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## Motivic Metamorphosis: Modelling Intervallic Transformations in Schoenberg's Early Works

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Music

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## Abstract

Composers can manipulate a basic musical idea in theoretically infinite ways. This concept of manipulating musical material was a central compositional philosophy of Arnold Schoenberg (1874 – 1951). As Schoenberg states, “whatever happens in a piece of music is nothing but the endless reshaping of a basic shape” (Schoenberg, [1935] 1975). It is the variety of ways in which these basic ideas, commonly termed motives, are manipulated that contributes to a work’s unique identity. According to Schoenberg, these varied basic shapes work dialogically to unify a musical piece. But *how* are these basic shapes varied?

Utilizing ordered intervals of pitch and duration, we may examine the structural properties of motivic segments which develop throughout a work. Exploring an analytical model tracking developmental transformations of melodic musical motives (shapes), this dissertation defines a robust group of intervallic transformations, equipping the analyst with a toolkit of transformational mechanisms. Applications of set-theory and other mathematically-based methodologies to Schoenberg’s post-1908 works often account for structural and motivic process. However, this is not the case for Schoenberg’s early works (1898 – 1908), where scholars typically examine form and harmony. But, as Carl Dahlhaus posits, Schoenberg thought motivically, and only detailed analyses of intervals demonstrate how motives relate to one another (Dahlhaus, 1987). Tracking such processes in Schoenberg’s early works, we come closer to understanding how new forms are created and their interrelations—how developed musical ideas emerge and are woven together to create coherence.

Defining a suite of transformational devices, this dissertation examines the treatment of varied motivic forms within two instrumental early works by Schoenberg, *Pelleas und Melisande*

op. 5 (1903) and String Quartet no. 2, op. 10 (1908). The analyses reveal developmental paths via networks which connect musical statements and quantify how one object moves *into* the next. The results demonstrate specific transformational moves which account for the manipulation of a motivic object, thereby creating subsequent forms. Such investigations permit larger connections and qualified observations to be made within the work of Schoenberg and all composers manipulating motivic forms. The resultant work engages Schoenberg's technique of musical development and investigates his motivic metamorphoses.

**Keywords:** Schoenberg, Motive, Transformation, Transformational Theory, Variation, Developing Variation, Interval, Music Analysis, Narrative, Music Networks

## Summary for Lay Audience

A motive is an idea which recurs within a piece of music, often forming the primary identity of the work; for example, the melodic line you may hum, the rhythmic hook you tap. By varying and developing these properties, composers often re-define or re-work the ideas to create different forms. These differences create variety and interest. Tracking the relationships between similar—yet different—motivic objects (pitches, rhythms, etc.), we can begin to discern how composers develop the motivic ideas within a work.

A composer of interest for tracking such processes is Arnold Schoenberg (1874 – 1951). Though motivic objects in his post-1908 compositions are well-examined thanks to the application of mathematical set-theory, we do not have a similar understanding of motivic relations within his early compositions (1898 – 1908). Examination of these compositions, however, is integral to understanding Schoenberg's compositional evolution. This dissertation develops and applies a new model to track the transformation of motives from statement to statement, allowing convergences and divergences to be identified in a manner not previously encountered. By ascribing defined transformational mechanisms which develop an object A into and object A<sup>1</sup>, relationships between musical objects can be better revealed and modelled. In previous approaches, analysts often use pitches and rhythms to compare statements. This project takes the intervallic measures between such items as the objects of study. Inspecting intervals reveals more about the quantitative structure within space, moving pitches, and rhythms to a background level.

This study utilizes two case studies, Schoenberg's *Pelleas und Melisande* op. 5 (1903) and String Quartet no. 2, op. 10 (1908). As a programmatic work (that is, having an intended

narrative) *Pelleas und Melisande* allows one to track the motivic development as it relates to character development. Schoenberg's transitional String Quartet no. 2, op. 10 on the other hand, permits the model to demonstrate how his compositional style evolved into more abstract relations. Exploring motivic objects, their similarities, divergences, and transformations lies at the heart of this project. This dissertation engages Schoenberg's technique of musical development as related to his early compositional practice and investigates his motivic metamorphoses.

## Dedication

To my family, inherited and acquired.

## Acknowledgments

The journey from my initial project idea to dissertation draft and from my first music theory seminar to my comprehensive exams is a path dotted with connections, both personal and professional. I am indebted to countless individuals and am indeed overwhelmingly grateful for the people who have supported this endeavour.

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# 1. Motivic Metamorphosis: Modelling Intervallic Transformations in Schoenberg's Early Works

## Shape Manipulation

Composers can manipulate a basic musical idea in theoretically infinite ways. Indeed, as a central compositional tenet of the influential composer and music theorist Arnold Schoenberg (1874 – 1951), he states: “whatever happens in a piece of music is nothing but the endless reshaping of a basic shape.”<sup>1</sup> These shapes, as one may imagine, can take a number of forms but one thing remains certain, it is the variety of ways in which these basic ideas—motives—are cogently transformed that contributes to a work’s unique identity.

Take, for example, the musical material shown in Figure 1.1 from Schoenberg’s String Quartet no. 2, op. 10 (1908). Drawing upon earlier thematic material, Schoenberg takes a portion of the initial statement (mm. 19 – 20) as source material which he then manipulates, varying the components of the initial segment to produce subsequently developed forms.

Figure 1.1: Schoenberg, String Quartet no. 2, op. 10/III (cello, mm. 19 – 23)



Notice that although the shapes remain similar in some respects, such as in their ascent and rhythm, there is a certain degree of reshaping the opening material which moves the form

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<sup>1</sup> Arnold Schoenberg, *Style and Idea*, ed. Leonard Stein, trans. Leo Black (London: Faber & Faber, 1975): 290. This statement originally appears in Schoenberg’s 1931 essay “Linear Counterpoint.”



through several varied statements. This is the premise of motivic development, taking a shape and reshaping certain elements to arrive at subsequent forms.

The developed forms articulated by Schoenberg are just some of the many possible outcomes that could be applied to the initial shape material. It could be likewise stylistic to continue with the alternative content proposed in Figure 1.2.<sup>2</sup> However, in his composition, Schoenberg methodically chose to incorporate the specific changes invoked in Figure 1.1. The question of why Schoenberg chose these specific forms may be concealed forever; however, we can strive to understand how Schoenberg arrived at such manipulated forms through examination of the transformations applied to such initial shape elements.

Figure 1.2: A Question of Choice: Further Developmental Options for mm. 21 – 23 of Schoenberg’s String Quartet no. 2, op. 10/III

The image displays a musical score for the bass clef of a string quartet. It is divided into five horizontal staves. The top staff is labeled 'Original' and contains the original musical notation for measures 21-23. The bottom four staves are labeled 'A', 'B', 'C', and 'D' on the left side, representing alternative developmental options. The notation includes various rhythmic values, accidentals, and articulation marks. An '8va' marking is present in the original score, indicating an octave shift. The key signature is three flats (B-flat, E-flat, A-flat).

<sup>2</sup> The alternatives presented in Figure 1.2 A – D have been generated by the author.

So, what are the motivic variations that change the form as it moves from one statement to the other and, how can we come to measure, compare, and understand these shape manipulations in a way sensitive to the original and resultant content? To approach this question is to fundamentally ask what material metamorphoses do Schoenberg's motives undergo? Seeking answers for these complex preliminary questions, this dissertation tracks motives and their development throughout two early works through a new analytical framework, revealing insight into his compositional practice of musical shape manipulation.

### Schoenberg's Shapes

From the above examples, it is clear that motives and their developments, operating as the primary shape object (or idea) of the piece, can be inspected as creating pathways of change through their variations. To be sure, creating variety rests on the premise that the composer changes specific elements within the motive which alter their form, yet simultaneously fosters similarities with previous forms. Tracking such changes between connected statements, through investigating how one object transforms into another, becomes a window into examining a compositional practice, which at its core, is nothing but the "endless reshaping of a basic shape."

In the case of Arnold Schoenberg, such tracking has been a main analytical focus when examining many of his works. To be sure, studies time and time again particularly of Schoenberg's atonal works (post-1908) have posited the strong connection between motivic units and their development, both in their capacity as structural markers and as the *modus operandi* for musical process.<sup>3</sup> Through rigorous analytical applications, investigations have often modelled

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<sup>3</sup> See, as one example, writings by Jack Boss: Jack Boss, "The 'Musical Idea' and Global Coherence in Schoenberg's Atonal and Serial Music," *Intégral* 14/15 (2000/01): 209 – 264; "'Musical Idea' and Motivic Structure in Schoenberg's Op. 11, No. 1," in *Musical Currents from the Left Coast*, ed. Jack Boss and Bruce Quaglia (Newcastle: Cambridge Scholars Publishing, 2008): 256 – 282; *Schoenberg's Atonal Music: Musical Idea, Basic*

the relationships (abstract or otherwise) between musical shapes revealing how they are woven together, each thread a site of significant connections. However, although this is predominantly true for scholarly inquiries of Schoenberg's post-1908 compositions, researchers examining his early works (1895 – 1908) often omit such rigorous treatments between relations of motivic entities. This is mainly a result of the inability of many later analytical frameworks to account for earlier, more tonal, contexts.<sup>4</sup>

In their stead, previous methodologies largely focus on other aspects of Schoenberg's early compositional style, such as harmony and form.<sup>5</sup> Where present in approaches using more quantitative strategies, the comparisons typically operate at such a high level that examining individual paths of shape developments are often overlooked.<sup>6</sup> Moreover, when discussion of motive is present in examination of Schoenberg's early works they are often approached through a more metaphoric lens, where descriptive language emphasizes the connections between

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*Image, and Specters of Tonal Function* (Cambridge: Cambridge University Press, 2019); "Schoenberg's Op. 22 Radio Talk and Developing Variation in Atonal Music," *Music Theory Spectrum* 14, no. 2 (1992): 125 – 149; "'Away with Motivic Working'? Not So Fast: Motivic Processes in Schoenberg's Op. 11, No. 3," *Music Theory Online* 21, no. 3 (2015); "An analogue to developing variation in a late atonal song of Arnold Schoenberg," PhD Dissertation, Yale University, 1991.

<sup>4</sup> Conversions of set-class, interval-class, similarity or equivalence measurement paradigms to diatonic universes/collections do not seem to mitigate the situations presented in the extended-tonal contexts of Schoenberg's transitional early practice.

<sup>5</sup> See Phillip Friedheim, "Tonality and Structure in the Early Works of Schoenberg," PhD Dissertation, New York University, 1963; Richard Swift, "Tonal Relations in Schoenberg's Verklärte Nacht," *19<sup>th</sup> Century Music* 1, no. 1 (1977): 3 – 14; Harry Ballan, "Schoenberg's Expansion of Tonality, 1899 – 1908," PhD Dissertation, Yale University, 1986; Phillip Murray Dineen, "Problems of Tonality: Schoenberg and the Concept of Tonal Expression," PhD Dissertation, Columbia University, 1988; Catherine Dale, *Tonality and Structure in Schoenberg's Second String Quartet, Op. 10* (New York: Garland Publishing, Inc., 1993); Severine Neff, *The Second String Quartet in F-Sharp minor, Opus 10*, ed. by Severine Neff, trans. by Grant Chorley (New York: W.W. Norton & Company, Inc., 2006); Julie Pedneault-Deslauriers, "'Denk an meinen Hund': Applied Subdominants and Motivic Treatment in Schoenberg's 'Warnung,' Op. 3, No. 3," *Intégral* 28/29 (2014 – 2015): 53 – 80. Catherine Dale's work, in particular, does inspect motivic forms at various pseudo-Schenkerian levels, but once again is more concerned with how they enact formal cohesion instead of the similarity relations between localized segments.

