a form-functional or paradigmatic perspective, like donning a pair of spectacles, offers a new frame through which to view the world (or a piece of music). Nonetheless, the metaphor has several shortcomings in that it suggests that acquiring technology is purely additive, while suggesting that a technology's utility depends on its level of sophistication. As Postman argues, technology's impact is not additive but rather ecological:

> A new medium does not add something; it changes everything. In the year 1500, after the printing press was invented, you did not have old Europe plus the printing press. You had a different Europe.[1]

By this same token, the introduction of a technology into the analyst's toolkit does not simply grant a new ability—say, to construct and evaluate a paradigm chart—but may fundamentally change the analyst's perspective and musical values. Second, using the term technology to describe music-analytical approaches tends to connote methods that are sufficiently complex and sophisticated. Yet there may be reasons to prefer less intricate technologies, whose application foregrounds the immediacy of a composition rather than theoretical postulates. Moreover, it seems plausible that a technology can be relatively modest and nonetheless afford sophisticated conclusions.[2] Adopting such a technology may not even

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[1] Neil Postman, "Five things we need to know about technological change" Conference in Denver, CO, March 1998. Retrieved from http://www.sdca.org/sermons_mp3/2012/121229_postman_5Things.pdf

[2] I owe this suggestion to Áine Heneghan.

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require us to add new concepts and terminology into our arsenal, encouraging instead a more basic engagement with music than that of our preliminary analyses. In these instances, one is not necessarily "equipping" new information or techniques, but rather learning how to downplay existing tendencies. Such technologies ask us not to augment or refine our theoretical categories, but to try to divest ourselves from them.

In this closing chapter, I attempt to implement some ideas from Donald Francis Tovey. Of all the authors whose technologies are featured in this study, Tovey is the most distanced— historically and ideologically—from our present time. Tovey did not propose an analytical method nor did he even consider himself a musicologist, but relied on his extensive knowledge as a musician in writing about aesthetic aspects of individual works. Although both contemporary and more recent reactions to Tovey have been mixed, his writings are sufficiently influential and unique to suggest their applicability for analysis. My intent here is to extrapolate some of Tovey's core attitudes and, keeping them in mind, analyze the first movement of Haydn's Sonata in G, Hob. XVI: 27. Thus, instead of measuring the sonata against a background of concepts and types, I will attempt to write an analytical précis of "what happens" in this movement. Attempting this analysis involves one in a process different from those fostered by other technologies, one that requires us to suspend certain theoretical preconceptions and received categories. Kevin Korsyn has written that whoever investigates Tovey's writings "will find his hearing challenged, and his imagination stimulated, by this seminal and profound musical thinker."[3] It is hoped that engaging with Tovey's ideas through analysis will serve to contextual some of these effects.

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[3] Kevin Korsyn, "Tovey's Analyses Reconsidered," *The Musical Times* 130 (1989): 474.

I. Preliminary Analysis of Haydn Sonata in G, Hob. XVI: 27, i.

The opening allegro constitutes a brief and lighthearted sonata form in G major, an overview of which is shown in Figure 6-1. Following a scalar ascent ornamented by turn figures, the melody hovers around scale degree 5 before coming to rest with an IAC in m. 6, followed by a more pronounced descent (forte dynamics, octave doublings) that ends the first theme in m. 12. Scale degree 5 is emphasized not only by the repetitions of D in mm. 2 and 6, but by the fact this pitch is approached by scalar descents from above and below. As shown in Example 6-1, the convergence upon D from the fifth below (m. 2) and the fifth above (m. 4) serve to deemphasize the tonic, contributing to the floating quality of this melody. The theme begins again in m. 13 but quickly transitions to new material, introducing chromatic tones in mm. 17–20. Haydn uses a similar gesture to that of mm. 7–8 to sound a half-cadential progression from tonic, to subdominant, to dominant in mm. 22–24.

Figure 6-1: Formal Overview of Haydn Sonata in G, Hob. XVI: 27, i

	Exposition		Development		Recapitulation
Measures:					
1–12	First theme in G	57–87	Second theme	87–97	First theme in G
12–24	Transition		material from Dm -> G	98–106	Transition
24–55	Second theme in D			106–140	Second theme in D
55–57	Closing theme in D			141–143	Closing theme in D

Example 6-1: Stepwise approaches to scale degree 5

Beginning with the pickup to m. 25, a new theme in D-major, which I label as the second theme, reminds me of the developmental episode (also in D major) from the first movement of the "Farewell" Symphony. Both openings group into two-bar units before making their way to I^6 in the fifth bar of the theme. But whereas the symphony uses ii^6 as a predominant preparation for the ensuing cadence, the sonata places this chord into a descending sequence from mm. 29–35 (see Example 6-2). Observe that the chromatic approaches to E and D (boxed in the example) are foreshadowed by those in mm. 18 and 20. The second theme relates to earlier music through its regular grouping into two-bar units and by the prevalent four-eighths rhythm established in m. 2. For the first half of the exposition, this rhythm usually occurs on the weaker measure of the two-measure group. Following the completion of the sequence at m. 36, this motive dominates the melodic landscape, sounding on five consecutive measures, and comprising half of the remaining twenty-two bars.

