Dramatic and Structural Orchestration in Richard Strauss's *Elektra*

by

Christopher Reid Isaak

Music Theory Area, Department of Music Research
Schulich School of Music
McGill University, Montreal
August 2020

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Master of Arts

Table of Contents

List of Figures

Abstract

With the largest opera orchestra of its day, Richard Strauss's *Elektra* (1909) not only marked a high point in his compositional career but also in the maximalist approach to orchestration characteristic of the early twentieth century. However, despite the undeniable importance of the orchestra in *Elektra*, it has not been a significant topic of music-theoretical research. The majority of the commentary on orchestration is underdeveloped or is introduced to support a different analytical claim. The primary goal of this thesis is to more fully investigate the role of orchestration in both the dramatic meaning and structural organization of *Elektra*.

In Chapter 2, I focus on two main aspects of the work in which orchestration plays a clear dramatic role: visual imagery, especially the animalistic descriptions of the characters, and symbolic contrasts, including the juxtaposition of light and dark and the opposition of the dramatis personae. I investigate the intricate connection between orchestration and these central, dramatic features in a series of analytical vignettes. In these analyses, I draw upon the theory of conceptual integration developed by Gilles Fauconnier and Mark Turner and their method of visualization, the Conceptual Integration Network, to demonstrate the various aspects of the music that contribute to the imagistic and symbolic effects, which include the instrumentation, register (both generally and instrument specific), and dynamics of the passage, as well as aspects of pitch and rhythm that shape the orchestral texture.

In Chapter 3, I examine the structural role of orchestration in two extended analyses. The first analysis focuses on a thematic contrast between two, central motives that underscore the opposing reaction of the two sisters, Elektra and Chrysothemis, to the news of their brother's death. This central contrast, generated through the combined use of opposing harmonies, registers, phrase placement, and orchestration, ultimately leads to a climactic layering of the two motives at the end of the passage. In my analysis, I focus primarily on the variations in the orchestration, which have three main functions in this passage: sudden and gradual additions of instruments for dynamic reinforcement, substitutions of a motive's accompaniment with a different motive, and actual transformations of the motives' orchestration that prepare the final, transformative climax of the passage.

The second analysis of this chapter focuses on the formal function of segmental orchestral effects—changes in orchestration that signal boundary creation—in the opening of the Recognition Scene and their interaction with the melodic and harmonic structure of the passage. In this analysis, I employ a variety of analytical methods, including traditional harmonic and formal analysis as well as graphical representations of the orchestral texture developed after Emily Dolan. I extend upon Dolan's graphical method by using colour to represent the function of the individual instruments within the musical texture, highlighting changes in instrument function that are not represented in the original graph. Ultimately, this analysis demonstrates that the varying strength of segmental orchestral effects contributes strongly to the hierarchical organization of musical units (phrases, phrase groups, and sections) and plays a defining role in the shaping of the passage's two climaxes.

Résumé

Avec le plus grand orchestre d'opéra de son jour, *Elektra* de Richard Strauss (1909) a marqué le sommet de sa carrière en composition, mais aussi dans l'approche maximaliste de l'orchestration qui caractérise le début du vingtième siècle. Cependant, malgré l'importance indéniable de l'orchestre d'*Elektra*, ceci n'a pas été un sujet de recherche considérable sur le domaine de la théorie de la musique. La majorité de recherche sur cette orchestration est sous-développée ou est introduite à l'appui d'une analyse des autres paramètres de la musique. Le but primaire de cette thèse est de faire une recherche compréhensive du rôle de l'orchestration dans l'expression dramatique et organisation structurelle d'*Elektra*.

Au chapitre deux, je me concentre sur deux aspects du score dans lequel l'orchestration joue un rôle dramatique clair : l'imagerie visuelle, surtout dans les descriptions animalières des personnages, et les contrastes symboliques, y compris la juxtaposition de lumière et la noirceur et le contraste des personnages principaux. Dans une série de vignettes analytiques, je fais l'enquête du rapport complexe entre l'orchestration et ses caractéristiques centrales et dramatiques. Dans ces vignettes, j'applique la théorie d'unification conceptuelle développé par Gilles Fauconnier et Mark Turner et leur méthode de visualisation, le Réseau d'Intégration Conceptuelle, pour démontrer les différents aspects de la musique qui contribuent à l'imagerie et aux effets symboliques. Ces aspects musicaux incluent l'instrumentation, la registre (que ce soit générale ou spécifique aux instruments), et les nuances du score, aussi bien que des aspects de tonalité et rythme qui façonnent la texture orchestrale.

Au chapitre trois, j'examine le rôle structurel de l'orchestration dans deux analyses élargies. Dans la première, je me concentre sur un contraste thématique entre deux motifs centraux qui soulignent les réactions opposantes des deux sœurs, Elektra et Chrysothemis, à la nouvelle de la mort de leur frère. Ce contraste centrale - produit par un combinaison des éléments suivantes : harmonies opposantes, registres, placement de la phrase, et l'orchestration - mène à une superposition climatique des deux motifs à la fin de la section. Dans mon analyse, je me concentre principalement sur les variations d'orchestration, qui ont trois fonctions principales dans ce passage : l'addition soudain et progressif d'instruments pour le renforcement dynamique, le remplacement de l'accompagnement d'un motif par un motif différent, et la préparation du point culminant transformateur final de la section par la transformation de l'orchestration des motifs.

La deuxième analyse de ce chapitre se concentre sur la fonction formelle des effets orchestraux segmentaires (les changements d'orchestration qui signalent la création de limites) dans l'ouverture de la *Scène de reconnaissance*, et leur interaction avec la structure mélodique et harmonique de la section. Dans cette analyse, j'utilise une variété de méthodes analytiques, y compris l'analyse harmonique et formelle traditionnelle ainsi que des représentations graphiques de la texture orchestrale développée par Emily Dolan. Je développe la méthode graphique de Dolan en utilisant la couleur pour représenter la fonction des instruments individuels dans la texture musicale, en mettant en évidence les changements dans la fonction de l'instrument qui ne sont pas représentés dans le graphique d'origine. Enfin, cette analyse démontre que la force variable des effets orchestraux segmentaires contribue fortement à l'organisation hiérarchique des unités musicales (phrases, groupes de phrases, et sections) et joue un rôle déterminant dans la forme des deux points culminants du passage.

Acknowledgements

I would like to thank a number of people for the essential role in the completion of this project. First and foremost, I would like to thank my advisor, Robert Hasegawa, whose guidance and support throughout the analytical process, drafting, and revision of this thesis was invaluable. I would also like to thank Stephen McAdams and the members of the Music Perception & Cognition Lab (MPCL) for broadening my understanding of music perception and for their input at various stages of this project's development. Thank you also to Graham Isaak and Deanna Rempel for their advice and assistance on my French and German translations. I would especially like to thank my fiancée, Deanna, for her unwavering support and encouragement throughout the writing process. This would not have been possible without you.

Financial support for this research was provided by a SSHRC grant awarded to Prof. Robert Hasegawa.

Chapter 1

Elektra and Orchestration: Current Research

Introduction

In orchestral terms, Richard Strauss's *Elektra* is a monumental work, surpassing in size the orchestral forces of his previous one-act drama, *Salome*, and dwarfing the operatic works of his peers.[1] The orchestra requires over a hundred players, a number which stretches the practical limits of the opera pit and tests the projective abilities of the singers. The opera, likes its orchestra, is one of extremes, in both musical and dramatic terms. Hugo von Hofmannsthal's libretto is full of visceral imagery, bloody symbolism and psychological tension, leading determinedly to the murderous climax. Strauss's music is equally brutal, with frequent layering and juxtapositions of tonally unrelated harmonies, including the famous Elektra chord, and numerous orchestral climaxes. In *Elektra*, Strauss stretched the boundaries of his compositional style to an expressionist peak from which he would ultimately recede in his following operatic collaborations with Hofmannsthal.

Elektra's orchestration had an undeniable impact. Both supporters and critics alike were impressed by Strauss's powerful and innovative orchestration, though the latter considered it a mask of the composition's weaker qualities.[2] However, despite its critical acceptance, *Elektra*'s orchestration has yet to be the focus of music-theoretical research. Instead, the majority of research has focused on more traditional areas of music-theoretical study, such as motive, form,

[1] Robin Holloway, "The Orchestration of *Elektra*: A Critical Interpretation," in *Richard Strauss: Elektra*, ed. by Derrick Puffett (New York: Cambridge University Press, 1989), 128.
[2] Bryan Gilliam, *Richard Strauss's Elektra: Studies in Music Genesis and Structure* (Oxford: Oxford University Press, 1996), 11.

and harmonic structure. Orchestration is certainly not ignored, but it is raised only in support of other analytical claims. The purpose of this thesis is to provide detailed insight into the extensive dramatic and structural roles of orchestration in Strauss's *Elektra*. To develop a foundation for original analytical study, this thesis draws together the scattered bits of information on *Elektra*'s orchestration found throughout the existing literature with recent research in cognitive linguistics and orchestration theory. My focus is ultimately analytical, but the results of this study will hopefully inform research on Strauss's operatic and symphonic music as well as opera studies more generally, which would benefit from a better understanding of the diverse functions of the operatic orchestra. The literary review to follow introduces the current research on both *Elektra* and orchestration theory, which will establish a context for the analytical investigations in the following two chapters.

Review of Research on *Elektra*

The Theme of Oppositional Contrast in *Elektra*

The importance of the theme of oppositional contrast in Hofmannsthal's *Elektra* and the musical realization of this theme by Strauss has been a common topic of research. Hermann Doswald comments on the use of both lighting and symbolic gestures to produce oppositional contrasts in his 1969 essay, "Nonverbal Expression in Hofmannsthal's *Elektra*." Doswald describes the dramatic purpose of the lighting in Hofmannsthal's play as follows:

> Its function throughout the tragedy is to create an alternating atmosphere of dark and light which serves to contrast the gloom and darkness prevailing in the household of Agamemnon with the light of the outside world and to symbolize the themes and mood of the play and the conflict of characters with each other and within themselves.[3]

[3] Herman K. Doswald, "Nonverbal Expression in Hofmannsthal's *Elektra,*" *The Germanic Review* 44, no. 3 (1969): 201.

Doswald also remarks on how the conflict between characters highlighted by the symbolic lighting is manifested through physical gestures:

> To show the antithesis between the two sisters, Hofmannsthal made extensive use of symbolical gestures. Chrysothemis's very first actions, when she appears on the stage in search of Electra, reveal her gentle, fearful nature in contrast to the wild, animal-like Electra.[4]

Various scholars have noted how various aspects of Strauss's score contain musical contrasts that further the characteristic oppositions in Hofmannsthal's original drama. In his dissertation on the compositional procedures in *Elektra*, Lawrence McDonald identifies the use of both contrasting intervals and tonal centres to express dramatic oppositions throughout the opera. He provides a list of contrasting pitch collections, along with the intervals that characterize them, that he identifies with a particular symbolic function:

1) Major third vs. minor third = Major mode vs. minor mode
2) Major second vs. minor second = Diatonic vs. chromatic
3) Perfect intervals and major intervals vs. diminished, augmented and minor intervals = Clear tonality vs. obscure or ambiguous tonality.[5]

He associates the leftmost intervals and their associated modes with Elektra and characters who support her, as well as positive emotions and events. The rightmost intervals, by contrast, support Klytämnestra and her supporters, as well as emotions and events associated with her character.[6] McDonald also draws parallels between these dramatic oppositions and the specific tonal centres associated with characters in the opera. He argues for example that Klytämnestra, Elektra's main oppressor, is primarily associated with B minor and secondarily with D♭ minor, two tonal centres that surround Elektra's main tonal centre, C, at "the most vicious interval of a minor second."[7]

---

[4] Doswald, "Nonverbal Expression in Hofmannsthal's *Elektra*," 206.
[5] Lawrence F. McDonald, "Compositional Procedures in Richard Strauss's *Elektra*" (PhD. diss., University of Michigan, 1984), 75.
[6] McDonald, "Compositional Procedures in *Elektra*," 76.
[7] Ibid., 103.

Tethys Carpenter also discusses the theme of opposition and contrast, focusing on the use of bitonal harmonies to depict the inner conflict of Elektra and Klytämnestra. While Carpenter suggests that the bitonal harmonies themselves do not represent external conflict as they do in the climactic moment of *Salome*,[8] she does highlight a key contrast between the bitonal harmonies associated with Elektra and Klytämnestra, respectively. Carpenter notes that the Elektra chord is composed of two triads, E major and D♭ major, that share a common tone, A♭/G♯, and is always treated as an "indivisible unit" while the B minor and F minor triads associated with Klytämnestra share no common tones and often occur in succession or with asynchronous entries, F minor typically entering late above B minor.[9] The semantic function of these musical differences is suggested by Carpenter in the following passage:

> Of all the characters in the opera, only Elektra and Klytämnestra, the one compelled by fierce hate to a destructive triumph and the other consumed within herself by guilt and yet defiance, are projected bitonally.[10]

Although she does not state it explicitly, Carpenter implies that the indivisible character of the Elektra chord illustrates her singular focus throughout the opera while Klytämnestra's divided sonority illustrates her inner conflict between guilt and defiance. In this sense, the contrast between the two bitonal sonorities further contributes to the theme of opposition in the opera.

Arnold Whittall also identifies a thematic opposition in *Elektra* in his book chapter, "Dramatic structure and tonal organisation." Whittall argues that the musical language of the opera is primarily a dialogue between the assertion of tonality (characteristic of Chrysothemis's music) and the allusion to tonality (characteristic of Klytämnestra's music).[11] Whittall relates the

[8] Tethys Carpenter, "The Musical Language of *Elektra*," in *Richard Strauss: Elektra*, ed. Derrick Puffett (Cambridge: Cambridge University Press, 1989), 78.
[9] Carpenter, "The Musical Language of *Elektra*," 82.
[10] Ibid., 85.
[11] Arnold Whittall, "Dramatic structure and tonal organization," in *Richard Strauss: Elektra*, ed. by Derrick Puffett (Cambridge: Cambridge University Press, 1989), 56.

confrontation between allusion and assertion with the confrontation between anticipation and action in the drama. While Whittall's argument is compelling from a tonal perspective, the limitations of his focus produce some unusual readings. For example, he argues that the final alternations of E♭ minor, representing the fallen Elektra, and C minor, representing the victory of Agamemnon, are not in tonal conflict, but rather form a unified complex through their sharing of the pitch E♭.[12] While the common tone between the two harmonies may be important, Whittall's analysis neglects the undeniably powerful contrast in register, dynamics, and orchestration between these two harmonies, which all contribute to the perceptual segregation of the two chords into two musical streams. The contrast between these harmonies is more aurally salient than the common tone connection between them.

While each of these writers capture unique aspects of the music of *Elektra* that contribute to the theme of oppositional contrast, they are all ultimately limited to a single parameter: pitch. McDonald identifies the use of intervals, modes, and tonal centres for musical opposition, Carpenter the use of bitonal chords, and Whittall the interplay of tonal assertion and allusion. New research is needed on the role of other musical features of the opera such as rhythm and meter, motive and form, and orchestration in expressing themes of opposition and conflict in the drama.

Orchestration, Imagery, and Symbolism in *Elektra*

Orchestration is hardly ignored in analytical research on *Elektra*, but it is rarely the topic of focus. Instead, notable examples of orchestration are introduced as asides or in support of other analytical claims. One of the most common examples is the use of the orchestration in the

[12] Whittall, "Dramatic Structure and Tonal Organization," 72.

creation of musical imagery. In her discussion of motivic transformations, Wanda Kaluzny notes that Strauss presents Agamemnon's second motive in the timpani:

> Yet within scene 4, Strauss creates a brilliant though subtle effect when he introduces Ag. 2 in the timpani at Reh. 247. Here the motive assumes the role of Klytemnestra's nervous heartbeat (Reh. 247+5 [Elektra to Klytemnestra]: "you can hear your own heart"). The motive not only simulates the aural effect of the heartbeat but also simultaneously indicates the source of Klytemnestra's anxiety.[13]

While Kaluzny notes the introduction of the timpani, her phrasing suggests that it is the motive's rhythm and not the timpani's sound which creates the 'aural effect' of the heartbeat. While it is clear from context that she is referring to the motive as stated by the timpani, her choice of phrasing minimizes the role of orchestration in this motivic transformation. In Norman Del Mar's summary of the work, the imagistic function of the timpani at Reh. 33a is identified only implicitly when he remarks that "the galloping hoofs of the messenger's horse die away and lead into a rapid movement built upon a broken form of Elektra's noble theme."[14] In other passages, Del Mar is more explicit about the orchestration. In the first meeting between Elektra and Klytämnestra (Reh. 149-177):

> A serpentine violin solo which also pervades the texture, meandering in and out, suggests the insidious Confidante, while a spiky row of ascending quavers on flute and piccolo characterizes the spiteful tongue of the Train bearer.[15]

And at Elektra's recognition of her brother, Orestes:

> In the tremendous orchestral outburst which follows, Strauss actually imitates the bellowing of hounds on six horns, although by the presence of the servants on the stage Orestes seems to imply that the 'hounds' who recognize him are these very menials.[16]

---

[13] Wanda Kaluzny, "The Role of Motive in Richard Strauss's *Elektra*" (M.A. Thesis, McGill University, 1984), 34-35.
[14] Norman Del Mar, *Richard Strauss: A Critical Commentary on His Life and Works, Vol. 1* (London: Barrie and Rockliff, 1965), 318.
[15] Del Mar, *Richard Strauss*, 311.
[16] Ibid., 321.

Although Del Mar discusses the instrumentation of these passages, he does not address the effectiveness of the instrumentation in representing the particular images, nor does he address the textural features of the musical lines that contribute significantly to the semantic dimension of these orchestral lines. In the first quotation, he mentions the contour of the violin line and its motion "in and out" of the surrounding musical texture. He does not, however, mention the violin's rapid triplet rhythm and largely chromatic motion, features which distinguish it from the surrounding musical motives and contribute to its serpentine-like quality. In the second quotation, Del Mar attributes an imagistic function to the horn section but does not extend this function to the low winds, brass, and strings that echo the same musical figure in the following measure. It is unclear whether this omission is simply in keeping with the summary nature of Del Mar's chapter on the opera or whether he actually considers the horns and their place within the mid-register of the orchestra to be more hound-like than the following ensemble.

The above passages from Del Mar—including his implicit reference to the "galloping" timpani—are all examples of animalistic imagery, a characteristic feature of Hofmannsthal's drama. Examples of more generally symbolic orchestral effects are also scattered throughout the literature. Both Wanda Kaluzny and Robin Holloway highlight the use of orchestration to "colour" or "shade" certain passages. Kaluzny notes that "Strauss colours the words 'Dunkel' ('dim') and 'Schatten' ('shadow') at four, and then two, measures before 242 (scene 4), where first the timpani (f) and then the third horn and bassoon (c) quote a low and pianissimo statement of Ag. 2."[17] Similarly, Holloway notes that the main motive of Klytämnestra's procession (Reh. 114_8-132) is played "low but loud on all the strings, *muted,* [which] colours the whole texture with a veil of powerfully thwarted energy."[18] In each of these examples, the low instrument

[17] Kaluzny, "Motive in *Elektra*," 35.
[18] Robin Holloway, "The Orchestration of *Elektra*", 141-142.

register (as well as the use dynamics and playing techniques) are mapped to visual concepts related to darkness—dimness, shadows, veils—but neither Kaluzny nor Holloway identify the commonality of this mapping between instrument register and brightness or offer similar examples from the opera.[19]

The depiction of emotion through orchestration is also a recurring theme in research on *Elektra*. Kaluzny notes how the orchestral transformation of a variant of Agamemnon's primary motive brings about "a total reversal of mood"[20] that highlights the shift from Elektra's description of her former beauty to her lament at her present appearance. She argues that the restatement of the motive by the basset horns with a sparse accompaniment offers a significant contrast to its previous repetitions in the piccolo, flute, and oboes. In her analysis of Elektra's opening monologue, Kaluzny argues that the presentation of the sustained B♭ minor harmony at Reh. 36_6 in the lower strings, woodwinds, and trombones "enhances the hushed sombre atmosphere" of the phrase.[21] Del Mar makes a similar connection between orchestration and emotion regarding a passage from Chrysothemis's first scene with Elektra (Reh. 94-98):

> The numb grief of [Chrysothemis's] misery is well caught by the cold orchestration which features the lower woodwind group of basset horns, cor anglais, heckelphone and bass clarinet, together with the bassoons and contrabassoon.[22]

The connections Del Mar draws between emotional state, temperature, and instrumental timbre in this passage are incredibly interesting, but like the earlier examples of orchestral imagery, they are underdeveloped. Del Mar does not explain why the timbre of the low woodwind ensemble

[19] Research on timbre perception that postdates Kaluzny and Holloway's research has established a connection between spectral centroid (a function of instrument register, register, and dynamics) and perceived brightness which they could not have referenced, but the description of low instrument registers in orchestration treatises frequently employs descriptors like "dark" and "deep," that suggest an implicit understanding of this now established mapping of centroid to brightness.
[20] Kaluzny, "Motive in *Elektra*," 26.
[21] Ibid., 113.
[22] Del Mar, *Richard Strauss*, 307.

has a particularly cold quality, nor what other aspects of the music, such as register and dynamics, contribute to this symbolic reading of the orchestration.

One of the few developed arguments for the symbolic role of orchestration is given by Carolyn Abbate who outlines two passages in which shifts in orchestration are used to highlight the contrasts between characters, first between Elektra and Chrysothemis and then between Elektra and Klytämnestra. In the passage with the two sisters (Reh. 90-91), Abbate argues that the shift from strings to a combination of flutes, clarinets, and English horn colours Elektra's remark, "Armes Geschöpf!" (poor creature!), which is otherwise integrated into the linear and harmonic progress of the passage.[23] In the pivotal scene between Elektra and Klytämnestra (Reh. 177-179), Elektra's questioning reply to her mother's confession of frequent sleepless nights is marked by an abrupt shift in harmony, melody, and meter and an orchestral "volte-face" as the strings are cut short by bass clarinet, muted trombones, and timpani (Reh. 178_4).[24] Abbate relates the changes in orchestration in these two examples to the meaning of Elektra's interjections:

> In Chrysothemis's speech, Elektra's remark – her obsessive A-D – is the merest ruffle in Chrysothemis's musical argument. In the exchange with Klytämnestra, the same Elektra-voice, no longer turned inward but thunderously phatic, is heard, interrupts, derails and redirects the passage.[25]

Abbate maps the severity of the musical disruption—produced primarily by the shift in orchestration, but also by the harmony—to the character of Elektra's responses; in the first example, an indifferent aside to Chrysothemis's outpouring, in the second, a prying question in

[23] Carolyn Abbate, "Elektra's Voice: Music and Language in Strauss's Opera" in *Richard Strauss: Elektra*, ed. by Derrick Puffett (Cambridge: Cambridge University Press, 1989), 118.
[24] Ibid., 118. In this analysis, Abbate's list of instruments is curiously cherry-picked from the score. She associates harp and strings with Klytämnestra, omitting the iridescent glockenspiel and flute that participate in the complex harmonies as well as the muted brass who play the repeated B minor chords. Her list of instruments accompanying Elektra is also incomplete. She neglects to mention the bass clarinet and timpani which enter first with the muted trombones and also excludes the bassoon and tremolo violins that enter under the horn motive with the muted trumpets.
[25] Ibid., 120.

her exchange with Klytämnestra. Although Abbate touches upon an important dramatic aspect of orchestration in the above examples, it is ultimately not the main focus of her book chapter. As such, the extent to which the orchestra expresses the intent of characters' remarks in the opera is not fully addressed. Abbate's commentary only illustrates the dramatic function of the orchestra with respect to Elektra. The extent to which the orchestra underscores and shapes the language of other characters in the opera has yet to be studied.

Currently, research on orchestration and its dramatic functions in *Elektra* has been unfocused and underdeveloped, discussed either in a summary fashion or in support of other analytical claims. My thesis addresses this fragmentary approach to the study dramatic orchestration in *Elektra* by providing a focused and systematic approach to the subject. I use the theory of conceptual metaphor, developed by George Lakoff and Mark Johnson, to illustrate the complex semantic function of the orchestra. Through this approach, I provide a more thorough account of the orchestral features that contribute to the pervasive examples of imagery and symbolism in the opera, including timbre, dynamics, and register, as well as elements of pitch and rhythm, which are integral aspects of the orchestral texture.

Orchestration and Musical Structure in *Elektra*

In *Elektra* research, discussion of the structural function of orchestration is less common than its dramatic function. The two main structural topics that are addressed are the orchestration of motives and the articulation of formal sections through segmental orchestral effects. While Kaluzny mainly addresses the symbolic function of timbre in the transformation of motives, she also remarks on the articulation of motive by specific instruments. In her discussion of the passage at Reh. 187a, Kaluzny notes that in the rapid string of sixteenth notes the bassoons only

double the strings on the Deed motive, which initiates ("motivates") the sixteenth-note figures at the beginning of every measure.[26] In this example, Kaluzny identifies how the orchestration differentiates the motive from the continuous sixteenth-note figure. Kurt Overhoff also discusses the role of orchestration in the differentiation of motives throughout the opera. Overhoff not only notes that certain instrument families are associated with certain characters and ideas,[27] he also argues that this use of distinct instrumental groups lessens dissonances and clearly differentiates the contrapuntal voices.[28]

The majority of references to structural orchestration are focused on the role of orchestration in the articulation of sectional boundaries. Kaluzny notes that the gradual thinning of the orchestral texture, along with registral descent, increased melodic fragmentation, and diminuendo, acts as a sign of conclusion.[29] Lawrence McDonald makes a similar observation, claiming that the beginning of the scene at Reh. 110a is marked by a "sudden thinning of texture" along with an abrupt shift to E minor (following a cadential $\frac{6}{4}$ chord in G minor), a drop in dynamics, and a rapid increase in tempo.[30] In both analyses, thinning textures articulate boundaries; however, the first is an example of a gradual process over the course of a codetta while the second is an example of an abrupt shift that marks the beginning of a new section. McDonald also notes that the low brass chord which defines the opening of the second part of Scene VI—Orestes's entrance (Reh. 123a)—returns at Reh. 130 to frame the tonally closed section.[31] Kaplan credits the shift in orchestration, rhythm, and register at Reh. 50_3 with

[26] Kaluzny, "Motive in *Elektra*," 43.
[27] Kurt Overhoff, *Die Elektra-Partitur von Richard Strauss* (München: Verlag Anton Pustet Salzburg, 1978), 190.
[28] Overhoff, *Elektra-Partitur*, 190-191.
[29] Kaluzny, "Motive in *Elektra*," 101.
[30] McDonald, "Compositional Procedures in *Elektra*," 161.
[31] Ibid., 166.

establishing a cadence on the non-functional Elektra chord.[32] Each of the above examples identify slightly different orchestration techniques (gradual reduction, sudden reduction, return of instruments) that mark slightly different structural boundaries (codettas, beginnings, sectional boundaries, non-functional cadences). Overall, this area of research on *Elektra* is underdeveloped, lacking a focused approach or analytical framework with which to provide a systematic understanding of the structural role of orchestration in the opera. In this thesis, I address this subject through two analyses of the structural role of orchestration in *Elektra*. My analyses provide a comprehensive account of the structural dimension of orchestration in the opera, which address many of the brief points discussed above. I also employ a number of analytical techniques, including cut-out scores, graphical representations of the orchestration, and traditional harmonic and formal analysis to clarify the orchestra's structural role.

Review of Research on Orchestration

Dialectic Theories of Orchestration

In orchestration research, dialectical theories of orchestration—those that divide orchestration into structural (thematic) and dramatic (rhetorical, coloristic) types—have been present for over a hundred years. Richard Strauss, who is generally regarded as an expert orchestrator, very rarely discusses the subject of orchestration in his writings. However, in his foreword to his revised edition of Berlioz's *Treatise on Instrumentation* he offers a theory on the evolution of orchestration that traces two "main roads of development."[33] The first he terms the symphonic (or polyphonic) road and the second the dramatic (or homophonic) road. Strauss

[32] Richard A. Kaplan, "The Musical Language of *Elektra*" (PhD. diss., University of Michigan, 1985), 121.
[33] Richard Strauss, foreword to *Treatise on Instrumentation* by Hector Berlioz, rev. by Richard Strauss, trans. By Theodore Front (New York: Edwin F. Kalmus, 1948), I.

attributes the origin of the first road to Haydn and Mozart "whose symphonic works…reveal in their style, in their themes, melodies and figurations the character of the string quartet with all its polyphonic possibilities."[34] This type of orchestral composition employs the different instruments of the orchestra as a means for delivering polyphony, rather than as a sonic end in themselves. Strauss traces this type of orchestration from Beethoven, to Schumann and Brahms, and finally to Wagner. Dramatic orchestration, by contrast, employs the "coloristic elements" of the orchestra to "reinforce poetry and stage."[35] While Strauss implies that these paths essentially developed simultaneously, he does note that the increasing virtuosity of melodic material led to the introduction of more coloristic effects within the polyphonic style.[36] Strauss argues ultimately that the symphonic and dramatic styles of orchestration are synthesized by ("the genius") Richard Wagner—a combination which Strauss considers to be the perfection of the modern orchestra. While the theory Strauss proposes in this foreword offers a rare window into his perspective on orchestration, the evidence he provides for these two roads of development is limited. He only names a small number of composers and works and provides no analytical evidence for the two types of orchestration. (This is to be expected given it is intended only to provide some historical context for the body of the treatise).

Timothy Cutler draws a similar stylistic distinction in his dissertation, "Orchestration and the Analysis of Tonal Music," between what he calls structural and coloristic orchestration. Cutler defines structural orchestration as that which articulates or clarifies the (Schenkerian) structure of the music and coloristic orchestration as that which obscures or conflicts with the

[34] Strauss, foreword to Berlioz's *Instrumentation*, I.
[35] Ibid., II.
[36] Ibid., II.

musical structure.[37] Furthermore, he states that coloristic orchestration is often concerned with the "purely expressive aspects of the composition."[38] Cutler's structural and coloristic categories have a clear similarity to the symphonic and dramatic roads of development outlined by Strauss, despite the more limited focus of Cutler's theory on only 18th and 19th century symphonic music (Strauss's categories encompass operatic and programmatic music in addition to symphonic works). In Strauss and Cutler's first category, orchestration has a purely structural function—the presentation of polyphony and the articulation of musical structure—while the second has an expressive or dramatic function—the use of the expressive capacity of the orchestra for rhetorical effect.

Cutler divides his analyses into two sections, one on foreground relationships and another on background relationships. Although he initially suggests that structural orchestration is associated with large-scale ideas and coloristic orchestration with small-scale effects, his analyses sometimes conflict with this premise. In the section on foreground relationships, Cutler argues that characteristic (as opposed to conventional) doublings and chord spacings can function as motivic indicators ('motive' in the Schenkerian sense of the word): intermittent doubling can highlight a particular intervallic pattern, while chord spacings can express a linear idea in a vertical structure. Both of these ideas are examples of structural orchestration on a smaller scale, closer to the musical surface. In his section on background structure, Cutler discusses how orchestration can either articulate or obfuscate musical structure. The primary forms of structural orchestration Cutler addresses are different types of contrast (sound vs. silence, loud vs. soft, abrupt shifts in instrumentation, changes in orchestral texture) that segment

[37] Cutler, "Orchestration and Tonal Music: Interaction between Orchestration and Other Musical Parameters in Selected Symphonic Compositions, c. 1785-1835" (PhD. diss., Yale University, 2000), 21 & 142.
[38] Cutler, "Orchestration and Tonal Music," 143.

the music and mark key structural points (i.e. sectional boundaries, structural harmonies, "potential and realized structural goals"[39]). The examples of coloristic orchestration Cutler offers are far more varied, but overall, they involve changes in orchestration that do not align with structural harmonies or formal boundaries. These include the expressive use of gradual and sudden orchestral tuttis, the confusion of the *Urlinie* descent in extensively varied recapitulations, the misalignment of harmonic transitions and timbral shifts, and the misalignment of changes in orchestration and structural harmonies. While Cutler limits his analyses to sonata form works, his theoretical framework could easily be extended to other musical forms.

An even more recent example of a dialectic theory of orchestration is Meghan Goodchild's theory of orchestral gestures. In her dissertation, Goodchild defines four types of orchestral gestures, which she organizes into two contrasting categories: thematic gestures (gradual addition and gradual reduction) and rhetorical gestures (sudden addition and sudden reduction).[40] Goodchild states that the thematic gestures organize the foreground musical processes into larger gestures of growth and abatement, while the rhetorical gestures mark an unexpected disruption of the musical flow.[41] Goodchild adopts this terminology from Robert Hatten's research on musical gesture, but these categories bear a clear relation to Cutler's concepts of structural and coloristic orchestration. Goodchild's thematic orchestral gestures, like Cutler's structural orchestration, reinforce the underlying musical processes while her rhetorical orchestral gestures, and Cutler's coloristic orchestration, conflict with the musical structure and subvert listener expectations. Despite the different focus of Goodchild and Cutler's theories—the

[39] Cutler, "Orchestration and Tonal Music," 274.
[40] Meghan Goodchild, "Orchestral Gestures: Music-Theoretical Perspectives and Emotional Responses" (PhD. diss., McGill University, 2016), 42.
[41] Goodchild, "Orchestral Gestures," 44.

former on musical gesture, the latter on Schenkerian form and harmonic structure—both divide orchestration into opposing categories in which the orchestration either confirms or conflicts with other aspects of the music.[42]

The scope of the above theories presented by Strauss, Cutler, and Goodchild in time period and genre presents a challenge for unification into a singular orchestration theory. Strauss's theory not only includes symphonic music, but also tone poems, oratorios, and operas from the 18th to the 20th century. Goodchild's theory could be extended to stage works, but her analyses are limited to symphonic works and tone poems from the 18th to 20th centuries. Cutler's theory is the most limited, focused exclusively to symphonic music of the 18th and 19th centuries. The varying scope of these theories primarily affects their interpretation of dramatic orchestration, which generally tends to be a more diffuse category. Moreover, differences between researchers regarding what constitutes musical structure also present challenges for the synthesis of these theories. Cutler's conception of musical structure and form is firmly grounded in Schenkerian theory while Goodchild's conception of musical structure is process-based and perceptually focused. As such, the meaning of the term "structural" is not equivalent across these theories.

Despite the various dialectic or binary theories of orchestration in the literature, few researchers have recognized the connection between them. In the following two chapters of this thesis, I employ this often-raised, dialectical division of orchestration as a theoretical framework for my analyses, investigating both the dramatic and structural roles of orchestration in *Elektra*.

[42] Although the sudden addition and reduction gestures typically occur in conjunction with abrupt changes in harmony, thematic material, tempo, and dynamics, this should not be confused with the types of orchestral confirmation that define structural boundaries. Goodchild is careful to clarify that the sudden addition and reduction gestures do not mark sectional boundaries such as the thematic units of sonata form but instead act as a "dramatic turning point" or "structural rupture" with expressive intent. (Goodchild, "Orchestral Gestures," 62 & 64.)

In addition, I introduce two, unique analytical approaches that address these different functions of the orchestra, an approach that can be applied to other dialectical theories of orchestration.

Orchestration and Perception

Another growing area of research focuses on the relationship between orchestration and perceptual processes. In their book chapter, "Perceptual Processes in Orchestration," Meghan Goodchild and Stephen McAdams propose that certain conventions of orchestration that have yet to be explicitly stated are in fact related to auditory grouping: the manner in which our perception organizes (blends, segregates, stratifies, etc.) sound.[43] They organize this grouping theory into three categories—concurrent, sequential, and segmental grouping—which they associate with particular sonic goals of orchestration, such as blend or heterogeneity, integration or segregation, and orchestral contrasts or progressive orchestration. Highlighting connections between orchestral treatises and the more developed research on auditory perception, Goodchild and McAdams argue that the relationship between orchestration and perception has been a form of implicit knowledge.

One of the strengths of Goodchild and McAdams' theory is that it is stylistically independent. Musical choices will always have a relation to auditory perception regardless of the artistic goal of the work. In this respect, it provides a more overarching theory of orchestration than some of the dialectic theories of orchestration discussed in the previous section. However, the perceptual goals of orchestration are by no means the limit of orchestration's role in music. Orchestration, or more specifically timbre, has a semantic dimension that cannot be captured by

[43] Meghan Goodchild and Stephen McAdams, "Perceptual Processes in Orchestration" in *The Oxford Handbook of Timbre*, ed. by Emily I. Dolan and Alexander Rehding (New York: Oxford University Press, June 2018), 2, Oxford Handbooks Online.

a theory of auditory grouping. Some theorists have sought to address this other facet of orchestration. Zachary Wallmark, for example, highlights the semantic dimension of orchestration by considering the language used to describe instrument timbre in his article, "A Corpus Analysis of Timbre Semantics in Orchestration Treatises." In this article, Wallmark identifies a large set of unique, timbral descriptors drawn from a corpus of eleven influential treatises or manuals on orchestration. He then categorizes these descriptors into seven groups: affect, matter, cross-modal correspondence, mimesis, action, acoustics, and onomatopoeia.[44] These categories of descriptors highlight aspects of orchestration (ie. symbolism, metaphor, emotion, imitation) that cannot be captured by a theory based only on auditory grouping.

In addition to the omission of semantic orchestral features, Goodchild and McAdams' perceptual theory of orchestration can only address the relationships between adjacent or, at least, near-adjacent timbres. Concurrent grouping identifies the effects of timbre on the grouping of concurrent sounds, sequential grouping identifies the effects of adjacent timbres on the formation of auditory streams, and segmental grouping identifies the effects of adjacent timbres on the segmentation of a series of sounds into larger groups. In some situations, tones of one timbre that are separated by tones of another, contrasting, timbre may form a single stream, establishing a relationship that is between non-adjacent sounds. However, this only occurs in rapid sequences of tones uncharacteristic of most music.[45] Because of this, grouping theories of orchestration cannot explain timbral similarities or transformations that are apparent to an attentive listener, but which are significantly separated in time. This ultimately limits the

[44] Zachary Wallmark, "A Corpus Analysis of Timbre Semantics in Orchestration Treatises," *Psychology of Music* (May 3, 2018): 10-11.
[45] Albert Bregman, *Auditory Scene Analysis* (London: The MIT Press, 1990), 478-9.

application of this theory, especially in regard to musical form, which necessarily involves relations between non-adjacent musical events.

Despite the above restrictions, the perceptual theory of orchestration proposed by Goodchild and McAdams is widely applicable because of its basis in auditory grouping, which underlies our experience of music (along with other learned aspects of musical organization).[46] In my thesis, I consider the role of auditory grouping in both dramatic orchestral effects and structural orchestration. I assess the relevance of auditory grouping in the foregrounding of textural features that contribute to a particular image or symbol. I also consider the role auditory grouping plays in the definition of musical units in conjunction with conventional tonal and formal analysis.

Analyzing Orchestration

The analytical approaches available to the orchestration theorist remain rather limited. There are two main approaches that have been taken in recent research: graphic representation and score annotation. In her book on the orchestral works of Haydn, Emily Dolan proposes a method of graphic representation designed for the analysis of orchestration. In Dolan's orchestral graphs, the different instruments are represented as lines whose varying thickness indicates the written dynamic level in the score (thicker means louder, thinner means softer).[47] The instrument families and their individual members are distinguished by the different shading of each line.[48] The order of the instruments in Dolan's orchestral graphs also encodes information about the

[46] Bregman, *Auditory Scene Analysis*, 455.
[47] Emily Dolan, *The Orchestral Revolution: Haydn and the Technologies of Timbre*," (Cambridge; New York: Cambridge University Press, 2013), 108.
[48] On the companion website to *The Orchestral Revolution*, the instrument families are distinguished by colour and their respective members by brightness which is a far clearer method of presentation than the shading used in the book. "Orchestral Graphs," The Orchestral Revolution, accessed on April 25, 2020, www.orchestralrevolution.com/orchestral-graphs.php.

particular excerpt. Rather than being presented in score order, the instrument sections are organized according to their relative playing time within the given excerpt with the most prevalent section on the bottom and the least prevalent on top (the sections themselves retain their score order). While the information present in these orchestral graphs also exists in the score itself, the reduction and reorganization highlight certain features that Dolan wishes to emphasize, such as the growth in dynamics and number of instruments. The reductive nature of her orchestral graphs also allows large passages of music to be compared and contrasted in relatively little space.

Meghan Goodchild also employs a method of graphic representation, which, though similar in some respects, was developed concurrently and independently of Dolan's orchestral graphs.[49] Goodchild's graphs (or "visualizations" as she refers to them) include three score-based features and three performance-based features. The score-based features include the instrumental texture (the number of independent parts sounding on each beat), the onset density (the number of attacks per beat), and the ambitus (the spread of the highest and lowest sounding instruments). The performance-based features include the loudness (measured in sones), spectral centroid (the spectrum's mean value or 'centre of gravity'), and tempo (manually coded in bpm). These features are tracked in six parallel time plots that allow for comparison of the various parameters over extensive passages within a single page.[50] Instrumental texture is presented as a stacked bar graph (one bar per beat) rather than as a series of lines as in Dolan's graphs. Additionally, instrument families are distinguished by colour, but there is no distinction between individual instruments or sections. Onset density is presented in a similar fashion. Like Dolan, Goodchild also chooses to reorder the sections instead of representing them in score order. Goodchild,

[49] Goodchild, "Orchestral Gestures," 49-50.
[50] Ibid., 245-256.

however, employs a fixed ordering, which begins with strings at the bottom, up through woodwinds, brass, percussion, and organ/harp, rather than one based on relative playing time of each section (although the fixed order does often correlate with playing time).[51]

Although Goodchild's visualizations are significantly more sophisticated than Dolan's orchestral graphs, both of them primarily function to reduce large sections of orchestral works into concise representations that highlight features that are difficult to observe in a full orchestral score. This reductive approach to orchestral analysis is very malleable. Parameters like register (ambitus or individual instrument register), dynamics or loudness, instrument texture, onset density, tempo, spectral centroid, and other timbral dimensions can be included or omitted depending on their relevance to a particular analytical focus. As such, there is potential for the adaptation of graphic representation to aspects other than orchestral growth, large scale textural contrasts, and orchestral gestures. However, increasing the number of included parameters has its disadvantages. The expansion of these visualization tools reduces their efficacy as expedient methods of presenting large amounts of data. While Goodchild's visualizations are more detailed than Dolan's, they are not always simple to interpret, and the overarching gestures can be muddled by the level of detail. In addition, the vertical compression of parameters like centroid, loudness, ambitus, and tempo in comparison to instrumental texture make it more difficult to recognize and assess the changes in these variables over time. Goodchild's graphs also present challenges for comparison due to the equal horizontal dimensions of excerpts that vary in length, which makes it more difficult to compare the rates of change between different examples. Ultimately, these disadvantages are a result of working with fixed margins. The presentation of

[51] Goodchild does not state why she chose this particular order, but it is possible that it is organized to reflect the historical development of the orchestra with the earliest instruments of the orchestra on the bottom and the newer members above.

future research online could allow for more freedom in the presentation of similar orchestral graphs, alleviating the differences in scale.

In addition to the use of space in Dolan and Goodchild's visualizations, there is also room for development in the use of colour. Both Dolan and Goodchild primarily employ colour to distinguish between instrument families in their graphic representations. While Dolan's rearrangement of instrument families highlights the process of growth and large-scale contrasts, the use of the familiar score order would free up colour to represent information other than instrument family. Goodchild's use of stacked bar graphs for the instrumental texture and onset density necessitates some type of differentiation (either through colour or perhaps shading).[52] In Goodchild's visualizations, however, she also uses colour for the other four variables: centroid, loudness, tempo, and ambitus. This use of colour could simply be done away with, especially in the graphs of centroid, loudness, and tempo which only track a single variable. Neither is colour required to differentiate the two lines that track the ambitus, which, by definition, do not cross. The colour in these graphs carries no information and can be visually misleading since some of the colours (purple, green, and red) are also used to represent instrument families in the graphs of texture and density.

The potential for graphic representation in visualizing orchestration is great and remains largely unexplored despite the pioneering work by Emily Dolan and Meghan Goodchild. There remains room for development in the structuring of the vertical and horizontal dimensions of the graphs for accurate comparison and in the use of colour as a means for representing additional dimensions within a single graph.

[52] The use of colour for instrumental texture also allows for the emotional intensity ratings for musicians and non-musicians to be overlaid on the same graph using continuous and dotted black lines.

An alternative approach to the analysis of orchestration is score annotation. This method has primarily been developed as part of the Orchestration Analysis and Research Database (ORCH.A.R.D.),[53] which is based upon the perceptual theory of orchestration outlined by Stephen McAdams and Meghan Goodchild.[54] The ORCH.A.R.D. website is a growing, searchable database of annotated orchestral scores currently spanning repertoire from 1787 to 1943 that is being developed by a team led by Stephen McAdams at McGill University as part of the Orchestration and Perception Project (an international partnership between McGill University, IRCAM-Centre Pompidou, and Haute École de Musique de Genève). The method of annotation is simple: coloured boxes indicating a particular orchestral effect are placed around the relevant instruments, highlighting the type of auditory grouping and the participating instruments. Antiphonal contrasts or timbral echoes, for example, would be highlighted by two boxes, a purple box around the initial instrument group and a green box around the response or echoing instrumental group.[55] Notes beside the annotated score provide further details on the orchestral effect, including its relative strength (according to the annotator) on a scale of 1 to 5 (1 being the weakest, 5 being the strongest), the instrumentation (including the dominance of a particular group, when relevant), and other noteworthy features of the example, such as registral characteristics or its relation to the surrounding musical landscape. The online platform contributes significantly to the effectiveness of this database, as it contains a significant and growing amount of information in a searchable format. As an analytical method on its own, however, it lacks a certain amount of depth. Although score annotation is an incredibly malleable technique that could be applied to highlight orchestral features beyond the grouping processes

[53] "About," ORCH.A.R.D., accessed on February 2, 2020, https://orchard.actor-project.org/about/.
[54]Goodchild and McAdams, "Perceptual Processes in Orchestration."
[55] ORCH.A.R.D., "About."

identified in ORCH.A.R.D., its use as a method of analysis is somewhat limited and necessitates further explanation through text or additional analytical figures. For more in-depth analyses, something more detailed and reductive is required, such as the graphs developed by Emily Dolan and Meghan Goodchild. Ultimately, score annotation is best suited as an initial analytical tool that supports further explanation.

Chapter Outline

This thesis is structured around a dialectic division of orchestration into a dramatic category, which is centred on the semantic function of the orchestra, and a structural category, which is centred on the organizational role of the orchestra and its relationship with other structural factors (harmony, thematics, etc.). Chapter 2 addresses the dramatic role of orchestration. In this chapter, I focus on two significant aspects of Hofmannsthal's drama that are highlighted in Strauss's score: visual imagery, especially descriptions of the characters' animalistic behaviours, and symbolic contrasts. I explore the relationship between these dramatic themes and their orchestral realizations in a series of analytical vignettes. Throughout these analyses, I employ a method of visualization developed by the cognitive linguists Gilles Fauconnier and Mark Turner known as a Conceptual Integration Network to demonstrate the integration of the dramatic imagery and symbolism of Hofmannsthal's drama with Strauss's musical score.

In Chapter 3, I turn towards structural orchestration. This chapter is primarily devoted to two analyses, the first of which is focused on the orchestration of motive and its role in creating extended, thematic contrasts while the second is focused on the interrelationship of segmental orchestral effects, thematic organization, and harmonic structure and their combined role in the

shaping musical form. In the second analysis, I make use of Emily Dolan's method of graphic representation as an analytical tool for the study of the orchestration. I develop upon her approach by incorporating the textural functions of the instruments (melody, harmony, etc.) into the graphs through the use of colour. This modified use of colours highlights orchestral shifts that do not involve a change in the instruments present, but rather involve an audible shift in the function of the instruments within the musical texture. These orchestral graphs are combined with more traditional harmonic and form analysis to illustrate the interrelationships of these various parameters in the overall organization of the musical work.

Before proceeding to the body of this thesis, it is necessary to offer a few notes on formatting. Measure numbers are presented in the following format: Reh. X_y. Measures are indicated in subscript, counting from the respective rehearsal number (based on the 1990 Dover Edition). The measure marked by a rehearsal number is treated as measure 1. Only measures 2 and onward are indicated by a subscript number. The measure numbers after rehearsal number 32, for example, would be written as follows: Reh. 32, Reh. 32_2, Reh. 32_3, etc. The only exception to this format is the initial measures of the work, which precede Reh. 1. These are simply numbered as mm. 1-9. For the ease of the reader, all score examples are notated in concert pitch except for the octave transpositions of the piccolos, contrabassoon, and double basses. These octave transpositions are occasionally omitted in examples where a variety of instruments are collapsed into a single staff. Lastly, traditional score order is employed for the majority of examples, but in certain examples the instruments are reorganized to reflect the musical texture. These alterations are either indicated by labels of the textural elements to the left of the score (melody, harmony, etc.) or by a note in the caption.

Chapter 2

Dramatic Orchestration in *Elektra*

Introduction

One of the most familiar functions of the opera orchestra is to provide dramatic effects that highlight and augment the characters and events onstage. The coloristic qualities of the orchestra and its varied members are frequently used to represent visual and aural imagery, to depict the outer qualities and inner thoughts of the characters, and even to create sound effects for the action onstage. While this aspect of operatic orchestration is well known, it is not well understood. Observations about the dramatic role of orchestration in Strauss's *Elektra* are quite common in the literature, but the connection between the orchestration techniques and their meanings often remains implicit. The following quote from Norman Del Mar regarding the passage at Reh. 98, introduced in Chapter 1, is illustrative of this type of observation:

> The numb grief of [Chrysothemis's] misery is well caught by the cold orchestration which features the lower woodwind group of basset horns, cor anglais, heckelphone and bass clarinet, together with the bassoons and contrabassoon.[56]

In this passage, Del Mar describes the orchestration in qualitative language, arguing that the orchestration is representative of Chrysothemis's emotional state. However, while he mentions the use of the lower woodwinds, he does not explain why this choice of instrumentation is significant nor how it relates to his interpretation of the orchestration at this point. What is it exactly that makes the orchestration "cold"? Further analysis of the orchestration would reveal that not only are the lower woodwinds used, but they each play within the lower range of their respective instruments. The lower register, both generally and within the instruments' ranges,

[56] Del Mar, *Richard Strauss*, 307.

produces a sound with a lower spectral centroid (the mean value of the spectrum or its 'centre of mass'), a dimension of timbre that has been correlated with the perception of brightness.[57] The soft dynamic of the passage further contributes to the dark sound of this passage. The connection between brightness and temperature is straightforward as brighter objects tend to radiate more heat (the sun being the most obvious example). Thus, the connection between the darker sound of the low woodwinds and a cooler temperature. Timbral brightness (and darkness) can also be related directly to Chrysothemis's emotional state of "numb grief." Studies on timbre and emotion have identified a connection between low arousal emotions such as sadness (a negative emotion) or tenderness (a positive emotion) and lower spectral centroid.[58] In addition, lower registers of instrument families, in particular low woodwinds and brass, have been correlated with negative emotions, such as anger or sadness.[59] The use of the lower register of these instruments contributes both to the sense of numbness (a low arousal state) and grief (a negative emotion). This direct connection between timbre and emotion is not expressed in Del Mar's quote, but it further supports the metaphorical relationships between timbre, emotion, and temperature.