<sup>6</sup> For example, Stephen Collisson, "*Grundgestalt, Developing Variation, and Motivic Processes in the Music of Arnold Schoenberg: An Analytical Study of the String Quartets*," PhD Dissertation, King's College, University of London, 1994; Edward Carson Demmond, "Using Developing Variation to Derive Foreground and Background Relationships in the Early Atonal Works of Arnold Schoenberg," PhD Dissertation, University of Wisconsin-Madison, 1995; Michael Cherlin, *Schoenberg's Musical Imagination* (Cambridge: Cambridge University Press, 2007).

shapes.<sup>7</sup> In such orientations, a motivic shape “grows”, “extends”, or “liquidates.” While eloquent and illustrative, the qualitative nature of these investigations prompts inevitable follow-up questions centering on *how*, specifically? Thus, although a valuable approach within the literature, this qualitative strategy traditionally results in an inability to generalize or explore quantifiable connections between musical events.

As a result, investigations evaluating Schoenberg’s shape manipulations within his early works are often obliged to take one of two treatments: i) to apply, perhaps mis-appropriately so, anachronistic tools used to quantitatively examine his post-tonal works (such as set-class analysis<sup>8</sup>); or, ii) to invoke qualitative metaphors to describe development.<sup>9</sup> From my perspective neither orientation produces optimal results. In fact, many methodologies and analyses examining Schoenberg’s works of this period are limited in their reflection of the composer’s motivic dimension. I thus propose that an alternative lens must be adopted which balances these two practices to inspect and account for how motivic shapes are altered in Schoenberg’s early works.

Establishing an analytical methodology which takes ordered intervals, in pitch and duration domains, as the objects of change in motives, my model tracks local (surface-level) variations of shapes. Creating a suite of transformational mechanisms, this work offers a consistent approach into qualifiers/quantifiers of *how* Schoenberg alters his musical material. This investigation into how intervals are manipulated through particular operations motivates

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<sup>7</sup> A primary proponent of such a tactic is Walter Frisch (See Walter Frisch, *The Early Works of Arnold Schoenberg, 1893-1908* [Berkeley: University of California Press, 1993]).

<sup>8</sup> See Kyung-Eun Kim, “The Harmonic Language of Arnold Schoenberg’s Second String Quartet, op. 10,” MA Thesis, McGill University, 1990. Kim’s analyses, using set-class analysis, seem an example of a premature application of such a robust analytic tool.

<sup>9</sup> Walter Frisch’s inspections, for example.

new links between his early motivic practice with his later, more abstract, style. At its core, this project incorporates Schoenberg's compositional philosophy into the ways in which we analyze and experience his music. This approach offers a new analytical lens to interpret Schoenberg's early motivic works and their developmental processes through transformations of intervallic content. By establishing a collection of transformational moves informed by intervallic spaces and applied through network comparisons, my approach quantifies motivic object "reshapings."

## Fundamentals

Motive, development, and similarity emerge as important concepts when establishing a way into Schoenberg's music through analysis. Their meanings constitute the terms of engagement with the material itself. These ideas, however, can present challenges as terminological and conceptual entanglements pervade Schoenberg's writings and the relevant analytical and theoretic literature.<sup>10</sup> Whether dependent on Schoenberg's age or his personal reflections, class notes or issues of translation, historicism or other obstacles, to be absolute in regard to a concept's definition in studying Schoenberg is not possible. Regardless, through correspondence, marginalia, textbooks, and other writings, one can often arrive at some

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<sup>10</sup> Robert Nelson, "Schoenberg's Variation Seminar," *The Musical Quarterly* 50, no. 2 (1964): 141 – 164; David Epstein, "Schoenberg's Grundgestalt, Vol. 1," PhD Dissertation, Princeton University, 1968; Alexander Goehr, "The Theoretical Writings of Arnold Schoenberg," *Perspectives of New Music* 13, no. 2 (1975); Roy E Carter, "On Translating Schoenberg's *Harmonielehre*," *College Music Symposium* 23, no. 2 (1983): 164 – 176; Patricia Kerridge, "*Grundgestalt* and Developing Variation: Arnold Schoenberg's *Verklärte Nacht*," MA Thesis, McGill University, 1986; Michael Schiano, "Arnold Schoenberg's *Grundgestalt* and its Influence," PhD Dissertation, Brandeis University, 1992; Pieter C. Van Den Toorn, "What's in a Motive? Schoenberg and Schenker Reconsidered," *The Journal of Musicology* 14, no. 3 (1996): 370 – 399; John Covach, "Schoenberg's (Analytical) Gaze: Musical Time, The Organic Ideal, and Analytical Perspectivism," *Theory and Practice*, 42 (2017): 141 – 160; Áine Heneghan, "Schoenberg's Sentence," *Music Theory Spectrum* 40, no. 2 (Fall 2018): 179 – 207; Áine Heneghan, "Schoenberg's Fundamentals of Musical Composition: A Source Study," *Journal of the Arnold Schönberg Center* 15 (2018): 163 – 89.

relativistic constellation of meaning for most terms.<sup>11</sup> As a result, it is worth spending some time to review the ideas of motive, development, and similarity. In this first section, I briefly examine these terms in context to the dissertation content and frame. Significantly, my interpretations and use of the concepts should orient readers as they approach my methodology and deploy its tools within the case studies.

To begin, let us examine a further example where the three concepts of motive, development, and similarity interact, shown in Figure 1.3. In Schoenberg's educational example, working out ways in which to alter a motive through development, one can observe the variety of manipulations possible.<sup>12</sup> Notice, for example, the illustrations' use of transpositions, embellishments, rhythmic changes, additions of pitches, etc. What is clear from these excerpts is that variation itself, as a developmental technique to produce similar—yet distinct—forms can utilize several transformational mechanisms.<sup>13</sup>

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<sup>11</sup> In any case, the multiplicity of meanings permits more open readings and allows for the dynamic nature of his ideas and their connections to permeate the source materials. Both Áine Heneghan and Charlotte Cross have presented considerable findings of how constellations of meaning can be informed through reading many sources, particular in the realm of understanding his formal ascriptions (See Áine Heneghan, "Schoenberg's Sentence," *Music Theory Spectrum* 40, no. 2 (Fall 2018): 179 – 207; Charlotte Cross, "Three Levels of 'Idea' in Schoenberg's Thoughts and Writings," *Current Musicology* 30 (1980): 24 – 36).

<sup>12</sup> Figure 1.3 is excerpted from *Fundamentals of Musical Composition*, eds Gerald Strang and Leonard Stein (London: Faber and Faber, 1999 [St. Martin's Press, 1967]): 12 – 13.

<sup>13</sup> This method can be seen in practice in Figure 1.1.

Figure 1.3: Examples of Motivic Development, from Schoenberg's Fundamentals of Composition (1999 [1967]): 12 – 13.

12 CONSTRUCTION OF THEMES

Ex.16

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

Ex.17

Developing variations of a motive based on a broken chord

Rhythmic changes

a) b) c) d) e) f) g) h) i) j) k) l) m) n)

Ex.18

Addition of ancillary notes

a) b) c) d) e)

Ex.19

Changing the original order

a) b) c) d) e) f) g) h)

THE MOTIVE

Ex. 20

Embellishing Ex.19

a) b) c) d) e) f) g) h) i)

Across many of Schoenberg's writings he educates readers by demonstrating that motives can change through strategies such as: starting from a different tone, using almost the same intervals, changing intervals, using rhythmic alterations such as augmentation, diminutions, and ornaments, as well as phrase changes in direction, harmonic underpinnings, dynamic changes, among other devices.<sup>14</sup> In all, it is clear that motivic manipulation can include any number of defined alterations. This insight into some of the specific ways in which Schoenberg thought of, and instilled change within, his works motivates the production of a toolkit of transformational mechanisms to then apply analytically to motivic music. Defining, tracing, and relating such variances is the concern of much of this project.

As shown within his musical practice through Figure 1.1, as well as his compositional pedagogy, providing the listener with a clear series of connected shapes was important to Schoenberg.<sup>15</sup> From the successive shapes, one conceptually links various formations, providing transformational connections—where the development itself resides. Imagine, if you will, that these linking transformations may define and join objects so much so that one may generalize the mechanisms of development as the main compositional feature. Thus, tracing the similarities between the two items through their transformational processes proposes ways in which they are similar or varied at a level beyond their sounding realizations. We will return to this idea more extensively in Chapter 2. For now, it is appropriate to continue to define the interactions between the thematic concepts to be discussed throughout the dissertation.

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<sup>14</sup> Arnold Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form*, ed. Severine Neff, trans. Charlotte M. Cross and Severine Neff (Lincoln: University of Nebraska Press, 1993): 31 – 39.

<sup>15</sup> This facet is represented by Lovina Knight's recollection that Schoenberg held that "the purpose is to give the ear new pictures. I have compared music to a panorama, an unfolding series of pictures, where each picture is joined to the preceding and the following. This is the logic of music, the meaning of development" (see Lovina Knight, "Classes with Schoenberg," *Journal of the Arnold Schoenberg Institute* 13, no. 2 (November 1990): 141).



## Motive

### General Concept and Analytic Object

The motive, as a conceptual and analytical object of study, is more-or-less a fluid entity which has operated under various connotations and paradigms. Through many guises, the motive typically serves as the unit name for important segments of music. Many composers and analysts use varying qualifiers for what it may explicitly define, but here I will focus on some of its early orientations, several of Schoenberg's specific invocations, and ultimately my own conception.

As Jonathan Dunsby attests, "early analysts of motive did not have the intention merely of breaking music into its smallest components, but of examining how those components were used (poetically) to form musical structure and perceived (esthetically) as structuring."<sup>16</sup> Engaging the interaction of recurring components is seen, therefore, as a primary intention of many motivic analyses. Within early twentieth-century approaches, analysts often wielded a Schoenbergian-Rétian paradigm of ascribing metaphors of growth to bracketed segments of passages in classical music.<sup>17</sup> Breaking these brackets into components which crossover and link two statements in unique ways was a strategy to demonstrate an organicist approach to the material and how masterworks, in particular, were successful in their deployment of such affinities. However, this method of analysis by the later half of the twentieth century often presented more obstacles than observations.<sup>18</sup> In its stead, approaches starting in the 1960s

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<sup>16</sup> Jonathan Dunsby, "Thematic and Motivic Analysis," in *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (Cambridge: University of Cambridge Press, 2002): 909; These analyses can be seen in the work of Schoenberg himself as well as Rudolph Réti and other early-twentieth-century theorists.

