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METER IN FRENCH AND ITALIAN OPERA, 1809–1859

A Thesis Presented

by

NICHOLAS J. SHEA

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

MASTER OF MUSIC

MAY 2017

Music

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METER IN FRENCH AND ITALIAN OPERA,
1809–1859

A Thesis Presented

By

NICHOLAS J. SHEA

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DEDICATION

To Trice and Mary Ann

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Christopher White must be thanked first. I would not have been able to conceptualize the scope of this project, master its methodologies, or convey the implications of my results to the scholarly community without his boundless patience and enthusiasm. Much gratitude to his ever-open door. Just as crucial to the development of this study is Brent Auerbach, for his critical eye on scholarly style, alongside an acute familiarity with historical and metrical discourse, constantly encouraged precision in my analysis. I also extend many thanks to Gary Karpinski for his consistent support of this project from its early stages; his direction refined my methodology, prose, and conference presentations to great effect. Further gratitude goes to Jason Hooper for pointing me toward this research area, his insightful feedback on style and analysis, and his general guidance through the program. Equally invaluable are my peers and other professors at UMass. I thank Allison Smith for her suggestions in our opera seminars and graduate student presentations, and Morgan Markel for her keen edits that always pushed me to consider other perspectives. Further thanks go to Jennifer Smith and Erinn Knyt for exposing me to the rich world of opera in their seminars.

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ABSTRACT

METER IN FRENCH AND ITALIAN OPERA, 1809–1859

MAY 2017

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Current and historical methods of metric analysis often assume that the first of two concurrent and equal pulses is stronger than the second. This, however, is not the case in all repertoires. For example, it has been shown that Verdi's midcentury operas often place emphasis on even-numbered beats (Rothstein 2011). This paper shows this metric trend to be even more prevalent in a corpus of nineteenth-century operatic excerpts (1809–1859).

I present a formalized decision tree that classifies phrases according to anacrusis length and prosodic accent, showing where large-scale metric accents fall within a phrase. This model produces three metric types which align with Rothstein's previous work. Compositional and historical features (e.g., language, premiere date, librettist, etc.) were tracked alongside type to determine whether preferences for certain metric forms were more prevalent in certain contexts. This indeed was the case. For instance, use of even-beat-emphasis meter increases over time, although odd-beat-emphasis meter remains most common. Individual composers also show a significantly distinguishable preference toward each type of meter. These results not only confirm that the highest concentration of even-beat-emphasis meter occurs in Verdi's midcentury operas, but that Verdi is the primary user of this type overall. Language and composer nationality do not significantly affect an excerpt's metric type; only Verdi shows the most distinction in

these areas. With these findings, I argue against using nationalist language to identify metric types (e.g., Franco-Italian meter and German meter) and instead propose a more nuanced understanding of nineteenth-century metric conventions.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS.....	v
ABSTRACT.....	vi
LIST OF FIGURES	x
CHAPTER	
1. INTRODUCTION	1
Biases in Accent.....	1
Biases in Theory and Analysis.....	3
Addressing the Bias	8
Nationalisms and Meter	11
2. THE CORPUS	13
French- and Italian-language Operas, 1809–1859	13
3. METHODOLOGY AND ANALYSIS	15
Marked Scores	15
Perception of Meter and Hypermeter.....	16
Perception of Duration and Tempo.....	19
Decision Trees	20
Sample Analysis – Franco-Italian Meter	24
Sample Analysis – German Hypermeter.....	26
4. RESULTS	29
Meter Over Time.....	29
Franco-Italian Meter over Time.....	31
Meter and Language	35
Meter by Composer.....	35
Meter by Composer Country of Origin.....	37
Meter by Librettist	38
Meter by Gender	40
Other Observations	40
5. DISCUSSION	42
Textual Accent in French and Italian Verse	42
Summary of Findings.....	45
6. OTHER APPLICATIONS.....	47
Meter Outside of Opera	47

Meter in “Venezianisches Gondellied”	49
Phrase Rhythm in “Venezianisches Gondellied”	53
7. CONCLUSION.....	60
A Summary of this Study.....	60
Considerations and Future Work	61
APPENDIX METER IN FRENCH AND ITALIAN OPERA, 1809–1859	63
BIBLIOGRAPHY.....	66

LIST OF FIGURES

Figure	Page
1. Isolated quarter notes	2
2. Combinations of accent.....	2
3. "Me-ter"	2
4. "Me-ter" with a barline	2
5. Meyerbeer, 'Je t'ai trompé, je fus coupable,' Robert le Diable, mm. 1–4.....	5
6. Plausibility of competing metrical models	5
7. Melodic grouping and displacement.....	6
8. Verdi, "Ma tu, superbo giovane," Oberto, mm. 98–102, conflicting phrase rhythms	8
9. Hugo Riemann's weak/strong setting of a formal period	10
10. Metric features of Rothstein's nationalistic metric types	11
11. Rossini, "La speranza più soave," mm. 9–11, score as marked in the corpus	16
12a. Rossini, "La speranza più soave," mm. 9–11, Franco-Italian meter.....	17
12b. Rossini, "La speranza più soave," doubled duration and tempo.....	17
12c. Rossini, "La speranza più soave," altered Franco-Italian Hypermeter.....	18
13. Minimum BPM requirement for a two-part metric group	20
14. Parameter Matrix	21
15. Decision tree for determining metric type (hypermeter)	22
16. Decision tree for determining metric type (meter)	23
17. Meyerbeer, "Je t'ai trompé, je fus coupable," Robert le Diable, mm. 7–11, marked score	24
18. Meyerbeer, "Je t'ai trompé, je fus coupable," Robert le Diable, mm. 7–11, labeling half-bar segments	25

19. Verdi, “Anch’io dischiuso un giorno”, Nabucco, mm. 9–14, marked score	26
20. Verdi, “Anch’io dischiuso un giorno”, Nabucco, mm. 9–14, placing the “X”	26
21. Verdi, “Anch’io dischiuso un giorno”, Nabucco, mm. 9–14, marking “A1” and placing “1”	27
22. Verdi, “Anch’io dischiuso un giorno”, Nabucco, mm. 9–14, labeling measures and marking “B2”	28
23. Metric type distribution in French and Italian arias, 1809–59	30
24. Use of metric types per decade, 1809–59	30
25a, 25b, and 25c. Metric type per year, 1809–59	32
26. Franco-Italian meter per decade, entire corpus	33
27. Franco-Italian Meter per decade, Primo ottocento removed	34
28. Franco-Italian Meter per decade, Verdi removed	34
29. Meter and language, 1809–59	36
30. Meter and language, 1809–59, Verdi removed	36
31. Meter by composer, 1809–59	37
32. Meter by composer country of origin, 1809–59	38
33. Meter by librettist, 1809–59	39
34. Metric type by librettist, 1809–59, Verdi removed	40
35. Italian verse designations and endings	43
36. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, formal sections	49
37. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, Franco-Italian meter	51
38. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, indeterminate hypermeter	52
39. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, German hypermeter?	54

40. Mendelssohn, “Venetian Gondolier’s Song,” mm. 4–21, conservative model of phrase rhythm for Phrase A (German) and A’ (Franco-Italian).....	55
41. Mendelssohn, “Venetian Gondolier’s Song,” mm. 4–21, adaptive model of phrase rhythm for Phrase A (German) and A’ (German)	56
42. Mendelssohn, “Venetian Gondolier’s Song,” mm. 4–21, adaptive model of phrase rhythm for Phrase A (Franco-Italian) and A’ (Franco-Italian).....	58
43. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, falling-fourths and phrase position.....	58

CHAPTER 1

INTRODUCTION

Biases in Accent

There is an implicit bias in the way Western listeners describe emphasis in music. Consider Figure 1. Here we have two note values that are removed from the context of any other musical features. If we subscribe to a binary perspective on accent, the way in which notes are emphasized, then there are only three viable ways in which these notes can be heard as they currently exist: strong/weak, weak/strong, and equally weighted.¹ See Figure 2.

When text is assigned to a rhythmic value, as in a vocal piece, the experience of accent becomes clearer. In Figure 3, the word “meter” is placed into the context of the two notes, where each syllable is assigned a rhythmic value. When speaking, one likely gives more emphasis to “me” rather than “-ter.” However, if a barline is added between the two notes (Figure 4), the accent pattern might switch to place more emphasis on the second syllable. Musicians, in this context, would think of the first syllable as an anacrusis to the next.

Both readings are equally valid in this contextually sparse situation, but note that it took the addition of a barline to encourage a weak/strong emphasis. This tendency speaks to the overarching bias that Western listeners have in hearing the first note of a two-note group as stronger than the second. It is ever-prevalent in historical and modern

¹ Without the context of another note, it is impossible to tell if the third option would be heard as weak/weak or strong/strong.

Figure 1. Isolated quarter notes



Figure 2. Combinations of accent

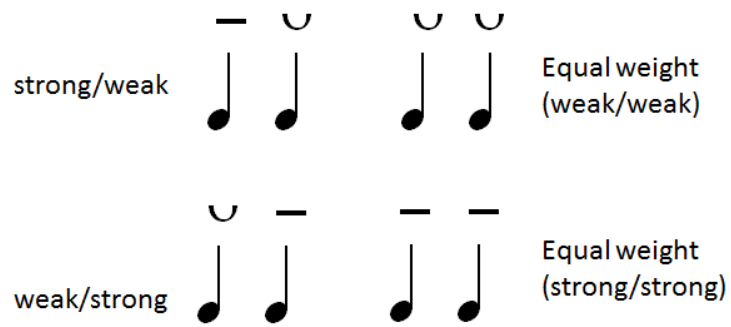


Figure 3. "Me-ter"

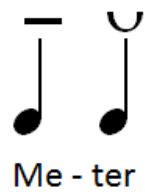
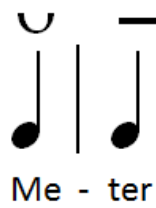


Figure 4. "Me-ter" with a barline



music theory, as well as performance practice, and influences the way we conceptualize and experience musical structures.

Biases in Theory and Analysis

To investigate how this bias manifests in analyses of larger spans of music and not just pairs of notes, the concept of meter needs to be clarified. Consider Joel Lester's definition from *The Rhythms of Tonal Music* (1986):

Most musicians agree that meter refers to the organization of beats or pulses into patterns containing an accented (or strong) beat followed by one or more unaccented (or weak) beats. Two separate components are thus necessary for the existence of a meter: a stream of beats or pulses, and an organization of those beats or pulses into accented and unaccented ones.

Note that while this description is generally agreeable and comprehensive, it states that weak beats are “followed by” strong beats, implying a strong/weak organization. A more accessible definition, offered here, makes no such distinction: *Meter is a regular stream of unaccented and accented pulses.*

The addition of the word “regular” to my definition draws on Lester's use of the word “organized” while also reflecting the language found in *A Generative Theory of Tonal Music (GTTM)* by Fred Lerdahl and Ray Jackendoff (1983)—a study which is often regarded as a cornerstone of modern rhythmic and metric analysis. The term “regular” refers specifically to the tendency to perceive meter as the result of equally-spaced pairs of events, which is implicit in their use of Metrical Well-Formedness Rules (MWFR) and Metrical Preference Rules (MPR) to describe musical structures. MPR 10 (Binary Regularity) addresses this tendency explicitly, stating “Prefer metrical structures in which at each level [of metric hierarchy] every other beat is strong.” This definition

further underscores the bias in theoretical writings toward a strong/weak model of metric structures, but it clarifies that pulses or beats can exist at different levels of meter. In this sense, we can expand on our previous definition to say that meter is generated by the perception of accents in music and can be experienced at different levels of metric hierarchy. Meter at levels of pulse at or above the notated measure will henceforth be referred to as *hypermeter*, while *hypermeasure* will refer to the level of the measure specifically.

Now that these basic features of meter have been established, consider Figure 5, the first four measures of Bertram's Act V aria from Meyerbeer's *Robert le Diable*. Here we can see that the vocal entrance, which is mirrored by the bass, does not begin on the first beat after the double bar.

The melody of this excerpt challenges Lerdahl and Jackendoff's conception of metric structures. At the quarter note level, the first beat is a rest. As such, the first note (C#3 on beat 2), should be weak under MPR 10 (Binary Regularity), but cannot be so in comparison to a beat of rest. That is, as listeners we would not hear the rest as somehow stronger than the note that follows. The discrepancy continues at the hypermeasure, where a musician would likely treat the first measure as an upbeat to the second. A weak/strong model of emphasis therefore might be more convincing for the beginning of this melody. Note that neither model is perfect. A weak/strong hearing is however more believable in more instances, as highlighted in Figure 6.² It is also important to note that this melody does not exist in a vacuum and conflicts with the strong/weak model presented by the non-bass accompaniment.

² In this instance, I choose to weigh structural importance in terms of quantity.

Figure 5. Meyerbeer, ‘Je t’ai trompé, je fus coupable,’ Robert le Diable, mm. 1–4.

Molto agitato

Bertram: Je tai trom - pé, je fus cou - pa - ble,

Figure 6. Plausibility of competing metrical models

Molto agitato

Bertram: Je tai trom - pé, je fus cou - pa - ble,

= more convincing

Music theorists have addressed similar discrepancies between melody, accompaniment, and meter through a variety of terminology. These include *out of phase*, *displacement dissonance*, *conflicting downbeats*, *shadow meter*, and *end-accented phrases*. The caveat to all of these terms is that they frame any disjunction in relation to a strong/weak model of meter.

Lerdahl and Jackendoff, for example, would characterize the melody in Figure 5 as out of phase because the grouping—the way pitches associate to form larger structures

Figure 7. Melodic grouping and displacement

The figure displays a musical score in bass clef with a key signature of two sharps (F# and C#) and a common time signature (C). The melody is written on a single staff, and the accompaniment is on a grand staff (treble and bass clefs). The lyrics are: "Bertram: Je tai trom - pé, je fus cou - pa - ble,". Above the melody, a bracket labeled "D+1 (♩=1)" indicates a displacement of one quarter note from the expected downbeat. Below the melody, a bracket labeled "Grouping (melody)" shows the melodic phrasing. To the left of the accompaniment, the text "Meter (accomp):" is followed by a rhythmic diagram consisting of a grid of vertical dots representing metric accents. The diagram shows a sequence of 16 dots, with the first dot on a weak position and the last dot on a strong position, illustrating the metric structure of the accompaniment.

like melodic fragments—and meter are not aligned. That is, the boundaries of the melody are not congruent with the strongest points of metric emphasis, indicated by the vertical dots in Figure 7. A similar approach by Harald Krebs (1999) would describe the melody as a metric dissonance that is displaced from the underlying metric structure—more specifically, as a *displacement dissonance*. Here, the metric displacement is $D+1$ ($q = 1$), where the displacement (D) from the original event occurs one ($+1$) quarter-note (q) from the expected downbeat. Again, see Figure 7. David Temperley (2003), on the other hand, would likely describe this phrase as *end-accented*. This is because the melody begins on a weak metric position (Figure 7), but ends on a metrically strong beat. Such an interpretation also gives more metric emphasis to the penultimate syllable, a stylistic feature typical of Italian-language poetic texts also observed in works by Meyerbeer (Huebner 1989).