Twice, the music attempts to reach an authentic cadence in the new key but instead cadences deceptively. Measures 42 and 46 resolve not to I, nor to vi, but to vii^6/V, which is followed each time by three measures of the four-eights rhythm. A three-bar closing theme— more of a codetta than a full-fledged theme—concludes the exposition in D major.

Example 6-2: Sequential activity in the second theme

The development begins in D minor with an ascending arpeggio using the eighth note rhythm that had pervaded the exposition. Its harmonic sequencing and alberti bass accompaniment recall those aspects of the second theme, particularly mm. 43 and 48. This rapid accompanimental pattern, combined with an increase from two-bar groups (mm. 58–79) to one-bar groups (mm. 80–86), contributes to the forward-driving character of this section. Harmonically, the development moves clockwise around the circle of fifths from Dm to Am to Em before reversing course in m. 74. The music works its way back through the developmental keys to tonic—first in major, then in minor—before a linear intervallic pattern from mm. 80–86 brings the development to a close on a V^7 of the home key. Example 6-3 indicates the succession of parallel tenths between melody and bass.

Example 6-3: Haydn Sonata in G, Hob. XVI:27, i. Measures 80–87

In the recapitulation, both the beginning and end of the first theme differ from their appearance in the exposition. The initial ascent is that of m. 13—the repeat of the first theme that served as the transition—instead of the dotted turn figures from the opening measure. Haydn then replaces the final cadence of this theme with a $V^{6/5}$/ii arpeggio (like that of m. 60) in m. 98. This sonority precedes a ii-$V^{6/5}$-I progression in tonic, followed by new material from mm. 102–105. It strikes me that although the expositional transition did not modulate, closing with a HC in G major, and thus did not necessitate structural change, Haydn alters the transition more than any other section in the recapitulation. Another G-major HC prepares for the tonic statement of the second theme, whose opening four bars now repeat before the remaining music concludes as expected.

Constructing the preliminary analysis involved us in some familiar activities: identifying scale degrees and Roman numerals, tracking motivic and thematic relations, segmenting the music into various time spans, and organizing these spans into a formal diagram (Figure 6-1). In previous chapters, the acquisition of technology asked us to supplement these actions with new ones, such as constructing paradigm charts or determining a unit's formal function or formal significance (MC, EEC etc.). This process also required us to understand unfamiliar terms such

as syntagm, learned style, compound basic idea, P^2, and so on. In parts two and three of the present chapter, I want to think about possibilities for expanding our analysis that rely less on new terminology but instead encourage an orientation away from certain modes of analysis. Extracting some ideas of Donald Tovey, and attempting to bring them into a second dialogue with the Haydn, will be instructive for this purpose.

II. Donald Tovey and Analytical Précis Writing: Three Musical Values

Donald Francis Tovey (1875–1940) was a British conductor, pianist, and composer who is today best known for his prolific writings on music.[4] Already by the age of twelve, he possessed considerable talent for reading and remembering musical scores, an ability which increased throughout his studies with Sophie Weisse and Sir Hubert Parry. In 1896, Tovey enrolled at Oxford, where he split his time between composition and his university studies. His professional career was launched in earnest with the first of a four-part concert series in London, in which he performed canonical works for piano in addition to some of his own compositions. From the very first concert in 1900, Tovey was writing program notes, the likes of which would eventually crystalize into the now-heralded *Essays in Musical Analysis*. Detailed and full of musical insight, the program notes would have been hard to digest during a single concert. In fact, it appears that Tovey intended to circulate the notes in advance for his audiences to study beforehand, but was never able to get them out in time.[5] These program notes were met with a mixed reception. Some reviewers spoke of Tovey's "penetrating insight and admirably lucid style."[6] Others were less sympathetic. As one writer admits "we are among those who doubt very

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[4] Much of the following biographical sketch draws from Mary Grierson, *Donald Francis Tovey: A Biography Based on Letters*, Oxford: Oxford University Press, 1952.
[5] Grierson, *Donald Francis Tovey*, 85.
[6] Ibid., 88

much the use of the peculiarly dull method of analysis which Mr. Tovey brings to bear upon the works on the programme."[7]

In 1914, Tovey was appointed Reid Professor of Music at the University of Edinburgh, a position he held until his death in 1940. During these years he conducted the Reid Symphony Orchestra, composed an opera, gave lectures, and wrote articles, including a revised set of essays for the fourteenth edition of the Encyclopedia Britannica.[8] Tovey also engaged in editorial work, helping to produce a new edition of the Beethoven piano sonatas in 1931, for which he wrote a companion volume titled *Companion to Beethoven's Piano Forte Sonatas: Bar-to-Bar Analysis*. This book exemplifies the analytical précis writing of his teacher, Hubert Parry, proceeding through each movement phrase by phrase. It is this approach that I will adopt in my analysis in part three.