<sup>17</sup> See Schoenberg's extensive use of the tree metaphor asserting an organic seed idea germinating and growing into many more forms. See also Réti's use of language qualifiers in his influential, yet highly criticized work, *The Thematic Process in Music* (New York: The Macmillan Company, 1951).

<sup>18</sup> John Covach, "The Schönberg Analytical Legacy: Rudolph Réti and Thematic Transformation," *Journal of the Arnold Schönberg Center* 16 (2019): 103.

centered on inspecting quantifiable content such as interval vectors, basic interval patterns, pitch-class sets, among other abstractions.<sup>19</sup> Replacing metaphoric comparisons of components with more rigorous and typically abstract tools can be observed through the motivic analyses deployed upon much of Schoenberg's post-1908 music. From Allen Forte's set-theoretical approach (1973, 1978), Robert Morris's similarity indexes (1979), Joseph Straus's voice-leading graphs (1997, 2003, 2005), to Lewin's interval-transformation paradigm (1959, 1968, 1973, 1977, 1987) and beyond, a framing of motive as suggesting structure/structural relations, whether hierarchal or abstract, lies at the heart of the tradition inspecting Schoenberg's works. The shift to examining the motivic object in more objective terms within compositions of the early twentieth century secured the analytical engagement of the motive for much of the last few decades. This has, however, resulted in analyses that deal with abstract relations to the sole exclusion of the surface-level, experiential phenomenon. As James Wright suggests, this produces a radically formalist branch which may have "'out-Schoenberged' Schoenberg by applying set-theory without regard for empirical concerns."<sup>20</sup> The realigned focus to the post-tonal repertoire in its expression of abstract connections thus created a collection of early works which were overlooked in their motivic-realm as they did not fall into Schoenberg's fully atonal style.

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<sup>19</sup> See, for example, David Lewin, "Re: The Intervallic Content of a Collection of Notes," *Journal of Music Theory* 3, no. 2 (1959): 298 – 301; Allen Forte, "The Basic Interval Patterns," *Journal of Music Theory* 17, no. 2 (1973): 234 – 272; Richard Chrisman, "Describing Structural Aspects of Pitch-Sets Using Successive-Interval Arrays," *Journal of Music Theory* 21, no. 1 (1977): 1 – 28; William Benjamin, "Ideas of Order in Motivic Music," *Music Theory Spectrum* 1 (1979): 23 – 34. Additionally, perspectives focusing on comparative and historic understandings also came to the foreground, for example as opposing positionings between Heinrich Schenker and Arnold Schoenberg. See for example, Jairo Moreno, "Schenker's Parallelisms, Schoenberg's Motive, and Referential Motives: Notes on Pluralistic Analysis," *College Music Symposium* 41 (2001): 91 – 111; Pieter C. Van Den Toorn, "What's in a Motive? Schoenberg and Schenker Reconsidered," *The Journal of Musicology* 14, no. 3 (1996): 370 – 399.

<sup>20</sup> James Wright, *Schoenberg, Wittgenstein and the Vienna Circle*, 2<sup>nd</sup> ed. (New York: Peter Lang, 2007): 124.

As Joel Lester comments, music of this more modern orientation moved ideas of tonal voice leading and harmony to a background level and “... in their place, motivic relationship[s] among groups of pitches” were the aspects which “generate melody and harmony.”<sup>21</sup> Lester continues that “analysis of this music entails locating these motives and understanding the way they are used.”<sup>22</sup> Thus, to interpret and analyze the music of Schoenberg, even in his transitional period, is to take the motive as the key analytical object. In many orientations and applications, however, scholars relinquished their positioning as applicable and sympathetic to Schoenberg’s early concept of motive, favouring tools that understand motive in his atonal works from abstract perspectives. As a result, recent paradigms which inspect Schoenberg’s use of motives operate almost exclusively on atonal works within his repertoire and have, in their methodologies, detached themselves from the tangible surface-level soundings of motive and their relations. Understanding motive, as not just an abstract entity, but a function of relations within Schoenberg’s conception, is vital to repositioning future scholarly engagement. So, what is a motive to Schoenberg?

### Schoenberg’s Motive

One may excerpt fundamental concepts of motive from various writings by Schoenberg.<sup>23</sup> Here, I present a sampling of explanations toward a definition of motive as well as its function. There are indeed many more examples that can be drawn from the literature; however, the

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<sup>21</sup> Joel Lester, *Analytical Approaches to 20<sup>th</sup> Century Music* (New York: W. W. Norton & Company, 1988): 9 – 10.

<sup>22</sup> Ibid.

<sup>23</sup> See for example, *Models for Beginners in Composition* (2017 [1943]), *Fundamentals of Musical Composition* (1999 [1967]), *The Musical Idea and The Logic, Technique, and Art of its Presentation* (1995), *Coherence, Counterpoint, Instrumentation, Instruction in Form* [*Zusammenhang, Kontrapunkt, Instrumentation, Formenlehre*] (1917 [1993]), *Style and Idea: Selected Writings of Arnold Schoenberg* (1975), *Theory of Harmony* (1911 [1978]).

following will serve to concisely ground the context moving forward. Further commentary on Schoenberg and motive exists in the writings of Alban Berg, Jack Boss, Stephen Collisson, Severine Neff, and others.

In the treatise *Coherence, Counterpoint, Instrumentation, Instruction in Form* (1917), Schoenberg goes as far as to say that a motive “is capable of creating the impression that it is the material of the piece.”<sup>24</sup> In more specific—yet, certainly still general terms—Schoenberg asserts that the features of a “motive are intervals and rhythms, combined to produce a memorable shape or contour...”<sup>25</sup> In such a high-level positioning, this means that a motive can be one of the smallest<sup>26</sup> building-blocks of a composition, while simultaneously allowing for larger constructions.<sup>27</sup> A definition formed through such general terms provides the motivic space to be almost anything.<sup>28</sup> A significant part of the conceptual elegance of the term motive, however, lies less within what it *is* and more in its *function*. First, as a metaphoric abstraction of the “greatest common factors” shared between segments.<sup>29</sup> A conglomeration of elements into essentials demonstrates Schoenberg’s affinity to think about the expressive potential among similarities

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<sup>24</sup> This “treatise” is more an editorial combination of Schoenberg’s early compositional philosophy and groundings. See the introductory comments by the editors for further context as well as a review by Alfred Cramer (Alfred Cramer, review of *Coherence, Counterpoint, Instrumentation, Instruction in Form = Zusammenhang, Kontrapunkt, Instrumentation, Formenlehre* by Arnold Schoenberg, Severine Neff and Charlotte M. Cross and *The Musical Idea and the Logic, Technique, and Art of Its Presentation* by Arnold Schoenberg, Patricia Carpenter and Severine Neff. *Music Theory Spectrum* 19, no. 1 (1997): 87 – 92); Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form*, 30 – 31. This assertion presents obvious issues regarding the presence to multiple motivic forms.

<sup>25</sup> Schoenberg, *Fundamentals of Musical Composition*, 8.

<sup>26</sup> See Schoenberg, *Style and Idea: Selected Writings of Arnold Schoenberg*, 249; See also Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form* where Schoenberg states: “... Since the *motive* turns out to be the smallest part (smallest common denominator) of a piece of music...” (25).

<sup>27</sup> Such a relating of “motive” to theme, or idea suggests inevitably suggests a hierarchal scheme which is where notions of *Urmotiv* or *Grundgestalt* fall within as examples of the highest abstract idea.

<sup>28</sup> In another source, Schoenberg generally states the generality that “a motive is something that gives rise to a motion... one can compare the motive with a driving force.” (Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form*, 27). Such a general positioning while intriguing in the sense of a more philosophical, meta-understanding, is not as informative as other definitions by Schoenberg on this subject.

<sup>29</sup> Also known as “smallest common multiple” within the literature (see Collisson, 62 and/or Schoenberg, *Fundamentals of Musical Composition*, 8).

between objects and their forms. This promotes a second function, which is a motive's use to promote unity, relations (similarities and differences), coherence, comprehensibility, and logic.<sup>30</sup> As a result, the relationship between motivic statements becomes a primary vehicle for musical meaning and expression.<sup>31</sup> The motive is, in essence then, both a unit and a considered relation.

In a larger sense, Schoenberg further imparts the idea that repetition of, or variation on units indicates their function as asserting motivic significance.<sup>32</sup> Elaborating on such structures, at both the complete segment and elemental level, permit motivic uniformity and identity to be examined within a piece. That is, working with a motive (whether repeated or varied) is to utilize materials which “may be traced back [to original forms]” and attains a “unity of configurations, [a] unity of ideas” within a work.<sup>33</sup>

It should be noted that notions of motive should not be conflated with *Gedanke* (idea), nor the *Grundgestalt* (basic shape).<sup>34</sup> The difference, in essentials, being that the idea of motive is more fluid and ubiquitous within a compositional setting. There may be multiple motivic elements that permutate, emerge, or change throughout the course of a composition, whereas the terms *Gedanke* and *Grundgestalt* largely refer to fixed (if fuzzy) objects. *Gedanke*, at times synonymous with *Gestalt* (as a signifier of a specific shape idea in the Schoenbergian sense) represents a presentation of a characteristic that does not change.<sup>35</sup> Further, Michael Schiano

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<sup>30</sup> Schoenberg, *Fundamentals of Musical Composition*, 8.

<sup>31</sup> It should be noted that motive, and *Gestalt* (as a signifier of shape in the Schoenbergian sense) are different entities. The latter is a higher-order presentation of a characteristic that does not change. See Schoenberg *Fundamentals of Musical Composition*, 8; Demmond, 24.

<sup>32</sup> Schoenberg, *Fundamentals of Musical Composition*, 9.

<sup>33</sup> Schoenberg, *Style and Idea: Selected Writings of Arnold Schoenberg*, 249.

<sup>34</sup> Scholarship around “musical idea” within Schoenberg’s compositional philosophy and practice can be readily drawn from the works of Patricia Carpenter and her students. See Patricia Carpenter, “Grundgestalt as Tonal Function,” *Music Theory Spectrum* 5 (1983): 15 – 38; “Schoenberg's Philosophy of Composition,” in *The Arnold Schoenberg Companion*, ed. Walter B. Bailey (Westport, CT: Greenwood Publishing Group, (1998)): 209 – 222.

<sup>35</sup> Schoenberg, *Fundamentals of Musical Composition*, 8.

posits a distinction between *Grundgestalt* and motive in a clear manner which suggests motive, “is perhaps synonymous with the *Grundgestalt* or at least one form that the *Grundgestalt* might take.”<sup>36</sup> This means that in some cases the *Grundgestalt* has the capacity to be both a motive, as well as the base Motive for the entire piece (emphasis on capital “M” intended).<sup>37</sup> That is, there can be embedded motives (shapes) within the *Grundgestalt* which themselves are varied through transformations but the idea of the *Grundgestalt* itself is often fixed as the first instantiation of the totality of the material for the piece.<sup>38</sup> Furthermore, the musical idea or *Gedanke* is often held to be more of a tonal problem and solution dialectic which creates a larger narrative over the course of a work. There are, of course, further exceptions and qualifiers to this essential summary formation.