Del Mar's description of this passage from *Elektra* is built upon three, closely-related conceptual metaphors. Conceptual metaphors, first introduced by George Lakoff and Mark Johnson, are metaphorical relationships between distinct concepts that structure our experience of the world.[60] In Del Mar's description, the three underlying metaphors are: TIMBRES HAVE

[57] Stephen McAdams, "Musical Timbre Perception," in *The Psychology of Music* (3rd Ed.), ed. Diana Deutsch ((New York: Academic Press, 2012), 41.
[58] Juslin, Patrik N. "Cue Utilization in Communication of Emotion in Music Performance: Relating Performance to Perception," *Journal of Experimental Psychology. Human Perception and Performance* 26, no. 6 (2000): 1797-1813; Gabrielsson, Alf, and Patrik N Juslin. "Emotional Expression in Music Performance: Between the Performer's Intention and the Listener's Experience." *Psychology of Music* 24, no. 1 (1996): 68-91.
[59] Chelsea Douglas, "Perceived Affect of Musical Instrument Sounds" (M.A. Thesis, McGill University, 2015), 23.
[60] George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: Chicago University Press, 2003), 3.

TEMPERATURES, EMOTIONS HAVE TEMPERATURES, and TIMBRES ARE EMOTIONAL STATES.[61] These metaphors not only structure the musical experience of the passage discussed by Del Mar, but also influence our understanding of orchestral timbre in general. In addition, the timbral descriptors that Del Mar employs form a significant part of our lexicon for timbre. Both affective descriptors (including emotional states) and material descriptors (including physical properties like temperature) are common in the literature on orchestration. Both affect and matter constitute one of seven basic categories of timbral descriptors Zachary Wallmark identifies in his corpus analysis of orchestration treatises and manuals.[62] As such, Del Mar's clam that the orchestration's cold quality is illustrative of Chrysothemis's emotional state is just one example of the metaphorical concepts TIMBRES HAVE TEMPERATURES, EMOTIONS HAVE TEMPERATURES, and TIMBRES ARE EMOTIONAL STATES that underly our verbal descriptions of timbre and orchestration.

As previously mentioned, the conceptual metaphor, TIMBRES ARE EMOTIONAL STATES, is not explicit in Del Mar's description but instead emerges as a result of the shared metaphorical connection of timbre and emotion to temperature, illustrated by the phrases "*cold* orchestration" and "*numb* grief" (emphasis added). These three metaphorical concepts reinforce one another and contribute to the dramatic meaning of the passage. As this example reveals, in-depth analysis of the orchestration often reveals a rich semantic world that often involves multiple metaphorical connections between conceptual domains, such as the emotional states of characters, timbre, and physical properties like temperature. Up to this point, research on *Elektra* has only referenced these connections in passing and rarely made explicit the metaphorical

[61] These conceptual metaphors are shown in all caps after George Lakoff and Mark Johnson (Lakoff and Johnson, *Metaphors We Live By*, 4).
[62] Wallmark, "Timbre Semantics in Orchestration Treatises,"10.

relationships that underlie them. As such, the main goal of this chapter is to explore the metaphorical relationships that connect aspects of the orchestration with elements of the drama, such as characters, emotions, events, and imagery. Although I am particularly concerned with examples that explicitly involve orchestration, I will also address the role of other parameters like pitch and rhythm as these musical features are integrally linked with changes in timbre and orchestral texture.

Since this is a large and somewhat diffuse topic, I will limit my focus to two dramatic themes that are characteristic of Strauss's *Elektra*: imagery (especially animalistic imagery) and symbolic contrasts. These two themes are pervasive throughout Hofmannsthal's original 1903 play of the same name and are integral to the libretto and staging of the operatic version. This chapter is divided into two main sections that correspond to the aforementioned themes. Part A concerns the use of the orchestra for the representation of images either expressed in the text or acted out on stage. I will focus particularly on the relationship between orchestration and imagery, highlighting the features of the orchestration that participate in the formation of the musical image as well as the general techniques employed in these imagistic effects. In Part B, I shift my focus from imagery to symbolism, outlining how orchestral contrasts are used to represent symbolic ones, including the contrast between light and dark as well as the rich contrasts between characters. These effects often rely on a combination of musical factors, including timbre, register, rhythm, dynamics, and harmony. For this reason, I will make use of a combination of analytical methods to elucidate the general techniques that underlie the musical contrasts. In addition to analytical approaches like score annotation and harmonic analysis, I make significant use of Conceptual Integration Networks (CINs) in my analyses of dramatic orchestral effects. CINs were developed by the cognitive linguists Gilles Fauconnier and Mark

Turner for the representation of conceptual blending and have been used in music research primarily by Lawrence Zbikowski.[63] In this chapter, these networks provide a visual representation of the features from the orchestration that act as a "sonic analog"—to borrow Zbikowski's phrase—for aspects of the libretto or staging.[64]

Part A: Orchestral Imagery

One of the primary functions of the orchestra in *Elektra* is to provide a musical representation of the imagery in the text. Hugo von Hofmannsthal makes significant use of imagery in his libretto, including references to blood, light, and darkness, as well as animalistic descriptions of the characters. Although musical imagery is a familiar compositional device, text painting especially, there is little research on the role of orchestration in its realization. Kurt Overhoff does outline some examples of orchestral imagery in *Elektra* in the appendix of his 1978 book, *Die Elektra-Partitur von Richard Strauss*. For example, he highlights, the use of the solo violin at Reh. 149 to illustrate the word "Gewürm" (worms), pointing out that the dissonances between this line and the motive in the clarinet family are softened by the use of contrasting timbres.[65] However, he does not explain why the solo violin is an effective choice for this image, nor does he discuss any other examples of orchestral imagery. Wanda Kaluzny also discusses orchestral imagery in her thesis on the opera, outlining how the orchestration of certain motives can give it an imagistic function. One example she gives is the presentation of

[63] There is one example of the use of Conceptual Integration Networks in Strauss scholarship in Blair Johnston's article on *Salome's* climax. Unfortunately, Johnston does not make further use of this modelling device anywhere else in the article. Blair Johnston, "*Salome's* Grotesque Climax and Its Implications," *Music Theory Spectrum* 36, no. 1 (2014): 42.
[64] Lawrence Zbikowski, *Foundations of Musical Grammar* (New York: Oxford University Press, 2017), Oxford Scholarship Online, 27.
[65] Overhoff, *Elektra-Partitur*, 190-1.

Agamemnon's second motive in the timpani, which she argues is illustrative of Klytämnestra's nervous heartbeat (Reh. 247_5), saying that the particular orchestration "simulates the aural effect of the heartbeat."[66] However, she offers no explanation as to why the timpani is an effective orchestral choice.

For listeners, the relationship between imagery and orchestration is often tacit. A metaphorical relationship between an image and the music can be drawn without the listener needing to mentally unpack the details of the connection. As Lawrence Zbikowski argues in the opening chapter of his book, *Foundations of Musical Grammar*, humans have an enormous "capacity for analogical thought" that is capable of integrating disparate musical features into coherent "sonic analogs."[67] Despite the immediacy of this process of conceptual integration, deeper analysis of how these sonic analogs structure our musical experience and how the music reflects on elements of the drama can be revealing. As was demonstrated in the Norman Del Mar quote discussed earlier, selective features of the orchestration are often connected with aspects of the text and other metaphorical concepts to yield a rich interaction between music and the drama. This interaction between different conceptual domains (music, language, gesture, etc.), in which selective aspects from separate domains or input spaces are mapped onto one another to produce a composite of the two, is referred to as *conceptual blend* or *conceptual integration*. The process of conceptual integration is typically represented by Conceptual Integration Networks (CINs), an analytical tool developed by Gilles Fauconnier and Mark Turner. These networks provide a visual representation of how new, blended concepts are synthesized from the combination of two

[66] Kaluzny, "Motive in *Elektra*," 35.
[67] Zbikowski, *Foundations of Musical Grammar*, 27.

separate domains. These domains, or 'mental spaces' as they are sometimes called, share some generic features that support their combination.[68]

To illustrate the basic format of the Conceptual Integration Networks (CIN) as well as provide a simple illustration of the musical imagery characteristic of *Elektra*, I will begin by discussing a rather straightforward example of orchestral imagery: the dramatic depiction of the storm described by Chrysothemis at Reh. 89_1 (Figure 2.1). In this particular passage, Chrysothemis proclaims her desire for children, going on to paint a vivid image of how she would protect them through cold and stormy nights, saying, "und mit meinem Leib sie wärmen in kalten Nächten, wenn der Sturm die Hütte zusammenschüttelt!" (and with my breast I would warm them in cold nights, when the storms batter the hut!)[69] On the word "Sturm," there is a sudden addition of instruments to the prevailing orchestral texture, certain elements of which are combined to paint a vivid aural image.

[68] Gilles Fauconnier and Mark Turner, "Conceptual Integration Networks," *Cognitive Science* 22, no. 2 (1998): 137-138.
[69] Translations are the author's own, unless otherwise indicated.

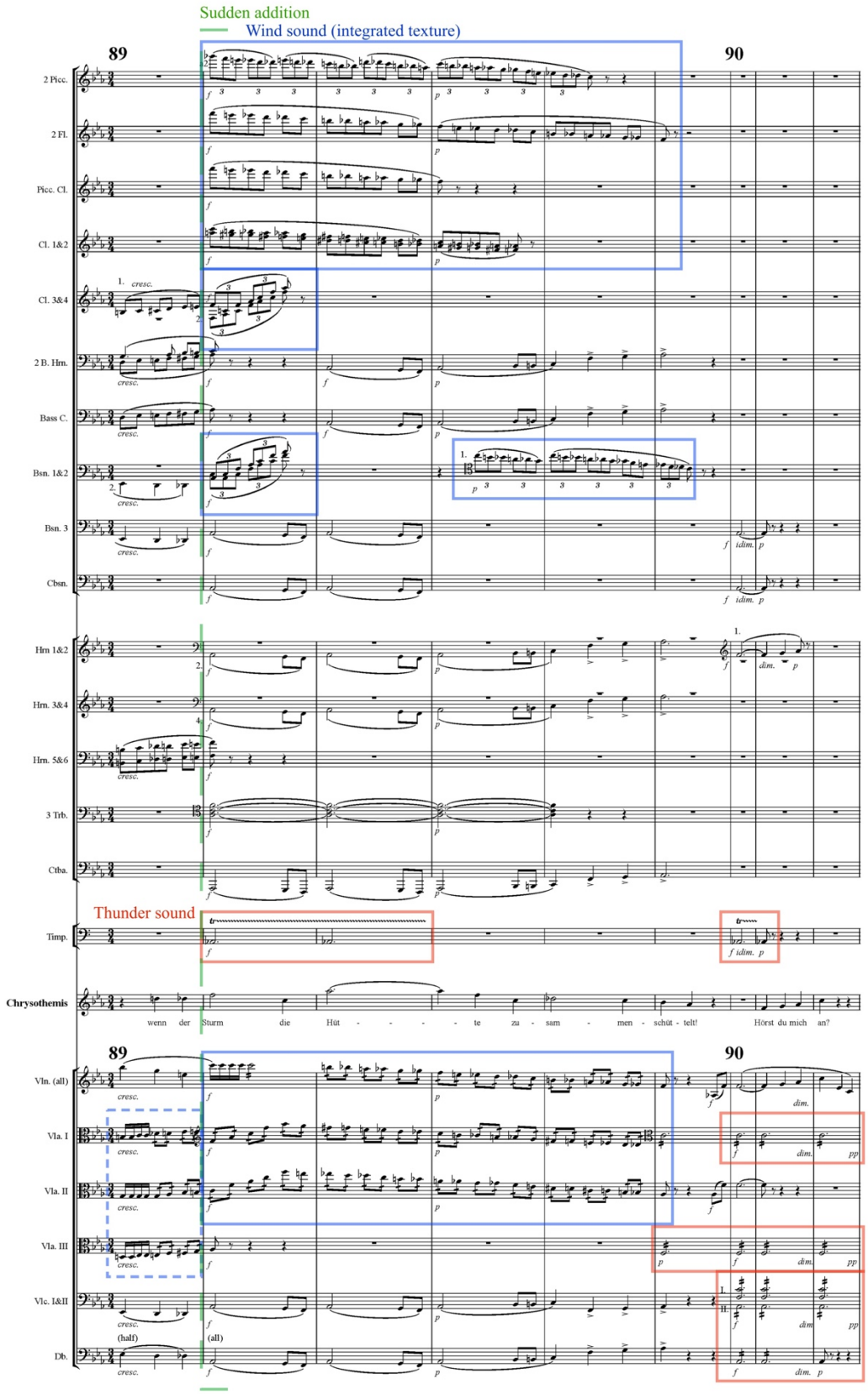

Figure 2.1: Strauss, *Elektra*, Reh. 89 - 90_3 (annotated score)

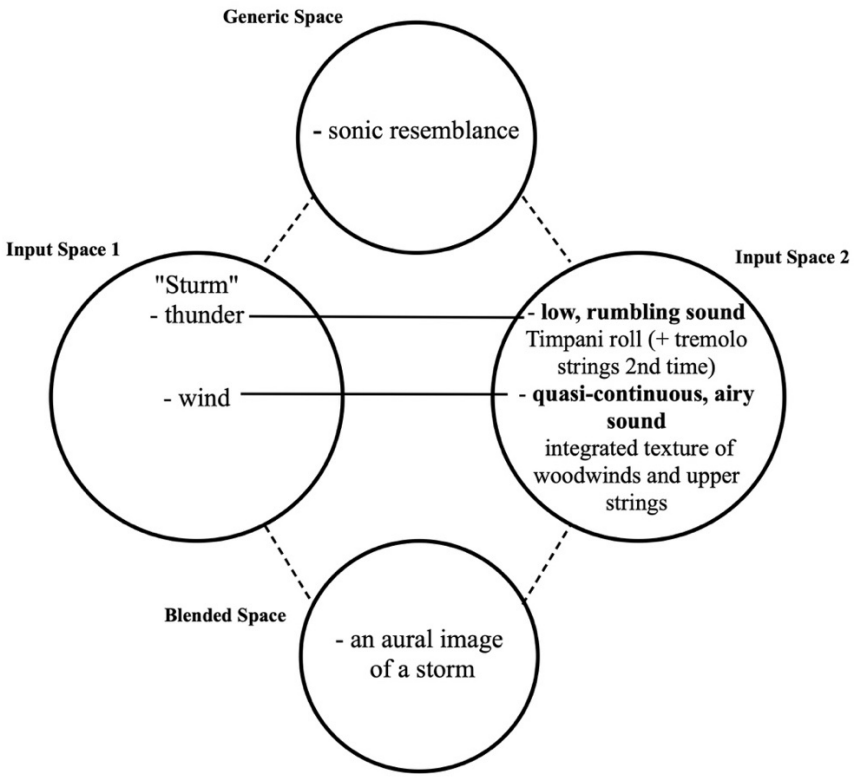

Figure 2.2: Conceptual Integration Network (CIN) for the *Sturm* effect

The Conceptual Integration Network (CIN) shown in Figure 2.2 illustrates the structure of the conceptual blending of the orchestral texture and the image of the storm. The network is comprised of four Mental Spaces: conceptual assemblies of related elements that are structured by some sort of conceptual frame.[70] The four Mental Spaces in this particular network are the Generic Space, the Blended Space, and the two Input Spaces. The Input Spaces contain the elements of the musical texture in the given passage and the elements of the image of the storm. The Generic Space shows the element that supports the blending of the two Input Spaces. In this example, it is the *sonic resemblance* between certain musical sounds, shown in the left Input Space, to the natural weather sounds in the right Input Space. The individual elements that are related through this generic correspondence are connected by black lines. It should be noted that,

[70] Fauconnier and Turner, "Conceptual Integration Networks," 137.

although other elements related to the music and the image of the storm are contained within these Mental Spaces, only the elements that contribute to the blended concept are shown in the Input Spaces. The final part of the network is the Blended Space, which shows the resultant mixture of the two Input Spaces. In this example, the resulting blended concept is *an aural image of a storm*. The mapping of the storm to the musical surface structures the sonic environment, relating two disparate parts of the orchestral texture: the low timpani roll and an integrated texture of woodwinds and strings.

Of the two elements of the orchestral image, the thunderous timpani roll is the simplest. Its low, continuous rumble clearly imitates the characteristic elements of thunder. Arguably, the bass drum would produce a more accurate representation, but the diffuse spectrum of the unpitched instrument would obscure the melodic line in the lower register. The timpani line thus has both a dramatic and a pragmatic function in this passage, contributing to the musical image while also reinforcing the main pitch of the bass melody, A♭. At Reh. 90 there is a second statement of the thunder-like rumble, this time with the addition of tremolo strings to the timpani roll. The two aspects of the string texture that are projected into the blended space are the iterative quality of the tremolo, which corresponds to the characteristic rumble of thunder, and the diminuendo, which corresponds to thunder's natural decay.

Unlike the thunderous timpani, the wind-like sound is produced through a more complicated, orchestral blend referred to as textural integration, a type of sequential grouping in which "two or more instruments have different material, but integrate to create a single textural layer."[71] This integrated texture can be broken down into three components that, when combined, produce a quasi-continuous fluctuation in pitch characteristic of the sound of wind (Figure 2.3).

[71] ORCH.A.R.D., "Table 1 - Orchestral effects, subtypes, and descriptions."

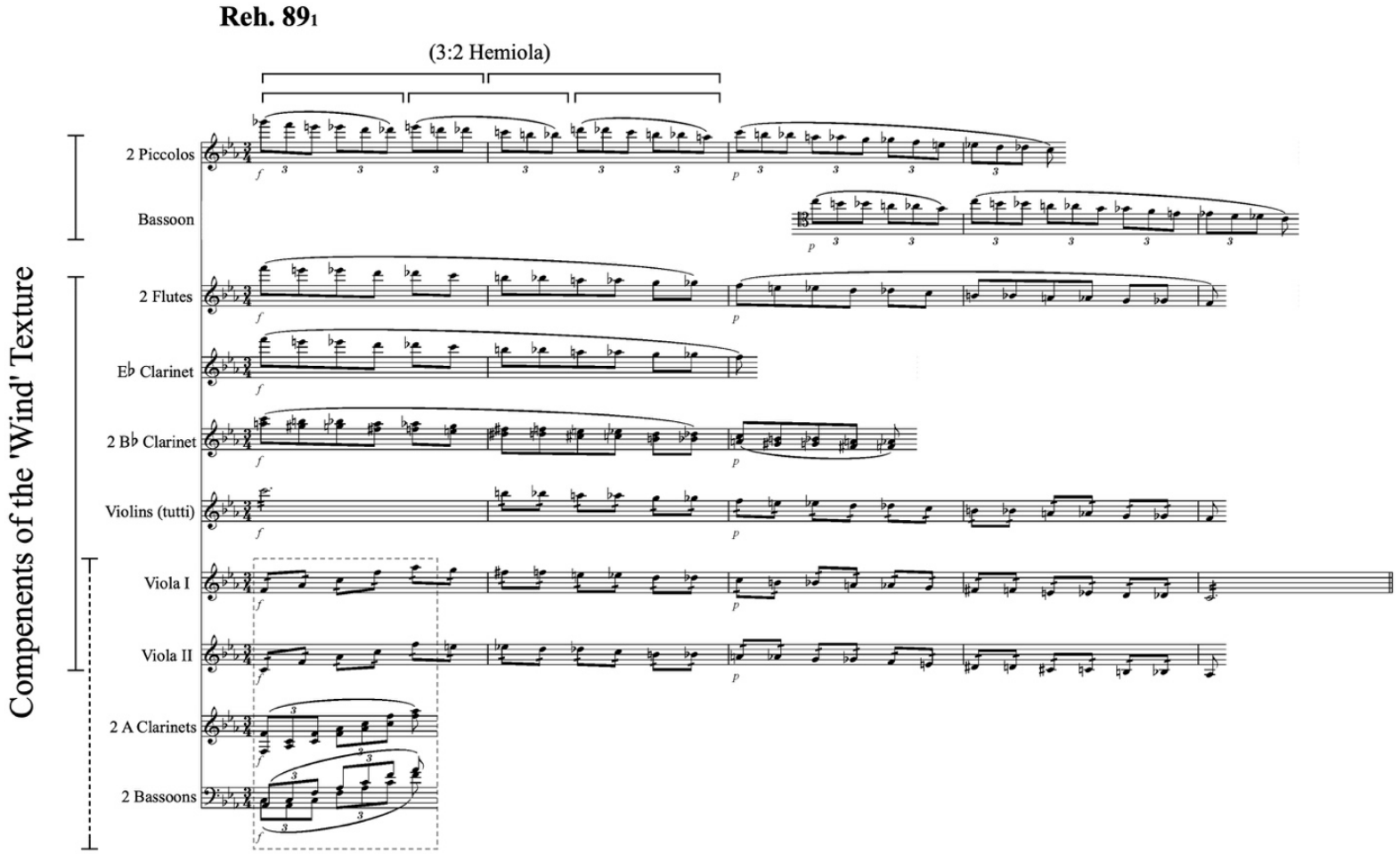

Figure 2.3: Breakdown of the integrated ‘wind’ texture with three components arranged according to register

The first and most significant component of the wind sound is a combination of flutes, clarinets, and upper strings playing parallel, descending chromatic scales in eighth notes—the measured tremolos in the strings adding to the rhythmic density of the line.[72] Above this are the piccolos, which constitute the second component of the integrated texture. The piccolos also play descending chromatic scales, but with a different initial pitch, faster rhythm, and with repeated beginnings of their descending scales on progressively lower pitches. The re-initiations of the scales come every two beats, producing a hemiola with the prevailing $\frac{3}{4}$ meter. This second component combines with the first to produce a polyrhythmic, polymetric texture. Included with the piccolo layer of the texture is the first bassoon, which enters in its upper register at the tail-end of the passage. The third and final component is a brief, rising arpeggio played by clarinets, bassoons, and violas. This arpeggio figure provides added strength to the beginning of this orchestral effect, while also reinforcing the F minor harmony (II^6) expressed in this passage.[73] Although the third component has a different contour from the chromatic scales, I have included it for two reasons: (1) it involves a similar group of instruments to the other lines with the violas even segueing directly into the first component, and (2) it contains the same 3:2 polyrhythm as formed between the other two components. These two factors, the first timbral and the second rhythmic, both serve to integrate this third component into the wind-like sound.

The musical image of the storm and the cross-domain mappings that support it are by no means exclusive to this piece. Richard Strauss's *Don Quixote* and the *Alpine Symphony* both include extended storm passages that involve similar timbral and textural characteristics. Other operas, such as Gioachino Rossini's *William Tell*, also include storm sections with similar

[72] These string tremolos also enter in the preceding measure in the viola as a lead-in to the sudden addition at Reh. 89_1.
[73] I will be using upper-case roman numerals for all functional harmonies.

orchestral textures. Karen Aplin and Paul Williams provide a comprehensive list of Western classical orchestral music that include musical depictions of storms.[74] *Elektra* is notably absent from their list, likely because the orchestral effect is rather brief and less familiar in comparison to their other examples they catalogue.

One final element of importance in the *Sturm* effect is the overall increase in orchestral forces at Reh. 89_1. Sudden addition gestures such as this are a common and powerful orchestral effect and are one of four orchestral gestures defined by Meghan Goodchild in her 2016 dissertation on the subject. According to Goodchild, the sudden addition gesture is typically part of "a goal-directed process leading up to and following the rapid addition of full forces" where "the sudden textural change marks a dramatic turning point as a part of the expressive trajectory of the gesture."[75] In this case, the sudden addition gesture contributes to the dramatic effect because of its marked relation to its musical surroundings. Just as the storm is an extreme weather event that is distinguished from "normal" weather by its increased activity and intensity, so too is the orchestral effect distinguished from its musical surroundings by its abrupt protrusion from the musical texture. The "Sturm" effect also marks a significant turning point in Chrysothemis's aria. The image of the storm acts as a dramatic peak in her description of motherhood, after which she calls out to Elektra, "Hörst du mich an? Schwester!" (Do you not hear me? Sister!) In Chrysothemis's maternal display, the image of the storm not only serves as a literal depiction of her motherly devotion to her future children, but also as an illustration of her strength of character, playing on the common trope of the storm as a trial or foe to be overcome.

[74] Aplin, Karen L. & Paul D. Williams. "Meteorological phenomena in Western classical orchestral music." *Weather* 66, no. 11 (Nov. 2011): 302-303.
[75] Goodchild, "Orchestral Gestures," 62.

It is the physical and emotional strength displayed by Chrysothemis in this passage which Elektra appeals to later on when she believes that they must carry out the murders themselves.

Animalistic Imagery

In *Elektra*, much of the imagery present is animalistic in nature and is frequently employed to characterize the people in the opera. There are far more animalistic references in the libretto and stage directions than there are corresponding musical effects, but Strauss does not hesitate to capitalize on these images when possible. In this section, I will focus primarily on the musical realizations of animalistic imagery that in some way incorporates timbre or texture in the cross-domain mapping.

The 'Strohwisch' Image

One of the densest passages of animalistic imagery is the opening scene, where a group of maids recount their exchanges with Elektra in vivid language (Figure 2.4). The first musical image from this scene I will outline is that of the *Strohwisch* (a bundle of straw fixed to the top of a wooden stake[76]), which Elektra is described as using to ward off the prowling maidens in the following exchange:

> MAID III. „Fort, Fliegen!" schrie sie, „fort!"
> ("Away, flies!" She cried, "Away!")
> MAID IV. „Schmeiß fliegen, fort!"
> ("Foul flies, away!")
> MAID III. „Sitzt nicht auf meinen Wunden!" und schlug nach uns mit einem Strohwisch.
> ("Prey not on my wounds!" and swatted at us with a bundle of straw.)

[76] A *Strohwisch* is typically placed in the ground in a field or meadow by farmers to ward off grazing animals like sheep. "Strohwisch," accessed on February 9, 2020, http://www.strohwisch.de.

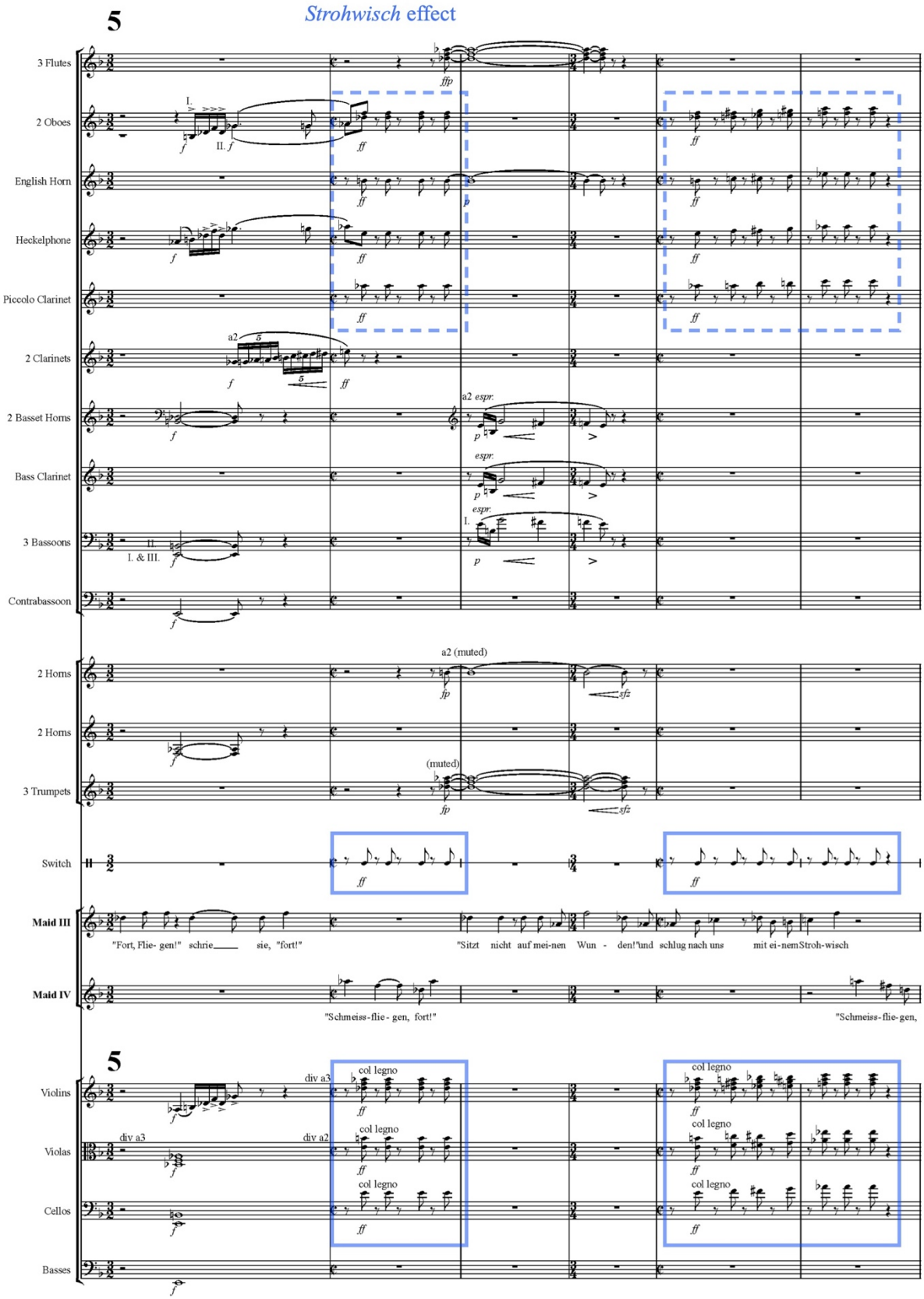

Figure 2.4: Strauss, *Elektra*, Reh. $5_{1\text{-}6}$ (annotated score)

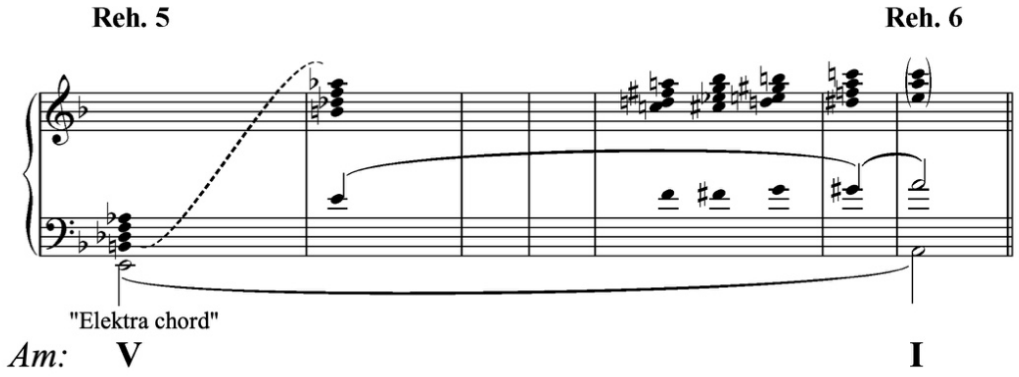

Figure 2.5: Harmonic analysis (Reh. 5-6)

Harmonically, the passage is centered around the Elektra chord, a bitonal sonority comprised of E major and D♭ major triads.[77] The chord is built on the bass note E and functions as a dominant chord in this passage, tonicizing the A minor phrase at Reh. 6 (Figure 2.5). In Reh. $5_{5\text{-}6}$, the chromatic planing of the Elektra chord acts as an extension of the V chord as the interval outlined by the bass voice of these chords moves from E to G♯ (written enharmonically as A♭ in the score). The upper voices move in parallel with the bass motion.

The primary imagistic feature of the orchestration here is contained within the repeated off-beat articulations of the Elektra chord at Reh. 5_2 & $5_{5\text{-}6}$. These short attacks produce a musical image of the *Strohwisch* that is supported by the acoustic similarity of the harmony's orchestration—a combination of the switch (a beater made of a bundle of birch dowels or cane rods) and *col legno* strings—to the strikes of a bundle of straw (Figure 2.6).

[77] Theorists, such as Wanda Kaluzny and Richard A. Kaplan, have debated the bitonal interpretation of the Elektra chord preferring descriptions like "polychordal" or "compound chord" to characterize its structure instead. One of the main objections that these theorists have is that the two triads are not segregated in register like some other bitonal sonorities in the opera. While this is valid, I disagree with the assumption that a triad can only be considered bitonal if its triads are segregated by register. I tend to prefer the bitonal interpretation, because it allows for comparison with bitonal chords, like the Bm+Fm chord characteristic of Elektra's mother, that have similar semantic functions (as demonstrated by Tethys Carpenter in their book chapter, "The Musical Language of *Elektra*"). That being said, the structural function of the Elektra chord is varied and complex and the interpretations put forth by Kaluzny and Kaplan both identify features of the chord's structure that are simply not captured by the bitonal label.

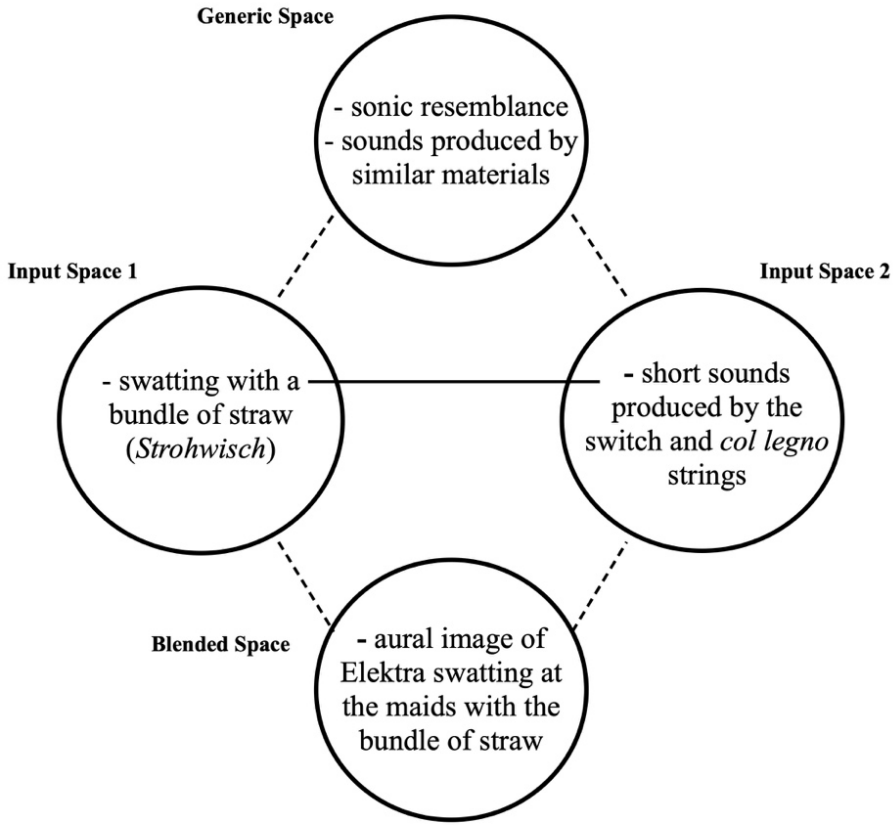

Figure 2.6: *Strohwisch* effect CIN

The resulting musical image is supported by the same generic correspondence as the *Sturm* effect, sonic resemblance, resulting primarily from the similarity in the materials producing the sound.[78] The complex sound produced by the *col legno* strings, the combined percussive attack produced by striking the edge of the bow hairs and the bow staff against the string, is itself quite similar to the sound of a bundle of straw. The switch, which is comprised of a bundle of birch dowels or canes, is even closer to a bundle of straw in its construction, making its sound remarkably similar. This correspondence supports the conceptual blend of these orchestral instruments with the sound of Elektra striking the maids with the *Strohwisch*.

[78] The woodwind instruments, which also play these short chords, do not contribute significantly to the musical image in this case. They do, however, reinforce the pitches of the Elektra chord, which indicates that it is she who was wielding the *Strohwisch* in the maid's recounting of the event.

The 'Scharrst' Image and Elektra's Digging

Another example from the first scene comes at Reh. 12, where the maids continue to recount their confrontations with Elektra (Figure 2.7). In this excerpt, the third maid reiterates a viperous exchange with Elektra, whom she mocks for constantly crouching over the corpse of her father, Agamemnon:

> MAID III. Da sprang sie auf und schoß gräßliche Blicke, reckte ihre Finger wie Krallen gegen uns und schrie: „Ich füttre mir einen Geier auf im Leib!"
> (Then up she leapt, her eyes flaming with passion, stretching out her fingers like crooked claws at us and cried: "An obscene vulture battens on my flesh!")
> MAID II. Und du?
> (And you?)
> MAID III. „Drum hockst du immer fort", gab ich zurück, „wo Aasgeruch dich halt, und scharrst nach einer alten Leiche."
> ("That's why you're always crouched," I answered back, "where the smell of carrion attracts you, scratching after an ancient carcass.")

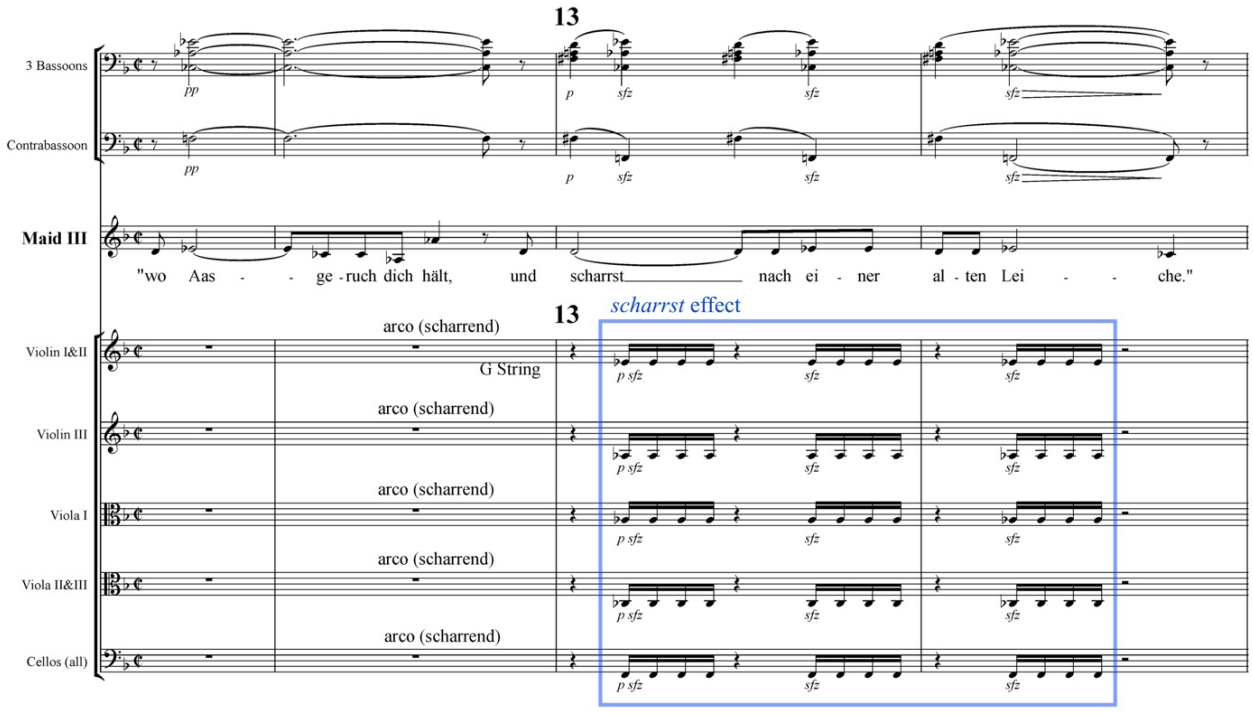

Figure 2.7: Strauss, *Elektra*, Reh. 12_4-13_2 (annotated score)

In this passage, the word *scharrst* is followed by three intermittent groups of sixteenth notes played by the strings that vividly illustrates Elektra's scratching and pawing. Strauss's imagistic intention in this excerpt is unambiguous, as all the string parts include the performance indication: *Scharrend (scratching)*. Unlike the previous examples, the cross-domain mapping here is not a mapping of sounds to sounds, but of gestures to gestures (Figure 2.8). The sound-producing gesture for aggressively bowed strings involves a similar action to the scratching and pawing of Elektra: the drawing of one surface (one's hands; a bow) forcefully across another (the ancient carcass; a string). The resulting sound of the strings, though distinct from the quieter, unpitched sound of scratching at a corpse, shares the essential characteristics of a scratchy sound due to the shared method of sound production (i.e. friction) and thus acts as a sonic analog for the animalistic action.

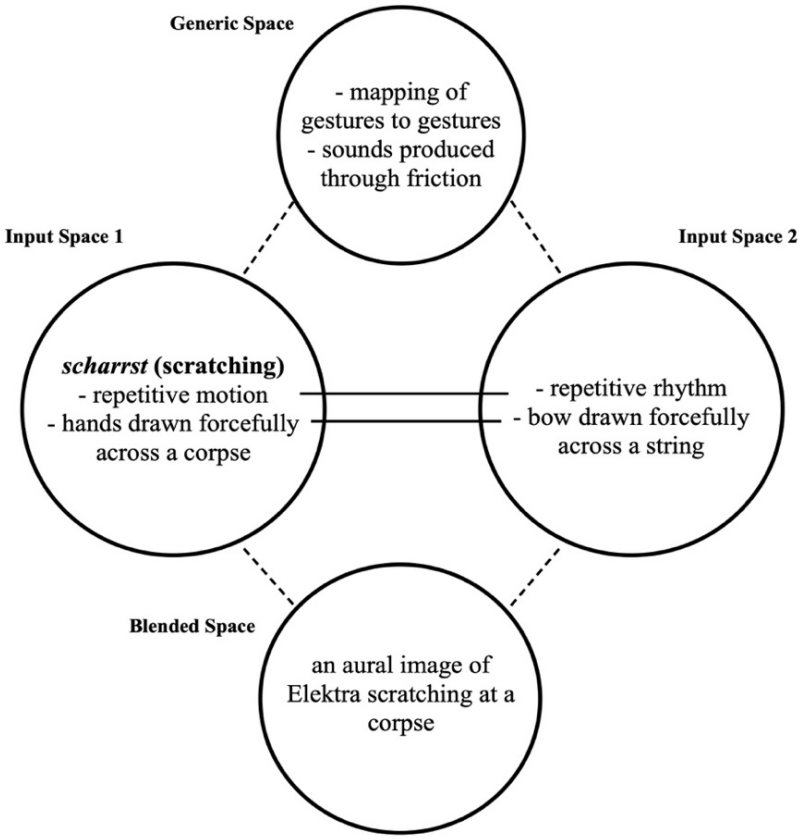

Figure 2.8: *Scharrst* effect CIN

In addition to the correspondence between the scratching gesture and the *scharrend* strings, the idiosyncratic registration of the harmony also plays a part in the musical image. The chord is arranged in the string section such that every group, with the exception of the 1st violas, is playing on its lowest string. The 1st and 2nd violin parts include an indication to play on the G-string (rather than the D string) and the 2nd and 3rd violas are forced to detune their low, C-string down to C♭ for this chord—a note which could easily have been played by the cellos. Strauss could have used a simpler registration of this harmony with a similar balance (shown in Figure 2.9), which includes the double basses and avoids the *scordatura* in the violas. However, Strauss chose a registration of the harmony that places it in the lower register of each string instrument, which, combined with the soft dynamics, produces a darker timbre than the more straightforward version. The semantic function of this timbral darkening is to highlight the textual reference to death and graves, concepts which share associations with darkness and night.[79]

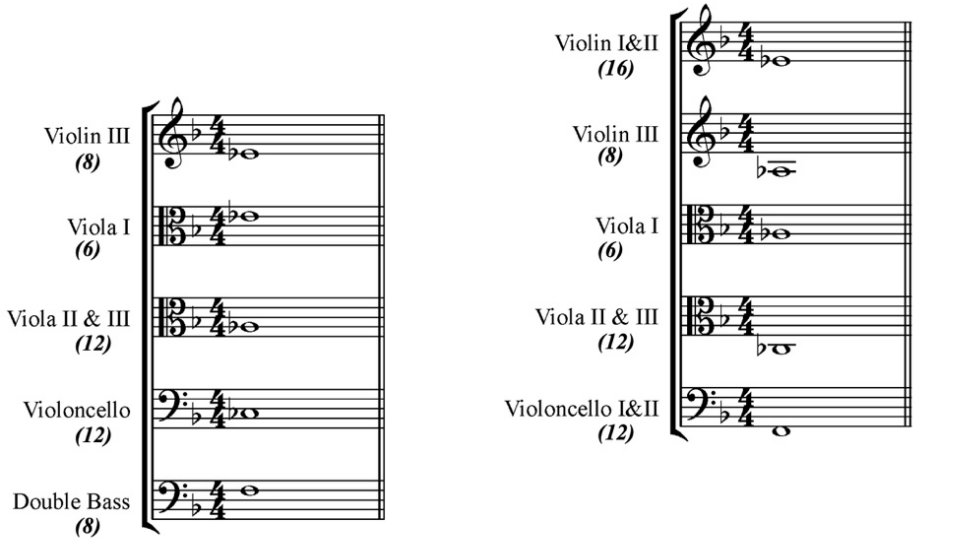

Figure 2.9: Two orchestrations of the *scharrst* chord

[79] Timbral darkness is itself already a cross-domain mapping between auditory and visual phenomena.

The mapping between the scratching/pawing behaviour of Elektra and the repetitive bowed string texture in the *scharrst* effect makes another appearance later in the opera when Elektra, determined to carry out the murders alone, begins to dig for her father's axe. The orchestral texture in this passage is slightly more complex than that of the *scharrst* effect at Reh. 13, combining three components in the low woodwinds and strings into an integrated texture. Aside from the differences in the details, certain key elements of the *scharrst* effect remain: (1) the use of bowed strings, (2) a repetitive sixteenth-note rhythm, and (3) scoring in a low register (both generally and within the register of each instrument). This orchestral texture accompanies Elektra's intermittent digging, beginning at Reh. 110a (shown in Figure 2.10) and returning at Reh. 114a & 116a (not shown). The latter passages each have the performance indication: *Elektra gräbt wieder* (Elektra begins digging again).

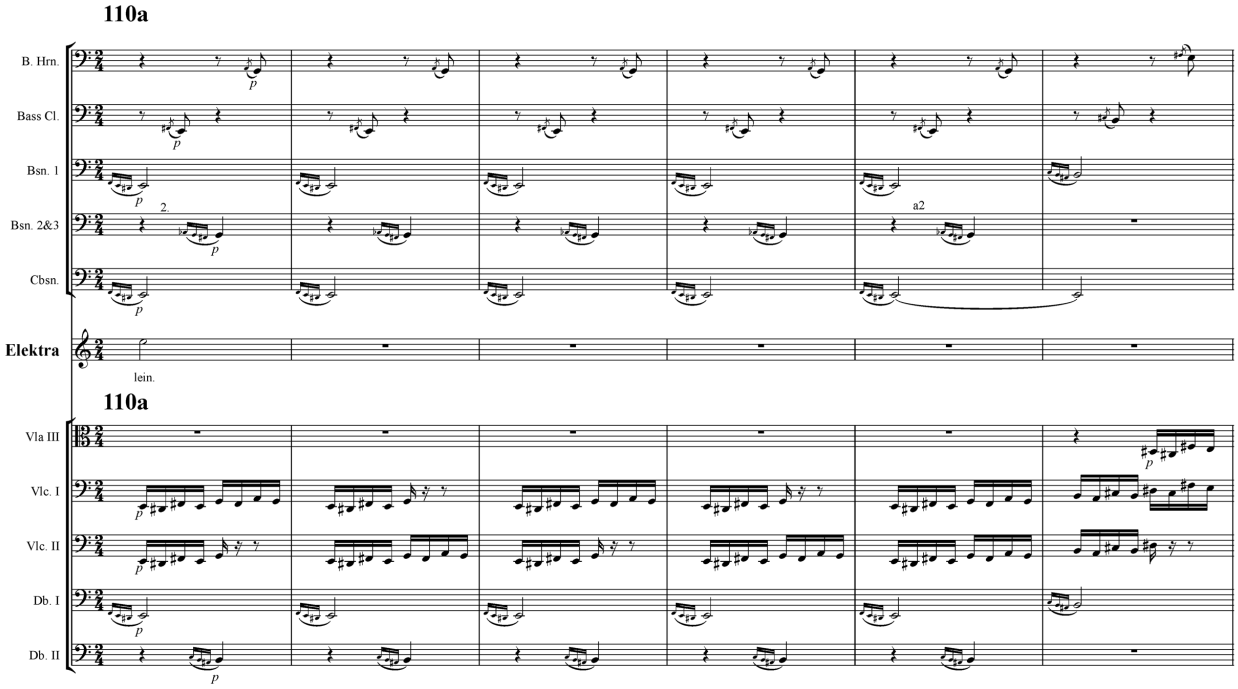

Figure 2.10: Strauss, *Elektra*, Reh. 110a$_{1\text{-}6}$

The 'Gewürm' and 'Zischen' Images

Another scene that contains animalistic imagery is the exchange between Elektra and her mother, Klytämnestra. In this scene, Klytämnestra stands in the palace entrance speaking to Elektra, with her Trainbearer and Confidante alongside attempting to interpret Elektra's cryptic remarks. There are two key animalistic images in this scene, both of which are associated with Klytämnestra's servants and characterize their effect on her mental state. These images are first established in Reh. 148-150 (Figure 2.11) when Elektra criticizes her mother's servants for their unhelpful counsel, sparking doubt in her mother's mind about their influence over her:

> ELEKTRA. Du bist nicht mehr du selber. Das Gewürm hängt immerfort um Dich! Was sie ins Ohr dir zischen, trennt dein Denken fort und fort entzwei,
> (You are no longer yourself. These snakes hang off of you constantly! What in your ears they hiss, divides your thoughts more and more in twain,)

The two images represented musically are the characterization of the servants as serpents[80] (*Gewürm*) and their hissing in her ear (*ins Ohr dir zischen*). Each of these characterizations can be connected to an element of the orchestral texture. The first image, *Gewürm*, is represented by a rapid, snaking line played by a solo violin (occasionally doubled by a flute for dynamic reinforcement). This line is clearly distinguished from the surrounding texture by its sudden introduction, rapid triplet rhythm, frequent chromatic motion, varied contour, and conspicuous solo timbre.[81]

---

[80] While *Gewürm* could be more accurately translated as "worms" or "maggots" I have chosen "serpents" which I believe better captures the servants' deceptive nature due to their long-standing symbolism (e.g. the serpent in the garden of Eden). Norman Del Mar uses similar language when he describes the musical representation in the violin solo as "serpentine" (Del Mar, *Richard Strauss*, 311). "Maggots" would also be a suitable translation since it captures the manner in which Klytämnestra's servants eat away at her consciousness.

