2004

Toward a Methodology for the Analysis of Fugue: An Examination of Selected Bach Organ Works

Scott Roberts
THE FLORIDA STATE UNIVERSITY
SCHOOL OF MUSIC

TOWARD A METHODOLOGY FOR THE ANALYSIS OF FUGUE: AN EXAMINATION OF SELECTED BACH ORGAN WORKS

By

SCOTT ROBERTS

A Dissertation submitted to the School of Music in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Degree Awarded: Spring Semester, 2004

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The members of the Committee approve the dissertation of Scott Roberts defended on March 29, 2004.

_____________________________
James Mathes
Professor Directing Dissertation

_____________________________
Michael Corzine
Outside Committee Member

_____________________________
Evan Jones
Committee Member

_____________________________
Peter Spencer
Committee Member

Approved:

_____________________________
Jon Piersol, Dean, School of Music

The Office of Graduate Studies has verified and approved the above named committee members
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ABSTRACT

A major difficulty in the study of fugue is the diversity found among fugues. Nineteenth-century formal structures do not apply adequately to fugue beyond a general three-part structure: exposition, departure from tonic, return to tonic. A recent article by Daniel Harrison investigates a return to a rhetorical approach to fugue analysis, an approach that is supported by the writings of Joel Lester. Harrison identifies statūs (artificial problems or conflicts in music) within the fugue from Bach’s Toccata (BWV 915) and discusses the manner in which the fugue addresses these ‘challenges’ through melodic and harmonic ‘arguments’. Harrison’s work stresses the rhetorical relationships within the fugue and their interactions within the fugue. Consequently, he assumes the existence of a theory of status relating to music, although he does not attempt to define that theory. By the same token, he identifies statūs within the BWV 915 fugue, but does not detail a methodology for doing so. This study builds on the approaches of Harrison and Lester to define a methodology for the analysis of fugue that identifies notable properties of the fugue and examines the reaction of the fugue to these notable properties. Fugues that respond to their notable properties are determined to have a rhetorical compositional approach. Fugues that do not respond to their notable properties are classified as having a literal compositional approach. This study uses Bach’s Fugue in C minor from Book I of the Well-tempered Clavier to develop the methodology. Four organ fugues of Bach (BWV 578, BWV 533, BWV 545, and BWV 547) comprise the balance of the study.
CHAPTER 1
INTRODUCTION

Paul Walker writes that a major difficulty in the study of fugue is the fact that “there exists no widespread agreement among present-day scholars on what its defining characteristics should be.” He states further that a primary factor in this disagreement is that “if all pieces called fugue were collected together and compared, no single common defining characteristic would be discovered beyond that of imitation in the broadest sense.” The major obstacle to consensus in this matter seems to be reliance upon formal structure as the primary factor in defining genre. Walker addresses this trend and its problematic application to fugue:

Since the early 19th century genre designations have been defined largely if not exclusively by their formal structures. Formal structure, however, is not in the end a defining characteristic of fugue. As a result, there has been prolonged argument about whether fugue is a form at all (and, by extension, whether it is a genre) as well as whether any particular formal model should be considered necessary….

One might assert that limiting a survey of fugues to those by a single composer would mitigate these taxonomical difficulties since a particular composer’s view of fugue would be part of that composer’s style. The analyst would be left with the simplified task of defining that style as it relates to specific fugues. Such is not necessarily the case. For instance, in the organ fugues of Bach one finds tendencies in compositional technique but a consistency of ‘formal’ design as defined by nineteenth-century thought is lacking.

Diversity between fugues by the same composer is to some extent dependent on the medium for which a fugue is composed. Bach wrote vocal, harpsichord, and organ fugues. While his approach varies between these media, the differences appear to result from the possibilities that each instrument affords. According to Walker, the harpsichord fugues “are in general relatively brief and tight in construction” and the vocal fugues tend towards this model. On the

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other hand, the organ fugues are “usually grander and more expansive.” Walker attributes these differences to the uses for each type of fugue. The harpsichord fugues were written to be used as teaching tools, while the primary purpose of the organ fugues was “public performance.” Another contributing factor is the limitations of each medium. Fugues for the harpsichord must be playable with two hands. While the vocal fugues have multiple voices available, they are limited by the ranges of the voices. Organ fugues have access not only to the hands but also to the feet, extending the range and number of notes that are playable at one time. The organ offers more contrast as well, through the addition or omission of the pedal with its deeper sounding stops.

A comparison of the lengths of the fugues from the Well-tempered Clavier with Bach’s organ fugues demonstrates the contrasts described by Walker. In calculating the length of the fugues comparisons are based on the beat note. The number of measures is not used in comparison because the number of beats per measure is not consistent. Instead, the total number of beats (number of measures x number of beats per measure) is used.

Table 1 shows various statistics regarding the fugues in the Well-tempered Clavier. The fugues of the WTC have short subjects, averaging 8.5 beats, and are generally brief, averaging 61.5 measures and 184.4 beats. In contrast, the statistics detailed in Table 2 show the organ fugues to be about twice as long, having subjects averaging 11.4 beats and an average length of 120.8 measures, or 366.3 beats.

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2 Ibid., 327. Walker is careful not to state his case too categorically, using words such as “generally” and “usually”. The “tendency” of the vocal fugues towards the harpsichord model does not rule out exceptions such as the opening “Kyrie” from the Mass in B minor.

3 The number of beats per measure is based on whether the fugue is in duple, triple, or quadruple meter. Pickup measures are not included in the measure count but the final measure is counted as a whole measure regardless of the time values of the note(s) of that measure. Any discrepancy between interpretations of where a subject ends or whether a single whole note in the last measure of a fugue should count as four beats is outweighed by the amount of data included in the averages.
Table 1. Statistics for fugues in the *Well-Tempered Clavier*.

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<th>Subject</th>
<th>Length</th>
<th>Measures</th>
<th>Beats per Measure</th>
<th>Beat Note&lt;sup&gt;4&lt;/sup&gt;</th>
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<td></td>
<td>Length (beats)</td>
<td>Range (half steps)</td>
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<tr>
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<td>846</td>
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<tr>
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<td>c</td>
<td>847</td>
<td>6</td>
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*4 To limit the amount of space required for the table, the following proportional values are used to indicate the beat note: 1 = whole note; 1.5 = dotted half note; 2 = half note; 3 = dotted quarter note; 4 = quarter note; 6 = dotted eighth note; 8 = eighth note.*
Table 2. Statistics for Bach’s organ fugues.

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* These fugues have two subjects.

To search for a common approach among fugues, limiting one’s scope to fugues in a single medium by a single composer does not completely eliminate the difficulty of finding

\[^5\] To limit the amount of space required for the table, the following proportional values are used to indicate the beat note: 1 = whole note; 1.5 = dotted half note; 2 = half note; 3 = dotted quarter note; 4 = quarter note; 6 = dotted eighth note; 8 = eighth note.

\[^6\] Bach’s title for BWV 552 is “Praeludium pro Organo pleno”. The fugue portion of the piece begins at measure 130 and continues to measure 174, after which the prelude material returns. The fugue is not labeled separately in the score. The score for BWV 552 is included in volume IV/4 of the NBA. See the bibliography for the complete citation.
common characteristics beyond “imitation in the broadest sense,” but it does facilitate matters by reducing the number of variables and providing a reasonable body of evidence for investigation. This study focuses on the organ fugues of Bach. Once a reasonable conclusion has been reached regarding this subset of Bach’s fugues, one can then determine whether that conclusion can apply to other fugues by Bach and, by extension, to fugues by other composers.

Preliminary analysis of several of Bach’s organ fugues indicates that, for Bach at least, each fugue resulted from a compositional process based on a musical core that complements the fugue’s formal structure. Each of the organ fugues in this study begins with a musical core that presents one or more notable properties. The musical core of a fugue is based on the elements of a fugue, both large and small, that are commonly identified in analysis: subject, answer, countersubject, exposition, episodes, middle entries, and closing sections. The formal structure in these fugues interconnects with this musical core and, as a result, varies from one fugue to the next. It plays a supporting role for the notable properties that are presented in the fugue. The types of musical core are not limited to these elements, and may include subsets of these elements (e.g., a motive from the subject), rhythmic ideas, and temporal spacing.

Two compositional approaches to fugue have been identified. If the notable properties of a fugue are resolved within the fugue, the approach is said to be rhetorical. If the notable properties remain unchallenged throughout the fugue, the approach is said to be literal.

Joel Lester, in his article on parallel-section constructions in Bach’s works, proposes that the following principle applies to “most, if not almost all,” of Bach’s works: “the opening of a piece states a core of material that is then worked with throughout the composition.” Lester limits his core of material to thematic ideas. In the context of fugue he refers to subject/answer, exposition, episodes, middle entries, and closing sections. The formal structure in these fugues interconnects with this musical core and, as a result, varies from one fugue to the next. It plays a supporting role for the notable properties that are presented in the fugue. The types of musical core are not limited to these elements, and may include subsets of these elements (e.g., a motive from the subject), rhythmic ideas, and temporal spacing.

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countersubject, and episodes (which are generally based on material from the subject/answer and countersubject) as core material. This study builds upon Lester’s assertion that Bach uses core material as the foundation of his pieces, but expands the definition of core material to include material other than thematic ideas. Musical core in this study includes phrase structure, rhythmic development, combinations of subject/answer entries, and division of the work into sections based on tonality, thematic material, or groups of measures. Elements that qualify as musical core are identified as notable properties in this study.

After identifying the musical core, it is necessary to identify any potential rhetorical ‘challenges’ presented by the musical core and determine whether they are subsequently resolved. Daniel Harrison refers to these challenges as status or issues. He describes status as an artificial problem or conflict in music that “is created by the composer for solution within the composition.” These status or issues may relate to unresolved scale degrees, harmonic motion between major and minor, rhythmic attributes, such as the alternation of primarily longer note values with primarily shorter note values, or emphasis on a particular scale degree. The remainder of the fugue may rise to meet these ‘challenges’ or issues through melodic and harmonic ‘arguments’. The formal structure of the fugue is often part of this argumentative process.

The purpose of this study is to investigate the organ fugues of J. S. Bach in order to develop a methodology for the analysis of fugue. One outcome of this methodological process is to determine the compositional approach, rhetorical or literal, of the fugue. Within this process one determines how the formal structure of each is an outgrowth of a musical core and identifies the interdependencies of the notable properties of the fugue. A method for identifying musical core (or notable properties) in the broader sense used in this study will be outlined along with the steps to ascertain the fugue’s response to these notable properties. In situations where the fugue has a rhetorical approach, this study will not attempt to equate particular rhetorical devices with their classical labels as defined in various treatises. The focus of this study is identification of the effect created by these devices within a fugue, not the identification of the devices

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11 Langenscheidt’s Pocket Latin Dictionary defines status (pl. statūs) as a “standing, position, posture, or attitude.”

themselves. The approach to fugue implemented here recognizes rhetorical devices for their persuasive power, but is at a level of abstraction above the rhetorical device.

Survey of Existing Literature

The literature considered in this study includes: 1) historical treatises dealing with fugue analysis, 2) contemporary approaches to fugue analysis, and 3) scores of the Bach organ fugues. Historical treatises that discuss fugue include those by Jacobus of Liège, Johannes Tinctoris, Bartolomeo Ramos de Pareja, Don Nicola Vicentino, Gioseffo Zarlino, Joachim Burmeister, Jan Adams Reinken, Jean Philippe Rameau, Johann Mattheson, Friedrich Wilhelm Marpurg, Johann Nikolaus Forkel, Jérôme-Joseph de Momigny, Antoine-Joseph Reicha, Moritz Hauptmann, Simon Sechter, Siegfried Wilhelm Dehn, and Hugo Riemann. Contemporary writings on topics related to fugue analysis include those by Daniel Harrison, Fred Lerdahl and Ray Jackendoff, William Renwick, Peter Westergaard, and Joel Lester. In addition to the historical and contemporary writings on fugue analysis listed above are several writings on the organ fugues of J. S. Bach. Most of these writings approach the fugues from a non-formal perspective. Several approach fugue from the point of view of historical musicology. A subset of these deals with authenticity of fugues, while an additional subset relates the organ fugues to other forms such as theme and variations or their derivation from North German organ music. Other writings deal with thematic issues, such as the source of some of Bach’s fugue subjects and/or their reference to biblical topics. For example, some authors regard Bach’s Fugue in E-flat major, BWV 552, as a reference to the Trinity. Still others deal with performance practice as it relates to Bach organ fugues or the application of rhetoric to Bach organ fugues.  

Mattheson, for instance, lists the following rhetorical devices in part 2, chapter 14, §§45-47 of his treatise: Epizeuxis [connection], Subjunctio [joining], Epanalepsis [repetition], Epistrophe [turning about], Anadiplosis [reduplication], Paronomasia [word-play], Polypotom [multiple grammatical cases of the same word], Antanaclasis [ultimate sense of a word], Ploce [alternate sense of a word]. An additional reason for omission of the classical rhetorical names is their unfamiliarity. Rhetoric has not been a part of standard educational curricula for many years and any classical names used would first have to be defined. Naming and defining these terms would cause numerous digressions and would not serve to enlighten this discussion.

While all of the aforementioned studies provide insight into various aspects of fugal composition and performance, none deals directly with analytic issues, except as noted. This study will critically examine the analytic works by Lerdahl and Jackendoff, and by Renwick. A critical examination of Lerdahl and Jackendoff’s work, which uses a rhythmic basis for analysis, will focus on whether placing a primary emphasis on rhythm always yields results consistent with harmony and voice leading factors. Renwick’s writings, which seek to discover ‘paradigms’ for fugue subjects, will be considered because of the Schenkerian approach to his analyses. The usefulness of his paradigms as a general model of fugue analysis based on Schenkerian analysis will be examined.

The current study will focus on Bach organ fugues in the context of the writings of Harrison, Lester, and Westergaard. Harrison’s study, which views ‘rhetorical analysis’ as “a study of musical argument,”\(^{15}\) will be the basis of the rhetorical aspect of the study. Lester’s study recognizes the rhetorical influence evident in all of Bach’s compositions (not just his fugues), yet his attention to rhetoric does not extend beyond a broad ‘outline’ level. The focus of Lester’s study is the division of Bach’s works into “roughly parallel sections within which … heightened recurrences [of core material] appear.”\(^{16}\) His work supports the identification of a musical core as the basis for Bach’s organ fugues. Because of the expansion of the idea of ‘musical core’ in this study to include aspects of formal structure and elements beyond the subject, answer, and countersubject as salient characteristics of a fugue, these entities will be referred to as notable properties. Lester’s work in the area of rhythm will be instrumental in the recognition of some of the notable properties identified for the fugues in this study. Westergaard’s study concentrates on spatial issues in music, specifically the relationship between scale degrees and related keys. His application of ‘musical space’ will be expanded to include horizontal structure (blocks of measures) in addition to vertical structure (pitch relationships).

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Boyer Stauffer. Thematic issues: Gerhard Wagner, Philip Sawyer, John M. Ross, Karl Wurm, and Hans Musch. Performance practice: Frank Morana, Albrecht Riemann, Pierre Vallotton, Klaus Aringer, and Bernhard Billeter. Rhetoric: Claus-Steffen Mahnkopf and Hubert Meister. See the bibliography for complete citation information of these works.

\(^{15}\) Harrison, 9.

\(^{16}\) Lester, “Heightening Levels”, 53.
CHAPTER 2
HISTORICAL WRITINGS ON FUGUE

Pre-Twentieth-Century Writings

A review of the uses of the term ‘fugue’ and writings about fugue in theoretical treatises demonstrates the challenge of attempting to define fugue as a compositional process or a formal structure. Historical writings on fugue reflect both of these viewpoints as well as a third stance that fugue is an interaction between these two. Furthermore, some treatises introduce rhetoric as a factor that shapes the compositional process, formal structure, or the interaction between them, while others consider narrative to be the controlling factor. Detailed summaries of pre-twentieth century fugue treatises can be found in the writings of Alfred Mann and Ian Bent.¹ The current discussion will focus on early works that relate to the application of rhetoric to fugue along with contemporary works that deal with fugue and its related texture, polyphony.