Overall, it is clear that a motive, at its core, is a unit that at many possible levels of length and abstraction forms meaningful segments that are both repeated and developed.<sup>39</sup> It is an entity that creates shared attributes across passages which signifies conformance to, or divergence from an established basic idea. It is simultaneously a specific and general phenomenon that operates at varying levels of perception and experience and has a multiplicity of identities. Returning to Figure 1.3, one can notice that the motive is clearly labelled in the first measure and it is this unit-idea which receives subsequent alteration, yet remains in essence, a functionally recognizable form through similarity relations.

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<sup>36</sup> Schiano, 46.

<sup>37</sup> Ibid. Severine Neff’s identification of *Urmotiv* is of similar orientation. See Neff, “Aspects of Grundgestalt in Schoenberg’s First String Quartet, op. 7,” *Theory and Practice* 9 (1984): 17 – 18. Additionally, see Jack Boss’s discussion of ‘Idea’ in *Schoenberg’s Twelve-Tone Music: Symmetry and the Musical Idea* (Cambridge: Cambridge University Press, 2014): especially page 20.

<sup>38</sup> See Neff, “Aspects of Grundgestalt in Schoenberg’s First String Quartet, op. 7,” 17 – 18.

<sup>39</sup> Matthew Arndt’s discussion that “motives and their forms are prototype-driven categories whose prototype are bundles of abstract ‘features’ or concrete ‘elements’” and subsequent situation within Schoenberg’s thinking is another way into the motive as object. See Matthew Arndt, “Toward a Renovation of Motivic Analysis: Corrupt Organicism in Berg’s Piano Sonata Op. 1,” *Theory and Practice* 42 (2017): 108.

Motive, in Schoenberg's view and the literature applied to his works, takes on multiple levels of meanings at different times. Through one interpretation, Carl Dahlhaus remarks on Schoenberg's significant reinvention of the motive:

...Schoenberg radically transformed the concept of motif [sic], which derived from the tradition of Beethoven and Brahms. To be sure, the idea of a vertical or harmonic motif was anticipated vaguely and sporadically in Wagner's late music dramas; but in the form that Schoenberg gave to it, it signifies a qualitative leap in musical thought. The principle of explaining and treating chords as motifs, as if they were sequences of notes projected in another direction, appears as the solution to a problem which had been caused by the emancipation of the dissonance.<sup>40</sup>

Here, Dahlhaus points to an orientation which suggests the motive as a different proposition altogether in Schoenberg's works as compared to earlier composers.<sup>41</sup> His reorientation of the motive to be the treatment of notes projected in an inferred horizontal direction (as opposed to harmonically-based or vertically-oriented schemes) demonstrates the conceptual shift of motive. Now motives can impart meaning through their intervals temporally spun out in space and time.

The current work builds upon Schoenberg's essential formation of motive that proposes a general definition of "motive" as any referential melodic or rhythmic unit. Comparing the unit as the site of musical development, one is able to trace its path within a piece.

### Motive, Definition Employed

For the purposes of this project, I define motive as a recurring segment of a set of musical features (specific pitch relations, durations, intervals<sup>42</sup>) that produce associative relationships and

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<sup>40</sup> Carl Dahlhaus, *Schoenberg and the New Music*, trans. Derrick Puffet and Alfred Clayton (Cambridge: Cambridge University Press, 1987): 164.

<sup>41</sup> I acknowledge that this specific suggestion is Dahlhaus's view on non-tonal entities, but nonetheless grant the excerpt as applicable to motives throughout Schoenberg's compositions and compositional imagination.

<sup>42</sup> This project will specifically investigate intervals of pitch and duration elements as defining motivic objects; however, motives certainly exist in other regards. For example, timbral associations, registral soundings,

permit a significant unit identity for the listener. The intent of this definition is to provide a general, yet constructive, paradigm in which the analyst can be permitted to treat motives as contextual, as required within the source. Purposefully, the definition does not restrict or define segmentation strategies to be employed, nor length of segment. It further promotes sensitivity to associative relations significant to individual listening strategies. In Chapter 2 some qualification will be discussed in regard to privileging comparisons between motivic units, based on “like”-ness through *Gestalt* principles. This element is functionally based upon relations rather than identity itself.

Since a motive, by my reference and definition, can be construed as a meaningful recurring segment, what will this project specifically examine? What constituent elements of a motive provide information so that the segments can be set in relief for contrast and comparison? Simply put, the answer lies within ordered intervals. We must first, however, turn our attention to the meaning of development and similarity before examining the objects which will bring these terms into dialogue.

## Variation

As mentioned, in developing motivic content within a work, composers must—by definition—change its component features to some degree. Such changes, as modelled in Figure 1.3, naturally produce a variety of forms. Through modification, the motive’s components are altered so that they resemble, or are similar to, a previous form, but are not one and the same. To more precisely compare the processes which take the objects from one form to the next, we must

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textual markers, or harmonic signifiers. Further work on ascribing intervallic labels to such parameters may produce promising results.



orient our concept of what it means to vary a musical idea. Let us first examine Schoenberg's writings on the matter.

Within his *Models for Beginners in Composition*, Schoenberg asserts: "variation is that kind of repetition which changes some of the features of a unit, motif, phrase, segment, section, or a larger part, but preserves others."<sup>43</sup> Whether this is through the addition or removal of new elements, changes to the intervallic values themselves, or altering the order, among other transformational devices, this change is manifested as differentiation from a source. Although speaking specifically to developing variation (which we will examine shortly), Jack Boss mentions, "each variation" carried out "serves as an index of remoteness from the original motive."<sup>44</sup> Thus, to understand motive through its varying forms and shapes, one must establish what it means to develop a motive's repetitions and the threshold for cohesion or similarity.

For Schoenberg, variation itself is a certain kind of repetition. In two instances, he clarifies two types of variation forms. *Coherence, Counterpoint, Instrumentation, Instruction in Form* suggests an ornamental versus developing variation classification:

One can distinguish two methods of varying a motive. With the first, the variations usually seem to have nothing more than an *ornamental* purpose; they appear in order to create variety and often disappear without a trace (seldom without the second method!!).

The second method can be termed *developing variation*. The changes proceed more or less directly toward the goal of allowing new ideas to arise.<sup>45</sup>

In this positioning, it is clear that developing variation (explored more below) is a more extreme form of change, one that moves beyond ornamentation to create a unique, original segment. The

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<sup>43</sup> Schoenberg, *Models for Beginners in Composition*, ed. and trans. by Gordon Root (Oxford: Oxford University Press, 2017 [G. Schirmer, 1943]): 15.

<sup>44</sup> Boss, "Schoenberg's Op. 22 Radio Talk," 130.

<sup>45</sup> Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form*, 33.

excerpt seems to further suggest that variation as ornamentation is more superfluous in its function, that it is not as critical or important to the development of ideas. Another observation within the passage demonstrates Schoenberg's deliberate avoidance of listing just how this ornamentation might occur; that is, what mechanisms are involved in creating variety.

In another instance, Schoenberg distinguishes between exact and modified repetitions:

*Exact repetitions* preserve all features and relationships. Transpositions to a different degree, inversions, retrogrades, diminutions, and augmentations are exact repetitions if they preserve strictly the features and note relations.

*Modified repetitions* are created through variation. They provide variety and produce new material (motive-forms) for subsequent use. Some variations, however, are merely local 'variants' and have little or no influence on the continuation.<sup>46</sup>

Once again, dissecting this basic positioning is important. First, notice that preserving "features" and "note relations" is the main qualifier of exact repetitions in his thinking. This is somewhat problematic given that order changes (retrogrades, for example) do unfold differently than prime forms, even if their abstract interval relations are unchanged. Further, diminutions and augmentations of note values are certainly a kind of development, just in the duration domain, as opposed to Schoenberg's pitch-centric thinking here. As a result, variations which are "exact repetitions" can be observed not as exact in the purest sense of the word, but of a higher-order relation than his opposing modified repetition view. Second, modified repetitions can produce both new forms and/or local variants (elements which elsewhere he identifies as ornaments). In this sense, it is perhaps difficult to maintain that a repetition can produce a new entity because development as repetition is traditionally a process that preserves, not differentiates. Moreover, to discredit the "local" changes as non-fundamental places an overemphasis on larger structural

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<sup>46</sup> Schoenberg, *Fundamentals of Musical Composition*, 9.

changes and diminishes the idea that small, subtle alterations can produce meaningful associations which can impact the listening experience. Evidently there are some conceptual dissonances within this view.

This structure of variation is not to be confused with the specific meaning of the related technique of *developing variation*.<sup>47</sup> Although both work from the idea that a structure transforms, the former proposes that an identity relation remains consistent and that the same form (ontologically speaking) is altered, yet well-connected. Developing variation, on the other hand, promotes the emergence of a new, independent idea connected more abstractly through several degrees of separation with its source (perhaps a nod to the approach of “becoming”). That is, developing variation, as a practice, works to create new musical ideas which are connected to previous ones through a series of logical relations, but do not in themselves warrant a 1:1 connection to all elements of the previous forms. Consequently, a motive altered through developing variation promotes original structures that are unlike the previous forms in enough characteristics that they begin to take on their own identity and connotations.

In this work, I shall set aside the specific conceptual paradigm of developing variation as the study herein is more concerned with the development of motivic objects that share higher-order similarities and whose connections are more tangible (surface-level).<sup>48</sup> My work insists on more local 1:1 relations and is steadfastly interested in the variation of motivic objects as a constellation of moves tightly connected to one another through transformations that leave the

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<sup>47</sup> See Dahlhaus for an introduction to the technique (Dahlhaus, “What is ‘developing variation’,” in *Schoenberg and the New Music Schoenberg and the New Music*, trans. Derrick Puffet and Alfred Clayton (Cambridge: Cambridge University Press, 1987): 128 – 133. For more preliminary information on the historic and contextual connotations of the term developing variation see Collisson (1994), Demmond (1995), Frisch (1982), Kerridge (1986), and Nelson (1964).

<sup>48</sup> The scale that I motivate within this project remains a degree behind positing the more abstract relations of two differing objects connected through a series of actions.

source identity intact. Here, I am concerned with the interactions and connections of two motivic forms. Thus, variations for my purposes can be construed as transformational mechanisms which perform operations on source material resulting in developed forms that, although different from the source material in some ways, have some degree of consistent elemental similarity.

As a result, variation can be seen as a modified repetition of motivic forms through various strategies (ornamental or otherwise). The production of novel statements is still, however, highly related to the original motive and can be viewed (and heard) as repetitions of the basic shape idea. A student of Schoenberg, Lovina Knight, states "...the process of development and elaboration is through introducing as much new material as possible, material which, though new, has subtly grown out of the material preceding it, related to the idea as a whole, to the other parts, and to the original themes."<sup>49</sup> The function of variation is therefore to produce successive form constructions which are still connected to discrete original or source forms. An understanding of similarity is therefore warranted.

## Similarity

Comparing two motivic objects and the degree of similarity between them is the core practice of the analytical work on shape manipulations proposed here. As a function which relays both convergences and divergences in elemental content or comparison between two objects, similarity is a useful gauge for understanding processes which may link the entities. The motive, as has been described, is as much about the relations, connections, and comparative contexts it exists within as it is the primary connection of notes on the page. Dissecting the relations through comparing the similarity of two or more objects permits one to examine the musical material in a

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<sup>49</sup> Knight, 141.

more enlightened manner, an oppositional positioning to the sign-posting analyses of form theories, and engages a more processual driven inquiry.