Tovey's writings has been widely influential, earning explicit praise from writers such as Joseph Kerman, James Webster, and Peter Kivy, while tacitly informing music scholarship more broadly. Webster credits Tovey as part a "twin tradition," which, along with Schenker, informs his multivalent method.[9] Often, scholars will note how Tovey had observed a phenomenon that they now wish to study in more formal terms. Other times, Tovey's insights are often taken as points of departure before proceeding with their preferred technology (whether it is Schenkerian, Sonata-Theoretic, or Form-Functional).[10]

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[7] Letter in the *Daily Telegraph*, reprinted in Grierson, Donald Francis Tovey, 88.

[8] Robert Pearson observes significant developments in Tovey's thought, revealed from comparing the 11th edition (1910–1911) to the 14th edition (1929). Robert Pearson, "More Dramatic than Any Drama: History, Narrative, and Analysis in the Writings of Donald Francis Tovey" (PhD diss., Brandeis University, 2011).

[9] James Webster, "Formenlehre in Theory and Practice," in *Musical Form, Forms, & Formenlehre: Three Methodological Reflections*, ed. Pieter Bergé (Leuven, Leuven University Press, 2009): 139.

[10] Lewis Lockwood is unique among scholars who have drawn on Tovey, in that he attempts his own analytical précis of Haydn's Eb Sonata. Lewis Lockwood, "Imagination, continuity, and form in the first movements of Hadyn's Op 77 quartets," in *Engaging Haydn: Culture, Context, and Criticism*, ed. Mary Hunter et al. (Cambridge: Cambridge University Press, 2012), 145–57.

Yet Tovey's work has also been criticized for being unsystematic, and for its alleged lack of theoretical purchase. It was Hans Keller who said that Tovey's approach "boil[s] down to mere tautological descriptions."[11] More recently, an introductory chapter on music analysis declared that Tovey "did not get us very far."[12] Today, such comments may reflect a broader trend in American music theory away from the brand of particularism preferred by Tovey and toward systematic methods and theories intended to generalize across the common practice repertoire and beyond.[13] But it also points to the strong distinction some continue to hold between description and analysis, in which the latter term of the binary is privileged.[14] As Catherine Dale writes:

> Tovey's 'bar-to-bar procedure...does not aspire to the same level of Evan's work, and constantly places the aesthetic effect of the music above objective analysis. Tovey's 'analyses' are rather 'descriptions' which fail to provide a rational explanation of such effects in terms of the technical means by which they are achieved.[15]

Matthew Riley defends Tovey against this charge by questioning the necessity of maintaining such a rigid distinction between analysis and description. Perhaps this style of analysis may "provide insights that might be denied to [Tovey's] more systematic German contemporaries."[16] Taking up this question from the personal vantage point adopted in this dissertation, I consider how Tovey's approach may impact my own analytical experience. To do

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[11] Hans Keller, "K. 503: The Unity of Contrasting Themes and Movements" *Music Review* 17 (1956): 48.

[12] "He [Tovey] did not break the music down into very small elements, he did not explain why he has written about certain elements and not others, and he did not show us distinctive ways in which his chosen elements interact. He drew on theory without thinking much about it and ended up with a description." Rachel Beckles Willson, "Music Theory and Analysis," in *An Introduction to Music Studies*, ed. J.P.E. Harper Scott and Jim Samson (Cambridge: Cambridge University Press, 2009), 31.

[13] Wingfield, for example, speaks of a "predominantly North American institutional imperative for generalised theories." Wingfield, *Beyond Norms and Deformations*, 145.

[14] Michael Tilmouth combines the two, in characterizing Tovey's *Companion* as "descriptive analysis." Michael Tilmouth, *The Classics of Music: Talks, Essays, and Other Writings Previously Uncollected* (Oxford, Oxford University Press, 2001): xxxviii.

[15] Catherine Dale, *Music Analysis in Britain in the Nineteenth and Early Twentieth Centuries* (Burlington, VT: Ashgate, 2003): 182.

[16] Matthew Riley "Review of Music Analysis in Britain in the Nineteenth and Early Twentieth Centuries, by Catherine Dale. *Music and Letters* 85 (2004).

this, we must construct a workable technology that adopts Tovey's criteria and desiderata for analysis. Indeed, although Pearson admits "there is no one methodology that Tovey employs consistently in all his work" he argues that he "systematically brings to bear the same musical values again and again in his analyses."[17] Tovey emphasizes the temporality of music, is intimately concerned with hearing, and maintains a healthy skepticism toward theoretical postulates. Each of these convictions contributes in some way toward appreciating the aesthetic qualities of music. That is, by using one's ears as the music unfolds temporally, while leaving aside a priori theoretical prejudices, one can more fully experience works of art. Let us consider each of these in turn.