The awareness of the interaction of rhetoric and music increased gradually throughout the Baroque era. This growing interdependence becomes apparent in the treatises of the eighteenth century, where it became a significant component of the discussion of fugue in the work of Mattheson, and Momigny continued the discussion in the nineteenth century. George Buelow describes this interaction between rhetoric and music as follows:

Beginning in the 17th century, analogies between rhetoric and music permeated every level of musical thought, whether involving definitions of styles, forms, expression and compositional methods, or various questions of performing practice. Baroque music in general aimed for a musical expression of words comparable to impassioned rhetoric or a musica pathetica. The union of music with rhetorical principles is one of the most distinctive characteristics of Baroque musical rationalism and gave shape to the progressive elements in the music theory and aesthetics of the period. Since the

¹ See Alfred Mann, The Study of Fugue and Ian Bent, ed., Fugue, Form and Style. Complete reference information is available in the bibliography.
preponderantly rhetorical orientation of Baroque music evolved out of the Renaissance preoccupation with the impact of musical styles on the meaning and intelligibility of words (as for example in the theoretical discussions of the Florentine Camerata), nearly all the elements of music that can be considered typically Baroque, whether the music be Italian, German, French or English, are tied, either directly or indirectly, to rhetorical concepts.²

The close relationship between rhetoric and music is evident throughout Johann Mattheson’s, Der vollkommene Capellmeister (1739). He writes:

Now the goal of music is to praise God in the highest, with word and deed, through singing and playing. All other arts besides theology and its daughter, music, are only mute priests. They do not move hearts and minds nearly so strongly, nor in so many ways.³

Later he writes that, in addition to “honoring God,” the goal of music is “pleasing and stirring the listeners,” a direct reference to the purpose of rhetoric.⁴

Mattheson includes a discussion of fugue composition in part 3 of his treatise. He traces the origin of the word ‘fugue’ to the Latin fuga (flight) and writes that these works are so called because one voice “flees before the other,” which follows “in a pleasant manner until they finally happily meet and become reconciled.”⁵ Mattheson’s choice of word here, “reconciled,” is especially appropriate to a rhetorical approach to fugue composition. The statūs that are identified for each fugue with such an approach must be “reconciled” or satisfied in some way for the fugue to be complete. He writes, concerning the construction of a fugue,

The very best [procedure] is when the fugal phrase is so arranged that one rather avoids true cadences, and knows how to set its limits so that no actual cadence would result: inasmuch as the resting places are not at all appropriate in fugues and counterpoints; but are such strangers that they seldom occur earlier nor can appear in their own form until the whole chase has run its course.⁶

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⁴ Ibid., part 2, chap. 4, § 66.

⁵ Mattheson, part 3, chap. 20, §§ 1, 2.

⁶ Ibid., § 15.
Avoidance of cadences occurs frequently in Bach’s music, and is not limited to his fugue writing. This technique will be a significant contributing factor in the dealing with statūs and their reconciliation in the present study. Mattheson does not include the analysis of a fugue in his treatise, but it is apparent from his writing that he considers the genre to be a compositional process in which rhetoric influences the resulting form of each composition.

As one might expect, nineteenth-century writings on fugal analysis reflect the same emphasis as other analytical writings of that period. The compositional process involved in fugue remains but the focus shifts from a rhetorical slant to a narrative or descriptive perspective, and the identification of formal structure through analysis becomes prominent. Some treatises, such as those by Dehn and Riemann, rely primarily on a sequential narrative description of a fugue. The treatise by Jérôme-Joseph de Momigny, however, provides analytic techniques that are applicable to the present study.

Momigny’s *Cours complet d’harmonie et de composition (Complete Course in Harmony and Composition)*, published in 1805, is the earliest treatise of the nineteenth century that deals with fugue. Momigny treats the theoretical aspects of counterpoint and fugue with great brevity (less than one page), choosing instead to devote most of his efforts to a discussion of the C major fugue from Book I of the *Well-tempered Clavier* by Bach and a fugue from Handel’s Harpsichord Suite No. 6 in F♯ Minor. His discussions involve deriving rules or precepts for fugue composition and observing the composer’s practice. Ian Bent describes the process as “starting from known instances and arriving at generalizations.” Momigny’s conclusions are such as would be introduced in a course on writing fugue: “in the first exposition [statement] of the subject, the answer should not be allowed to enter until a large portion of the subject has been sounded, so that the subject may be assimilated’ (p. 519).” In his discussion of the Handel fugue Momigny concludes with a scenario between a father, mother, and daughter that he introduces as “how one might set about interpreting the expressive content” of the fugue. He assigns text to the subject, answer, and countersubject, and then proceeds to describe the interaction of these characters based on the interaction of the motives in the fugue. His belief in the validity of this approach is evident in his concluding statement:
This, or something like it, is the range of feeling that we believe Handel might have experienced, or the image that he might have had in mind, as he composed this fugue.\(^7\)

While one might view Momigny’s discourse as an application of rhetoric to a fugue, there is no evidence whatsoever to indicate that Handel had this or any other scenario in mind when writing the fugue. One might also question whether knowing what Handel was thinking when he wrote the fugue would be beneficial in analyzing the work, although such knowledge might be useful if one were applying narrative analysis typical of the nineteenth century.

There are several benefits to Momigny’s analysis. The first is his identification of Handel’s use of the subject, answer, and countersubject throughout the fugue. While this is elementary, it is a necessary component of fugal analysis (at least in the exposition) in that it provides a means of creating a reference for each motive used within the fugue. It also provides the analyst (and would-be composer) with insight into how the composer of the fugue manipulated its thematic material. Second, Momigny’s discussion of Handel’s use of a tonal answer includes a possible explanation for the existence of tonal answers. More often than not, the rationale given behind this phenomenon is the avoidance of a modulation to the supertonic (dominant of the dominant). Momigny points out that the practice of writing tonal answers arises from the unequal halves of the diatonic scale one creates when using the dominant as the dividing point.\(^8\) The end result of both explanations (avoiding a modulation to a foreign key) is the same, yet Momigny’s efforts make the ‘rule’ seem less arbitrary.

One finds a third benefit in Momigny’s analysis in his discussion of the spacing of voices. In his discussion of what he terms the “third exposition” he describes the effect of invertible counterpoint, taking what was originally in the tenor voice and moving it to the soprano. He states that, although this works well in a four-voice fugue for the organ or harpsichord, it would not be successful in a three-voice fugue “because it is not possible to retrieve the voices from an octave displacement [diapason] without endangering the coherence of the part-writing.”\(^9\)

Momigny’s analysis is not without its deficiencies. It is limited both in its narrative,

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\(^8\) See Bent, 32.

\(^9\) Bent, 33.
sequential description of the fugue and in his attempts to read non-musical elements into the music, as evidenced by the scenario of the father, mother, and daughter mentioned above. While the sequential description of a work has its benefits, it fails to recognize long-range motions. It emphasizes the parts to the exclusion of the whole.

**Contemporary Writings**

Since the nineteenth century, theoretical writings about fugue have consisted primarily of summaries, histories, and elaborations on pre-twentieth century works. Twentieth-century composers did not commonly use fugue for their compositions because “the indissoluble bond between fugue and tonality … made the genre uncongenial to those 20th-century composers who had abandoned tonal harmony.”

Nonetheless, writers have continued to attempt to explain what a fugue is, how one is constructed, and how a composer might go about creating a “successful” fugue. In the latter part of the twentieth century four noteworthy analytical approaches have been applied to contrapuntal processes, specifically that of fugue. William Renwick has written the most extensive recent work that attempts to incorporate a Schenkerian approach to fugue in his *Analyzing Fugue: A Schenkerian Approach.* In the area of rhythmic analysis the work of Fred Lerdahl and Ray Jackendoff stands out along with that of Joel Lester. Daniel Harrison stresses the relationship between fugue and rhetoric in his article, “Rhetoric and Fugue: An Analytical Application” and Joel Lester, acknowledging the influence of rhetoric on Bach’s fugues, presents a theory of parallel sections in Bach’s compositions in his article, “Heightening

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Levels of Activity and J. S. Bach’s Parallel-Section Constructions.”

The Schenkerian Approach to the Analysis of Fugue

Analyzing Fugue from a Schenkerian Perspective

Creating Schenkerian graphs of fugues is not common. Neither of the standard texts for teaching Schenkerian analysis offers a thorough discussion of fugue. There appears to be a general perception that graphing a fugue with Schenkerian analysis is a difficult task. Charles Burkhart writes,

One reason for this paucity [of literature on Schenkerian analysis of fugue] is simply that, because of the great complexity of the fugue, producing a persuasive graph of one (just like composing one) is among the most difficult of assignments. It has also been commonly assumed that, not being a form in the sense sonata is, and permitting such freedom and diversity of treatment, fugue does not readily lend itself to generalisation–more precisely, to the discovery of paradigms, normative patterns that recur in many works. William Renwick, who has written the only book to date dealing with fugue from a Schenkerian perspective, writes,

Discovering or recognizing the path of the fundamental line in a fugue often constitutes a major difficulty for the analyst. The very nature of fugal style includes copious voice-exchanges, voice crossings, register shifts, subsidiary motions to and from inner voices, and the unique demands which the various imitative techniques place on the

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15 Allen Forte and Steven E. Gilbert, *Introduction to Schenkerian Analysis* (New York: W. W. Norton, 1982); Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach* (New York: Oxford University Press, 1998). Neither book’s index has an entry for “fugue”, nor is fugue mentioned in the Table of Contents in either book. Both texts do include fugue excerpts in their discussions of topics (Forte and Gilbert: compound melody, p. 71 (fugue subject—single melodic line), see also the excerpts from *The Art of Fugue* on pp. 84, 92, 97 (three-part texture examples); Cadwallader and Gagné: melody and counterpoint, p. 22 (fugue subject—single melodic line)); however, complete fugues are not discussed.

voice leading. Further, the through-composed form of many fugues gives little in the way of definite structural indicators for the analyst.\textsuperscript{17}

Voice-exchanges, voice crossings, register shifts, and subsidiary motions to and from inner voices are common in all types of music to which Schenker’s method is traditionally applied. These aspects of fugue, in themselves, should not present a task any more difficult than, for instance, that of graphing a Mozart sonata. The source of the majority of this perceived difficulty is the search for a single, upper structural line amidst the myriad of subject entries in a fugue. Heather Platt addresses this issue in her review of Renwick’s book:

As Renwick notes, perhaps the most serious problem encountered in this type of fugue analysis is the conflicting interest of the entries of the subjects in the various voices and the need to locate a single, upper structural line.\textsuperscript{18}

William E. Benjamin provides perhaps the most apprehensive view of this issue:

... the problems of trying to account for harmonic coherence in contrapuntal music ... become even more intractable when broader spans of music are under consideration [i.e., broader than a few measures] ... and positively unmanageable with respect to intensely imitative music, in which the notion of a single structural upper voice becomes a veritable fiction.\textsuperscript{19}

Carl Schachter, however, counteracts this misconception when he writes,

In principle, the analysis of a fugue should present no problems essentially different from those encountered in other types of music. Fugal procedures, after all, grow out of the contrapuntal and harmonic elements fundamental to tonality.\textsuperscript{20}

William Renwick’s approach to fugue is Schenkerian in two ways. First, he uses Schenkerian graphs for his analysis. Second, and more important, he approaches fugue from its \textit{sine qua non}, the subject. He bases this approach on Schenker’s statement that “genuine fugues … are always determined by the subject, by its dimensions and harmonic content.”\textsuperscript{21}

\textsuperscript{17} Renwick, 205.


\textsuperscript{21} Renwick, \textit{Analyzing Fugue}, 189-90, quoting Schenker, \textit{Free Composition}, 143-44.
Consequently, he groups fugues into three categories according to “the underlying harmony of a subject as a whole”: (1) I-V-I, (2) I-V/V-V, and (3) I-V. He further subdivides these categories into subject/answer paradigms, identifying 5 patterns for category one, 10 for category two, and 16 for category three. These paradigms represent the possibilities for combining a subject and answer by identifying the scale degrees (of the tonic key) that make up each subject/answer pair.

Renwick states in his Epilogue that the methodology he proposes focuses on repetitive patterns in fugues, recognizing “similarities rather than unique differences.” Since the purpose of this study is to uncover the uniqueness of each fugue, its particular challenges and the manner in which they are or are not overcome, Renwick’s methodology does not apply here. Specific compositional challenges may be found in multiple fugues and may be addressed in the same manner in multiple fugues, but there is no stipulation in this study that a compositional challenge can be confronted with only one approach.

The Use of Rhythm as the Primary Analytic Factor in Distinguishing Structural and Non-structural Elements in Music

In *A Generative Theory of Tonal Music* Fred Lerdahl and Ray Jackendoff present a theory of music in which rhythm is a fundamental component of the process of determining relationships between pitches. This is evident in Lerdahl’s summation of the theory in his subsequent book, *Tonal Pitch Space*:

GTTM [*A Generative Theory of Tonal Music*] proposes four types of hierarchical structure simultaneously associated with a musical surface. Grouping structure describes the listener’s segmentation of the music into units such as motives, phrases, and sections. Metrical structure assigns a hierarchy of strong and weak beats. Time-span reduction, the primary link between rhythm and pitch, establishes the relative structural importance of events within the rhythmic units of a piece. Prolongational reduction develops a second hierarchy of events in terms of perceived patterns of tension and relaxation.

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22 Ibid., 21.
23 Ibid., 209.
Lerdahl and Jackendoff offer an explicit statement on the importance of rhythm in their theory when they state that “structural importance [of pitches and musical events] depends on more elementary intuitions concerning the segmentation and rhythmic analysis of the musical surface…” They present this statement in contrast to the “treatments of motivic-thematic processes, such as Meyer’s (1973) ‘implicational theory’, Epstein’s (1979) ‘Grundgestalt’ organization, and aspects of Schenkerian analysis…” Lerdahl and Jackendoff assert that their theory offers a “firmer foundation for the study of artistic questions” than those theories mentioned above. Although they contend that their work serves “to complement rather than compete” with those methodologies, this discussion will show that, in relation to Schenkerian theory, the implications of Lerdahl and Jackendoff’s analyses are often in direct opposition to those offered by Schenkerians. These differences are almost always the result of the dependency on rhythm by Lerdahl and Jackendoff and the secondary role of rhythm in traditional Schenkerian analysis.

Allen Forte and Steven Gilbert, in their *Introduction to Schenkerian Analysis*, write that “a fundamental principle of Schenkerian analysis is illustrated in the most lucid manner [in their Example 3]: The function of a note is determined by its harmonic and contrapuntal setting” (italics original). It is evident from any Schenkerian graph that Schenker’s analytical tool gives priority to pitch over rhythm. This is inevitable given that tonal motion is the basis of Schenkerian analysis.

Lerdahl and Jackendoff make a connection between music and linguistics, observing that knowledge of the building blocks allows one to create infinite combinations of those components (sentences or musical compositions). However, they discourage making a literal comparison between parts of speech and music. They write,

Many previous applications of linguistic methodology to music have foundered because they attempt a literal translation of some aspect of linguistic theory into musical terms—for instance, by looking for musical “parts of speech,” deep structures, transformations, or semantics.

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25 Lerdahl and Jackendoff, 7-8.
26 Ibid., 7.
27 Forte and Gilbert, 11.
28 Lerdahl and Jackendoff, 5.
The distinction, however, between Schenker’s theory and that presented by Lerdahl and Jackendoff is the point of origin for each. Schenker uses harmonic progression as the basis for his analysis. Lerdahl and Jackendoff use rhythm as their basis and, consequently, require a structural musical element for every rhythmic unit. In contrast Schenkerian analysis is not limited in the amount of time space (to use Lerdahl and Jackendoff’s term) that can appear between structural elements. This causes problems for Lerdahl and Jackendoff when linear motions such as linear intervallic patterns appear, an issue to be discussed subsequently.