Briefly, for Schoenberg, similarity means “partial identity, partial difference.”<sup>50</sup> Through the recognition of “like parts” as well as the discerning of “dissimilar parts”, one arrives at the basis of change and variation.<sup>51</sup> Taking such a stance on tracing variation through comparison of similar objects fosters an environment which both locates and describes musical process. Similarity measurements of recent theories often deal with abstract entities and rests on calculations which result in a numerical product, saying less about the surface-similarities and more about the mathematical degree of similarity.<sup>52</sup> In this project, I take a more contemporaneous perspective on similarity, through the invocation of *Gestalt Psychology* principles—not to be confused with Schoenbergian *Gestalten*.<sup>53</sup> I motivate a foundation of likeness which operates on the principles of proximity, similarity, common-fate, closure, good curve, and past experience.<sup>54</sup> A definitive segmentation strategy (which is in itself a manner of viewing similarity and dissimilarity) is not pursued within this work as my approach is based more on my own musical intuition and experience. Gestalt principles further offer useful

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<sup>50</sup> Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form*, 11.

<sup>51</sup> *Ibid.*, 21.

<sup>52</sup> For example, Michael Buchler, “Relative Saturation of Subsets and Interval Cycles as a Means for Determining Set-Class Similarity,” PhD Dissertation, University of Rochester, 1998; Eric Isaacson, “Similarity of Interval Class Content between Pitch-Class Sets: The IcVSIM Relation,” *Journal of Music Theory* 34, no. 1 (1990): 1 – 28; Robert Morris, “A Similarity Index for Pitch-Class Sets,” *Perspectives of New Music* 18, no. 1 (1979-80): 445 – 460; Dmitri Tymoczko, “Set-Class Similarity, Voice Leading, and the Fourier Transform,” *Journal of Music Theory* 52, no. 2 (2008): 251 – 272.

<sup>53</sup> Christian von Ehrenfels, “Gestaltqualitäten,” *Vierteljahrsschr. f. wiss. Philosophie* 14 (1890): 249 – 292. [Reprinted in Ferdinand Weinhandl (Ed.), *Gestalthafes Sehen* (Darmstadt: Wissench. Buchges., 1960).]; For a translation see Barry Smith, “Christian von Ehrenfels I: On the Theory of Gestalt,” in *Austrian Philosophy: The Legacy of Franz Brentano* (Chicago: Open Court Publishing Company, 1994): 244 – 284; For a detailed discussion of the influence and role of Gestalt psychology in German culture see Mitchell Ash, *Gestalt Psychology in German Culture 1890 – 1967* (Cambridge: Cambridge University Press, 1998).

<sup>54</sup> These elements are the typical elements of the fields components which allow for shape comparison and relations to arise. This concept will be discussed further in Chapter 2. By most accounts there are some nomenclature differences between early Gestalt psychologists, however, the conceptual orientation of the definitions and characteristics remain consistent despite semantic variation.

assistance in aligning the segmentation practice with the thought of the times. Such an open strategy allows for future studies to engage a number of varying approaches to segmentation and comparison that may vary from the structures presented.<sup>55</sup> In all, there is little need to define specific strategies of segmentation operations performed within my case studies as the task is centered on my perception of shapes and their interactions. Several segmentation strategies, if wielded consistently, should produce similar results.

When observing the aspects which are similar between two motivic objects a fundamental premise must be remembered: in motivic generation, we know that the notes themselves are going to change—that is the whole point of development. Tracing change through alterations of specific pitches or rhythms is therefore not especially helpful or necessarily meaningful as their changes do not reveal structural alterations. As I will soon illustrate, tracking similarities and differences in their generic ordered interval structures will reveal significant manipulation to the form itself. As a result, models sensitive to intervallic understandings of pitch and duration relations possess the ability to generalize the transformational processes beyond the surface soundings. Similarity between motivic segments is a measure that is most meaningfully utilized through the lens of intervals.

### Intervals as Objects: Tracking Motivic Forms Across Variants

To track a motive and its variation (as a function of its conformance or divergence to a previous form) requires the inspection of a particular analytical object. The motive itself can only be thought of as a high-order form composed of constituent parts that sum to make the whole

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<sup>55</sup> For example, theories such as Dora Hanninen, *A Theory of Music Analysis: On Segmentation and Associative Organization* (Rochester: University of Rochester Press, 2012); or, Christopher Hasty, “Segmentation and Process in Post-Tonal Music,” *Music Theory Spectrum* 3 (1981): 54 – 73.

idea. To understand motive through its alterations and component changes, one must take an object that reveals structural shape changes in a consistent manner. As has been suggested, the quantifiable relational environment provided within the concept of an ordered interval promotes such an avenue of comparison.<sup>56</sup> Though many scholars examine several of Schoenberg's works through ostensibly intervallic means, few of them take the ordered interval as the main analytic object of his early compositions.<sup>57</sup> An interval, as any measured distance between two points/attributes or assigned length value, allows spaces to be modelled in ways which are not biased to perceived differences of points themselves, but rather permits generic structural features to be identified, set in relief to their signifiers.

William Benjamin, in his 1979 article "Ideas of Order in Motivic Music," discusses the notion that a music theory contains two components. "The first," he says "is an abstract network of extremely general bases for asserting musical coherence; this, in effect, its technology."<sup>58</sup> "The second," he continues "consists of constraints which govern the invocation of these generalities in music-analytical activity."<sup>59</sup> My work takes the interval, a "theoretical blind spot" to quote Carl Dahlhaus, as the technology that promotes a general basis for asserting claims about musical objects, here motives.<sup>60</sup> Through the use of ordered intervals (defined more thoroughly in Chapter 2), my project utilizes a suite of transformational mechanisms which define specific conditions that alter motivic forms from one statement to the next. Utilizing intervals allows general connections to be drawn between similar structural objects. My

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<sup>56</sup> An ordered interval, as a general principle, can exist in any musical domain and is chiefly concerned with a defined distance and a consistent orthography. For example, I will use the term (well-defined in Chapter 2) to refer to, at times, ordered pitch intervals and ordered temporal intervals (durations).

<sup>57</sup> Analyses of Schoenberg's later works often take the unordered interval set/collection as the main grouping for inspection.

<sup>58</sup> William Benjamin, "Ideas of Order in Motivic Music," *Music Theory Spectrum* 1 (1979): 24.

<sup>59</sup> *Ibid.*

<sup>60</sup> Dahlhaus, 64.

modelling of motive and its variation, although simple in premise, presents a theoretical and practical means to examine music which at its core focuses on the manipulation of intervals, on the variation of motivic objects. The relation between interval and motive can thus be drawn as such: a motive can be defined as a series of intervallic units of any domain that plays a role in musical parsing and relative meaning.

I have spent some time defining motive, variation, similarity, and intervals-as-objects as they are primary ideas which intersect many of the fundamental assumptions and questions pertaining to the forthcoming research endeavour. An orientation to their meanings and usage allows the reader to more fully grasp the context of engagement and the impact of the findings themselves. Extensive supplementary literature exists on each concept. Without further delay outlining their deployment within this project will commence.

### Research Questions *or* Intervallic Insights: Schoenberg's Early Music Reconsidered

My primary research question for this study in its simplest form posits: how does Schoenberg manipulate and develop his motives in his early works? Approaching this overarching question promotes several further inquiries. Firstly, what does it mean to track a motive in Schoenberg's compositions and what are the objects under inspection? Here, I promote an understanding sympathetic to Schoenberg's assertions and expressions in his theoretical, teaching, and other documents which demonstrate that intervals (in their broadest understanding) are at the forefront of Schoenberg's "object" orientation. Secondly, how can we quantitatively measure and describe the operations used to vary motivic content? As purely harmonic, formal, set-class, voice-leading, or other individual methodologies have shortcomings within their treatments of such a repertoire, what analytical tools can foster new insights? Can we define a



standardized set of transformational mechanisms that would help to account for such processes? The results of this line of inquiry is the concern of Chapter 2 and suggests a novel approach. Thirdly, what can tracing such motivic process tell us about Schoenberg's craft? Upon inspection of transformational procedures, are we able to gain further insights that relate to other compositional considerations, such as form or narrative? Such a question is deeply apparent in the exploration of *Pelleas und Melisande* op. 5 (Chapter 3) where I focus on the programmatic implications of reading localized transformations. Moreover, implications of this question in relation to conceptions of musical objects themselves are palpable as one progresses through the transitional work String Quartet no. 2, op. 10 (1908). In Chapter 4 the application of the developed methodology demonstrates departures from his more normative proceedings of linked concrete ideas and indeed reveals the breakthrough moments whereby abstract forms begin to assert the relations more fundamentally. Such implications ask, can we foster an examination of stylistic tendencies or growth within his practice through such explorations? These research questions, among other supplementary investigations, support a main objective: understanding motivic variation and the mechanisms of transformation in Schoenberg's early compositional practice.

## Outline and Chapter Summaries

In broad strokes, this project develops a methodology for inspecting intervallic content and development between surface-level motivic statements, which is consequently applied to two works from Arnold Schoenberg's early compositional output, *Pelleas und Melisande* (1903) and String Quartet no. 2, op. 10 (1908). The introductory portions of each main chapter will delve more specifically into the relevant literature as required. Chapter 2 presents the methodological framework which can be implemented to inspect motive in any work where examination of

forms through comparison is sought.<sup>61</sup> This novel approach, developed with Schoenberg's early works in mind, is applied to case studies from his early works, presented in Chapters 3 and 4. Chapter 3 examines how motivic transformations assist in connecting programmatic ideas in *Pelleas und Melisande* and how such mechanisms can hold programmatic significance, buttressing existing narrative descriptions and associative meanings. Chapter 4 presents an in-depth exploration of the role transformations play in manipulating objects within Schoenberg's String Quartet no. 2, op. 10 and focuses on how discrete moves appear intentional from a compositional perspective. The chapter further demonstrates the progressive move from clear surface-level connections to more blurred abstract relations, representative of Schoenberg's transitional thinking. Such orientation promotes the interval as the linking characteristic between his two practices. Chapter summaries below discuss each chapter in further detail.