Analyzing in time

Tovey states that "the first condition for a correct analysis of any piece of music is that the composition must be regarded as a process in time."[18] One should approach a musical work like they would a story—from beginning to end. Tovey laments the tendency of those who scan through the work's contents in search of certain phenomena, such as the second subject. In his view, "the listener has no business even to know that there is such a thing as a "second subject" until he hears it."[19] Rather than construct a formal chart that segments the piece from a bird's-eye-view perspective, Tovey prefers to analyze each idea as it appears. The most sustained illustration of this approach is his *Companion to Beethoven's Pianoforte Sonatas: Bar-to-Bar Analyses* (hereafter *Companion*). I conclude this section with two examples from this book, which may serve as a model for our analysis in part three.[20]

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[17] Pearson, "More Dramatic than Any Drama," vi.
[18] Tovey, *Companion*, 1.
[19] Ibid., 1
[20] This is not to say that Tovey always proceeds from bar to bar. For example, volume 2 of the *Essays in Musical Analysis* contains an analysis of Beethoven's Diabelli variations. Rather than proceed "variation by variation,"

Tovey insistence on listening in time concerns his notion of the "naive listener," a term which appears frequently throughout his writing. Naiveté is a desirable state, both with respect to music-theoretical knowledge and to the specific content of the piece. The latter sense concerns the listener's ignorance of any musical events except those she has heard. Yet this listener may draw on past musical experiences, including extensive knowledge of the repertory.[21] We might attempt to locate Tovey's naive listener in terms of three categories posed by Edward T. Cone in his well-known essay "Three Ways of Reading a Detective Story—or a Brahms Intermezzo." In a first reading, one encounters the events in time, without advanced knowledge of the plot. Having read the entire story, the reader can now situate the events with respect to this overall pattern, a process Cone terms the second reading. It is at this level that synoptic analysis takes place, the story conceived as singularity suspended in time. The third reading combines the two, as the reader proceeds in time but retains some knowledge acquired from synoptic overview:

> Like the first, this one is temporally oriented: it accepts the story as narrated. Again, like the first, it aims at enjoyment; but now, guided by the synoptic comprehension of the second reading, it can replace naive pleasure with intelligent and informed appreciation.[22]

Tovey's naive listener may be understood in the sense of one who undertakes a third reading or listening. For Tovey, "A true analysis takes the standpoint of a listener who knows nothing beforehand, but hears and remembers everything."[23] Tovey's analyses frequently adopt

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Tovey takes each of the important ideas from the theme, and traces them through the variations that follow. Tovey, *Essays*, 22.

[21] He also acknowledges certain generic expectations an educated student may have. It is reasonable to expect, for example, that a quick-tempo opening of a multi-movement instrumental work will be in "first movement form." Tovey, *Companion*, 1.

[22] Edward T. Cone, "Three Ways of Reading a Detective Story—or a Brahms Intermezzo" *The Georgia Review* 31 (1977): 557.

[23] Donald Tovey, *Essays in Musical Analysis* Vol. 2 (London, 1935): 68.

this perspective, and it hardly seems coincidental that one of Tovey's contemporaries once compared his writing to that of a detective story.[24]

Analysis and Listening

A related conviction holds that one should only make analytical statements that can be supported by a musical hearing. Overreliance on the score can suggest conclusions beyond that of what an actual listener would experience. Speaking against *a priori* fancies that limit the ear's ability to perceive musical details, Tovey writes:

> Nothing, for instance, can be worse for a musician's mental health than the pursuit of fantastic derivations that are not verifiable by ear and by their own context. The student "is welcome--nay, invited--to suspends belief in any analytical statement so long as it fails to convince when compared with the sound of music.[25]

Elsewhere, Tovey warns against what he calls "ocular analysis," which inhibits one's ability to appreciate genuine musical insights.[26] The takeaway point is not that one should eschew the score entirely, but that one's visual observations should accord with what one hears, and that we should be skeptical of those observations that are not corroborated in aural perception. Taking this approach may force one to sideline those insights generated from careful study of the score, including motivic resemblances that are most apparent visually. For Tovey, however, it is preferable to err on the side of noticing too little, than claiming too much (see ahead, Tovey's analysis of Beethoven Op. 49 No. 1).

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[24] On Tovey's analysis of Beethoven's C sharp minor quartet, Richard Capell from the Daily Telegraph remarked "No one with a musical interest ever found a detective story half so engrossing as these pages." Grierson, *Donald Francis Tovey*, 287.