Closely linked with both Lerdahl and Jackendoff’s and Schenker’s analytical methods are the tools devised by each for representing their analysis. Basic Schenkerian notation includes stems to indicate structural notes and slurs to indicate dependency. Lerdahl and Jackendoff introduce a tree notation for reductions (similar to dependencies in Schenkerian theory). They defend their notation as superior to Schenker’s:

To construct reductions one must have an adequate notation. Schenkerian notation, though attractive, is not explicit enough; it typically combines a number of levels at one putative level (“background,” “middleground,” or “foreground”), it often does not show what is an elaboration [dependency] of what, and it utilizes too many signs (beams, slurs, quasi-durational values) to express similar relationships. The formal nature of our inquiry necessitates a completely unambiguous and efficient notation, one that reflects in a precise way the hierarchical nature of reductions. To this end it is convenient to borrow from linguistics the notion of a “tree” notation.29

The trees created by Lerdahl and Jackendoff are (in their terms) an “excessively vertical representation of musical experience.”30 A glance at one of their examples (see Figure 1, a “time-span reduction of the chorale ‘O Haupt voll Blut und Wunden’ from Bach’s St. Matthew Passion”31) easily demonstrates this aspect. Lerdahl and Jackendoff address the difficulty in reading their trees, stating that “their difficulty lies solely in their novelty.” They go on to maintain that if they “had been able to invent an equally efficient and accurate representation through traditional musical notation” they would have done so.32

29 Ibid., 112.
30 Ibid., 116.
31 Ibid., 142.
32 Ibid., 117.
It is not the purpose of this review of Lerdahl and Jackendoff’s work to defend Schenkerian graphs over Lerdahl and Jackendoff’s trees or vice versa. The purpose here is two-fold: 1) to seek to understand the importance of considering rhythm when analyzing music, and 2) to consider the limitations of an analytical method that elevates the role of rhythm over that of

33 Ibid., 144 (Example 6.25).
harmony.

The concern over whether rhythm should be used as the primary determining factor in analysis can be illustrated by comparing Lerdahl and Jackendoff’s analysis of the opening of the first movement of Mozart’s *Sonata in A major*, K. 331, with Forte and Gilbert’s Schenkerian analysis of the same excerpt.²⁴

Figure 2 shows Lerdahl and Jackendoff’s rhythmic analysis of the opening of K. 331. Figure 3 shows Forte and Gilbert’s Schenkerian analysis of the same excerpt. Lerdahl and Jackendoff’s method is to “select the structurally most important [rhythmic] event in each time-span, in a cyclical fashion from level to level.”²⁵ This process is similar to Schenkerian reduction from foreground to various middleground levels to background. The difference, however, is that Lerdahl and Jackendoff use rhythm as the criterion for determining structural events whereas Schenkerian analysis uses harmony to determine structure. These two criteria lead to differing and somewhat contradictory results; therefore, it is necessary to examine them critically.

![Figure 2. Lerdahl and Jackendoff’s analysis of the opening of Mozart’s *Sonata in A major*, K. 331.](image)


²⁵ Lerdahl and Jackendoff, 120.

²⁶ Ibid., Example 5.12.
In the Mozart example, Lerdahl and Jackendoff segment the music through rhythmic groupings based on a metrical hierarchy. They assert that each of these groupings (time-spans) can contain only one “structurally most important event.” Schenkerian analysis also asserts that there is only one structural event within a given group, yet Schenkerian theory does not require that all groups be equal in length. A major difference between Lerdahl and Jackendoff’s analysis and that provided by Forte and Gilbert is the treatment of measures 3 and 4. Lerdahl and Jackendoff choose the “vi\(^7\)” chord at the beginning of measure 3 as structural because of its rhythmic placement. (The vi\(^7\) is in quotes following the example of Lerdahl and Jackendoff. They place the chord in quotes “because it is hardly a chord in a normal sense; the labeling is for convenience.”) Similarly, they state that the root-position I chord at the beginning of measure 4 is not structural because it resides within the same group as the cadential V that follows it. In contrast Forte and Gilbert’s graph shows that the tonic chord at the beginning of measure 4 is

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37 Forte and Gilbert, 134 (Example 137b), Forte and Gilbert, 137 (Example 139a, b).

38 Ibid., 120.

39 Ibid.
structural in that it is the goal of a linear intervalllic pattern that begins with the “vi7” chord in measure 3. Forte and Gilbert also group the ii6 in measure 4 with the cadential V even though rhythmically, according to Lerdahl and Jackendoff, it ‘belongs’ in a group with the tonic chord. David Harvey supports Forte and Gilbert’s analysis in his review of Lerdahl and Jackendoff’s text when he writes, “Whilst metrical weight and motivic parallelism are invoked in favour of ‘vi7’, the harmonic context renders any decision equivocal at best.” He objects to Lerdahl and Jackendoff’s assertion that the bass line for the first four measures is A-G#-F#-E, corresponding to the notes in the bass of the “structurally most important events” in each measure, stating that “the F# on the first beat of b. 3 hardly implies the E of b. 4 … [since it] occurs on a higher structural level than F#, and is not directly elaborated by it.” As shown in the graph by Forte and Gilbert, the F# in question is the beginning of a linear intervalllic pattern whose goal is the tonic chord with bass note A. This reading is not possible with Lerdahl and Jackendoff’s theory since it spans rhythmic groupings.

The implications of these contrasting analyses are perhaps most evident in their influence on performance. According to Lerdahl and Jackendoff’s analysis, the performer would play each of the first three measures similarly. Each has two beats and in each of these measures the first chord is structurally most important. The first two measures are parallel in their melodic and harmonic organization. Both Lerdahl and Jackendoff’s analysis and Forte and Gilbert’s analysis show these parallels. Their treatment of measure 3, however, differs. In the Forte and Gilbert analysis measure 3 appears as the beginning of a linear intervalllic pattern that culminates with the tonic chord at the beginning of measure 4. Lerdahl and Jackendoff separate measure 3 from measure 4 except at the two highest levels of their analysis. Regardless, their analysis glosses over the tonic chord at the beginning of measure 4 and emphasizes the cadential V. A performance that is influenced by the Forte and Gilbert analysis would drive from the downbeat of measure 3 to the downbeat of measure 4, whereas a performance that is influenced by Lerdahl and Jackendoff would attempt to connect the downbeat of measure 3 with the dominant chord in

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40 Harvey, 297.

measure 4.

An additional difference between these two analyses concerns the treatment of the ii\(^6\) chord in measure 4. Lerdahl and Jackendoff consider this chord to be grouped with the tonic chord at the beginning of measure 4 due to its metric placement within the first half of the measure. Furthermore, since they consider the tonic and dominant chords to be structurally more important in this measure (and the dominant chord more so than the tonic chord), the predominant ii\(^6\) is relegated to insignificance. The graph by Forte and Gilbert, on the other hand, shows the predominant ii\(^6\) to be a ‘pickup’ to the cadential V. With this analysis a performer would treat the tonic chord at the beginning of measure 4 as a (secondary) arrival point and play the ii\(^6\) as a ‘springboard’ to the cadential V. The Lerdahl and Jackendoff analysis indicates that the ii\(^6\) should be connected to the tonic chord at the beginning of this measure by virtue of its rhythmic placement. In essence, Lerdahl and Jackendoff imply that each of these measures should be played with similar grouping of each beat since each beat has basically the same rhythm (\(\text{q} \quad \text{e} \quad \text{q}\)).

We see from these analyses that a strictly rhythmic approach not only obscures tonal motion but can lead to emphasis on the ‘wrong’ chord in a performance. Schenkerian analysis has as its primary concern tonal motion, yet rhythm is a consideration when making decisions regarding structural vs. nonstructural harmonies and pitches. The harmonic foundation of tonal music is described by Joseph Straus, in his book *Introduction to Post-Tonal Theory*, where he defines what is meant by tonal music. His definition is as follows:

For a piece to be tonal, it must have two things: functional harmony and traditional voice leading. Functional harmony refers to things like dominants, subdominants, and tonics, and to the general idea that different harmonies have specific, consistent roles to play in relation to each other…. Traditional voice leading is based on certain well-known norms of dissonance treatment. The triad and its intervals (thirds, fifths, sixths, and usually fourths) are consonant. Other sonorities and other intervals are dissonant: they tend to resolve to more consonant sonorities and intervals. There are other aspects of tonality, but these are probably the most fundamental.\(^{42}\)

Voice leading and functional harmony are fundamental to tonal music. The role of rhythm, on the other hand, is to dictate the general flow of tonal music through time space. Fluctuations in this flow, such as rubato, are suggested and controlled by voice leading and

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harmony. Rhythm is necessary to communicate the flow of tonal music. The admonitions regarding harmonic rhythm found in any theory or counterpoint text demonstrate this. In tonal music, however, rhythm cannot exist independently of voice leading and harmony. The two work in tandem to create a musical text. Rhetorically speaking, rhythm controls the delivery of the musical text. But the voice leading and harmonic relationships inherent to tonal music exist apart from rhythm. An analytic method, therefore, that promotes rhythm above these relationships risks undermining the essence of tonal music.

The Use of Rhythm as a Secondary Factor in Determining Structure

Joel Lester’s *The Rhythms of Tonal Music* includes a chapter entitled ‘Rhythm and Polyphony’. In this chapter he writes of the “rhythmic differentiation of voices” that occurs not only in complex polyphonic works, such as fugues, but in simpler pieces also, such as Bach’s two-part inventions. He states that Bach sometimes “maintains polyphonic rhythms even in relatively homophonic textures,” citing the opening of the second Brandenburg concerto as an example. His work, however, is not limited to the identification of low-level rhythmic events; he relates these low-level phenomena to structural divisions in musical pieces, demonstrating how they are used to the composer’s advantage. For instance, he writes concerning Beethoven’s *Piano Sonata*, op. 10, no. 1, and Chopin’s *Mazurka*, op. 67, no. 3:

In these two passages, there is a duple grouping of measures caused by melodic subdivisions. But in both, articulations in the accompaniment create entirely different (and irregular) divisions. The points where the different structures converge become powerful arrivals that would lose much of their power if all textural components contained the same subdivisions.

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43 Consider, for example, the relatively strong rhythmic placement of a suspension and the relatively weak rhythmic placement of its resolution. Other examples include the strong rhythmic placement of a cadential six-four, which is similar in nature to a suspension, and the rule that, if the harmony changes on a weak beat, it must also change on the following strong beat (avoidance of harmonic syncopation).

44 Lester, *Rhythms of Tonal Music*, 244-248.

45 Ibid., 253. The Beethoven piece examples are 6-17 through 6-20 on pp. 184-186, and the Chopin example is 6-11 (p. 178). He mentions example 6-13 (p. 181) in conjunction with the Chopin; however, example 6-13 is from Beethoven’s *Piano Trio*, op. 1, no. 3, first movement.
Lester’s discussion of the C minor fugue from Book I of the Well-tempered Clavier emphasizes its continuity in the face of conflicting structural divisions created by the rhythms of the piece. He observes that “overlapping continuities … characterize the larger form of many of Bach’s fugues.”  He mentions the overlapping of a circle of fifths sequence (measures 9-11) with a subject entry in the relative major, stating that the listener is unaware of the entry “until later in measure 11 or even in measure 12.” His point in this section is the reconsideration of the traditional three-part structural view of fugue. He writes,

> It is beyond dispute that Baroque fugues, like virtually all tonal pieces, begin in the tonic, move away from the tonic, and return to the tonic later in the piece. As a result, minimal evidence exists in each fugue to affirm this conception of fugal structure. But the layout of an individual fugue often leads to quite a different structuring.  

For Lester, then, describing the structure of a fugue as simply a three-part form applies to all fugues is too general to adequately represent individual fugues. A significant component of the individuality of each fugue structure is its rhythmic structure. The application of rhythmic structures to a rhetorical approach to fugue analysis will be detailed in the description of the methodology used in this study.

**Contemporary Views of the Relationship between Rhetoric and Fugue**

Harrison’s article, “Rhetoric and Fugue: An Analytical Application,” is a reaction to an earlier article by Gregory Butler in which Butler seeks to return to a rhetorical analysis of music characterized by the identification of rhetorical figures in music.  Despite Butler’s reliance on treatises by writers such as Burmeister, Mattheson, and Berardi, Harrison objects to his approach because, although these authors “possess an impressive command of classical rhetoric and its forms, [they] by and large do not treat rhetoric as a living and elastic art.” He states further that

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46 Ibid., 256.

47 Ibid., 257. Alfred Mann makes a similar conclusion regarding diversity among fugues in his review of Marpurg’s treatise.


49 Harrison, 1.
rhetoric seemed to be for these authors a scholastic, dry, and contrived system of figures, tropes, and rules to be memorized by teenaged schoolboys who had as much understanding of their subtleties as their latter-day counterparts have of generative linguistics when parsing sentences.  

Regarding the benefit (or lack thereof) of this analytical approach, Harrison concludes:

Applied to fugue, this kind of analysis by rhetorical figure—which Butler believes makes the fugue “exciting and vital”—both obscures large-scale structure and robs fugue of musical interest. This result is precisely what fugue does not need; traditional analysis already brutally atomizes fugal structure, and the fugue has always been suspected of being the favored artistic vehicle of erudite scholars, pedants, and bores.  

According to Harrison the structure of a fugue should not be subject to a “standardized procedure” such as that found in some composition texts that, for instance, require stretto and pedal point at certain places in the fugue. He does support the view of a “generally useful order of parts” (similar to an oration) but asserts that the structure of the fugue should ultimately be dependent upon the “requirements and peculiarities of its subject.”  

Harrison demonstrates his view with an analysis of the fugue from Bach’s *Toccata* (BWV 915). His first task in fugue analysis is the identification of *statūs* inherent within the subject. He defines *status* as “a conceptualized conflict that generates the need for a persuasive oration and determines its character.” In his own words, his work “is not meant to offer a new analytic theory, but to expand upon existing theories both musical and rhetorical.” Harrison assumes the existence of a theory of *status* relating to music, choosing to let the G minor fugue speak for itself rather than go to great lengths “to define musical *status* closely, providing a lexicon of musical figures.”  

Harrison identifies five *statūs* in this fugue and describes each as an opposition or conflict. Two examples of *status* found in his example are a seemingly unresolved scale degree

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50 Ibid., 1-2.
51 Ibid., 4.
52 Ibid., 8.
53 Ibid., 10, note 37.
54 Ibid., 41-42.
and contrast in melodic or pitch content. These *statūs* are “immediately apparent” in the subject of this toccata (shown in Figure 4). Harrison asks:

- Why is E♭ given such emphasis in the first phrase and then ignored in the second? [Conflict: “reliance as opposed to abandonment”]
- Why is the second phrase so monotonous compared with the first? [Conflict: “active as opposed to static”]

![Figure 4. Subject of Toccata, BWV 915 (Example 1 of Harrison’s article).](image)

Harrison’s analysis of the fugue details the musical means by which Bach addresses the conflicts presented by the subject, cross-referencing them to the terms used in classical rhetoric. He approaches the analysis via the traditional segmentation of fugue into subject/answer, countersubject, episodes, and middle entries, relating these to the classical rhetorical classifications: *narratio, divisio, confirmatio,* and *conclusio.*

Harrison takes the view that unity in fugue is a result of successful persuasion regarding the “conceptualized conflicts” presented by the fugue’s subject. He contradicts Schenker (and, by extension, Renwick) when he writes:

> For fugue achieves artistic success not because it displays a pre-existent unity in every structure, as Schenker seems to maintain in his essay on the C-minor fugue, but because its various thematic treatments, harmonic modulations, contrapuntal devices, and so forth interest, convince, and perhaps even amaze, persuading the listener that it has not only displayed but also earned its unity. The rhetoric of fugue consists in this: that structure is also device, motion is also gesture, and that unity is a result, not a source.

Another approach that is both dependent upon rhetoric and compatible with Harrison’s

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55 See Harrison’s summary of *statūs* for the BWV 915 fugue on p. 13 of the article.
56 Ibid., 10.
57 Ibid., 40-41.
study, is presented by Lester in his article, “Heightening Levels of Activity and J. S. Bach’s Parallel-Section Constructions.” Lester presents three principles that he considers to be applicable to all of Bach’s works:

1. The opening of a piece states a core of material that is then worked with throughout the composition.
2. Recurrences of material almost invariably exhibit a heightening level of activity in some or all musical elements.
3. Bach quite frequently organizes his movements into roughly parallel sections within which these heightened recurrences appear.\textsuperscript{58}

Lester states that “all three principles and their interaction in his [Bach’s] music are consonant with rhetorical ideas of musical structure (\textit{inventio} and \textit{dispositio}) during Bach’s lifetime.”\textsuperscript{59} Lester treats rhetoric as a “philosophy” in Bach’s music, that is, as a mindset that offers a broad means to an end. For instance, he writes in one place of a “rhetorically satisfying cadence.”\textsuperscript{60} Later he discusses the “rhetorical function of cadences” and states that “cadences were deemed necessary [in Bach’s time] to bring a musical argument to a close.”\textsuperscript{61}

Whereas Harrison infers all \textit{statūs} from the subject, Lester’s opening core of material includes the entirety of the opening section of a fugue.\textsuperscript{62} His analysis of the C minor fugue from Book I of the \textit{Well-tempered Clavier} divides the fugue into two sections and describes the parallelisms between the corresponding components of the sections (subject/answer entries and episodes).\textsuperscript{63}

This study will augment the findings of Harrison and Lester by examining the creation of sections within a fugue through significant changes in texture, density, or rhythm as core material. In turn, these structural sections will both reflect and complement the core material

\textsuperscript{58} Lester, “Heightening Levels”, 52-53.