Conflicting downbeats (Rothstein 1989) and shadow meter (Samarotto 1999) are terms used to describe the same type of metric conflict at a hypermetric level. Both relate to *phrase rhythm*, a theory introduced by Rothstein in *Phrase Rhythm in Tonal Music* (1989). Edward Klorman quite effectively defines this otherwise complex concept as “a category referring broadly to the pacing of musical phrases, including the relationship between hypermeter and phrase (grouping) structure and various techniques for manipulating a basic phrase structure through composed expansions and contractions” (2016, 32). In the case of Figure 8, the melody and accompaniment in this excerpt by Verdi demonstrate competing phrase rhythms.

Rothstein (1989) would argue that the first downbeat one hears in the accompaniment, marked by a “1,” is equally valid to the following downbeat represented in the melody. Conflicting downbeats are therefore created due to the non-congruent phrase rhythms. Similarly, Frank Samarotto (1999) would say that each part demonstrates a distinct strong/weak meter; however, since strong and weak pulses alternate (MPR 10), the strong hyperbeat entrance of the melody always competes with the otherwise weak hyperbeat in the accompaniment. In this sense, one meter shadows another and the listener experiences a sense of shadow meter.

In these theories, meter is framed by barlines and dictated by the binary alternation of strong and weak pulses. These features determine the strongest points of metric emphasis. Disjunctions between melody and accompaniment are therefore considered metric anomalies; hence the need for special terminology. Recent work has shown that, in some repertoires, such features are more normative, however.

Figure 8. Verdi, "Ma tu, superbo giovane," *Oberto*, mm. 98–102, conflicting phrase rhythms

An informal examination of the compositions included in these metric theories offers a clue as to why previous excerpts do not conform to their models of musical structures. Simply put, operas by Meyerbeer and Verdi exist outside of the scope of their studies. This is arguably true of most music theory studies, which tend to favor Western European repertoires primarily composed by Germanic composers. Further generalization also might suggest that vocal music is underrepresented as genre. In this sense, the relationship between non-German poetic texts, melody, and meter has been overshadowed by the analysis of instrumental music. William Rothstein (2008; 2011) has responded to this trend by challenging the canonical perspective of meter as it manifests in nineteenth-century French and Italian opera.

Addressing the Bias

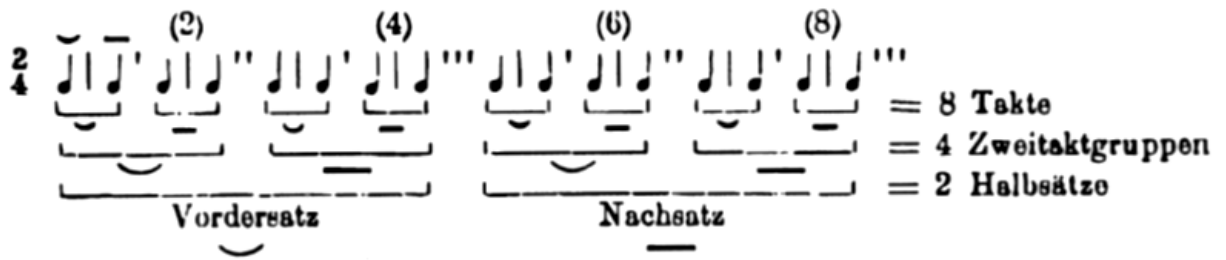
In an essay on nationalist styles in eighteenth- and early nineteenth-century music, Rothstein (2008) claims that barlines can misinform the true metric emphasis of phrase, similar to the phenomena described in Figure 4. He highlights instances in which

composers use “Italian barring” (mostly in vocal music) to create long upbeats leading to strong-beat cadences. The term “strong beat” in this case refers to cadential resolution on beats 1 or 3 in a four-beat measure or hypermeasure. This practice is said to run counter to the writings of most German composers and theorists of this time, who prefer “German barring” —phrases that begin with a short or no anacrusis and cadences that resolve on a weak beat (beats 2 or 4). The overwhelming presence of the German barring style in eighteenth century theory and practice generates what Rothstein calls a “German bias” in most previous metric discourse.

Simplifying these arguments suggests that the strong/weak model of meter has prevailed as the most legitimate conception of meter in tonal music both historically and currently. Writings by nineteenth-century music theorist Hugo Riemann (a German nonetheless!) are an exception. His theories on meter generally conceptualized music as an active, goal-oriented process which constantly anticipates the material to follow. Metaphorically, the incipit of a phrase is a question that is answered by the cadence or, more simply, by the end of the melodic gesture. This philosophy is reflected in his mature metric theory, where the first half of a two-part metric unit is always considered to be an anacrusis to the next on all levels of metric hierarchy (Caplin 2002). Riemann’s metric unit is thus analogous to the prosodic iamb (∪ –), in which the upbeat is unstressed and the following downbeat is stressed. For an example of his setting of a *period*, a formal structure of music featuring two cadences and (typically) of eight measures in length, see Figure 9.

Riemann’s conceptualization of meter has been largely regarded as a historical curiosity, but Rothstein (2011) argues it is aptly suited to address meter in French and

Figure 9. Hugo Riemann’s weak/strong setting of a formal period



Italian vocal music due to the metric function of the *accento commune* (“common accent”) or *accent tonique* (“tonic accent”). These prosodic events often fall on the penultimate syllable of the poetic line and are to receive a high level of metrical stress. Composers such as Mozart and Verdi often coordinated these textual end-accents with cadential resolution. When these events are barred in duple groups, this reinforces Riemann’s perception of meter as anticipatory, since the musical motion is directed toward the end-accent and cadence on the first beat the second bar.

Rothstein’s more recent study (2011) clarifies the previous Italian and German barring styles as a type of meter (Franco-Italian meter and German meter), while specifying how these meters are measured. Each type is defined by the span of a phrase’s anacrusis, which is measured in half-bar segments, and the location of the resolution of its cadence on either a strong or weak beat/hyperbeat. This information is summarized by Figure 10.

Franco-Italian meter consists of a long (half a bar or more) anacrusis leading toward a strong-beat cadence. German meter, in contrast, features a short (less than half a bar) or no anacrusis and a weak-beat cadence. Neutral barring exists as a synthesis of the other two, demonstrating both a short or no anacrusis and a strong beat cadence.

Currently there is no designation nor any evidence of a metrical type demonstrating a

Figure 10. Metric features of Rothstein’s nationalistic metric types

		Anacrusis	
		Short or none	Long
Cadence	Strong	Neutral	Franco-Italian
	Weak	German	undetermined

long anacrusis and weak-beat cadence. All of these types can be elevated to the hypermetric level by augmenting their duration to full-measure segments. These categories come from Rothstein’s observation of meter in Verdi’s midcentury operas (1847–53), an era otherwise known as the *primo ottocento* which is said to contain a high concentration of Franco-Italian meter.³

Nationalisms and Meter

In Rothstein’s work, the following points seem to be suggested: German meter constitutes most meter found in common practice music, Verdi is the primary user of Franco-Italian meter, and that certain languages are more apt to generate certain metric types. This study tests these assumptions to investigate how Verdi’s use of meter generalizes to his contemporaries, how an opera’s language correlates to its primary metric type, and in what situations might a composer use Franco-Italian meter if it is demonstrably less common.

To test these points, I use a corpus of French and Italian-language operatic excerpts from the first half of the nineteenth century. I present a method that classifies

³ In response, Rothstein reweights L&J’s Metrical Preference Rules to approach the metrical structures found within Verdi’s works.

phrases according to anacrusis length (i.e., the duration of a phrase before the first strong downbeat) and prosodic accent (i.e., the accents within the poetry or lyrics). This method shows where large-scale metric accents fall within a phrase, effectively categorizing each excerpt into the metric types. For each excerpt, compositional and historical features (e.g., premiere date, language, librettist, character gender, etc.) are tracked to determine whether preferences for certain metric types are more prevalent in certain contexts.

CHAPTER 2

THE CORPUS

French- and Italian-language Operas, 1809–1859

The operas included in this corpus are all French- and Italian-language operas that premiered in the first half of the nineteenth century. The era chosen begins with notable precursors to French Grand Opera, moves through this genre's zenith, includes the beginning of Verdi's career, and concludes with operas premiered shortly after the *primo ottocento*.⁴

The selected operas were chosen to create an equal distribution between the four parameters of language, chronology, composer, and librettist. Since one of the primary goals of this thesis is to determine the impact of language on metric emphasis, the corpus is equally balanced between French and Italian-language operas. This is true of the fifty-year span of the corpus, but also for each decade where the six operas in each ten-year span consist of three Italian and three French works. Verdi's *primo ottocento* (1847–53) are also included in the corpus due to their theoretical importance.⁵ This results in works from only six composers—Spontini, Rossini, Donizetti, Auber, Meyerbeer, and Verdi—and twenty-two librettists. Other organizations of composers are possible, of course, but the priorities of this study make the selected composers ideal for achieving equal distribution. This is due in part to the length of their compositional careers.

⁴ Writings by Justin London (2013) and Robert Gjerdingen (2014) guide the methodology and framework of my corpus, while meter-specific corpus studies such as those by Leigh Van Handel (2009) and John Paul Ito (2014) serve as models.

⁵ Not only do Verdi's midcentury operas serve as a departure point for the analysis, but they also act as a control group that can be easily removed from the data set to examine trends outside of their influence.

Adherence to these parameters resulted in a total of thirty French and Italian operas for analysis, in addition to the five *primo ottocento* operas. From these works a total of 208 excerpts were analyzed. The complete list of the operas selected can be found in the Appendix. Note that all solo pieces (arias, cabalettas, cavatinas, romanzas, etc.) from every opera are included. Each piece in the corpus is represented by its score in .pdf format, which is then marked in several ways, as described in the following section.

CHAPTER 3

METHODOLOGY AND ANALYSIS

This section details the methodology used for determining the metric type of an excerpt. Analysts progress through a series of prompts whose questions are designed to qualify the characteristics of each metric type as they navigate through the chart. This kind of sequence is also known as a *decision tree* and will be referred to as such throughout the thesis. Before the components of the decision trees are discussed, however, some aspects of textual accent, notation, and perception should be clarified in regard to the excerpts and methodology.

Marked Scores

The position of the textual end-accent is marked using a bolded arrow in all excerpts by consulting the libretto whenever possible. Within the libretto, the accent is most typically located at the penultimate syllable before a break in the poetic line. In cases where the text could not be referenced, certain cues in the score were used to determine its location. Here, the end-accent is most easily found by looking for punctuation in the text. This is true in Figure 11, where the end-accent falls on the penultimate syllable before the comma. Other indicators include an exclamation point or semicolon. Figure 11 also shows how the syllable often coincides with a melodic break and demonstrates a distinct rhythmic profile due to the segmentation of the final syllables.⁶

⁶ Some verse endings and their corresponding rhythms include: ♪ ♪ – piano, ♪ ♪ ♪ – sdrucchiolo, ♪ – tronco. See Part V for a more comprehensive look at Italian accent structures.

Figure 11. Rossini, “La speranza più soave,” mm. 9–11, score as marked in the corpus

Andantino ♩ = 66

La spe - ran - za più so - a - ve, già - quest!_

Textual end-accent, marked with arrow

Comma marks end of poetic line

Perception of Meter and Hypermeter

The following methodology can determine an excerpt’s metric type regardless of its time signature, how it is barred, or at what metric level the type manifests. This is due in part to the hierarchy between meter and hypermeter and how they interact with the characteristics of each metric type. Consider the following examples.

One of the most efficient ways to identify Franco-Italian meter is to see if the beginning of the melody starts after the downbeat. If the beginning of the measure contains a rest, but the melodic content still fills half the measure or more, then the excerpt is likely set in Franco-Italian meter (Figure 12a). As you can see, Figure 12a does have a long anacrusis and a strong-beat cadence. However, what if the notation of this excerpt were changed? In the case of Figure 12b, both the note values and tempo are doubled.

Perceptually there would be no difference, but the notation change would force us to assign a different metric type if we only rely on the features of the melody. Since this is still Franco-Italian meter, we must broaden our scope. We can no longer measure the

Figure 12a. Rossini, “La speranza più soave,” mm. 9–11, Franco-Italian meter

Counting (half-bars): 1 2 3 4 Strong-beat cadence Textual end-accent

Andantino ♩ = 66

Starts with a rest

La spe - ran - za più so - a - ve, già - quest' -

Figure 12b. Rossini, “La speranza più soave,” doubled duration and tempo

Counting: 1 2 3 4

Andantino ♩ = 66

No anacrusis

Weak-beat cadence?

La spe - ran - za più so - a - ve,

length of an anacrusis in half-bar segments, but should do so in full bars, as above. Critically, the “rest” before an excerpt must not be discounted (Figure 12c), even if its duration is a full measure or more. This follows Rothstein’s (2011) methodology in determining *Franco-Italian hypermeter*, in which he assigns a “1” in the counting sequence to the one-bar introduction or “vamp” that Verdi often employs before the vocal entrance.

Figure 12c. Rossini, “La speranza più soave,” altered Franco-Italian Hypermeter

Long anacrusis

Counting: 1 2 3 4 1

Strong-beat cadence

Andantino $\text{♩} = 66$

La spe - ran - za più so - a - ve,

My methodology accounts for discrepancies between notation and metric level by starting the analysis sequence at the pulse level of the notated measure (hypermeasure).⁷ Though this may seem counterintuitive, it allows the analyst to check for a one-measure introduction before preemptively qualifying an excerpt as having a short or no anacrusis. An excerpt demonstrating a vocal entrance that does not fall on the downbeat, but fills exactly or more than half of its containing measure (such as Figure 12a), is quickly rerouted to another sequence that determines type on a lower level, i.e. one that measures beats in half-bar segments.⁸

⁷ Richard Cohn (2016) refers to this as a “downbeat pulse.”

⁸ Cohn (2016) uses metric sets to avoid time-signature discrepancies and show metric equivalence. This methodology can be used to prove Figures 12a and 12c belong to the same meter. Two measures of 6/8 are notated in a set as $\langle 2\ 2\ 3\ 2 \rangle$, and is equivalent to four measures of 3/4, $\langle 2\ 2\ 3\ 2 \rangle$.

Perception of Duration and Tempo

In regard to duration and tempo, there are limitations to a person's ability to perceive a pulse as such. To explain, music theorists have found that the threshold to perceive a metrical span as a group is approximately 10 seconds (London 2012). This span is typically more than sufficient, since we are only concerned with the perception of strong and weak pulses as part of a two-part group. Some excerpts in the corpus do exceed this duration, however, and require a slight change of approach. Any excerpts falling under the tempo threshold detailed in Figure 13 are to be analyzed in half-bar segments so that the 10 second durational requirement is met.

As Rothstein's discourse serves as the theoretical underpinning of most of this thesis, it is only fair that we also consider his thoughts on perception. Per his comments in "Metrical Theory," he believes that the durational threshold for grouping is somewhat inconsequential for the trained listener.