## Chapter 2: Analytical Model

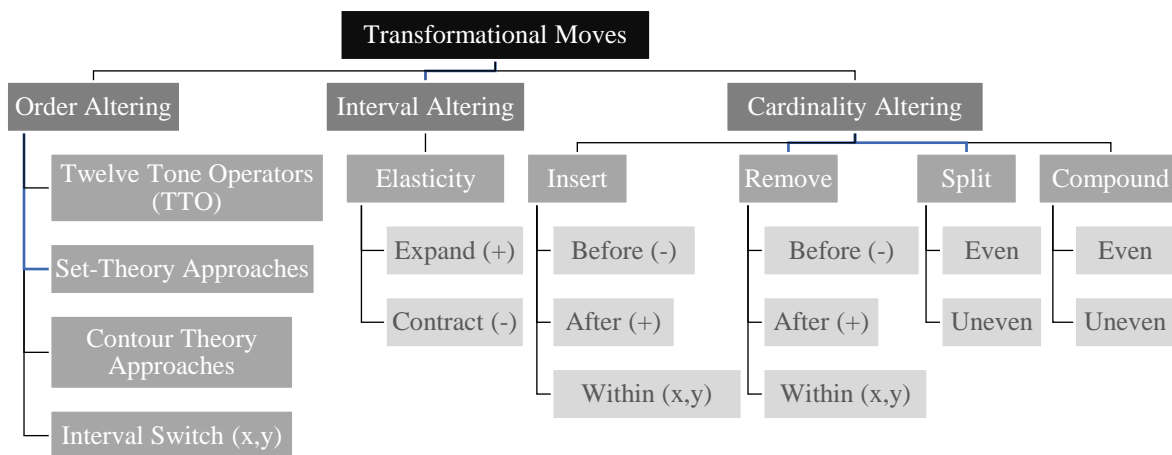
Insights into a piece of music can be approached through the application of various analytical paradigms, however, frameworks constructed for specific research questions lend a nuanced approach to understanding a compositional method or practice. Though previous analytical forays into Schoenberg's early works have posited and answered certain questions, such as harmonic language, text relationships, formal procedures, et cetera, my specific research questions pertaining to *how* Schoenberg re-works his motivic material are often overlooked. This issue, in combination with the fact that the typical lenses to examine such questions are anachronistic to a certain degree or less rigorous than desired, has prompted the development of my own methodology.

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<sup>61</sup> To be sure, the tool is flexible enough to be redefined to fit certain collection orientations and to be extended and developed beyond its fundamental mechanisms.

To be sure, previous modes of inquiry into motive in early Schoenberg tend to focus either on qualitative descriptors, such as Walter Frisch’s *The Early Works of Arnold Schoenberg* (1993), or on generalized systems and abstract spaces, such as voice-leading paradigms (Morris, 1998; Straus, 1997, 2003, 2005; and Tymoczko, 2008).<sup>62</sup> My framework finds a balance between these practices, re-envisioning Schoenberg’s developmental processes as constituted by, and transformed through, relationships among both pitch and duration intervals. In this pursuit, I establish three specific categories of motivic development: order-altering, interval-altering, and cardinality-altering. As shown in Figure 1.4, the model categorizes various moves under these three broad streams. Each category enables certain defined moves, described in detail within Chapter 2. The collection of transformations results in a terminological and operational toolkit which is then applied to the interval node connections between two motivic objects, labelling the change in defined ways. Such an application generates a general approach to how motives are changed in relation to one another and promotes understandings of process.

Figure 1.4: Summary of Transformational Mechanisms

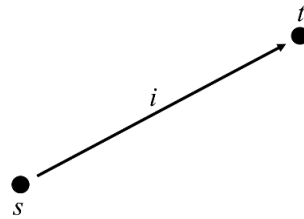


<sup>62</sup> The work of Frisch (1993) seems to be influenced by the methodological approach of Rudolph R  ti’s work, *Thematic Process in Music* (1951). Both heavily rely on the inclusion of language descriptors and metaphoric understandings. The non-specifics of R  ti’s approach has been critically evaluated by Leonard Meyer (1973, 59 – 67) and Nicholas Cook (1987, 89 – 115) with a main criticism levied as a lack of defined terminology.

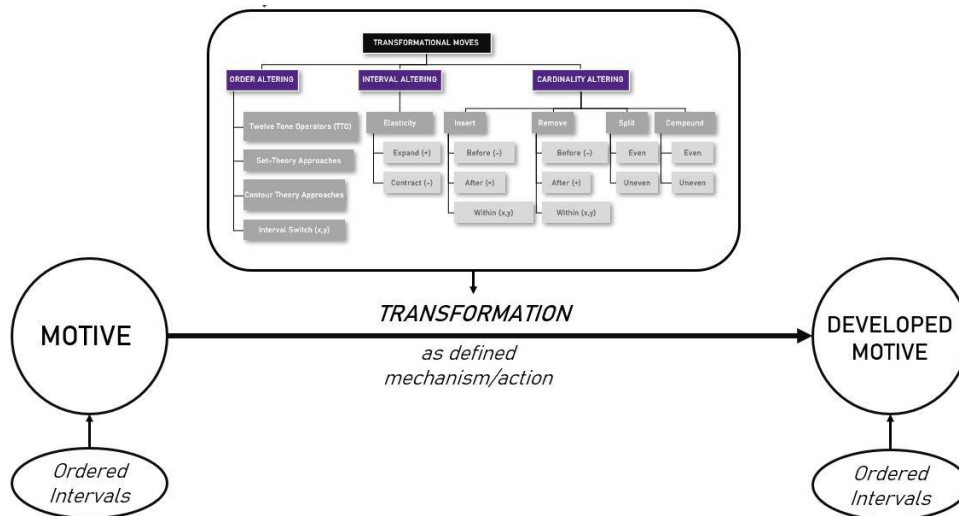
This system of change-enacting or mechanistic alterations between two objects lies at the heart of the Lewinian idea of transformation.<sup>63</sup> His motivation of tracking the change from objects  $s$  to  $t$  through  $i$  is fundamental to the endeavor encouraged by transformational theorists, shown conceptually in Figure 1.5.<sup>64</sup> As demonstrated by the figure, a general orientation proposes any number of defined interval moves ( $i$ ) that transform one object ( $s$ ) into another ( $t$ ).

Figure 1.5: Conceptualizing Transformations

a) Lewin's Figure 0.1, Generalized Musical Intervals and Transformations (1987)



b) Project Categories and Operational Framework Proposed



<sup>63</sup> David Lewin (1933 – 2003), as a prominent proponent of a more transformation lens when analyzing music, has often motivated the dynamic connection(s) between musical objects as one of the primary ways to engage in musical material and process. For a general understanding and summation of this idea, see Lewin, *Generalized Musical Intervals and Transformations* (New Haven: Yale University Press, 1987).

<sup>64</sup> This language, of course, is in reference to his Lewin's oft-cited Figure 0.1 (See, Lewin *Generalized Musical Intervals and Transformations*, xxix).

Taking intervals as the objects of analysis, my model tracks variants of motives as they are spatially and temporally developed. Through this tracking of process, we come closer to understanding how forms are interrelated—how developed musical ideas emerge and are woven together to create larger coherence. By formalizing a set of transformational moves, discussions regarding motivic process and manipulation will more accurately reflect the nature of the musical development, lead to new modes of listening, and promote discussions of musical ontology. As we align with the concept of intervals-as-objects in themselves, we are able to measure development, variation, similarity, or change through the interval itself: a theory of intervallic voice-leading, a theory of shape manipulations.

Utilizing transformational networks that foreground the processes which take one interval node *into* another through a specific mechanism, one is able to track cogent developmental techniques which arise from the musical structures themselves.<sup>65</sup> As John Rahn evocatively describes, when one utilizes networks “we see ... a net throbbing with static dynamism as each musical object constantly and happily *transforms itself* along the arcs connecting and relating it to every other musical object in the net.”<sup>66</sup> Such dynamism relayed through network representations will demonstrate the processes in a new light and allow a greater degree of inspection and comparison between objects. Illustrating transformational connections, this model reveals how Schoenberg moves from one motivic statement to the next, functionally (and theoretically) describing at least part of my *how* question. This, of course, is dependent on coherent relations being present within his music itself. The theory building of Chapter 2,

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<sup>65</sup> This, as noted, is in opposition to a framing which places emphasis not on the structures themselves, but on the abstract collection.

<sup>66</sup> John Rahn, “Some Remarks on Network Models of Music,” in *Musical Transformation and Musical Intuition: Eleven Essays in Honor of David Lewin*, ed. Raphael Atlas and Michael Cherlin (Massachusetts: Ovenbird Press, 1994): 232.

although provocative, must be applied to case studies to reveal any underlying efficacy. Chapters 3 and 4 offer such investigations.

### Chapter 3: *Pelleas und Melisande*: Program as Process, or Motive and Meaning

Taking Carl Dahlhaus's notion that the content of Schoenberg's *Pelleas und Melisande* is "created from a web of leitmotifs that portray the basic themes and conflicts inherent in the drama" with the possibility to "trace single leitmotive[s] throughout the score, observing how its alteration and development reflect the course of the drama," Chapter 3 investigates the narrative implications of tracking surface-level motivic development.<sup>67</sup> This first application of the analytical methodology inspects Schoenberg's motivic working-out as it relates to the character-motive forms of *Pelleas und Melisande*.

To date, relatively few analyses have inspected localized developmental mechanisms of the characters varying motivic forms. When previous analyses are compared there is no strong consensus between authors on the questions of specific object identity and transformations.<sup>68</sup> A clear discord emerges as a result of the multiplicity of motivic forms within *Pelleas und Melisande*, mainly as scholars take varying objects as motivic forms and trace them principally as markers of form. In my chapter, I examine motivic workings-out at the local, statement-to-

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<sup>67</sup> Dahlhaus, 71.

<sup>68</sup> While some authors agree on certain character forms and moments/scenes, in general there is a multiplicity of identities read across analyses. For instance, Schoenberg's 1949 program notes describe the occurrence of approximately eleven thematic moments, Berg's analyses cite no less than twenty to forty-eight primary motivic occurrences, Walter Frisch indicates eight "principal themes," and Michael Cherlin's analysis cites eight motives which are not the same eight as Frisch's (See Frisch, *The Early Works of Arnold Schoenberg, 1893-1908*, 161; Cherlin, "Dramatic Conflict in *Pelleas und Melisande*," in *Schoenberg's Musical Imagination*, 87). See further Walter Bailey, *Programmatic Elements in the Works of Schoenberg*, 63 – 65 or Jenkins, *Schoenberg's Program Notes and Musical Analyses*, 144 – 147; Bryan Simms, *Pro Mundo–Pro Domo: The Writings of Alban Berg* (Oxford: Oxford University Press, 2014): 150 – 155; Alban Berg, *Pelleas und Melisande: (nach dem drama von Maurice Maeterlinck) symphonische Dichtung für Orchester, op. 5 von Arnold Schönberg. Kurze thematische Analyse* (Vienna: Universal-Edition, 1920).

statement, level of each the characters Pelleas and Melisande. This presents a new reading of process and permits tracking changes in the characters' musical space as reflective of their narrative/programmatic situation(s). Assigning divergences (read as transformational processes) between statements presents the opportunity to relay specific marked events and posits new meanings and associations, grounded in musical signifiers. Such a treatment reinforces existing analyses that take a more high-level perspective on process and relations within the work. This close inspection permits glimpses into how Schoenberg "express[es] moods and characters in precisely formulated units."<sup>69</sup>

#### Chapter 4: String Quartet no. 2, op. 10 and the Air of Other Planets

Chapter 4 discusses Schoenberg's String Quartet no. 2, op. 10 (1908). Where previous analyses focus on principal thematic statements, harmonic, and formal aspects of the work in broad strokes, my analyses present a close reading of the pathways of localized motivic forms on the musical surface.<sup>70</sup> Dara Crispin describes that within the work, "motivic fragments [are] laid

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<sup>69</sup> Arnold Schoenberg, "Foreward to a Broadcast Recording of *Pelleas und Melisande*," *The Music of Arnold Schoenberg*, vol. 2, Columbia M2S 694 (1963): 2.