[81] In his revised version of Berlioz's *Treatise on Instrumentation*, Strauss warns against the all too frequent misuse of the solo violin, saying that its effect is "so peculiar and conspicuous that it should never be employed without a compelling poetic motive." Richard Strauss, commentary in Berlioz's *Treatise on Instrumentation*, trans. Theodore Front. (New York: Edwin F. Kalmus, 1948), 58. Strauss adheres to his own advice in *Elektra*, reserving the violin solo solely for this effect. Single violins are employed in other limited passages, but only for extremely soft textures and not as a prominent soloist.

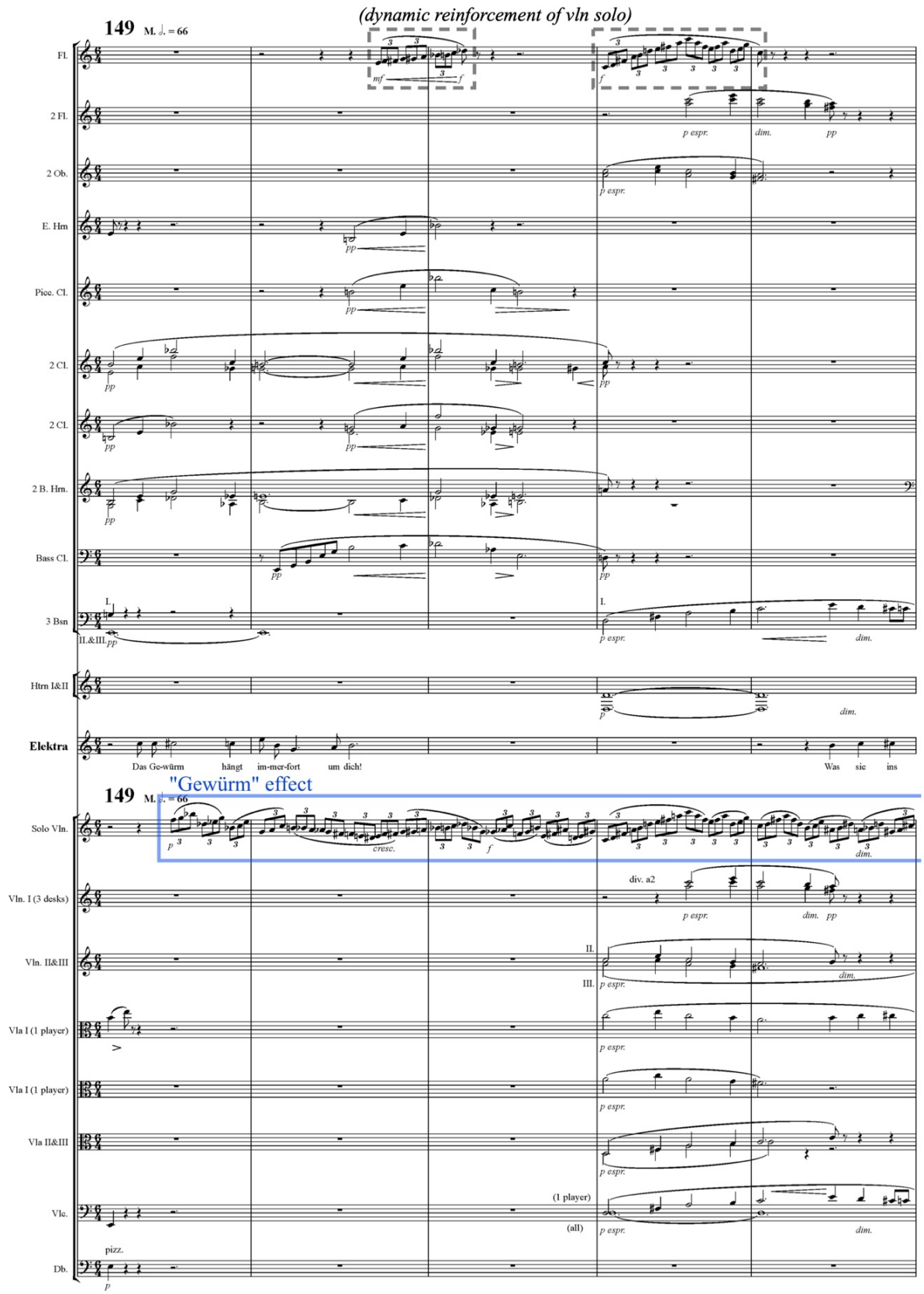

Figure 2.11: Strauss, *Elektra*, Reh. 149-150$_5$ (annotated score)

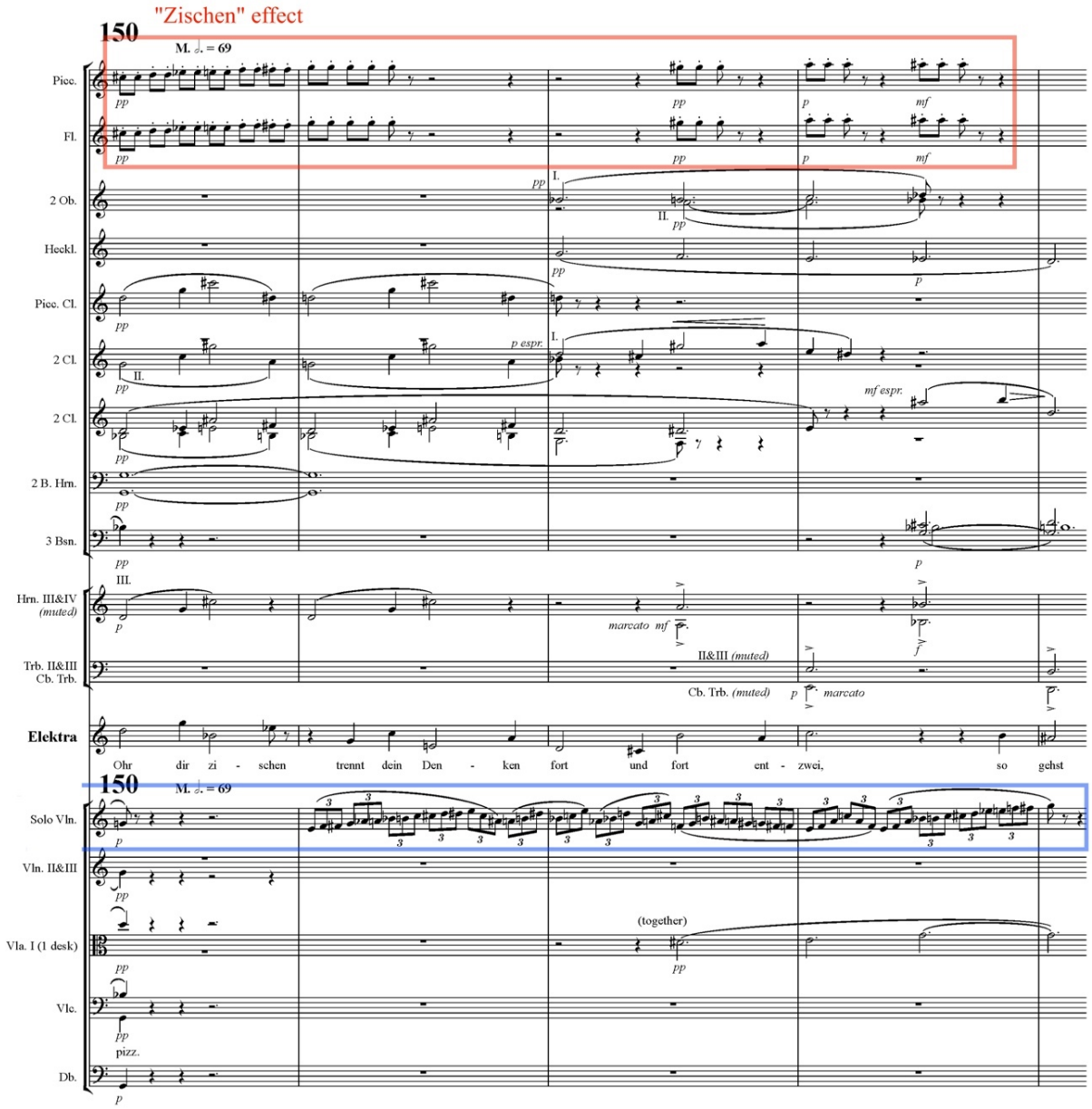

Figure 2.11 (cont.): Strauss, *Elektra*, Reh. 149-150$_5$ (annotated score)

The solo violin weaves its way through a chordal motive in the clarinets that Kurt Overhoff refers to as the *Motiv der Qual* (Motive of Pain).[82] The motion of the solo violin through the harmonies of this motive highlights the destructive effect of the servants' divisive advice on Klytämnestra's psyche. Figure 2.12 illustrates how the textural characteristics of the

[82] Overhoff, *Elektra-Partitur*, 190-1.

orchestration are melded with the physical behaviour of serpents and the metaphorical motion of these creatures through Klytämnestra's psyche.

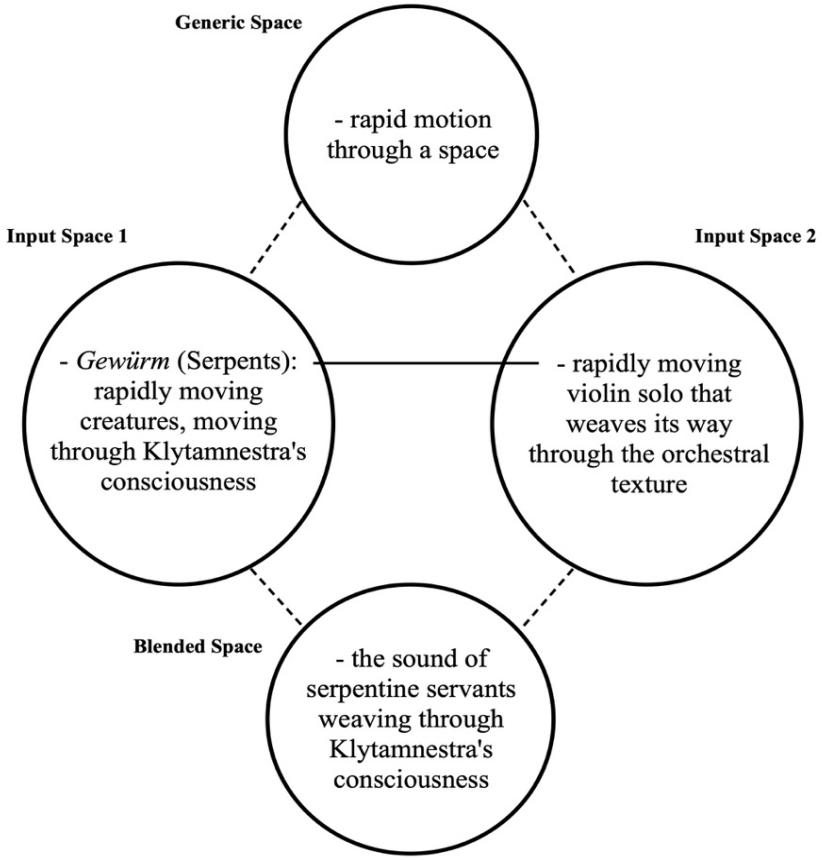

Figure 2.12: *Gewürm* image CIN

This image returns twice more in this scene: at Reh. 158-159 (not shown), when Klytämnestra recalls what her servants have whimpered in her ear, and at Reh. 175_2-176_8 (Figure 2.13), when Klytämnestra finally dismisses them. In this final passage, the violin solo alternates with a solo viola in imitation until the latter gradually fades out on a trill as the servants disappear into the palace. In each of these examples, the musical line moves in and through the prevailing instrumental texture, often tracing out the shape of the underlying motives, but with numerous divergences and frequent chromatic motion.

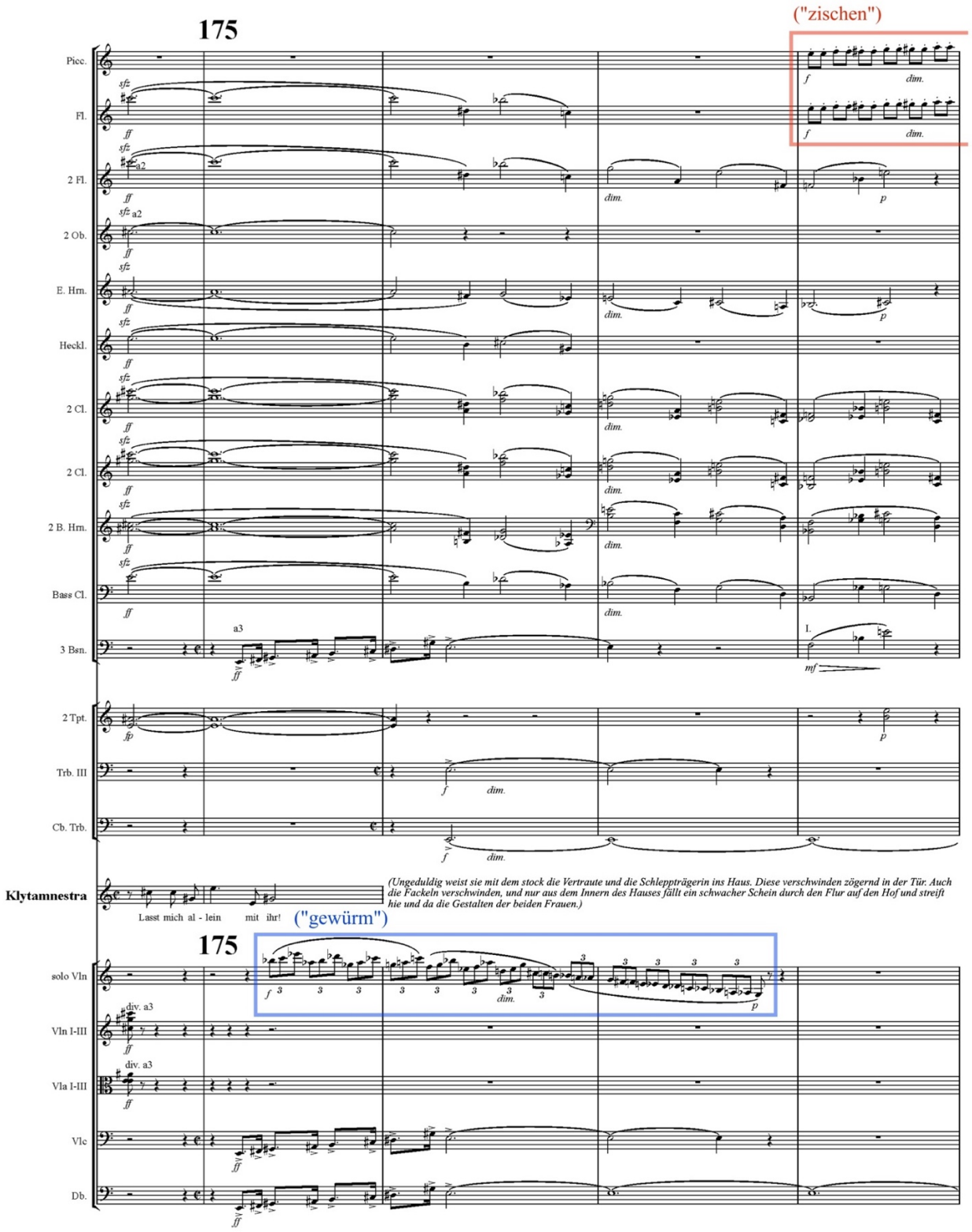

Figure 2.13: Strauss, *Elektra*, Reh. 174_8-176_{11} (annotated score)

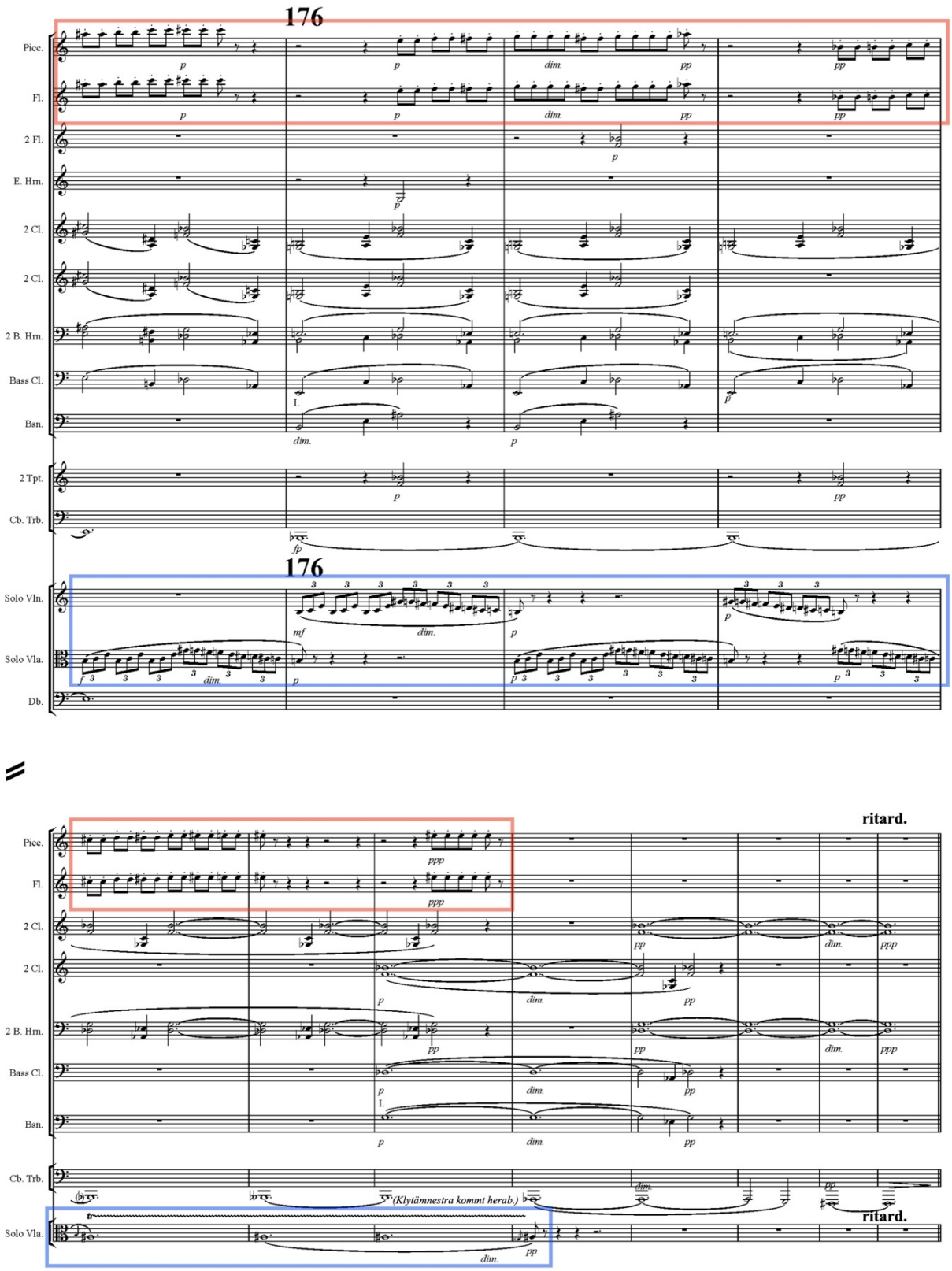

Figure 2.13 (cont.): Strauss, *Elektra*, Reh. 174_{8}-176_{11} (annotated score)

In this scene, the characteristics of the solo violin line, as well as its relationship to the surrounding texture, provides a musical analog for the image of serpents weaving their way into Klytämnestra's consciousness. The blending of elements from the orchestral texture with Elektra's characterization of her mother's servants is mediated by the shared generic concept of rapid motion through a space. In musical terms, the violin moves through the harmonies of the clarinets at a rapid pace, the violin's otherness made clear by its distinct timbre. Likewise, the words of Klytämnestra's servants weave their way through her consciousness, embroiling her thoughts as they do so.

The second imagistic line in the musical texture enters at Reh. 150, accompanying Elektra's words, "Ohr dir zischen." The line that accompanies this phrase is comprised of a piccolo and flute in octaves, playing an ascending chromatic line of twice-articulated, staccato eighth notes. This texture offers a distinct contrast to the violin line through its eighth-note rhythm, staccato articulation, high register, airy timbre, and steadily ascending contour. The mapping of this texture to the servants' repeated whispering, shown in Figure 2.14, is mediated by the similarities between the general characteristics of whispering/hissing and the short, pianissimo articulations and airy timbre of the piccolo/flute combination. The association of the piccolo/flute line with the servants' whispering is established continually throughout the scene. The staccato line returns at Reh. 154_2 where the servants offer contradictory counsel and again at the end of the scene (Reh. 175_4) when the servants begin to leave (the incessant pecking of the piccolo and flute fading out along with the solo strings).

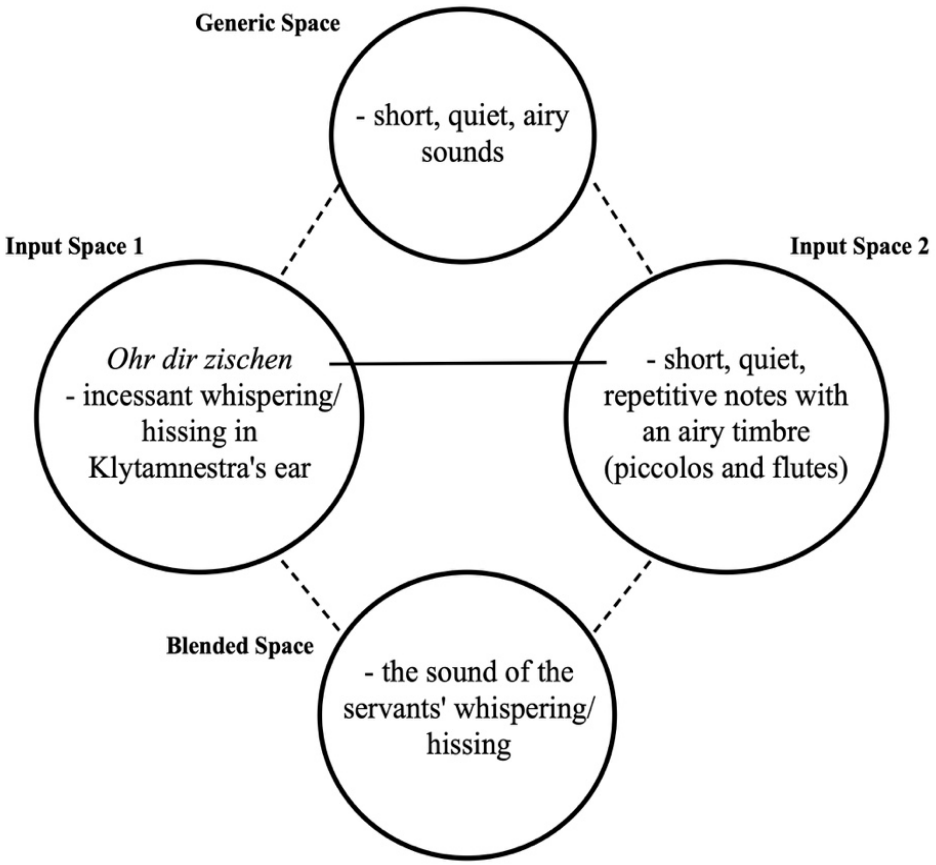

Figure 2.14: *Ohr dir zischen* image CIN

The generic correspondences between the respective images and their musical corollaries are varied, but are, for the most part, more general than those in the previous examples. The timbre of the solo violin (and solo viola) does not have an acoustic similarity to the sound of serpents (or worms). It is, rather, the solo violins' rapid, slurred triplets and its varying, often chromatic motion through the surrounding orchestral texture that contribute to the aural image. The timbre of the piccolo and flute, on the other hand, do have some aural similarity to the sound of hissing/whispering. However, this acoustic similarity is combined with aspects of articulation, rhythm, and pitch to depict the incessant, destructive whispering of Klytämnestra's servants.

Conclusion & Discussion

The examples presented in Part A encompass both a wide variety of imagery and methods of musical representation. However, there are some shared musical characteristics that can be identified between the varied images. The first characteristic of these imagistic effects is the combined presence of both timbral and textural (rhythm, contour, register, etc.) features. While the timbral qualities of instruments often have semantic associations that contribute to the musical imagery, other musical aspects are required to invoke these associations. For example, while the wind-like timbre of the flutes and piccolos is an abstract timbral quality that results from its method of sound production, it is only in conjunction with other aspects like the rhythm, contour, register, and pitch material of the woodwind line that these instruments take on a clear semantic function in the *Sturm* effect (Figure 2.1). Another general characteristic of these examples is their markedness in relation to the surrounding orchestral texture and musical context. In each of these examples, the instruments that participate in the musical image are often omitted from the surrounding music, highlighting their entrances into the musical texture. In general, the instruments or playing techniques used in these imagistic effects are limited almost exclusively to the passages shown. The string solos accompanying the *Gewürm* image are some of the only instances of solo string writing in the entire opera (excluding the use of single string instruments for extreme soft dynamics). Likewise, the *col legno* playing technique is only used in the *Strohwisch* image. The switch is also used sparingly throughout the opera.

The above characteristics serve to emphasize certain instruments and invoke particular semantic associations that correspond with a particular aspect of an image expressed in the libretto or through the action onstage. The differentiation of certain instruments from the orchestral texture as a whole can arguably be related to the notion of *selective projection*, one of

the primary features of conceptual blends. *Selective projection* is the notion that only certain elements from each input space are projected into the blended space.[83] The sparing use of certain instruments and their marked relation to the surrounding orchestral texture often highlights the members of the orchestra which are relevant to the particular image and thus are projected into the blended space. In the *scharrst* image, for example, the strings are distinguished from the bassoons that are also present in the passage by the strings section's increased rhythmic activity, unconventional voicing of the harmony, and intermittent presence in the oscillating harmonies. These factors place emphasis on the string family and distinguish them from the bassoons who do not contribute to the *scharrst* image. In this respect, the characteristics of the orchestral texture can actively contribute to our recognition of the select musical elements that are relevant to a particular image.

Part B: Orchestration and Symbolic Contrast

One of the characteristic features of Hofmannsthal's 1903 play *Elektra* is the frequent use of symbolic contrast. In an effort to convince Strauss of his play's uniqueness in relation to *Salome*—Strauss's previous operatic endeavor—Hofmannsthal emphasized the theme of contrast in *Elektra*, saying that "in *Salome* much of it is so to speak crimson and violet, in an oppressive atmosphere, in *Elektra* however it is a heterogenous mix of night and light, black and bright."[84] In both his stage directions and his essay "Szenische Vorschriften zu Elektra," Hofmannsthal gives directions for the lighting of the stage where the physical contrast of light and darkness has a symbolic role. Herman Doswald provides an account of the symbolic function of non-verbal

[83] Fauconnier and Turner, "Conceptual Integration Networks," 143.
[84] Hugo von Hofmannsthal to Richard Strauss, April 27, 1906.

aspects in Hofmannsthal's *Elektra* (1903), suggesting that the "alternating atmosphere of dark and light…serves to contrast the gloom and darkness prevailing in the household of Agamemnon with the light of the outside world and to symbolize the mood of the play and the conflict of characters with each other and within themselves."[85] The non-verbal forms of expression in Hofmannsthal's original play are further augmented by Strauss's score. In this section, I will outline how orchestration creates symbolic musical contrasts that underscore important oppositional themes throughout the drama, including the opposition of light and dark and the contrasts between characters.

Timbral Brightness and the Opposition of Light and Dark

In *Elektra*, light and darkness have a significant symbolic role. Light and darkness are represented in the orchestration through variations in timbral brightness, a well-known perceptual attribute based on the cross-domain mapping of the visual to the aural domain that has been shown to be strongly correlated with spectral centroid (the mean value of a sound spectrum or its "centre of mass").[86] Spectral centroid not only varies depending on the instrument, but also varies with the register and loudness of the pitch.[87] In general, the higher and louder a note is the higher its spectral centroid. Combined variations in register, loudness, and instrumentation are a key feature of the timbral darkening effects in *Elektra*. Kaluzny discusses timbral darkening as a motivic transformation that colours the words *Dunkel* (dim) and *Schatten* (shadow) at Reh. $241_{6\text{-}9}$, where the timpani and then a horn and bassoon play the ascending octave motive associated with the dead Agamemnon, pointing out the low register and soft dynamics of the instruments.[88]

[85] Doswald, "Nonverbal Expression in Hofmannsthal's *Elektra*," 201.
[86] McAdams, "Musical Timbre Perception," 41.
[87] Ibid., 45-46.
[88] Kaluzny, "Motive in Elektra," 33.

The combination of these factors produces a timbrally dark sound that highlights the words associated with the shadow of Agamemnon. While Kaluzny focuses on this orchestration technique in relation to motive, it is a general practice that can also be applied to lone harmonies, such as the *scharrst* effect discussed earlier (see Figure 2.9). In the following examples, timbral brightening and darkening is applied to individual harmonies. Variations in register, loudness, and orchestration are used to brighten or darken harmonies that correspond to symbolic contrasts in the text or lighting in the opera.

Timbral Modulation and Chrysothemis's Fear of Death

In *Elektra*, darkness is frequently used as a symbol for death, both feared and real. Chrysothemis makes two references to her own death in her aria (Reh. 75-114), each of which is marked by a timbral modulation in conjunction with a B minor triad (the only two B minor harmonies in the entire aria). The first B minor harmony occurs between Reh. 85 & 86. In this passage, Chrysothemis chastises her sister for her vengeful spirit, which has kept Chrysothemis trapped in their mother's palace unable to live a woman's life as she desires. At this point, she exclaims, "Ich will heraus! Ich will nichts jede Nacht bis an den Tod hier schlafen! Eh' ich sterbe, will ich auch leben!" (I want to be free! I will not sleep here every night until I die! Before I die, I want to live!)

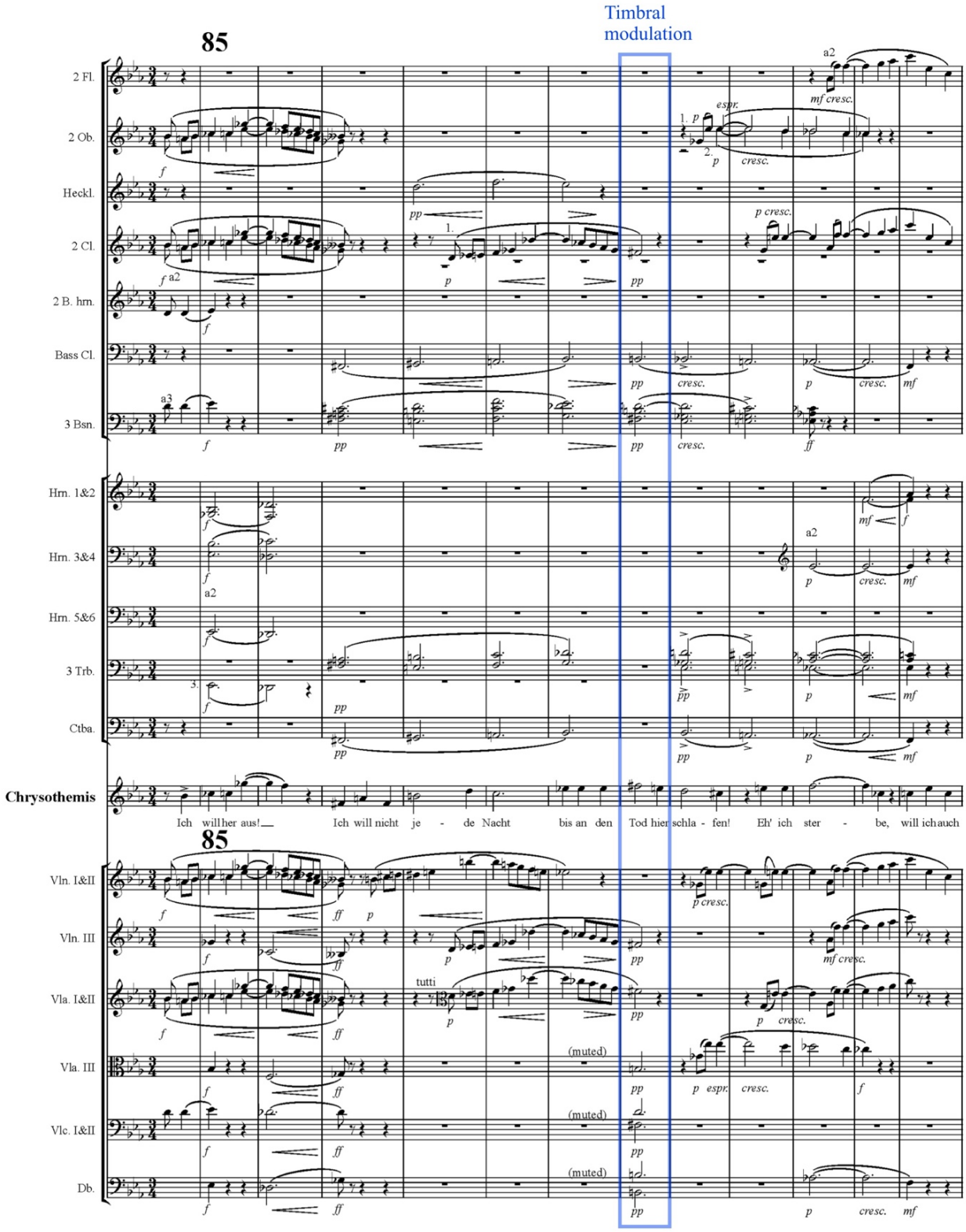

Figure 2.15: Strauss, *Elektra*, Reh. $85_{1\text{-}12}$ (annotated score)

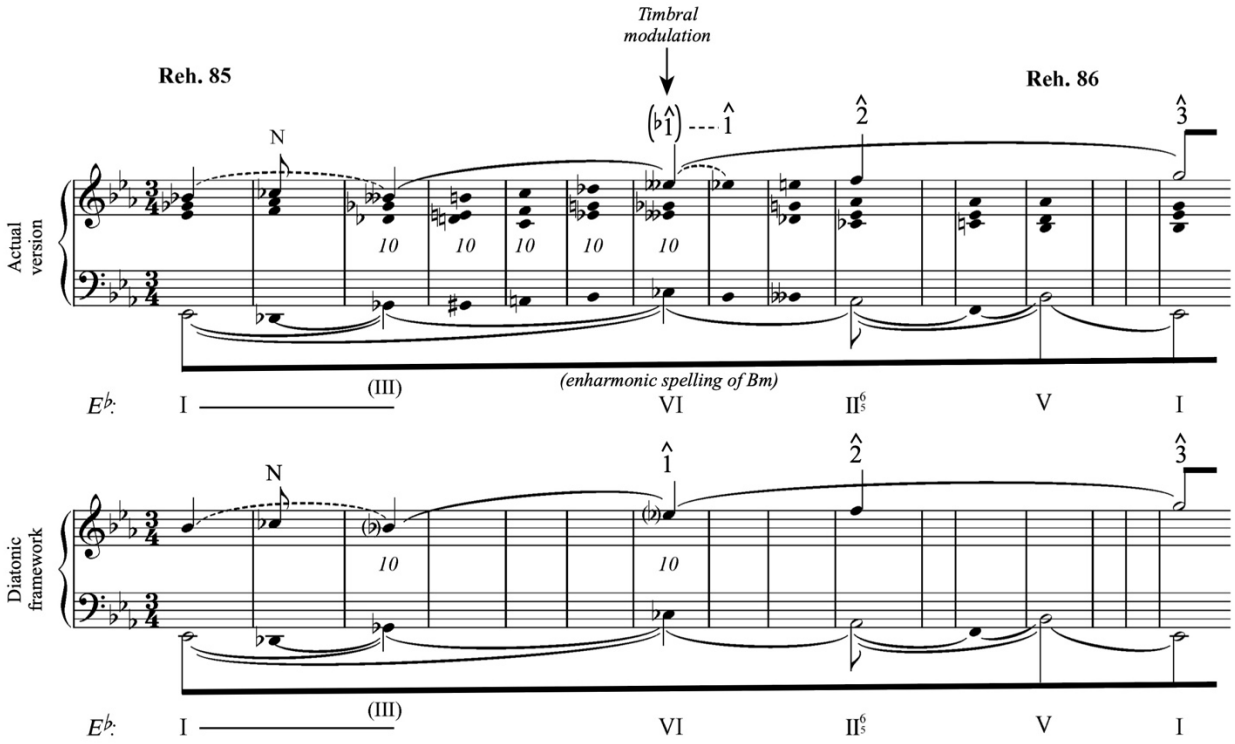

Figure 2.16: Harmonic structure and diatonic framework of Reh. 85-86$_4$. B minor is respelled as C♭ minor in this figure to clarify its tonal function.

Within this relatively short, E♭ prolongation, shown in Figure 2.16, chromatic transformations lead away from the home key, ultimately straying to an altered VI chord, C♭ minor (spelled enharmonically as B minor in the score), before sliding chromatically into the II^6-V-I cadential progression. The transformation of III into a minor chord lowers the melodic line a half step, from $\hat{5}$ to $\flat\hat{5}$, at the beginning of the parallel tenths in the outer voices that lead up to the C♭ minor harmony (VI). A diatonic, E♭ minor version, in which this chromatic alteration of the melody is omitted, is shown in the lower staff of Figure 2.16. In this more normative version, the VI chord supports $\hat{1}$, which begins the $\hat{1}$-$\hat{2}$-$\hat{3}$ ascent to the *Kopfton* of the extended E♭ major section that follows.

The depression of the melodic line from Reh. $85_{3\text{-}7}$ is accompanied by a sudden drop in dynamics and the harmony is darkened by a partial shift in its orchestration at the arrival on the VI chord (Figure 2.17). The harmony, which is played by a combination of low woodwinds (heckelphone, three bassoons, and bass clarinet) and low brass (three trombones and tuba), is darkened at Reh. 85_{7} when the trombones temporarily drop out and are replaced by a combination of low, muted strings. The three bassoons and bass clarinet that continue through this measure, preventing the orchestration of the harmonic line from being completely discontinuous. This discontinuity in the low brass and continuity in the low woodwinds results in a brief timbral modulation in the harmonic line—a gradual change of timbre that results in a smooth, continuous change—rather than a disruptive contrast.[89] The dramatic function of this timbral modulation is thus not to separate this harmony from the progression, but to shade it in conjunction with Chrysothemis's reference to her fear of death.

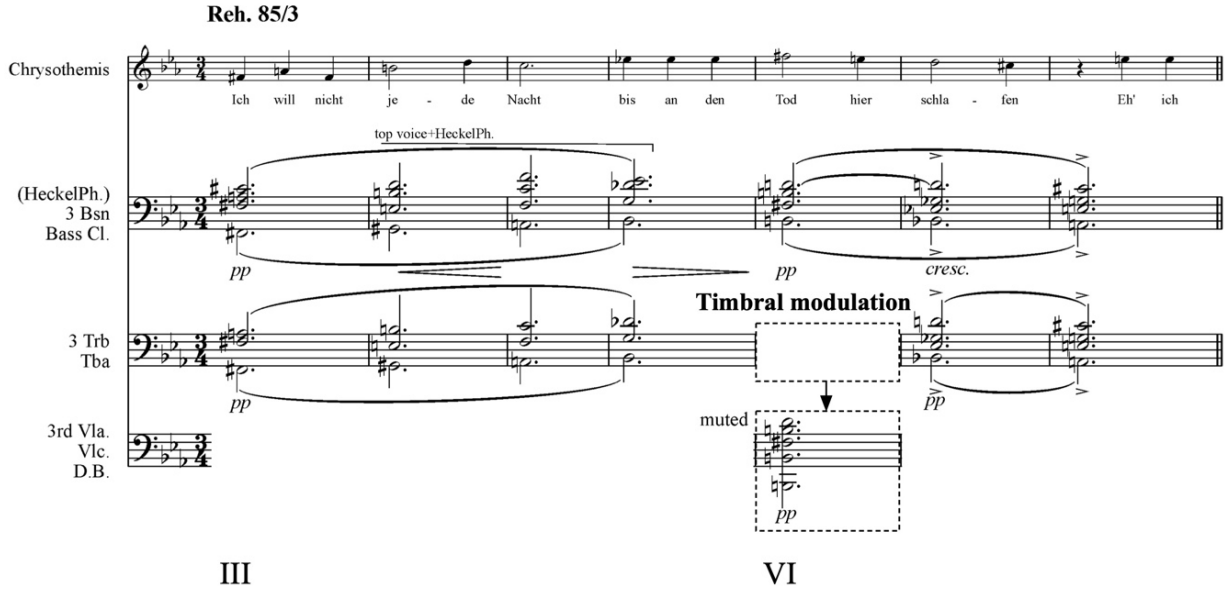

Figure 2.17: Timbral shading of B minor harmony (Reh. $85_{3\text{-}9}$)

[89] ORCH.A.R.D., "Table 1," About.

The timbral modulation in this example accompanies the word *Tod* in Chrysothemis's phrase, "Ich will nicht jede Nacht bis an den Tod hier Schlafen!" (I will not sleep here every night until I die!), providing a sonic analog for the related concepts of death and sleep, ideas which are both associated with the darkness of night (the former only metaphorically). The timbral modulation on the B minor harmony is likewise connected to visual darkness through the mapping of timbral properties to visual ones, specifically spectral centroid to visual brightness. It is through this shared property as *darker states of things* that the related concepts of death and sleep are integrated with the shaded B minor harmony (Figure 2.18). The integration of the concepts invoked by Chrysothemis (Input Space 1) with the timbral shading effect (Input Space 2) gives the orchestration a clear symbolic meaning. The orchestration, in turn, strengthens the conceptual relationship between death and sleep by emphasizing their shared association with night.

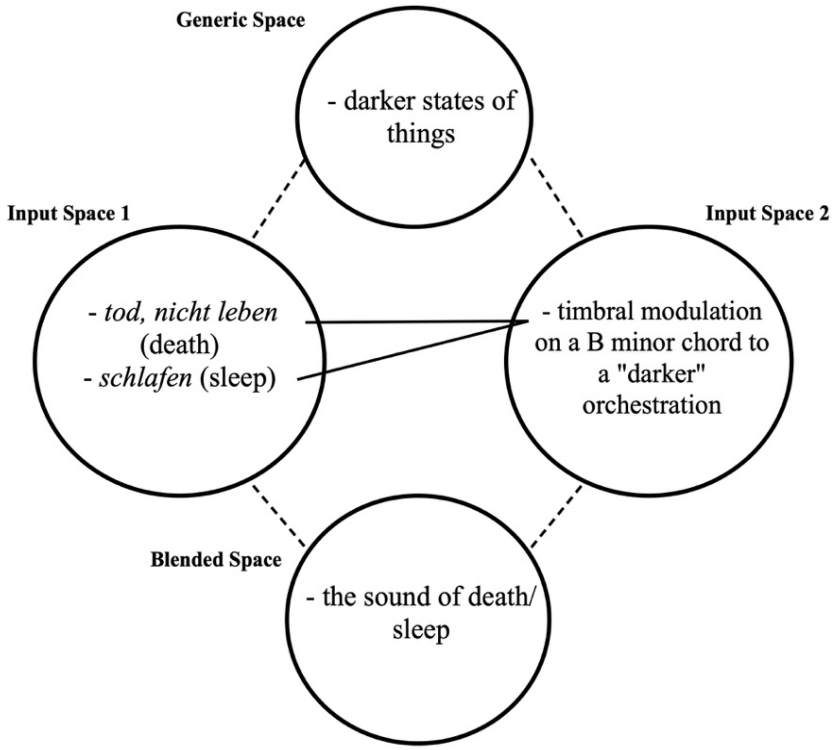

Figure 2.18: Timbral shading CIN

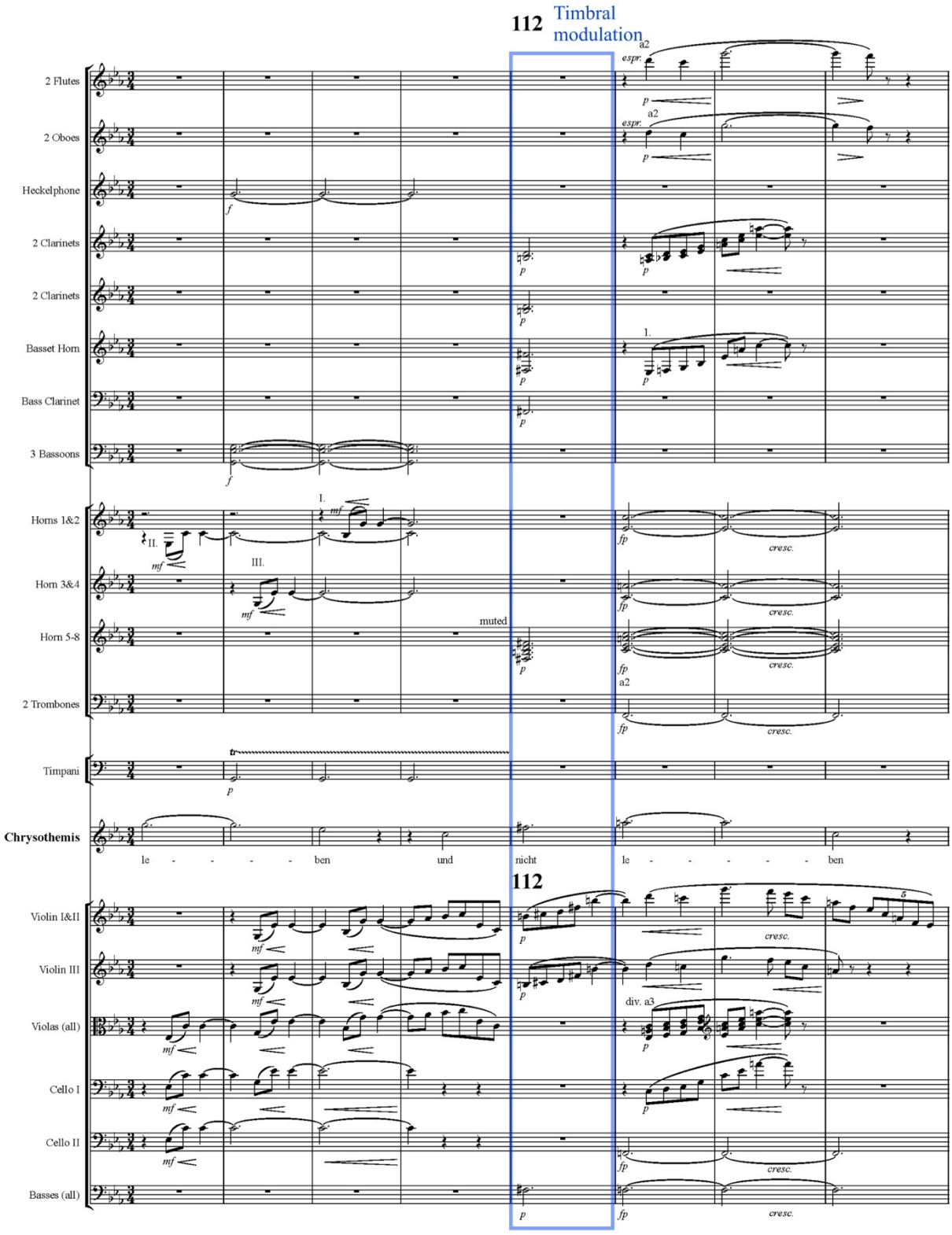

Figure 2.19: Strauss, *Elektra*, Reh. 111_6-112_4 (annotated score)

The second B minor harmony of Chrysothemis's aria occurs near the aria's conclusion (Figure 2.19). Here, Chrysothemis again makes reference to her own death, saying, "Nein, ich bin ein Weib und will ein Weibershicksal! Veil lieber tot, als leben und nicht leben!" (No, I am a woman, and a woman's lot I crave! Far better dead, than to be alive and not live!)

This time, the B minor harmony occurs in the context of C minor as a chromatic, passing chord. In this passage, V is extended by a double-neighbour figure in the bass voice (G-(F♯)-F-A♭-G) which unfolds between the cadential $\frac{6}{4}$ and V^7 (Figure 2.20). The B minor harmony occurs within the chromatic descent of the bass (G-F♯-F), sounding above the passing note, F♯.