\textsuperscript{59} Ibid., 53.

\textsuperscript{60} Ibid., 69.

\textsuperscript{61} Ibid., 77.

\textsuperscript{62} For Lester, the opening section is not necessarily the exposition. Rather, it is the group of measures from the beginning of the fugue up to the point at which parallelisms occur, an event that defines the beginning of a new section.

\textsuperscript{63} Ibid., 70, Table 5.
based on subject, answer, and countersubject.

Combining these approaches to fugue, we can reach the following thesis statement: The opening of a fugue contains within its core material one or more notable properties, evidenced by its rhythm, harmony, and melody. These notable properties may be viewed by the fugue as conflicts to be resolved by the working out of solutions via rhetorical devices. The source for these solutions lies in the same material from which the conflicts arise. Support for the identification of these conflicts and their solutions may be found in the formal structure of a fugue. Fugues that seek a resolution of their notable properties use a rhetorical compositional approach, whereas fugues that do not regard their notable properties as ‘challenges’ use a literal compositional approach.\textsuperscript{64}

Using the work of Harrison and Lester as a foundation, this study will investigate four organ fugues of Bach to demonstrate the assertions made in the thesis statement above. A method for identifying the notable properties of a fugue will be outlined. Each fugue will illustrate a particular type of notable property as the basis of its compositional approach. These notable properties are 1) Expansion, using Fugue in G minor, BWV 578, 2) Palindrome or (horizontal) geometric shape, using Fugue in E minor, BWV 533, 3) Unexpected Change in the Prevailing Rhythmic Motion, using Fugue in C major, BWV 545, and 4) Combining Forces, using Fugue in C major, BWV 547. Additional notable properties will be identified within the course of each analysis; however, the ones listed here are the most prominent of each of these fugues. The Fugue in E minor, BWV 533, demonstrates a literal compositional approach. The other three fugues demonstrate a rhetorical compositional approach.

\textsuperscript{64} The oppositions defined by Harrison (“reliance as opposed to abandonment”, “active as opposed to static”) are examples of conceptualized conflicts. Other types of conflicts will be covered in the discussion of the methodology and in the analysis of the organ fugues. The supporting role of a fugue’s structural sections and their relationship to the rhetoric of the fugue will be outlined in the analysis of the organ fugues.
CHAPTER 3

METHOD

Of the twenty-eight organ fugues of J. S. Bach, four will be considered in this study: 1) Fugue in G minor (BWV 578), 2) Fugue in E minor (BWV 533), 3) Fugue in C major (BWV 545), and 4) Fugue in C major (BWV 547). The subjects are of varying lengths: BWV 578 – 4 ½ measures; BWV 545 – 3 measures; BWV 533 – 2 measures; BWV 547 – 1 measure. BWV 578, BWV 533, and BWV 547 have subjects that are instrumental in nature. BWV 545, on the other hand, has a sustained, slow moving, vocal-like subject.

The subjects of the first three fugues in the study (BWV 578, BWV 533, and BWV 545) are comprised of contrasting motives. These three fugues also have close correlations between the lengths of sections (spatial aspects) of their formal structure and intervallic ratios. In contrast, the first three subject/answer entries in the exposition of BWV 547 flow seamlessly from one to the next, which will be described as an Exposition Block (a block of exposition entries).

Although a four-voice fugue, the fourth entry of the exposition is separated from the first three and becomes part of the transition between this first block of three entries and the next block of three entries. These combinations of three subject/answer entries permeate the first two-thirds of the fugue after which two-entry blocks are found. This reduction in the musical core will be explained as a rhetorical device. The analysis of this fugue demonstrates the identification of notable properties\(^1\) independent of the boundaries of subject, answer, and countersubject.

These fugues will be analyzed using traditional harmonic analysis, formal analysis, and Schenkerian techniques. Schenkerian graphs in this study are limited to foreground graphs, not as a requirement or restriction to the analysis in the study, but because the clarifications needed from that analytical technique within this particular study extend only to foreground events. It should not be inferred that the application of the analytical process in this study should be

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\(^1\) Notable properties are defined in step 2 of the methodology (see p. 35).
restricted in any way as to the analytical tools that may be used or to what extent they may be involved.

The methodology created for this study combines analytic techniques traditionally applied to fugue along with inductive reasoning to ascertain the compositional approach to each fugue. The process is a recursive one since the significance of properties identified in a fugue is not known until one considers the fugue as a whole. Presently, two compositional approaches have been identified with regard to fugue: 1) a rhetorical approach in which the composition (composer) establishes musical ‘challenges’ at the outset of the fugue, then proceeds to address these challenges through musical ‘arguments’, and 2) a literal approach in which those musical events that raise one’s analytic curiosity are not ‘resolved’ through musical ‘argument’; instead, they persist throughout the fugue, thereby indicating an illustrative purpose rather than a rhetorical one. ‘Literal’, in this context, refers to a presentation of information. There are no qualifications regarding the content or the purpose for which it is presented, other than that its presentation is not intended to persuade. It differs in this respect from the rhetorical approach, whose purpose is to persuade.

This methodology incorporates a six-step process that leads the analyst to a determination of the rhetorical or literal nature of a fugue. The methodology will be demonstrated using the Fugue in C minor from Book I of Bach’s Well-tempered Clavier. The rationale for choosing this piece are: 1) it is a brief, tightly-constructed piece of only 31 measures, 2) it has a limited number of notable properties, affording a brief discussion, 3) it shares notable properties in common with the organ fugues in this study, and 4) it is an example used by Lester in his work on rhythm, thus allowing this discussion to elaborate on an example from one of the works that serves as the foundation of this study.

The analysis of a fugue will not necessarily include an application of all six steps. All six steps are listed here for completeness. An outline of the steps of the methodology will be presented at the end of this chapter.
Methodology for Fugue Analysis

Step 1. Identification of Traditional Fugue Elements.

The first step in the analysis of a fugue is to identify all of the traditional fugue elements, that is, subject/answer entries (including the end of the exposition), countersubject, codettas, episodes, and coda. The traditional fugue elements are to be identified, as appropriate, by the voice in which they occur, the applicable key(s), and any compositional techniques employed, such as augmentation, diminution, retrograde, inversion, or stretto. Figure 5 shows the completion of this step for the C minor fugue.

Step 2. Identification of Salient Characteristics (Notable Properties) of the Fugue Exposition.

Following the identification of traditional fugue elements, one should examine the fugue exposition for anomalies, that is, any characteristics that appear unusual or evoke one’s analytic curiosity. Additionally, the analyst should identify any features that distinguish this fugue from other fugues. These features need not be unusual or even unique to the fugue under consideration, but they should be attributes that are not required of a fugue. For example, a ‘head and tail’ subject can be a distinguishing feature of a fugue for, while it is not unusual to have this type of subject, it is not expected that every fugue will have such a subject. At this point in the analysis, it is necessary merely to identify potential distinguishing features and anomalies. The remaining steps of the methodology will determine the significance of these entities. The types of salient characteristics possible are identified in the following sections. Salient characteristics that are identified for a fugue, based on the following criteria, are called notable properties.

Linear ascent/descent. A notable property of the subject of the C minor fugue, one that is mentioned in every discussion of this fugue in the literature, is the descending line, $\hat{6} \hat{5} \hat{4} \hat{3}$, that is so prominent (see Figure 6). This feature is not so unusual, yet its emphasis in the subject, through repetition, qualifies its inclusion in the list of salient characteristics.

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2 In this methodology it is not necessary to identify middle entries as “subject” or “answer” since it is not always possible beyond the exposition to positively identify entries as an “answer” unless the fugue’s answer is tonal rather than real.

Figure 5. Identification of Traditional Fugue Elements in *Fugue in C minor*, from Book I of the *Well-tempered Clavier* by J. S. Bach.
Episode 4 (inversion of Episode 1 in mm. 5-6)

S/A (soprano)

Episode 5

Cadential formula

Figure 5—continued.
An additional ascent/descent notable property in this fugue is an ascent from 6 to 1 that passes through each half-step of the hexachord comprising the upper portion of the combination of natural, harmonic, and melodic minor scales. It occurs in episode 1, which falls between the second and third subject entries of the exposition (measures 5-6; see Figure 7). It is considered a salient characteristic because of its passage through each half-step between 6 and 1 as opposed to a more straightforward ascent through the melodic minor scale.

Figure 6. Descending line 6-5-4-3.

Figure 7. Ascent from 6 to 1 (measures 5-6).

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4 Some texts refer to this as a codetta. Lester terms it Episode 1 and that label is used here to avoid ambiguity.
‘Blocked’ linear ascent/descent. A related notable property is the ‘incomplete’ descent in the 6-5-4-3 line. Linear descents are considered complete if they reach tonic. Linear ascents that begin below 5 are considered complete if they reach 5. Linear ascents that begin at 5 are considered complete if they reach 1. An incomplete ascent/descent will be referred to as a ‘blocked’ ascent/descent, in the sense that the melodic line is ‘prohibited’ from reaching its destination.5

Rhythmic and melodic patterns. Rhythmic and melodic patterns within the exposition can be notable properties of a fugue. A distinguishing feature of this subject is its segmentation into rhythmic cells. The subject of this fugue divides into cells of 4+4+3+3+2 eighth notes (see Figure 8).6 The divisions correspond to the motivic subsets (melodic patterns) of the subject. The first two are a repetition of a four-eighth-note motive. The third set is an interruption of the four-eighth-note motive, resulting in a three-eighth-note motive. The last two sets involve the mirroring of a three-note motive.

Figure 8. Rhythmic Cells in the Subject.

‘Suspended’ scale degree. A scale degree, other than tonic, that is not connected in a linear fashion to other scale degrees is considered to be ‘suspended’ and should be identified.

5 It is not implied here that the Urlinie descent is a salient characteristic of every fugue. That descent is expected and, therefore, not unusual or distinguishing. Thus, identification of a subject with a descent that does not reach tonic is not a priori the discovery of a salient feature of the fugue. On the other hand, it should not be summarily dismissed because of its relationship to the Urlinie descent that will occur. Its significance, or lack thereof, will become evident as one proceeds through subsequent methodological steps. Depending upon its relationship to other characteristics of the fugue that are identified, it could become an integral part of the rhetorical vs. literal conclusion. As stated above, the purpose in this step is the identification of potential distinguishing features and anomalies. The critique of these features comes later.

6 The sets are identified by the number of eighth-note durations they contain in order to avoid fractions and promote readability.
This type of *notable property* will be seen in the discussion of the *Fugue in E minor*, BWV 533.

**Contrasting material.** A contrast in rhythmic values or melodic content is considered a potential *notable property*. The active vs. static nature of the fugue from *Toccata*, BWV 915, discussed by Harrison is an example of melodic contrast within a subject (see p. 26 above). The *Fugue in C major*, BWV 545, discussed in chapter 6, is an example of contrast in rhythmic values. Contrasting material is not limited to the subject or the exposition. In the BWV 545 fugue the rhythmic contrast concerns the fugue in its entirety.

**Structural units.** If the subject represents a structural unit, such as a period, this is a *notable property* of the fugue. This situation will be discussed in the analysis of the *Fugue in G minor*, BWV 578.

**Step 3. Identification of Patterns in the Structure of the Fugue as Defined by Step 1.** The next step in the methodology is to examine the formal structure of the fugue, based on the identification of subject/answer entries, codettas, episodes, and coda from step 1, to determine if any patterns exist. In this study, the sections within a fugue’s structure are categorized into two types: 1) *Integrant*, and 2) *Digression*. *Integrant* refers to the primary element with which the structure begins and ends; the element whose recurrence is expected throughout the fugue. *Digression* refers to the secondary elements that appear between instances of the *integrant*; these elements may or may not be repeated as part of the structure. These terms are used instead of the traditional terms ‘entry’ and ‘episode’ because the methodology permits segmentation of a fugue into structural divisions based on other significant phenomena in addition to the traditional segmentations by entry and episode. (These additional segmentations will be discussed in step 4.) In the event that traditional structuring is employed, the terms *integrant* and *digression* are synonymous with ‘entry’ and ‘episode’. The traditional structure of the *Fugue in C minor* is shown in Table 3.

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7 The term “integrant” is used because of its relation to the term “integral” (as opposed to “integrated”). Integrants in the fugue are the *sine qua non* of the fugue.
Table 3. Structure of *Fugue in C minor* from Book I of *Well-tempered Clavier*.

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>3</th>
<th>5</th>
<th>7</th>
<th>9</th>
<th>11</th>
<th>13</th>
<th>15</th>
<th>17</th>
<th>20</th>
<th>22</th>
<th>26</th>
<th>29</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exposition</strong></td>
<td>S/A</td>
<td>S/A</td>
<td>E 1</td>
<td>S/A</td>
<td>E 2</td>
<td>S/A</td>
<td>E 3</td>
<td>S/A</td>
<td>E 4</td>
<td>S/A</td>
<td>E 5</td>
<td>S/A</td>
<td>Coda</td>
</tr>
<tr>
<td><strong>Traditional section</strong></td>
<td>I</td>
<td>I</td>
<td>D</td>
<td>I</td>
<td>D</td>
<td>I</td>
<td>D</td>
<td>I</td>
<td>D</td>
<td>I</td>
<td>D</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td><strong>Integrant (I)</strong></td>
<td>S</td>
<td>A</td>
<td>B</td>
<td>S</td>
<td>A</td>
<td>S</td>
<td>B</td>
<td>S</td>
<td>B</td>
<td>S</td>
<td>B</td>
<td>S</td>
<td>B</td>
</tr>
<tr>
<td><strong>Digression (D)</strong></td>
<td>g→c</td>
<td>c→E♭</td>
<td>E♭→c</td>
<td>c→g</td>
<td>g→c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
</tbody>
</table>

Once the structure is defined, it should be examined for patterns. Three types of structural patterns have been identified in this study and are detailed below.⁸

**Successively longer or shorter integrant or digression.** If the length of the occurrences of the *integrant* or *digression* are successively longer or shorter in a consistent manner, this characteristic should be noted. This feature will be discussed more fully in the analysis of the *Fugue in G minor*, BWV 578, a fugue that contains increasingly longer *digressions* as the fugue progresses.

**Mirroring of integrant or digression lengths.** If the lengths of the occurrences of the *integrant* or *digression* create an arithmetic mirror, this characteristic should be noted. This feature will be discussed more fully in the analysis of the *Fugue in E minor*, BWV 533, where the *digressions* become progressively longer, then progressively shorter, the lengths of which create a palindrome.

**Correlation between integrant and digression lengths.** If the ratios created by the horizontal spacing of the occurrences of the *integrant* and *digression* reflect intuitive values or values that correspond to the tuning ratios of intervals, these should be noted. Intuitive ratio values are those for which a mental image is easily obtained, e.g., 1:2, 1:3, 1:4, as opposed to a ratio such as 43:19. Tuning interval ratios are 1:1 (unison), 1:2 (octave), 3:2 (perfect fifth), 4:3 (perfect fourth), and 5:4 (major third). Examples of these correlations will be demonstrated in the discussions of the *Fugue in E minor*, BWV 533, and the *Fugue in C major*, BWV 545.

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⁸ None of these patterns is found in the *Fugue in C minor*. 

In some fugues the segmentation of a fugue by entries and episodes is inconsequential from an analytic standpoint. In others an alternative structuring based upon other notable properties may be analytically enlightening. It is also possible that both structural segmentations may inform the analysis. The following is a list of the types of phenomena that may suggest an alternate reading of a fugue’s formal structure.9

**Incoherent, inconsistent, or unintuitive structure.** In some situations an incoherent, inconsistent (lacking pattern), or unintuitive structure is a notable property of the fugue. These conditions arise from one of the following conditions: 1) The entries overlap excessively so as to blur or annihilate potential formal segment boundaries, or 2) The entries are obscured so as to reduce their salience. Both C major fugues in this study exhibit this characteristic. The BWV 545 fugue contains entries that are obscured through 1) Being overshadowed by other voices, or 2) Occurring in the midst of a continuing melodic or harmonic idea. The BWV 547 fugue has a very short subject (one measure) that occurs 49 times, often in an overlapping manner. The multitude of entries reduces the significance of each entry. An incoherent, inconsistent, or unintuitive structure based on entries and episodes is an indicator that one should look elsewhere for an alternative, more informative definition of the fugue’s formal structure. The details of the traditional structures of the two C major fugues and their alternative structures will be discussed in their analyses below.