Many theorists have posited ca. 40 bpm as the slowest that can be apprehended as a salient pulse stream; I disagree. The early twentieth-century theorist Theodor Wiehmayer regarded 40 bpm as the normal lower extreme, but he maintained that this speed can be lowered to at least 20 bpm in some circumstances. (2011)

My method for determining metrical type, however, has been created with accessibility in mind; that is, it should be fairly intuitive for anyone with basic musical skills to navigate the analytical sequence found in the next section. It is therefore difficult for me to adapt Rothstein's perspective, as I do not believe a casual (but still musically trained!) listener typically attunes to groupings at such a large durational span.⁹

⁹ Further challenges in determining tempo are posed by faded, illegible, or inconsistent metronome markings, making documentation with any consistency a fairly difficult endeavor. Some excerpts do not have metronome marks at all but instead describe pace or style. In these instances, the excerpt is assumed

Figure 13. Minimum BPM requirement for a two-part metric group

Time signature	Beats per minute
C	q = 48
2 4	q = 24
3 4	q = 36, h. = 12
12 8	e = 144, q. = 48
6 8	e = 72, q. = 24
3 8	e = 36, q. = 12

Decision Trees

Two separate decision trees have been created to avoid the subjectivity that often plagues the use of MPRs and other forms of metric analysis.¹⁰ It is my hope that anyone who possesses a basic understanding of musical components can use this tool to determine metric type of a phrase. All excerpts in the corpus were analyzed using this method.

Recall that the metric types are qualified by the state of two features — anacrusis length and cadence position. I group these features into two distinct Sequences. Sequence A qualifies the length of the anacrusis as either long or short, while Sequence B qualifies the position of the cadence as strong or weak. Each chart in Figures 12 and 13 begins with Sequence A, then moves to Sequence B. Using basic musical observations, the analyst will navigate the sequences to arrive at a single parameter for each (A1 or A2; B1 or B2) that represents the state of the metric features (Figure 14). Once the parameter is

to meet the 10 second requirements unless the text indicates a remarkably slow tempo, such as *Larghissimo*, *Grave*, or *Lento*.

¹⁰ David Temperley (2001) relied on preference rules to describe musical structures, but later no longer advocates for their use in *Music and Probability* (2007), stating: “I was also troubled by the seemingly ad hoc and arbitrary nature of the preference rule-approach. One could develop a model by adding rules and tweaking their parameters in a trial-and-error fashion, but there didn’t seem to be any principled basis for making these decisions.” (p. 12) While Rothstein (2011) clearly had a principled basis for the Verdian MPRs, I do agree with Temperley in that preference rules can be used arbitrarily. Reducing Rothstein’s metric types into quantifiable parameters allows the following sequence to be the arbiter in determining what type manifests within an excerpt, thus sidestepping the issue entirely.

selected it is to be marked at the top of the page. The combination of the two parameters from each sequence then determines the metric type, as demonstrated in this matrix:

Figure 14. Parameter Matrix

Parameters	Metrical Characteristics	Metric Type
A1 B1	Short or no anacrusis Strong-beat cadence	Neutral barring
A1 B2	Short or no anacrusis Weak-beat cadence	German meter
A2 B1	Long anacrusis Strong-beat cadence	Franco-Italian meter
A2 B1	Long anacrusis Weak-beat cadence	Undefined

An analyst should begin with the sequence chart “Determining Metric Type – Hypermeter” (Figure 15) unless the tempo falls under the BPM requirements specified above. If the excerpt happens to be set metrically, i.e. in half-bar segments, then the hypermeter chart will prompt the use of the “Determining Metric Type – Meter” chart (Figure 16). This rerouting ensures that correct length of anacrusis is determined and orients the placement of the *accento comune* or *accent tonique* on a strong or weak beat based on half-bar segments.

Figure 15. Decision tree for determining metric type (hypermeter)

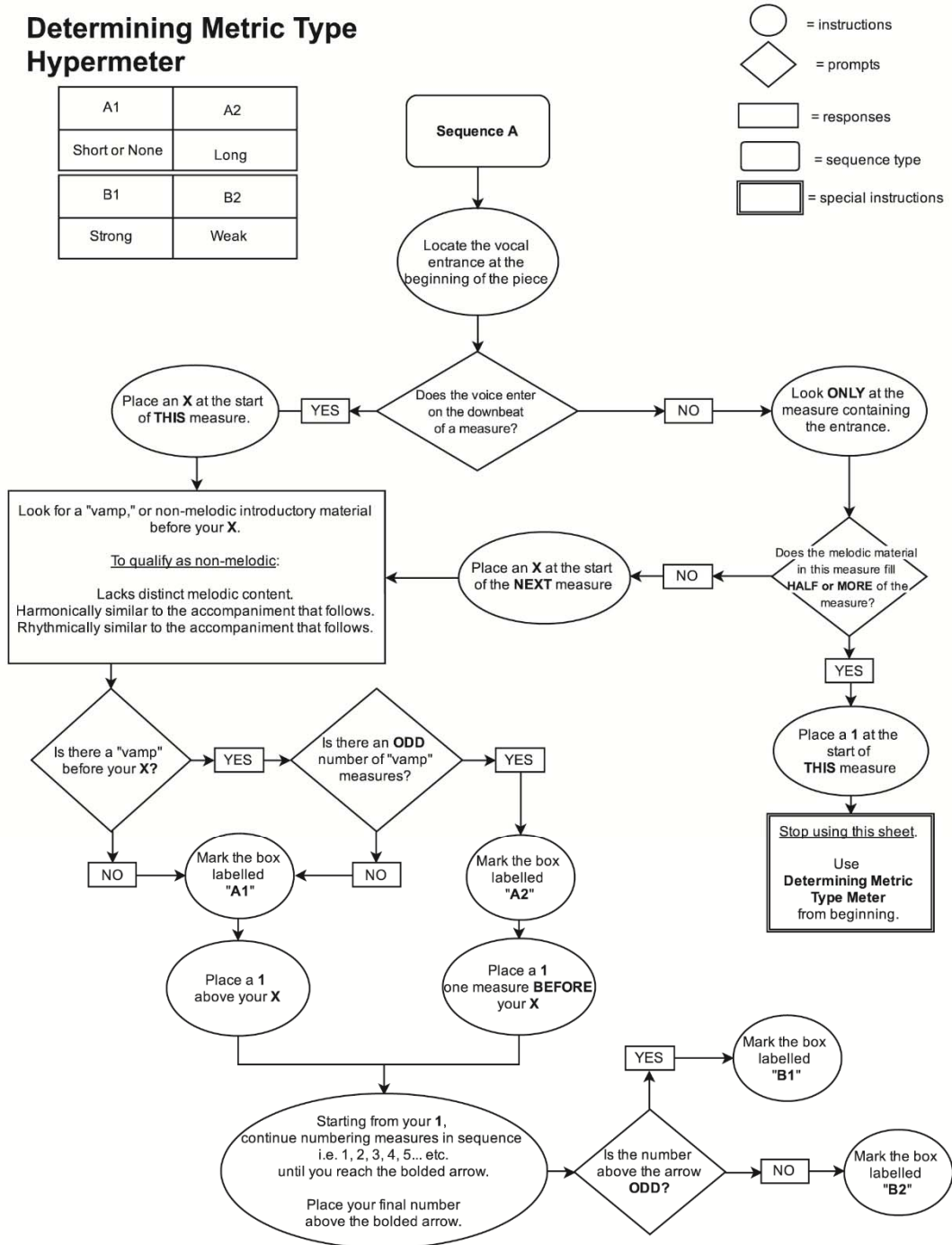
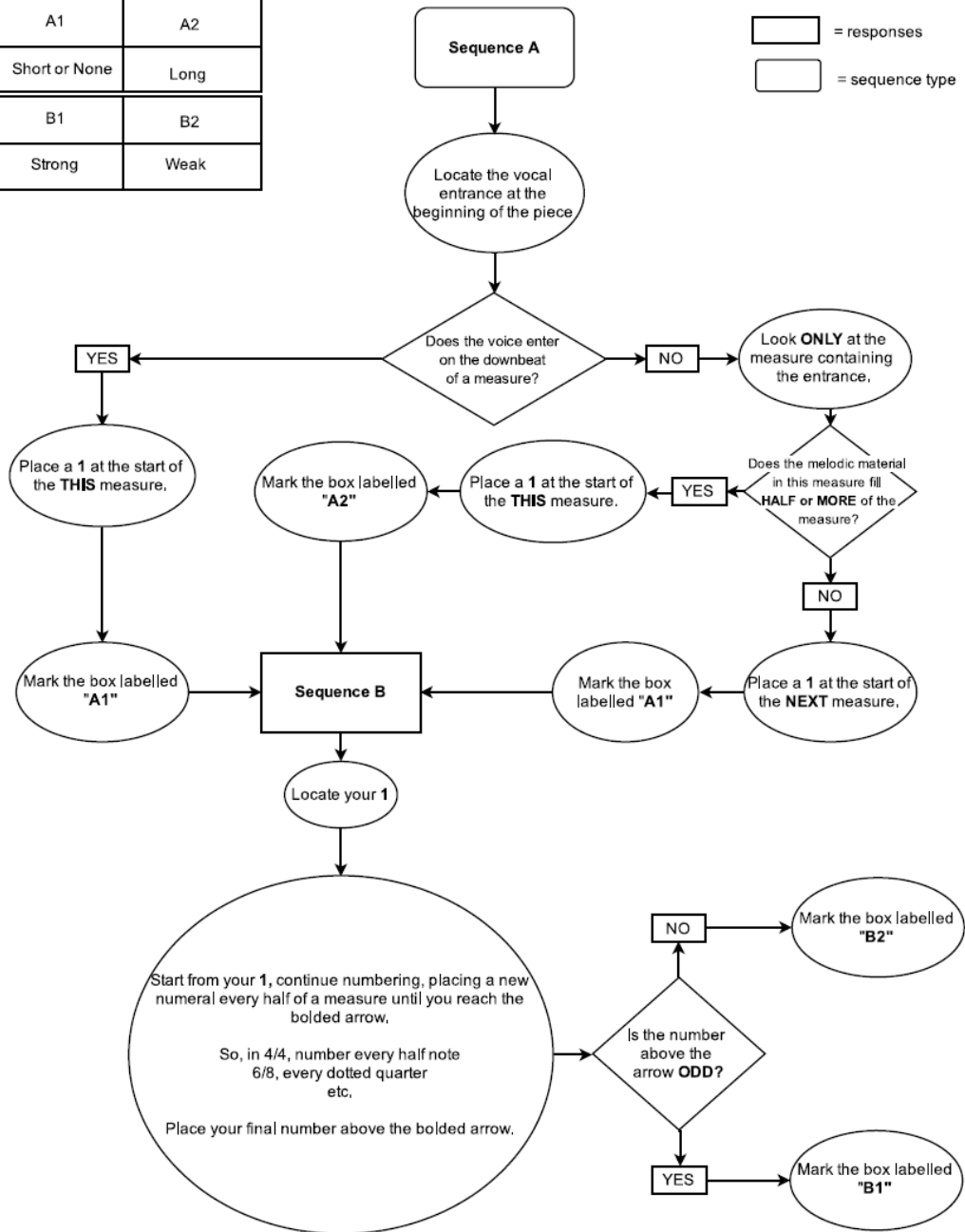
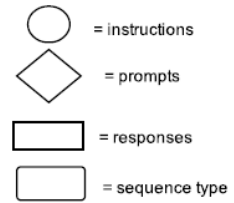


Figure 16. Decision tree for determining metric type (meter)

Determining Metric Type Meter

A1	A2
Short or None	Long
B1	B2
Strong	Weak



Sample Analysis – Franco-Italian Meter

Consider the following excerpt from Bertram’s Act V aria in Meyerbeer’s *Robert le Diable* (Figure 17). Note that the textual end-accent has been marked with a bolded arrow. The six-measure introduction to this excerpt is not shown, as m. 7 marks the first entrance of the voice and our metric concerns involve textual accent. (Figures for this section are integrated into the text to streamline the marking procedure).

Figure 17. Meyerbeer, “Je t’ai trompé, je fus coupable,” *Robert le Diable*, mm. 7–11, marked score

The image shows a musical score for the aria "Je t'ai trompé, je fus coupable" from Meyerbeer's *Robert le Diable*, measures 7-11. The score is in 2/4 time and features a vocal line and piano accompaniment. The vocal line begins with the lyrics "Je t'ai trompé, je fus coupable, hé-las! pour". A bolded arrow points to the end of the phrase "coupable". The piano accompaniment includes dynamics like *p*, *ff*, and *e staccato*.

Starting from the first prompt of the decision tree, we can observe that entrance of the voice does not begin on the first beat of the measure, so we should choose “no” and follow the tree to the right. The next prompt instructs us to look only at the measure containing the vocal entrance, then asks if the melodic material in this measure fills more than half, less than half, or exactly half of the measure. As we can see, the melody occupies 3 of the 4 quarter pulses and is therefore more than half. Continuing the sequence, we are now prompted to place a “1” over the first measure and switch to the “Determining Metric Type – Meter” decision tree. To summarize our progression so far:

Does the voice enter on the first beat of its containing measure? → No.

How much of the measure does the entrance fill? → More than half.

Place a “1” over the first measure.

Use “Determining Metric Type – Meter”

In switching to the meter decision tree, we see that the Sequence A is similar to the other sheet. As such, we can quickly move through the first few prompts based upon our previous answers.¹¹ The next relevant prompt directs us to mark A2 in the box at the top of the page, which denotes that the excerpt has a long anacrusis. Now we can move on to Sequence B.

The first instruction of the Sequence B is to locate the “1” we placed over the first measure. From there, we are to continue numbering in half-measures and place our final number over the bolded arrow. If performed correctly, the excerpt should look like this:

Figure 18. Meyerbeer, “Je t’ai trompé, je fus coupable,” Robert le Diable, mm. 7–11, labeling half-bar segments

The image shows a musical score for the vocal line and piano accompaniment. The vocal line is in bass clef with a key signature of one sharp (F#) and a common time signature. The lyrics are: "Je t'ai trompé, je fus coupable, hélas! pour". Above the vocal line, the numbers 1, 2, 3, 4, and 5 are placed over the first five half-measures. A bolded black arrow points down to the end of the fifth half-measure. The piano part is in treble and bass clefs with a key signature of one sharp and a common time signature. It includes dynamic markings such as *p*, *ff*, and *p*, and the instruction "e staccato.".

The next prompt asks if the number above the arrow is either even or odd. Since 5 is odd, we are instructed to mark the box at the top of the page containing B1. Now that the sequence is complete, two boxes have been marked: A2 and B1. According to the matrix, this means that the metric type for this excerpt is Franco-Italian meter, due to its long anacrusis (A2) and strong-beat cadence (B1).

¹¹ Repeating the prompts allows for analysts to double-check their responses and ensures that the A sequence is followed when analyzing a piece that exceeds 10 seconds.

Sample Analysis – German Hypermeter

Where the previous excerpt directed us from the hypermeter to the meter decision tree, the following aria “Anch’io dischiuso un giorno” from Verdi’s *Nabucco* will allow us to use the hypermeter tree exclusively. Again, note the arrow marking the textual end-accent.