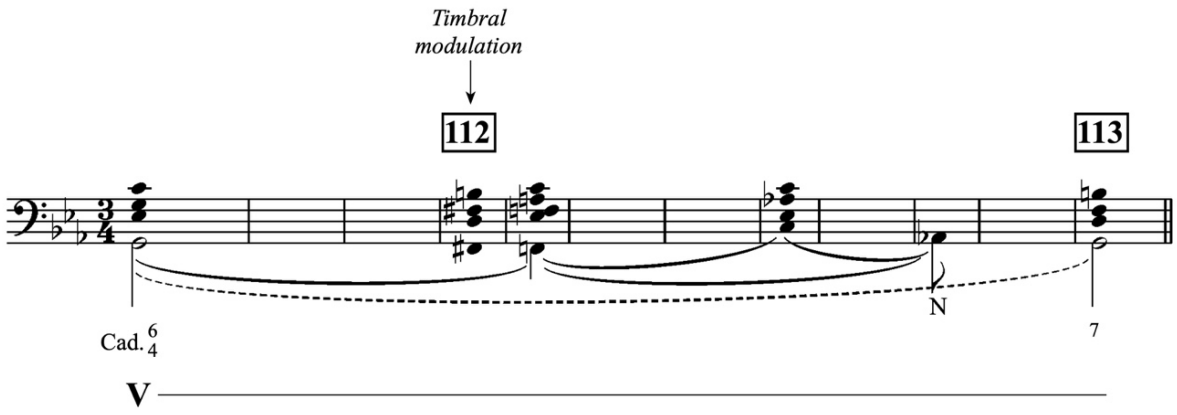

Figure 2.20: Harmonic reduction (Reh. 111$_7$-113)

Though the B minor chord's syntactic function is completely different from the previous example, its semantic function is unchanged. As in the previous example, the B minor chord is shaded through a timbral modulation in the harmonic layer, highlighting Chrysothemis's reference to her fear of death. Rather than occurring beneath the word *Tod* earlier in the phrase, the B minor chord enters instead under the word "nicht" in the phrase, "und nicht leben!" (at Reh. 112). This distinction is important as it clarifies that it is not simply death that Chrysothemis fears, but rather dying before having truly lived.

Leading up to this measure, the harmony is sustained by the low double reeds, horns, and timpani, with the strings progressively adding to the harmony as each section, beginning with the 2nd cellos, sustains the pitches of the melodic line (see Figure 2.19). At Reh. 112, when the harmony slides down to B minor, this group of instruments is replaced by a new ensemble that darkens the B minor harmony. While no instruments in the harmonic layer play continuously through this measure, the move from open to muted horns retains a level of continuity. In the woodwinds, the brighter, nasal sound of the heckelphone and bassoons is replaced by the dark, low register of the clarinet family. The active sound of the timpani roll on the bassline is lessened by a shift to the double basses on the B minor harmony. The timpani roll returns not long after on the V^7 chord at Reh. 112_9 leading to the final climax of the passage at Reh. 114. Although the shift in the orchestration is more significant than in the previous example, it still functions as a timbral modulation primarily because of the brevity of the orchestral shift as well as the linear continuity of the harmonies in the orchestra.

In Figures 2.15 & 2.19, the harmonic layer of the orchestral texture is briefly darkened in places where Chrysothemis expresses her fear of dying before she has truly lived. Chrysothemis's references to the notions of death and sleep are integrated with timbral modulations to darker timbres through their shared property as *darker states of things*. The exclusive appearance of these timbral modulations on the only two B minor chords in the entire scene (from Reh. 75-114) also stablishes a harmonic relationship that is notably independent of the local tonal context, as the two B minor harmonies have completely unrelated functions in their respective passages (the initial B minor harmony even warranting an enharmonic interpretation as C♭ minor within the E♭ minor phrase). As such, the B minor triad acts as an independent harmonic entity with a clear symbolic association in this scene comparable to the

function of the Elektra chord in the opera, though without the fixed voicing. Unlike the Elektra chord, however, the B minor triad is secondary to its orchestration in this passage. The use of timbral shading is what draws the association between these two B minor triads and is ultimately what connects them with Chrysothemis's fear of death.

Sudden Reduction and Agamemnon's Death

References to the death of Agamemnon are often accompanied by more pronounced orchestral shifts that are often sudden and unexpected, occurring at points where the focus of the characters shifts towards the fallen king. These effects are similar to the sudden reduction orchestral gesture outlined by Meghan Goodchild, but on a smaller scale.[90] The first of these sudden reduction gestures, shown in Figure 2.21, comes near the start of Elektra's monologue, which begins with her calling out to her father, "Agamemnon! Agamemnon! Wo bist du, Vater? Hast du nicht die Kraft, dein Angesicht herauf zu mir zu schleppen?" (Agamemnon! Agamemnon! Where are you, father? Have you not the strength, to lift your face to see mine?)

In this passage, the key of B♭ minor is clearly established by the funereal sentence theme. The phrase leads from I to V, with a crescendo in the final measure intensifying toward an expected return to I (Figure 2.22). However, Elektra's focus shifts at this point and the music shifts with it. A *subito ppp* harmony in the strings supplants the expected I chord, interrupting the crescendo played by the woodwinds and horns. "Es ist die Stunde," Elektra recalls, "unsre Stunde ist's, die Stunde, wo sie dich geschlachtet haben." (It is the hour, our hour it is, the hour when the slaughter happened.)

[90] Goodchild, "Orchestral Gestures," 64-66.

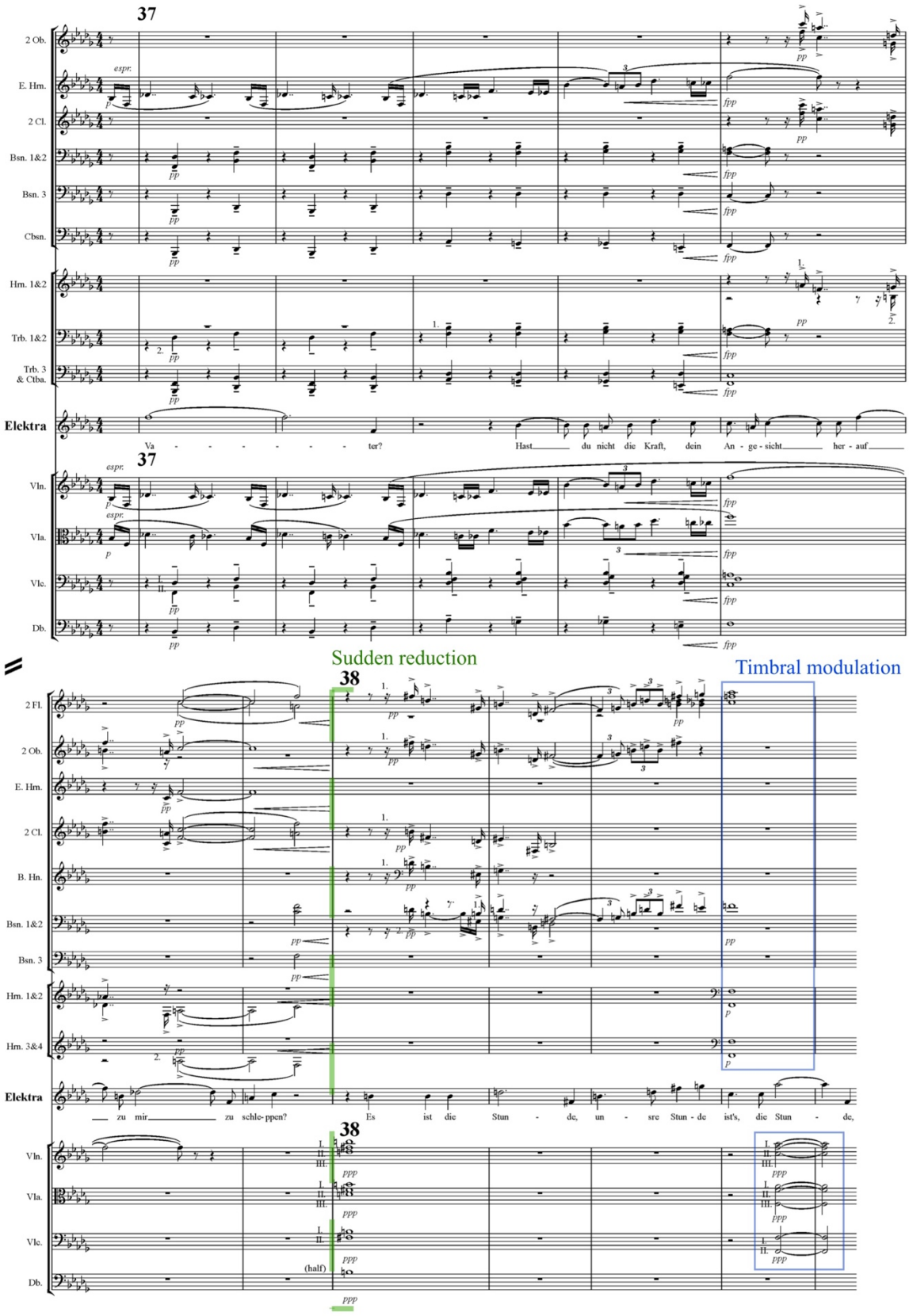

Figure 2.21: Strauss, *Elektra*, Reh. 37-38$_5$ (annotated score)

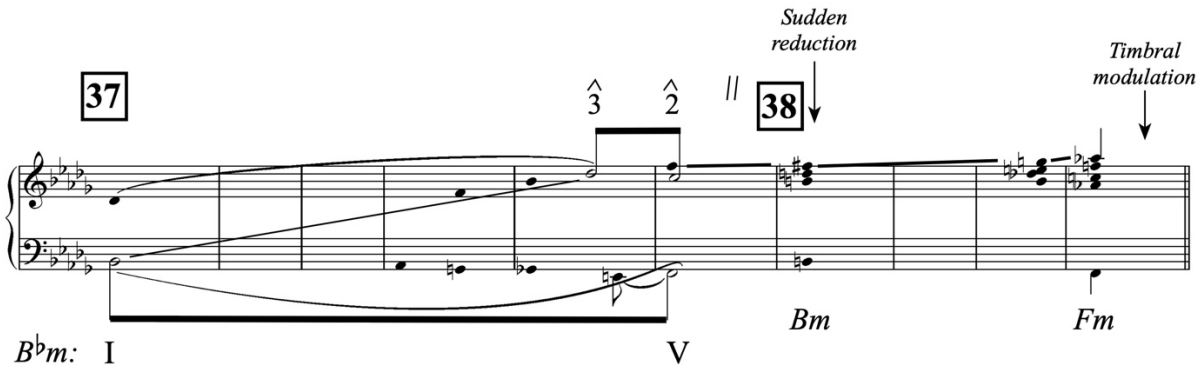

Figure 2.22: Harmonic structure (Reh. 37-38$_5$)

The sudden reduction in this passage is more drastic than the timbral modulations seen in Chrysothemis's aria. The interruption of the woodwind texture by the strings, the abrupt shift in dynamics, and the harmonic discontinuity all combine to create an orchestral contrast that perceptually separates the two phrases. The expectation of arrival created by the preceding crescendo makes the almost inaudible B minor chord all the more surprising.

As the passage continues another *ppp* string chord enters on F minor, framing Elektra's ritualistic repetition of the word "Stunde." This pair of minor triads, B minor & F minor, is common throughout the opera and is typically associated with Klytämnestra and her murderous act.[91] Between these two harmonies, a small group of woodwinds link together two motives: the first associated with the royal lineage of the palace and the second specifically with Elektra's royal blood.[92]

In this excerpt, Elektra's shift from speaking to her father to reflecting on his murder is reinforced by the musical shift in harmony, dynamics, and timbre. Unlike the slight timbral modulations in the previous examples, this combined shift creates an audible division. Although it coincides with the phrase boundary, it is still unexpected. The preceding crescendo and the V

[91] Carpenter, "The Musical Language of *Elektra*," 82.
[92] Del Mar, *Richard Strauss*, 299.

chord both suggest a dynamic and harmonic arrival at the beginning the second phrase, but they are both denied by the *ppp* B minor chord.

A similarly abrupt orchestral contrast occurs when Chrysothemis brings up Agamemnon's death in her aria (Figure 2.23). Frustrated with Elektra's indifference, Chrysothemis exclaims, "Hab Mitleid mit dir selber und mit mir! Wem frommt denn solche Qual?" (Have pity on thyself and on me! Who profits from such pain!) She then continues, addressing their shared source of pain: "Der Vater, der ist tot." (Our father, he is dead.)

As before, the reference to Agamemnon's death is accompanied by a timbral shift that interrupts the musical flow. The effect of the *subito p* is further heightened by the *molto crescendo* leading up to Reh. 93; a feature of the previous example as well. The large group of woodwinds and strings falls silent and only the distant call of muted trumpets sounds, accompanied by a small chorus of low flutes and oboes. In addition to the dynamic and timbral contrasts is a metric shift from the flowing $\frac{3}{4}$ meter that characterizes Chrysothemis to the duple division of the motive associated with the fallen Agamemnon. Unlike the previous example, the harmonic progression is rather straightforward. The $D^{\flat 7}$ dominant chord cadences on $G^{\flat}$ as expected (written enharmonically as $F^{\sharp}$). However, it resolves on a minor tonic rather than a major one. The harmonic continuity is undercut by the sudden collapse of the ambitus, which disrupts the linear flow of the voices and minimizes the sense of resolution.

In both Figures 2.21 & 2.23, sudden reductions in the orchestra mark boundaries at points where the focus of the text shifts towards Agamemnon's death. Abrupt changes in multiple parameters, including the reduction in orchestral forces and the shift to quiet, muted instruments not previously present create a darkening effect that underscores the references to death.

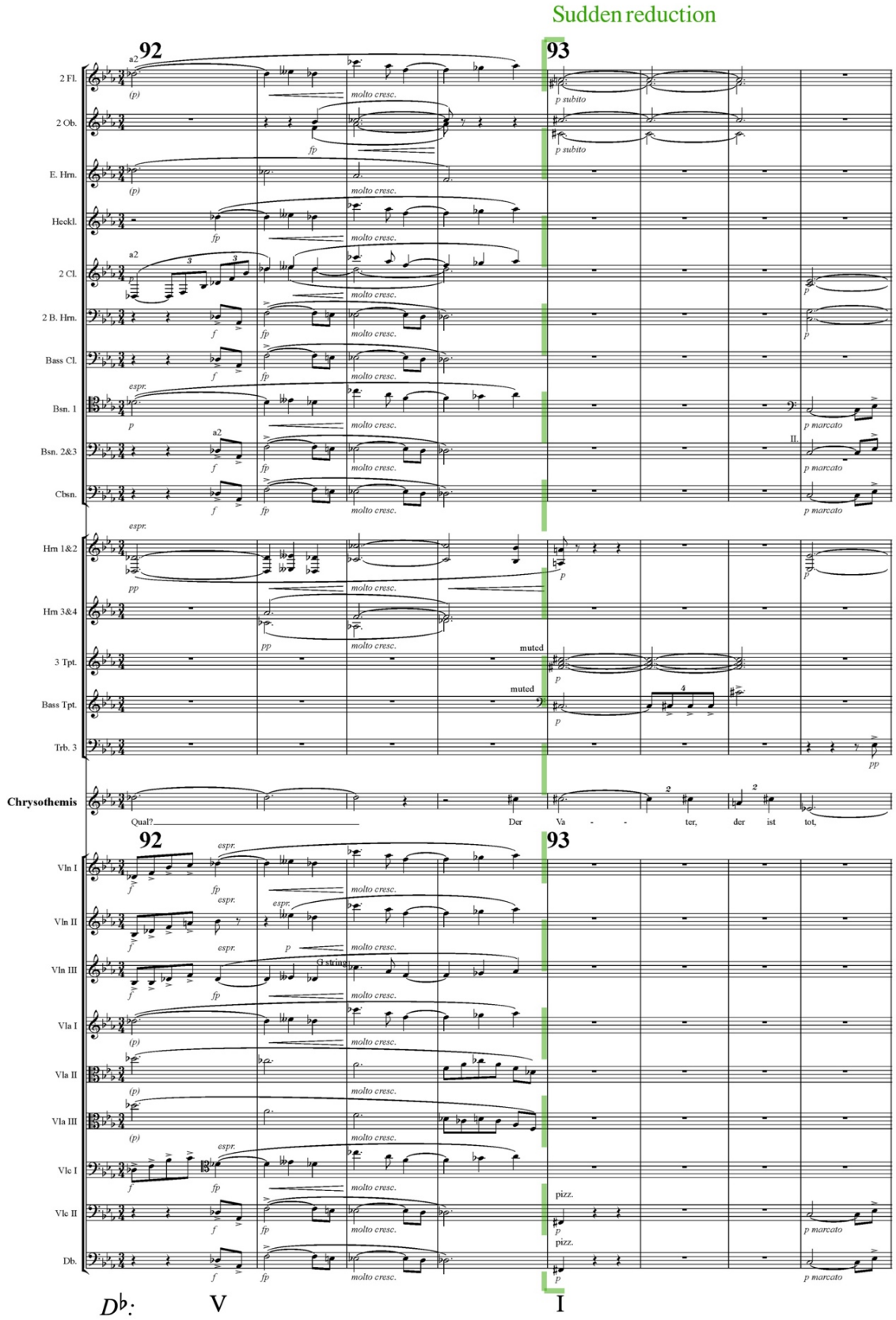

Figure 2.23: Strauss, *Elektra*, Reh. 91_5-93_4 (annotated score)

The timbral modulations do not fully disrupt the musical flow while the sudden reductions are significantly disruptive and create a clear discontinuity in the musical flow. The sudden reductions occur at points where dynamic and harmonic arrivals are expected. Additionally, no instruments play continuously in the sudden reduction effects, thus increasing the markedness of the *ppp* ensembles when they enter. The differing level of disruption between the examples of timbral modulation and sudden reduction highlights the difference between Chrysothemis's mere fear of death (before she has lived freely) and Agamemnon's actual death—one is prospective, the other real.

Symbolic Lighting and Timbral Brightness

In addition to the previous examples of timbral shading, there are also numerous examples of timbral brightening. The entrance of timbrally bright instruments often occurs in conjunction with symbolic lighting onstage. In *Elektra*, physical light is almost exclusively represented by high, muted brass instruments. The clearest example of this is the passage where Klytämnestra learns of Orestes's death (Figure 2.24). Upon hearing the news from one of her servants, Klytämnestra begins to call for more lights and serving maids continue to emerge with torches, eventually bathing the stage in light. The entire passage is extensively detailed in the performance directions by Strauss and Hofmannsthal:

> *[Reh. 261$_6$] Sie winkt: "Lichter!"*
> ([Klytämnestra] commands: "Lights!")
>
> *[Reh. 262] Es laufen Dienerinnen mit Fackeln heraus und stellen sich hinter Klytämnestra.*
> (Serving Maids come running from the palace with torches and range themselves behind Klytämnestra.)
>
> *[Reh. 265] Klytämnestra commands: "Mehr Lichter!"*
> (Klytämnestra commands: "More Lights!"

> *[Reh. 265$_5$] Es kommen immer mehr Dienerinnen heraus, stellen sich hinter Klytämnestra, so daß der Hof voll von Licht wird und rotgelber Schein um die Mauern flutet.*
> (Still more serving maids come out and range themselves behind Klytämnestra, so that the courtyard is flooded with light and a reddish yellow glare eddies round the walls.)[93]

Each call for light is articulated by a loud fanfare played by the upper brass (muted trumpets, trombones, and horns), whose high piercing notes carry through the orchestra.[94] These chords are doubled by the strings, whose descending glissandi emerge out of the brass harmonies in each statement. The final fanfare at Reh. 266$_3$ is repeated multiple times until Reh. 268$_4$. In this passage, timbral brightness is mapped directly to visual brightness as the light of the torches bathes the stage. The momentary brightness highlights Klytämnestra's temporary triumph over Elektra.

This same effect is used earlier in the opera when Elektra first scampers on stage, emerging out of the dark house into the light of the courtyard (*Elektra kommt aus der schon dunkelnden Hausflur gelaufen*). Her entrance, accompanied by a precipitous ascent through the orchestra, peaks on a *fortissimo* B minor triad played by high muted trumpets (Figure 2.25). Elektra's first appearance in this passage highlights the contrast between the symbolic darkness of the household and the light of the outside world, cementing this thematic contrast almost immediately in the opera.[95]

[93] Richard Strauss, *Elektra*, libretto by Hugo von Hofmannsthal, vocal score by Carl Besl (Boosey & Hawkes Ltd., 1943), 106-107.
[94] These fanfares return at Reh. 182a & 184a$_3$, played instead by an oboe and upper woodwinds. The softer woodwind orchestration creates an illusion of distance in relation to the strident brass, illustrating musically the distance of the singular torch lighting the entrance of the palace as Orestes enters to carry out the murders.
[95] Doswald, "Nonverbal Expression in Hofmannsthal's *Elektra*," 201.

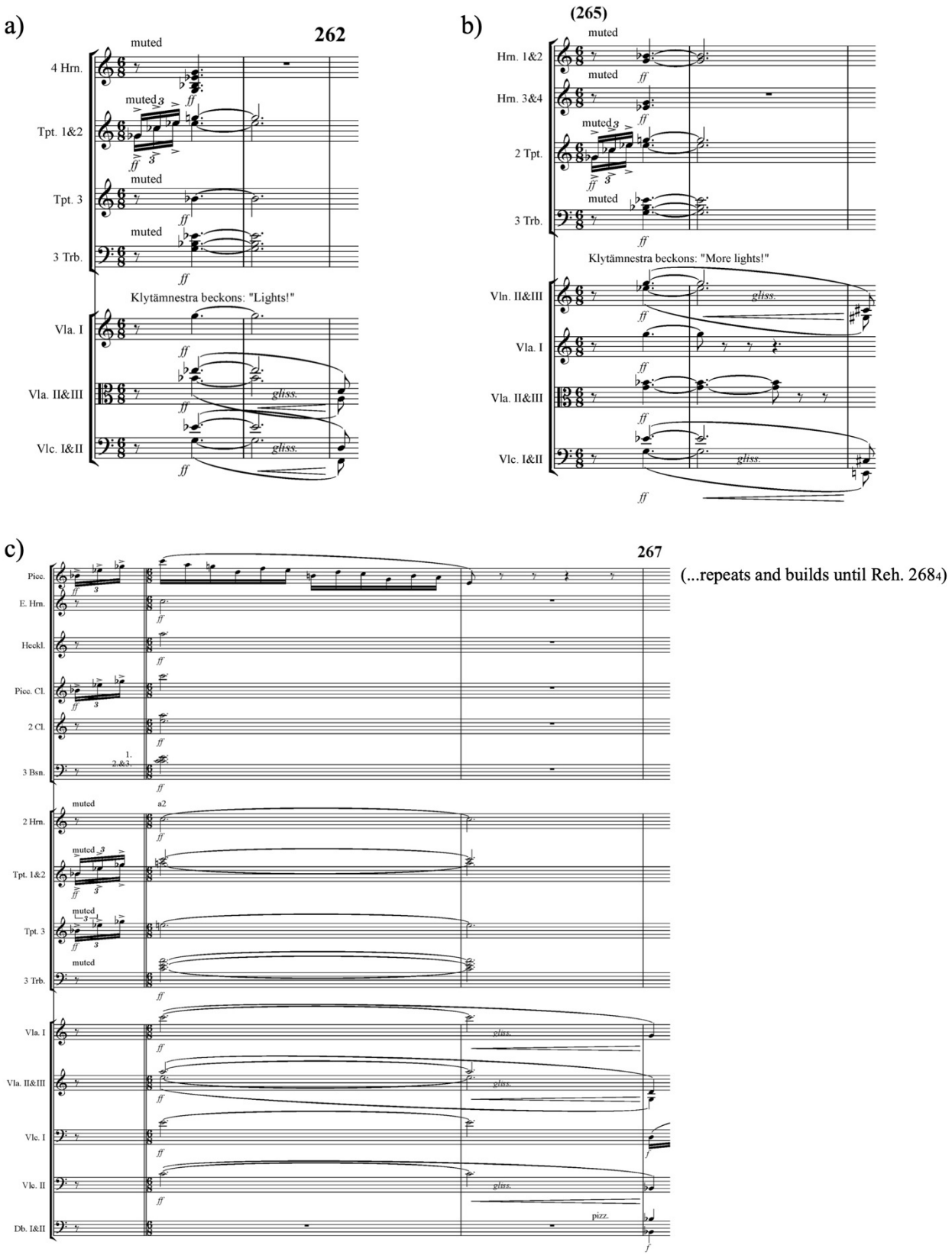

Figure 2.24: Strauss, *Elektra*, a) Reh. $261_{6\text{-}7}$, b) $265_{1\text{-}2}$, and c) $266_{3\text{-}4}$ (reduced score)

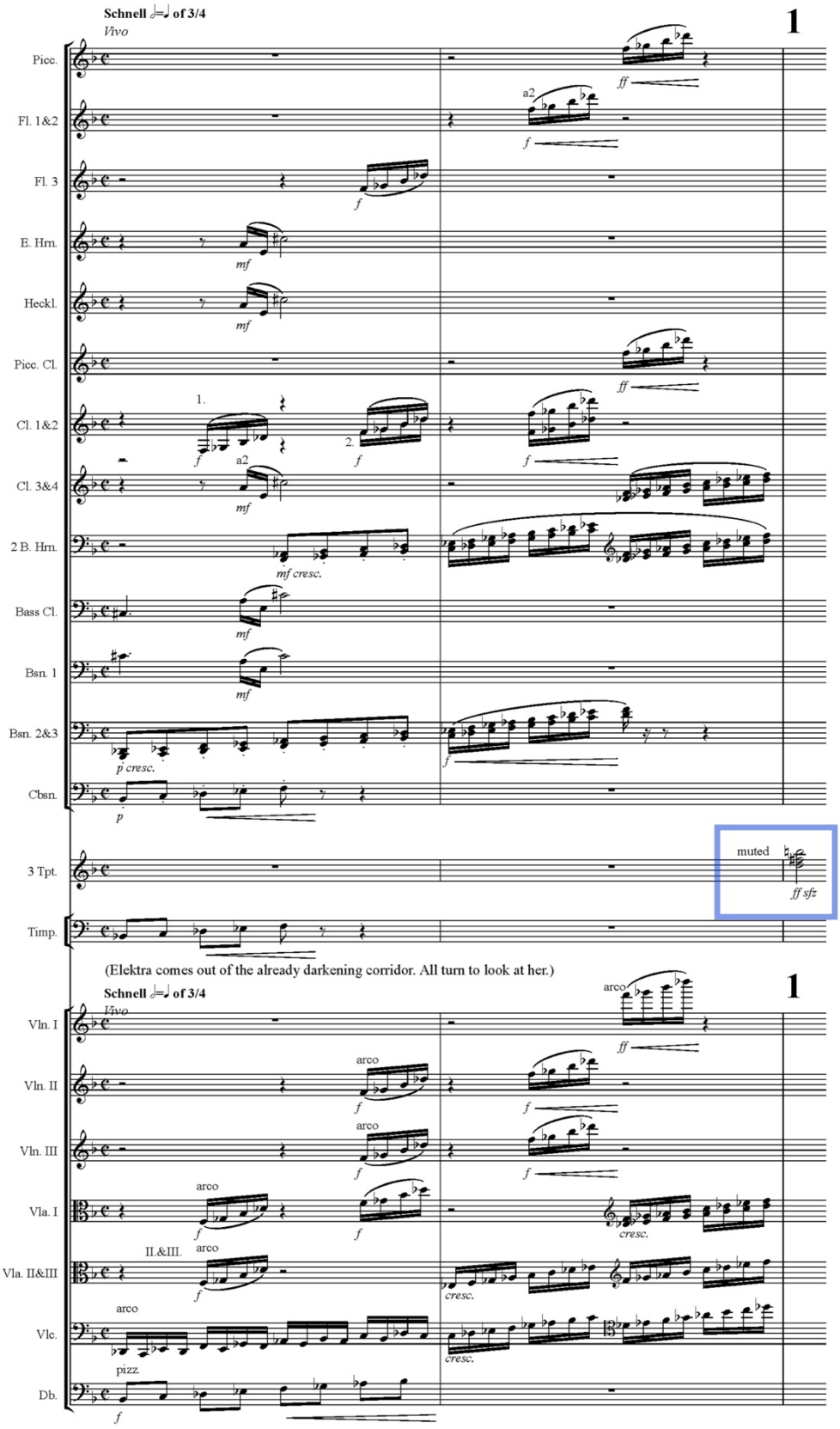

Figure 2.25: Strauss, *Elektra*, Reh. 0_8-1 (annotated score)

Each of these examples is built on the same mapping of visual properties to timbral ones: timbrally-bright brass sonorities provide a sonic analog for the symbolic lighting onstage (Figure 2.26). Although the specific symbolic function of the lighting differs in each passage, they are accompanied by the same orchestral effect.

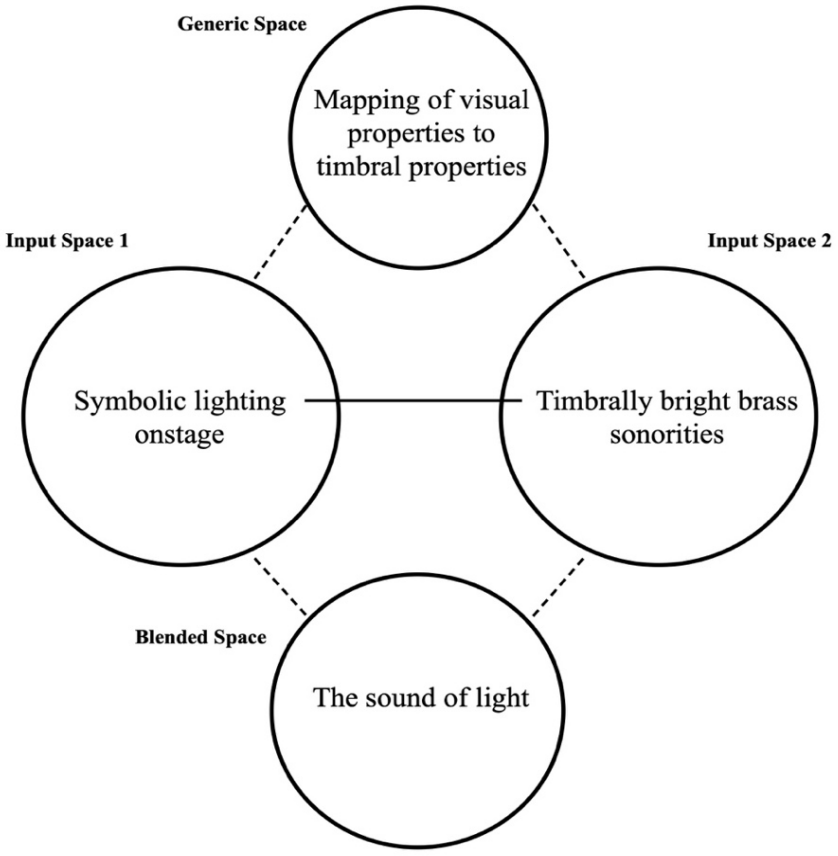

Figure 2.26: Timbrally-bright sonorities CIN

Orchestration and the Contrast of Characters

In addition to the symbolic contrast of light and dark, Strauss's *Elektra* also involves the frequent opposition of characters. The majority of the scenes in the opera have only two characters on stage and those with more, such as the opening Maid's scene, often contrast one group of characters with another. In this section, I will focus on two, character contrasts. The first contrast I will discuss is between the young and old male servants (Reh. 26a-33a) and the

second is between Chrysothemis and Elektra in their first scene together (Reh. 75-114). In each of these scenes, orchestral contrasts—abrupt changes in the musical flow[96]—differentiate between characters and function as a musical depiction of their contrasting traits. In each of these examples, harmonic, rhythmic, and registral aspects also play a role in strengthening the overall effect.

The Young and the Old Servant

The interlude with the two male servants, a scene rarely discussed in the literature, is an excellent example of how symbolic character contrasts are expressed through the orchestration. The two characters on stage are primarily differentiated by age, referred to only as the Older Servant (*Alter Deiner*) and the Younger Servant (*Junger Deiner*). This scene may seem superfluous to the overall drama, but what it offers is a symbolic contrast between the generations within the household with the two servants standing in for the male heads of house, Aegisthus and Agamemnon. The younger servant is clearly associated with Aegisthus as illustrated by his insolent, garish behaviour and the descending-fourth musical gesture that accompanies him, a gesture drawn from the opening fragment of Aegisthus's main motive.[97] He enters the stage to fetch a horse so that he can bring news of Orestes's death to Aegisthus. The older servant, on the other hand, is associated with the rightful head of the house, Agamemnon, and his heir, Orestes. He, like the other elder members of the household, carries the memory of Agamemnon's murder with him. The relationship between the elder servants and Agamemnon is clarified later on when the older servants are the first to recognize Orestes when he returns to avenge Agamemnon's death, bowing and kissing Orestes's feet (Reh. 142a).

[96] Goodchild and McAdams, "Perceptual Processes in Orchestration," 16-17.
[97] Kaluzny, "Motive in *Elektra*," 99.

In the orchestration of this scene, the symbolic contrast between these two characters is clearly highlighted by orchestral contrasts that segment the music through abrupt timbral shifts. The music accompanying the young servant is played primarily by horns and strings with occasional interjections from upper woodwinds at the beginning of the passage (Reh. 26a-28a$_5$).The old servant, on the other hand, is accompanied only by the bassoons, which interrupt the prevailing texture three times, the first two underscoring the older servant's only two lines in the passage, while the last sounds when the young servant says, of the older servant, "Da glotzt er!" (how he stares at me!) Each of these three bassoon solis articulates a single, low minor triad that interrupts the harmonic and rhythmic flow of the music. This association of the aged man with low, quiet, rhythmically inactive bassoons[98] further distinguishes him from his younger counterpart, whose music is an excess of fanfare-like outbursts.

At Reh. 27a$_4$, a soft A♭ minor triad in the bassoons disrupts the intensifying process of fragmentation in the ascending sequence that precedes it (Figure 2.27). The entrance of the bassoon trio on the weak beat of the measure is masked by the boisterous *forte* that precedes it. Only gradually does it become perceptible. The harmony's unclear beginning and lengthy sustain disrupts the rhythmicity of the preceding music. Moreover, the bassoon harmony presents an extreme drop in register that clearly distinguishes it from the surrounding music that accompanies the younger servant (Figure 2.28). The harmonic function of the A♭ minor triad in this passage is unclear and attempts to integrate it into the prevailing key of F major would minimize its semantic function. The chord is meant to be disjunctive and to represent the older servant's contrasting characteristics.

[98] The association between bassoons and old age is quite common in Western art music. In *Elektra*, the bassoons are often used in the orchestration of motives associated with the aged and weathered Klytämnestra. The depiction of the grandfather by a solo bassoon in Prokofiev's *Peter and the Wolf* is another example of this semantic association.

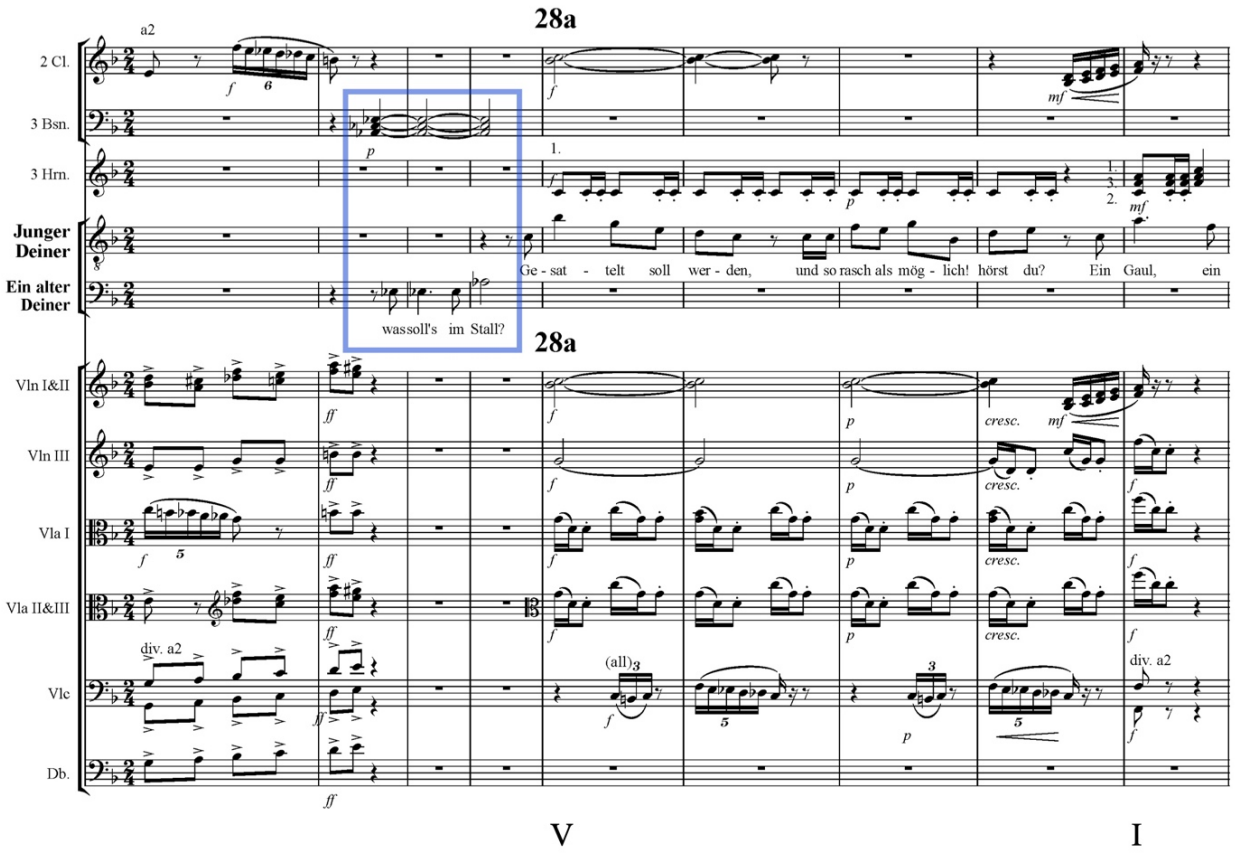

Figure 2.27: Strauss, *Elektra*, Reh. 27a$_3$-28a$_5$ (annotated score)

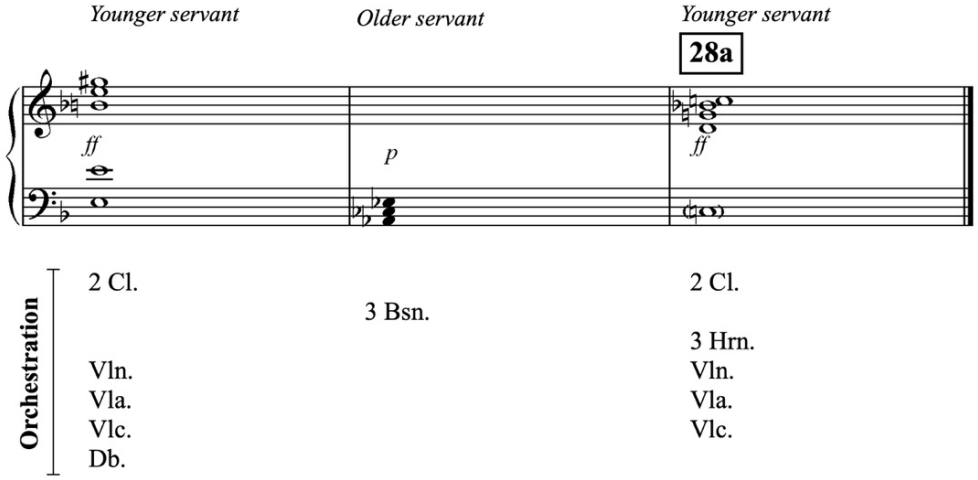

Figure 2.28: Dynamic and registral contrasts (Reh. 27a$_4$-28a)

The second bassoon soli, at Reh. 29a, underscores the old servant's question, "Für wen?" (Figure 2.29). Once more, the sonority is differentiated by dynamics and register and articulates a somewhat unexpected minor chord. As the progression moves on, the F minor harmony can be heard as III in the local cadence in D♭ major (VI), forming part of a $\hat{3}$-$\hat{5}$-$\hat{1}$ bass arpeggiation that can be found in other cadences in *Elektra* (see Reh. $36_{3\text{-}6}$ & Reh. $74_{1\text{-}2}$). However, it follows incongruously from V/V in the main key of FM, subverting a possible tonicization of V.

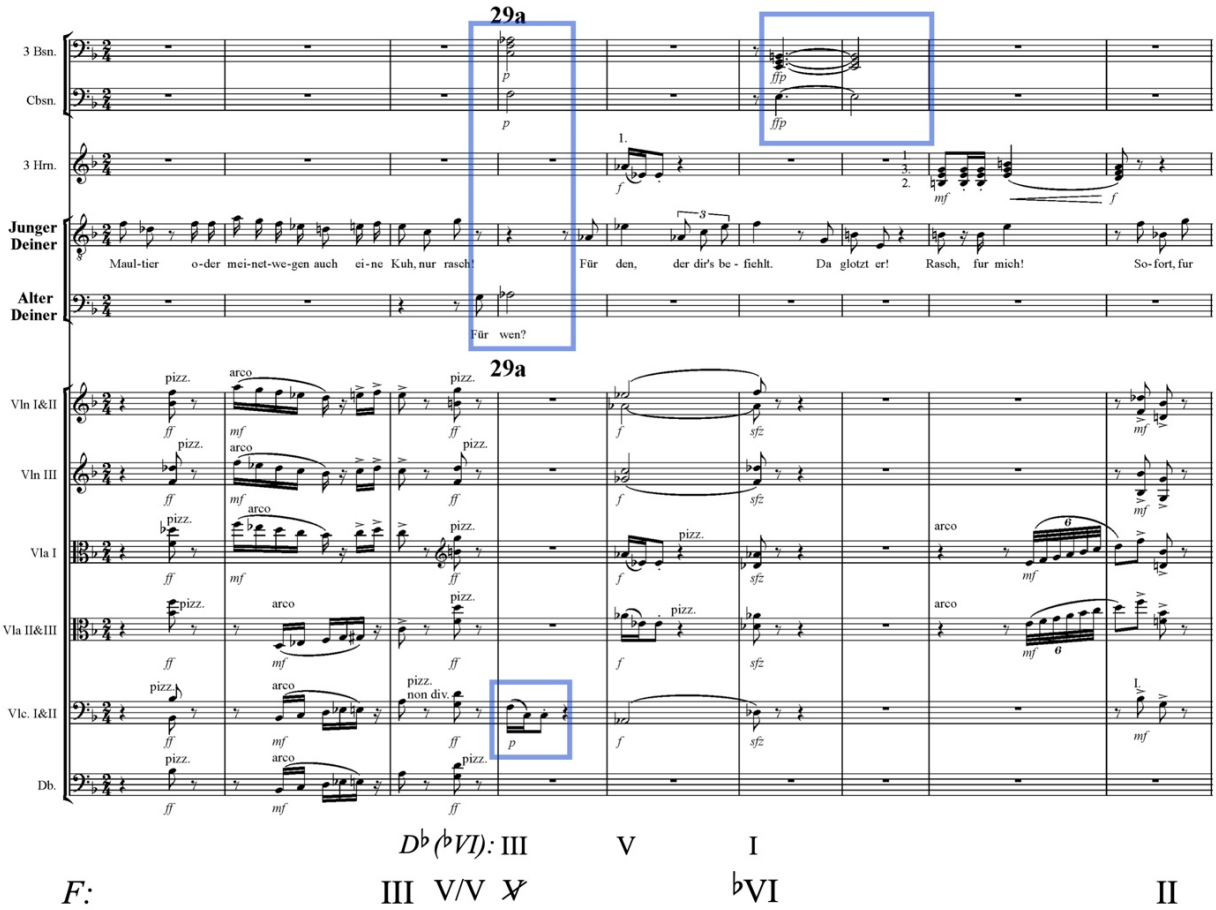

Figure 2.29: Strauss, *Elektra*, Reh. $28a_6$-$29a_6$ (annotated score)

The third and final bassoon soli follows not two measures later, abruptly interrupting the cadence on D♭ major with a sudden E minor triad. This soli is also marked by a *ffp* accent which

musically represents the old servant's visible disdain for the younger servant. Again, dynamics, register, and orchestration all combine to create a contrast between the minor triads and the surrounding music (see Figure 2.30).

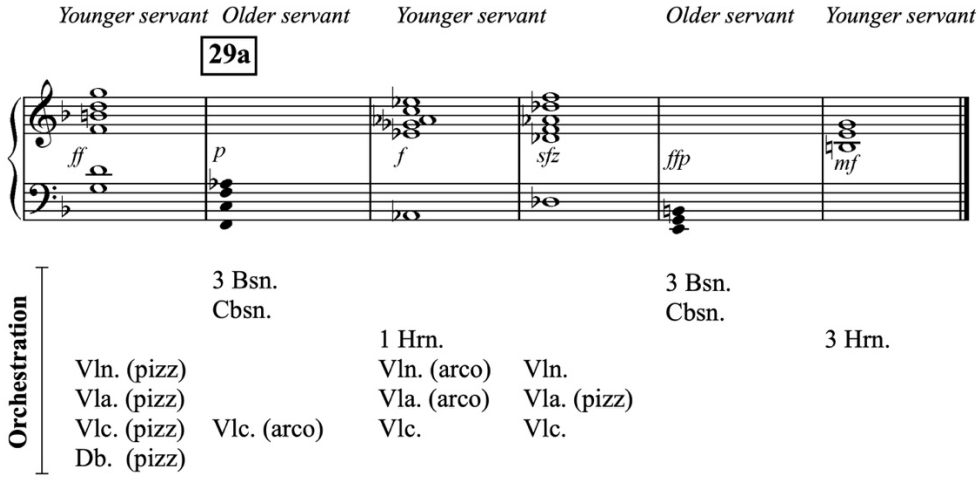

Figure 2.30: Dynamic and registral contrasts (Reh. $28a_8$-$29a_4$)

The E minor harmony played by the bassoons is incongruous. It has no clear harmonic connection to the key of D♭. When the passage continues, the E minor harmony is picked up by the horns, sliding unceremoniously down to Dm and from there leading into a cadential progression in the main key (F major) and an arrival on the thematic form of the motive associated with Aegisthus at Reh. 30a.

One final point to be made about the orchestration of this passage is the general absence of the bassoons in the surrounding music. Only near the beginning of the passage do two bassoons briefly double the violas. This technique, seen throughout this chapter, further differentiates the two main instrumental groups, increasing the markedness of the bassoons when they do enter. The CIN in Figure 2.31 provides a summary of the symbolic orchestration of this scene.

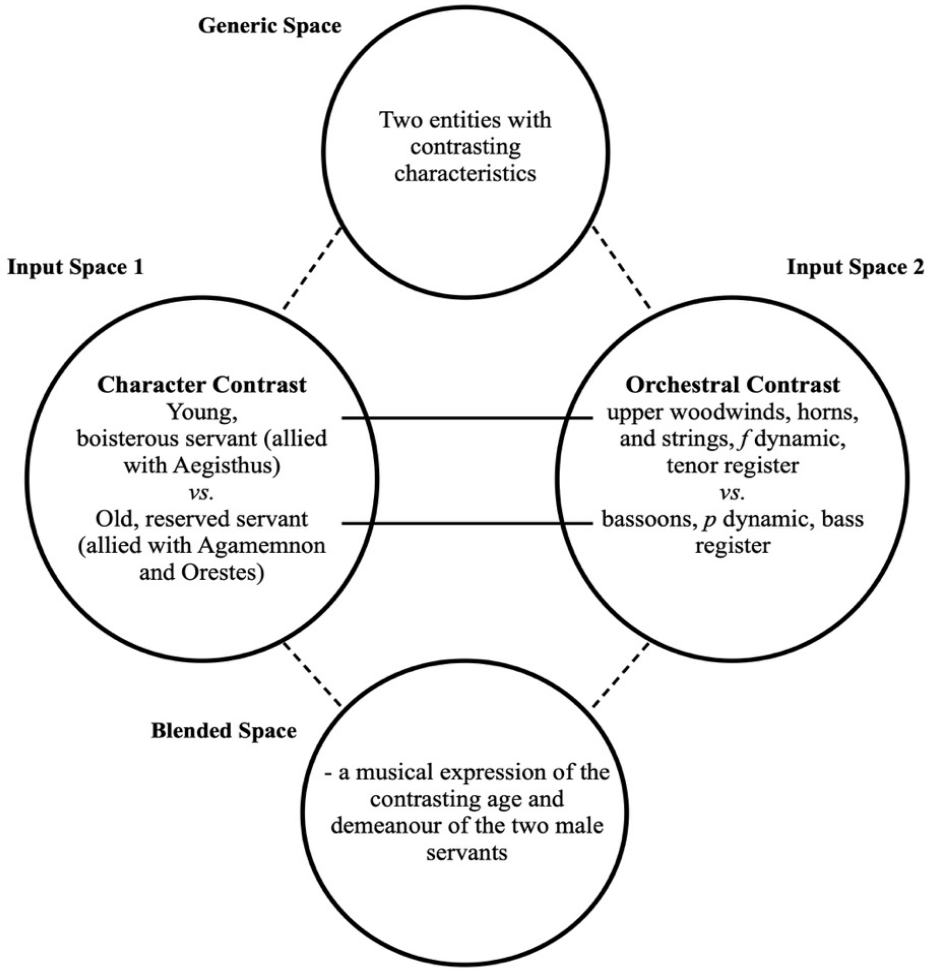

Figure 2.31: Male Servants' contrast CIN

The orchestral contrast provides a musical analog for the contrasting characteristics of the two male servants. The distinct register of their respective accompaniment clarifies their age difference, while the dynamic and timbral contrasts characterizes their contrasting demeanour, which reflects the demeanour of the primary male characters: Aegisthus and Agamemnon (and Orestes, by association).

Elektra and Chrysothemis

The character contrast that was of particular interest to Strauss was the one between Elektra and her sister, Chrysothemis. In later years, he recalled this contrast between the

possessed goddess of vengeance and the radiant character of her mortal sister as one of the aspects of Hofmannsthal's *Elektra* that had significant musical potential.[99] The two sisters share the stage for the majority of the opera, providing ample time to establish and explore their differences. In this section, I will focus primarily on their first scene together, in which Chrysothemis's "radiant character" is on full display. In this scene, she laments the situation that Elektra's flagrant resentment has put them in and expresses her desire for a woman's life. Unlike Elektra, she would rather reconcile and move on than obsess over avenging their father's murder. During this aria, Elektra interjects only three times. Each of these short responses illustrates Elektra's disdain for what she regards as her sister's pitiful weakness and each is accompanied by an orchestral contrast that highlights the character of Elektra's remarks.