[25] Tovey, *Companion*, 9.

[26] Donald Tovey, *Beethoven* (London: Oxford University Press, 1945), 98

The Poverty of Music Theory

A central theme throughout Tovey's writing his disregard for what he saw as professional misinformation disseminated by music scholars. He repeatedly censures those for upholding unfounded musical orthodoxies, and for contributing to a literature of textbooks that defy the common sense of the practicing musician. Rarely does Tovey identify these offenders by name, speaking of only of critics, theorists, and the "the nineteenth-century scholar." Occasionally, he takes issue with the victorian composer and musicologist William Henry Hadow (1859–1937), whom he had known from Oxford.[27] Elsewhere, he criticizes the harmonic theories of both Schoenberg and Rameau. Tovey's remarks on Rameau's notion of fundamental bass are characteristic of his derisive tone:

> The conception [of the fundamental bass] is true only of the most obvious harmonic facts; beyond them it is as vain as the attempt to ascertain your neighbour's dinner from a spectrograph of the smoke from his chimney.[28]

Tovey believed that one's own experience with music provides everything necessary for a full appreciation of musical works. Music theories, even when providing accurate information, are superfluous to musical enjoyment. Tovey writes:

> It is essential to my argument that no aesthetic aspect of a piece of music should be beyond the reach of an experienced listener without the intervention of some merely professional technical information.[29]

Tovey was especially critical of prior conceptions of musical form. One of his most oft quoted remarks is his assertion that "there are no rules whatever for the number or distribution of

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[27] In his review of Hadow's book *The Viennese Period*, Tovey praises the composer Hadow's "wit and descriptive power," along with his "sense of style which many a Doctor of Music entirely lacks." Yet he also points to Hadow's "failure to grasp the significance of things like Beethoven's fugues," perhaps due to his overreliance on textbook views of the subject. Timouth, *The Classics of Music*, 282–283.

[28] Donald Tovey, *The Forms of Music* (London: Oxford University Press, 1957), 62.

[29] Tovey, "Musical Form and Matter," in *The Main Stream of Music and Other Essays* (Oxford, Oxford University Press, 1949): 166.

themes in sonata form."[30] Thematic content is, in fact, is not considered a fundamental aspect of sonata form at all, a view which contrasts with the thematically-oriented approaches of thinkers like A. B. Marx. Tovey's concern is not only that such views mischaracterize compositional practice—failing to capture the aesthetic aspects of works of art—but that they may negatively affect how audiences understand and experience this music. By focusing on received categories of form, one is distracted from attending to its unique qualities. It is the naive listener, rather than the professional theorist, who is better positioned to understand and appreciate the aesthetic qualities of great works of art.[31]

Two Analyses from the Companion to the Beethoven Pianoforte Sonatas

Each of the following analyses from the *Companion* model the kind of précis writing that Tovey ascribes to his composition teacher Sir Hubert Parry. Certain analyses, such as that of the "Tempest" Sonata, are preceded by additional remarks about Beethoven's style. But most begin with the opening incipit of the movement, as in Example 6-4, followed by bar-by-bar commentary. Tovey's accompanying remarks on mm. 9–21 are quoted below.

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[30] Tovey, *The Forms of Music*, 210.
[31] As Korsyn writes, "[Tovey] aims to restore suspense to listening—to recapture the tension, the uncertainty, even the chaos, of our experience of sounds in time." Korsyn, "Tovey's Analyses Reconsidered," 473.

Example 6-4: Tovey's Analysis of Beethoven Sonata in Cm, Op. 10 No. 1, i.

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SONATA IN C MINOR, Op. 10, No. 1.

Allegro molto e con brio : C minor.

First Group.

  Bars 1–8.—Eight-bar theme in two 4-bar steps, containing figures (a) and (b)

Arising out of (b[2]) a new cantabile develops by threefold repetition of a 2-bar figure, expanded the third time to 4 bars of downward scale. At bar 17 a new 2-bar group leads in three steps, broken with rests, into the next period. The whole passage from bar 9 proves that bar 9 is unaccented, a fact not forced on the listener until the broken phrases mark the rhythmic grouping from bar 17 onwards. But theorists who tell us to carry this rhythm back to bar I impute a ridiculous abstruseness to Beethoven and ascribe marvelous prophetic powers to the human ear. They also fail to observe that, whatever their success in so construing the opening, they will have to admit that an odd bar or an overlap has intervened before the exposition has finished; since otherwise the repeat, the development, and the recapitulation will alternately come out on the other rhythmic basis. Meanwhile no listener is going to suppose that the bump on bar I represents a weaker accent than the unsupported first note of bar 2; nor is any intelligent player going to suppose that such an interpretation could be made appreciable to the ear. Then, since we must admit that these are odd bars and rhythmic displacements, why not assign them where they confirm the obvious facts of *forte* chords and the impressions of human listeners whose rhythmic sense recognizes that some impressions are weaker than others, and that in course of time impressions may change?[32]

The remainder of the analysis works through the material phrase by phrase, concentrating on mostly surface-level phenomena. Throughout this passage, Tovey favors the real-time "impressions of human listeners," while chastising analysts who draw connections that would only occur to someone with "marvelous prophetic powers." This not does prevent him from deriving any figures whatsoever, only from asserting relationships that are unintuitive. We can

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[32] Tovey, *Companion*, 48.