Figure 19. Verdi, “Anch’io dischiuso un giorno”, *Nabucco*, mm. 9–14, marked score

The image shows a musical score for the aria "Anch'io dischiuso un giorno" from Verdi's *Nabucco*, measures 9-14. The score is in G major and 4/4 time. The vocal line is marked "Cantabile" and the piano accompaniment is marked "allarg.". The lyrics are: "Anch'i - o dischiuso un gior - no ebbi al.la.gioia il co - re; tut - to parlar mi in - tor - - no u -". A downward arrow points to the end of the vocal phrase in measure 14.

Starting from the Sequence A of the hypermeter tree, we can observe that the vocal entrance does not enter on the first downbeat of the measure. Furthermore, the entrance occupies less than half of its containing bar, so we are instructed to place an “X” at the start of the following measure:

Figure 20. Verdi, “Anch’io dischiuso un giorno”, *Nabucco*, mm. 9–14, placing the “X”

The image shows the same musical score as Figure 19, but with an "X" placed above the first measure of the vocal line. The lyrics and other markings are the same as in Figure 19. A downward arrow points to the end of the vocal phrase in measure 14.

The next prompt concerns any introduction the excerpt might have. Conveniently, a fermata pauses any previous metric activity, allowing us to choose “no” in response. However, let us pretend for a moment that the fermata does not exist. The prompt asks if

there is any non-melodic introductory material before the vocal entrance, otherwise commonly referred to as a “vamp.” At the bottom of the prompt, three criteria are listed to qualify an introduction as non-melodic:

The introductory material lacks distinct melodic content.

The introductory material is harmonically similar to the accompaniment that follows.

The introductory material is rhythmically similar to the accompaniment that follows.

Even if the fermata was not present, we could disqualify the first measure of the excerpt from the counting sequence because it contains a distinct melody in the right hand of the piano reduction. Since the excerpt does not have a non-melodic introduction, we can select “no” in response, mark the box A1 at the top of the page, and place a “1” above our previously marked “X”.

Figure 21. Verdi, “Anch’io dischiuso un giorno”, Nabucco, mm. 9–14, marking “A1” and placing “1”

A1	A2
Short or None	Long
B1	B2
Strong	Weak

The musical score shows the vocal line and piano accompaniment. The vocal line starts with a fermata over the first measure. Above the first measure, there is a circled 'A1' and an 'X' with a '1' above it. A bolded arrow points to the fourth measure of the vocal line. The piano accompaniment is marked 'allarg.' and features a complex rhythmic pattern.

Now at Sequence B, we are instructed to start numbering full measures until reaching the bolded arrow. This time the accent arrives on the fourth number, an even integer, which

means that B2 should be marked. The resulting metric type for this excerpt is thus German meter, evidenced by the short anacrusis (A1) and weak-beat cadence (B2).

Figure 22. Verdi, “Anch’io dischiuso un giorno”, Nabucco, mm. 9–14, labeling measures and marking “B2”

AB1. *Cantabile*

1 2 3 4

X

Anch'io dischiuso un giorno ebbi alla gioia il core; tutto parlarmi intorno u-

allarg.

A1	A2
Short or None	Long
B1	B2
Strong	Weak

CHAPTER 4

RESULTS

A total of 208 excerpts for solo voice and accompaniment were extracted and analyzed via the methodology defined in Part III. Results show that 81 excerpts are set in Franco-Italian meter, forming 39% of the data pool. Meanwhile, 108 are set in German meter (52%) and 19 are neutrally barred (9%). Figure 23 summarizes the distribution of type. A discussion of the implications of my findings can be found in Part V.

Other information was also collected in correspondence to metric type. These include the decade in which an opera was composed, its set language, composer, composer country of origin, librettist, and the character's gender. Chi-square and probability tests were conducted using a contingency table to determine the statistical relevance of these correspondences. Of these, all but character gender proved to be statistically significant in relation to the three types of nationalistic meter.

Meter Over Time

Figure 24 shows general trends in meter by highlighting use of each metric type per decade. Here, German meter and Franco-Italian meter demonstrate an inverse relationship: the former decreases in use over time (68% to 52%), while use of the latter rises sharply (12% to 48%). Neutral barring also decreases over time (22% to 6%), but to a lesser degree than German meter. One can therefore expect to hear more Franco-Italian meter as they move chronologically through the corpus, at the expense of German meter. Furthermore, neutrally barred phrases are more common than Franco-Italian meter at the

Figure 23. Metric type distribution in French and Italian arias, 1809–59

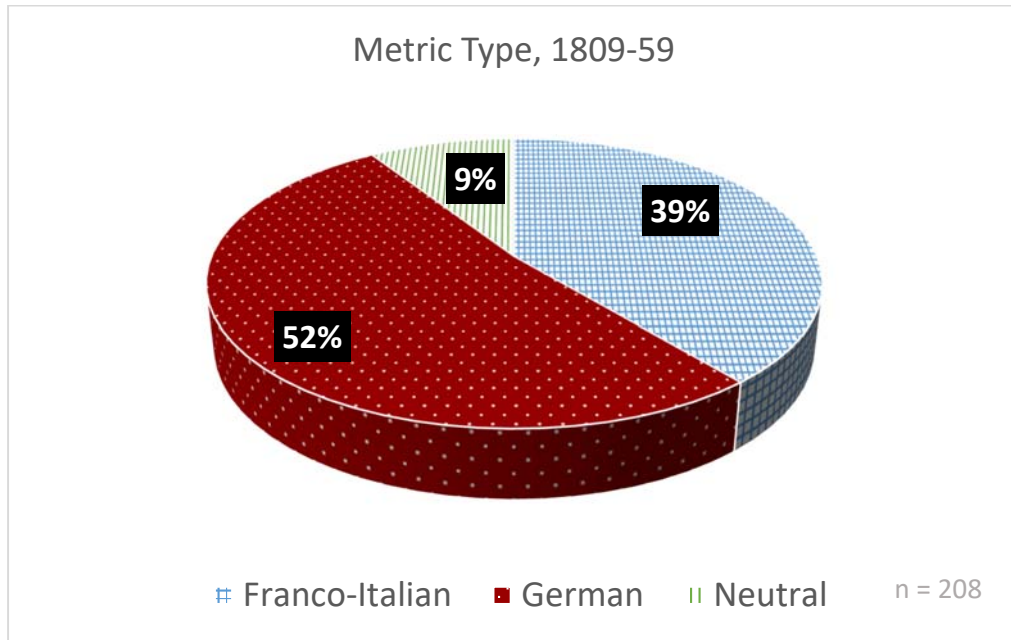
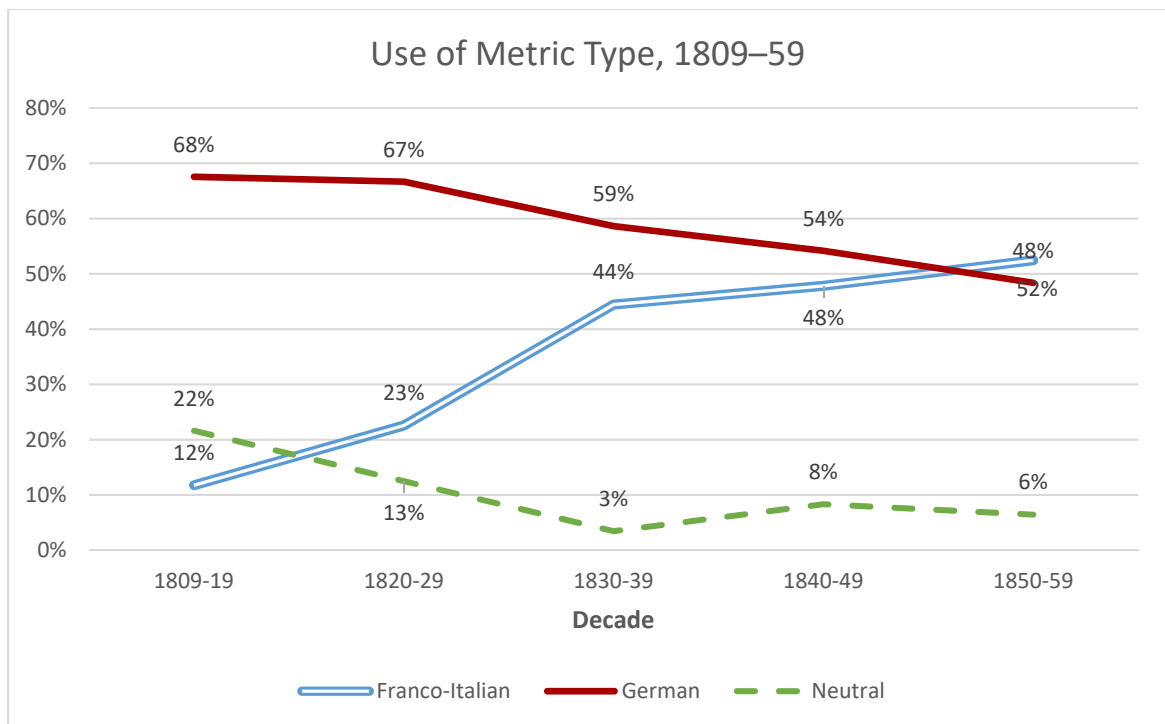


Figure 24. Use of metric types per decade, 1809–59



beginning of the century, but decrease to insignificant levels as time progresses. (χ^2 : 52.9, $p < 0.001$).

One caveat to the above is that it reduces or concentrates the results into a decade. The following figures (25a, 25b, 25c), however, show that the trends illustrated by Figure 24 are maintained when the data is distributed to include all operas at all time points. As you can see, the trend lines still show that the use of German meter and neutral barring decreases over time, while use of Franco-Italian meter continues to rise.

A general sense of the use of these types from 1809–59 is offered here, but a more detailed empirical examination is required to determine the causes behind these metric trends. Since German meter and Franco-Italian meter are shown to be inversely related and German meter is the more common type overall, the following discussion primarily focuses on changes in the use of Franco-Italian meter as a unique or “marked” metric phenomenon.

Franco-Italian Meter over Time

Composer use of the Franco-Italian metric type is marked by a high positive correlation over time. At the start of the nineteenth century, only 12% of solo pieces are set in Franco-Italian meter, but by the end of the midcentury this figure rises to 52%. The following scatter plot in Figure 26 highlights these trends.

The most notable increase in the use of Franco-Italian meter occurs between decades 2 and 3 (+21%). This increase coincides with the start of Verdi’s compositional career. Moreover, the span from 1840–1859 includes all operas from Verdi’s *primo ottocento* (1847–53), a period in which Rothstein believes the Franco-Italian metric type is highly concentrated. This assumption can be incorporated into a post-hoc hypothesis

Figures 25a, 25b, and 25c. Metric type per year, 1809–59

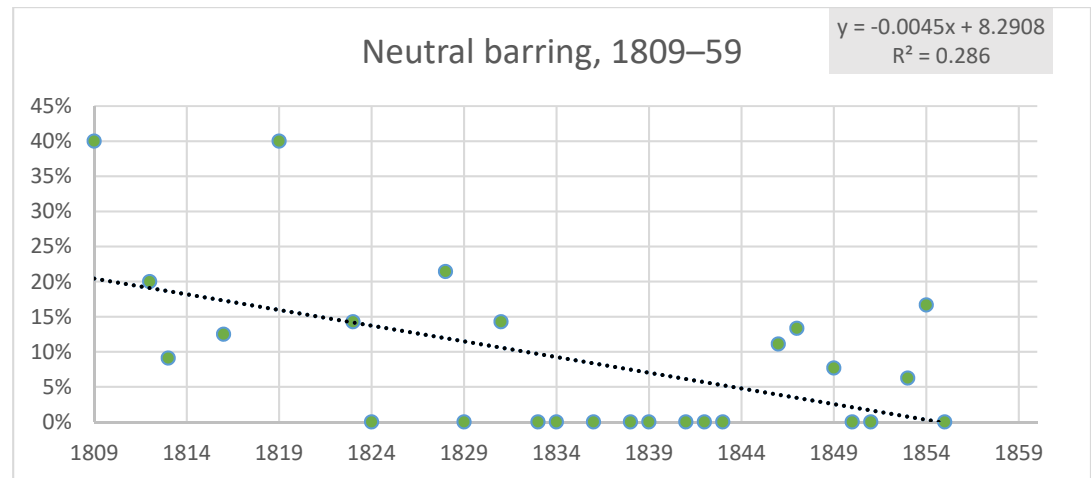
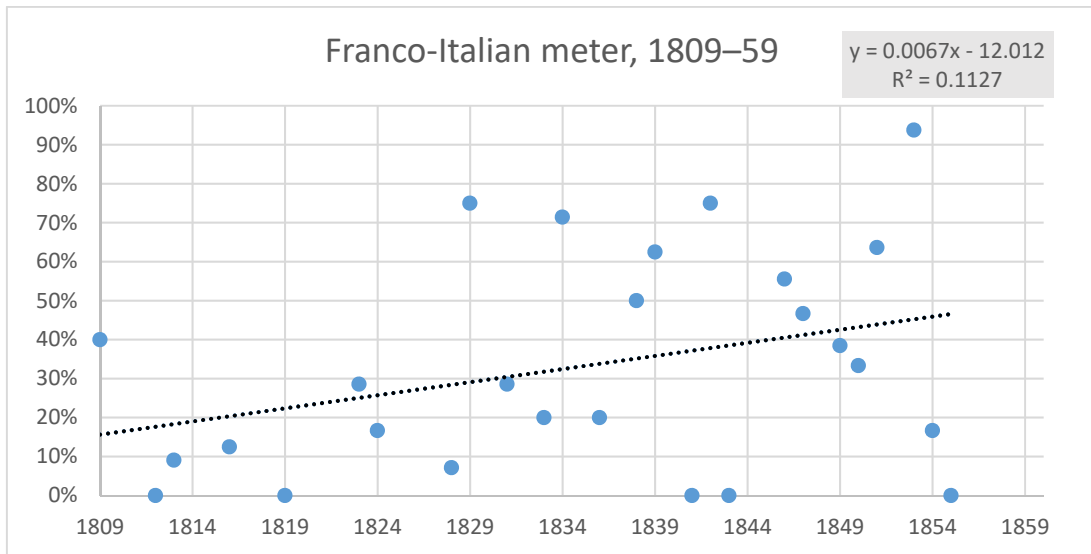
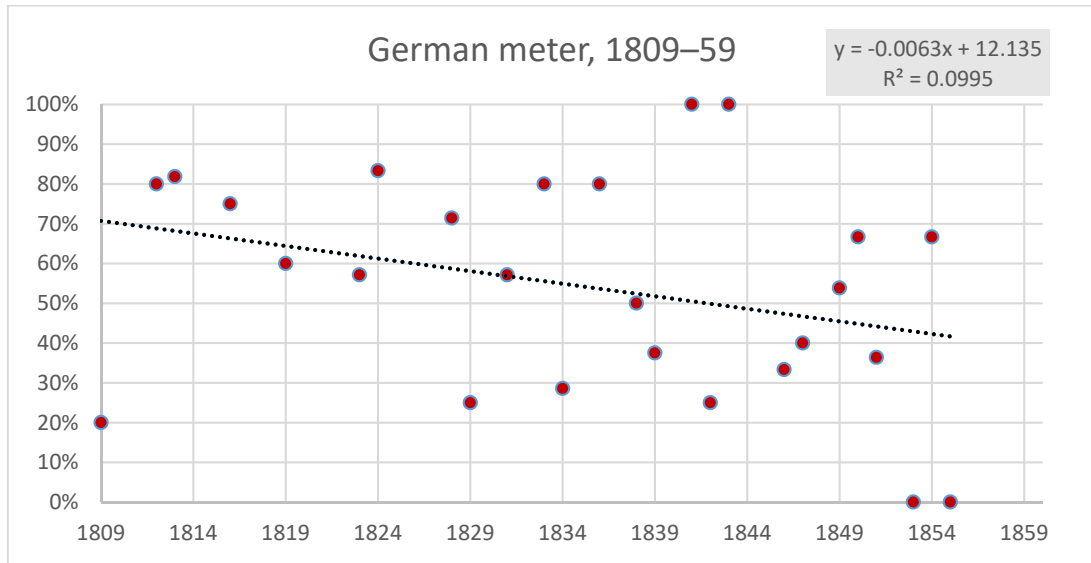
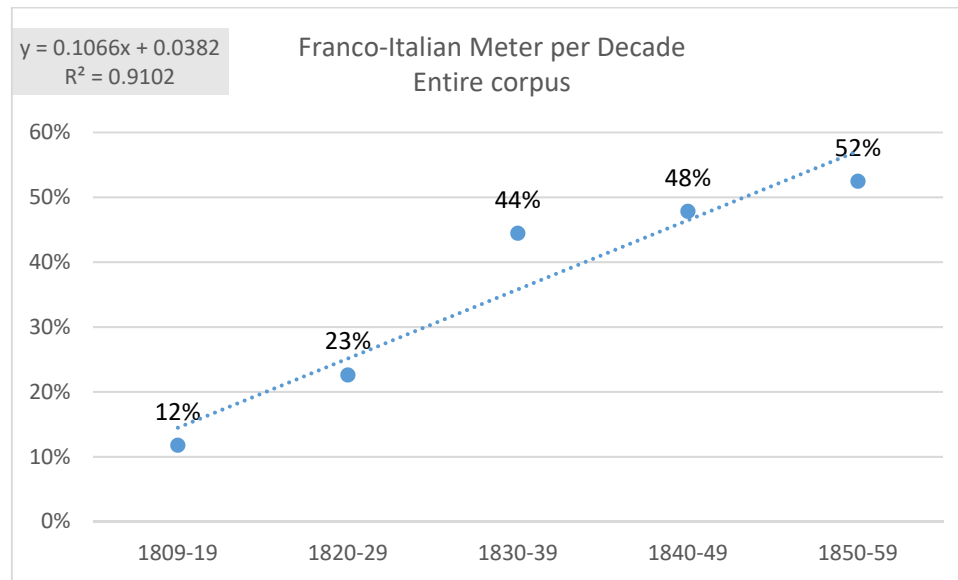