In Figure 2.32, Elektra responds to her sister's plea, "Schwester, hab Erbarmen!" (Sister, have pity!), with the sarcastic query, "Mit wem?" (On whom?) This brief remark is punctuated by an abrupt, pizzicato string chord that interrupts the orchestral texture in the midst of a cadential progression. Chrysothemis's sincere concerns, illustrated by the unabashed lyricism of her music, are met with the blunt indifference of Elektra, who considers her sister's sincere desire for a woman's life trivial in comparison with her desire for vengeance. The sudden percussive attack beneath Elektra's remark reveals her ultimate disdain for her sister's outpouring of emotion.

The abrupt pizzicato harmony severs any connection with the preceding orchestral texture—a combination of woodwinds, horns, timpani, and (arco) strings. The chord is also rhythmically marked by its placement on the metrically weak beat two, rather than, say, on the third beat, which is given secondary emphasis in the $\frac{3}{4}$ meter throughout most of the scene. This

[99] Richard Strauss, *Recollections and Reflections* (Westport, Conn.: Greenwood Press, 1974), 154.

metric accent is combined with an abrupt drop in register relative to the preceding II chord. The passage continues as expected to a resolution on D♭, but the instrumentation shifts again on the cadential arrival to a combination of clarinets, horns, and trombones when Chrysothemis shifts from her own concerns to address her sister's evident disinterest.

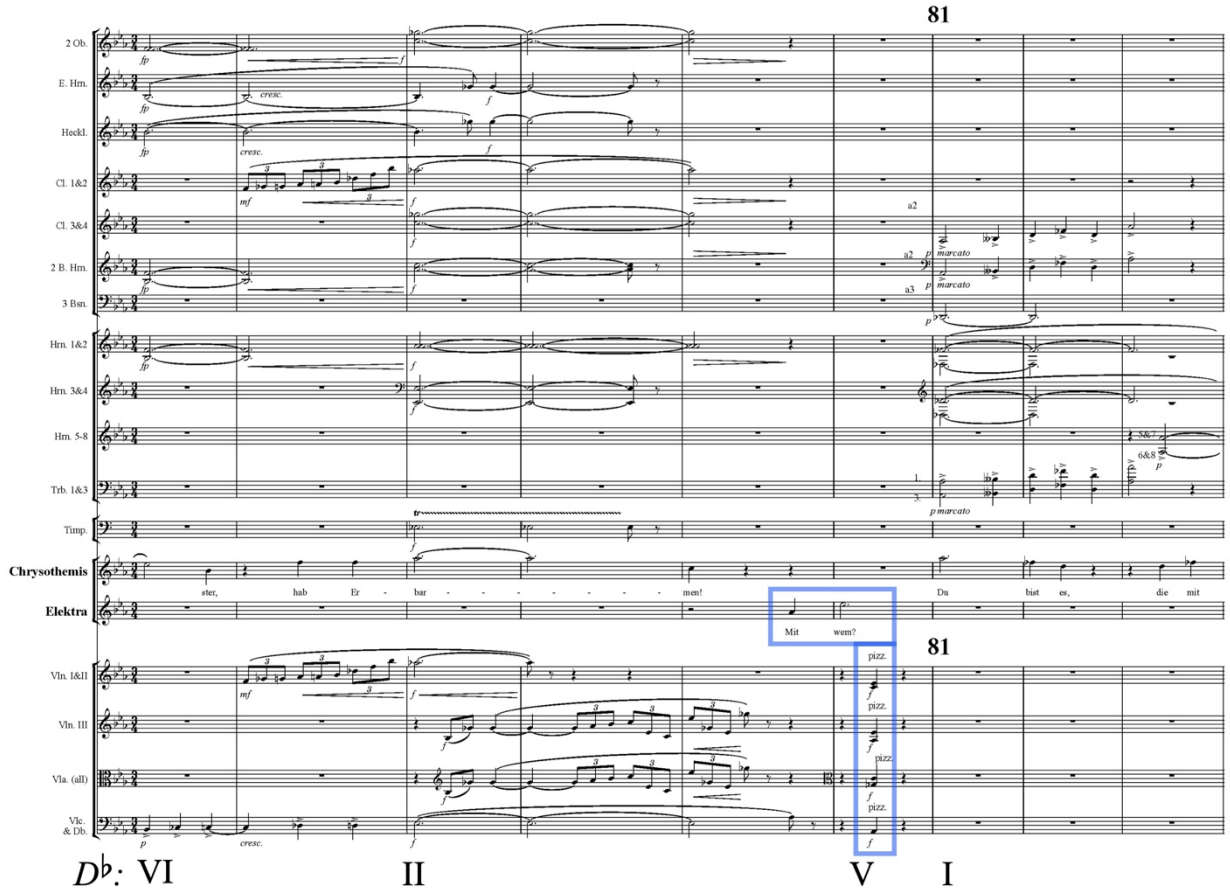

Figure 2.32: Strauss, *Elektra*, Reh. 80_5-81_3 (annotated score)

Elektra's second interjection comes at Reh. 90_8 and follows a similar plea from her sister, who, after spending considerable time expressing her desire for children, implores her silent, implacable sister to respond (Figure 2.33). Elektra speaks, but only to herself when she says, "Armes Geschöpf!" (Poor creature!) The orchestral texture shifts at this point from the string-dominant texture (with woodwinds and horns), to a lightly scored D major chord played by the

bass clarinet and three low flutes (two clarinets also enter briefly as reinforcement under Elektra's line). Elektra's pity for her sister, whose concerns she regards as trivial, is revealed by the motive played by the English horn. This motive first appears midway through the opening scene when one of the maids expresses pity for the subjugated Elektra.

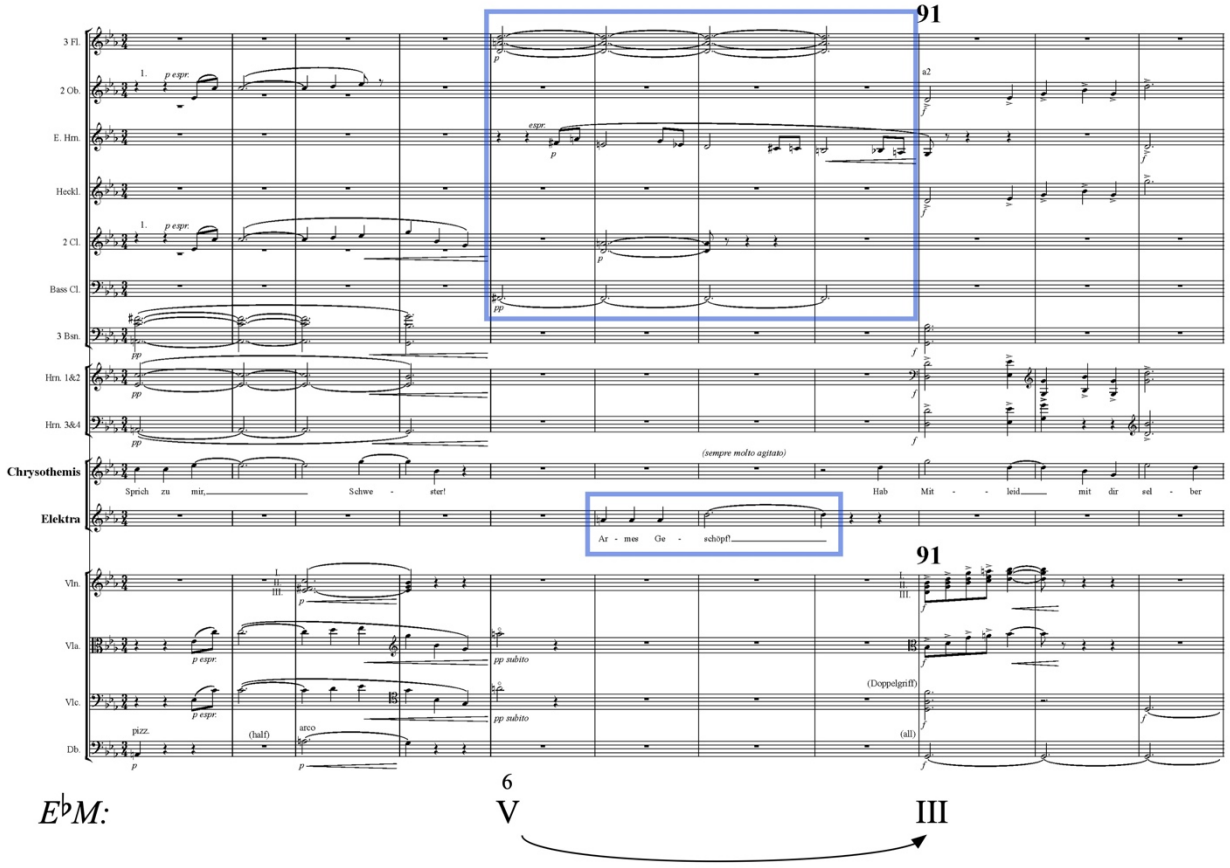

Figure 2.33: Strauss, *Elektra*, Reh. 90_4-91_3

The disjunction of the orchestral texture at this moment is intensified by the *subito pp*, which disrupts the expected peak of the crescendo that precedes it, pushing the dynamic arrival to Reh. 91 where Chrysothemis continues accompanied by almost the exact same group of instruments. The harmony of this passage also plays a role in this contrast. Carolyn Abbate, who discusses this passage in her book chapter, "Elektra's Voice," gives due credit to the

orchestration and its role in articulating the character of Elektra's response. However, she understates the supporting role of harmony in this passage. In her discussion, Abbate states that, "Elektra's interpolated A-D, and the supporting harmony, are barely disjunctive, a passing phenomenon smoothly integrated into the linear and harmonic progress of the passage."[100] While this may be true of the local harmonies, in the larger harmonic context the arrival on V/III is certainly not the most likely or expected progression. Preceding this short excerpt, E♭ major is clearly established at Reh. 86_4 with a sentential theme accompanying Chrysothemis's declaration, "Kinder will ich haben." The opening section of the theme closes with a half cadence, followed by the initiation of a cadential progression, beginning with I^6 and II^6 (Figure 2.34). In this context, the diminished harmony at Reh. 90_4 could very easily lead to V of E♭, following the common rising bassline: $\hat{3}$-$\hat{4}$-#$\hat{4}$-$\hat{5}$($-\hat{1}$). A resolution to V would also reproduce the outer-voice structure of the opening sentential theme at a higher structural level. However, this more conventional resolution is subverted when the bassline passes from A down to F♯ (shown in the lower staff of Figure 2.34). The progression is certainly smooth given that this diminished 7th chord is common to both V and III, but it is also the less expected of the two resolutions. The effectiveness of this unexpected harmonic progression is furthered by the anomalous orchestral shift to the small choir of woodwinds and the sudden drop in dynamic. The combination of these elements creates a musical contrast that differentiates the two sisters and illustrates Elektra's indifference to her sister's concerns.

[100] Abbate, "Elektra's Voice," 118.

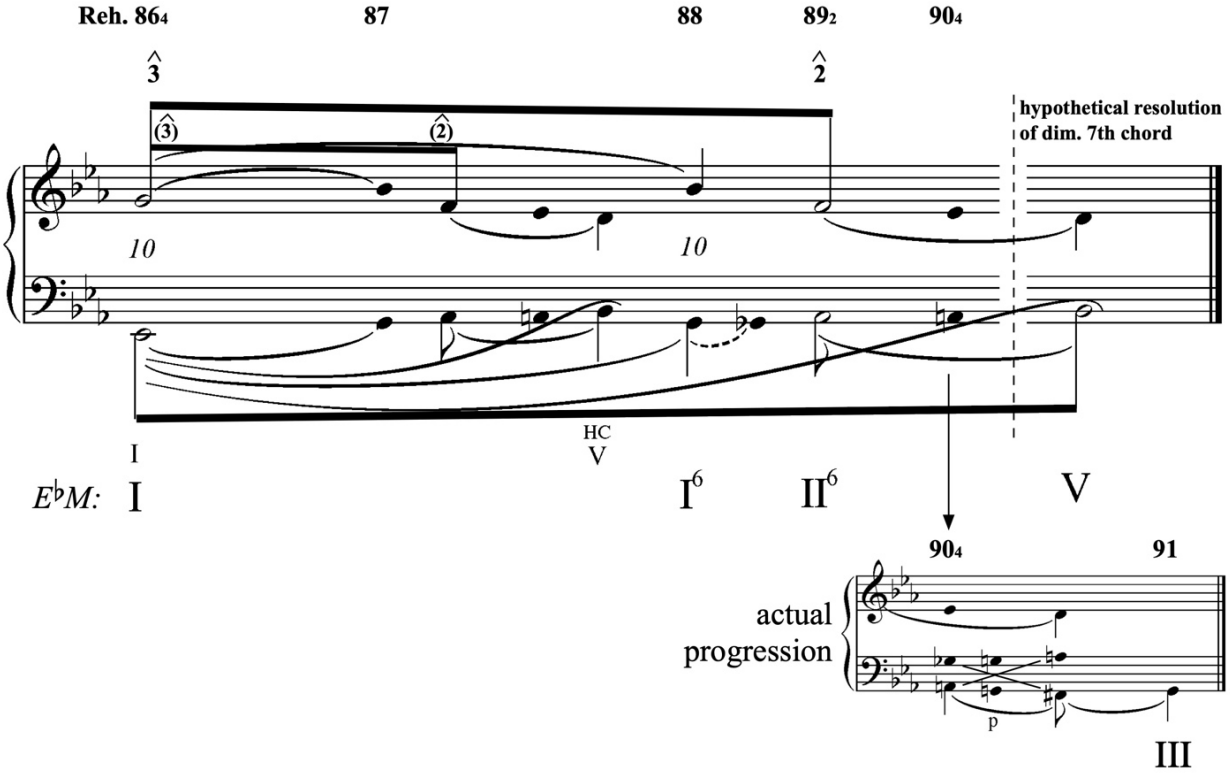

Figure 2.34: Harmonic structure with hypothetical resolution to V (Reh. 86_4-90_7). Actual resolution at the conclusion of the passage is shown below.

The final interjection by Elektra comes at the end of this passage and is by far the most pronounced (Figure 2.35). At this point, Chrysothemis has broken down in tears after once again expressing her desire for a woman's life (*ein Weiberschicksal*). The music begins to build toward another climax, the tension growing over the G pedal point. The expected resolution at Reh. 114 of the G^7 harmony is C minor, but instead the Elektra chord blares out in low, muted brass. Elektra, frustrated with her sister's weakness, then exclaims forcefully: "Was heulst du? Fort, hinein! Dort ist dein Platz!" (What are you howling for? There, inside! That is your place!)

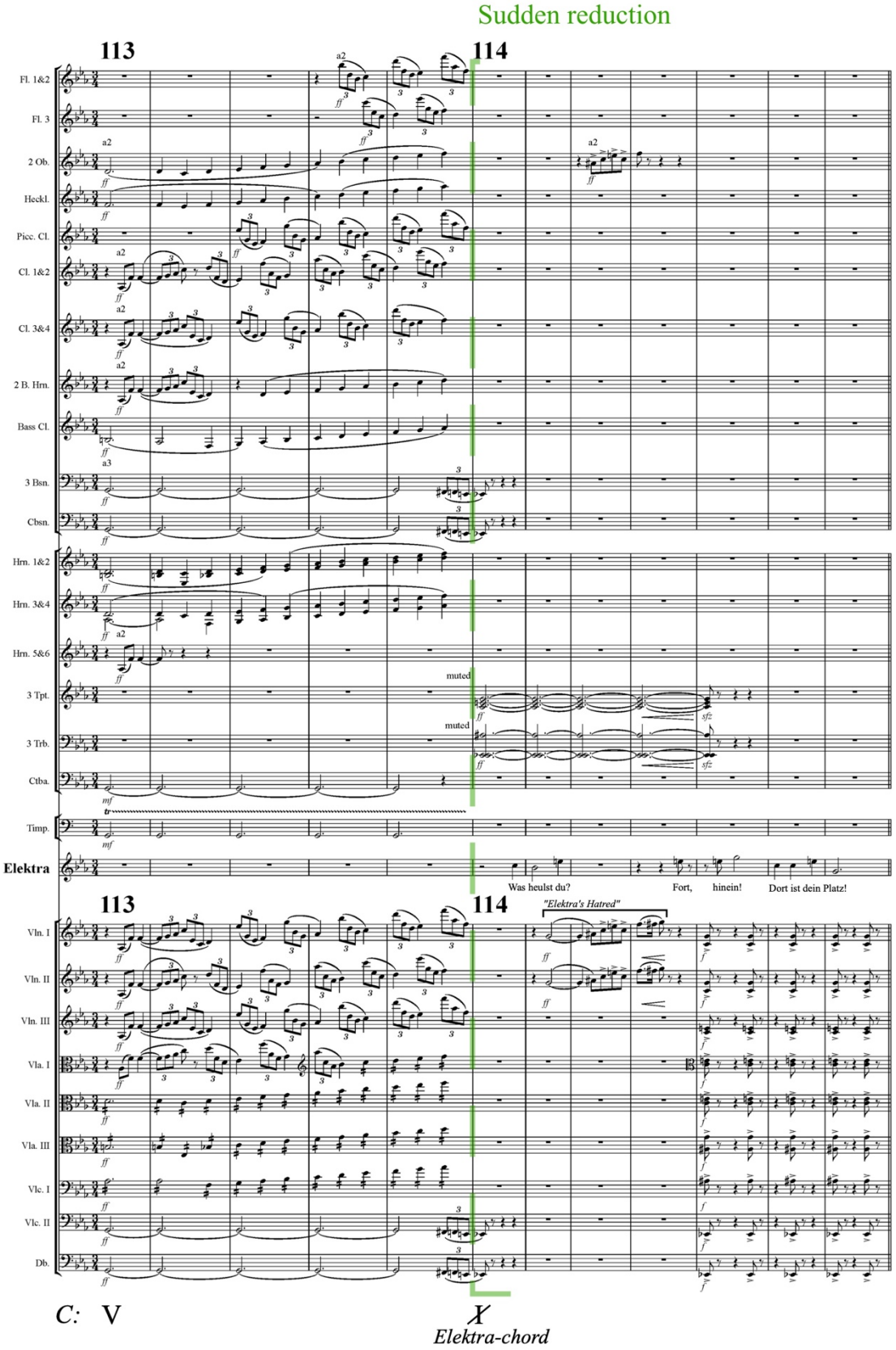

Figure 2.35: Strauss, *Elektra*, Reh. 113_3-114_8 (annotated score)

While the harmonic progression is unusual, it is not completely arbitrary. The massive registral shift aside, the outer voices progress outwards in contrary motion: the rising scale in the melody reaches the note G while the bass slides downwards from G to E♭, providing a framework for a V-V$^4/_2$-I^6 progression (Figure 2.36). The Elektra chord supplants the I^6 resolution, but its particular transposition in this passage provides some level of harmonic continuity as it contains both the notes of C minor and C major triads (as well as C^7 and C^{-7}). Combined with the grotesque timbre of the *ff* muted brass, the Elektra chord sounds like a distortion of the expected I^6 chord.

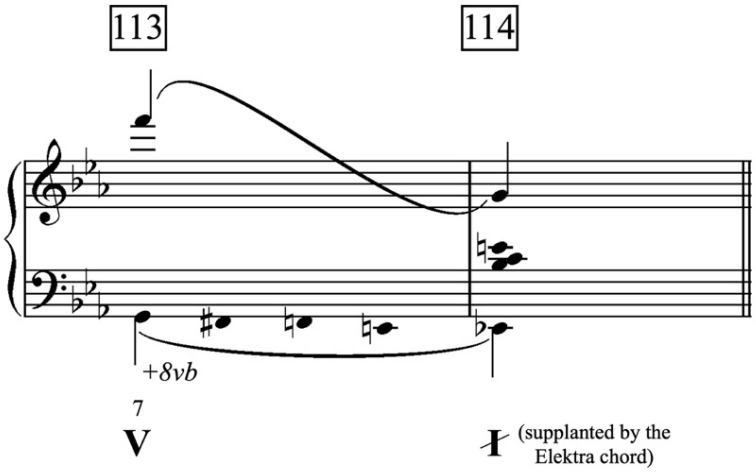

Figure 2.36: Harmonic reduction (Reh. 113-114)

Harmonic continuity aside, the discontinuity of the orchestration is undeniably powerful and, as before, involves the combination of a number of factors. One of the most prominent of these is the disjunction in register. At Reh. 113, the melody begins a stepwise ascent into the upper reaches of the orchestra that is most powerful in the horns, who reach a high F (concert

pitch), which is often identified in orchestration treatises as their highest reliable pitch.[101] At this point the ambitus collapses from almost seven octaves to just over two octaves. The timbral contrast between the orchestral tutti and the low, muted brass is also strengthened by the deliberate omission of the trombones and trumpets in the orchestral tutti before their entrance at Reh. 114. This not only allows time for the brass players to put in their mutes, but also distinguishes the sonority from the preceding orchestral texture. The final aspect to mention here is the rhythmic stagnation that occurs on the Elektra chord. Although Elektra's line at Reh. 114 retains the $\frac{3}{4}$ meter, the overall lack of rhythmic activity in the orchestra is jarring, especially following the steady triplets of the previous measures. The flurried statement of the motive, known as the *Haß-motiv*[102] or "Elektra's Hatred,"[103] in the strings and oboes does little to stabilize the passage. Following this are five sharp articulations of the Elektra chord that forcefully instate a duple division. The scene concludes as the sounds of Klytämnestra's procession can be heard in the distance.

Throughout the opera, contrasts between characters are combined with contrasts in the orchestra. These effects vary in their quality and strength depending on the tone of the characters' gestures or remarks. Elektra's three interjections within Chrysothemis's aria are quite varied; at some points subtle and subdued, at others, brash and abrasive. The bassoon solis accompanying the elder servant are primarily stagnant and indifferent but in one instance, pointed with disgust. Despite these variations, the orchestration functions consistently to highlight the contrasting aspects of the characters onstage.

[101] Samuel Adler, *The Study of Orchestration,* 3rd Ed. (New York: W.W. Norton, 2002), 315.
[102] Overhoff, *Elektra-Partitur*, 46.
[103] Del Mar, *Richard Strauss*, 298.

Conclusion

In this chapter, I have outlined two main categories of dramatic orchestration that complement two of the important themes in Hofmannsthal's libretto: imagery and symbolic contrasts. In Part A, I demonstrated how imagery is blended with select features of the orchestration to create an aural image. These images depended not only on the timbral qualities of certain instruments, but also on textural features such as rhythm, dynamics, contour, and register. Likewise, the symbolic contrasts between light and dark and the contrasts between characters analyzed in Part B relied on both timbre and other parameters such as harmony, rhythm, dynamics, and register to clarify and enhance the symbolic effect. In addition, the instruments and playing techniques used for imagistic and symbolic effects are often omitted from the surrounding passages and even from the majority of the opera to increase the markedness of these effects. There is evidence that Strauss deliberately limited the use of certain instruments and playing techniques to heighten their effectiveness. Strauss himself comments multiple times on the importance of employing certain instruments with restraint in his revision of Berlioz's *Treatise on Instrumentation*. In the foreword to Berlioz's treatise, he criticizes a student whose disregard for the "noble character" of the Wagner tubas leads him to include them in a comedy overture as reinforcement in a tutti passage.[104] Strauss echoes this sentiment later on with regards to the solo violin, commending Wagner's economical use of the instrument and saying that it serves to "exemplify once more the old truth that a device becomes the more effective the less it is used."[105] The restrained usage of instruments—a characteristic not often associated with Strauss—is especially evident in the examples of orchestral imagery, but it can

[104] Strauss, foreword to Berlioz's *Treatise on Instrumentation*, III.
[105] Strauss, commentary in Berlioz's *Treatise on Instrumentation*, 59.

also be seen to some extent in the symbolic contrasts in Part B of this chapter. The sudden addition or reduction of instruments, abrupt shifts, and anomalous instrumental lines all distinguish themselves from the surrounding music in a manner that catches the attention of the listener. This is the primary characteristic of dramatic orchestration. It is anomalous and unexpected and above all athematic. It does not act as a large-scale structural device, despite its prevalence through the opera.

Chapter 3

Structural Orchestration in *Elektra*

Introduction

While the relationship between orchestration and drama is fairly well-established, the relationship between orchestration and musical structure is less clear. The extent to which orchestration contributes to musical structure forms the primary point of contention among researchers. Currently, there are two main positions held regarding orchestration's structural significance. The first, more conservative position is that orchestration interacts with musical structure but does not create it. When it coincides with the musical structure of the work, it articulates the form of the music and when it contradicts the musical structure, it obfuscates the form of the music. In his essay "Timbre and Language—Timbre and Composition," Pierre Boulez proposes the above dialectic of articulation and obfuscation to describe the function of timbre in ensemble music, referring to the two opposing categories as "raw timbre" and "organized timbre," respectively.[106] Raw timbre, associated with smaller ensembles, articulates form through "refinement and division," while organized timbre, associated with the orchestra, obscures form through dense, illusory orchestration.[107] Timothy Cutler adopts a similar dialectic view of timbre in his dissertation, applying it specifically to 18th and 19th century orchestral music.[108] Cutler focuses primarily on how orchestration articulates or obfuscates the tonal structure of the work in the context of sonata form symphonies. Changes in orchestration

[106] Pierre Boulez, "Timbre and Composition—Timbre and Language," *Contemporary Music Review* 2, no. 1 (1987): 169.
[107] Boulez, "Timbre and Composition - Timbre and Language," 167.
[108] Cutler, "Orchestration and Tonal Music," 264-313.

articulate form when they coincide with the melodic and harmonic structure and obscure the form when they diverge from these elements. In both cases, the orchestration interacts with a pre-conceived, or, at the very least, separate, tonal structure and form that is independent from the medium in which it is presented (i.e. the orchestra).[109] Emily Dolan argues against this viewpoint in her analysis of Haydn's symphonic music, proposing that orchestration ought to be considered an equal player within the musical experience:

> The notion that Haydn articulated form through orchestration does not sufficiently describe his compositional technique: to do so implies that form is somehow the "aesthetic goal" of the work, as if sound were merely a convenient medium by which to convey the abstract beauty of those forms. To say that orchestration articulates form would be akin to arguing that the purpose of a new version of a theme is to create variation form. Form, harmony, and orchestration are all in the service of the musical experience.[110]

Dolan goes on to argue that "if we accept that orchestration does not merely articulate structures, then we must consider the possibility that it actually creates its own forms that can be understood on their own terms."[111] Dolan identifies two main orchestral forms characteristic of Haydn's symphonic music, including thematic growth, both as a thematicization of introductions[112] and as a method of thematic variation across entire movements,[113] and dialectical contrasts between tranquil and powerful orchestral sonorities in Haydn's slow movements.[114]

While there is disagreement regarding the structural independence of orchestration, from those who consider it an augmentation of independent structures and forms to those who argue for its own formal capacities, there is an underlying consensus that orchestration's structural function is directly related to its role in auditory grouping, from the blending of a single pitch to

[109] Cutler, "Orchestration and Tonal Music," 264.
[110] Dolan, *The Orchestral Revolution*, 100.
[111] Ibid., 102.
[112] Ibid., 104.
[113] Ibid., 112.
[114] Ibid., 120.

the segmentation of large sections. Both Timothy Cutler and Emily Dolan highlight the gradual changes and abrupt contrasts as examples of structural orchestration. Some recent research has focused specifically on the role of orchestration in the auditory grouping of music. Goodchild and McAdams describe the connection between musical form and auditory grouping as follows:

> According to the Gestalt principle of similarity, similar sounds are grouped together and are segmented into chunks that are bounded by acoustical dissimilarities. A succession of gradual changes creates a sense of continuity, whereas discontinuities promote the chunking of musical units. Therefore, musical segments are formed on the basis of similarities in register, texture, and instrumentation (that is, timbre); changes in one or more of these musical features signal boundaries at various levels of the musical hierarchy.[115]

They categorize orchestration into groups according to three hierarchical levels of auditory grouping: concurrent grouping, which concerns the blend or heterogeneity of pitches, sequential grouping, which concerns the segregation or integration of musical lines, and segmental grouping, which relates to various forms of orchestral contrasts and progressive orchestration processes.[116] Their theory, which focuses on the perceptual processes in orchestration, can be used to support both Boulez and Cutler's argument for the secondary role of orchestration in relation to the musical structure as well as Dolan's position that orchestration is an equal player with form and harmony in the ultimate musical experience.

Arguably, the fundamental reason researchers disagree on the structural role of orchestration has less to do with the orchestration or the form, but rather with the analysis of these musical aspects. Since orchestration is often analyzed after harmony and form, it is automatically considered in relation to pre-existing conceptions of the musical structure. Whereas, if orchestration is analyzed first or, at least, concurrently with harmony and form, as Dolan argues, it can affect the decisions of the analyst of the harmonic or formal organization. In

[115] Goodchild and McAdams, "Perceptual Processes in Orchestration," 19.
[116] Ibid., 3.

this chapter, I will take the latter analytical approach, considering orchestration alongside aspects of harmony and form. I will focus on two extended passages in *Elektra* that are illustrative of the structural role of orchestration. Part A focuses on the orchestration of motive in *Elektra* and the motivic-orchestral contrasts that govern large sections of the work. My analysis in Part A explores the thematized contrast between Elektra and Chrysothemis in which motive, harmony, phrase structure, and orchestration function together to trace the dramatic form of the passage. In Part B, I focus on the interaction of orchestration, form, and tonal structure. This section is centred on an analysis of the opening to the pivotal Recognition Scene (Reh. 123a-130a). This analysis focuses primarily on the relationship between segmental grouping processes, including orchestral contrasts and progressive orchestration techniques, and the tonal and formal structure of the passage. Throughout this chapter, I employ a variety of analytical methods, including graphic representation (developed from Emily Dolan's orchestral graphs[117]), score annotation, and more traditional harmonic and formal analysis. While the two analyses in this chapter account for only a limited portion of this lengthy work, they address topics, such as motive, thematic contrasts, tonal structure, and form, that have been covered in previous research but with little regard for the essential contribution of orchestration.

Part A: Motive, Orchestration, and Thematic Contrast in *Elektra*

Richard Strauss's *Elektra* is undeniably a motivic composition. In *Elektra*, motives, representing people, events, objects, and symbols, pervade the drama. Numerous motives in the opera have been catalogued by scholars with names highlighting their symbolic meaning. Kurt Overhoff's *Motiv der Qual* (Motive of Pain) and the *Haß-motiv* (Hate Motive) mentioned in

[117] Dolan, *The Orchestral Revolution*, 108-9 & 121.

Chapter 2 are two such examples. Overhoff provides the most comprehensive table of motives in his book on the opera, though some scholars, such as Wanda Kaluzny, diverge from Overhoff in their naming and interpretation of certain motives.[118] Overall, however, there are few discrepancies regarding the basic connections between motives and characters, objects, or events.

In addition to their rich symbolism, motives are integral to the tonal structure and form of the work. Lawrence McDonald notes that motives play an important role in the articulation and obfuscation of tonality in the opera, arguing that the strength of the tonality in a given passage is in part derived from the level of tonal implication (or lack thereof) in the motives present.[119] Wanda Kaluzny outlines the role of motive in the formal organization of Elektra's monologue in her final analysis, highlighting the connections between the passage's tonal and dramatic structure and the changing motivic material.[120] While the importance of motive in *Elektra* is widely recognized, little consideration has been given to the orchestration of motive and its contribution to the opera's structure. Although Kaluzny does provide an interpretation of the opening motive's orchestration, she only credits the orchestration with enhancing the "expressive capacity of the motive."[121] Kaluzny makes a similar observation in another passage, noting that a shift in the orchestration brings about a "total reversal of mood" at Reh. 161a$_7$.[122] In both cases, Kaluzny notes orchestration's contribution to the expressive intent of a motive but does not address its possible structural role. While the expressive function of motivic orchestration in *Elektra* is an important feature, the structural importance of motivic orchestration is also

[118] Kaluzny provides an excellent derivation of a motive she refers to as "Elektra's Nobility" from the *Haß-motiv* (or "Elektra's Hatred"), demonstrating their clear melodic and rhythmic similarities (Kaluzny, "Motive in *Elektra*, 58-60). This differs from Overhoff's title for the same motive, *Agamemnon der König* (Overhoff, *Elektra-Partitur*, 195), which obscures the musical connection of this motive with Elektra and her other motives.
[119] McDonald, "Compositional Procedures in *Elektra*," 107.
[120] Kaluzny, "Motive in *Elektra*," 101-126.
[121] Ibid., 11.
[122] Ibid., 26.

significant. In the following two sections I will address the structural role of motivic orchestration, first by outlining the basic form of motivic orchestration found in *Elektra* and then by exploring the large-scale implications of motivic orchestration in one of the dialogues between Elektra and Chrysothemis.

The Orchestration of Motive

One of the basic structural functions of orchestration in *Elektra* is to characterize and differentiate between various musical motives. In the opera, many motives are associated with a unique group of instruments that remains consistent across the motive's numerous iterations. The consistency of the orchestration provides continuity across the varied statements of a given motive and distinguishes the motive from its musical surroundings through its unique instrumentation. While the orchestration of all motives varies to some extent, these variations are typically contained within a single instrument family or combination of families. A motive, for example, might be orchestrated as a doubling of the oboe and string families. At one point it may be stated by the oboes and violins and at another by the English horn and violas, but its place within the oboe and string families of the orchestra remains constant, providing continuity across a wide range of possible transpositions and transformations.

An important factor in this approach to motivic orchestration is the significant size of *Elektra*'s orchestra, in which the range of many instrument sections is expanded by the inclusion of numerous auxiliary instruments. *Elektra*'s orchestra, shown in Figure 3.1, was the largest operatic orchestra at the time of its premiere in 1909.

INSTRUMENTATION

Piccolo
3 Flutes (Flutes I & III doubling on Piccolo)
2 Oboes
English Horn (= Oboe III)
Heckelphone
E♭ Clarinet
4 Clarinets (B♭, A)
2 Basset Horns
Bass Clarinet (B♭)
3 Bassoons
Contrabassoon
4 Horns (F, E)
2 B♭ Tenor (Wagner) Tubas
2 F (Wagner) Tubas
(4 Tubas = Horns V-VIII (E♭, F, B♭, E))
6 Trumpets (F, D, C, E♭, B♭, E♭)
Bass Trumpet (D, C)
3 Trombones
Contrabass Trombone
Contrabass Tuba
6-8 Timpani (2 players)
Glockenspiel
Triangle
Tambourine
Side Drum
Cymbals
2 pairs Castanets
Bass Drum
with Switch
Tam-tam
Celesta *ad libitum*
2 Harps
8 1st Violins
8 2nd Violins
8 3rd Violins
6 1st Violas (= 4th Violins)
6 2nd Violas
6 3rd Violas
6 1st Cellos
6 2nd Cellos
8 Double Basses

Figure 3.1: *Elektra*'s orchestra

The increased size of the orchestra provides both an increased number of possible instrument combinations and a larger register for the transposition of motives within a single instrument family or combination thereof. The heckelphone, contrabassoon, bass trumpet, and contrabass trombone all extend the low range of their sections while the two piccolos (the second played by the 1st or 3rd flute) and E♭ clarinet extend the upper range of theirs. Two basset horns, which fit in between the clarinets and bass clarinet, are also included in the orchestra.

While many of these instruments were already features of the *fin de siècle* orchestra, the inclusion of them all was uncommon, especially in an opera where the size of the pit and the necessity of balancing with voices place natural limits on the orchestra's possible size.

The auxiliary instruments included in *Elektra* have a noticeable impact on the orchestration of motives throughout the opera. The expanded oboe family, which includes two oboes, English horn, and heckelphone, plays an important part in the orchestration of a number of motives and repeated gestures. Although the English horn was a common member of Strauss's orchestra, the heckelphone was not. Strauss did include the heckelphone in his previous opera *Salome* (1905) and in the *Alpine Symphony* (1915) but did not make use of it in the majority of his other works. The heckelphone extends the range of the oboe section down to A^2, overlapping significantly with the range of the bassoons—the other double-reed family (Figure 3.2). These two sections are often combined, because of their similar reed construction and resulting similarities in sound.

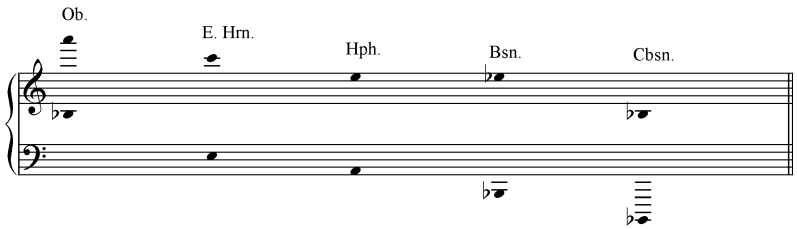

Figure 3.2: Ranges of the oboe and bassoon families

The most prominent motive that exploits the registral breadth afforded by the double reed family is the flurried, ascending gesture typically associated with Elektra's ire (Figure 3.3).[123]

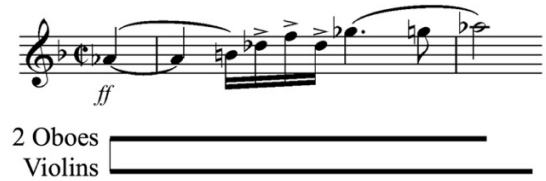

Figure 3.3: First statement of "Elektra' Hatred" motive and its orchestration (Reh. 1_6)

This arpeggio motive—hereafter referred to as "Elektra's Hatred"—is frequently presented above the Elektra chord and is nearly always orchestrated as a unison combination of string and double reed instruments across its wide range of transpositions throughout the opera. In its first statement at Reh. 1_6, shown in Figure 3.4, it is played by two oboes and the violins.

In the passage from Reh. $169a_3$-$170a_5$, there are five statements of Elektra's Hatred that occur across a range of four octaves (Figure 3.4). These statements jump between the members of the double reed and string families, but largely remain within this limited orchestral subgroup. One exception is the last statement, in which the piccolo clarinet substitutes for the oboe family. In this passage, the clarinet provides extra power in the conclusive statement of the motive as well as consistency in the upper register—especially on the high F♯, which would have a weaker sound if played by the oboe at the upper end of its range. The oboe, unlike other woodwind instruments like the flute or clarinet, becomes less penetrating in its upper register.[124] The use of the E♭ clarinet or other instruments in this motive, however, is rare. The majority of its forty-nine statements throughout the opera are comprised of a combination of double reeds and strings.

[123] Overhoff terms this motive the *Haß-motiv* (Hate motive). Overhoff, *Elektra-Partitur*, 197. I will use Kaluzny's label, "Elektra's Hatred." Kaluzny, "Motive in *Elektra*," 54.
[124] Adler, *The Study of Orchestration*, 195.

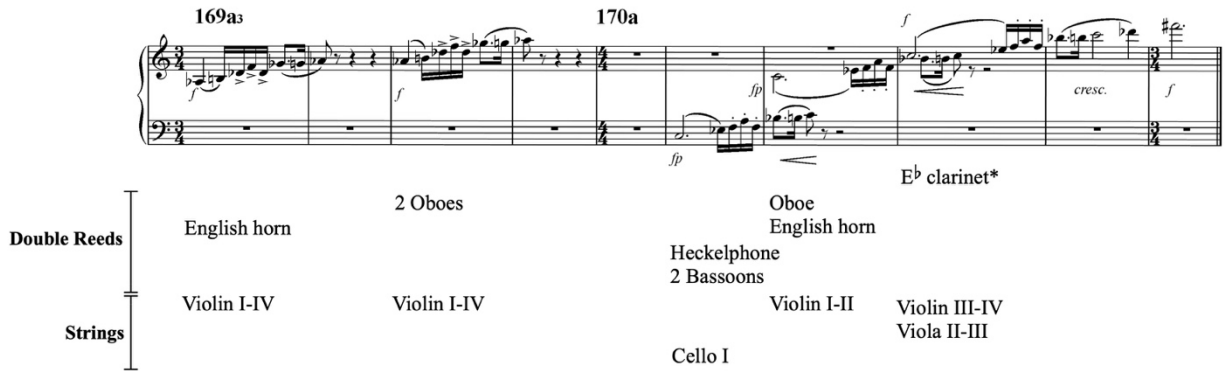

Figure 3.4: Repeated statements of "Elektra's Hatred" and its orchestration (Reh. $169a_3$-$170a_5$)

Another motivic gesture characterized by the Double Reed and String subgroup is the ascending arpeggio figure that vividly depicts the sound of the whip. The switch or cymbals are often also included in this gesture, increasing its percussive attack. This rising, minor arpeggio is present in two passages from the opening scene and also features prominently in Klytämnestra's procession (Reh. 114-132). In its first statement at Reh. 16, it is played by the 1st bassoon and cellos (Figure 3.5).

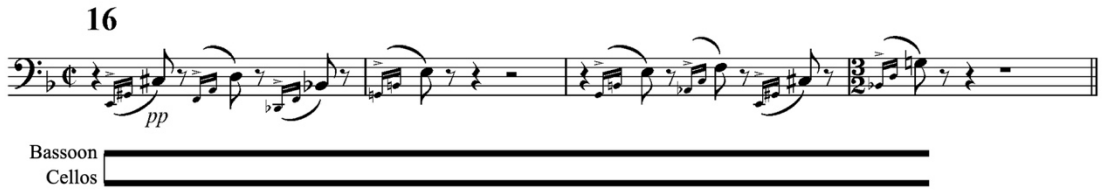

Figure 3.5: First statement of the whip gesture and its orchestration (Reh. 16_{1-4})

The consistency of the whip motive's orchestration is displayed most clearly at the conclusion of the opening scene where the fifth maid's cry, "Sie schlagen mich!" (they're beating me!), is followed by a climactic layering of motives. In this passage, the whipping gesture can be heard repeated fifteen times across a range of three octaves (Figure 3.6). In each statement, however, it remains within the established subgroup.

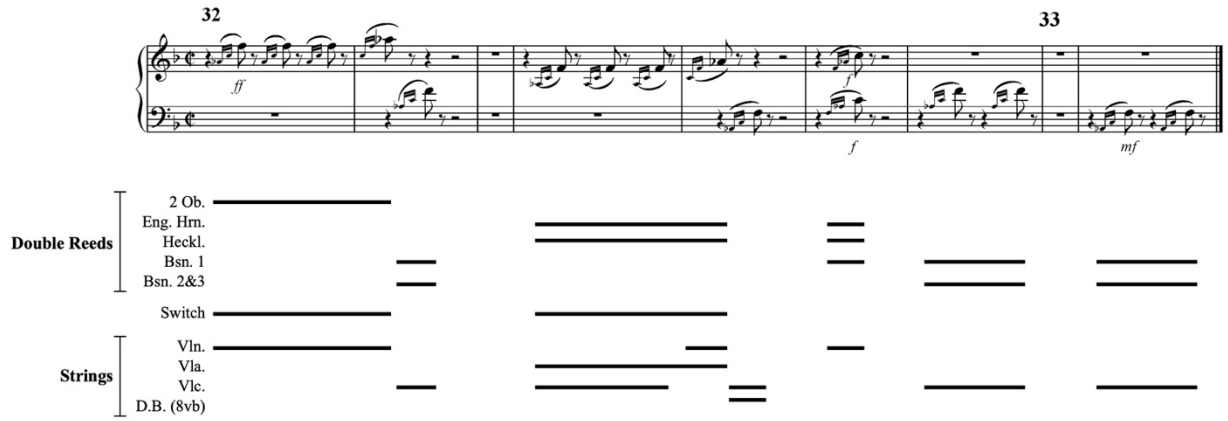

Figure 3.6: Repeated statements of the whip gesture and its orchestration (Reh. 32-33$_2$)

In Klytämnestra's procession, other woodwinds are sometimes used to double the strings, either with or in place of the double reed family. Some of these additions, like the E♭ clarinet, flute, and piccolos are used in the highest passages where the motive extends beyond the range of the oboe family. The double reed family, however, is present in the majority of its statements.

Like the oboe family, the clarinet family also spans a large range and it is likewise used as a consistent ensemble for the orchestration of certain motives. The E♭ clarinet extends the upper range up to about A^6, while the inclusion of two basset horns overlaps with the register of the four B♭/A clarinets and bass clarinet (Figure 3.7).

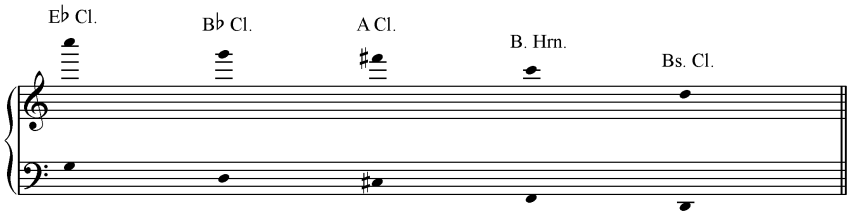

Figure 3.7: Ranges of the clarinet family

One motive that is exclusively associated with the clarinet family is what I refer to as the Tower Motive (Figure 3.8). This motive enters shortly after Chrysothemis appears onstage to

warn Elektra of their mother's plan; its bare parallel fifths illustrative of the barren cage of Elektra's future imprisonment. The use of clarinets also highlights the motive's connection with Klytämnestra, whose motives are frequently played by the clarinet family.

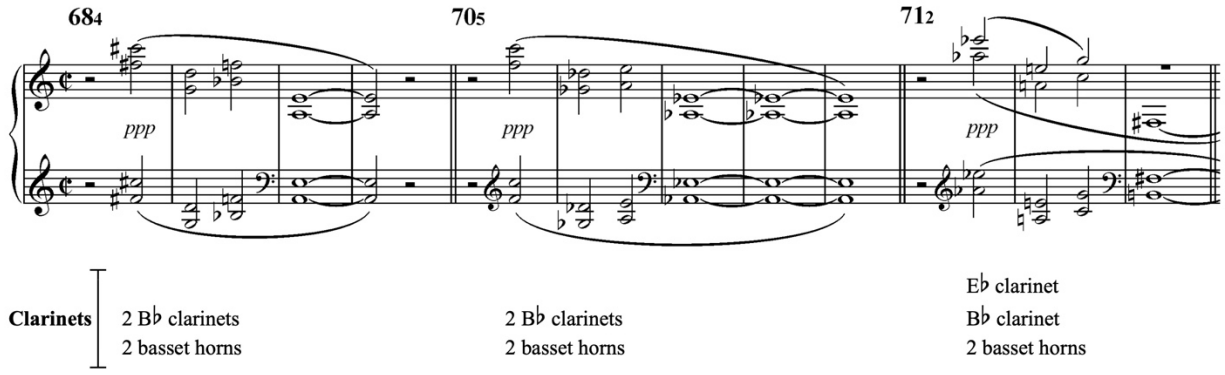

Figure 3.8: Three statements of the Tower Motive and its orchestration (Reh. 68_4-71_4)

The extensive range of the clarinet family provides a consistent sound across the wide register of the motive itself as well as across its different transpositions. The first two statements are played by a pair of B♭ clarinets in parallel fifths and are doubled an octave below by the basset horns. In the third and highest statement, the E♭ clarinet replaces the top B♭ clarinet. Although this passage is technically within the B♭ clarinet's range, it would be impractical and ineffective at the *ppp* dynamic. The final statement of this motive comes at Reh. 118_3 and is played by the basset horns alone (not shown).

The piccolos, like the E♭ clarinet, extend the upper range of their section, providing an expanded registral palette for the orchestration of motives. The second motive to be introduced into the opera, a variant of Elektra's "Nobility Motive," [125] demonstrates this function of the piccolos in the flute family (Figure 3.9).

[125] Kaluzny, "Motive in *Elektra*," 58.

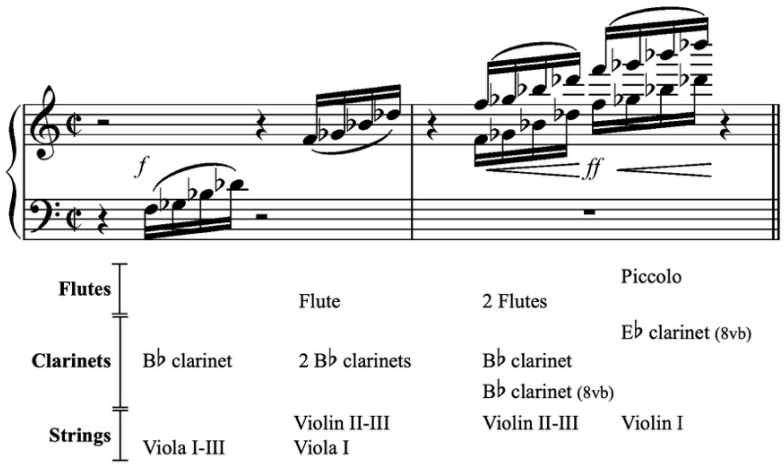

Figure 3.9: Repeated statements of "Elektra's Nobility" variant and its orchestration (mm. 8-9)

In this passage, the motive is limited to a doubling of the flute, clarinet, and strings across its four octave transpositions (the flute family is absent from the first and lowest statement). In the final statement, the piccolos and 1st violins double at pitch, while the E♭ clarinet supports them an octave below.

In the brass section, the contrabass trombone and bass trumpet both extend the low range of their sections and provide a greater expanse for motives played by the Trumpet and Trombone subgroup. A good example of this is the 8va repetitions of Elektra's "Nobility Motive" at Reh. 255 (Figure 3.10).