**Significant changes in the prevailing rhythm.** If the prevailing rhythm of a fugue is subjected to unexpected changes, this is a notable property of the fugue. Alternation between rhythmic note values on a frequent or regular basis is not cause for reordering the structure of the fugue. The *Fugue in C major*, BWV 545, contains an example of infrequent changes in the prevailing rhythm. The 2/2 fugue begins primarily with half notes and quarter notes. By measure 8, however, eighth notes are established as the prevailing rhythm. The balance of the fugue contains eighth notes on every beat except in four cases (rare, for a fugue of 111 measures): measures 18, 54, 81, and 108(9). In each of these cases, the rhythm changes to quarter notes. The rarity of these occurrences supports their inclusion as a notable property of the fugue. Their significance will be addressed in the analysis of the BWV 545 fugue below.

9 None of these applies to the *Fugue in C minor*. 

---

39
**Significant changes in texture or density.** A significant change in texture or density is a *notable property* of the fugue. As is the case with significant changes in the prevailing rhythm, texture and density changes become significant though scarcity. The *Fugue in E minor*, BWV 533, contains examples of this phenomenon, which will be detailed below in the analysis of this fugue.

**Combination of multiple subject/answer entries into a larger, cohesive entry.** There are times when multiple subject/answer entries combine into a larger, cohesive entry. This occurs in the *Fugue in C major*, BWV 547, and is a by-product of that fugue’s short, one-measure subject. In that fugue the first subject/answer pair is best understood to be entirely in the tonic key rather than an alternation of tonic and dominant. Furthermore, the codetta that is usually found between two pairs of entries in the exposition of a four-voice fugue occurs after the third entry, and the fourth entry is subsumed in the material that follows. This phenomenon is termed an ‘Exposition Block’, indicating that multiple subject/answer entries are treated as a single unit, or *integrant*. The existence of Exposition Blocks (EB’s) is a *notable property* of a fugue. The details of this phenomenon and its implications in the analysis of the fugue will be discussed below.

**Step 5. If Notable Properties of the Fugue Dictate an Alternate Structure, Repeat Step 3 with the New Structure.**

Since none of the *notable properties* of the *Fugue in C minor* imply the possibility of an alternate structure, the detailing of this step with examples will be reserved for the discussion of the organ fugues in the study.

**Step 6. Determine How the Fugue Responds to Its Notable Properties.**

A fugue may respond to or treat its *notable properties* in one of two ways. If the *notable properties* are ‘addressed’ through musical arguments, such that the reason for their identification as a *notable property* is ‘reconciled’, the compositional approach to the fugue is rhetorical. A *notable property* is ‘reconciled’ through an appearance of the *notable property* that is accompanied by the attribute that qualified its inclusion as a *notable property*. For example, an incomplete linear ascent/descent is ‘reconciled’ by the appearance of a complete form of that linear ascent/descent. If the *notable properties* of the fugue are not ‘reconciled’ then the compositional approach to the fugue is literal. Theoretically, it is possible to have a fugue in which there is a mixture of ‘reconciled’ and ‘non-reconciled’ *notable properties*. At present,
such a hybrid has not been identified; the fugues in this study are either rhetorical or literal in their compositional approach. The implications of such a hybrid cannot be fully dealt with until such a work is found.

The following *notable properties* have been identified for the *Fugue in C minor*: 1) A prominent linear descent, $\hat{6} \rightarrow \hat{5} \rightarrow \hat{4} \rightarrow \hat{3}$, which is ‘blocked’ (it does not reach $\hat{1}$); 2) an ascent from $\hat{5}$ to $\hat{1}$ that progresses by half-step in lieu of a more direct approach through the melodic minor scale; and 3) rhythmic cells corresponding to the motivic subsets of the subject. In the final step the analyst examines these *notable properties* to determine if they are ‘reconciled’. For the first *notable property* to be reconciled, there must be a complete $\hat{6} \rightarrow \hat{5} \rightarrow \hat{4} \rightarrow \hat{3} \rightarrow \hat{2} \rightarrow \hat{1}$ descent. The second *notable property* would be reconciled through an ‘uninhibited’ ascent using the melodic minor scale. The organization of the third *notable property* consists of a reduction in the number of elements in each set from 4 to 3 to 2, setting up an expectation of a final cell of 1 eighth note, a rhythmic capstone, so to speak. Its reconciliation, therefore, would be a sequence of rhythmic sets of 4, 3, 2, and 1 eighth note(s).

Since the $\hat{6} \rightarrow \hat{5} \rightarrow \hat{4} \rightarrow \hat{3}$ descent is part of the subject, it follows that it will recur with each entry. This fact also implies that this *notable property* may not be reconciled since a change or addition to the subject is required to obtain a complete descent to $\hat{1}$. The second *notable property*, found first in the codetta in measure 5-6, appears at measures 17 and 18 (see Figure 9).

The original source of the rhythmic pattern of the third *notable property* is the subject, but this characteristic permeates the entire fugue. The rhythmic cells are identified based on the contour of the melodic lines. In some situations a rhythmic set of four eighth notes consists of three eighth notes followed by an eighth rest. For example, in measures 7-8 there is an interruption of the descent in the alto voice (see Figure 10). The next logical note for the alto would be C. The implied harmony is $i_4^6$ and the implied note in the alto is C. Omission of the C serves to diminish the strength of the $i_4^6$ and provides a more pleasing aural effect, yet the rhythmic set still consists of four eighth notes.\footnote{The notion of a rhythmic cell of one element is not without precedent. See, for example, William Rothstein’s discussion of Bach’s Invention No. 1, where he writes of “the gradual shortening of the sequential [rhythmic] units—from one half measure to half a measure, then to one beat and perhaps to half a beat….” William Rothstein, *Phrase Rhythm in Tonal Music* (New York: Schirmer Books, 1989), 126.}

\footnote{Similar situations occur in measures 12, 16, 21, and 27. The occurrence at measure 12 avoids a complete tonic chord. A complete tonic chord at this point would weaken the cadence at measure 13. A complete tonic chord is...}
Bach’s rhythmic cells in the episodes are more varied, but there is a pattern to them (see Figure 11). Episode 3, the central episode, contains cells of four eighth notes in all voices. Episodes 1 and 4 are essentially the same rhythmically, as are episode 2 and the first part of episode 5. The tail portion of episode 5 returns to cells of four eighth notes.\textsuperscript{12}

\textsuperscript{12} The number of eighth notes in each rhythmic set is determined by 1) the manner in which the notes correspond to the motives from the subject, and 2) by the natural grouping that is dictated by Baroque performance practice. For example, the 2+4 groups in the soprano and alto of Episode 2 are separate sets because of the articulation that would occur from the note repetition and the correspondence of the 4-note group to a motive in the subject.

\textsuperscript{12} Avoided in measures 16 and 21 as well, again to prevent minimizing the cadences at measures 17 and 22. The omission of the note C in measure 27 (beat 3) serves the same purpose as the omission in measure 8.
Figure 11. Rhythmic Sets in the Episodes.
Each of the notable properties of this fugue is reconciled and their resolutions occur, for all practical purposes, simultaneously in measures 27-29 (see Figure 12). The $\frac{6}{5}\cdot\frac{4}{3}$ descent reaches its goal of $\hat{1}$ in both the soprano and bass voices, while at the same time (interrupting the soprano descent, in fact) the ascent from $\frac{5}{3}$ to $\hat{1}$ overcomes the ‘hurdles’ of the chromatic scale and ascends abruptly via the melodic minor scale from dominant to tonic. Meanwhile, the rhythmic cells are extended with multiple cells of three eighth notes and provided with a final cell that includes a single eighth note ($4+4+3+3+3+3+2+1$), a pattern that appears in all three voices.

The resolution of the notable properties of this fugue points to a rhetorical compositional approach. The concurrent resolution of the various notable properties and the point at which this occurs demonstrates a two-fold concept that will be found in all of the rhetorically-based organ fugues included in this study. First, as seen in the C minor fugue, the resolutions of the various
notable properties are concurrent. Second, once the ‘challenges’ of the fugue have been ‘resolved’, the fugue ends. Brief codas, such as that seen here, are possible, but it is apparent that they serve the purpose of creating a graceful conclusion for the piece.

The following is an outline summary of the steps of the methodology. These steps will be applied to four of Bach’s organ fugues in the following chapters.

**Outline of the Methodology for Fugue Analysis**

1. Identification of traditional fugue elements
   a. Motivic/structural
      i. Subject/answer entries
      ii. Countersubject
      iii. Codetta
      iv. Episodes
      v. Coda
   b. Harmonic
2. Identification of salient characteristics (*notable properties*) of the fugue exposition
a. Linear ascent/descent  
b. ‘Blocked’ linear ascent/descent  
c. Rhythmic and melodic patterns  
d. ‘Suspended’ scale degree  
e. Contrasting material  
f. Structural units  

3. Identification of patterns in the structure of the fugue as defined by step 1  
a. Successively longer or shorter integrant or digression  
b. Mirroring of integrant or digression  
c. Correlation between integrant and digression lengths  

4. Segmentation of the fugue using significant phenomena  
a. Incoherent, inconsistent, or unintuitive structure  
b. Significant changes in the prevailing rhythm  
c. Significant changes in texture or density  
d. Combination of multiple subject/answer entries into a larger, cohesive entity  

5. If notable properties of the fugue dictate an alternate structure, repeat step 3 with the new structure.  

6. Determine how the fugue responds to its notable properties.
CHAPTER 4

EXPANSION AS A NOTABLE PROPERTY: A STUDY OF BACH’S *FUGUE IN G MINOR*, BWV 578

J. S. Bach’s *Fugue in G minor*, BWV 578, is an example of expansion as a notable property. These expansions occur melodically, harmonically, and structurally over the course of the fugue. The traditional structural segmentation of the fugue is presented in Table 4. To complete step 1 of the methodology, an examination of the fugue’s exposition is in order. The cadences in this subject divide it into two parts. One reading of this division results in labeling the subject as a contrasting, asymmetrical, non-modulating period. A second reading

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13 Since the subject is not manipulated through the use of compositional techniques such as augmentation, diminution, stretto, inversion, and retrograde, that row has been omitted from the table.

Figure 13. BWV 578 – Annotated Score.
Figure 13—continued.
avoided cadence

cadential extension

transfer of S/A to tenor

Figure 13—continued.
Figure 13—continued.
Figure 13—continued.
Figure 13—continued.
views the second phrase as *Fortspinnung* followed by a cadential elaboration. In either case the label ‘period’ is appropriate and, in both cases, the period has an asymmetrical form. The first part of the period is a two-measure phrase that ends with a half cadence, while the second part is a two-and-one-half measure phrase that ends with an authentic cadence.

Further examination of the subject reveals other notable properties. The material of each part of the subject contrasts with that of the other part. The first phrase of the subject is active both melodically and harmonically whereas the second phrase is static, repeating a melodic figure consisting of scale degrees $1, 2,$ and $3$ over a prolongation of dominant harmony. Another notable property in the subject is Bach’s use of a descending arpeggio, $D-B_{b}-G$, in measures 1-2. Closely related to this notable property is yet another, that of the opening interval of the subject, a perfect fifth. The active phrase of the subject uses two instances of this interval as ‘bookends’, an ascending fifth to begin and a descending fifth to close. The roots of the two triads also create the interval of a perfect fifth.

Step 3 of the methodology requires the identification of patterns in the traditional segmentation of the fugue. In this fugue, traditional segmentation into *integrants* and *digressions* reveals a pattern in the lengths of these sections. A summary is provided in Table 5. Digression A is 2 measures long and the following digression, B, half again as long ($2 + 1 = 3$ measures).

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15 William Rothstein discusses the creation of phrase structure through the process of *Fortspinnung* in *Phrase Rhythm in Tonal Music* (New York: Schirmer Books, 1989), 125-127. He refers to this phrase structure as a “period”.
Following these two digressions is period V, the central period of the fugue and the only period that is extended beyond the 4 ½ measure length of the original period (see Figure 14). Bach expands the antecedent phrase of this period via an interpolation from 2 measures to 3 and adds a 2 ½ measure modulating cadential extension to its consequent phrase, resulting in a total addition of 3 ½ measures.

Table 5. Traditional formal sections in BWV 578.

<table>
<thead>
<tr>
<th>Section</th>
<th>Length (measures)</th>
<th>Length of Antecedent / Consequent / Extension (measures)</th>
<th>Integrant (Period)</th>
<th>Digression</th>
<th>Key</th>
<th>Measure Beat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4 ½</td>
<td>2 + 2 ½</td>
<td>I</td>
<td></td>
<td>g</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>½</td>
<td></td>
<td>link</td>
<td></td>
<td></td>
<td>5.3</td>
</tr>
<tr>
<td>2</td>
<td>4 ½</td>
<td>2 + 2 ½</td>
<td>III</td>
<td></td>
<td>g</td>
<td>12.3</td>
</tr>
<tr>
<td></td>
<td>½</td>
<td></td>
<td>link</td>
<td></td>
<td></td>
<td>17.1</td>
</tr>
<tr>
<td>3</td>
<td>4 ½</td>
<td>2 + 2 ½</td>
<td>IV</td>
<td></td>
<td>d</td>
<td>17.3</td>
</tr>
<tr>
<td>3 ½</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22.1</td>
</tr>
<tr>
<td>4</td>
<td>4 ½</td>
<td>2 + 2 ½</td>
<td>V (ext.)</td>
<td>g → B♭</td>
<td></td>
<td>25.1</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>3 + 2 ½ + 2 ½</td>
<td>VI</td>
<td></td>
<td>B♭</td>
<td>33.1</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45.3</td>
</tr>
<tr>
<td>5</td>
<td>4 ½</td>
<td>2 + 2 ½</td>
<td>VIII</td>
<td></td>
<td></td>
<td>50.3</td>
</tr>
<tr>
<td>8 ½</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>55.1</td>
</tr>
<tr>
<td>6</td>
<td>4 ½</td>
<td>2 + 2 ½</td>
<td>IX</td>
<td></td>
<td>g</td>
<td>63.3</td>
</tr>
</tbody>
</table>
Interpolation by embellished repetition of the opening of the subject.

The length of this extension, 3 ½ measures, repeats in the third digression (C). Digression D is 5 measures, the sum of the lengths of transitions A and B. The final digression, E, is 8 ½ measures, the sum of the lengths of transitions C and D. We see a correlation between the antecedent/consequent phrases of the subject and the digression/integrant repetition of the fugue as a whole. The digressions are active in that each is different in both length and content, and the

Figure 14. Period V from BWV 578.
repetition of the integrants in the fugue is ‘static’ due to the similarity of the material in each repetition as noted above.

Since none of the significant phenomena defined in step 4 of the methodology apply to this fugue, steps 4 and 5 may be omitted in this analysis. The remaining phase of the analysis, therefore, is the identification of how the fugue ‘responds’ to its notable properties.

Given that the subject of this fugue is a period, it is likely that each integrant in the fugue will also be a period. Bach’s treatment of the integrants in this fugue does not vary much and their melodic material is always the same—subject and countersubject. Each is basically two independent voices with the addition of a pedal point or ‘filler’ voice. Four of the nine integrants use the subject as the bass line and the countersubject as the soprano. Two of the periods use the subject as the bass line and free material followed by a pedal point as the soprano. Of the remaining two (apart from the initial solo statement of the subject), both of which have the subject in the soprano, the bass line contains free material followed by a pedal point or the countersubject. If one were to play the integrants in this fugue consecutively without the digressions, the resulting ‘piece’ would seem redundant. Table 6 summarizes the integrants in the fugue.

The lack of variety in the organization of soprano and bass in the integrants hints that the digressions have an important role in the fugue. With the duplication of combinations as mentioned above there must be something apart from the soprano/bass counterpoint within the integrants that gives each one a novel sound. In some situations this is achieved partially by stating the material in a different key. However, the final integrant (and statement of the subject), which one expects to be the culmination of the entire fugue, is the same as the third integrant both in key and content. We shall see that it is the digressions in the fugue that prepare the listener to hear the final integrant as a climatic event and not merely the repetition of material previously heard.

The asymmetrical nature of the period identified in the subject hints that expansion may be a primary attribute of the fugue. In step 3, we identified a pattern in the length of the fugue’s digressions. Each digression is longer than the previous in a cumulative manner. The central integrant of the work (period V) reflects this expansion, being the first integrant that moves beyond the key areas of tonic and dominant, in effect ‘broadening’ harmonically. This reflection of a notable property in the structure of the fugue points to a rhetorical compositional approach,
in that the reflection of this notable property at a structural level is a response to, or reconciliation of, the notable property.