Figure 26. Franco-Italian meter per decade, entire corpus



which states: If Verdi's *primo ottocento* is concentrated in Franco-Italian meter, then its removal will result in a decrease of this meter from 1840 to 1859.

To test Rothstein's assumption, Figure 27 shows the removal of the *primo ottocento* from the data set to determine its influence on the corpus. Here, we see that the positive correlation between decade and metric type diminishes once the period is excised. Thus, we can confirm that the *primo ottocento* is responsible for increased concentration in Franco-Italian meter during this period.

Of note in Figure 27 is the large spike in Franco-Italian meter that occurs midway through the timespan. This jump from 15% in 1820–29 to 33% in 1830–39 marks Verdi's entrance into the corpus, coinciding with the opera *Oberto* (1839). The previous assumption can be taken further to account for Verdi's influence outside his midcentury operas: if Verdi's works outside of the *primo ottocento* are concentrated in Franco-Italian meter, then their removal will result in a decrease of Franco-Italian meter from 1839 to 1859. The following, Figure 28, shows this to be true once Verdi is taken out of the

Figure 27. Franco-Italian Meter per decade, Primo ottocento removed

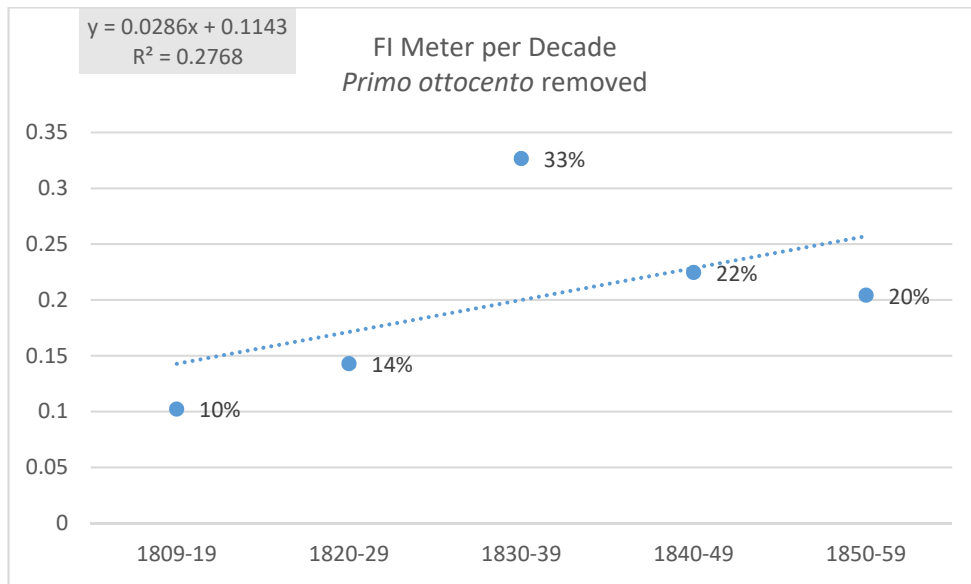
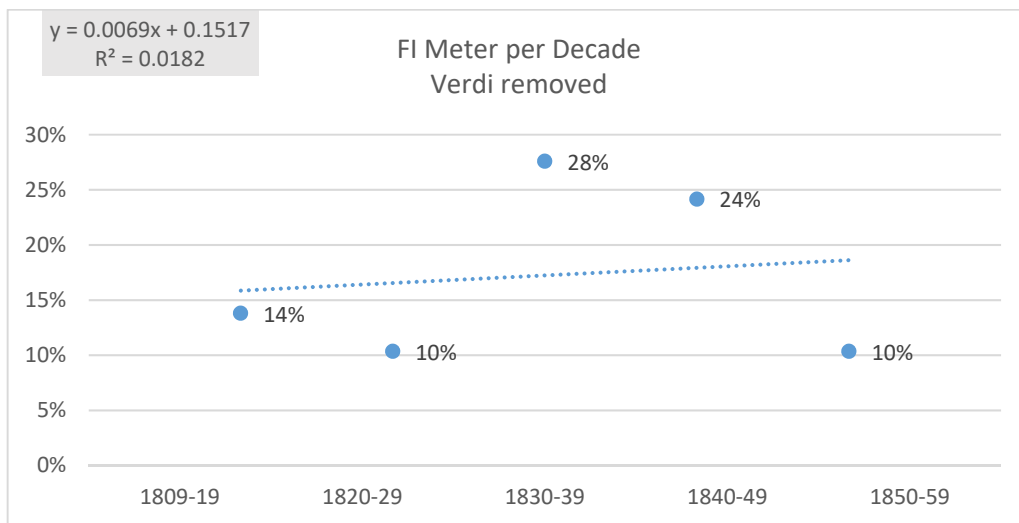


Figure 28. Franco-Italian Meter per decade, Verdi removed



corpus content, confirming the second hypothesis—Verdi’s operatic output is primarily responsible the increase in use of Franco-Italian meter in the corpus during the first half of the 19th century.¹²

¹² In excluding Verdi entirely, the number of excerpts drops to 118 from 150 when removing the *primo ottocento*. Likewise, the original corpus consists of 196 excerpts, meaning that of the seven composers represented, Verdi’s operas feature the most solo pieces per opera.

Meter and Language

In tracking language as it pertains to metric type, results show that Italian-language operas are slightly more likely to feature Franco-Italian meter in arias (Franco-Italian, 52%; German, 41%; Neutral, 7%). Of operas in French, arias are overwhelmingly more likely to be in German meter (Franco-Italian, 15%; German, 71%; Neutral, 14%). Figure 29 summarizes these results (χ^2 : 26.0, $p < 0.001$).

Since Verdi's presence has been proven to increase the concentration of Franco-Italian meter, it is important to distinguish the correlation between language and meter outside of his influence. As before, Figure 30 excludes Verdi from the corpus and, as one might expect, we see that the distribution of meter in the Italian works shifts dramatically. The general trends outlined in Figure 29 are still maintained, but the discrepancies between metric types as they correspond to the opera's language are lessened (χ^2 : 2.44, p : 0.295).

Meter by Composer

Figure 31 demonstrates the correlation between composer and their use of each metric type (χ^2 : 240, $p < 0.001$). Of those composers, Spontini's output consists of 15 excerpts or less, meaning those operas featured less solo pieces per opera. Any speculations on this composer's type usage are therefore somewhat unreliable. Because Donizetti, Auber, Meyerbeer, Rossini, and Verdi are better represented within the corpus, the graph offers a more accurate perspective on their compositional trends. Note that it is more likely one will encounter a phrase in German meter when examining works by Rossini, Auber, and Meyerbeer circa 1809–59. However, Verdi's *primo ottocento* is

Figure 29. Meter and language, 1809–59

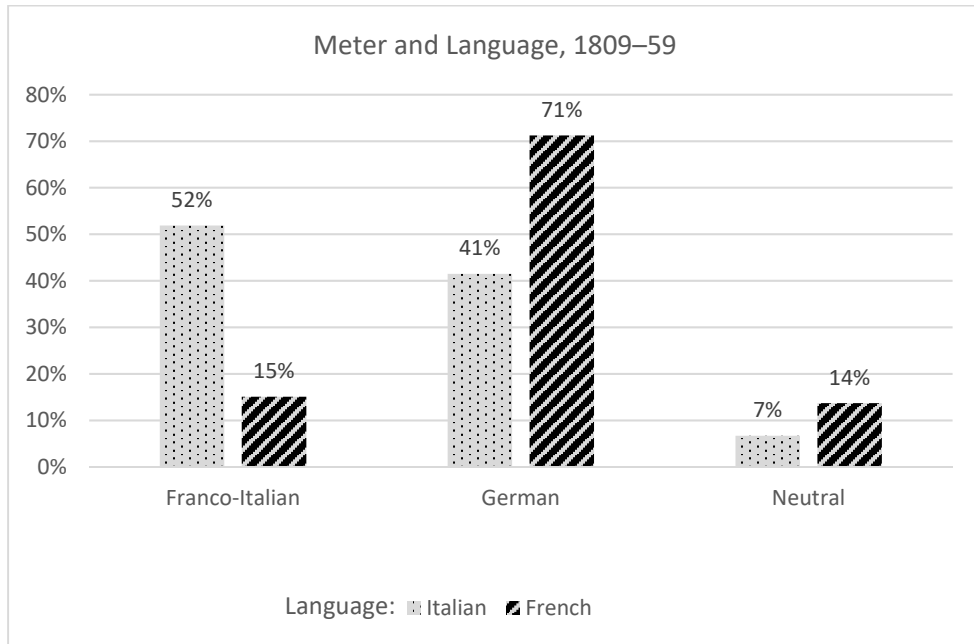


Figure 30. Meter and language, 1809–59, Verdi removed

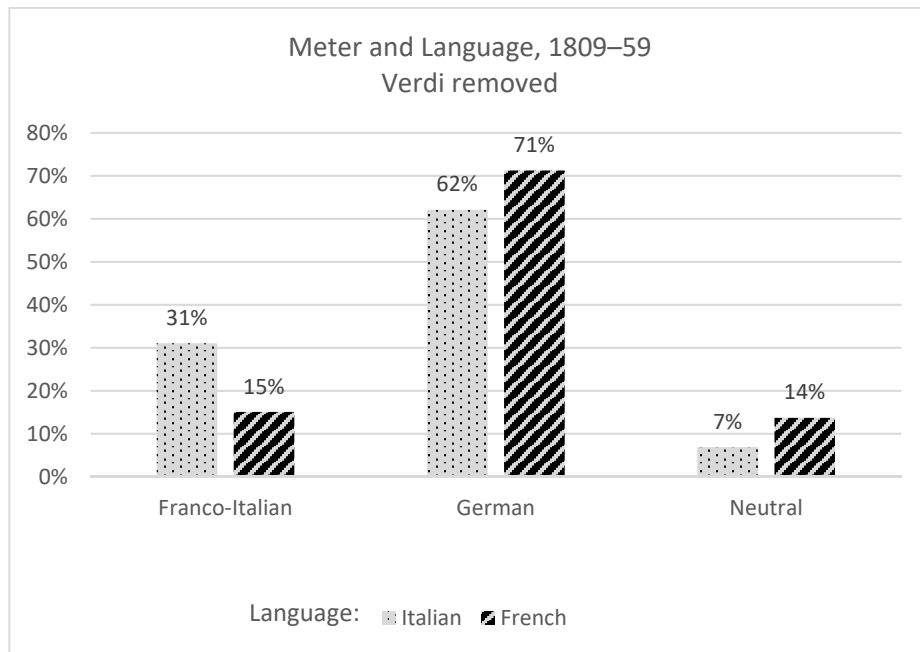
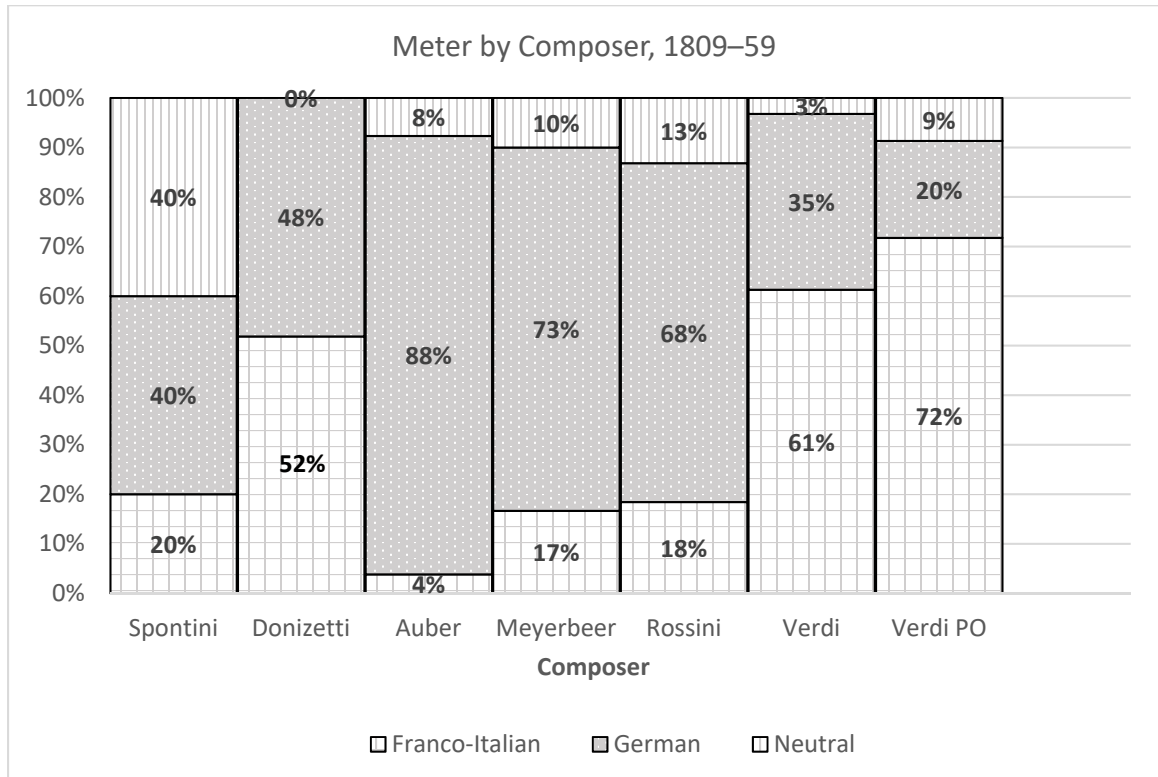