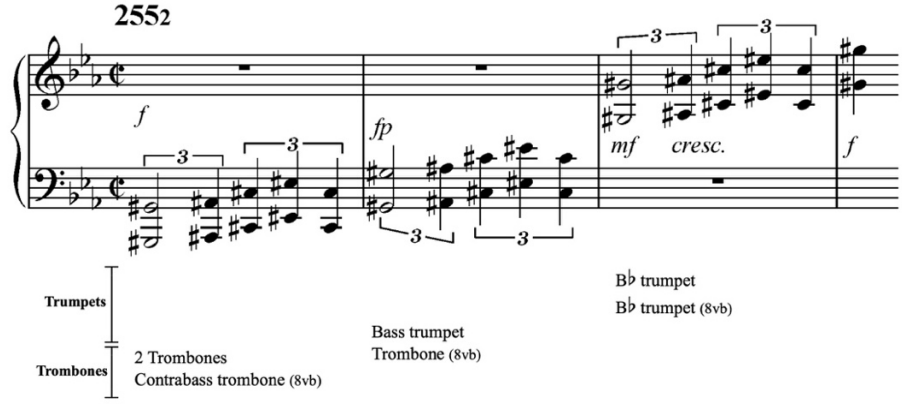

Figure 3.10: Repeated statements of "Elektra's Nobility" motive and its orchestration (Reh. $255_{2\text{-}5}$)

The motive is played in octaves and passes from the low end of the trombone section to the trumpet section, which is made possible by the extended low register of the contrabass trombone and the linking of the trombone and trumpet sections by the bass trumpet. The bass trumpet isn't technically necessary given that its statement of the motive falls within the range of the tenor trombone; however, its combination with the trombone an octave below smooths the transition between the two instrument families.

The tuba family is also expanded in comparison with Strauss's previous works to a total of five members: four Wagner tubas (two in F, two in B♭) and a contrabass tuba.[126] These instruments are rarely used for monophonic motives, employed instead in rich homophony. The most prominent example of this is Orestes's chorale, which accompanies Orestes's appearance onstage at Reh. 123a (Figure 3.11). The trombones frequently enter at the tail-end of the motive, augmenting the tuba sound. Additionally, the lowest voice of the chorale is doubled by the basses (later this role is taken on by the contrabassoon). This chorale occurs nine times in the opera, always in its tuba orchestration.

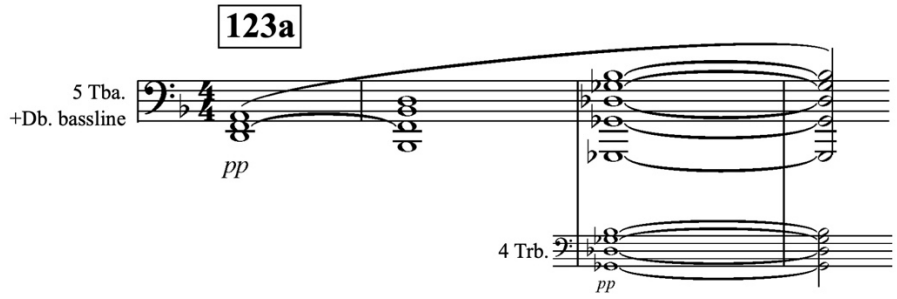

Figure 3.11: First statement of Orestes's Chorale (Reh. 123a$_{1\text{-}4}$)

[126] In *Also Sprach Zarathustra* (1896), Strauss uses two bass tubas. In later tone poems such as *Don Quixote* (1897) and *Ein Heldenleben* (1898), a single tenor tuba is included with the one bass tuba. In *Salome* (1905), only one bass tuba is employed.

The expansions of nearly all instrument sections in *Elektra*'s orchestra affords, among other things, a greater registral space for the consistent orchestration of motives. Motives can be transposed across multiple octaves while retaining the sonic qualities of a specific instrument family or combination of families. This orchestral invariance gives many motives a characteristic sound that is contrasted with the other motives throughout the opera. In the following analysis, I explore the structural implications of this approach to motivic orchestration and its relation to the theme of opposition, especially the opposition between characters.

Analysis #1: Strauss, *Elektra*, Reh. 34a-52a

In *Elektra*, the musical contrasts created by the distinct orchestration of motives have a central, thematic role, reinforcing the dramatic contrasts that pervade Hofmannsthal's drama. I have already discussed the manner in which generic orchestral contrasts, which are not tied to particular themes or motives, are used to highlight the contrasts between characters in Chapter 2. In this analysis, I will focus on how orchestral contrasts, in combination with the motivic and harmonic material, act as a central, structural element that clearly outlines the dramatic form of Elektra and Chrysothemis's dialogue following their brother's supposed death (Reh. 33a-52a).

The thematic, orchestral contrast that characterizes this passage is similar, in many respects, to the dialectical, orchestral contrast identified by Emily Dolan that plays out in Haydn's symphonic slow movements. Dolan describes the basic schema of these movements as a dialectical opposition between a tranquil theme and an opposing, more forceful sonority that plays out across the course of the slow movement and often peaks with a transformative encounter between the tranquil theme and opposing sonority.[127] Despite the stylistic and formal

[127] Dolan, *The Orchestral Revolution*, 120.

differences between Haydn's slow movements and this fast, transitional passage, the same schema can be found. From Reh. 34a, an orchestral contrast between two motives is established that underscores the sisters' opposing reactions to the news of their brother's death. Each motive is stated successively throughout with its own, unique orchestration, register, phrase placement, and harmonic function. The contrast between the sisters' motives persists, building throughout the passage until both motives are presented simultaneously for the first time on the climactic dominant of the passage. In this scene, contrasts in the orchestration, register, harmony, and phrase structure all combine to establish a thematic contrast that culminates in the transformative conclusion of the passage.

The passage can be divided somewhat loosely into three parts based on the changing focal point of the dialogue (Figure 3.12). The first part is centered on *what* the deed is, the second on *who* is to carry it out, and the third on *how* it is to be executed. Repeated and related words that produce this tripartite division are underlined in the dialogue.[128] In the first section, "Was?" (What?) is frequently repeated by both sisters, as is Elektra's answer to this question, "Das/ein Werk" (the deed). In the second section, the words "Wir" (we), "Wir zwei" (we two), and "du und ich" (you and I) all reference who is to carry out the deed. In the final section, there are fewer exact repetitions of words and phrases, but overall the section is centred on how the deed is to be carried out, including what is to be used (the axe), the order in which they are to be murdered (whichever order), and when it is to be done (at night). The passage concludes with an important shift in focus from the murderous deed to Chrysothemis herself as Elektra attempts to bolster her sister's confidence for the task that has befallen them.

[128] The repetition of key words and phrases is a common feature of *Elektra*. In her book chapter on the opera, Carolyn Abbate argues that the centrality of sound and voice is embodied in Hofmannsthal's text, highlighting that numerous references are made to 'hearing' throughout the libretto. She identifies numerous phrases in which the words "hören," "hört," "hörst," and gehört" are used. Abbate, "Elektra's Voice" 107.

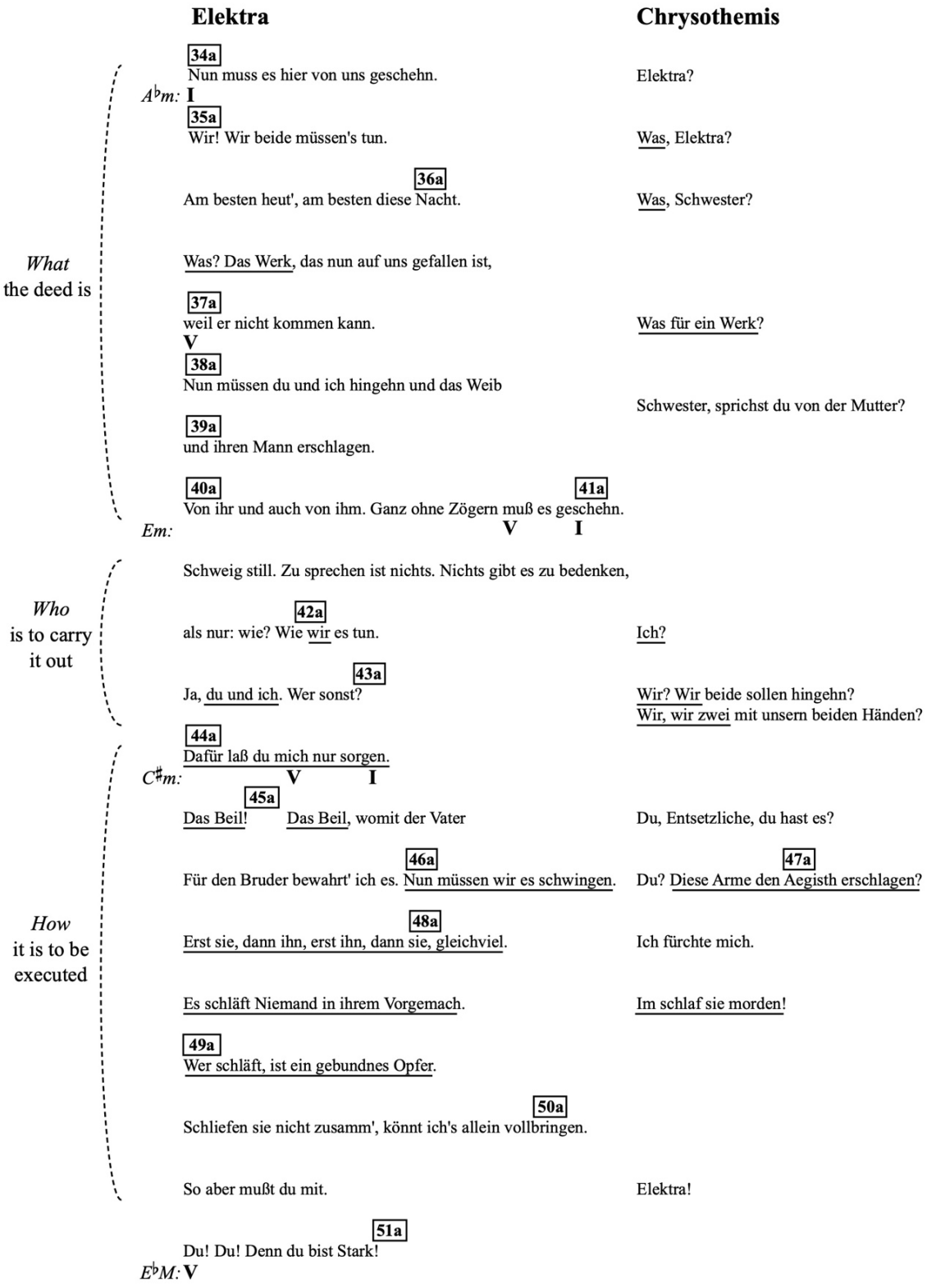

Figure 3.12: Annotated libretto of Reh. 34a-51a. Main harmonies are shown below the text and the tripartite dramatic structure is bracketed on the left. Repeated words and phrases are underlined.

This final shift coincides with the arrival on the main dominant of the passage, B♭7, which prepares the climactic arrival on E♭ major at Reh. 52a. From Reh. 52a onwards, Elektra continues her attempts to persuade her sister, but ultimately fails.

In addition to the libretto, the main harmonies also mark out the tripartite division of the passage. The initial section is largely within the key of A♭ (first major, then minor), while the following two sections are initiated by authentic cadences in E minor and C♯ minor, respectively. The final section concludes with the climactic arrival on B♭7, which prepares the return to E♭ major; the main tonal area associated with Chrysothemis earlier in the opera.

Within this passage, there are two main motives that are associated with Elektra and Chrysothemis, respectively. These motives establish a defining contrast between the two sisters and characterize their unique response to the tragic circumstance in which they find themselves. The character contrast is established musically through the contrasting orchestration, registration, articulation, and harmonic-structural role of the respective motives. The motive associated with Elektra in this passage is a transformation of the triplet arpeggio motive, "Elektra's Nobility" (Figure 3.13). In this analysis, I will simply refer to it as "Elektra's motive" (Figure 3.13*b*).

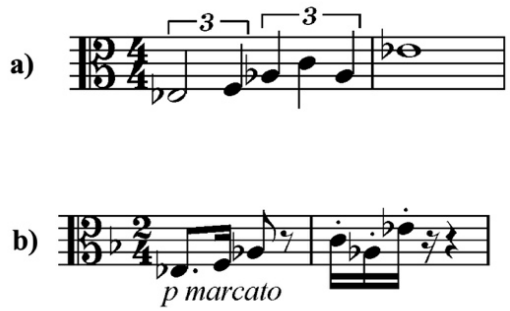

Figure 3.13: Derivation of (*b*) Elektra's motive from (*a*) "Elektra's Nobility" motive

The triplet rhythm is transformed into two, sixteenth-note figures whose march-like rhythm and relatively rigid quality are suggestive of Elektra's solemn determination at this point.[129] The main motive associated with Chrysothemis is a brief woodwind refrain, initially set to Elektra's name (Figure 3.14).

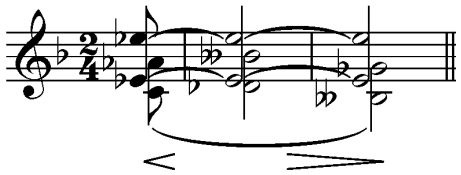

Figure 3.14: Chrysothemis's "Elektra!" refrain

Overhoff terms this motive the *Motiv des Anrufs* (the Calling Motive).[130] I will simply refer it "Chrysothemis's motive" or "Chrysothemis's refrain." Its light, woodwind orchestration and treble register is a stark contrast to the baritone statements of Elektra's motive in the low woodwinds and strings.

There are four main elements of contrast between the sisters' motives, which are clearly established in the first phrase of the passage (Figure 3.15). Each motive is presented in its own, unique instrumentation and register and each motive has a contrasting harmonic and formal function. Elektra's motive is played by the violins and violas, accompanied by sustained harmonies in the bassoons and a staccato bassline played by pizzicato celli and basses. Elektra's motive initiates the phrase and its triadic shape outlines the main harmony, A♭, of the passage.

[129] Kaluzny terms this transformation of "Elektra's Nobility" the "Triumph-Nobility" motive because of the opening rhythmic pattern's similarity to Elektra's triumphant dance rhythm introduced at Reh. 51. Kaluzny, "Motive in *Elektra*," 80.
[130] Overhoff, *Elektra-Partitur*, 198.

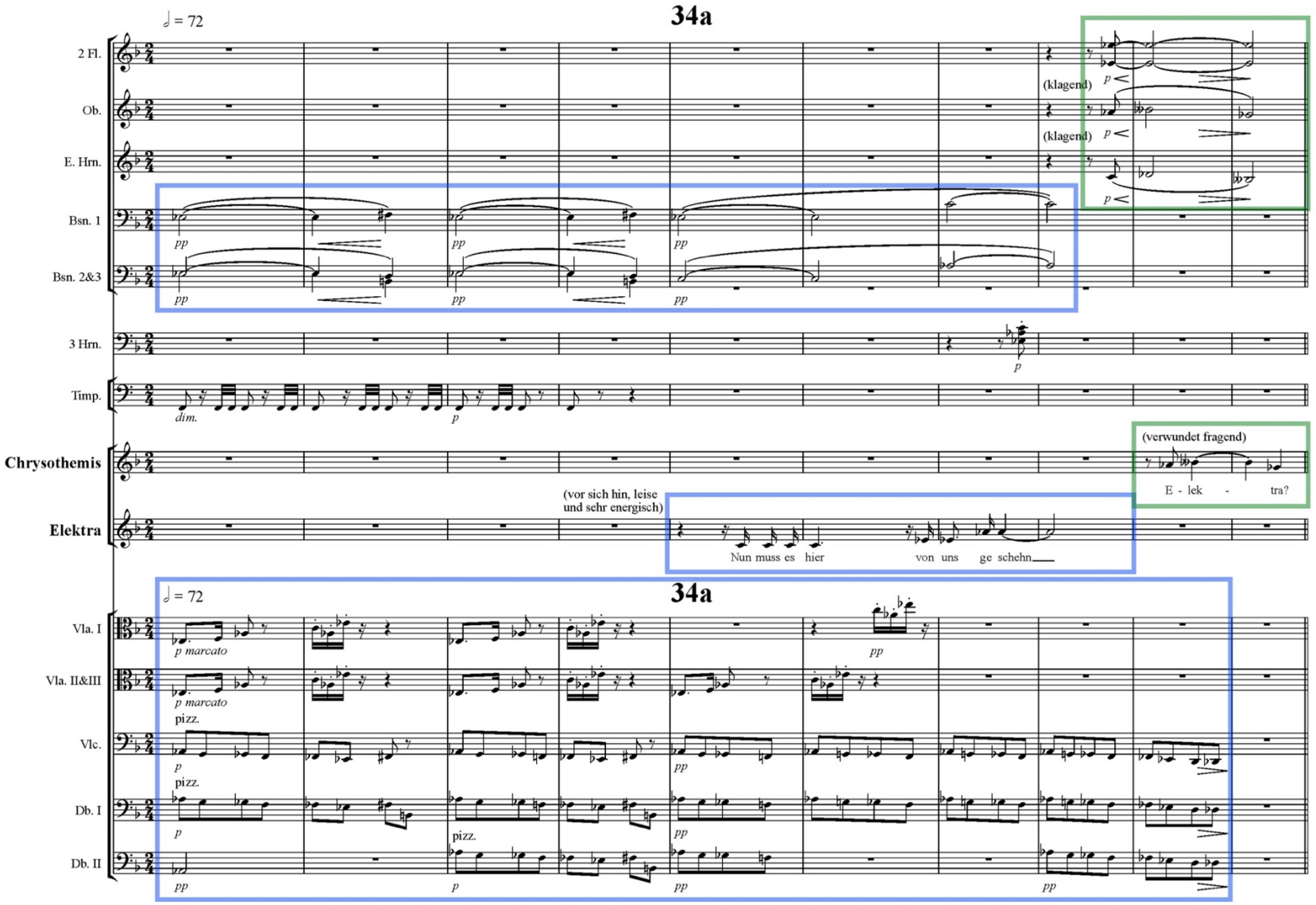

Figure 3.15: Strauss, *Elektra*, Reh. 33a$_4$-34a$_6$ (annotated score). Elektra and her motive is shown in blue and Chrysothemis and her motive in green.

Chrysothemis's motive, by contrast, is played by a spare combination of flutes, oboe, and English horn. The main double-neighbour figure (in parallel 6^{ths}) is played by the oboe and English horn while the pedal-note (in octaves) is played by the flutes. The motive sounds a soprano register, well above that of Elektra's motive. Harmonically, Chrysothemis's motive is dissonant and unstable, functioning as a neighbouring, half-diminished 7th chord in relation to the preceding triadic harmony of Elektra's motive. In later passages, Chrysothemis's motive sometimes functions as a passing, diminished 7th chord, which, although different, retains the motive's dissonant, unstable quality. Figure 3.16 summarizes the four main elements of the sisters' motivic contrast. The basic, contrasting elements established in this first phrase are largely consistent throughout the scene with a few variations that I will discuss in the following sections.

	Elektra's Motive	**Chrysothemis' Motive**
Harmony	Triadic; stable	Neighbour or passing half-diminished or diminished 7th chord
Register	Baritone	Soprano
Phrase Placement	Beginning	End
Orchestration	*Melody*: (Violins) Violas *Harmony*: 3 Bassoons *Bassline*: Cellos Basses (pizz.)	*Octaves*: 2 Flutes *Neighbour figure*: Oboe English horn

Figure 3.16: The four basic elements of Elektra and Chrysothemis's motivic contrast

In this scene, there are three, extended passages in which the sisters' motives are juxtaposed: Reh. 33a$_4$-38a$_6$, Reh. 42a-44a$_5$, and Reh. 48a-52a. The harmonic structure of these three passages is shown in Figure 3.17.

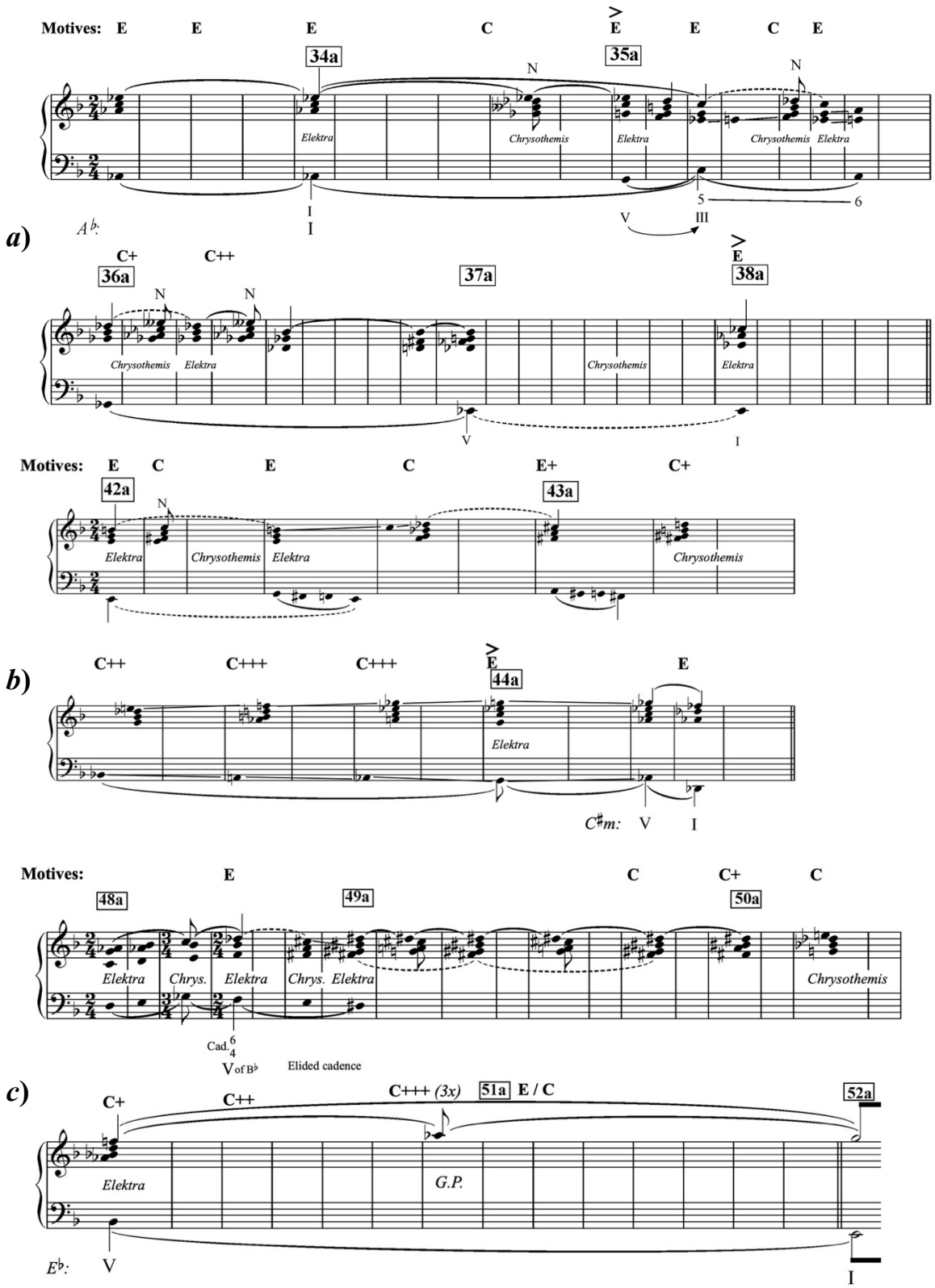

Figure 3.17: Harmonic analyses of passages featuring the sisters' motivic contrast. Motives and their orchestral additions (with ">" indicating orchestral accents and "+" indicating gradual additions) are shown above the staff.

Statements of the sisters' motives are labelled above the staff (E for Elektra and C for Chrysothemis). The accents above indicate statements where the orchestration is expanded to create a sudden emphasis on the beginning of the motive, while the plus signs above indicate gradual additions to the motives' orchestration. Vocal entries are shown between the staves in italics. The first section is entirely within A♭ (Figure 3.17*a*), with a large-scale motion from I to V. Elektra's motive coincides with many of the main structural harmonies, including the initial tonic (Reh. 33a$_4$), the tonicization of III (Reh. 35a), and the return to the tonic over the dominant pedal (Reh. 38a). Chrysothemis's motive, by contrast, acts as a neighbouring half-diminished chord in its four statements within this first section. The second section (Figure 3.17*b*) leads from E minor to a cadence on C♯ minor (D♭ minor). There is a quasi-sequential repetition of Elektra and Chrysothemis's motives at Reh. 43a. Chrysothemis's motive is then repeated in stretto over a chromatic, descending bassline. The chromatic wedge formed by the outer voices is terminated on the octave G (Reh. 44a) and Elektra's motive returns. Elektra's motive is then repeated at the cadential arrival on C♯ minor (D♭ minor).

The third section with the sisters' motives forms the conclusion of the passage (Figure 3.17*c*). Elektra's motive returns at Reh. 48a$_4$ on a B♭ minor $\frac{6}{4}$ chord. The sequential approach to the Fr^{+6} chord suggests that the B♭ minor $\frac{6}{4}$ chord may be a cadential dominant, but a resolution in B♭ is elided. Instead, the B♭ minor $\frac{6}{4}$ chord moves chromatically to an inversion of G♯^{7}. Motives from the C♯ minor section of the scene return here as well, highlighting the harmonic connection to C♯, but this major-minor 7th chord also fails to resolve. Chrysothemis's motive returns and leads into the final dominant harmony, B♭^{7}. Chrysothemis's motive is repeated

multiple times over the dominant harmony until finally both of the sisters' motives are layered at Reh. 51a. Unlike the earlier two sections, Chrysothemis's motive now occurs on a structurally important harmony, accompanying her sister instead (Reh. 50a$_{3\text{-}4}$). This transformation underscores the dramatic shift at this point as Elektra attempts to bolster her sister's confidence. Elektra, in an attempt to chide her sister through flattery has co-opted her sisters' musical gesture and transformed its harmony into an active dominant that leads to Chrysothemis's main key of E♭ major.

Dynamic Expansion: Orchestral Accents and Gradual Additions

While the basic orchestration of the two motives is consistent across the majority of the scene, there are some variations to the orchestration at key points. The primary variation of the orchestration is the addition or substitution of instruments for dynamic effect. In Elektra's motive, the addition or substitution of instruments marks the beginning of certain motivic statements, often in conjunction with a written increase in dynamics. These are indicated by the accents above the motivic labels in Figure 3.17. The first example of this type of orchestral addition is at Reh. 35a (Figure 3.18).

In this statement of the motive on V/III, the horns temporarily replace the bassoons in the harmonic layer. In addition, the celli and basses temporarily switch to arco to produce a louder sound before returning to pizzicato in the following statement. The motive itself, played by the violas, is stated in canon an octave above by the violins. This addition to the orchestral texture increases the rhythmic density on the V/III chord and fills the silent pauses in the original motive.

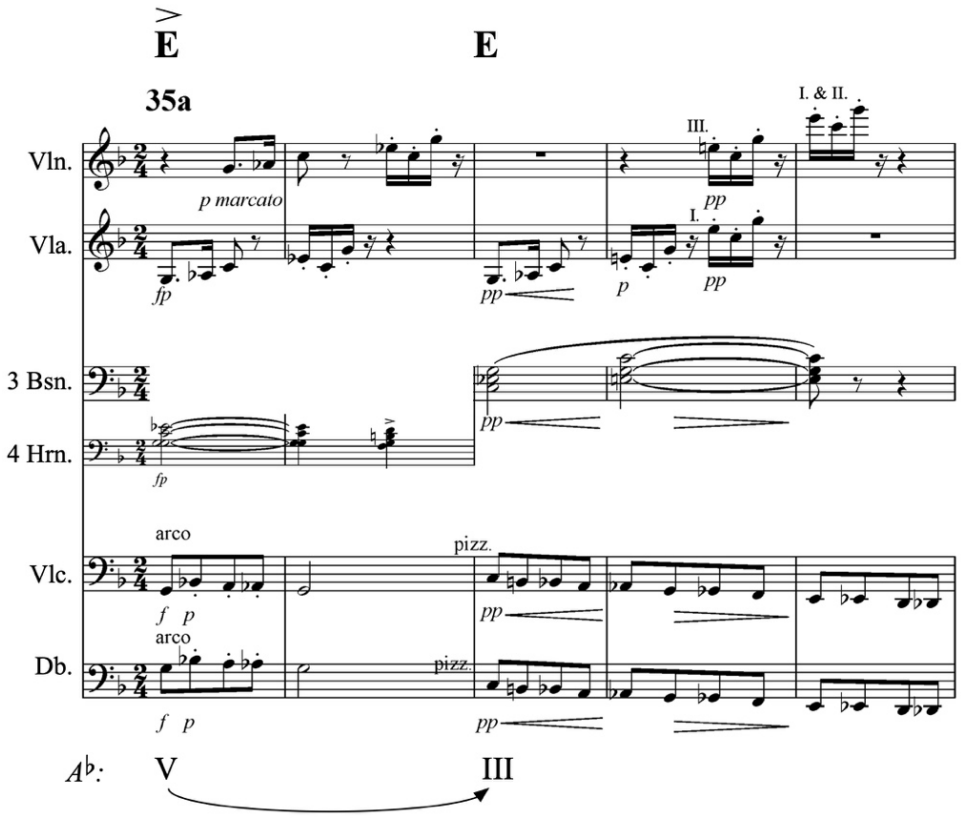

Figure 3.18: Dynamic expansion of Elektra's motive (Reh. 35a$_{1\text{-}5}$): orchestral accent. Throughout this analysis (Figures 3.18-2.9), the instruments are organized according to the musical texture (from top to bottom: melody, harmony, bassline). The added instruments (the horns) are presented in a small staff to indicate their secondary role.

In the following statement at Reh. 35a$_3$, the violins are still present, but they no longer form a distinct line in relation to the violas. These timbral and textural variations briefly increase the volume and rhythmic density, enhancing the written *fp* on the V/III chord. When the harmony resolves to III, the dynamic returns to *pp* and the original orchestration of the motive returns.

There is a similar transformation of Elektra's motive at Reh. 38a that provides added emphasis to the arrival on A♭ minor above the dominant pedal (Figure 3.19). In this instance, however, instruments are added to the existing orchestration rather than substituting for instrument sections in the three-part texture.

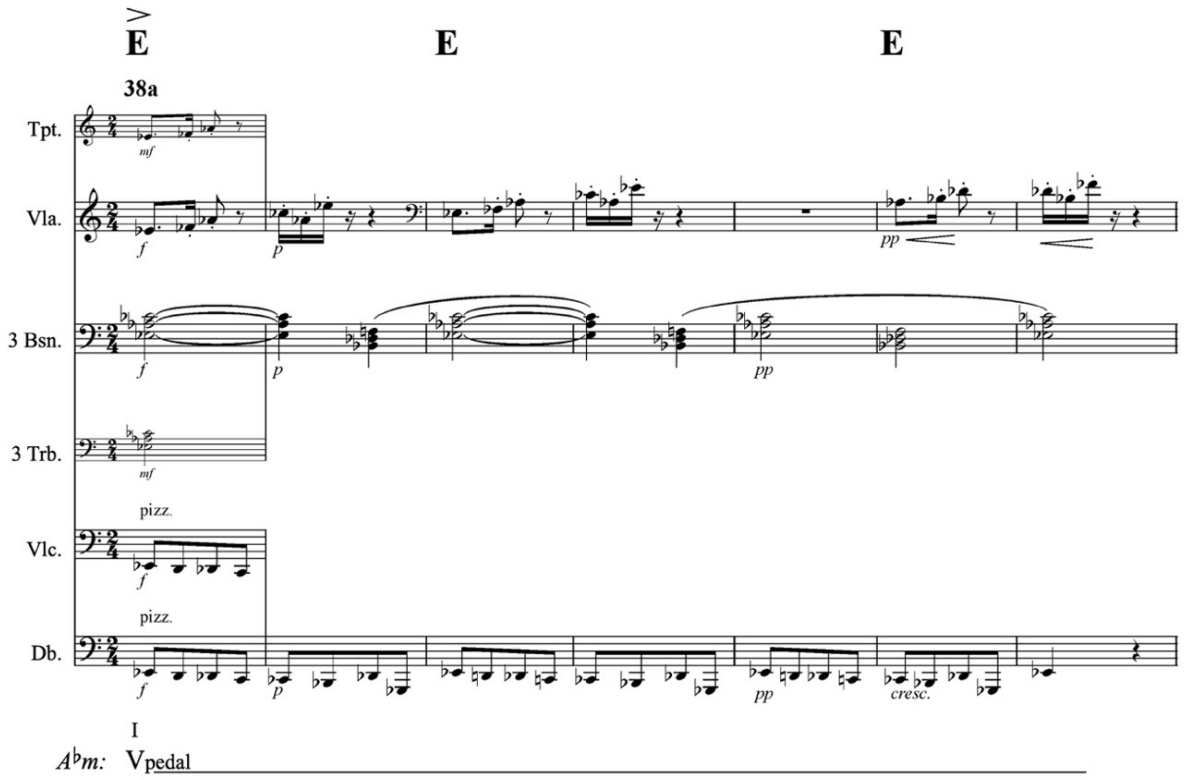

Figure 3.19: Dynamic expansion of Elektra's motive (Reh. 38a$_{1\text{-}7}$): orchestral accent

In the first measure, a trumpet and three trombones are added to the orchestral texture, doubling the melody and harmony respectively. The bassline is still played pizzicato by the low strings, but the cellos only play the first measure before dropping out. The written dynamics correspond with the increased orchestral forces. The first measure is marked *f* (*mf* in the brass for balance) but the dynamic drops immediately to *p* in the following measure.

Elektra's motive is also marked with an orchestral accent in the C♯ minor cadence at Reh. 44a (Figure 3.20). The melody in the violas is doubled by a single horn in the first measure and the harmonic layer in the bassoons is doubled throughout by muted tubas. This statement of Elektra's motive follows the ascending repetitions of Chrysothemis's motive and marks the end of the quasi-sequential passage.

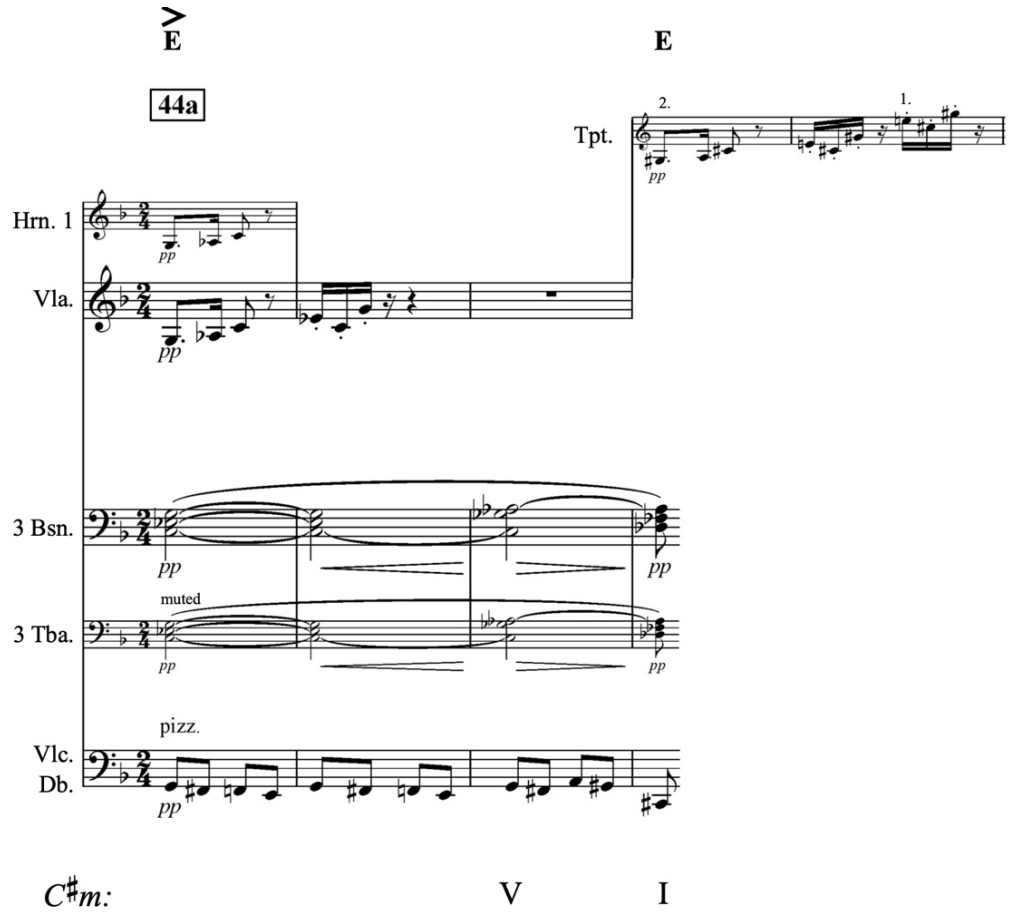

Figure 3.20: Dynamic expansion of Elektra's motive (Reh. 44a$_{1\text{-}5}$): orchestral accent

Although there is no written dynamic change in conjunction with the added horn or tubas, the addition of these instruments will naturally increase the dynamic. A more pragmatic reading of this orchestration choice is that the horn is included to increase the audibility of the beginning of the motive, which might otherwise have been masked by the preceding *ff*.

Elektra's motive is repeated on the cadential arrival at Reh. 44a$_4$, but this time in an entirely new orchestration (Figure 3.20). Instead of the established orchestration of violas doubled by brass, the motive is stated by trumpets alone. The sustained harmonies and staccato bassline that have thus far accompanied the motive are also absent, replaced by a lone oboe, playing one of Agamemnon's motives, and tremolo strings. Unlike the orchestral additions and

substitutions beforehand, this shift marks a true transformation of the motive. It comes as Elektra's focus shifts towards *how* the deed is to be executed and the orchestration anticipates the multiple statements of the motive in the upper brass in the climactic conclusion of the passage.

Occasionally, additions to the orchestration are gradual rather than sudden and instead of producing a dynamic/timbral accent they create a tiered crescendo across successive repetitions of a motive. This type of dynamic expansion is indicated by a plus sign rather than an accent in Figures 3.18 to highlight its additive function. At Reh. 43a, violins I & II are added to the violas on the first half of the motive to provide added dynamic strength to the repetition of Elektra's motive in this quasi-sequential passage (Figure 3.21). In addition, the cellos are omitted from the bassline in the first statement but enter in the second, increasing the dynamic contrast between the sequential repetitions. The written dynamics also rise from *pp* to *p*.

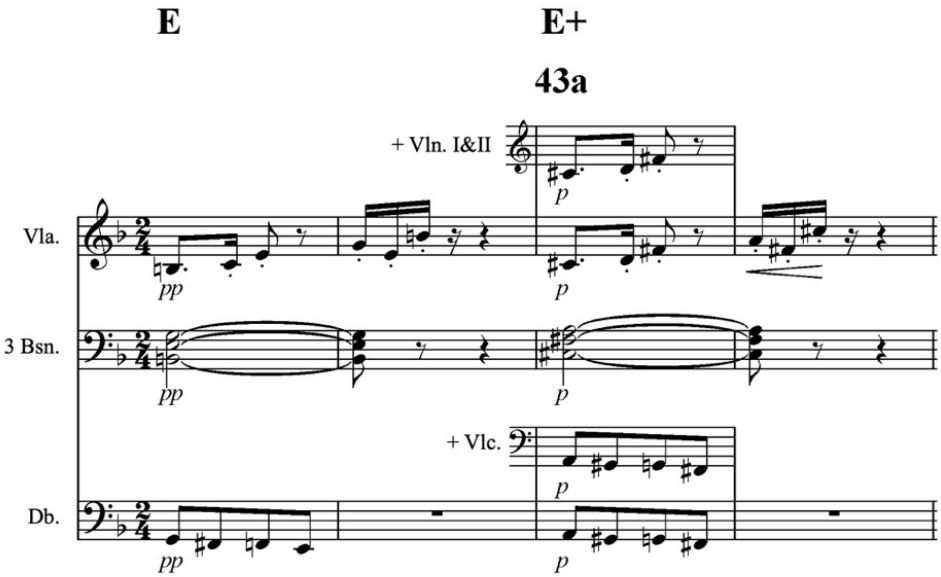

Figure 3.21: Dynamic expansion of Elektra's motive (Reh. 42a$_4$-43a$_2$): gradual addition

Gradual addition is more frequently employed in the orchestration of Chrysothemis's motive in this scene. In the passages in which Chrysothemis's motive is repeated—Reh. 43a$_4$-

44a and Reh. 49a$_7$-50a$_9$—the addition of instruments with each successive statement augments the written crescendi. As in the previous example, these additions are marked by plus signs in Figure 3.18. The first example (Reh. 36a) unfolds over just two statements of Chrysothemis's motive (Figure 3.22).

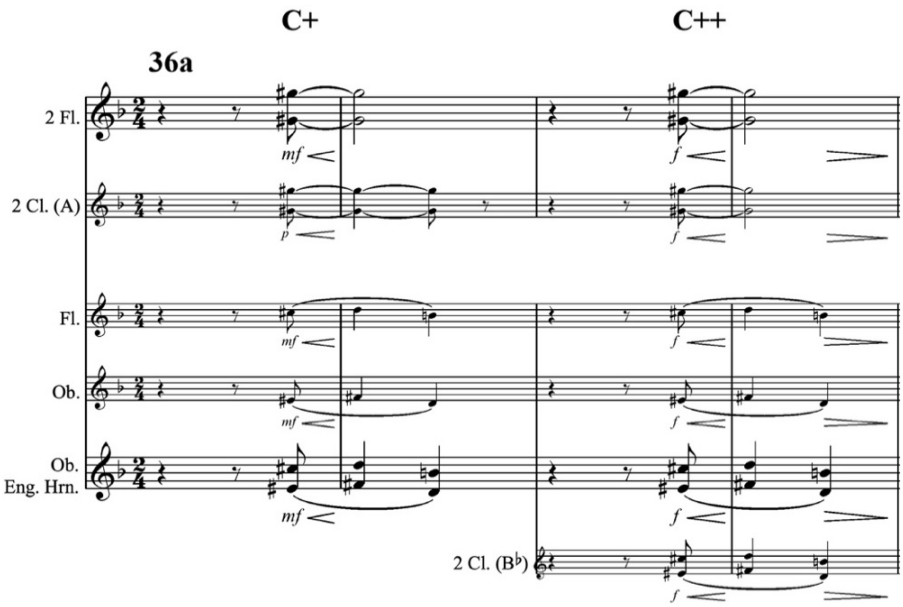

Figure 3.22: Dynamic expansion of Chrysothemis's motive (Reh. 36a$_{1-4}$): gradual addition

The first statement of this gradual addition process already begins with an expanded instrumentation of the motive. Two clarinets double the octave played by the flutes, while another flute and oboe now double the main, neighbour figure. Since the basic orchestration has already been established, the gradual addition process has already begun on this first statement. It is therefore already marked with a plus sign. In the following statement, two clarinets are added to the double neighbour figure, in addition to the pair of clarinets already present in the octave pedal.

Dynamics and durations are similarly used to increase the dynamic growth between the two motives. Initially, the two A clarinets only sustain the octave for a portion of the flutes' duration. They also have a softer, notated dynamic of *p*, rather than the blanket *mf* in the other

parts. When the motive is repeated, however, the A clarinets play for the entire measure and share the *f* dynamic of the other instruments.

The second example of gradual addition in Chrysothemis's motive comes at Reh. 42a$_5$ (Figure 3.23).

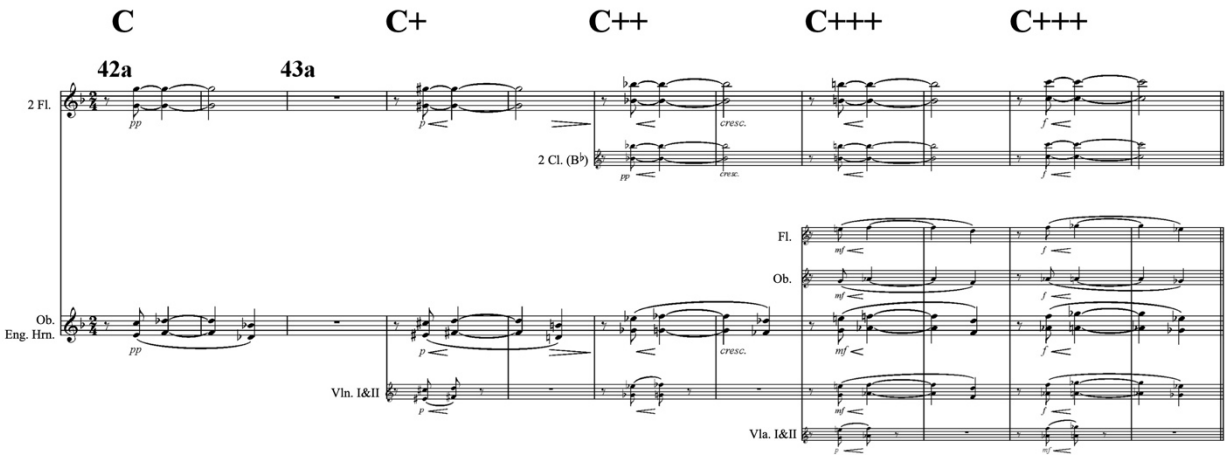

Figure 3.23: Dynamic expansion of Chrysothemis's motive (Reh. 42a-43a$_9$): gradual addition

The additions seen in Figure 3.22 are again introduced here. Two clarinets double the flute octaves at Reh. 43a$_4$ and a flute and oboe are added to the neighbour figure two measures later. In addition to these woodwinds, upper strings are also progressively added to the neighbour figure in this passage. Initially, the 1st and 2nd violins, which enter on the motive's first repetition, play only the very beginning of the motive. In the final two statements, the 1st and 2nd violas are added to the opening of the motive and the violins play the motive in full.

The final gradual addition process on Chrysothemis's motive comes at the end of the whole passage and involves an important transformation of the motive's orchestration. In this conclusive passage, Chrysothemis's motive now accompanies Elektra as she attempts to bolster her sister's confidence and convince her that she must help her carry out the murders. The main orchestral transformation in this excerpt is the substitution of tremolo violins for the octave pedal

typically played by the flutes (Figure 3.24). The tremolo strings continue from the previous phrase where they accompanied the Axe Motive (*Motiv des fallenden Beiles)*.[131] The neighbour figure begins in the oboe family with the gradual addition of strings, clarinets, flutes, and bassoon over the course of its nine repetitions (the last four statements occurring in diminution). Chrysothemis interrupts her sister one final time in this passage and the orchestration highlights this last cry with an anomalous interruption of the process of gradual addition. A single, *f* statement of Chrysothemis's motive juts out suddenly from the unfolding crescendo. The violas—first to be added—are temporarily omitted from the motive and replaced by three flutes. This sudden interruption of the gradual addition process, along with the reversion to the initial instrumentation of flutes and oboes, underscores Chrysothemis's final exclamation, distinguishing her from her sister. The contrast between the two sisters is thus retained through the abrupt timbral and dynamic shift in this measure.

[131] Overhoff, *Elektra-Partitur*, 202.

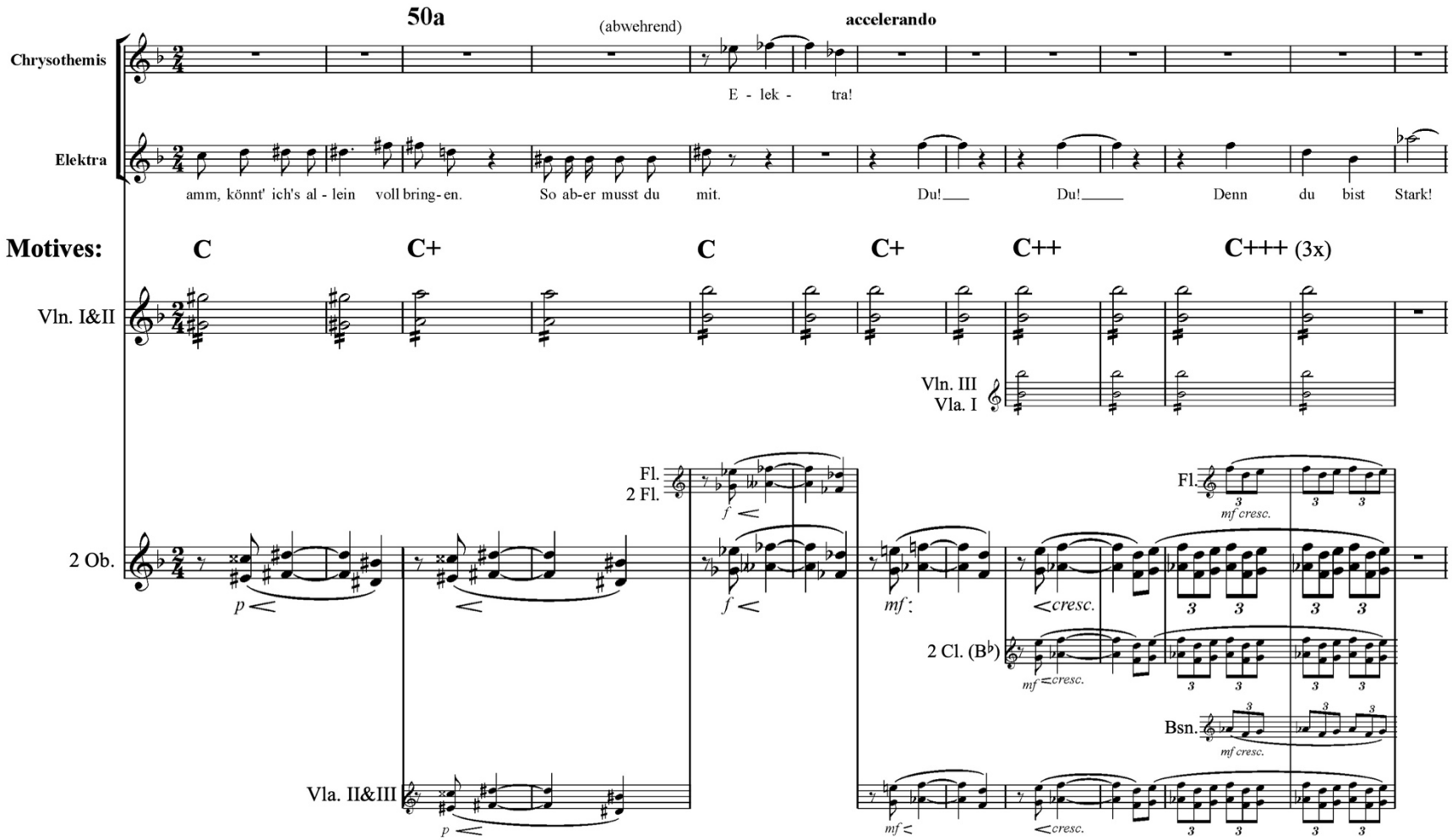

Figure 3.24: Dynamic expansion of Chrysothemis's motive (Reh. 48a$_{13}$-50a$_{11}$): gradual addition. The gradual addition process is interrupted at Reh. 50a$_3$, highlighting the vocal shift from Elektra to Chrysothemis.