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infer, then, that Tovey believes most listeners to be capable of hearing that the quarter notes that cross the bar line from mm. 2–3 (b^1) are expanded in mm. 3–4 as b^2, which then serves as the concluding gesture of each of the downward scales from mm. 9–12. But no listener would hear the opening bar as unaccented in relation to m. 2 on the count of events that later transpire. Rather than "carry this rhythm back to bar I," Tovey suggests we identify the rhythmic displacement where it actually occurs in time (the *forte* chords).

Tovey's analysis of the opening movement of Beethoven's Sonata in G, Op. 49 No. 2 takes the same approach, minus the score excerpt and annotations.

> Bars 1–4.—Four-bar melody; bar I closing into 2; the rest of bar 2 leading to a pair of bars with medial close. A link of 3 quavers in bass leads to
> 5–8.—Bars 1–4 in higher octave, with chromatic link into
> 8/9–14.—New 4-bar phrase (1+1+2) with tonic close, linking with repetition in lower octave, the 3rd bar replaced by modulation to dominant, with overlap into next period.
> 15–20.—Six bars *on* the dominant (not *in* it): twice 2, then one, repeating itself in ½-bars and closing into next bar. Call this passage (A). (It would be far-fetched to derive the triplets in these bars from the triplets in bar I. The student cannot too soon be warned against judging of musical form by eye instead of by ear. When Beethoven wants the listener to recognize an allusion he gives plenty of help at the moment itself. The student had far better miss a dozen genuine subtleties than make one false point.)[33]

Readers familiar with William Caplin's approach, surveyed in chapter four, will notice that many of Tovey's observations could be more precisely defined using form-functional terms. Note how the terms "melody" and "phrase" are both designate four-bar spans. Throughout the *Companion*, Tovey uses words like melody, phrase, theme, and strain more or less interchangeably to describe a variety of theme types. For example, he refers to the opening sentence of Beethoven's Op. 2 No. 1, i, as an "Eight-bar theme (A); 2+2 in sequence, followed by 1+1 in sequence, rising to 2-bar half-close on dominant."[34] The same unit could be described,

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[33] Tovey, *Companion*, 152.
[34] Tovey, *Companion*, 12.

in form-functional parlance, as an "eight-bar sentence with four-bar statement-response presentation, continuation (with fragmentation, increased harmonic rhythm etc.), and cadential idea ending on a half cadence."[35] Tovey's relatively minimal use of specialized terminology, distinguishes him from modern scholars of musical form.

III. Analytical Précis of Haydn Sonata in G, Hob. XVI:27, i.

At this point the reader may well notice some similarities between this analytical approach and the strategy taken in each of the preliminary analyses throughout this dissertation. For the most part, these analyses describe but do not theorize musical aspects, which are mostly located on the musical surface. Furthermore, they have proceeded more or less in order, speaking in synoptic terms only briefly, at either the beginning or end of the analytical portion. One the other hand, my concern with deriving motivic relationships in the score distances this approach from those acutely concerned with real-time listening. This, of course, results from my penchant for analytical rather than listening experience, an interest which was clarified and defended in chapter one. The challenge then is not simply to translate my preferred terminology into Tovey's language (i.e. half cadence = half close) but to truly adopt Tovey's his criteria and desiderata for analysis. Here, I attempt an analytical précis of the first movement of Haydn's Sonata in G, Hob. XVI:27, keeping in mind the three values enumerated above. As usual, the goal is not to replicate Tovey's prose style, but to attempt to think from the perspective he encourages. I will present the analysis in full before reflecting upon both the process and product of this activity.

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[35] Tovey uses the phrase "tonic and dominant" to mean something like Caplin's statement-response presentation, as when he describes the opening of Beethoven's Sonata Op. 2 No. 3, i as "Eight-bar theme: 2+2 with reciprocal tonic and dominant..." Tovey, *Companion*, 27.

Example 6-5: Haydn Sonata in G, Hob. XVI:27, i. Measures 1−3

First Group.

1–8: Eight-bar melody, beginning with ornamented scale that ascends to and hovers about D until tonic close.
9–12: Arising out of A and B, but reversing direction, a *forte* idea brings about a full close.
13–24: Appearing to restate A and B, Beethoven gradually introduces chromatic tones, leading to a half close.