Figure 31. Meter by composer, 1809–59

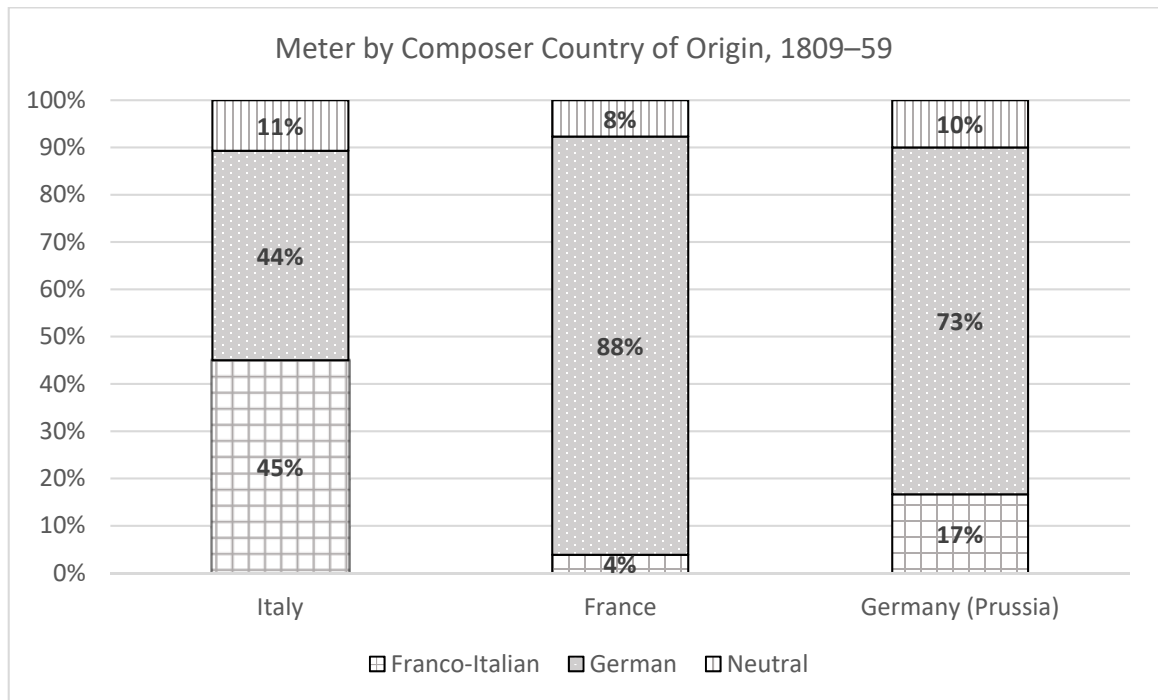


again an exception (“Verdi PO” in Figure 31). In those works, one is approximately two times as likely to hear an incipit in Franco-Italian meter as opposed to German meter. Outside of the *primo ottocento*, Donizetti (52%) nearly matches Verdi’s use of this meter (62%).

Meter by Composer Country of Origin

Tracking a composer’s country of origin or their birthplace can help to parse the nationalist assumptions presented in Rothstein’s studies. Figure 32 shows that composers born in Italy (all but Auber and Meyerbeer) have a nearly equal preference for German and Franco-Italian meter. Auber (France) overwhelmingly employs German

Figure 32. Meter by composer country of origin, 1809–59

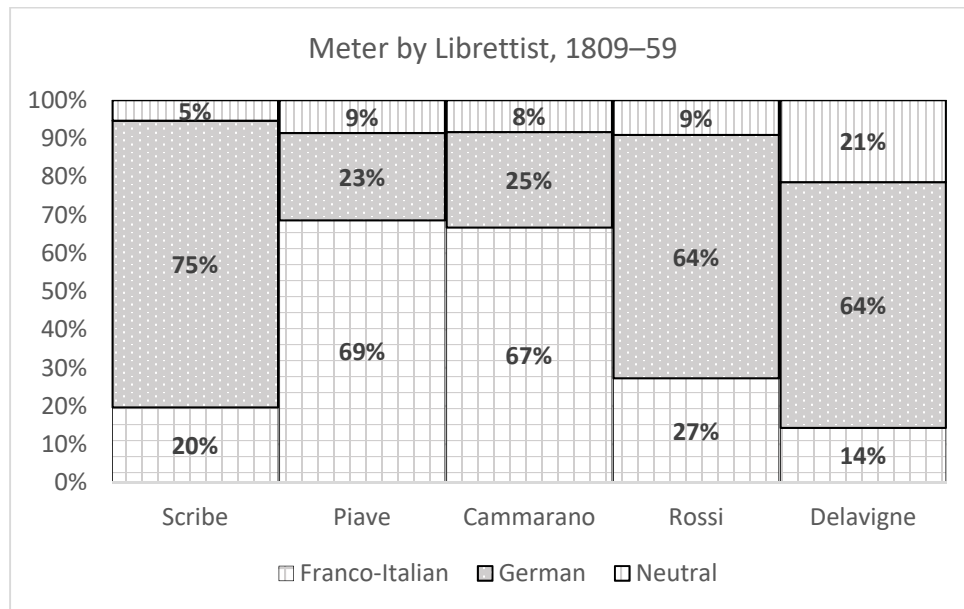


meter, whereas Meyerbeer (Germany) uses Franco-Italian meter slightly more (χ^2 : 27.4, $p < 0.001$).

Meter by Librettist

Figure 33 shows the relationship between meter and librettists in the top five most represented composers in the corpus: Scribe (n = 56), Piave (n = 35), Cammarano (n = 24), Rossi (n = 22), and Delavigne (n = 14). Piave is a Verdi-exclusive collaborator, as is Cammarano, barring a single opera with Donizetti. All other librettists in the corpus correlate to the composers with 10 excerpts or less. Unsurprisingly, Piave and Cammarano's texts are primarily set in Franco-Italian meter. Rossi and Delavigne match one another in regards to German meter (64%), but Delavigne employs Neutral barring

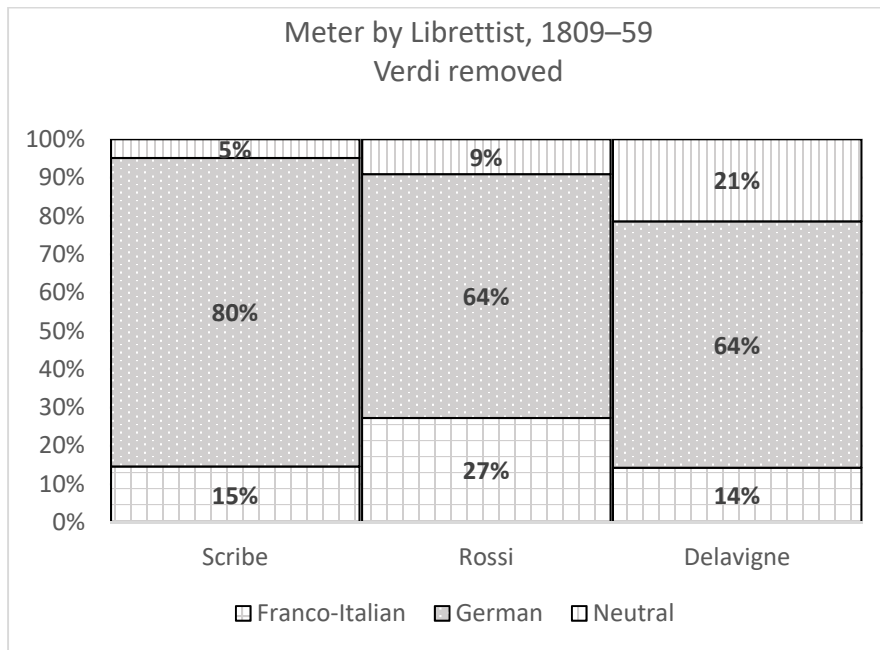
Figure 33. Meter by librettist, 1809–59



(21%) slightly more than Rossi, who uses Franco-Italian meter more (27%). Scribe’s output shows the greatest representation of German meter (75%) ($\chi^2: 133, p < 0.001$).

After removing Verdi (Figure 34), the top librettists with more than 10 excerpts are Scribe (n = 41), Rossi (n = 22), and Delavigne (n = 14). Rossi and Delavigne’s output remains consistent, but Scribe’s use of German meter rises slightly (+5%) in opposite of Franco-Italian meter (-5%), further illustrating Verdi’s association with the latter metric type ($\chi^2: 20, p: 0.001$).

Figure 34. Metric type by librettist, 1809–59, Verdi removed



Meter by Gender

Character gender is determined, when possible, by referencing voice type or an opera synopsis. Results suggest that meter as it corresponds to gender is statistically insignificant (χ^2 : 0.349, p : 0.840).

Other Observations

Navigating the corpus has offered other insights into the compositional practices of this period that are not drawn from the methodology outlined above. Though unquantified, they relate to the historical tendencies highlighted by previous results.

The corpus suggests that most French melodies appear to be longer than Italian ones. Many Verdian melodies span two or three measures at most before segmenting, but melodies by Auber can continue for multiple systems. For example, the melody from “O bonte! I déshonneur!” in Auber’s *L’enfant prodigue* continues uninterrupted for 15

measures. Such melodic connectivity could have implications on meter and accent and will be investigated in future studies.

Also made evident by the corpus content is that Italian composers generally include more solo works in their operas. In a sense, this corroborates the long-standing assumption that French operas place more of an emphasis on chorus and larger ensemble numbers. These set pieces were avoided in this study due to the possibility of *conflicting downbeats* (Rothstein 1989) between the textual end-accents. As before, an expansion of this study could include alternative methods to address these multi-voice settings.

CHAPTER 5

DISCUSSION

Textual Accent in French and Italian Verse

The most general distinction between accent treatment in Italian and French libretti is that Italian verse accents are placed on a specific syllable dictated by total number of syllables in the line, while the French language places emphasis on the weight of vowels regardless of their position (Rothstein 2011, 97). Furthermore, the rules of Italian prosody are well-established in both historical theory and practice, but French accent treatment is less clear even today. A study by Andreas Giger (2008) specifies that there were many competing methods to setting French poetic meter in the nineteenth century. Even the stanza, a basic unit of prosody, was often of ambiguous structure and content in the French style (p. 2). Rothstein's (2011) analogous approach to Franco-Italian meter therefore draws skepticism when he states "In Italian, however, the *accento comune* is, in principle, not only the last but also the strongest accent in a poetic line; the same principle applies, *mutatis mutandis*, to the French *accent tonique*" (97).

Rothstein (2011, 94) defines syllable content and verse endings in Italian verse by use of common designations. This information is summarized by Figure 35 where bolded syllables indicate metric emphasis. These accent structures are nearly universal to all Italian opera libretti, so much so that composers often viewed them as constrictive in forming new melodies (Giger 2008, p. 2). As such, one can expect to see *ottonario* verses with *piano* endings, for example, as commonplace in both Mozartean and Verdian operas.

Figure 35. Italian verse designations and endings

Italian Verse Designations

quinario, five syllables
settenario, seven syllables
ottonario, eight syllables
decasillabo, ten syllables

Italian Verse Endings

piano, **Ver-di**
sdrucchiolo or ‘sliding’, **brin-di-si**
tronco or ‘truncated’, **a-mor’**

Giger (2008, 7–10) states that, like Italian poetic meter, French meter is determined by syllabic content. The French language, however, places more emphasis on the weight of vowels. Initially, the vowel-based accent can be readily determined in an individual word, but establishing the position of obligatory accents in an entire verse becomes more significantly more challenging. This is largely due in part to “the lack of clear rules” or competing theories of accent placement in French poetic texts, and is further complicated by the nationalistic biases of composers and librettists.

Defined as the *e muet* (or mute “e”), the accentual treatment of adjacent vowels within a French poetic text is a pervasive challenge faced by analysts of French libretti. The treatment of the *e muet* involves the alteration of the syllabic content of a word when vowel-adjacency occurs. There are two types of adjacent-vowel alterations: a contraction of vowels into one syllable (syneresis) and the separation of vowels into two syllables (dieresis). This aspect is often simple in isolation, but determining whether a syneresis or a dieresis should occur within a line of text depends on the context of the event. Here, the location of the adjacency determines the type of alteration. Therein lay the complexity, for the correct treatment of the *e muet* is often ambiguous, but with high stakes, as the results of the treatment can affect the syllabic and accentual integrity of a verse.

Giger defines the tonic accent as “a short rhythmic group consisting of a polysyllabic word.” Furthermore, he asserts that “nineteenth-century theoretical sources

usually agree that the tonic accent . . . falls on the ultimate syllable of rhythmic groups not ending with an *e muet* and on the penultimate syllable of those ending with an *e muet*” (2008, 9). In this way, Giger’s approach gives credence to Rothstein’s analogous treatment of the *accento comune* and *accent tonique*.

A caveat to this confirmation is that other research suggests French accents are less punctuated compared to Italian accents. David Huron (2008, 188–189) notes that “French syllables tend to show relatively little variation in duration” and exhibit “very little stress or dynamic emphasis.” This tendency is vaguely corroborated by Giger who states that “current scholarship has attempted to prove that the main French accent is primarily one of duration and not stress” (2008, 9). Nineteenth-century Italian composer and librettist Arrigo Boito also implies this when he describes Verdi’s setting of the French opera *Les Vêpres siciliennes* as “having smoother and less definite accents” than Italian text (Giger 2008, 2). Finally, the longer, interrupted melodies found in works by Auber (see Part IV) might suggest that prosodic accent plays a lesser role in delineating metric sections in French works.