Table 6. Material used for integrants in BWV 578.

<table>
<thead>
<tr>
<th>Integrant (Period)</th>
<th>Beginning measure.beat</th>
<th>Material for soprano</th>
<th>Material for bass</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1.1</td>
<td>subject (single line)</td>
<td></td>
<td><strong>g</strong></td>
</tr>
<tr>
<td>II</td>
<td>6.1</td>
<td>countersubject</td>
<td></td>
<td><strong>d</strong></td>
</tr>
<tr>
<td>III</td>
<td>12.3</td>
<td>countersubject</td>
<td></td>
<td><strong>g</strong></td>
</tr>
<tr>
<td>IV</td>
<td>17.3</td>
<td>free material; pedal point</td>
<td></td>
<td><strong>d</strong></td>
</tr>
<tr>
<td>V</td>
<td>25.1</td>
<td>subject</td>
<td>free material; pedal point</td>
<td>g → B♭</td>
</tr>
<tr>
<td>VI</td>
<td>33.1</td>
<td>countersubject</td>
<td>free material; subject</td>
<td>B♭</td>
</tr>
<tr>
<td>VII</td>
<td>41.1</td>
<td>free material/countersubject; pedal point</td>
<td></td>
<td>B♭</td>
</tr>
<tr>
<td>VIII</td>
<td>50.3</td>
<td>subject</td>
<td>free material; countersubject</td>
<td><strong>c</strong></td>
</tr>
<tr>
<td>IX</td>
<td>63.3</td>
<td>countersubject</td>
<td></td>
<td><strong>g</strong></td>
</tr>
</tbody>
</table>

The expansion reflected in the increased length of the digressions has a practical function, preventing the recurrence of material (as depicted above in Table 6) from sounding redundant. Instead, the repetitions serve as a material reinforcement. The repetition of the initial integrant throughout the fugue would indicate that, from the point of view of rhetorical discourse, the initial integrant is the thesis statement or the point that is to be made. The absence of compositional techniques in this fugue such as augmentation, diminution, stretto, inversion, and retrograde, which provide variety with regard to the subject, is offset by the augmenting of the digressions, preventing reiteration of the thesis statement from sounding hackneyed or repetitive. On the contrary, the successively longer digressions in this fugue result in a welcoming of each integrant repetition as if the transitions were arguments in support of the
thesis statement (integrant). Upon hearing a repetition of the thesis, the listener may be drawn more and more into agreement with the thesis statement until at the end there is complete agreement and, therefore, no more arguments or transitions.\textsuperscript{16}

The second phrase of the subject also presents evidence of expansion as a notable property. Beginning with the interval of a descending fourth, there follows expansion to a fifth and a sixth.\textsuperscript{17} This notable property and the descending arpeggio notable property mentioned in step 2 (see page 54) are the sources of the material for the digressions in the fugue (see Figure 15). Digression A inverts both of these through the use of an ascending arpeggio and ascending fourths. The harmonic use of the circle of fifths, although common in fugue transitions and an integral part of each digression in this fugue, mimics the perfect fifth notable property.

Digression B expands the ascending fourth figure to include the descending third motion found in the first phrase of the subject. By combining two notable properties, expansion and the ascending fourth, Bach works towards their individual resolutions by demonstrating their compatibility, showing that they are not in conflict with each other. Digression C incorporates these two notable properties but in a different manner. This digression expands the fourth to a sixth, reflecting the expansion of the second phrase of the subject.

The next digression, D, combines the techniques used in the previous digressions. In this instance we find both ascending fourths and ascending sixths combined with the descending third motion. Additionally, the circle of fifths traverses the complete circle, beginning and ending with C minor, thus indicating a working out of the conflicts of the fugue, while suggesting that a conclusion has not been reached since there is not a commitment to move away from the current (non-tonic) key. This digression is the only one that incorporates the organ pedal, to which Bach assigns the roots of the chords in the circle of fifths. The use of the pedal here not only provides the fourth voice needed for the chord roots, but also creates a stronger dominant preparation in measure 50 before the subject entry in C minor.

\textsuperscript{16} It is readily admitted that some of these statements are speculative and interpretative. Their basis, however, is the analysis and, as such, they are presented as reasonable extrapolations of the data in the context of music as rhetorical discourse. In this respect they are deemed to be distinct from the fanciful narratives found so often in writings of the nineteenth and early twentieth centuries.

\textsuperscript{17} It might prove beneficial to compare expansion as a notable property in this fugue, reflected in the widening of the fourth to a sixth, and its resolution with the same phenomenon in other fugues that contain “wedge” subjects.
The final digression, E, joins every notable property of digressions A-D. We find the descending arpeggio (measures 55-57) followed by ascending sixths (measure 58) followed by ascending fourths (measures 59-60) followed by the melodic third, first ascending then descending (measures 61-63). The circle of fifths appears once again, continuing from C minor. This time, however, the cycle breaks at G minor, the tonic, in preparation for the statement of the final integrant. The return to the tonic, after entries in the relative major and subdominant, signals an end to rhetorical arguments. In fact, the cadence at measure 58, the point of the break from the circle of fifths and reestablishment of tonic, is essentially the same cadence that ends
the fugue. The melody is the same in both cases and the accompanying harmonic progression is i-V-i. To end on beat 3 of measure 58, however, would have been anti-climatic. Such an ending would follow a digression whose descending figures serve to reduce tension, and would not provide a strong ending, a situation that would clearly be at odds with an art whose purpose is to persuade. Instead, having exhausted all obstacles put forward by the “conceptualized conflicts” of the fugue, Bach employs ascending fourths in the context of a 10-6 linear intervallic pattern to build to a ‘triumphant’ final statement of the fugue’s thesis. This final statement also resolves the ascending fifth notable property found in the first two notes of the fugue. The ascent from tonic to dominant can be answered only by a descent from dominant to tonic. The final two notes of the bass provide the resolution of the opening interval.
Digression E

descending arpeggio in all three voices

circle of fifths: Cm F B♭ E♭ A° D

same cadence as mm. 67-68

ascending sixths

G

ascending melodic third

circle of fifths: Cm F B♭ E♭ A° D Gm

Conclusion

Bach’s *Fugue in G minor*, BWV 578, illustrates several attributes of the rhetorical process as it applies to fugue. Several notable properties are evident from an examination of the
subject alone: the opening perfect fifth, the descending arpeggio, and an active phrase followed by a static phrase. Less obvious at the outset is the use of a musical period as a notable property. It is only by an examination of the remainder of the fugue that the significance of the period within the fugue becomes apparent. Investigation of the structure of the fugue reveals the use of expansion as a rhetorical argument through the lengthening of the digressions. Upon reflection, one can see hints of the importance of expansion in the fugue in the subject itself. Expansions are evident also in the content of the digressions. The incorporation of all of the notable properties in the final digression suggests that all rhetorical conflicts have been satisfied. The task of the orator now complete, the fugue ends with a grandiose statement of its thesis.

The search for notable properties in this fugue demonstrates the recursive nature of the steps of this methodology. Notable properties are usually evident from an examination of the beginning of a fugue alone, yet the significance of potential notable properties, such as the two-part structure of the subject and expansion as a rhetorical argument, are apparent only after one considers the entire work. Examination of both the subject and the fugue as a whole reveals that each notable property discovered in this fugue permeates the entire work, providing solutions through rhetorical argument to the conflicts instigated by the fugue.
CHAPTER 5
PALINDROME AS A NOTABLE PROPERTY: A STUDY OF BACH’S FUGUE IN E MINOR, BWV 533

Introduction

In the previous chapter the analysis of Fugue in G minor, BWV 578, was presented as a step by step completion of the steps of the methodology. For the remaining analyses, the steps of the methodology were performed in the specified order; however, the following discussions are presented as a narrative of the results of the analysis in order to achieve a better descriptive flow.

There are at least two ways to interpret the notable properties found in J. S. Bach’s Fugue in E minor, BWV 533, that will be considered here. One interpretation is that it is a study in frustration. It is not technically difficult to play, yet it is quite a challenge for the performer to make sense of its ‘stop and start’ nature. The notable properties of this fugue are not resolved, resulting in a literal fugue, a behavior that is consistent with the structure of the fugue. An examination of the spacing of the subject/answer entries reveals a palindrome: the eight entries span 2, 3 ½, 3 ½, 5, 5, 3 ½, 3 ½, and 2 measures. One possible figurative use of a palindrome is to reflect frustration in that the departure from a point of origin is followed by a backtracking to that point of origin. (In other words, the goal of the departure is not reached.) Coupled with the inability of 5 to ascend past 6 and the lack of a ‘normal’ stepwise descent from 5 to 1 that will be demonstrated, it might be inferred that the literal statement of this fugue is ‘Sometimes one has to give up’ or ‘Some problems cannot be solved’.

A second interpretation is that the fugue represents confidence and stability, interpreting the notable properties listed above as providing a secure enclosure rather than limiting one’s mobility. Each of these interpretations will be considered separately and in relation to one
Interpretation One – Frustration

Figure 16 shows the identification of traditional fugue elements in this piece. Support for the first interpretation, frustration, begins with the opening statement of the subject (see Figure 17). One often hears the first two notes played as if they comprise a pickup note followed by a downbeat. In reality, the downbeat is the eighth-note rest and the two notes following are echoes that may be likened to a bouncing ball. The downbeat is the initial bounce of the ball and the next two notes are progressively smaller bounces. Holding the quarter-note E its full value would serve only to accent or draw attention to that note, the opposite of the effect implied by the distribution of the notes across the beats of the measure. One might do well, then, to shorten the value of the quarter note in performance, relying upon the excellent acoustics of the building to continue the pitch for the remainder of its value while the sound dies away.

There are other reasons for shortening the quarter notes in the subject. In the context of the mordent, the accent is on the first attack of the main note, not the return to the main note after playing the lower neighbor. To hold the note for a full quarter-note value works against this principle by accenting the weaker part of the ornament in the same way that holding the note stresses a weak beat in the measure as mentioned above. A second argument in favor of shortening these quarter notes is the way they are used in conjunction with the countersubject. Every accompanied subject or answer entry in the fugue has a change of harmony on the second half of the quarter-note beat. Whether the quarter note is consonant or dissonant with the chord change is variable as the fugue alternates between the two choices as shown in Table 7. Favoring consistency of execution, we are left with the conclusion to shorten the quarter notes in order that the harmonic changes are not obscured.

1 It is not the purpose of this study to choose one interpretation over the other or to imply that there are not other valid interpretations. In the effort to make sense of the data, however, both interpretations will be considered.

2 All score quotations for Fugue in E minor, BWV 533, are taken from Johann Sebastian Bach, Neue Bach Ausgabe, IV/5 (Kassel: Bärenreiter, 1972), 92-93. Reprinted by permission.
Figure 16. BWV 533 – Annotated Score.
Figure 16—continued.
Figure 16—continued.
Table 7. Quarter-note pitches in subject/answer entries and how they fit within the harmony.

<table>
<thead>
<tr>
<th>Measure.Beat</th>
<th>Voice</th>
<th>Quarter-note pitch</th>
<th>Chord Progression</th>
<th>Consonant</th>
<th>Dissonant</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Bass</td>
<td>E</td>
<td>e: i V i V</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>6.3</td>
<td>Soprano</td>
<td>B</td>
<td>e: V i V i</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>10.1</td>
<td>Alto</td>
<td>E</td>
<td>e: i iv i vii°6</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>12.3</td>
<td>Bass</td>
<td>F♯</td>
<td>b: V i V i</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>19.1</td>
<td>Tenor</td>
<td>B</td>
<td>e: V i vii°7 i</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>24.1</td>
<td>Soprano</td>
<td>E</td>
<td>a: V i V i</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b: vii°6 i</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>27.3</td>
<td>Alto</td>
<td>B</td>
<td>e: V i V i</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>33.3</td>
<td>Bass</td>
<td>B</td>
<td>e: V i V7/V V</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

The second half of the subject is not any easier for the performer. The leap from 5 to 1 tempts one to stress 1 but, as in the first half of the subject, the goal of the motion is on a weak beat. The second half of the subject is active in contrast to the first half of the subject and our first notable property is the reverse of one that we observed in the G minor fugue: here we have a static half of the subject followed by an active half. The second notable property is also found in

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3 The “static” and “active” nature of the parts of the subject is drawn from a correlation of the note values to steps that one might take. In the first half of the subject there is a pause after the second and fourth steps. In the second half, the steps are continuous. While the pause may be “active” in the sense that one is poised to take the next step, the impression of an onlooker to the entire progression is that the second half is active in relation to the first.
the subject: both parts of the subject are built on repetitions of a short motivic idea (see Figure 17 above). A third notable property found in the subject is the lack of a linear descent from 5 to 1 or even from 3 to 1 (see Figure 18). Instead, 5 is left suspended and there is an ascent from 1 to 3.

![Figure 18. BWV 533 – Graph of Subject.](image)

The repetitions of the second notable property can be thought to signify the frustration reflected by non-progression. Closely related to this is the implication of the third notable property – the ‘usual’ tendency of scale degrees appears to be thwarted repeatedly. The subject leaves 5 suspended without a linear connection to any other scale degree and the 1-2-3 ascent is not complemented by a corresponding 3-2-1 descent.4

Several ‘attempts’ of 5 to ascend to 1 within the fugue are ‘blocked’ by 6. In measure 8 6 appears to act as a border to any attempt to reach beyond it. In measure 14 we have a 10-10-10 linear intervallic pattern in the dominant, B minor, but once again any motion past 6 is disallowed (see Figure 19).

Beginning in measure 16 we find a pattern of ascent similar to the one in measures 5-6. In this case the ascent begins on 3 in an inner voice and extends an octave to 3. However, it cannot be considered to contain an ascent from 5 to 1 because of its use of #6 instead of b6 and it is, in fact, simply a prolongation of 3 rather than a successful ascent past 5. The subsequent

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4 It is accepted that these ascents are common occurrence. It is also accepted that one expects such an ascent to be followed at some point by a corresponding descent. The fact that these are common occurrences does not preclude their identification as a notable property although it does somewhat guarantee that this notable property will be resolved within the piece. This event is included as a notable property here because it shares features of the “more significant” status of the suspended scale degree 5, which is also without descent. Both are included as a notable property because they play an integral role in supporting the palindrome notable property. Their inclusion is not meant to imply that all Urlinie descents should be considered notable properties. They are significant only as they relate to the definition and/or resolution of other notable properties within a piece.
descent does not mirror the ascent but 6 figures prominently as a boundary above 5 (see Figure 20). Measure 23 shows another instance of 6 as an incomplete neighbor to 5 (see Figure 21) and measures 29-33 present another descent from 6 to 2 (see Figure 22). This subsequent descent
Figure 20. Ascent from $\hat{3}$ to $\hat{3}$.

Figure 21. $\hat{6}$ as incomplete neighbor to $\hat{5}$.
contains an additional stress of $\hat{6}$ on the first beat of measure 33, a note that seems to appear out of nowhere. The repeated appearance of $\hat{6}$ as an upper neighbor to $\hat{5}$, especially as it is presented in measure 33, supports the suspension of $\hat{5}$ as a notable property. Towards the end of the fugue these incomplete neighbors imply $\hat{5}$ as a cover tone even as the Umline descends to $\hat{1}$.

The final use of $\hat{6}$ as a barrier to any ascent past $\hat{5}$ occurs in the penultimate measure of the fugue. As if to set aside any doubt as to the possibility of $\hat{5}$ going anywhere, Bach begins with $\hat{1}$ and, proceeding upward in a stepwise motion, arrives at $\hat{5}$. At this point he indicates a turn, an ornament that would include $\hat{6}$, followed by a brief second attempt at $\hat{6}$ before dropping (exhausted?) to a $\hat{2}$-$\hat{1}$ final cadence (see Figure 23). The repetition of the $\hat{1}$ to $\hat{5}$ stepwise motion in the bass reinforces the idea of the suspension of $\hat{5}$.