<sup>70</sup> Some studies, in alphabetical order, include: Annicchiarico, "A Study of 'Entrueckung': From the Second String Quartet of Arnold Schoenberg, Op. 10," PhD Dissertation, Brandeis University, 1994; Collisson, "Grundgestalt, Developing Variation, and Motivic Processes in the Music of Arnold Schoenberg: An Analytical Study of the String Quartets," PhD Dissertation, King's College, University of London, 1994; Crispin, "Arnold Schoenberg's Wounded Work: 'Litanei' from the String Quartet in F sharp minor, op. 10," *Austrian Studies* 17 (2009): 62 – 74; Dale, "Schoenberg's Concept of Variation Form: A Paradigmatic Analysis of 'Litanei' from the Second String Quartet, op. 10," *Journal of the Royal Musical Association* 118, no. 1 (1993): 94 – 120; Dale, *Tonality and Structure in Schoenberg's Second String Quartet, Op. 10* (New York: Garland Publishing, Inc., 1993); DeVoto, "Arnold Schoenberg's F# Minor Quartet: A Technical Analysis," *Journal of the Arnold Schoenberg Institute* 16, no. 1 (1993): 293 – 322; Hindemith, "Analysis of Schoenberg's Second String Quartet," reproduced in David Neumeyer and Giselher Schubert, "Arnold Schoenberg and Paul Hindemith," *Journal of the Arnold Schoenberg Institute* 13/2 (1990): 13 – 46; Jalowetz and Zemlinsky, "Analysis of Schoenberg's Second Quartet," *Erdgeist* 4, no. 2 (1909): 225 – 234; Kim, "The Harmonic Language of Arnold Schoenberg's Second String Quartet, op. 10," MA Thesis, McGill University, 1990; Moraitis, "'Die Luft von Anderem Planeten': Metaphysical Resonances in Arnold Schoenberg's Second String Quartet," PhD Dissertation, University of Wisconsin-Madison, 2007; Neff, *The Second String Quartet in F-Sharp minor, Opus 10* (New York: W.W. Norton & Company, Inc., 2006); Schmid, "Studie über Schönbergs Quartette," *Schweizerische Musikzeitung* 74 (1934): 84 – 91.

out with surgical precision.”<sup>71</sup> Within the case study, it becomes clear that Schoenberg invokes precision of material development as he utilizes increasingly advanced transformational mechanisms as the work progresses, the results of which permit insights into his developing compositional practice. As a result, we may understand further Schoenberg’s path to thinking in terms of abstract intervals, through the orientation of ordered intervals-as-object motives.

Tracing interval manipulation through their transformational mechanisms allows inspections of similarity to occur and promotes comparisons to be sought and revealed. As often described, the transition from clear contiguous motivic paths of similar content within the first movements to more distantly related material and abstract connections in the later portions demonstrates a compositional trajectory that departs from archetypal manipulations. This moves the listener and analyst to construct meaning through another constellation of signifiers, to attempt to understand something so new as the air of other planets.

## Work Contributions

This dissertation informs insights of Schoenberg’s early motivic practice and, in doing so, address several incongruities between analytical theory and musical composition. The work intersects with three primary areas of study: i) theories of voice leading, intervals and spaces, motive, sets, developmental relations, and similarity; ii) Schoenberg’s own writings, compositional views, and methods, and iii) previous analytical writings on the early works. While interacting with this substantial body of literature, I propose a new manner in which to engage the early works in analysis, resulting in insights into Schoenberg’s motivic transformations hitherto unseen in previous studies.

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<sup>71</sup> Crispin, 64.



As Schoenberg was both a theorist and composer, examining his works as documents of musical development helps one to contextualize the development of motivic manipulations. Through inspecting intervals (within pitch and duration domains) as the main indicators of change within his early instrumental works, this study illuminates new understandings of shape continuity and change. As a result, the project helps mitigate the methodological gap in approaches toward motivic music by quantifying relations of objects through intervals. By formalizing a set of transformational moves, discussions regarding motivic process and manipulation more accurately reflect the experiential nature of musical development and the object-shape relations that are promoted, contrasted, and developed. The two case studies examined, *Pelleas und Melisande* (1903) and String Quartet no. 2, op. 10 (1908), offer new findings into the ways in which Schoenberg specifically manipulates his motives. The analyses present readings of process which describe how at a local-level Schoenberg manifested and implemented his conception of development and variation. These two works provide the means to not only illustrate the originality of the methodology but also demonstrate how we can better connect Schoenberg's motivic shape manipulations through inspecting interval transformations. This new interpretative paradigm is not limited to the work of Schoenberg. Although the case studies demonstrate the success of such an analytical lens on Schoenberg, the method's adaptability (in defining intervals in differing universes and contexts) affords the possibility of exploring motivic works by several other composers.

## Chapter Conclusion

In *Schoenberg and the New Music*, Carl Dahlhaus states: “the process of observing differences or similarities in order to formulate stylistic concepts involves placing certain aspects

and individual traits side by side.”<sup>72</sup> Motives, in Schoenberg’s early works seem to be one of the best vehicles to compare and contrast. Placing statements side by side permits a reading of shape development of motives. As Dahlhaus continues,

Schoenberg *thought* ‘motivically’, even when he did not *compose* ‘motivically.’ Only detailed analyses would demonstrate how in a single work or movement the process of spinning out formal connections from interval structures relates to the events that are escribed by gestural patterns. But whether the mediation turns out to be comprehensible or not, it is always Schoenberg’s fundamental intention to make structural features felt as expressive ones and vice versa.<sup>73</sup>

Here, the motivic objects themselves are further constrained to be defined by their salient intervallic structures. Inspecting such structures, we can begin to examine the web of relations that connect various motivic statements for their similarity and differences. In this comparison we can come to read such variances as developmental and trace the transformational processes which yields one from the other. Investigating surface-level relations of motives and their variation one can abstract what it meant for Schoenberg to develop his objects and how they mechanistically transform. Dahlhaus, once again offering insight into the product of such an investigation into Schoenberg’s music, states “by extrapolating them [similarities and differences] the work as a whole and as an individual entity is abrogated, for it changes from being an object of aesthetic contemplation to being a document for a style or technique.”<sup>74</sup> This project, framed by the definitions above and the methodology and case studies to follow, will explore and engage Schoenberg’s technique of musical development as related to his early compositional practice, investigating his motivic metamorphoses.

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<sup>72</sup> Dahlhaus, 19.

<sup>73</sup> *Ibid.*, 77.

<sup>74</sup> *Ibid.*, 19.

## 2. Methodology

Consider the musical excerpt from Schoenberg's String Quartet no. 2, op. 10/III (1908), shown in Figure 2.1. Examining this passage, we can observe similar melodic statements (motives<sup>1</sup>) repeating through six forms, statements labelled I – VI. Prominent recurring features include a sixteenth-note to quarter-note rhythmic pattern, an opening slur articulation, a continual ascent of pitch groupings, and similar overall interval content.

Figure 2.1: Schoenberg's String Quartet no. 2, op. 10/III (cello, mm. 19 – 23)



However, quantifiable differences also occur between each iteration, particularly in the realm of specific interval moves. Traditional analytical lenses may, however, struggle to express these subtle intervallic alterations. Many approaches, for example, do not delve past the surface-level pitch-objects to reveal the more specific shape transformations inherent within the passage. To be sure, set-classes between motivic groups vary, contour remains consistent, ideas of functional harmony are strained, and typical voice-leading paradigms leave much to be desired.<sup>2</sup> Although such methods value varying aspects of alteration, what is clear is that there are strategic manipulations of the motivic objects such that they are transformed, yet related to the opening segment. In such a practice there are discernable connections to be drawn between the source and its variants, but one is often ill-equipped to explore such affinities under common analytical

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<sup>1</sup> See Chapter 1 for discussion on motive.

<sup>2</sup> This is not to say that all current methodologies lack any parameter or means to coherently analyze the processes of Figure 2.1, but more so to identify that many of our past and present analytical techniques do not align harmoniously with the nature of this progression. With pitch-class set theory largely overemphasizing the difference between the motivic forms in their unordered form, while contour theory emphasizes the general similarity, a need to find a middle-ground between these perspectives exists.

frameworks. Several of the methodologies above may be successful in their own right but are limited in perspective.

To date, numerous methodologies that deal with motivic content, such as within Figure 2.1 focus almost exclusively on changes to pitch content. That is, the sounding notes themselves (either pitches or pitch-classes). However, in melodic motivic generation, we know that the notes themselves are going to change—that is the whole point of melodic development. Accordingly, tracking articulated pitches as transformations in these works is not especially helpful or necessarily meaningful. New lenses sensitive to intervallic understandings of relations and process which possess the ability to be generalized beyond the surface soundings become important when inspecting motivic development. Wielding alternate perspectives that promote structural variations, one is poised to gain a deeper understanding of motivic music. Thus, utilizing models more sensitive to the idea of motivic development *as* intervallic transformations promotes a framework which offers more insight into the developmental processes themselves.

Motivic variation, such as that performed upon the initial segment of Figure 2.1, lies at the heart of Schoenberg's early works (1895 – 1908). Analytical approaches, however, are not often sensitive to the nature of the transformational process. This chapter proposes an analytical methodology to interpret Schoenberg's early motivic compositions. By refining understandings of motivic transformations through intervallic content, the model establishes a collection of transformational mechanisms. My framework re-envision Schoenberg's developmental processes as constituted by, and transformed through, relationships among both pitch and temporal intervals (durations). To do so, I establish three specific categories of motivic development: 1) order altering, 2) interval altering, and 3) cardinality altering. Defining transformational process, these mechanisms suggestively support my own musical intuitions, and

engender new modes of engagement. Listening with an emphasis on intervallic connections attunes the ear to hear the very nature of how basic shapes are manipulated in time and space. Ultimately, aligning my analytical model with Schoenberg's predisposition for thinking motivically and this research deepens our understanding of motivic writing addressing several incongruities between theory, analysis, and musical practice.

Before a thorough presentation of the model, a preliminary discussion of the intervallic space, objects, relevant previous practices, and mapping methods is explored in Section I. Section II of this chapter defines the proposed transformations using hypothetical examples, as well as excerpts from Schoenberg's early works. Section III presents a brief case study of Schoenberg's *Verklärte Nacht* (1899). A glossary has been compiled of important terms and concepts.<sup>3</sup>

## I. Preliminaries

### Space and Intervals

This model investigates intervals as markers of transformation(s). Intervals, in this framework, refer to any measured distance between two points. In particular, intervals here operate in two domains: pitch and duration/temporal. The spaces of each domain are reflected in Figure 2.2.<sup>4</sup> In this figure, the pitch domain can be conceptualized as a continuous  $y$ -axis ( $\mathbb{Z}$ ), reflecting a countably infinite integer space (modular intervals).<sup>5</sup> Note that the pitch dimension

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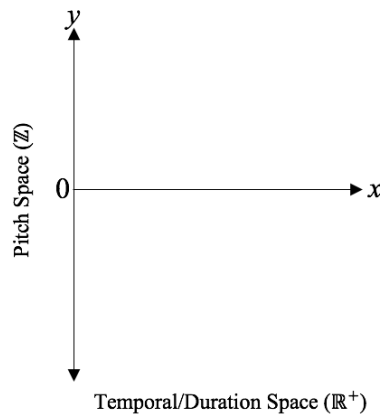
<sup>3</sup> See Appendix 1.