Overall, textual accent placement in French is much less predictable than the well-defined principles of Italian accent in libretti. It is true that theorists such as Antonio Scoppa encouraged the Italianization of French verse and that Meyerbeer occasionally set his French libretti as such, but other authorities, such as French composer Camille Saint-Saëns, rebelled against the Italian influence on French verse and melody (Giger 2008, 15). If Rothstein draws on accent in language as his primary motivation in defining the metric types, then French and Italian should be treated as analogous only with caution—the two languages are shown to have distinct accent profiles which often differ in metric

emphasis. It is therefore not clear whether Italian accent tendencies can be applicable to French text in all cases.

Summary of Findings

Results in Part IV show Franco-Italian meter to be more prevalent in the works of other composers than previously considered, with its use increasing steadily over the fifty-year period. Statistical tests also indicate that individual composers differ significantly on their preferences for metric types. These results not only confirm that the highest concentration of Franco-Italian meter occurs in Verdi's mid-century operas, but that Verdi is the primary user of this type within the entire corpus. Notably, a libretto's language and the composer's nationality do not significantly affect the excerpt's metric type; that is, except for Verdi, composers were equally as likely to use each type of meter.

The discrepancy between nationality, language, and metric type is best represented in the output of French librettist Eugène Scribe, as his French and Italian-language texts were primarily set in German meter. An examination of poetic accent between French and Italian libretti also highlights a notable difference in how syllables are accented in each language. Finally, Leigh VanHandel's (2009) study on barring styles in nineteenth century art song indicates that French composers (though not the ones examined here) show preference for neutrally-barred phrases, which is confirmed by my results.¹³

¹³ The methodology and corpus for VanHandel's work differs significantly from mine. Note that Rothstein clarified the features of metric types two years later. Therefore, VanHandel cannot account for the

The result of these findings leave the “Franco” aspect of Franco-Italian meter ambiguous. More broadly, the overall link between meter, language, and nationalism is also unclear. Perhaps Rothstein’s original argument, one that only discerned the difference between German and Italian barring styles, is the more culturally-accurate assessment of meter as it corresponds to nationalisms and language.

With the support of the evidence presented, I argue against using nationalist language exclusively to identify these metric types. At best, these labels can mislead a reader into unfounded cultural associations and at worst they dilute the important distinction between composer treatment of the French and Italian language. In a field overburdened by new terms, however, I do not suggest adding another name for the weak/strong model of meter. Instead, I maintain that the spirit of this quote by Rothstein (1989, 12) is crucial: “Terminological currency is, wherever possible, to be preferred to new coinage.” Terms by other theorists do exist and Rothstein’s nationalistic metric types are in fact very useful in the appropriate contexts.

hypermetric versions of these types, and instead tracks how only the vocal line begins and ends in relation to the notated meter. Furthermore, Rothstein’s intuitions about barring styles is derived from the interaction of text and meter in Italian works, whereas VanHandel focuses exclusively on barring in French and German art song from the late nineteenth century.

CHAPTER 6

OTHER APPLICATIONS

Meter Outside of Opera

Corpus studies offer the advantage of illuminating trends in a body of works formed through set parameters. This usually results in a model of expectations for the works within its boundaries. Once these expectations are established, however, the more interesting question becomes “How do these norms act *outside* of these boundaries?”

So far, the study has surveyed meter in opera as a texted genre of music but, since our scope has only included vocal music, the following discussion will focus on nationalistic meter in an *instrumental* work from the same period. Through a metric analysis of the “Venezianisches Gondellied,” (“Venetian Gondolier’s Song”) no. 5 from Op. 62, *Songs Without Words* by Felix Mendelsohn, I will show how the metric principles Rothstein applies to vocal music can translate to an instrumental work by a contemporary composer.

Op. 62/5 was chosen due to its overt Italian song style. It features falling-fourth gestures throughout—which L. Poundie Burstein (2006, 34) has coined the “gondolier’s call” in his analysis of another gondola song, Op. 32/6—and its phrases end with rhythmic values that mirror the Italian *tronco* verse-ending. It also features a one-bar introductory vamp and phrases begin on the half-bar, suggesting both Franco-Italian meter and hypermeter. Overall, the melodic motion and harmonic rhythm is acutely operatic, so much so that one can easily imagine this melody in any nineteenth century French or Italian opera. Since Mendelsohn is a contemporary of the previous composers

and the work evokes the Italian style, this piece therefore offers the chance to examine meter as it relates to nationalisms in instrumental works during this period.

Before beginning the metric analysis of op. 62/5, its formal structures will be defined in Figure 36 to facilitate the discussion. Our focus will be on the introduction (mm. 1–4), the first phrase (labeled *A*, mm. 4–12), and its repetition with slight rhythmic variation (labeled *A'*, mm. 13–21). Note the salient features of these sections: a falling-fourth gesture from 1 to 5 occurs twice in the introduction—the first on the downbeat of m. 2, and again on the half-bar of m. 3. Another occurs after Phrase *A* in m. 12 across the barline. Phrase *A* is a typical eight-measure parallel *period* that consists of an *antecedent* and *consequent* (4 measures + 4 measures). The antecedent begins on a half-bar in m. 4 and spans a total of eight half-bar units until the half cadence (HC) in m. 8, while the consequent starts in m. 8 and continues to a perfect authentic cadence (PAC) in m. 12. The repetition (*A'*) demonstrates the same form as *A*, but with its antecedent starting on the half-bar in mm. 13 and consequent on the half-bar in m. 17.

The primary challenge in analyzing this piece does not come from the structure of its melody: it is notated in a metrically unambiguous compound meter, features a regular two-bar hypermeter with no hypermetric phrase extensions, and only rarely demonstrates a triple division of the otherwise duple hypermeasure (dotted half pulse). Metric conflicts instead arise from two situations; first, when the meter of the melody is measured against the meter in the accompaniment and, second, when the melody repeats with variation. Still, some listeners may find the melody/accompaniment conflict to be subtle if not non-existent. To that point, note that there are two kinds of listeners when it comes to metric interpretation. Conservative listeners tend to maintain their initial interpretation of the

Figure 36. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, formal sections

The musical score is presented in four staves. The first staff begins with a treble clef and a 6/8 time signature. It features a melodic line with a 'Parallel Period Antecedent' and 'Phrase A'. The second staff continues the melodic line with a 'Consequent' and an 'HC' (Half Cadence). The third staff shows a bass line with a 'Parallel Period Antecedent' and 'Phrase A'', followed by a 'PAC' (Phrase Accent). The fourth staff continues the bass line with a 'Consequent' and a 'PAC'.

meter throughout a listening, even if significant metric disruptions occur. On the other hand, adaptive (or “radical”) listeners are more likely to shift their metric position to adapt such changes (Imbrie 1973, 45–66).

The decision trees from Part IV return as my primary methodology. Without a poetic text, however, certain interpretive decisions must be made; decisions largely contingent on what one hears as the “song” aspects of this piece and their preference for either a strong/weak or weak/strong model of meter. Such considerations lead down different paths of the decision tree, thus representing the various ways in which listeners can position themselves metrically.

Meter in “Venezianisches Gondellied”

It was suggested earlier that phrase-endings in m. 12 and m. 21 are similar in rhythmic style to the *tronco* verse-endings typically found at the end of a poetic stanza.

We can use the decision trees to ascertain the excerpt's metric type with this assumption. Bolded arrows will be placed over these measures and, as before, the decision tree "Determining Metric Type – Hypermeter" will be used first.


The instruction to "Locate the vocal entrance at the beginning of the piece" immediately stalls the analysis. Since there is no poetic text, it is impossible to tell where the gondolier starts to sing. Is it in m. 2 with the "gondolier's call," as Burstein has claimed? Or are we instead more concerned with the more rhythmically-active melody that comes after? For now, let us focus on Phrase A and ignore the introduction, since the latter measures hardly qualify as a phrase.

The first prompt asks "Does the voice enter on the downbeat of a measure?" If the introduction is disregarded and the gondolier begins singing on the half-bar in m. 4, then we can select "No" and follow the tree to the right. This interpretation also means that melodic material of Phrase A fills half the measure containing the entrance. In response, we should place a "1" over the start of m. 4 and switch to the "Meter" decision tree.

Retracing our steps through the other tree leads us to mark the box labelled "A2" at the top of the page, meaning the excerpt features a long anacrusis. Now at Sequence B of the "Meter" tree, we are instructed to begin numbering half-bar segments from our previously marked "1" until we reach the bolded arrow. Because the distance to the end-accent spans an odd number of half-bars (17), "B1" is also marked. Phrase A is therefore set in Franco-Italian meter under this interpretation, due to its long anacrusis (A2) and strong-beat cadence (B1). See Figure 37.

Figure 37. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, Franco-Italian meter

A1	A2
Short or None	Long
B1	B2
Strong	Weak



If the falling-fourth in m. 2 is indeed a vocal entrance, then this interpretation leads down a much different path than before. Returning to the “Hypermeter” tree, the prompt “Does the voice enter on the downbeat of a measure?” can now be answered “Yes.” And, as we follow the tree to the left, we should place an “X” at the start of m. 2. We are now instructed to look for a non-melodic introduction before this measure. The single bar of accompaniment that starts the piece confirms the presence of a “vamp” and directs us to move right through the prompt. Because the vamp spans an odd number of measures, we can move further right and then down, where we are instructed to mark “A2” and place a “1” at the start of m. 1. From here, whole measures are numbered until m. 12 where the bolded arrow is positioned. Since this span is even, “B2” should be marked at the top of the page.

The combination of these parameters results in an unusual metric state—a long anacrusis (A2) and a weak-beat cadence (Figure 38). Currently this metric type is undetermined and has never been encountered anywhere else in this study. In consideration, I do not believe the “gondolier’s call” should be so-readily incorporated

Figure 38. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, indeterminate hypermeter

A1	A2
Short or None	Long
B1	B2
Strong	Weak

with the following melody. That is, the material within the introduction should remain separate from Phrase A, where the imagined poetic text would begin. This follows with the previous analysis, which does not consider any introductory material to be part of the counting sequence.

Even with these results, some will still hear the PAC in m. 12 as metrically weak. I believe this occurs because of a preference for a strong/weak model of meter and four-bar phrases. That is, even though m. 1 is an introductory vamp, a strong/weak hearing positions this measure as metrically stronger than the following. Maintaining this sense with a four-bar phrase model also encourages listeners to hear the downbeat of m. 5 as metrically strong. The vocal entrance on the half-bar in m. 4 is therefore treated as a metrically weak anacrusis instead of part of an otherwise strong hypermeasure. The following sequence shows how disregarding the anacrusis takes us down yet another path in the decision trees.

Starting anew at the “Hypermeter” tree, we are indeed claiming that the half-bar anacrusis is inconsequential, so the voice does enter on the downbeat of the measure in this hypothetical scenario. Following the tree to the left, an “X” is placed at the start of m. 5 and the measure before is checked for a non-melodic introduction. Since there is no “vamp,” we progress downward through the prompt and are instructed to mark the box labelled “A1.” From here, we place a “1” above the X and start numbering full measures. We finish the sequence with an even number (8), which means we select “No,” follow the prompt through to the right, and label “B2” at the top of the page.

The intentional lack of an anacrusis and a weak-beat cadence in Figure 39 positions the phrase awkwardly in German hypermeter. More critically, due to the hierarchical nature of meter, the antecedent would necessarily encompass the anacrusis to the consequent. Lerdahl and Jackendoff (1989) might argue in response that the melody is out of phase with the meter; or Samarotto (1999) would claim that a shadow meter is occurring between the melody and accompaniment. While these interpretations may be more normative to current metric discourse, such a hearing unarguably ignores the basic features of a Franco-Italian melody—all to maintain an eight-bar phrase that starts on a metrically strong downbeat

Phrase Rhythm in “Venezianisches Gondellied”

Our analysis so far has only focused on Phrase A, but the returning the falling-fourth gesture that immediately follows in m. 13 is hypermetrically disruptive. This section investigates how this event influences the metric position of Phrase A’. Here, two listener perspectives are weighed: a conservative listener who prefers to maintain their

Figure 39. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, German hypermeter?

A1	A2
Short or None	Long
B1	B2
Strong	Weak

The musical score consists of two staves. The first staff begins with a treble clef and a 6/8 time signature. It is divided into three measures: measure 1 (Introduction), measure 2 (Phrase A), and measure 3 (Phrase A). The second staff continues from measure 4 to measure 8 (Phrase A'). A downward-pointing arrow is positioned above measure 8, indicating a specific metric event.

initial sense of the meter, and as an adaptive listener, who is more likely to shift their orientation based on metric disruptions.

An advantage of the decision trees is that they reproduce results similar to a phrase rhythm analysis. Since German and Franco-Italian models of hearing have already been established for Phrase A, the methodology will change slightly to relate these types to the phrase rhythm of both A and A'. Doing so allows us to incorporate the hypermetric disruption in m. 13 and avoid re-navigating the decision trees.

The first option offers a conservative stance from a German hypermetric perspective. If a listener hears the resolution of the PAC as metrically weak, then m. 13 must be heard as metrically strong under a conservative model. Such an interpretation places the beginning of Phrase A' at a metrically weak position, shifting the metric type of the second phrase to Franco-Italian meter as an *end-accented* (Temperley 2003). See Figure 40.

Figure 40. Mendelssohn, “Venetian Gondolier’s Song,” mm. 4–21, conservative model of phrase rhythm for Phrase A (German) and A’ (Franco-Italian)

Phrase rhythm: 1 — 2 — 3 — 4 — 5 —

The figure displays a musical score in 6/8 time, divided into three systems. Above the first system, a phrase rhythm diagram shows five measures: measure 1 is a single beat, measure 2 is a half-beat, measure 3 is a single beat, measure 4 is a half-beat, and measure 5 is a single beat. The first system (measures 4-8) is labeled 'Phrase A' and includes annotations 'HC' at the end of measure 5 and 'PAC Metrically weak' at the end of measure 8. The second system (measures 9-13) is labeled 'Phrase A'' and includes annotations '(1)' at the start of measure 9, '2' at the end of measure 10, and '3' at the end of measure 11. The third system (measures 14-18) includes annotations '4' at the start of measure 14, '5' at the end of measure 15, '6' at the end of measure 16, '7' at the end of measure 17, and '8' at the end of measure 18. The end of measure 18 is annotated with 'PAC Metrically strong'. The end of measure 15 is annotated with 'HC'.

A second, more adaptive hearing comes in two variations. Again, assuming m. 12 is metrically weak, then m. 13 could be viewed as a hypermetric extension. In this scenario, the phrase rhythm is prolonged to group m. 12 and m. 13 as a larger weak beat. Another interpretation would be to hear m. 12 and m. 13 as successive downbeats. The result of either places the downbeat of m. 14 as a new hypermeasure beat “1” of A’ and assumes the second phrase is also beginning-accented or in German meter. See Figure 41.

Figure 41. Mendelssohn, “Venetian Gondolier’s Song,” mm. 4–21, adaptive model of phrase rhythm for Phrase A (German) and A’ (German)

Phrase rhythm: 1 ————— 2 ————— 3 ————— etc.