Figure 3.25 shows an expanded summary of the two motives' orchestrations from Figure 3.16, now including instruments used for dynamic expansion as well as the true orchestral transformations.

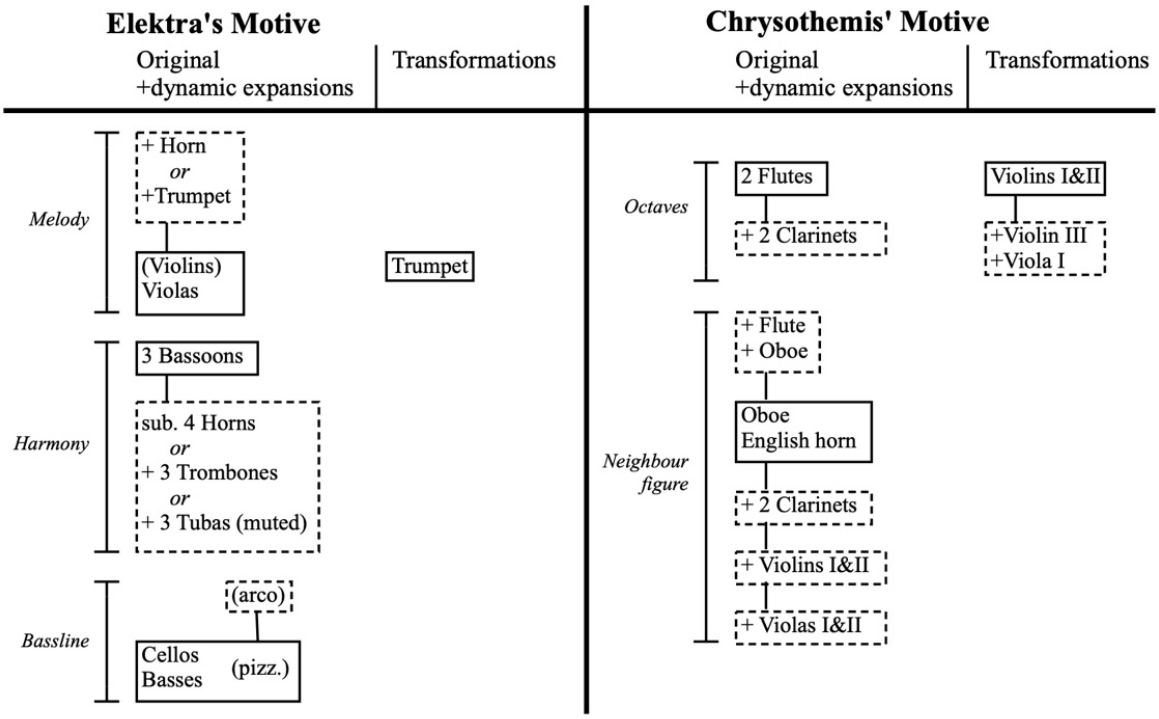

Figure 3.25: The sisters' motivic orchestrations with dynamic expansions and transformations. Instruments added or substituted for dynamic expansion are shown in the dotted boxes. Orchestral transformations are shown in a separate column, aligned with the part of the texture for which they substitute.

Additional instruments in each part of the musical texture are shown in dotted boxes arranged according to score order. Instruments used in the transformed versions of the motives are shown in a separate column on the right. Although the orchestration appears more diffuse when these additional instruments are accounted for, the orchestral contrast between the two motives is retained. The only instruments used in both motives are the upper strings and their relative prevalence within the two motives is unique. In Elektra's motive, the upper strings are in the

foreground, playing the motive alone or doubled by the brass. In Chrysothemis's motive, they enter as an addition to the woodwinds, rather than the main instrumental group.

Referential Substitution

There are a couple of other variations to the orchestration of Elektra's motive throughout this scene that do not fall into the category of dynamic expansion or transformation. These transformations involve the substitution of the established orchestration and transformation of the motive's accompaniment to highlight a reference in the text. The first of these occurs at Reh. 35a$_7$ (Figure 3.26).

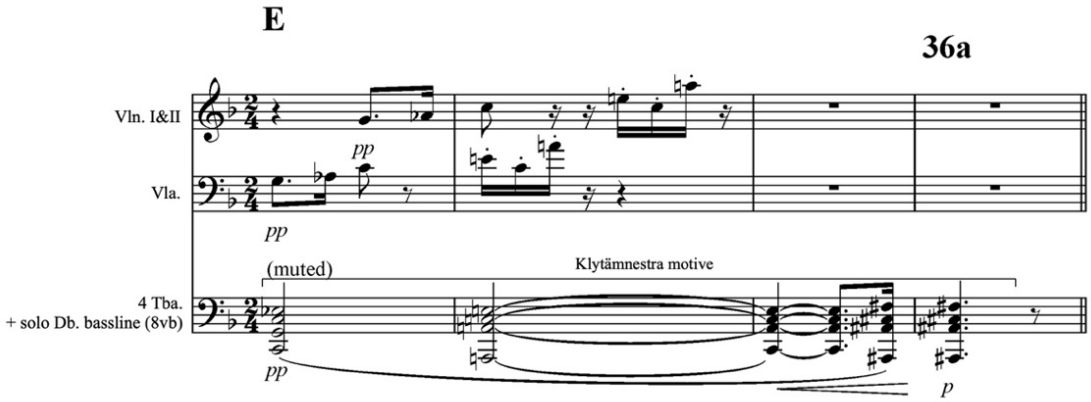

Figure 3.26: Referential substitution in Elektra's motive (Reh. 35a$_7$-36a)

In this statement of Elektra's motive, the melody retains its original orchestration. However, the pizzicato bassline is omitted and the bassoons harmonies are replaced by a choir of muted tubas playing the tail of a different motive (the lowest tuba is doubled by a single bass player). This secondary motive is drawn from the tail end of a motive associated with Klytämnestra, which is first introduced into the opera at Reh. 67$_5$. This motivic tail is featured prominently in Klytämnestra's moment of victory when her servants arrive with the news of Orestes's death (Reh. 270$_3$ and 272). Because of its appearance at Klytämnestra's triumphant passage, the tail

end of the motive is not only associated with Klytämnestra, but also with victory or the upper hand. Both of these associations are invoked when it is stated at Reh. 35a$_7$ as Elektra alludes to murdering her mother to avenge her father's death. Although the muted tubas are included in the orchestration of Elektra's motive at Reh. 44a, their function at Reh. 35a$_7$ is not to reinforce the established orchestration but to replace it as part of a specific dramatic reference.

The motivic tail of Klytämnestra's motive is substituted again for the sustained harmonies at Reh. 39a$_5$ where its association with Klytämnestra is made explicit in the libretto (Figure. 3.27).

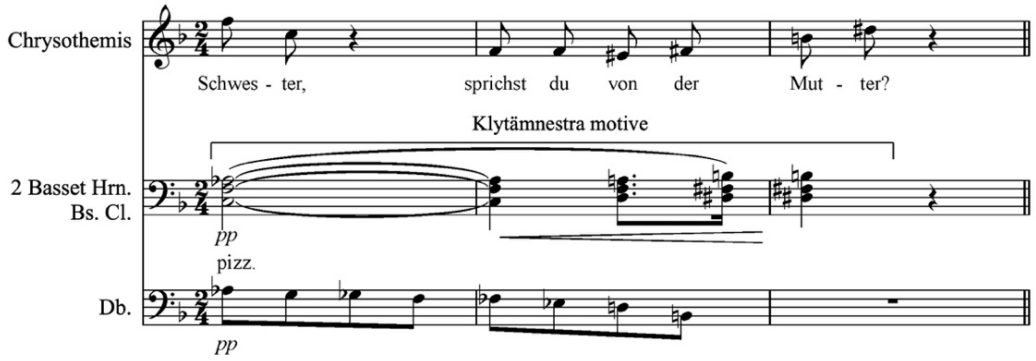

Figure 3.27: Referential substitution in Elektra's motive (Reh. 39a$_{5\text{-}7}$)

Although Elektra's motive itself is not present, both the tail of Klytämnestra's motive, now played by a chorus of low clarinets, and the eighth-note pizzicato bassline are. The presence of the bassline from Elektra's motive highlights the textual reference to Elektra ("Schwester, sprichst du…") while the tail-end of her mother's motive highlights the reference to Klytämnestra ("…von der Mutter?").

These two passages are examples of what I refer to as *referential substitution*, where a part of a motive's orchestral texture incorporates a new motive that provides an added, and often related, reference to a character, event, or other symbol. An essential property of these referential

substitutions is that they are only partial. Some aspect of the previous motive or the motive's accompaniment must be present for a connection to be established between the two motives. Referential substitutions add a second layer of meaning by associating the established motive in a passage with the motive added to it. In Figure 3.26, the target of the deed to which Elektra refers (Klytämnestra) is revealed in the orchestra before it is stated explicitly by Elektra or her sister. The manner in which this secondary reference is incorporated into Elektra's motive is incredibly effective as it retains the sustained homophonic texture of the original bassoon harmonies. The presence of the viola melody in the first example (Figure 3.26) and the pizzicato bassline in the second (Figure 3.27) further establish the connection with the original form of Elektra's motive. Because the basic homophonic texture of Elektra's motive is retained in the substituted motive, the thematic contrast between Elektra and Chrysothemis is not lost. Figure 3.28 shows the orchestral structure of the motives, including the referential substitutions.

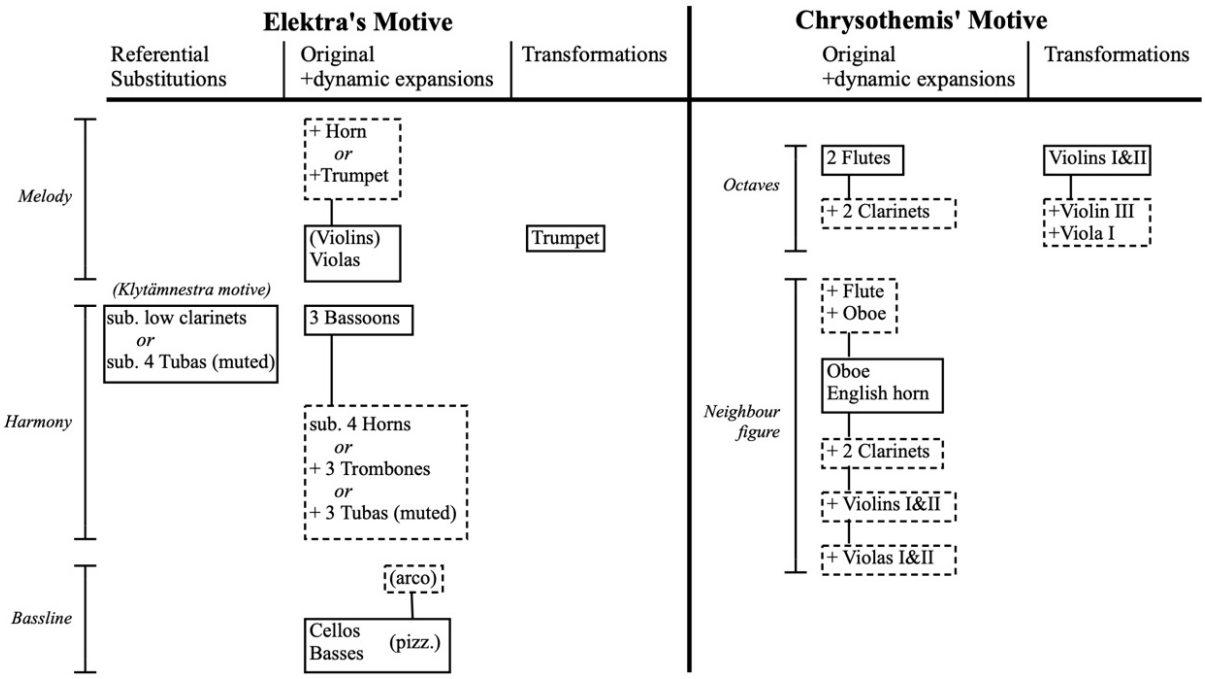

Figure 3.28: Orchestrations of the sisters' motives with dynamic expansions, transformations, and referential substitutions

The Final Transformation

In the final appearance of the sisters' motives, the established contrast that pervaded the scene is dissolved as the motives are overlapped and transformed in the climactic, orchestral flourish that concludes the passage (Figure 3.29). The flourish is approached by a gradual addition process which is abruptly interrupted by a grand pause in the orchestra as Elektra reaches her apogee of the passage (A♭). When the orchestra re-enters, the sisters' motives are presented simultaneously for the first time. Chrysothemis's motive is no longer played by a group of woodwinds. Instead, it appears in diminution played by the upper strings in an ascending arpeggio that rapidly traverses two octaves.

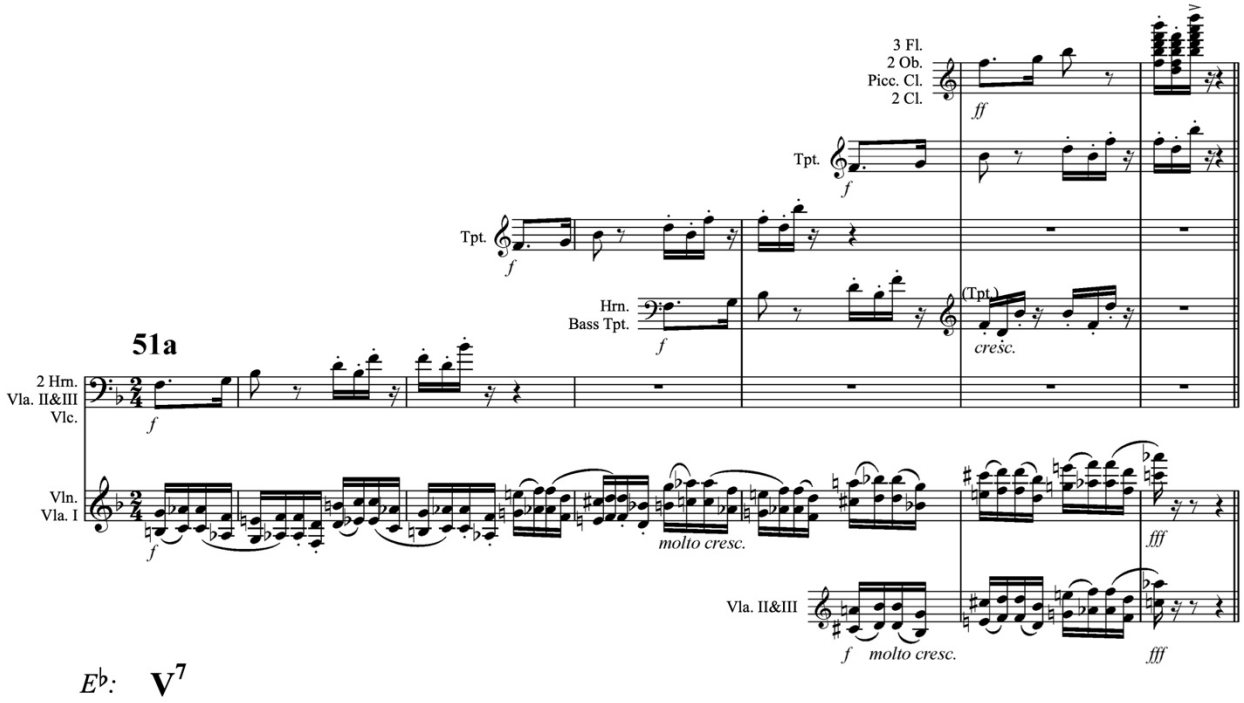

Figure 3.29: The final transformation of the sisters' motives (Reh. 51a$_{1\text{-}7}$)

Elektra's motive is presented in canon, with the imitative voices entering at an increasing rate. The motive traverses a number of instrumental combinations as it ascends through the

orchestra. It begins in a doubling of cellos and horns, similar to the viola/horn doublings earlier in the scene. After this it shifts to various combinations of trumpets and horns until the final statement where the upper woodwinds enter, doubling the trumpet in brilliant, parallel harmonies. In this orchestral crescendo, the previously established harmonic, orchestral, and formal contrasts between the two motives are abandoned as Elektra completely overwhelms her sister. The distinct phrase placement and differing harmonic function are no longer present as the motives, together, outline the dominant harmony. The motives also lose their registral separation as they co-mingle in a similar register, following the same large-scale ascent. The final distinction, their orchestration, is destroyed as the originally established orchestration is dissolved in this sweeping orchestral tutti. This dissolution of the central, motivic contrast acts as the "transformative encounter" in this scene, illustrating, ultimately, the overwhelming of Chryothemis by her increasingly determined sister.

Summary

In this transitional passage, the distinct orchestration, register, harmonic function, and formal function of Elektra and Chrysothemis's motives create a musical contrast that underscores the sisters' opposing reactions to the news of their brother's death. Elektra is determined and calculating, while Chrysothemis is confused and horrified. The two motives illustrate this character contrast in musical terms. While the orchestrations of the two motives contrast throughout the scene, they are not completely static. The variations in the orchestration fall into three main, functional categories: dynamic expansion, the addition of instruments as orchestral accents or gradual additions; referential substitution, the partial substitution of a motive's accompaniment with a different motive; and transformation, a complete change in a motive's

orchestration. With the exception of the final transformation, the only instruments used in both motives are the violins and violas. Their separation in register and their differing significance within the orchestral texture, however, are sufficient to dispel any sense of connection between the two orchestral groups. It is only in the final transformation that the individual motives lose their distinctiveness, caught up in a single, rising gesture.

In *Elektra*, the use of motivic contrasts to illustrate thematic contrasts extends beyond this relatively short dialogue, permeating throughout the opera. As illustrated at the beginning of Part A in this chapter, numerous motives employ a characteristic orchestration that provides continuity across statements of a single motive and allows for various motives to be contrasted with one another. Motivic contrasts not only underscore the contrasts between Elektra and Chrysothemis, but also the contrasts between Elektra and Klytämnestra, Aegisthus and Orestes, and Aegisthus and Agamemnon. Moreover, the contrasting orchestration of motives in *Elektra*—as illustrated in the above analysis—exists as part of overall, structural contrasts that involve aspects of register, dynamics, rhythm, meter, harmony, and form.

Part B: Orchestration, Tonal Structure, and Form

One of the primary topics of recent orchestration research is its large-scale structural role, especially its importance in the auditory grouping or "chunking" of musical units, from single phrases, to full themes and larger sections. Timothy Cutler, Emily Dolan, and Meghan Goodchild all analyze what they refer to as "large-scale" or "higher-order" processes that shape the musical form of whole sections and even entire movements through orchestral contrasts, progressive orchestration, and orchestral gestures. Cutler argues that orchestration plays a key role in articulating form in sonata movements through various types of textural contrasts. He

notes that in sonata expositions, first and second themes are often differentiated through their unique orchestration.[132] In development sections, the orchestration is more varied, but it is often used to "alert the listener to potential and realized structural goals" through changes in the orchestral texture.[133] In recapitulations, the orchestration of the expositional themes is transformed, providing variety to the previously stated material.[134] The orchestration in the recapitulation is frequently contrasted with the equivalent passages in the exposition. Emily Dolan, in her analyses of Haydn's symphonies, also identifies textural contrasts as a large-scale structural device.[135] She argues that Haydn's slow movements "unfold as a working-through of opposing sonorities or textures," one tranquil and the other more forceful, culminating in a transformative encounter near the end of the movement.[136]

In addition to orchestral and textural contrasts, musical form is also shaped by progressive processes and gradual orchestral gestures. Emily Dolan outlines how orchestral introductions in Haydn's music often involve a process of orchestral growth that "thematizes the very act of beginning."[137] Meghan Goodchild develops a similar concept of gradual addition and the reverse process, gradual reduction, which shape the form of large passages through their goal-directed motion. Goodchild argues that gradual addition and reduction function as thematic gestures, which coincide with the ongoing musical processes in the work, rather than rhetorical gestures, which are disruptive and unexpected.[138] These progressive orchestral gestures along with orchestral contrasts play an important role in the segmental grouping of the music and can therefore function to define musical units, such as phrases and sections.

---

[132] Cutler, "Orchestration and the Analysis of Tonal Music," 268.
[133] Ibid., 274.
[134] Ibid., 279.
[135] Dolan, *The Orchestral Revolution*, 117.
[136] Ibid., 120.
[137] Ibid., 105.
[138] Goodchild, "Orchestral Gestures," 44.

Thus far, research on *Elektra* has largely ignored the role of orchestration in the formal organization of the work. Only rarely is the orchestration of larger sections discussed in an detail. Robin Holloway approaches the subject in his critical reading of the opera's orchestration, noting the function of instruments within the orchestral texture of extended passages in the Recognition Scene, including the opening D minor section (Reh. 123a-130a):

> [The Wagner tubas'] sublimity is used early in the scene between Elektra and the stranger before he is recognised as her brother (Figs. 123a-6a). Though the four trombones join them, the timbre is tuba-ish in the most normative way, and all five of the family retain this low-horn organ-harmony foundation in the superb fourteen-bar sentence beginning at Fig. 126a.[139]

And the lyrical A♭ major section later in the scene (Reh. 148a-155a):

> The Recognition Scene (Figs. 148a-55a) is also characterised by this golden strings-and-horns sound. The strings are given melody and flowing accompaniment figures…A few woodwinds are sparingly used to double and intensify; all eight horns provide a glowing core of organ harmony, at its most ardent at Fig. 154a where the paragraph's point of climax simultaneously begins to droop.[140]

While Holloway identifies the basic textural characteristics of these passages—strings forming melody and accompaniment figures with doubling from the woodwinds, horns forming the harmonic layer—there is no commentary on how changes in the orchestral texture coincide with the harmonic or phrase-structural organization of the opera.

In order to explore the relationship between orchestration and form in *Elektra* more fully, I will focus my final analysis of this thesis on the connection between gradual and sudden changes in the orchestral texture and their relation to the tonal and phrase-structural organization in the opening of the Recognition Scene. In this analysis, I will combine traditional harmonic and formal analysis with graphic representations of the orchestral texture developed after Emily

[139] Holloway, "The Orchestration of *Elektra*," 132.
[140] Ibid., 130.

Dolan to highlight the relationship between the orchestration and the form. I will also introduce a variation of Dolan's graphic approach to reveal changes in the orchestral texture that are not visible in the more basic orchestral graph.

Analysis #2: Strauss, *Elektra*, Reh. 123a-130a

In *Elektra*, the ultimate turning point is the arrival of Elektra's brother, Orestes, whose return provides the solution to her ultimate goal: the avengement of Agamemnon's murder. Leading up to this moment, the situation for Elektra has become increasingly bleak as her psychological victory over her mother is undermined by the news of Orestes's death and her sister ultimately refuses to assist Elektra in the murders in his stead. In desperation, Elektra resolves to carry out the murders herself when Orestes finally appears. The importance of Orestes's arrival in the opera is heightened by the extended dialogue between Elektra and him as they don't immediately recognize one another. In my analysis, I will focus on the first main section of the Recognition Scene, as it is commonly known, which precedes Orestes's recognition of his sister and Elektra's subsequent recognition of her brother. This passage, from Reh. 123a-130a, is firmly grounded in D minor, acting as a tonal parallel to the opening maid's scene.[141] The tonal relationship aside, however, there is an undeniable contrast in the musical atmosphere of the opening maid's scene and the Recognition Scene. The first is a flurry of violent, slashing gestures that are barely contained, if at all, within the D minor key established in the opening motive. The meter is as unstable as the tonal centre and the rhythmic language is equally diverse. The Recognition Scene, by contrast, is solemn and slow and is dominated by a single, lamenting theme that is built on a repeated, trochaic rhythm. Despite the uniqueness of

[141] Gilliam, *Richard Strauss's Elektra*, 77.

these two D minor scenes, what is undeniably significant in both is the role of orchestration in shaping the musical form (in conjunction with more familiar structural elements, such as pitch, rhythm, and meter). In my analysis, I will focus on this relationship between orchestration and structure in the Recognition Scene with an emphasis on the connection between the orchestration, the themes, and the tonal structure.

The opening of the Recognition Scene can be divided into three main sections based upon the organization of the libretto and the thematic structure of the music (Figure 3.30). The scene begins with a dialogue between Elektra and Orestes, who, at this point, are still strangers to one another. The accompanying music is fragmented in conjunction with the dialogue. Different motives accompany the two characters and additional motives enter to when other characters are referenced.

The most prominent motive of this section is the solemn tuba chorale that accompanies Orestes (mentioned in the above passage from Holloway's book chapter), which returns multiple times throughout the scene, its harmonies transformed slightly with each statement. The lamenting theme that characterizes the following two sections is also introduced in the opening section, leading to a climax on a vibrant, but short-lived, D major cadential $\frac{6}{4}$ chord. This turn to the major mode, however, is only temporary. The cadential $\frac{6}{4}$ chord proceeds to V^7 as the melodic line sinks slowly downwards, eventually resolving back onto D minor as Orestes's chorale returns.

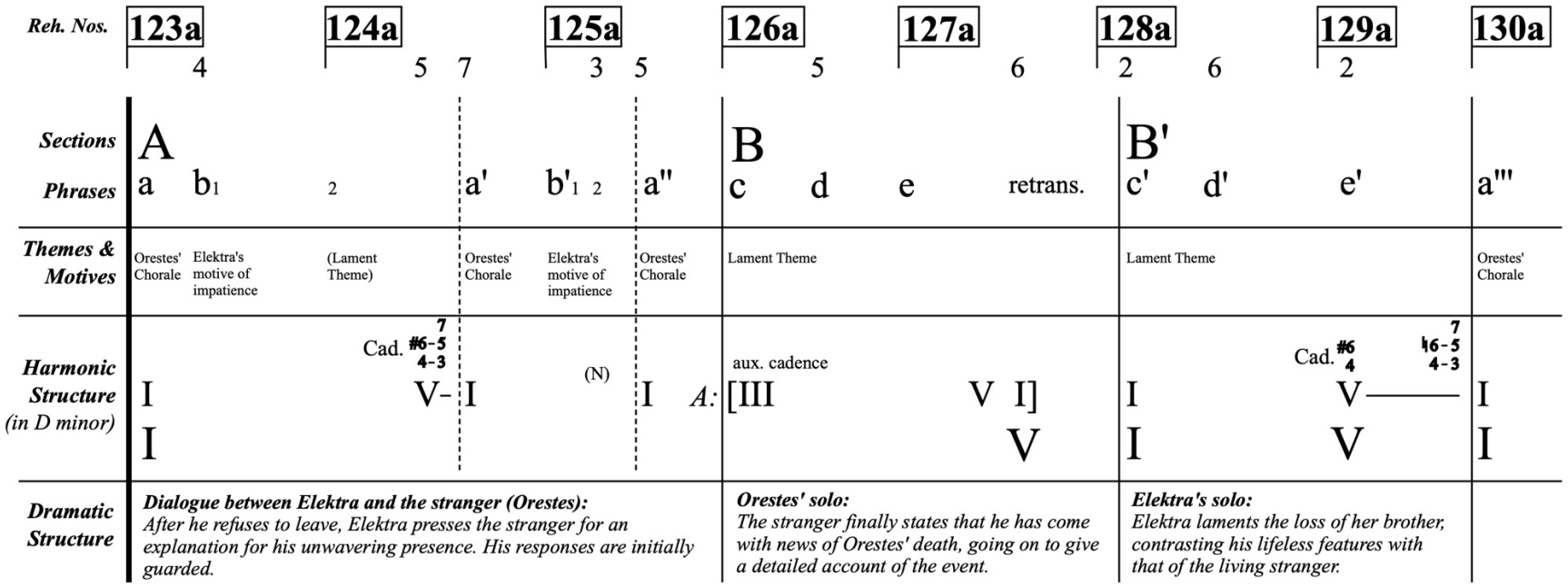

Figure 3.30: Formal outline of Reh. 123a-130a

In the following section, Orestes, who is unaware of whom he is addressing, describes the fictionalized version of his death to Elektra. This passage is dominated by a melancholic, chromatic theme whose repetitive rhythm is suggestive of a funeral march. In the following section, Elektra responds with a lament for her brother over the same melancholic theme, ironically contrasting the image of Orestes's lifeless body with that of the living stranger before her (who is, in fact, Orestes himself). In this final section, the climactic D major cadential $\frac{6}{4}$ chord prefaced in the opening section returns in a fuller, richer orchestration, before, once again, sinking back to the low D minor of Orestes's chorale.

While the dramatic structure and formal organization of this scene is plainly organized into three sections, the harmonic structure instead creates a binary division. The overall harmonic structure of the passage is as follows: I-V ‖ I-V-I. The relationship between the thematic organization and harmonic structure of the passage produces a complex and interesting musical form. The opening dialogue, which sounds in some ways like an introduction, prolongs the D minor tonic (Figure 3.30). The first half of the A section (phrases a and $b_{1\text{-}2}$), is built on a I-V-I progression, while the shorter second half (phrases a' and $b'_{1\text{-}2}$) strays only briefly to a neighbour harmony built on C♯ ($\hat{7}$) before returning to I. The following section essentially leads to V through an extended auxiliary cadence in A (III-V-I). The majority of the passage, however, extends the C♯ minor harmony (III of V). The eventual tonicization of V only occurs at the very end of the section. The dominant is reactivated in the short retransition at Reh. $127a_6$ and the theme previously heard in C♯ minor is now presented in the main key. The binary division of the harmonic structure aligns with the conclusion of the second of the three main formal sections, breaking up the two, thematically related sections.

Orchestration has a multivariate role in the musical structure of this scene, establishing relationships between harmonies and instrument families, differentiating musical units of various lengths, clarifying the hierarchy of these formal divisions, and shaping the musical climaxes with parallel orchestral gestures. These different structural aspects not only involve changes in the general orchestral texture, but also in the function of the instruments within the musical texture (i.e. melody, accompaniment, countermelody, etc.). To illustrate the structural function of orchestration in this scene, I will employ orchestral graphs as a visualization tool to represent the musical score in a highly compact form. This method of graphic representation was developed by Emily Dolan in her book, *The Orchestral Revolution*, as a method for analyzing orchestral gestures and processes that take place over extended passages.[142] These orchestral graphs provide a reduced picture of the musical score by removing information on pitch and rhythm, emphasizing instead the changes in the orchestration. No additional information from beyond the score is added, but the extensive reduction allows large sections to be viewed at once, providing an excellent visualization of extended musical passages in large orchestral scores. In my analysis, I extend Dolan's graphical method in some instances to include the information on the function of instruments within the musical texture as well (i.e. melody, harmony, countermelody). This reveals changes in the orchestration that are not represented in the basic orchestral graph. These graphs, combined with traditional harmonic and formal analysis, provide a clearer picture of the integral structural role of orchestration and its intimate relationship to the more familiar aspects of musical structure.

An orchestral graph of the entire D minor passage is shown in Figure 3.31 Two of the most clearly visible changes are the beginnings of the B and B' sections, where numerous

[142] Dolan, *The Orchestral Revolution*, 106-107.

instruments enter into the orchestral texture (especially the upper woodwinds). Separating them is the retransition, which is notably sparse in comparison. Both the orchestral texture and the overall density of the music are considerably reduced, offering an audible relief from the quiet, but sustained, texture of the surrounding passages. In contrast to the relative invariance of the orchestral texture in the B and B' sections, the A section is noticeably more disjunct. The fragmented orchestral texture characterizes the dialogic nature of the opening passage. The clear changes in the orchestral texture and the contrast between the fragmented opening texture and the more stagnant orchestration that follows coincides with the tripartite organization of the libretto and thematic structure of the music.

The orchestration is also clearly allied with the tonal organization of the passage with clearly visible orchestral shifts at the arrival on all but one of the tonic chords. On each tonic harmony, with the exception of the penultimate tonic chord, there is a clear reduction in the orchestral texture from a larger and more diverse ensemble to the singular sound of the tuba section, establishing a connection between this instrument family and the tonic harmony. This is furthered by the overall absence of the tubas in the rest of the passage. Only beneath Orestes's extended oration do they continue their homophony as part of the orchestral texture.

One last feature that can easily be seen in the orchestral graph of Figure 3.31 are the parallel orchestral shapes of the passage's two climaxes. In both cases, the orchestral texture gradually thickens and the overall dynamic increases towards the climactic peak, after which, the orchestral process reverses, the orchestra thinning and receding back to *p*. The parallel shape of these climaxes highlights their parallel cadential harmonies, while the extent of the effect distinguishes the smaller initial climax, which forms the peak of the initial tonic prolongation, from the final climax, which forms the peak of the entire passage.

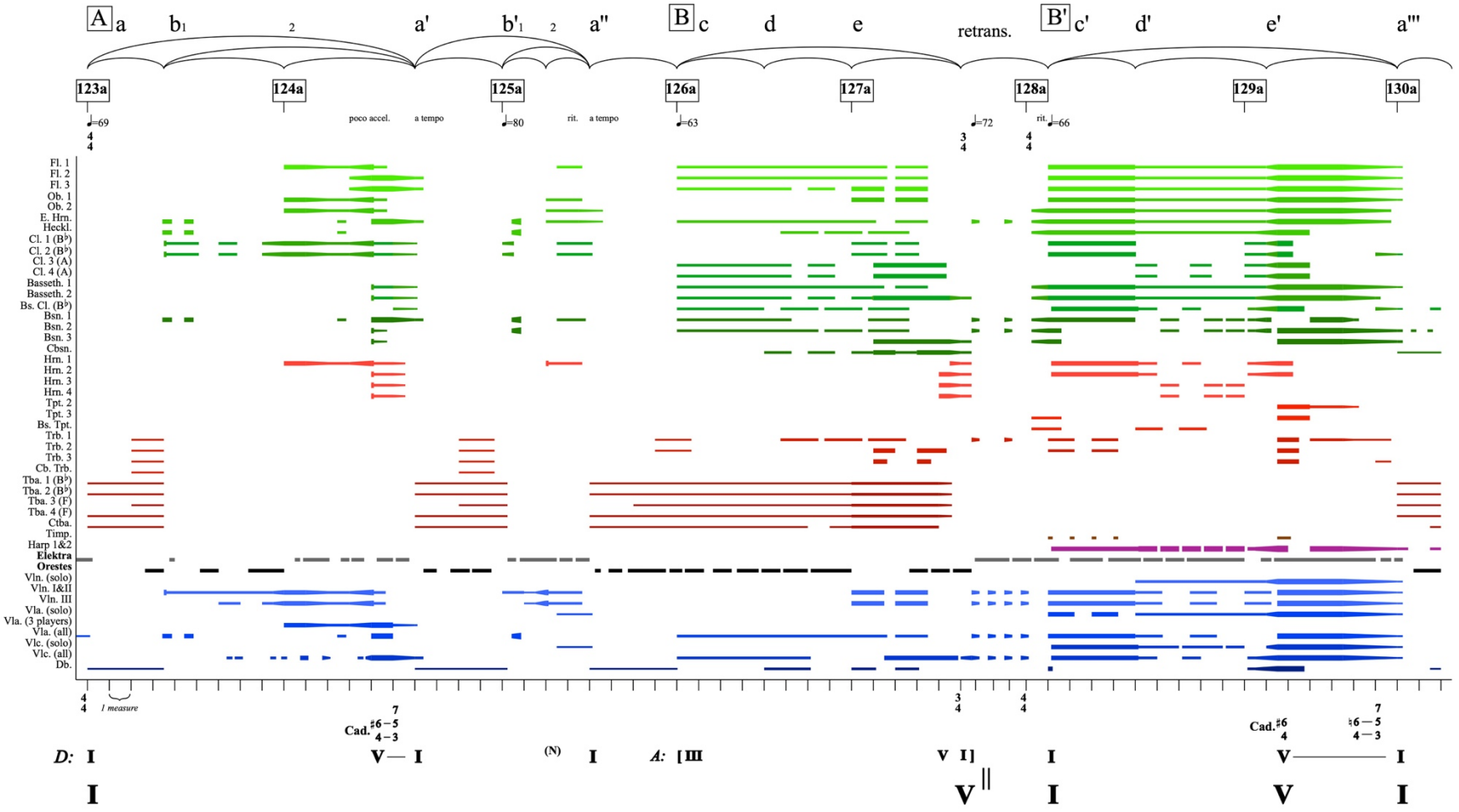

Figure 3.31: Orchestral graph of Reh. 123a-130a

While the orchestral graph in Figure 3.31 is revealing, further analysis is required in order to understand the structural role of the orchestration in this passage more fully. There are four main aspects of the orchestration in this passage that I would like to focus on, which include the orchestral reductions involving the tuba section, the orchestration of the two climaxes, and two forms of orchestration that demarcate phrases in the A section and the two B sections.

The Orchestration of Orestes's Chorales: Internal and External Structure

Among the most striking features of the opening to the Recognition Scene are the repeated statements of Orestes's tuba chorale at Reh. 123a, 124a$_7$, 125a$_5$, and 130a, made even more prominent by the sudden silence of the rest of the orchestra in each case. The cessation of the orchestra focuses the attention of the listener solely on the tuba section; the insistent repetitions and calm, sombre tone of the tuba chorales is illustrative of Orestes's unwavering resolve. In addition to their symbolic function, the tuba chorales also share a deep connection with the harmonic structure of the passage. Each of the chorales begins on the tonic chord in closed position, demarcating the tonic prolongation boundaries throughout the scene. Of all the tonic harmonies in the scene, only the penultimate D minor chord at Reh. 128a$_2$ is not marked by a return of the tubas. Rather than destroying the established relationship between the homophonic tuba sonority and the tonic harmony, this omission increases the sense of conclusion when the tubas do return on the final tonic. In its first three appearances in the A section, the tuba section becomes synonymous with the tonic and the expectation of its return is only satisfied at the very end of the passage.

The tubas, however, are not the only instruments present in Orestes's chorale. The trombones are also included in the chorale's orchestration; however, they are only added at the

tail end of the chorale. Only in the chorale's final statement are the trombones omitted (along with a number of other characteristic features). The late addition of the trombones gives the chorales a dynamic shape that plays an important role in defining its internal structure. Each of the first three chorales exhibit a consistent pattern of growth in the number of voices, the ambitus (distance between the outer voices), and the orchestration that furthers the sense of transformation as the harmonic progression leads away from the tonic chord (Figure 3.32).

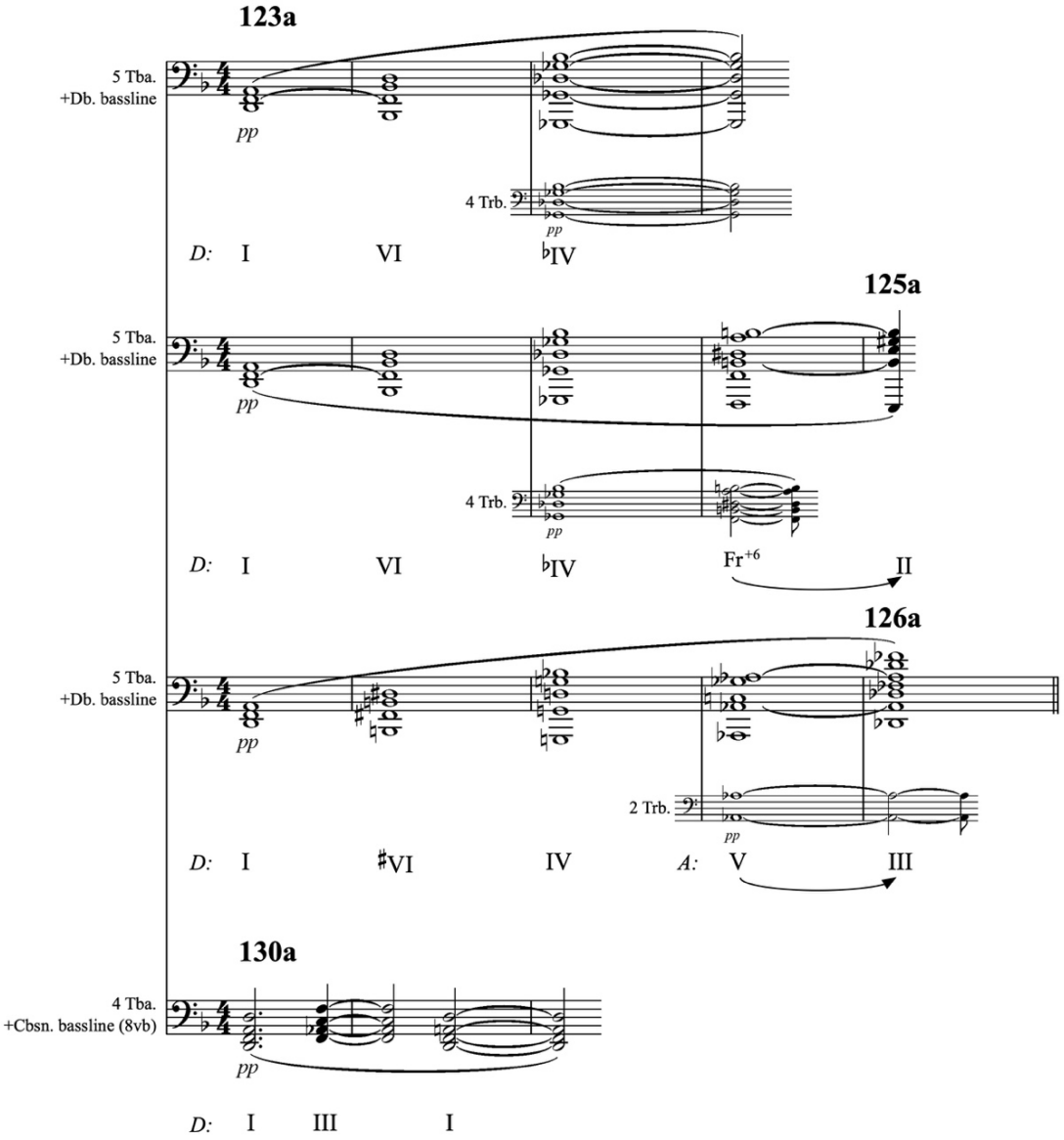

Figure 3.32: Four statements of Orestes's chorale (Reh. 123a-130a). The added trombones are shown below the tuba staves.

Although the harmony of each chorale is transformed slightly with each statement, the first three chorales all share a similar harmonic structure. The chorales all begin on D minor in closed position followed by a triadic progression over a descending-thirds bassline. As the harmonic progression unfolds and the outer voices diverge, inner voices are gradually added to the homophony, increasing the number of voices from three to five or six. The final harmonies of the chorales are augmented by the addition of the trombones to the tuba homophony.[143] In the first two chorales, four trombones enter on the ♭IV chord, colouring the altered harmony. In the third chorale, only two trombones enter, this time a measure later on the V of D♭ (C♯). This subtle process of growth in the number of voices, ambitus, and timbre all further the sense of transformation created by the altered harmonies that lead away from the home key. The final tuba chorale, which strays only briefly from the tonic chord, does not expand in its number of voices or instruments. In addition to this, it differs rhythmically from the earlier chorales and the motion of its voices are entirely parallel. In many respects, it is distinct. What connects this final chorale with the previous three, however, is its homophonic texture, its arrival with the tonic harmony, and the characteristic reduction of the orchestral texture to the tuba family alone. These factors sufficiently connect this chorale with its counterparts. What, then, is the purpose of this chorale's numerous differences? The variations of the final chorale, including the absence of growth in the number of voices, the parallel motion, and the static orchestration, eliminate the process of growth and transformation characteristic of the previous chorales, providing a strong sense of finality and resignation on the conclusive tonic.

[143] In Holloway's discussion of this passage, he remarks that, "though the four trombones join [the tubas], the timbre is tuba-ish in the most normative way." Holloway, "The Orchestration of *Elektra*," 132. While the characterisation of the timbre as "tuba-ish" captures the secondary role of the trombones in the chorale, Holloway ultimately overlooks the importance of this addition within the process of growth that defines these chorales (i.e. the number of voices, the ambitus, the harmonies, and the orchestration).

One final aspect of the chorale's orchestration to address is the doubling of the bassline. In the first three statements this doubling is provided by the basses, whose addition to the lowest voice provides extra stability and weight to the low line in the somewhat precarious *pp* dynamic. In the final statement this supportive role is taken up by the contrabassoon, which, instead of doubling the bassline at pitch, plays an octave below.[144] This change in the orchestration and the octave drop in the bassline further contribute to the conclusiveness of the final chorale.

In this passage, the orchestration of Orestes's chorales contributes both to their internal structure and to the overall form of the passage. The addition of the trombones to the tuba orchestration, along with the growth in the number of voices and the widening ambitus, highlights the transformative quality of the harmonic motion within the chorales. In the final chorale, the absence of growth in the orchestration coincides with the sense of finality provided by the single, brief diversion from the D minor triad. In the context of the passage as a whole, the contrast between the uniform sound of the tuba chorale and the more diverse intervening textures marks the boundaries of all but one of the tonic prolongations in this D minor passage. This larger formal relationship between orchestration and harmony is essential in establishing a connection between the first three chorales and the final chorale, the latter lacking a number of the defining features of its counterparts. Once the orchestration is taken into account, however, it is clear that the three chorale statements and the final chorale have the same large-scale structural function in this passage: the articulation of prolongational boundaries.

[144] The contrabassoon also doubles the bassline of Orestes's chorale when it returns later in the Recognition Scene at Reh. 172a$_{11}$.

Orchestration of Harmony and the Division of Phrases in the A Section

Within the three main sections of this scene, smaller musical units are defined by more subtle orchestral changes. The A section is primarily segment by the repeated statements of Orestes's chorale, which divide the passage into two subsections. The third chorale, which provides the concluding tonic in the A section, acts as a bridge to the B section that follows. The passages between these three chorale statements are primarily defined by the orchestral texture of the harmony, which is defined by the sound of tremolo violins whose agitated quality characterizes Elektra's restlessness in the presence of the unwavering stranger (Figures 3.33 and 3.34). The violins are the only continuous instruments within the harmonic layer in both passages, fading out only briefly at the ends as Elektra's nervous energy is met by Orestes's calm resolve. Phrase divisions within these two passages are marked by changes in the instruments doubling the violin harmonies.

In each passage, shifts between contrasting woodwind groups, along with the changing motivic material, mark out the phrase divisions of the section. There is a clear parallelism between the opening phrases of each section (labelled b_1 and b'_1). These phrases are orchestrated identically and share both motivic and harmonic material (Figure 3.35). Both phrases begin on triads rooted on scale degree $\hat{2}$. The first phrase oscillates between E♭ minor and E diminished triads while the second begins on E major before sinking to E minor in the same measure. The harmonies are played continually by the tremolo violins with two clarinets doubling intermittently throughout. Each phrase also begins with the same motive, which is orchestrated as a combination of low double reeds and violas.

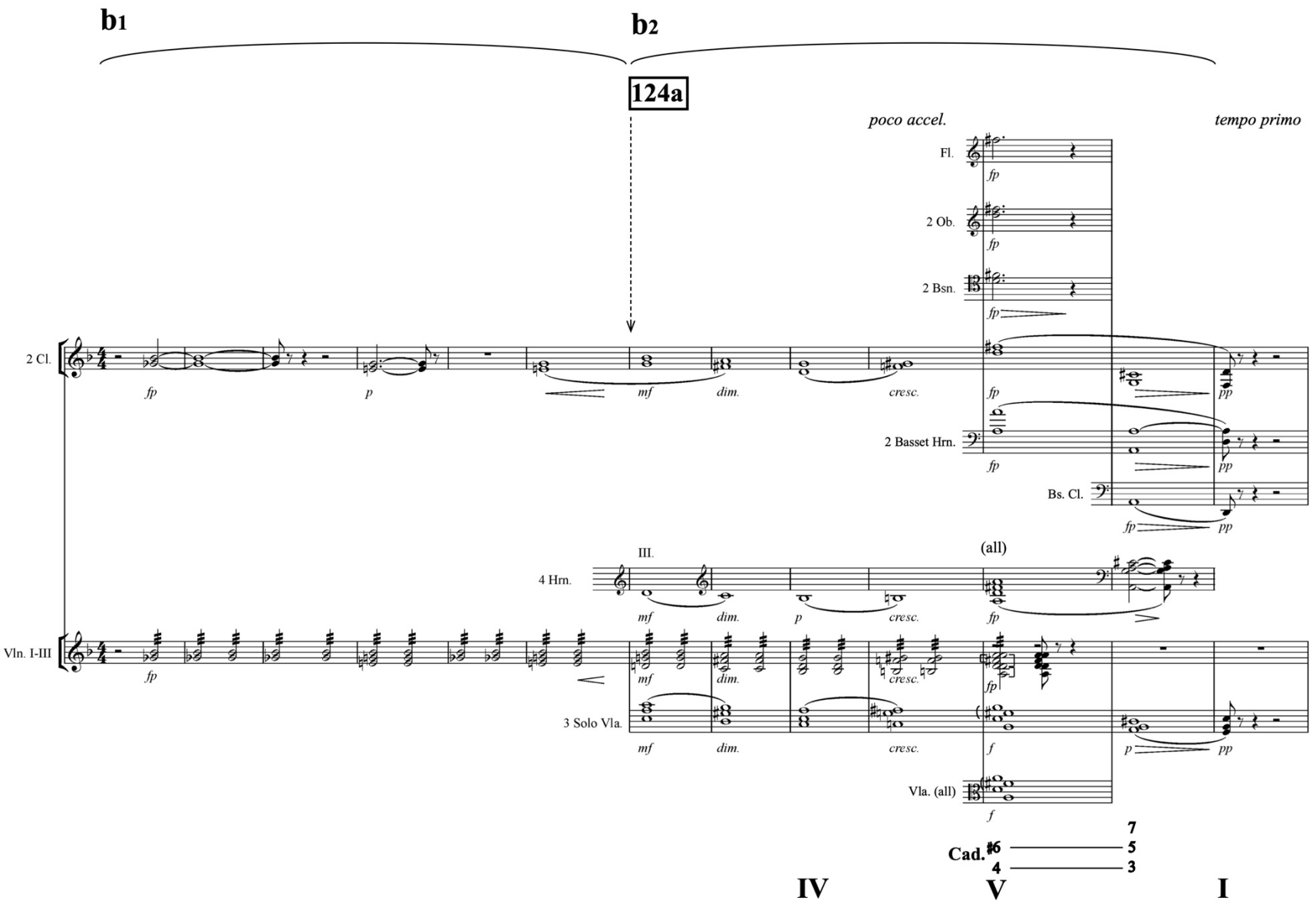

Figure 3.33: Orchestration of the harmonic layer (Reh. 123a$_4$-124a$_7$)

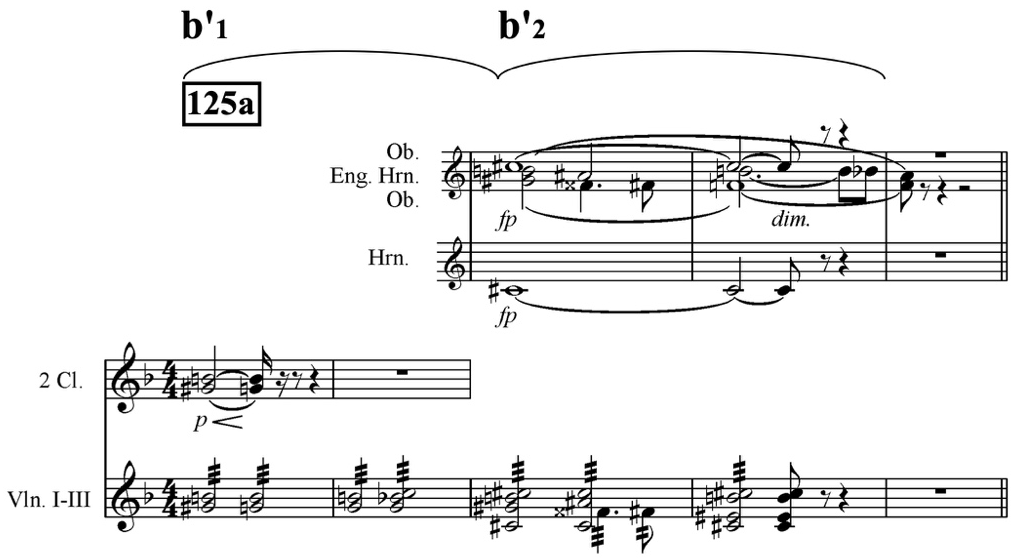

Figure 3.34: Orchestration of the harmonic layer (Reh. 125a$_{1\text{-}4}$)

Norman Del Mar suggests that this motive is illustrative of Elektra's "restless impatience" and the orchestration, which employs the same combination as one of her other motives, Elektra's Hatred,[145] strengthens this association.