Example 6-6: Haydn Sonata in G, Hob. XVI:27, i. Measures 25−30

Second Group.

25–35: New Melody in D with broken-chord accompaniment; 2+2 tonic and dominant phrase, continuing 1+1 in melodic sequence.
36–42: The disjointed configuration of notes obscures the obvious rhythmic fact of B.
43–53: B harmonized so as to postpone a full close in the new key.

54–57: Cadence group in D.

Development.

58–71: A and B combined, moving from D minor through A minor to E minor. The listener who refrains from looking ahead will hear that the same D above middle C that began the exposition and its repetition also begins the development, becoming its initial tonic.
72–86: Sequencing back through A minor to D minor to G minor (2+2). Bass descends one measure at a time to dominant preparation for

Recapitulation.
First Group.

87–97=1–11 with new ornaments in the right hand.
98–106: Ascending arpeggio interrupts earlier full close with developmental texture supporting the dominant of A minor. New, lyrical material concludes with half close in tonic.

Second Group.

107–114=25–28 twice, now in tonic, the second moved up an octave.
115–143=29–57 transposed to tonic.

My experience of analyzing in this style is one of great difficulty. In the first place, it is challenging to describe the succession of phrases without reference to the terminology and framework of recent theories of form. Characterizing the phrase-structural aspects of this movement as repetitions of melodies or ideas strikes me as needlessly impoverished compared to the precise descriptions made possible by form-functional tools. In the second place, I found myself resisting the urge to make more incisive motivic connections than were warranted from a listener's perspective. Refraining from such practices, including the tendency to couch observations in terms of theoretical categories, proves difficult precisely because of how ingrained these activities into my analytical approach. What is revealed from this is that unlearning analytical behaviors may be more difficult than adding in new practices.

Yet in some ways, this struggle to reserve oneself, to aspire to a more naive, listener-oriented approach, may be rewarding even if one is not fully successful in assimilating this perspective. Haydn's juxtaposition of accompaniment textures in mm. 97–98, for example, emerged as a salient feature once I divested myself of attending to the ii-V$^{6/5}$-I progression to which the applied chord leads. Deemphasizing motivic parallelisms—but still acknowledging appearances of A and B—guided my eyes and ears toward different elements of the piece, such as contour and register. For example, I noticed that both the exposition and development begin with the same pickup note in isolation (the D right above middle C). Similar to the application of Ratner's ideas in chapter three, the act of noticing and describing musical events—in the absence of a governing system into which these observations fit—is itself a rewarding aspect of analysis and it is unfortunate that negative attitudes toward this kind of engagement still persist today.[36] To be sure, this provisional attempt to incorporate some of Tovey's ideas would benefit from more extended consideration of his other writings. Suggestions for refining this approach are surely to be found in Tovey's book *Beethoven* and his lectures collected in the volume *A Musician Talks*.

IV. Conclusion

Tovey is a suitable figure with which to conclude our discussion because his approach has something in common with each of the technologies employed in this study. His connection to Ratner lies in their shared belief in the predominance of tonal, rather than thematic aspects of

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[36] Recall the examples in footnotes 11–15. Joseph Dubiel has similarly expressed his resentment toward expressions like "mere description," asking "what's 'mere,' I'd like to know, about conveying the sense of what it's like to listen to some music?" I would go further and argue, echoing remarks from chapter one, that there is nothing mere about describing our music-analytical engagements. Joseph Dubiel, "Analysis, Description, and What Really Happens," *Music Theory Online* (2000).

sonata forms. Ratner's vivid description of topics, his attention to detail, and his reluctance to

systematize musical processes would likely have met with Tovey's approval. Those who employ

paradigmatic analysis, or any approach that neutralizes historical or cultural concerns in

exploring introversive semiosis, will find points of contact with Tovey's notion of the "detached"

composer.[37] Moreover, his disregard for theories of form continues to resonate with present-day

scholars, such as Agawu, whose brief diatribe against conceptions of sonata form would be well

at home in one of Tovey's lectures:

> The ability to distribute the elements of a Brahms symphony into sonata form categories
> is an ability of doubtful utility or relevance, and it is a profound shame that musicology
> has devoted pages upon pages to erecting these schemes as important mediators of
> musical meaning. At best, they possess low-level value; at worst, they are distractions.[38]

Although Hepokoski and Darcy, in their Sonata Theory, seek to transcend this

understanding—positing not rules, but flexible, heuristically conceived options—their skepticism

toward the "textbooks" and the vehemence with which they debate other theorists, finds parallel

in the career of Tovey. His preference for temporally-sensitive analysis, which articulates a

dramatic story might also appeal to the authors of Sonata Theory, although they would likely

insist upon the need for a hermeneutic framework that can organize these insights.[39] In terms of

criteria for analysis, Tovey's précis writings show a concern with surface-level phrase structure,

and his grouping notation resembles that of Caplin's, minus the accompanying taxonomy of

types and functions. Both writers also downplay the significance of thematic content in their

analytical approach.