Phrase A

Hypermetric extension: 8, -----

or Successive downbeats: 1 →

PAC Metrically weak

Phrase A'

3 ————— 4 ————— 5 ————— 6 ————— 7 ————— 8,

PAC Metrically weak

At this point, a paradox or sorts is created. A conservative listener who consistently assumes a 4-bar model for metric structures is forced to make a change from hearing A as beginning-accented to A' as end-accented. Conversely, the more adaptable listener, who embraces hypermetric extensions and the like but still subscribes to a strong/weak model of meter, inevitably forces a beginning-accented perspective on both the A and A' phrases. In short, a conservative hearing necessitates a change in perspective, while an adaptable one discourages it.

These phrase rhythm analyses all rest on one important cornerstone: hearing m. 1 as metrically strong. This, above all else, reinforces a beginning-accented, German meter model for Phrase A in both the conservative and adaptive interpretations. But, our previous decision tree analysis in Figure 37 shows that Phrase A is indeed in Franco-Italian meter. So, how does this retroactively position the introduction?

Recall that Rothstein's methodology for counting the phrase rhythm of Franco-Italian meter is to label bars or half-bars as "2-3-4, 1." Moreover, Riemann preferred to hear all phrases under a weak/strong model. Applying these alternative methodologies to the introduction yields a metric interpretation that I believe better-reflects the Italian vocal style that the title and melodic motion evoke.

Indeed, if one assumes a four-bar model of phrase structure and counts measures backward from the "1" in Figure 37, we find that m. 1 starts with a "2" in the counting sequence. With this evidence, I argue that an adaptive Franco-Italian hearing, one that counts the introduction as "2-3-4, 1" and subsequently places both A and A' as end-accented, is also valid. As shown in Figure 42, the metric position of the phrase, which begins on a half-bar, and the *tronco*-esque rhythmic value of a dotted quarter at the cadence of A and A' on the downbeat of the measure, are both clear indications of an Italian-barring style. Complications from the one-bar vamp may suggest that, despite his efforts, Mendelssohn missed the mark in truly capturing the Italian style à la Verdi and others, due to Phrase A starting a bar earlier than convention. (The solution would be to have the introduction span one more measure).

The answer to a seemingly simple question like "Where are the downbeats?" has significant implications on how metric structures are perceived. Such inquiries also must eventually lead to more complicated ones, like "Which downbeats are more important?" The repeating falling-fourth gestures and their distinct metric positions keenly embody the duality of this phenomenon. When projected to hypermetric level (Figure 43), they might suggest that Phrase A should be heard under the strong/weak model in parallel with

Figure 42. Mendelssohn, “Venetian Gondolier’s Song,” mm. 4–21, adaptive model of phrase rhythm for Phrase A (Franco-Italian) and A' (Franco-Italian)

2 — 3 — 4 — 1, — 2 — 3 —

Introduction Phrase A Hypermetric extension:

4 — 5 — 6 — 7 — 8 —

or 1 — 1 — 2 — 3 — 4 —

Successive downbeats PAC Phrase A'

5 — 6 — 7 — 8 — 1

HC PAC

Figure 43. Mendelssohn, “Venetian Gondolier’s Song,” mm. 1–21, falling-fourths and phrase position

strong weak weak strong strong weak

Introduction Phrase A

weak strong

Phrase A'

HC PAC

the first falling-fourth, while the weak/strong model should be applied to Phrase A' in tandem with the second.

Not affording metric malleability between A and A' has clear implications: a strictly German hearing ignores the Italian influence embodied in Mendelssohn's melody and a ubiquitous Franco-Italian perspective disregards Mendelssohn's status as a German composer. Indeed, there are no right answers when it comes to metric interpretation, but a one-size-fits-all approach to meter is actively discouraged by the evidence presented here and in previous sections.

Nationalistic terms for meter have been used here and throughout the thesis to highlight cultural, historical, and theoretical influences in compositional procedure. Their use is perhaps most effective in opera studies, as the genre almost necessarily encompasses these components through the text, drama, and music. Applying the terms elsewhere can be convincing, but only when the nationalistic style is clear, as in Mendelssohn's Italian gondola songs. I therefore caution one against using "Franco-Italian meter" to describe instrumental phrases that simply begin off the beat, especially outside of operatic and common practice repertoires. Instead, consider Temperley's *end-accented phrases* or Rothstein's *conflicting downbeats*. These terms do not necessarily imply a strong/weak or weak/strong model of meter and are thus more accessible to a wider variety of genres. More importantly, however, non-nationalistic terminology avoids diluting the cultural connections between language, theory, practice, and meter made by Rothstein and this study.

CHAPTER 7

CONCLUSION

A Summary of this Study

This thesis began by highlighting the strong/weak bias most Western listeners bring to their conception of musical structures. Two recent studies by William Rothstein on meter in eighteenth-century and early nineteenth-century music were then introduced to show how these biases can misconstrue meter in Italian and French opera and common practice repertoires at large. Within his work, Rothstein provides the terms Franco-Italian meter and German meter to describe weak/strong and strong/weak models of meter, respectively. These are founded on the link between language, its poetic meter, and musical meter as it pertains to nationalism in works by Italian opera composers like Mozart and Verdi. However, they are drawn from assumptions that have yet to be quantified.

In response, Parts II and III proposed the methodology and sources for investigating these claims further. By creating a corpus of nineteenth-century French and Italian operas that is chronologically balanced according to language, I was able to show in Part IV that only Verdi and Donizetti, as Italian composers, show a strong preference toward use of Franco-Italian meter. French composers, on the other hand, most often prefer German meter. An examination of the historical differences between accent tendencies in French and Italian poetic meter in Part V highlighted further discrepancies between the French and Italian aspects of Franco-Italian meter. The beginning of Part VI thus concluded that certain nationalistic components of Rothstein's Franco-Italian and German metric types were unclear and, pointing to evidence found in Part IV and V,

recommended use of Rothstein's nationalistic metric types only with caution. "Italian meter" was proposed as a more accurate alternative to "Franco-Italian meter" in response.

To close the thesis, an analysis of Mendelssohn's "Venezianisches Gondellied" from *Songs Without Words* op. 62/5 was conducted to investigate how Rothstein's metric types and my own methodology interact with an instrumental work from the mid-nineteenth century. Mendelssohn evokes the Italian song style in this work by imitating verse-endings to conclude phrases, but the one-bar introductory vamp misaligns the events on weak beats under a strong/weak model of meter. Multiple metric interpretations were posited to demonstrate how positioning the first measure as metrically weak aligns the melody to be set in Franco-Italian meter, which is reflected in the decision tree analysis.

Considerations and Future Work

Like any empirical study, certain obstacles inhibited data gathering. The most pervasive of these was score availability. Many nineteenth-century opera scores, especially the early ones, have simply not been digitized. Hard copies in non-autograph form from less popular composers (Spontini and Auber) were nearly as difficult to access. Consulting both Yale and Harvard's music libraries yielded only minimal results. Most scores had to be accessed off from IMSLP through low-quality scans or scavenged from the annals of the internet. Until this repertoire is given more attention by music scholarship, this trend is likely to continue.

Treating multi-voice works also proved to be more ambitious than the scope of this study would allow. First, I could not devise a non-arbitrary method for determining

the true metric type of an excerpt when conflicting downbeats occurred between subsequent textual end-accents. One way around this would be to assume that the first metric type presented is the “true” meter of the piece. My analysis of Op. 62/5, however, discourages such a dogmatic approach. The pool of excerpts is also already quite large by only including arias and other solo pieces. Including non-solo numbers would certainly be outside the scope of this thesis. Future work will hopefully expand to include more composers and numbers. Moving from hand-coding to electronic computational analysis would also help in this regard.

If I were adamant about renaming Rothstein’s types, I would parse out the differences between French and Italian metric styles, as I lightly suggested at the end of Part V. Thus, German meter, Franco-Italian meter, and neutral barring would be respectively reassigned as German meter, Italian meter, and French meter. This is because the French composers, both here and in VanHandel (2009), seem to use neutral barring more than other composers. Furthermore, many of the French excerpts featured *tronco* verse-endings that fall immediately after the barline. I believe this is due to the function of the *accent tonique*—not as an accent on the penultimate syllable as Rothstein has suggested—but as an accent on the ultimate syllable.

APPENDIX

METER IN FRENCH AND ITALIAN OPERA, 1809–1859

Operas Used in this Study

Decade	Year	Opera Title	Composer	Librettist 1	Librettist 2	Language
1809-19	1809	Fernand Cortez	Spontini	de Jouy		French
	1812	La pietra del pargone	Rossini	Romanelli		Italian
	1813	Tancredi	Rossini	Rossi		Italian
	1814	Pélage	Spontini	de Jouy		French
	1816	Il barbiere di Siviglia	Rossini	Sterbini		Italian
	1819	Olimpie	Spontini	Dieulafoy	Brifaut	French
1820-29	1823	Semiramide	Rossini	Rossi		Italian
	1824	L'ajo nell'imbarazzo	Donizetti	Ferretti		Italian
	1828	Le siège de Corinthe	Rossini	Balocchi	Soumet	French
	1828	La muette de Portici	Auber	Delavigne		French
	1828	La Regina di Golconda	Donizetti	Romani		Italian
	1829	Guillaume Tell	Rossini	de Jouy	Bis	French
1830-39	1831	Robert le Diable	Meyerbeer	Scribe	Delavigne	French
	1833	Gustave III	Auber	Scribe		French
	1834	Gemma di Vergy	Donizetti	Bidera		Italian
	1836	Les Huguenots	Meyerbeer	Scribe	Deschamps	French
	1838	Maria de Rudenz	Donizetti	Cammarano		Italian
	1839	Oberto	Verdi	Solera		Italian
1840-49	1841	Les diamants	Auber	Scribe	Saint-Georges	French
	1842	Linda di Chamounix	Donizetti	Rossi		Italian
	1843	Don Pasqualle	Donizetti	Donizetti	Ruffini	Italian
	1846	Atilia	Verdi	Solera	Piave	Italian
	1847	Haydée	Auber	Scribe		French
	1847	Macbeth	Verdi PO	Maffei	Piave	Italian
	1849	La battaglia di Legano	Verdi PO	Cammarano		Italian
	1849	Le prophète	Meyerbeer	Scribe		French
1850-59	1850	Stiffelio	Verdi	Piave		Italian
	1850	L'enfant	Auber	Scribe		French
	1851	Rigoletto	Verdi PO	Piave		Italian
	1853	Il trovatore	Verdi PO	Bardare	Cammarano	Italian
	1853	La traviata	Verdi PO	Piave		Italian
	1854	L'etoile du nord	Meyerbeer	Scribe		French
	1857	Simon Boccanegra	Verdi	Piave		Italian
	1859	Dinorah	Meyerbeer	Barbier	Carre	French
	1859	Un ballo in maschera	Verdi	Scribe	Somma	Italian

Distribution of Meter, Entire Corpus

Decade	Year	Opera Title	Composer	Librettist 1	Librettist 2	Language	FI	GR	NE	
1809-19	1809	Fernand Cortez	Sportini	de Jouy		French	2			
	1812	La pietra del paragone	Rossini	Romanelli		Italian	0	4	1	
	1813	Tancredi	Rossini	Rossi		Italian	1	9	1	
	1814	Pelage	Sportini			French	1	1	1	
	1816	Il barbiere di Siviglia	Rossini	Sterbini		Italian	1	6	1	
1820-29	1819	Olimpie	Sportini	Dieulafoy	Brifaut	French	0	3	2	
	1823	Semiramide	Rossini	Rossi		Italian	2	4	1	
	1824	Lajo nell'imbarazzo	Donizetti	Ferretti		Italian	1	5	0	
	1828	Le siège de Corinthe	Rossini	Balocchi	Soumet	French	0	2	1	
	1828	La muette de Portici	Auber	Delavigne		French	0	5	2	
	1828	La Regina di Golconda	Donizetti			Italian	1	3	0	
	1829	Guillaume Tell	Rossini	de Jouy	Bis	French	3	1	0	
	1830-39	1838	Maria de Rudeuz	Donizetti	Cammarano		Italian	2	2	0
		1831	Robert le Diable	Meyerbeer	Scribe	Delavigne	French	2	4	1
1833		Gustave III	Auber	Scribe		French	1	4	0	
	1834	Gemma di Vergy	Donizetti			Italian	5	2	0	
	1836	Les Huguenots	Meyerbeer	Scribe	Deschamps	French	1	4	0	
	1839	Oberto	Verdi	Solera		Italian	5	3	0	
	1840-1849	1841	Les diamants	Auber	Scribe	Saint-Georges	French	0	3	0
		1843	Don Pasqualle	Donizetti			Italian	2	0	0
	1849	Le prophète	Meyerbeer	Scribe		French	1	3	0	
	1846	Attila	Verdi	Solera	Plave	Italian	5	3	1	
	1847	Haydée	Auber	Scribe		French	0	5	0	
	1847	Mabech	Verdi PO	Maffei	Plave	Italian	7	1	2	
	1849	La battaglia di Legano	Verdi PO	Cammarano		Italian	4	4	1	
1850-59	1842	Linda di Chamounix	Donizetti	Rossi		Italian	3	1	0	
	1850	Stiffelio	Verdi			Italian	3	0	0	
	1851	Rigoletto	Verdi PO	Plave		Italian	7	4	0	
	1853	Il trovatore	Verdi PO	Bardare	Cammarano	Italian	10	0	1	
	1853	La traviata	Verdi PO	Plave		Italian	5	0	0	
	1850	L'enfant	Auber	Scribe		French	0	6	0	
	1854	L'etoile du nord	Meyerbeer	Scribe		French	1	4	1	
	1857	Simon Boccanegra	Verdi			Italian	2	0	0	
	1859	Dinorah	Meyerbeer	Barbier	Carre	French	0	7	1	
	1859	Un ballo in maschera	Verdi	Scribe	Somma	Italian	4	5	0	
Totals							82	109	20	
Percentage							39%	52%	9%	

Distribution of Meter, Librettist								
	Quantity			Total	Percent			
	FI	GR	NE		FI	GR	NE	
de Jouy	5	2	2	9	56%	22%	22%	
Rossi	6	14	2	22	27%	64%	9%	
Sterbini	1	6	1	8	13%	75%	13%	
Dieulafoy	0	3	2	5	0%	60%	40%	
Brifaut	0	3	2	5	0%	60%	40%	
Scribe	11	42	3	56	20%	75%	5%	
Balocchi	0	2	1	3	0%	67%	33%	
Soumet	0	2	1	3	0%	67%	33%	
Delavigne	2	9	3	14	14%	64%	21%	
Bis	3	1	0	4	75%	25%	0%	
Deschamps	1	4	0	5	20%	80%	0%	
Saint-Georges	0	3	0	3	0%	100%	0%	
Piave	24	8	3	35	69%	23%	9%	
Maffei	7	1	2	10	70%	10%	20%	
Cammarano	16	6	2	24	67%	25%	8%	
Bardare	10	0	1	11	91%	0%	9%	
Barbier	0	7	1	8	0%	88%	13%	
Carre	0	7	1	8	0%	88%	13%	
Somma	4	5	0	9	44%	56%	0%	
Ferretti	1	5	0	6	17%	83%	0%	
Romanelli	0	4	1	5	0%	80%	20%	

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