The bracketed section in Figure 23 contains repeated motions from $\hat{7}$ to $\hat{1}$, as if that section is mocking $\hat{5}$ by holding a carrot ($\hat{1}$) just out of reach, so to speak. This parenthetical material supports the interpretation of the fugue as representing frustration.
Interpretation Two – Confidence and Stability

The second interpretation of this fugue begins with the three notable properties presented with the first interpretation and adds a fourth notable property: the structure of the fugue reflects the ratios of the perfect fifth (3:2) and its inversion, the perfect fourth (4:3). Emphasis on this interval and its inversion is evident from a fifth notable property: all of the subject/answer entries are either in tonic or dominant; furthermore, Bach does not depart from these two keys during the entire fugue, a fact that may account for the brevity of the fugue. The hint at G major in measures 21-22 is easily absorbed in the context of E minor in measures 19-23, and the hints at A minor in measures 24-25 and measure 32 are even more readily acceptable as the use of secondary dominants within the tonic key. Additionally, the perfect fifth is the opening interval of the fugue, created by a motion from 5 (the suspended scale degree discussed above) to tonic.
A sixth notable property concerns the presence of a fifth subject/answer entry in the exposition of this four-voice fugue. The fifth entry occurs in the bass (measures 12-14) under a cadential extension of the fourth entry.

To arrive at the ratios for the perfect fifth and perfect fourth reflected in the structure of the fugue, we once again look at the manner in which digressions segment the fugue. In the G minor fugue (BWV 578) we ignored melodic links in the context of transitions. In this fugue we will ignore minor codettas such as that found in measures 5-6. Our decision to do so is not entirely arbitrary. There are additional considerations that justify this analytic decision.

The first digression spans measures 15-18. All prior measures are involved in either a subject or answer except for the brief codettas mentioned above. The cadence on the downbeat of measure 15 is the first authentic cadence of the fugue, signifying the end of a section. Additional phenomena that contribute to a sectional division at this point are the reduction in voices and the change in rhythm. The next integrant begins at measure 19, signified by the addition of voices, the change in rhythm, and the appearance of another subject entry (see Figure 24).

The second digression begins in measure 31 and continues to beat 3 of measure 33. Here, a change in rhythm along with the use of melodic ideas other than subject or countersubject demarcates the sections. The cadential extension in the last half of measure 35 will be combined with the second digression in order to create the 4:3 ratio of the perfect fourth. That half measure is not accounted for in the palindrome of measures spanning the entries in the fugue (see page 64 above and Table 8 below). Thus, it is considered reasonable within the speculative nature of this portion of the analysis to include it with the second digression since it complements and supports the notable properties of the fugue.

The correlation of the fugue structure to interval ratios lies in the length by which the span of each integrant is extended and the length of the digressions (see Table 8). The entry spans are increased by 1 ½ measures twice and then decreased by the same amount. The fraction, 1 ½, equates to the 3:2 ratio of the perfect fifth. The first digression is 4 measures long and the second, when the cadential extension at the end of the fugue is included, is 3 measures long – a

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5 The two prior cadences are a half cadence on beat 3 of measure 6 and a half cadence on beat 3 of measure 9.

6 Digression 1 (4 measures) : Digression 2 (2 ½ + ½ = 3 measures).
ratio matching that of the perfect fourth (4:3).7

Figure 24. First digression.

Table 8. Palindrome and reflection of interval ratios in the structure of BWV 533.

<table>
<thead>
<tr>
<th>Measure. Beat</th>
<th>1.1</th>
<th>3.1</th>
<th>6.3</th>
<th>10.1</th>
<th>15.1</th>
<th>19.1</th>
<th>24.1</th>
<th>27.3</th>
<th>31.1</th>
<th>33.3</th>
<th>35.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry length</td>
<td>2</td>
<td>3½</td>
<td>3½</td>
<td>5</td>
<td>5</td>
<td>3½</td>
<td>3½</td>
<td>2</td>
<td>½</td>
<td>2</td>
<td>½</td>
</tr>
<tr>
<td>Digression length</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td>2½</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key</td>
<td>i</td>
<td>v</td>
<td>i</td>
<td>v</td>
<td>i</td>
<td>v</td>
<td>i</td>
<td>i</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subject / Answer</td>
<td>S</td>
<td>A</td>
<td>S</td>
<td>A(S)</td>
<td>S</td>
<td>A</td>
<td>S</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voice</td>
<td>T</td>
<td>B</td>
<td>S</td>
<td>A(B)</td>
<td>T</td>
<td>S</td>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7 The observation of the correlation between section lengths and interval ratios is, admittedly, speculative. However, Bach did belong to the Society of Musical Sciences, he did understand tuning systems, and he would have known the ratios of the various intervals. It seems reasonable, therefore, to think that he might have deliberately created such a correlation as this in one of his pieces.
Conclusion

Two interpretations of the notable properties of this fugue have been presented. The first interprets the fugue’s palindrome structure as voicing frustration, a view reflected by the ‘boxing in’ of 5, and the apparent inability to expand beyond this boundary. The second interpretation takes the data of the first, adds to it the reflection of the intervallic ratios of the perfect fifth and perfect fourth, and, interpreting boundaries as providers of security rather than inhibitors, concludes that the fugue suggests confidence and stability. This second interpretation could have been achieved without the interval ratio notable properties; however, the reinforcement of these attributes at such a global level serves to provide further validation of this view. In the context of the second interpretation, the parenthetical section in measures 33-35 could be interpreted as representing a future hope, that is, at the appropriate time 5 will ascend to 1 but, in the meantime, one is content in the current state.

In identifying notable properties for this fugue, we observed a repetition of the static/active paradigm. The identification of notable properties both from the subject alone and from the formal structure of the piece also applied. Once again, attention to the digressions of the fugue was instrumental in the analysis. We encountered the palindrome at the local level (linear descents) as well as at the global level (span of integrants). The expansion identified as a notable property in BWV 578 appears here as a palindrome (expansion followed by contraction) in the context of the integrants. The notable properties of this fugue were not ‘reconciled’; hence, the application of the ‘literal’ label. Significant, in this respect, are the suspension of 5 and the lack of a descent corresponding to the ascent from 1 to 3. These are complemented by the use of only two key areas, tonic and dominant, and the palindrome nature of the fugue’s structure. Categorizing this fugue as a literal fugue, rather than rhetorical, is consistent with the two interpretations presented here. Both interpretations reflect a state of affairs, but there is no indication that the status quo, either frustration or confidence, requires any action.
CHAPTER 6
UNEXPECTED CHANGE IN THE PREVAILING RHYTHMIC MOTION AS A NOTABLE PROPERTY: A STUDY OF BACH’S *FUGUE IN C MAJOR*, BWV 545

Introduction

Bach’s *Fugue in C major*, BWV 545, has several commonalities with the two fugues discussed thus far. Once again we have the static vs. active component but in this situation the source of this component is solely rhythmic. This fugue will be the first in this study for which step 4 of the methodology applies. We will see that segmentation of the fugue using the traditional fugue elements is inconsequential from an analytic standpoint. Segmentation of the fugue based on the unexpected changes in the prevailing rhythmic motion, however, will prove significant. The length of the sections created by the rhythmic changes corresponds to intervallic ratios similar to what we found in BWV 533. Finally, we also find an ‘inability’ to ascend past a scale degree (⁴), but with a different outcome—this fugue breaks that barrier, so to speak, in its last three measures. An additional topic to be introduced with this fugue is the appearance of obscured subject/answer entries—entries which are masked by the accompanying material. Their significance in the context of this fugue will be discussed.

*Fugue in C major*, BWV 545

Contrast as Notable Property Revisited

Figure 25 shows the identification of traditional fugue elements in this piece.¹ One of the

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Figure 25. BWV 545 – annotated score.
Figure 25—continued.
Figure 25—continued.
Figure 25—continued.
notable properties in the *Fugue in G minor*, BWV 578, was the alternation of static and active phrases in the subject, a notable property created by contrasting elements (see page 56). The first notable property in the BWV 545 fugue, found in the subject, is also based on contrast (see Figure 26). The first half of the subject incorporates long note values, half notes, and the second half smaller note values, quarter notes, yielding a contrast in the prevailing rhythm as a notable property.

Figure 26. Subject of *Fugue in C major*, BWV 545.
Blocked Ascent as Notable Property Revisited

The second notable property concerns the subject as well: An ascent past \( \hat{4} \) seems to be prohibited. This notable property corresponds to the situation in BWV 533 where attempts to ascend past \( \hat{5} \) were always blocked by \( \hat{6} \). At this point one might question the validity of these ‘blocked ascents’ as anything other than a reflection of neighbor motions within a common Urlinie descent. After all, the subject of the G minor fugue discussed above does not ascend past \( \hat{5} \) yet no mention was made of its being ‘blocked’.

The G minor fugue differs from the E minor in its approach to \( \hat{5} \). The G minor fugue leaps from \( \hat{1} \) to \( \hat{5} \) before descending an octave to \( \hat{5} \). In the G minor fugue there is no stepwise approach from \( \hat{1} \) to \( \hat{5} \) and, therefore, no proposal of an ascent. The E minor fugue, on the other hand, begins with \( \hat{5} \) and contains an ascent (from \( \hat{1} \) to \( \hat{3} \)) in its subject. Additionally, as shown above, there are repeated stepwise ascents in that fugue, each of which is halted by \( \hat{6} \). These stepwise ascents substantiate ascending stepwise motion as a characteristic of the fugue and, thus, provide valid support for a notable property. Furthermore, in the G minor fugue there are several stepwise ascents through all scale degrees, including an ascent spanning a tenth from \( \hat{1} \) to \( \hat{3} \) (see Figure 27).

The C major fugue of the current discussion has a subject that is built upon a stepwise ascent from \( \hat{1} \) to \( \hat{4} \) followed by a corresponding descent from \( \hat{4} \) to \( \hat{1} \). The accompanying material (it is not a countersubject) traverses a descent from \( \hat{1} \) to \( \hat{5} \) (in the context of the tonic key), but there is no bridge between \( \hat{4} \) and \( \hat{5} \) in the sense that the F (\( \hat{4} \)) and G (\( \hat{5} \)) are not connected melodically (see Figure 28). This gap between \( \hat{4} \) and \( \hat{5} \) permeates the fugue through the repetition of the subject and the accompanying material. Including the accompanying material with the subject in the definition of a notable property is an example of not limiting oneself to the subject in the search for core material.\(^2\)

In contrast to the E minor fugue, in which the ascent from \( \hat{5} \) is always blocked, this C major fugue has a complete ascent from \( \hat{1} \) to \( \hat{1} \) in the final three measures of the fugue. The ascent begins in the bass and, once \( \hat{5} \) is reached, transfers to the soprano (see Figure 29). The drop from \( \hat{2} \) to \( \hat{5} \) in the soprano and the inclusion of \( \hat{6} \) as a grace note supports reading \( \hat{5} \) in the soprano as a continuation of \( \hat{5} \) in the bass. The usual procedure with a cadential six-four would

\[^2\] Daniel Harrison’s work supports this approach when he links the “three thematic members” of the exposition (subject, countersubject, “residue” notes) “into a single, large thematic unit: S/A – C – R(6)” (Harrison, 15).
be to continue from $\hat{2}$ in the soprano with $\hat{1}\text{-}\hat{7}\text{-}\hat{1}$ or $\hat{3}\text{-}\hat{2}\text{-}\hat{1}$. In addition, the $\hat{6}$ grace note is not required (the grace notes could have been $\hat{3}$ and $\hat{2}$). The combination of these departures from the norm lends support to the reading of a complete ascent from $\hat{1}$ to $\hat{1}$. 

Figure 27. Stepwise ascents in *Fugue in G minor*, BWV 578.
Unexpected Change in the Prevailing Rhythm as a Notable Property

The next notable property regards the rhythm of this fugue. As stated above, the first half of the subject incorporates longer note values (half notes) while the second half uses shorter note values (quarter notes). There are a couple of eighth notes in measure 4 and a few more in the accompanying voice. Once we arrive at measure 8, however, eighth-note motion becomes the prevailing rhythm (see Figure 30).

There are four places in the fugue where the prevailing rhythm changes unexpectedly, namely at measures 18, 54, 81, and 108(9). Each of these corresponds with a cadence, and these cadences serve as ‘pillars’ that segment the fugue into sections consistent with the ratios that make up various intervals (see Table 9).³

³ Although multiples of 3 are prevalent in these segmentations as is the total number of measures, 111 (37 x 3), it is not the intent of this study to argue one way or the other regarding Bach and numerology. Observations will be made based upon the data and the reader may decide for him/herself whether Bach was aware of these phenomena or whether they are merely coincidences. The reader may also decide, if he/she believes that Bach intended the numeric
Figure 30. Progression to eighth-note rhythmic motion at the beginning of BWV 545.
Table 9. Proportions in *Fugue in C major*, BWV 545.

<table>
<thead>
<tr>
<th>Section</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Cadential Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure</td>
<td>18</td>
<td>54</td>
<td>81</td>
<td>108</td>
<td>111</td>
</tr>
<tr>
<td>Length</td>
<td>18</td>
<td>36</td>
<td>27</td>
<td>27</td>
<td>3</td>
</tr>
<tr>
<td>Multiple (measure)</td>
<td>6 x 3</td>
<td>18 x 3</td>
<td>27 x 3</td>
<td>36 x 3</td>
<td>37 x 3</td>
</tr>
<tr>
<td></td>
<td>2 x 9</td>
<td>6 x 9</td>
<td>9 x 9</td>
<td>12 x 9</td>
<td></td>
</tr>
<tr>
<td>Multiple (length)</td>
<td>6 x 3</td>
<td>12 x 3</td>
<td>9 x 3</td>
<td>9 x 3</td>
<td>1 x 3</td>
</tr>
<tr>
<td></td>
<td>2 x 9</td>
<td>4 x 9</td>
<td>3 x 9</td>
<td>3 x 9</td>
<td></td>
</tr>
<tr>
<td>Last subject/answer in section</td>
<td>4 (2^2)</td>
<td>9 (3^2)</td>
<td>12</td>
<td>16 (4^2)</td>
<td>0</td>
</tr>
<tr>
<td>Number of subject/answer entries in section</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

Ratios:
- II to I – 2:1 (P8)
- II to III – 4:3 (P4)
- III to IV – 1:1 (Unison)

Last Subject/Answer Entries in Section:
- II to I – 3:2 (P5)
- III to II – 4:3 (P4)
- IV to III – 4:3 (P4)

Number of Subject/Answer Entries in Section:
- II to I – 5:4 (M3)
- IV to III – 4:3 (P4)

**Obscure Subject/Answer Entries**

Each of the subject/answer entries of the G minor and E minor fugues discussed above is prominently displayed, that is, they are not obscured by the texture. In the BWV 545 fugue, however, there are several instances of subject/answer entries that are overshadowed by the accompanying voices. Generally speaking, for this to happen there must be voices both above and below the subject. Entries in the highest or lowest voices are going to be easily accessible to the ear regardless of what takes place in the accompanying voices. Another contributing factor to the obscuring of an entry is the introduction of the subject in the midst of a continuing melodic or harmonic idea. For instance, the tenor entry beginning in measure 28 and the following alto entry beginning in measure 35 are secondary to the melodic activity that began in measure 19 and
continues to measure 38 (see Figure 31). Two other obscured entries occur in measure 52 and measure 79 (see Figure 32). The alto entry in measure 52 is subservient to the material beginning in measure 50, which cadences in measure 55. The alto entry of measure 79 is similarly overshadowed by the material beginning at measure 76 and continuing to measure 85, overlapping the obscured entry in measure 84, discussed below.

The entry pair in measures 84 and 89 differs from those previously mentioned in that these entries are not completely obscured (see Figure 33). In the first of these the bass drops out in measure 85, leaving the tenor as the lowest voice and, therefore, a prominent one. In the latter entry the soprano drops out in measure 89, drawing attention to the alto entry. Reentry of the soprano in measure 90 masks the alto voice for the remainder of that entry.

It is evident that Bach was not concerned with whether these entries stood out in the course of the fugue. This lends more weight to the notable property regarding formal sections created by a attenuation of rhythmic activity than to the other notable properties regarding static rhythm vs. active rhythm and blocked ascents. It does not negate the latter notable properties; however, it does imply that formal structure was a primary concern of Bach’s in composing this fugue. A secondary concern would be continuity of melodic and harmonic ideas as seen in their precedence over subject/answer entries. Bach’s attention to the inclusion of these obscured entries is significant and supports the structural findings. Without these ‘hidden’ entries a large portion of the ratio ‘coincidences’ would not exist, demonstrating the interdependency between local and global events in the identification of notable properties.

Obscuring entries in the fugue causes the traditional formal structure to be inconsequential. Following step 4 of the methodology, one or more notable properties of the fugue (unexpected change in the prevailing rhythmic motion in this case) are then used to create an alternative formal structure, which is then examined for patterns (step 5).