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[37] "Musical history is full of warnings against facile attempts to trace the qualities of music to the non-musical
history of the times. The musical composer is the most detached of all artists. For him the time is either out of joint
or irrelevant." Tovey, *The Main Stream of Music*, 347.
[38] Agawu, *Music as Discourse*, 8.
[39] See Hepokoski's criticism of Webster's Tovey-inspired multivalent method. Hepokoski, "Response to James
Webster," 146.

However, it is the Toveyan technology, which, in my experience using it in analysis, most strongly resists the metaphor of an analytical technology. Like Ratner, of course, Tovey lays out no single method for one to learn and apply. The bar-to-bar approach taken here, although it satisfies the three desiderata, is only found in the *Companion*, and cannot be taken as representative of Tovey's analytical style. But there is still another challenge: the extensive knowledge of repertoire on which Tovey's analyses depend. Unlike, say, the paradigmatic method, for which only the most basic musical fundamentals are needed to put it to work, Tovey's approach works best when used by someone who, like himself, has a lifetime of experience as a musician. Although I had read a dozen of Tovey's analyses, extracting from them some common threads and strategies, I found it difficult to carry this approach through to the Haydn. This is because what is common to each of them is not their reliance on an overarching theoretical system—a storehouse of terms, concepts, and strategies for analysis--but a deep familiarity with music, acquired through years of engagement as a composer, conductor, and performer. As Kerman put it, "the process takes a subtlety of mind, a power of analysis, and a clarity of purpose, which nobody but Tovey has been prepared to bring to it."[40] One can extract some of Tovey's ideas, mobilizing them for analysis, but there are no shortcuts to gaining the experience needed to renders these ideas effective.

Whether or not this situation is unique to myself or applies broadly to modern analysts, it brings us back to the contingent nature of technologies, which are, after all, only one component of analysis. Despite our attempt to isolate the offerings of select technologies, other abilities are bequeathed from one's manifold experiences as a listener and student of music. Therefore, in asking which technologies best serve such-and-such a purpose, we would not only have to

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[40] Joseph Kerman, "Counsel for the Defense," *The Hudson Review* 3 (1950): 439.

consider one's aims and motivations, but also the unique skillset and disposition one has prior to acquiring any particular tool.

Possibilities for extending this research are several. This dissertation has aimed to foreground ways in which technologies affect both our experience as analysts, and the products that emerge from them. Its strategy has been to analyze the same music in two ways: one with the technology in question, one without. This same procedure could be extended to Schenkerian, post-tonal, and neo-Riemannian technologies. Another option is to shift the terms of comparison so that the preliminary analysis is itself brought into relief against less mediated modes of analysis. That is, how might the acquisition of what I called "basic" theoretical concepts (tonic, scale degrees, motives) affect the analytical experience of someone with no prior exposure to these ideas whatsoever? Assuming that we are speaking of tonal analysis, employing this same method—adopting an even more naive perspective, against which to compare the current baseline approach—presents a serious challenge. It is one thing to temporarily suspend knowledge of things like development sections or medial caesuras—and we do this, to some extent, when we analyze music that lacks these features. It is quite another to assume a state in which, say, scale degrees do not have characteristic tendencies and resolutions.

A more complete picture of analysis and technology, then, would involve moving beyond this personal, self-reflective enterprise, to one that deals with the experiences of many. One way forward might be to conduct an ethnographic study of how people employ technologies in their lives as musicians, scholars, and educators. Here, I am thinking of Tia DeNora's study of *Music in Everyday Life*, in which she interviewed fifty British women about their experience with music. For many of the interviewees, music functioned as a mode of self-expression, allowing the user to manipulate their feelings and emotional states. In this spirit, one might interview

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technology-users on their experiences with a variety of tools, including those not explored in this study. By having individuals communicate their experiences with and without certain tools, we might gain a broader perspective on how technologies promote actions, insights, and experiences

However one chooses to pursue this issue, the fact that our analytical technologies harbor such potential makes them worthy subjects of study in their own right. Whether or not such inquiry leads to new modes of composition, positive knowledge about a corpus, or refinements to the tools themselves, I continue to believe that the greatest benefit of these technologies is their ability to promote unique experiences—analytical, aural, or otherwise. Steven Rings closes his book on transformational technologies by reminding us of this very point. It is with these remarks that I will close my own project:

> This mediation is not to be lamented as a stumbling block on the way to a pristine, transparent account of originary hearing; it is rather something to celebrate—an enabling construct that allows us to cultivate diverse and richly detailed experiences through conscious interpretive engagement.[41]

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[41] Rings, *Tonality and Transformation*, 222.

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