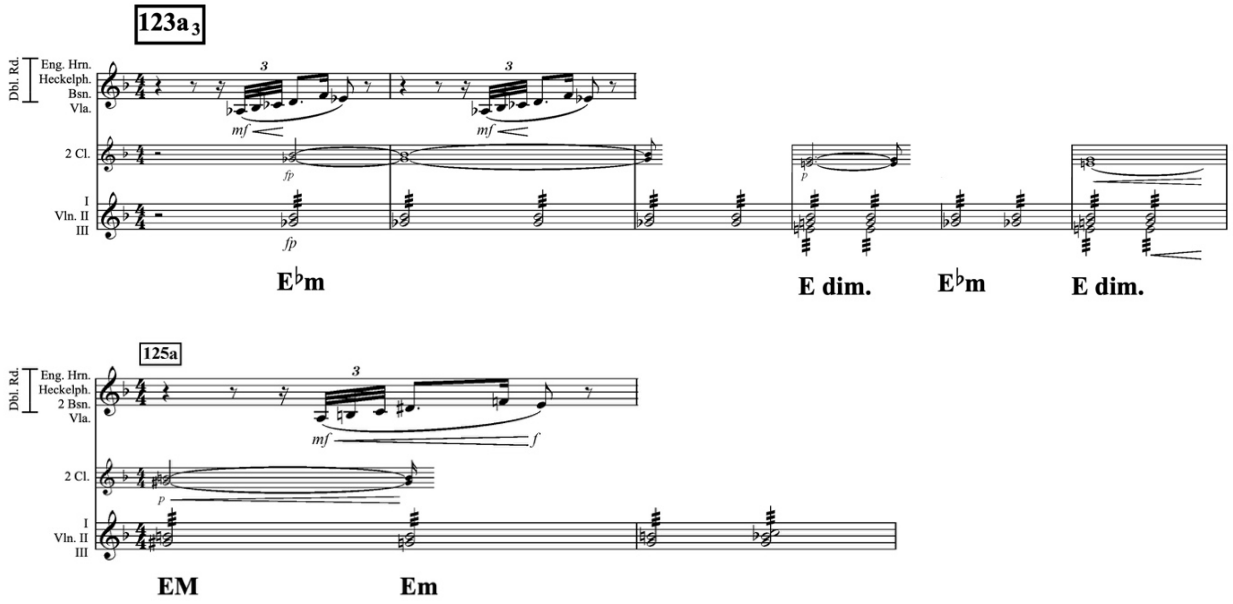

Figure 3.35: Parallel orchestration of the a and a' phrases (Reh. 123a$_{4\text{-}9}$ and Reh. 125a$_{1\text{-}2}$)

[145] Del Mar, *Richard Strauss*, 320.

The following phrases of each section (labelled b_2 and b'_2) differ in their harmonic and melodic material but are both demarcated by a shift in the woodwind instruments doubling the violin harmonies. At 124a, a horn is added to the clarinets (who now play continuously) as the lowest voice in the three-part harmony; three solo violas also enter in this phrase. The expansion of the harmony's orchestration enriches the texture at the beginning of this phrase. Above the harmonies, the lamenting theme, which dominates the B and B' sections to follow, is introduced. The climax of this phrase is marked by a further addition of instruments to the harmonic texture, most of which expand upon the instrument sections already present. (This effect will be discussed in more detail later in this analysis). Phrases b'_1 and b'_2 are also separated by a change in the doubling of the harmonic layer. At Reh. $125a_3$, the intermittent doubling of the clarinets is replaced by a sustained combination of oboes and horn, whose entrance is marked by a *fp*. The horn has the lowest voice as it did at Reh. 124a, while the oboe family plays above (the English horn nested between the two oboes). One of Klytämnestra's motives—thinly orchestrated—accompanies Elektra's reference to her mother.

While the two passages between the chorales begin with the same motive and new motives or themes do enter in each phrase, the thematic material alone does not clearly differentiate the phrases. The motive associated with Elektra's impatience bleeds over from the preceding phrase (re-entering at Reh. $124a_3$). The melodic figuration played by the cellos continues from Reh. $123a_7$ up to Reh. $124a_4$ as well. In the following passage at Reh. 125a, only two motives are stated briefly in the four measures. The musical texture is dominated by the vocal lines and the characteristic tremolo harmonies. The freedom of the thematic material in this section is in keeping with the dialogue that it accompanies, giving the opening section a recitative-like quality. This quality is reinforced by the clearer thematic structure and aria-like

vocals of the following two sections. The overall stability and presence of the harmonic texture is also characteristic of recitative accompaniments. The ever-present tremolos in the violins provide continuity and character to the two passages while the changes in the woodwind doublings demarcate the phrase structure, even as motives and themes alternate and overlap.

Timbral Exchange and the Division of Phrases in the B and B' Sections

The other two sections in the opening of the Recognition Scene, B and B', are built on the same lament melody. In these two sections, the phrase structure is subtly marked in the orchestra by a partial exchange in the melodic and harmonic instruments. Instruments that had the melody in the first phrase of these sections switch to the harmonic layer in the second phrase and vice versa. Essentially, there is a timbral exchange between the melodic and harmonic voices of the musical texture. The exchange, however, is not total. A few instruments retain their place within the musical texture, providing a level of continuity between the two phrases by minimizing the timbral contrast created by the instrumental exchange. The smooth transition between these basic, four-measure phrases is in direct contrast to the large alternations between the tuba chorales and the richer orchestral texture surrounding them that defines the larger tonic prolongations. Structural levels are thus distinguished aurally by the strength of segmentation in the orchestra.

Since this orchestral shift does not involve a change in the instrumentation as whole (i.e. the instruments playing and not playing is largely unchanged), it is not visible in the original orchestral graph (Figure 3.31). To highlight this timbral exchange, information regarding the function of the instruments within the orchestral texture must be included. In the original orchestral graph, colour was used to differentiate the main instrument families, an important

feature given the timbral similarities between them. However, this information is already provided in some capacity by the organization of the orchestral score, which is already organized according to instrument family. Because of this, the colour of the instrument lines can easily be adapted to represent other information, such as the function of the instruments within the musical texture. This allows effects like the timbral exchanges of the B and B' sections to be represented within an orchestral graph. In Figure 3.36, two contrasting colours (with contrasting luminosity) are used to represent the harmonic and melodic layers of the passage. The sustained harmonic layer is shown in dark blue and the wailing theme in light yellow. The different countermelodies in each section, which are not relevant to the current discussion, are shown in grey.

In the original orchestral graph shown in Figure 3.32, there is no visible division of these phrase boundaries in the orchestra. Only a few instruments enter or exit in either case. The orchestral shift becomes clear, however, when the function of each instrument in the orchestral texture is taken into account in Figure 3.36. The phrase division is primarily marked by the shift in the instruments' function from melody to harmony and vice versa, rather than through the replacement of one ensemble of instruments with another.

Figure 3.37 provides another visualization that perhaps better captures the exchange between the melody and harmony. The instruments are arranged into melodic and harmonic groups and their transfer between voices is tracked with solid arrows. The instruments that do not shift are indicated with straight, dotted lines. The instruments that retain their harmonic or melodic function across the phrase boundary provide continuity and lessen the strength of the timbral exchange.

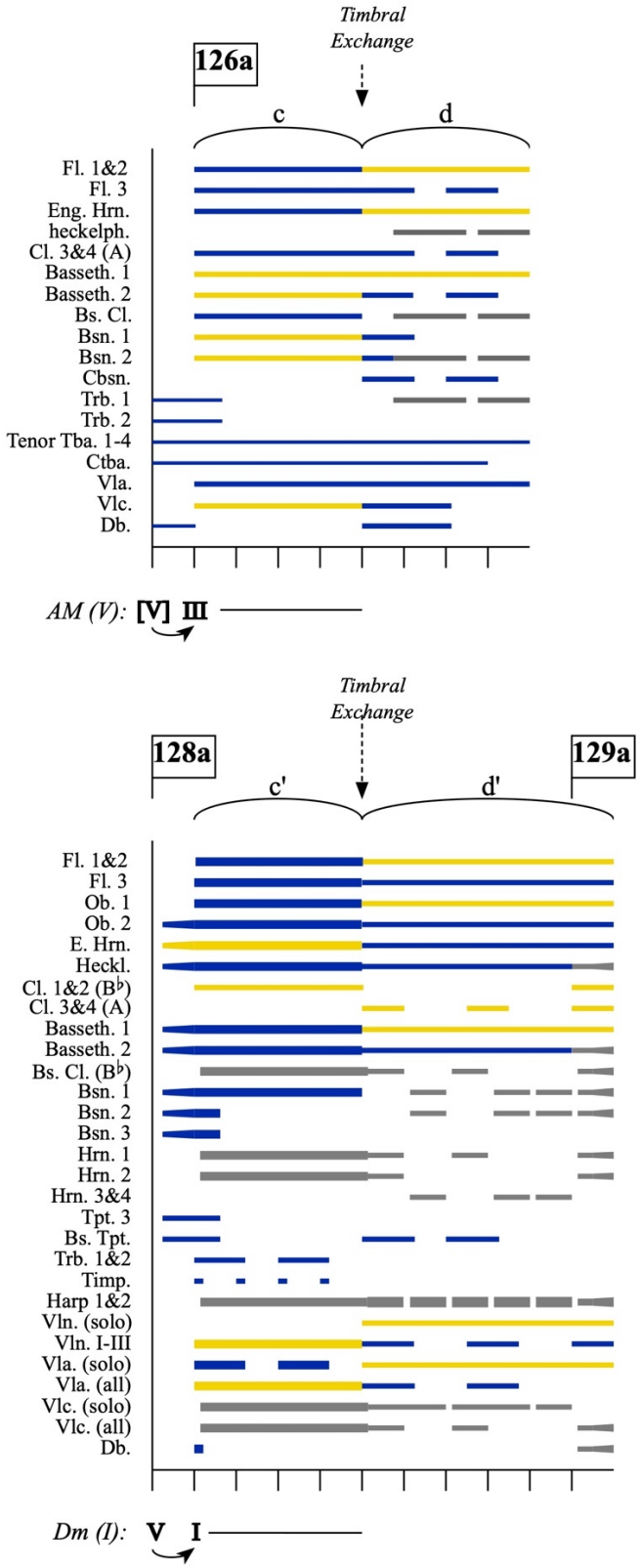

Figure 3.36: Orchestral graphs of the beginning of the B and B' sections. Melodic instruments are shown in yellow, harmonic instruments in blue and instruments with the countermelody in grey.

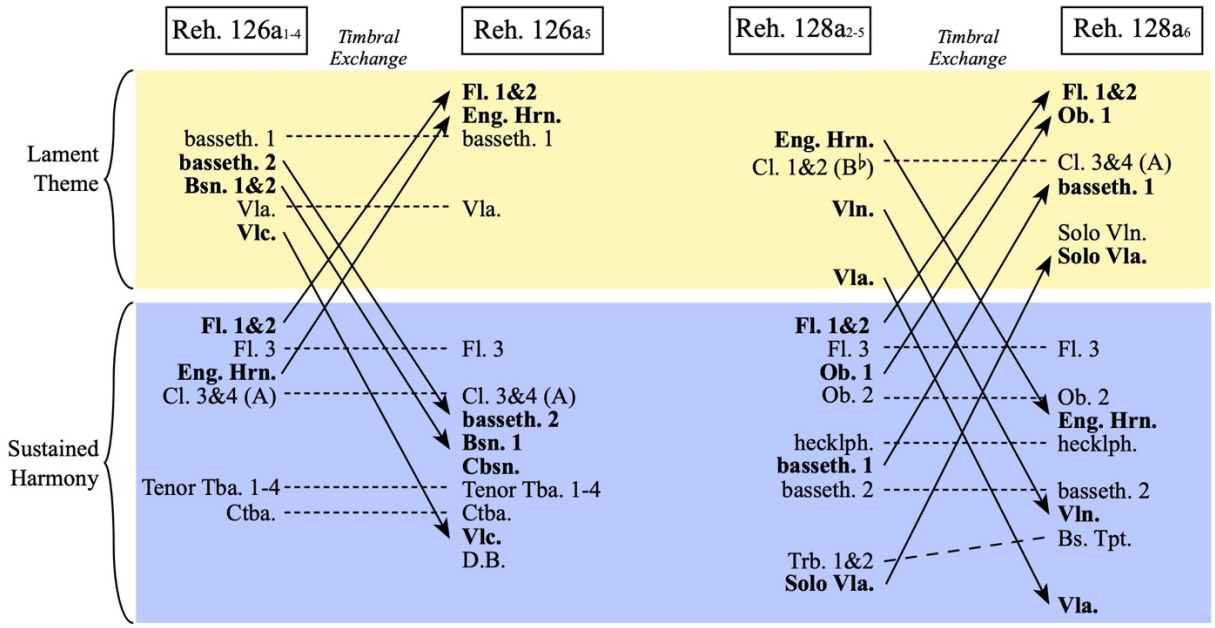

Figure 3.37: Timbral exchanges between the harmonic and melodic voices in the B and B' sections. The thematic instruments are shown in yellow and the harmonic instruments in blue. Instruments that switch harmonic and melodic functions are bolded.

In the first passage, the 3rd flute, 3rd and 4th clarinets, 1st basset horn, tuba section, and viola section all retain their respective functions across the phrase boundary. In the second passage, the 3rd flute, 2nd oboe, heckelphone, and 2nd basset horn retain their respective voices in the orchestral texture. In some cases, similar instruments from the same section or instrument family also provide some level of connection, such the two trombones that are replaced by the bass trumpet in the following phrase.[146] These instruments do not have equivalent timbres, but they sound sufficiently similar to be connected.

As a segmental grouping effect, timbral exchange produces a minimal sense of contrast and division. In the above examples, the overall orchestral texture is largely unchanged, only the melodic and harmonic role of certain instruments changes. Additionally, a number of instruments

[146] Holloway, "The Orchestration of *Elektra*," 143.

retain their harmonic or melodic role across the boundary, providing a link between the two phrases. By contrast, the orchestral reductions discussed earlier move from a diverse, orchestral group to a single instrument family (the tubas) that was absent from the preceding orchestral texture. The difference in the degree of segmentation between the timbral exchange and the orchestral reductions emphasizes the unique structural level of these divisions. The orchestral reductions produce a strong sense of division and mark out the large-scale prolongation boundaries of the passage, while the timbral exchanges produce only a mild division between the phrases within the larger sections.

Gradual Addition and Hierarchical Climaxes

Arguably, the most impactful aspect of the orchestration in this scene is that of the two main climaxes. The written crescendi which lead up to both climaxes are combined with a process of gradual addition in the orchestra; the parallel shape of the orchestral gestures highlighting the parallel cadential progression of the two climaxes. Although the climaxes share the same, basic orchestral gesture, they are noticeably asymmetric in size and strength. The initial climax is lightly scored, limited primarily to the woodwinds and strings. The final climax, on the other hand, incorporates almost the entire orchestra, including instruments like the trumpets, trombones, and timpani, which are largely absent from the passage as a whole. The differing strengths of the two orchestral gestures clearly distinguishes their structural significance; the first is only a climax of the opening prolongation, the second a climax of the entire section.

As mentioned, both climactic passages share a similar harmonic structure, though they are approached in slightly different ways (Figure 3.38). Each climax occurs on a cadential $\frac{6}{4}$

chord that features a modal shift to D major, highlighted by Elektra's apogees on the raised $\hat{3}$, F♯. The D major cadential $\frac{6}{4}$ eventually reaches V^7, sinking back onto the minor tonic as Orestes's tuba chorale returns. In the second passage, the post-climactic progression is expanded, but the arpeggiated shape of Elektra's melody from the first climax is still present. The chromatic descent in Elektra's line, moving in parallel tenths with a lower voice, extends the note D over a couple measures.

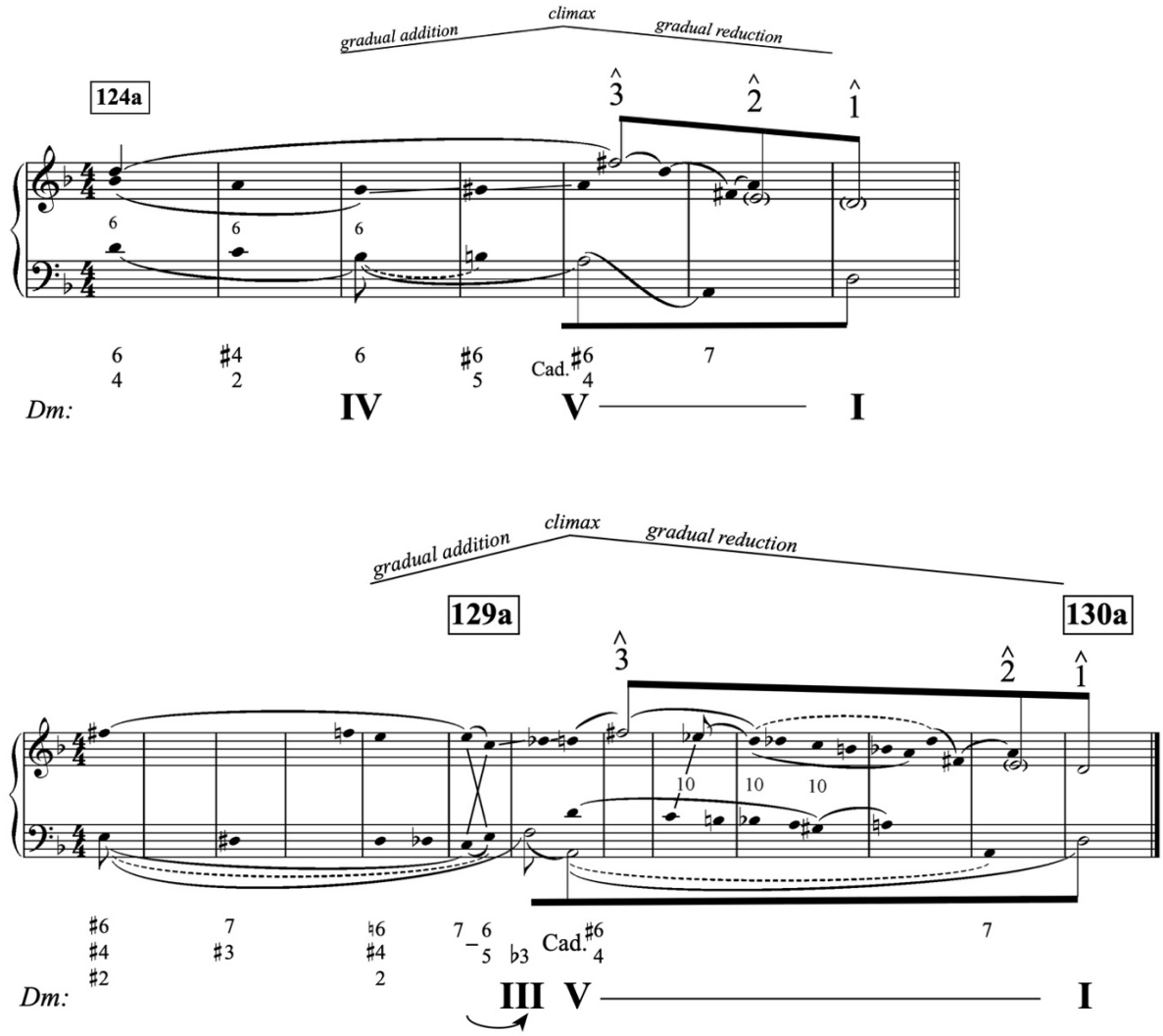

Figure 3.38: Harmonic structure and orchestral shape of the two climaxes (Reh. 124a$_{5\text{-}7}$ and Reh. 129a$_2$-130a)

Although the two climaxes have very a similar harmonic and melodic structure, the lengthened conclusion of the second climax contributes to its higher structural significance. Arguably more significant, however, is the extent to which the orchestral peak of the second climax exceeds the first. In the first climax, the orchestral texture reaches its richest point thus far in the scene, but it is still fairly restrained. In the second climax, the orchestral texture expands to include nearly the entire orchestra, dwarfing the previous climax. In both passages, the orchestration augments the written crescendi a through a brief process of gradual addition that unfolds in two stages. One group of instruments is added a measure or so before the climax and another group is added on the climax itself (Figure 3.39). The instruments that enter do not add new voices to the musical texture, but rather join the existing melody and harmony of the respective passages. The gradual addition process is not the only important aspect of the orchestration in these climaxes. At the climactic arrivals, some instruments also shift roles in the musical texture (similar in many respects to the timbral exchanges just discussed), marking the climactic moment by increasing the volume and intensity of the melodic line as well as enriching the harmony. In conjunction with the growth and shift in the orchestral texture is a change in the overall registral expanse of the harmonic voices at the climactic arrival. Following the climaxes, the harmonic texture thins once again as different instruments gradually fade away.

In the first climax, the only instruments initially added are the 2nd and 3rd flutes, which join the melodic line played by the 1st flute and oboes. On the climax itself, numerous instruments are added to both the melody and the harmony. The melody continues in the 2nd and 3rd flutes and is now doubled by the English horn, bassoon, and celli.

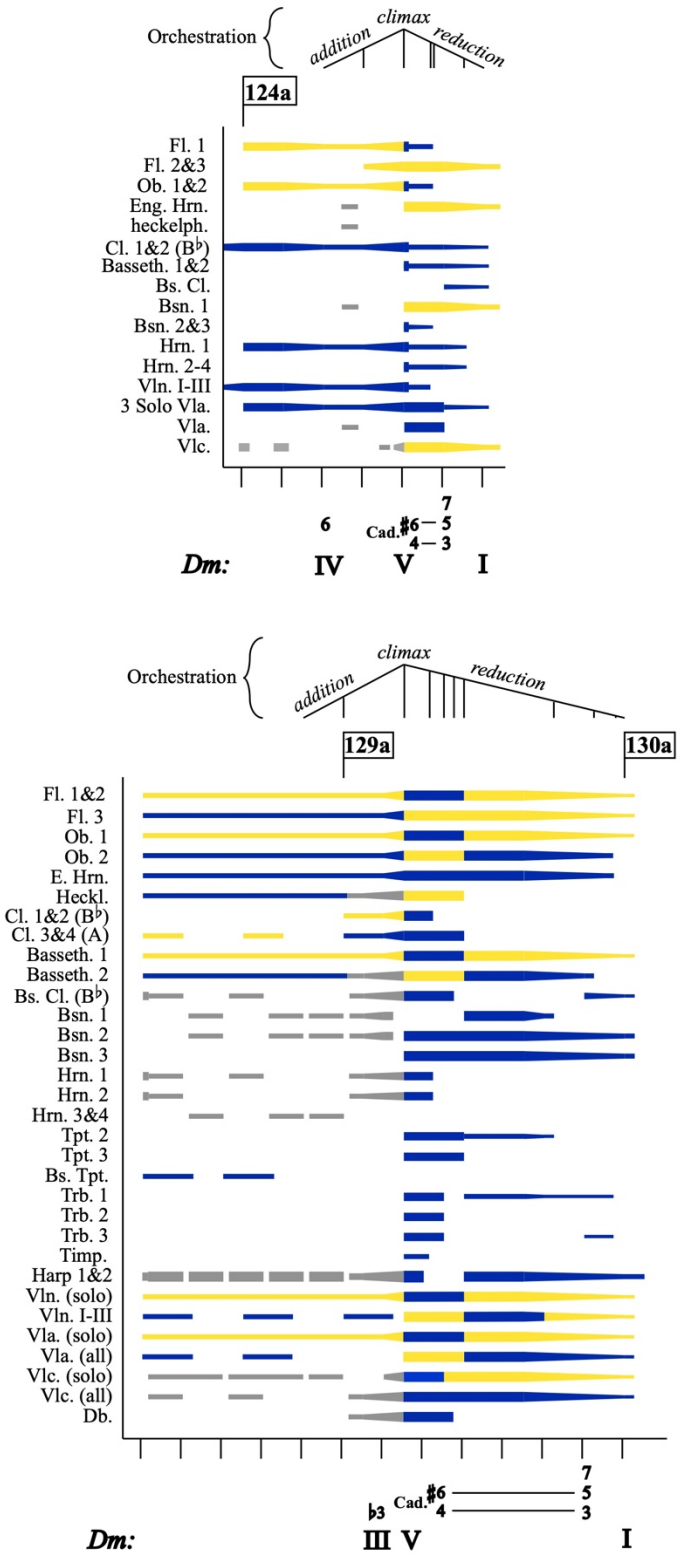

Figure 3.39: Orchestral graphs of the two climaxes (Reh. 124a$_{1\text{-}7}$ and Reh. 128a-130a). Melodic instruments are shown in yellow, harmonic instruments in blue, and the instruments with the countermelody in grey. Schematics of the orchestral gestures are shown above the graphs. The vertical lines indicate points where instruments are added or removed from the orchestral texture.

The introduction of these instruments in their higher registers (the bassoon and celli especially) produces a noticeable increase in volume and intensity despite the pitch of the melodic motive, which now sounds a fourth lower than before. The change in the brightness of the melodic line counteracts the shift downwards in register, which, in its own, may have dampened the climactic moment. The 1st flute and two oboes shift from the melody to sustained harmony at the climax, placing added emphasis on the raised $\hat{3}$.

In addition to the upper woodwinds, two basset horns, two bassoons, three horns, and the viola section are also added to the harmony. The majority of these instruments join other members of their section that were already carrying the sustained harmonies. The two basset horns join the pair of B♭ clarinets, the three horns join with the lone horn, and the viola section enriches the three solo violas present in the previous measures. Throughout all these additions, the characteristic sound of the tremolo violins continues, providing connectivity within the harmonies of the A section. The thickening of the orchestral texture is accompanied by an increase in the number of sounding pitches. In the preceding measures the harmony is limited to three voices with no octave doublings. At the climax the harmony grows to six voices, extending from A3 to F♯5 (Figure 3.40).

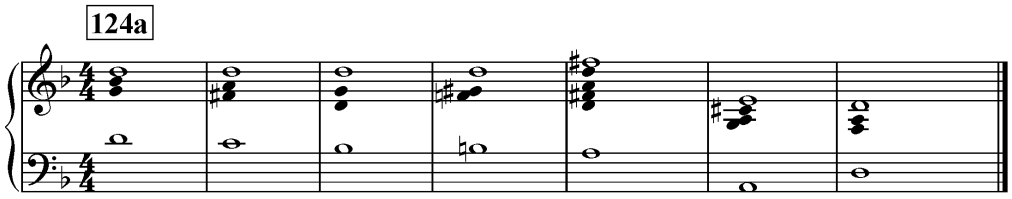

Figure 3.40: Harmonic reduction of the first climax (Reh. 124a$_{1\text{-}7}$) illustrating the expansion and collapse of the ambitus and the changing density of the harmony

The abrupt richness of the harmony is short-lived. The tremolo violins are the first to fade out, halfway through the measure, followed by the flute, oboes, and two bassoons. As the cadential $\frac{6}{4}$ chord moves to V^7, the harmonic voices drop extensively. The viola section is no longer present—the solo violas continue—and the horn section fades out a few beats later. The harmonic layer continues to the end of the phrase played only by the clarinet section and the trio of violas (see Figure 3.33).

The musical elements that shape the first climax, including the two-stage addition of instruments, the shift in the melodic and harmonic orchestration, the abrupt expansion in register, and the following gradual reduction, are all magnified in the second climax (Figure 3.39). The first addition of instruments occurs at Reh. 129a, a measure and a half before the climactic peak. The main addition in this measure is the double basses which join the countermelody played by the celli, horns, harps, and low woodwinds. Up to this point in the B' section, the basses have been completely absent from the orchestral texture, having provided only a single pizzicato at its beginning. For this reason, their introduction at Reh. 129a is strongly felt. The other instruments introduced in this measure are less marked because of their presence earlier in the phrase, but they still have a role to play in the orchestral crescendo.

At Reh. $128a_6$, the orchestra begins to alternate between stronger and weaker ensembles. The instruments which carry the melody and harmony are intermittently reinforced by additional instruments, while the countermelody is echoed each measure by a thinned and distorted version of its orchestration (Figure 3.41). At the beginning of the phrase, the strong-weak alternation in the three voices of the musical texture coincide, but the melodic and harmonic reinforcements begin to diverge as the passage continues.

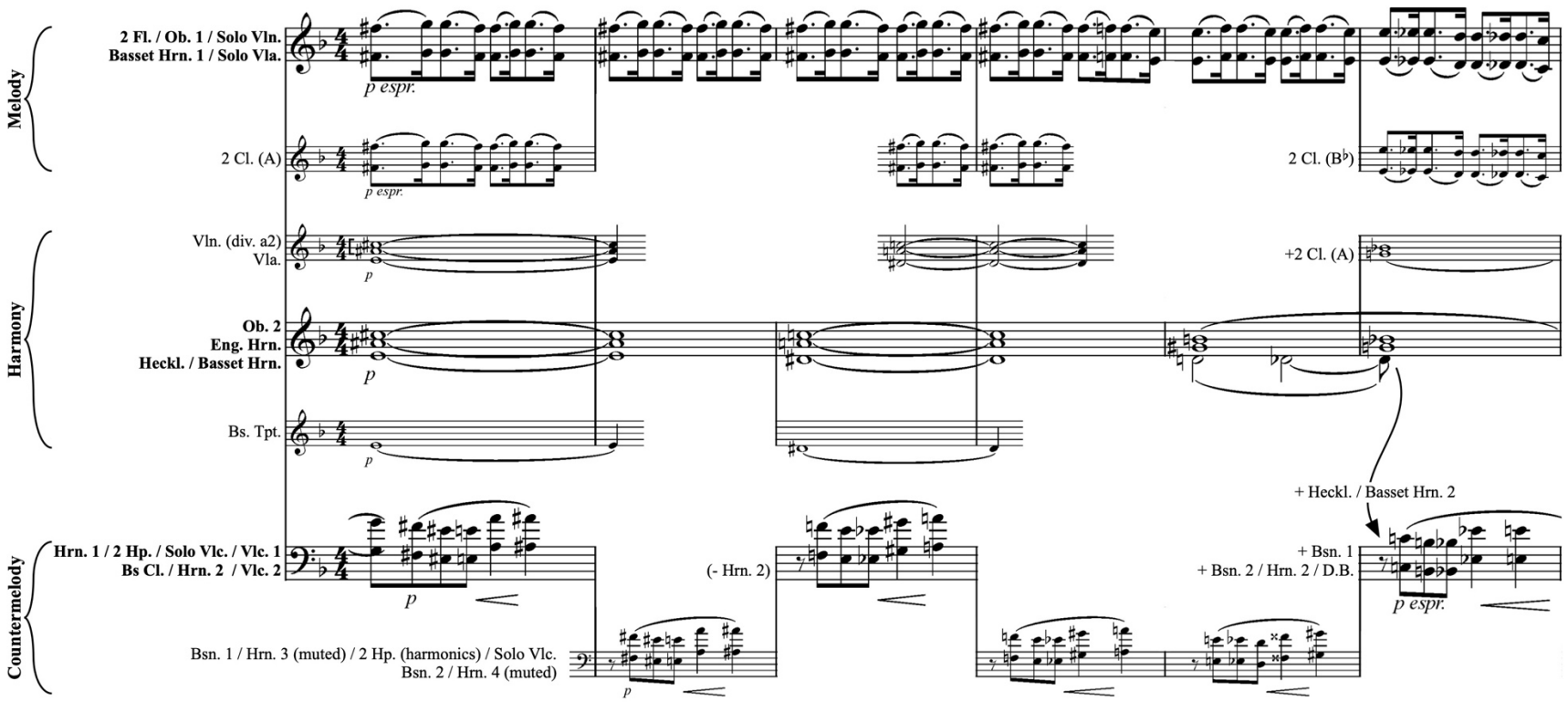

Figure 3.41: Reduced cut-out score of Reh. 128a$_6$ - 129a showing the alternation of instrument ensembles in the countermelody and intermittent additions of instruments to the melody and harmony.

The ensemble carrying the countermelody alternates with a timbrally-altered version of itself every measure; an effect with a distorted, echoic quality. In Figure 3.41, the main group is shown in the upper staff and the weaker group is shown below. The bass clarinet alternates with the lighter timbre of the bassoons, the pair of horns alternates with a muted pair, the harps alternate natural pitches with harmonics, and the cello section alternates with a solo cello. The main melody and the sustained harmonies are played continuously by a number of woodwinds and strings that are intermittently reinforced by two A clarinets, bass trumpet, and violin and viola sections.

As the passage progresses, the strong-weak alternations in the melody and harmony diverge from the alternations in the countermelody in a fascinating diffusion of orchestral voices. The countermelody's orchestration changes each measure, but the intermittent instruments that double the melody and harmony are partially delayed. The bass trumpet enters at the beginning of the phrase's third measure, but the clarinets and upper strings are delayed by two beats. The pattern of orchestral emphasis devolves even further when the stronger orchestration doesn't return two measures later in either the countermelody or the melody and harmony (Reh. $128a_{10}$). Instead, the additional instruments enter in the following measure (Reh. 129a). The reversal of the expected orchestral emphasis initiates the process of gradual addition that ultimately leads to the climax a measure and a half later.

The process of addition concludes when two trumpets, three trombones, the timpani, and most of the remaining woodwinds and strings join the orchestral texture, enriching the bright, D major cadential $\frac{6}{4}$ chord. The double basses leap an octave and a sixth from F3 to A1; the space within is filled by the warmth of the timpani and brass. The ambitus of the passage

expands from an octave and a fifth to nearly five octaves only to collapse to only a tenth by the end of the following measure (Figure 3.42).

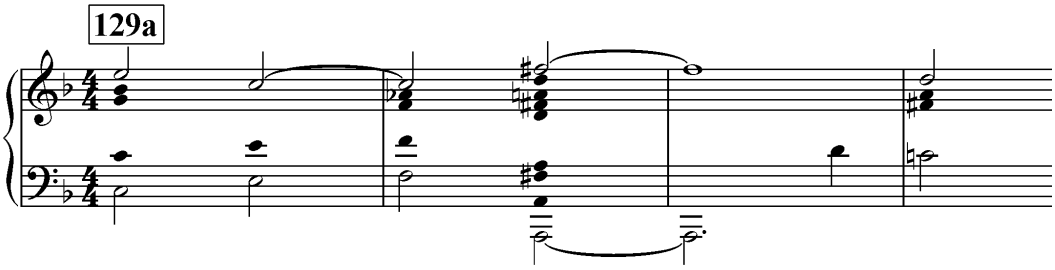

Figure 3.42: Harmonic reduction of second climax (Reh. 129a$_{1\text{-}4}$) illustrating the expansion and contraction of the ambitus and the density of the harmonies

A shift in the melodic and harmonic roles of many instruments, again, contributes to the climactic arrival. This shift, coupled with the conclusion of the countermelody, places greater emphasis on the lament theme. The shift is most prominent in the strings, where the solo violin and viola are replaced by their respective sections.

The descent from the orchestral peak in Reh. 129a$_2$ unfolds over the course of the following five measures. The melodic line, after holding on dearly to the tonic note, slinks chromatically down an octave. The orchestration of the harmony thins out progressively as well. Many instruments across the orchestra disappear within the first measure after the climax. In the final two measures before Reh. 130a, most of the woodwinds and brass fade away.

The two climaxes in this passage are an excellent illustration of how orchestration can function to not only draw parallels between musical events, but to clarify their differing structural significance within the passage. The gradual addition and reduction processes, the sudden expansion of the ambitus, and the shift in the melodic/harmonic roles of the instruments provide a clear connection between these musical events. The differing size and strength of these aspects clearly distinguishes the relative structural significance of each climax. It is clear when

the second climax is heard that it is overarching, far exceeding that of the first climax in the size of the orchestra, the overall dynamic and ambitus, and the extended length of its conclusion; the first climax governs the opening section, the second climax governs the entire passage.

Summary

As illustrated in this analysis, orchestration is an integral aspect of musical form and it is intimately connected to the tonal and thematic structure. Orestes's chorales are characterized and shaped by their orchestration within the tubas and trombones and this orchestration in turn demarcates the prolongational boundaries of the passage through its consistent return with the tonic chord (excluding the penultimate tonic). Furthermore, the internal shape of the orchestration, which gradually grows along with the harmonic progression and ambitus, establishes a musical pattern that when removed in the last homophony signals its finality.

Smaller phrases are denoted by subtler changes in the orchestration. In the A section, the harmonic layer is characterized by the sound of tremolo violins. Phrases within this section are defined by changes within the woodwind doubling of these violin harmonies. The mixture of continuous and variable instruments is characteristic of a number of the lower-level phrase divisions in this section. The first two phrases of the B and B' sections also incorporate a mixture of continuous and varying instruments; however, these phrases do not involve a change in the general orchestral texture, but rather a change in the melodic or harmonic function of the instruments. This type of change is also present in the two climaxes of the passage.

The passage's two climaxes are ultimately defined by their orchestral shape—a gradual crescendo and diminuendo produced by the gradual addition and reduction of instruments to the orchestral texture. The climactic arrivals, which both occur on D major cadential $\frac{6}{4}$ chords, are

characterized by a sudden growth in the ambitus (largely through an expansion of the lower register) and a thickening of the harmony. While the harmonic structure of the climaxes and their conclusion is similar, their unique structural significance is clearly defined by their relative strength and size. The second climax is a magnified version of the first in every respect, highlighting its place as the global climax of the passage.

The contributions of the orchestration to the musical structure of this passage are extensive and my analysis does not address them in their entirety. That said, the factors of I have touched on cover a significant portion of the section and are representative of structural orchestral effects that can be found throughout the opera. What I hope is made clear in my analysis is the extreme variety of ways in which orchestration contributes to musical structure, including the segmentation of musical units, the characterization of themes, and the shaping of musical events.

Conclusion & Directions of Future Research

The orchestration of Richard Strauss's *Elektra* is inarguably an inexhaustible topic of study. As such, I sought to organize my research around two, unique functions of the orchestra in *Elektra*: its dramatic and its structural function. In Chapter 2, I investigated the role of orchestration in the creation of musical imagery and symbolic contrasts that complement Hofmannsthal's drama. I ultimately argue that the primary characteristic of dramatic orchestration is its marked, anomalous quality, which distinguishes it from the surrounding music and highlights its semantic function. In Chapter 3 of the thesis, I explored the structural role of the orchestra in the opera, which is largely based upon its creation of auditory grouping effects. In the first of two analyses, I focus on the intimate connection between motives and their

orchestration, highlighting the importance of this parameter in the opera's thematic, motivic contrasts. In the second analysis, I investigate the interrelationship between the orchestration and the melodic and harmonic structure, which ultimately contributes to the overall form of the passage. These two analyses illustrate how the auditory grouping effects of the orchestra contribute to the thematic contrasts of the opera as well as the definition of musical units, including motives, phrases, and sections.

In this thesis, I have sought to establish the importance of orchestration in *Elektra* by placing it at the forefront of my inquiry. However, I found it necessary to take a holistic analytical approach, as orchestration is ultimately inseparable from other musical parameters. In Chapter 2, aspects of register, dynamics, contour, pitch collections, and rhythm all contributed to the dramatic effects to some degree. The descending, chromatic contour and rapid rhythm of the upper woodwind line in Figure 2.1 contributed to its wind-like sound. The analyses in Chapter 3 highlighted further interrelationships between orchestration and other musical features, including thematic and motivic development, harmonic structure and formal organization. The intimate connection between motives and their orchestration is a major contributor to the formal organization in both the sisters' dialogue and the opening of the Recognition Scene. In the first analysis, the unique orchestration of the sisters' motives acts as a structural device throughout the passage, in combination with the distinct register, harmonic structure, and phrase placement of the motives. In the second analysis, the established connection between the tuba section and Orestes's D minor chorale produces a two-fold sense of closure when the tuba section returns on D minor at the conclusion of the passage, even when many of the chorale's other defining features are no longer present. Arguably, the most significant illustration of the interrelationship between orchestration and form is the *timbral exchange* effect found in the Recognition Scene.

In the original orchestral graph of the whole passage (Figure 3.31), this effect is invisible. Only once the function of the instruments within the musical texture was included in Figure 3.36 is this segmental orchestral effect made clear.

Throughout this thesis, I have sought to improve the presentation of score examples. In addition to the modified version of Dolan's orchestral graphs, I played with the presentation of the orchestral score in a variety of ways for both pragmatic and analytical reasons. In many examples, I employed reduced, cut-out scores and frequently rearranged the instruments to reflect the musical texture rather than familial instrumental relationships. I employed cut-out to provide a clearer visualization of sudden or gradual orchestral changes. I rearranged the instruments according to the musical texture to highlight parallelisms in the orchestration of musical passages, as well as to illustrate the different weighting of the musical lines. I believe these approaches to the presentation of orchestral scores, as well as the introduction of the textural function of instruments into Dolan-esque orchestral graphs, are effective means of presenting orchestral analyses that reveal features of the orchestration that are often missed when observing a complete orchestral score. In addition to these techniques, I also employed Conceptual Integration Networks as an analytical tool to unpack the rich semantic dimension of the orchestra in *Elektra*. While I have sought to adapt some existing analytical techniques and introduce some of my own, there is still a strong need for further development and improvement of methods for orchestration analysis. The practice of orchestration is richly complex and it will require an equally rich analytical approach to demonstrate its varied musical roles: dramatic, structural, and everything in between.

Bibliography

Adler, Samuel. *The Study of Orchestration*. 3rd Edition. New York: W.W. Norton, 2002.

Aplin, Karen L. & Paul D. Williams. "Meteorological phenomena in Western classical orchestral music." *Weather* 66, no. 11 (November 2011): 300-306.

Berlioz, Hector. *Treatise on Instrumentation*. Enlarged and revised by Richard Strauss. Translated by Theodore Front. New York: Edwin F. Kalmus, 1948.

Bregman, Albert S. *Auditory Scene Analysis.* London: The MIT Press, 1990.

Boulez, Pierre. "Timbre and Composition – Timbre and Language." *Contemporary Music Review* 2 no. 1 (1987): 161-171.

Cutler, Timothy S. "Orchestration and the Analysis of Tonal Music: Interaction between Orchestration and Other Musical Parameters in Selected Symphonic Compositions, c. 1785-1835." Ph.D. diss., Yale University, 2000.

Del Mar, Norman. *Anatomy of the Orchestra*. Berkeley and Los Angeles: University of California Press, 1981.

———. *Richard Strauss: A Critical Commentary on His Life and Works*. Vol. 1. London: Barrie and Rockliff, 1965.

Dolan, Emily I. *The Orchestral Revolution: Haydn and the Technologies of Timbre.* Cambridge; New York: Cambridge University Press, 2013.

Doswald, Herman K. "Nonverbal Expression in Hofmannsthal's Elektra." *The Germanic Review* 44, no. 3 (1969): 199-210.

Douglas, Chelsea. "Perceived Affect of Musical Instrument Sounds." M.A. Thesis, McGill University, 2015.

Dunsby, Jonathan. "Considerations of Texture." *Music & Letters* 70, no. 1 (Feb. 1989): 46-57.

Fales, Cornelia. "The Paradox of Timbre." *Ethnomusicology* 46 No. 1 (2002): 56-95.

Fauconnier, Gilles and Mark Turner. "Conceptual Integration Networks." *Cognitive Science* 22, no. 2 (1998): 133-187.

Gabrielsson, Alf, and Patrik N Juslin. "Emotional Expression in Music Performance: Between the Performer's Intention and the Listener's Experience." *Psychology of Music* 24, no. 1 (1996): 68-91.

Gilliam, Bryan. *Richard Strauss's Elektra: Studies in Music Genesis and Structure*. Oxford: Oxford University Press, 1996.

———. *Rounding Wagner's mountain: Richard Strauss and modern German opera.* Cambridge: Cambridge University Press, 2014.

———. "The Strauss-Hofmannsthal operas." in *The Cambridge Companion to Richard Strauss,* edited by Charles Dowell Youmans, 119-135. Cambridge; New York: Cambridge University Press, 2010.

Goodchild, Meghan. "Orchestral Gestures: Music-Theoretical Perspectives and Emotional Responses." Ph.D. diss., McGill University, 2016.

Goodchild, Meghan and Stephen McAdams. "Perceptual Processes in Orchestration." in *The Oxford Handbook of Timbre,* edited by Emily Dolan and Alexander Rehding. Oxford University Press, 2018. https://doi.org/10.1093/oxfordhb/9780190637224.001.0001.

Johnson, Randolph. "The Standard Power, and Color Model of Instrument Combination in Romantic-Era Symphonic Works." *Empirical Musicology Review* 6 No. 1 (2011): 2-19.

Johnston, Blair. "Salome's Grotesque Climax and Its Implications." *Music Theory Spectrum* 36, no. 1 (2014): 34-57.

Juslin, Patrick N. "Cue Utilization in Communication of Emotion in Music Performance: Relating Performance to Perception." *Journal of Experimental Psychology. Human Perception and Performance* 26, no. 6 (2000): 1797-1813.

Kaluzny, Wanda. "The Role of Motive in Richard Strauss's *Elektra*." M.A. Thesis, McGill University, 1984.

Kaplan, Richard A. "The Musical Language of *Elektra*: A Study in Chromatic Harmony." Ph.D. diss., University of Michigan, 1985.

Kendall, Roger A. and Edward C. Carterette. "Identification and blend of timbres as a basis for orchestration." *Contemporary Music Review* 9, Parts 1 & 2 (1993): 51-67.

Lakoff, George and Mark Johnson, *Metaphors We Live By*. Chicago: Chicago University Press, 2003.

Lembke, Sven-Amin, and Stephen McAdams. "The Role of Spectral-Envelope Characteristics in Perceptual Blending of Wind-Instrument Sounds. *Acta Acustica United with Acustica* 101 (2015): 1039-1051.

Matthews, Paul, ed. *Orchestration: An Anthology of Writings.* New York: Routledge, 2006.

McAdams, Stephen. “Musical Timbre Perception” in *The Psychology of Music*, 3rd edition, edited by Diana Deutsch, 35-67. New York: Academic Press, 2012.

McDonald, Lawrence F. “Compositional Procedures in Richard Strauss’s *Elektra.*” PhD. diss., University of Michigan, 1976.

Overhoff, Kurt. *Die Elektra-Partitur von Richard Strauss*. München: Verlag Anton Pustet Salzburg, 1978.

Puffett, Derrick, ed. *Richard Strauss: Elektra.* New York: Cambridge University Press, 1989.

Sandell, Gregory J. Winter. “Roles for Spectral Centroid and Other Factors in Determining ‘Blended’ Instrument Pairings in Orchestration.” *Music Perception* 13 No. 2 (1995): 209-246.

Strauss, Richard. *Elektra*. Libretto by Hugo von Hofmannsthal. New York: Dover Publications, Inc., 1990.

———. *Elektra*. Libretto by Hugo von Hofmannsthal. Vocal score by Carl Besl. London; New York: Boosey & Hawkes Ltd., 1943.

Strauss, Richard and Hugo von Hofmannsthal. 1974. *A working friendship; the correspondence between Richard Strauss and Hugo von Hofmannsthal.* New York: Vienna House.

Strauss, Richard. *Recollections and Reflections*. Westport, Connecticut: Greenwood Press, 1974.

Wallmark, Zachary. “A Corpus analysis of timbre semantics in orchestration treatises.” *Psychology of Music* (May 3, 2018): 1-21.

Zbikowski, Lawrence M. *Conceptualizing Music: Cognitive Structure, Theory, and Analysis.* Oxford; New York: Oxford University Press, 2002.

———. *Foundations of Musical Grammar*. New York: Oxford University Press, 2017. https://doi.org/10.1093/oso/9780190653637.003.0002.