It is not unusual for Bach to hide a subject or answer entry in a fugue; however, it is seen as significant here in that it supports other notable properties. A tentative analytic technique relative to this methodology might be that the existence of obscured subject/answer entries indicates that one should look elsewhere besides the subject for significant notable properties.
Beginning of melodic idea

Obscured entry in tenor

Obscured entry in alto

Figure 31. Obscured entries in measures 28 and 35.
Figure 32. Obscured entries in measures 52 and 79.
Figure 33. Partially obscured entries in measures 84 and 89.

Conclusion

Bach’s *Fugue in C major*, BWV 545, continues the paradigms of static vs. active material, found in all of the fugues discussed thus far, and that of ‘blocked ascent’, which we found in the E minor fugue, BWV 533. Once again, formal structure has served an important role in the discovery of a notable property that reflects the ratios of various intervals. In this situation unexpected changes in the prevailing rhythm compounded with cadential harmonic motion created the formal divisions according to step 4 of the methodology. For the first time, we identified a notable property based on an alternative formal structure of the fugue. We also had our first encounter with obscure subject/answer entries. The next fugue in our study will take both of these concepts a step further.
CHAPTER 7
COMBINING FORCES AS A NOTABLE PROPERTY: A STUDY OF BACH’S FUGUE IN C MAJOR, BWV 547

Introduction

J. S. Bach’s *Fugue in C major*, BWV 547, presents several new analytic challenges. Upon first glance at the score, we immediately see that the subject is very short, only one measure.\(^1\) Closer inspection reveals that, in the 72 measures of the fugue, there are over 50 occurrences of a subject or answer, including those created by techniques such as inversion, augmentation, and overlapping entries. The combination of an extremely short subject and a multitude of entries argues against using the subject alone as core material. For this reason we will look at combining subject/answer entries to satisfy this requirement. The existence of so many entries lasting for such a relatively brief time brings up the issue of obscured entries, discussed in the previous fugue.

In this fugue, therefore, the analytic thrust will be the broadening of those attributes of fugue that qualify as notable properties and a discussion of the requirement to allow a departure from the traditional segmentation of a fugue’s structure to meet the challenge of these new notable properties.

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\(^1\) For a complete copy of the score, see Johann Sebastian Bach, *Neue Bach Ausgabe*, IV/5 (Kassel: Bärenreiter, 1972), 25-29, from which all score quotations are taken. An annotated copy of the complete score is not provided here because, with few exceptions, every measure of the fugue is included in the figures provided in this chapter. All score quotations are reprinted by permission.
Brief, ‘Modulating’ Subject as Notable Property

There are several aspects of the opening of this fugue that have significant influence on the task of identifying notable properties for the fugue (see Figure 34). First, as mentioned above, is the relative brevity of the fugue’s subject, a single measure. Second, is that the subject tonicizes dominant at its conclusion. Apart from the F at the end of the subject, the first subject/answer combination is best understood to be entirely in the tonic key, C major.

Figure 34. Opening of Fugue in C major, BWV 547.
Combining Forces: Exposition Blocks as a Notable Property

Another unusual characteristic of the opening of this fugue is that, instead of the usual subject-answer-codetta-subject-answer design, we find subject-answer-subject-codetta-answer. Since the fugue begins as a four-voice fugue we expect the exposition to contain entries in each of the four voices. The end of the fourth entry (measure 6), however, occurs over a $\text{ii}_5^6$ chord in G major. The chord at the end of the third entry, V, is much more convincing as the conclusion of the exposition. Further study of the fugue reveals that at the beginning of the fugue the subject/answer entries appear in groups of three. We see subject/answer groups appearing immediately after the first cadence of the work, an imperfect authentic cadence in measure 8, and throughout the rest of the fugue. This leads to the conclusion that the integrant upon which this fugue is based is the combination of subject/answer entries. This combination of entries will be labeled ‘Exposition Block’ (abbreviated ‘EB’). Thus, our paradigm in this fugue is EB’s as integrants separated by digressions. The first digression spans measures 4-8, which includes the fourth subject/answer entry. Table 10 identifies the EB’s and digressions.

We have, at this point, identified several notable properties:

1. The fugue has a brief, one-measure, subject.
2. This subject appears to modulate, yet the combination of subject/answer never moves convincingly from the tonic key.
3. The subject/answer entries appear in groups of three.
   a. The subject does not seem able to stand alone because of its short length and its modulatory nature.
   b. Each group is labeled an ‘Exposition Block’ (EB).

As indicated in Table 10, as the fugue progresses the number of entries in each EB decreases until the final EB contains only one entry, a tonal answer. This narrowing of the EB’s from three entries to one can be viewed as a solution to the notable property that creates the EB’s, namely, that the subject cannot stand on its own due to its brevity and open-endedness. The point at which the EB’s experience their first reduction, from three entries to two, divides the fugue into two sections with a 2:1 ratio. Bach underscores this event with the first entrance of the organ pedal.

---

2 Beginning with measure 50, the texture is five voices through the end of the fugue.
Table 10. Exposition Blocks (integrants) and digressions in BWV 547.

<table>
<thead>
<tr>
<th>Measure.Beat</th>
<th>Exposition Block</th>
<th>Digression / Codetta</th>
<th>Key(s)*</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>EB 1</td>
<td></td>
<td>C – C – C</td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td></td>
<td>digression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.3</td>
<td>EB 2</td>
<td></td>
<td>C – C – G</td>
<td></td>
</tr>
<tr>
<td>11.3</td>
<td></td>
<td>digression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.3</td>
<td>EB 3</td>
<td></td>
<td>C – C – C</td>
<td></td>
</tr>
<tr>
<td>16.4</td>
<td>EB 4</td>
<td></td>
<td>C – C – C</td>
<td></td>
</tr>
<tr>
<td>20.1</td>
<td></td>
<td>codetta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.3</td>
<td>EB 5a</td>
<td>e – a</td>
<td>first two entries</td>
<td></td>
</tr>
<tr>
<td>22.3</td>
<td></td>
<td>digression</td>
<td>modified inversion of subject appears three times, each one overlapping the previous</td>
<td></td>
</tr>
<tr>
<td>25.3</td>
<td>EB 5b</td>
<td>F</td>
<td>third entry</td>
<td></td>
</tr>
<tr>
<td>26.3</td>
<td></td>
<td>a – d – G – C</td>
<td>inverted subject appears four times</td>
<td></td>
</tr>
<tr>
<td>35.1</td>
<td>EB 6</td>
<td>a – d – d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38.3</td>
<td></td>
<td>digression</td>
<td>continued use of inverted subject</td>
<td></td>
</tr>
<tr>
<td>43.1</td>
<td>EB 7</td>
<td>f – c – c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46.1</td>
<td></td>
<td>digression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49.1</td>
<td>EB 8</td>
<td>C – C</td>
<td>first two-entry EB</td>
<td></td>
</tr>
<tr>
<td>53.1</td>
<td></td>
<td>digression</td>
<td>inverted subject appears three times</td>
<td></td>
</tr>
<tr>
<td>56.1</td>
<td>EB 9</td>
<td>F(d) – b(G)</td>
<td>third of D minor modulates to G; third of G major modulates to F minor</td>
<td></td>
</tr>
<tr>
<td>58.3</td>
<td></td>
<td>codetta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59.3</td>
<td>EB 10</td>
<td>C – F</td>
<td>augmented inversion of subject</td>
<td></td>
</tr>
<tr>
<td>64.1</td>
<td></td>
<td>cadential extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66.3</td>
<td></td>
<td>codetta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67.3</td>
<td>EB 11</td>
<td>C – C</td>
<td>no #4 in second entry</td>
<td></td>
</tr>
<tr>
<td>69.1</td>
<td></td>
<td>codetta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71.2</td>
<td>EB 12</td>
<td>C</td>
<td>single entry</td>
<td></td>
</tr>
</tbody>
</table>

* Underlined key indicates a tonal entry returning to the key specified. Non-underlined key indicates entry modulating from the specified key. For example, C – C – C indicates a subject entry in C major that ‘modulates’ to G major, followed by a tonal answer returning to C major, followed by another subject entry in C major that ‘modulates’ to G major.
According to the table there are 30 subject/answer entries in the fugue. This figure differs from the 50+ quoted above because it does not include versions of the subject or answer that are not part of an EB. The ratio of EB entries between the two sections of the fugue mentioned above is 21:9 or 7:3.

In the first part of the fugue Bach uses inversions (sometimes modified) of the subject and answer in the digressions (see Figure 35). Later he uses these inversions as countersubjects to the entries in the EB’s (see Figure 36).

Beginning with EB 8 (measure 49), which is introduced by an occurrence of an answer, Bach uses an augmented subject and answer for the EB entries. As mentioned above, this coincides with the first entrance of the organ pedal in the fugue. For the accompaniment to these entries, Bach continues with inversions of the subject and answer. EB 9 returns to unmodified subject entries, after which EB 10 incorporates augmented inversions of the subject for its entries (see Figure 37).

From the beginning of the fugue Bach often overlapped subject and answer entries by one note, for instance, treating the final note of the subject as the first note of the answer. With EB 11 Bach overlaps the entries even further (see Figure 38).

Bach’s treatment of the subject and answer throughout the fugue demonstrates a gradual overcoming of the EB notable property. First, in EB 8, the number of entries is reduced from three to two while, at the same time, the subject and answer are augmented. In conjunction with this event, a fifth voice is added to the texture and persists through the end of the fugue. After an instance of two unmodified entries (EB 9), he manipulates the next two entries (EB 10) by augmenting and inverting them. This expansion, contraction, and turning upside down conjures up the image of kneading bread, in a sense ‘molding’ the EB’s into a unified whole. In the penultimate EB (11) Bach overlaps the entries by half their length, signifying their gradual union, and in the final EB (12) we are left with a single entry, notably a tonal answer leading to tonic.

---

3 The modified inversion that appears in measures 22-25 appeared first in measures 6-7 (see Figure 34 above).
Figure 35. Inversions of the subject and answer in transitions.
Figure 36. Inversions as countersubjects in Exposition Blocks.
Figure 37. Use of augmentation and inversion in subject entries.
Figure 37 – continued.

Figure 38. Overlapping of entries in Exposition Block 11.
Conquering the Tendency to ‘Modulate’

A fourth notable property is the open-ended nature of the subject resulting from the $\hat{4}$, which gives the subject the sense of modulation. This phenomenon appears only with a subject entry since the $\hat{4}$ tonicizes the dominant. The $\hat{4}$ of the tonal answer is the leading tone of the tonic key and, therefore, cancels out the motion toward the dominant, bringing the harmony back to tonic. This pattern continues for most of the fugue. In the penultimate EB (11), however, $\hat{4}$ is not raised (see Figure 39). This EB begins with an answer entry (returning to tonic) and the following subject entry uses the natural $\hat{4}$ to remain in the tonic key, resolving the conflict of this notable property. This solution works in conjunction with the resolution of the Exposition Block notable property discussed above.

![Figure 39. Use of $\hat{4}$ in Exposition Block 11.](image)

Obscured Entries

Bach obscures entries in this fugue through two methods. First, the sheer number of entries (49) reduces their significance regardless of whether the entries are overshadowed by other voices as discussed in the earlier fugues of this study. Second, the entries are obscured through the many strettos. With the chaining of so many of the entries, attention is diverted to other melodic aspects of the fugue. This obscuring of the subject/answer entries in the fugue works as a notable property to indicate that significant aspects must be found elsewhere. In the same manner in which the obscured entries of the BWV 545 fugue directed our attention to the
infrequent changes of rhythm and blocked ascents, the obscuring of entries in this fugue draws our attention to its other attributes – Exposition Blocks and the raised $\hat{4}$.

**Conclusion**

The short subject of this fugue combined with the myriad of subject/answer entries required an expansion of the valid paradigms for notable properties discussed thus far. We have seen the creation of Exposition Blocks, groups of subject/answer entries that combine forces to act as a unit of core material. In this fugue the EB’s begin with three subject/answer entries, eventually reducing to two and finally, one. This treatment of the EB’s serves as the solution to the notable property of combined forces. In the process, the entries of the EB’s are augmented and, subsequently, augmented and inverted. They are further manipulated by overlapping the entries by half their length leading to a unified conclusion in the final entry, one that is reinforced through the use of a tonal answer. The resolution of the notable properties points to a rhetorical compositional approach to this fugue. This fugue also continues the practice of treating obscured entries as indicators to look elsewhere for notable properties and core material. In this case we were led to the EB’s and the treatment of the raised $\hat{4}$, an attribute related to the tendency of the subject to modulate.
The task of analyzing fugue is a multifaceted one. Traditionally, fugue has been analyzed through the identification of its subject, answer, and countersubject and their compositional treatment throughout the fugue. Additionally, fugues have been divided into sections, namely, exposition, episodes, middle entries, and closing sections. Analysts have discussed key areas, manipulation of the subject through techniques such as inversion, augmentation, and stretto, and the labeling of middle entries and transitions. All of these analytic techniques are valid descriptions of the surface of a fugue, yet they tend to treat fugue as a formal structure and do not address the means by which a fugue is created by a composer beyond imitation and compositional techniques.

More recently, fugues have been subjected to analysis based upon rhythm (Fred Lerdahl and Ray Jackendoff) and a modified Schenkerian approach (William Renwick). The use of rhythm as the primary factor in analysis has been questioned based on the belief that, given the integral function of voice leading and harmony in tonal music, an approach based on these attributes is better able to yield a more ‘correct’ interpretation than one based primarily on rhythm. The Schenkerian approach is deeply rooted in harmony and voice leading; however, Renwick’s application of this approach, the creation of subject/answer paradigms, does not always clarify harmony and voice leading in fugue.

The work of Daniel Harrison and, subsequently, that of Joel Lester has sought to return to a rhetorical view of fugue composition and analysis. This study has built upon those techniques, demonstrating various means of identifying notable properties in fugues. The classification of core material has been expanded beyond that of the subject or subject/answer/countersubject combination to include aspects of formal structure and creation of Exposition Blocks, in which multiple subject/answer entries are considered an entity.

The process of identifying notable properties has been a balance between a critical look
at the opening of a fugue (subject, answer, and countersubject) and the fugue as a whole. Care
has been taken to accept as notable properties only those attributes of a fugue that are supported
in both areas. A methodology for completing this task has been defined and demonstrated. One
result of following the methodology is the identification of whether the compositional process of
a fugue is rhetorical or literal.

Areas for Further Research

Obviously, the twenty-four organ fugues of Bach not included in this study warrant
analysis. This study does not claim to present all possible notable properties in the organ fugues
of Bach or in the fugue genre as a whole. It would be worthwhile to conduct a study of the
remaining organ fugues to determine not only if additional notable properties may be found, but
whether there are correlations between the organ fugues that share notable properties. In other
words, determine if it is possible to conclude that certain types of fugues imply or preclude
certain notable properties and vice versa.

Comparison of non-organ fugues with organ fugues sharing common attributes with
those fugues may prove fruitful. For instance, the seemingly abrupt ending of the Fugue in C
major, BWV 547, with a final entry in an inner voice is similar to the ending of the G minor
fugue from the Well-Tempered Clavier, Book I. An analytical comparison of the two may be
beneficial. The vocal fugues of Bach offer the same types of comparisons as those mentioned
above. In addition, however, the presence of a text in the vocal fugues provides the possibility of
further discovery. For instance, there may be notable properties related to the text or a resolution
of a notable property may coincide with a particular point in the text.

Additionally, this method may be applied to fugues by other composers to determine if a
commonality may be found beyond that of imitation. A study of Mendelssohn’s fugues could
especially be beneficial since he admired and studied Bach’s works. In the course of this research
other approaches to fugue may be discovered besides rhetorical and literal, and correlations
between composers, musical periods, and approaches to fugue composition may be revealed.
APPENDIX

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January 27, 2004

Scott Roberts
220 Rolling Meadows Drive
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Scott Roberts
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Terri Torretto, Rights & Permissions, Dover
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Sent: Tuesday, January 27, 2004 9:12 AM
To: Torretto, Terri
Subject: FW: Request for permission to use material

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BIOGRAPHICAL SKETCH

Scott Roberts is a native of Macon, Georgia. He earned the Bachelor of Arts degree in Organ Performance from Bob Jones University in Greenville, South Carolina, and holds Master of Music degrees in Organ Performance and Music Theory from Florida State University. He is an Assistant Professor of Music at The University of Tennessee at Martin, where he teaches music theory and composes for various university ensembles. He has presented papers at the FSU Theory Forum, Music Theory Southeast, and the Georgia Association of Music Theorists.