<sup>4</sup> A discursive discussion of transformational spaces can be observed within Edward Gollin, "Representations of Space and Conceptions of Distance in Transformational Music Theories," PhD Dissertation, Harvard University, 2000.

<sup>5</sup> This pitch-space can be defined by any collection or pitch-universe, and further abstracted to an  $\mathbb{R}$ -space if the analytical need arises. As the model in the current context ultimately deals with Schoenberg's early works, a chromatic pitch space is preferred. However, Tymoczko (2010) has successfully proposed that compositional and

conceived of as  $\mathbb{Z}$  reflects pitch-space rather than pitch-class space and this model does not assume pitch-class-intervals or interval-classes, rather ordered pitch intervals. Transference (transposition) to any portion of this space is theoretically possible. Durations, on the other hand can be plotted on a continuous temporal timeline, conceptualized as infinitely continuing positive real numbers on the  $x$ -axis ( $\mathbb{R}^+$ ).<sup>6</sup> The durational dimension accounts for the continuum of time as a positively progressing entity, between a starting attack point and the final moment of sounding. Although objects can only manifest in positive time-space, transformations are able to negate/subtract time from positive objects in subsequent iterations.

Figure 2.2: Unified Pitch and Duration/Temporal Space



Within this space, pitch and duration intervals will assume modular blocks of time or space (explored below). Further, this model primarily disassociates the two domains as they operate on two different perceptual planes with literature supporting development as occurring in either or

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analytical spaces in theoretic inquiry need not be limited to integers and is content in dealing with spaces that are isomorphic to real numbers.

<sup>6</sup> This space is reflective of Lewin's idea of *time span* (See Lewin, *Generalized Musical Intervals and Transformations* (Oxford: Oxford University Press, 2007): 60).

both domains, separately or concurrently.<sup>7</sup> Most simply, both domains deal with ordered intervals in either  $\mathbb{Z}$  (pitch-domain space) or  $\mathbb{R}^+$  (duration-domain space).

The elements within such a space are the intervallic values themselves as they map onto this space, termed *int-nodes*. An int-node is a singular element which reflects the distance measurement of an object. An int-node combines with other int-nodes to produce an ordered set (a string of elements—a motive). Int-nodes expedite spatial orientations of objects through displacing the surface-level sounding events to a conceptual background, placing emphasis instead on a generic structural level (segments of pitch and duration intervals).<sup>8</sup> A dual nature is inherent within this existence; sounding objects are necessary in order to realize interval boundaries, and intervallic objects conversely imply such boundaries. Figure 2.3 explores this paradigm.

Motives, as a series of typically ordered intervallic units (int-nodes), offer a fertile ground for exploring transformations of evolving forms.<sup>9</sup> As is common practice, exploring motives as a collection of int-nodes (operating in either domain) grants an ability to investigate the variations or changes between two or more realizations. A collection of int-nodes will define a “motive

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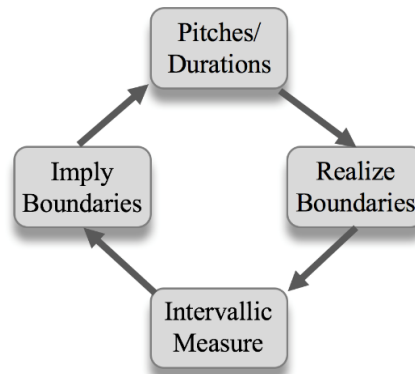
<sup>7</sup> Schoenberg for instance has distinct sections for ideas of rhythmic development separate from pitch elements. A multitude of methodologies work with two-variable ordered duples  $(i,j)$ , Steve Rings’s *Tonality and Transformation* (2011) for example; however, I do not believe this must be the case. For example, comparison of the same pitch-interval and duration/temporal-interval domains of the same object will map onto each other (1-to-1) as they possess the same intervallic cardinality. Thus, comparison of the two planes is informative and already possible on a case-by-case basis. For further reading on this position of non-isomorphism between pitch and time space see Justin London, “Some Non-Isomorphisms between Pitch and Time,” *Journal of Music Theory* 46, no. 1/2 (2002): 127 – 151.

<sup>8</sup> In theory, the notion of set-class reflects the essence of what is currently advocated; however, I am ultimately interested in the transformations of intervals between set-classes (not pc-voice-leading), which traditional models of set-class space largely overlook (An obvious exception being David Lewin’s “Some Ideas About VL between PCsets,” *Journal of Music Theory* 42, no. 1 (1998)). My idea then, is to better develop the interval side of the set-class coin, rather than just the pitch-articulations. In doing so, my model aligns more with the spirit of Hasty’s approach in “An Intervallic Definition of Set Class” (Christopher Hasty, “An Intervallic Definition of Set Class,” *Journal of Music Theory* 31, no. 2 (1987)).

<sup>9</sup> Later, we will explore the concept that a re-ordering of motive still constitutes an identity relation through a transformational mechanism.

string.”<sup>10</sup> This ordered string can be produced for either pitch-domain elements or durational/temporal-domain elements.<sup>11</sup>

Figure 2.3: Dialectic of Intervals as Objects



Several previous terms suggest certain affinities with the current construction. Although similar to Allen Forte’s “interval succession” and “basic interval patterns (BIPs),” a main divergence recognizes the difference between pitch-space versus pitch-class space and a further difference lies within the preference here for an ordered succession.<sup>12</sup> This intervallic motive string also departs from the notion of interval vectors as sets in this model are ordered and not presented as a totality of moves such as observed within an array.<sup>13</sup> In this model, the retention of an initial ordering and orientation within pitch-space better demonstrates the actual

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<sup>10</sup> The constitution of a “motivic object” has been the topic of scholarly debate for many decades (see introductory discussion on Schoenberg, Réti, Frisch, etc.). For a Schoenberg-specific context see Stephen J. Collisson, “*Grundgestalt, Developing Variation, and Motivic Processes in the Music of Arnold Schoenberg: An Analytical Study of the String Quartets*,” PhD Dissertation, King’s College, University of London, 1994; and, Charlotte Cross, “Three Levels of ‘Idea’ in Schoenberg’s Thoughts and Writings,” *Current Musicology* 30 (1980): 24 – 36.

<sup>11</sup> Motive strings can exist for any musical parameter. Moreover, motivic conceptualization can be a set of elements that combines parameters (for example, pitch and timbre) as signifying a motive. It is entirely possible, as others have conceived, to pair these features together as an ordered duple ( $i, j$ ) or other set. Cardinalities between motive strings in the pitch domain and durational domain will remain the same; however, if another analyst is inclined to do so at any point for comparison or for insight, they may wish to overlay or combine one domain with the other.

<sup>12</sup> See Forte, *The Structure of Atonal Music* (New Haven: Yale University Press, 1973): 63 – 64; and Forte, “The Basic Interval Patterns,” *Journal of Music Theory* 17, no. 2 (1973): 234 – 272.

<sup>13</sup> See Forte, *Structure of Atonal Music*, 15; Robert Morris, *Class Notes for Atonal Music Theory* (1991): 45 – 46; Morris, “A Similarity Index for Pitch-Class Sets,” *Perspectives of New Music* 18, no. 1 (1979-80): 445 – 460; Isaacson, “Similarity of Interval Class Content between Pitch-Class Sets: The IcVSIM Relation,” *Journal of Music Theory* 34, no. 1 (1990): 1 – 28.



arrangement and subsequent manipulation of the motivic object in question, saying less about general or abstract relations of summed or unordered sets.<sup>14</sup>

The idea of tracking motivic strings as a set of int-nodes describes the larger concept of *int-leading*, a process akin to similarity relationships such as Robert Morris's "Interval Succession of a Segment (INT)."<sup>15</sup> Other approaches utilizing this type of structure include Edward Pearsall's idea of Shape/Interval Motive, Jack Boss's and Jeffery Gillespie's works on motive in Schoenberg, and Lora Gingerich's Motivic String used to analyze the music of Charles Ives.<sup>16</sup>

The operational space for the transformational processes has been set and we are now able to define the constituent units of the objects under inspection. An interval, being any measurable distance between two points in space or time, manifests in this framework through ordered pitch intervals in chromatic pitch-space under the pitch domain (infinite/continuing).<sup>17</sup> In durational measures this occurs through base units where the quarter note is equal to an infinitely divisible and additive inter-onset value of 1.<sup>18</sup> For expressing lesser durations decimal

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<sup>14</sup> This idea is foundational to motivic relations and perhaps best explored in Benjamin, "Ideas of Order in Motivic Music," *Music Theory Spectrum* 1 (1979).

<sup>15</sup> Morris, *Class Notes*, 6.

<sup>16</sup> See Edward Pearsall, "Transformational Streams: Unravelling Melodic Process in Twentieth-Century Motivic Music," *Journal of Music Theory* 48, no. 1 (Spring, 2004): 69 – 98; Jack Boss, "'Musical Idea' and Motivic Structure in Schoenberg's Op. 11, No. 1," in *Musical Currents from the Left Coast*, ed. Jack Boss and Bruce Quaglia (Newcastle: Cambridge Scholars Publishing, 2008): 256 – 282; Jeffery Gillespie, "Motivic Transformations and Networks in Schoenberg's 'Nacht' from Pierrot Lunaire," *Intégral* 6 (1992): 34 – 65; Lora Gingerich, "A Technique for Melodic Motivic Analysis in the Music of Charles Ives," *Music Theory Spectrum* 8 (1986): 75 – 93.

<sup>17</sup> Chromatic pitch-space has been chosen for the repertoire under consideration, Schoenberg's early music. Any universe or collection could be defined. Moreover, given an infinite space which is also infinitely divisible, moves outside the universe are theoretically possible.

<sup>18</sup> This is an arbitrary modular block assignment; however, it is representationally more manageable than fractional constructs of time units/relations. Modular units allow for more concrete conceptualizations of "structures." One could conceptualize and express this "interval" through infinite means. Working with 1 as a whole number which is easily divisible and conceptualized is solely for convenience. For a proportional conception of these units see Pearsall, "Interpreting Music Durationally: A Set-Theory Approach to Rhythm," *Perspectives of New Music* 35, no. 1 (1997): 205 – 230. In his discussion, Pearsall cautions that a base such as this does not consider the underlying speed or tempo of the pulse (See Pearsall, "Interpreting Music Durationally," 208). For his methodology,

representations are used in lieu of fractions.<sup>19</sup> In durational space, only positive values can construct a structure, and duration/temporal-objects themselves are not able to negate time. In practice, negative time-units exist only to generate an altered string of positive (uni-directional) durations.<sup>20</sup>

The nature of the transformations described below will, at several junctures, demonstrate some properties of mathematical groups; yet, I am not committed to the mathematical rigor of groups here, with several contexts within this model lacking formal group structures.<sup>21</sup> In this way, I advocate for a space that does not reflect all the requisites for a group-theoretic approach, but rather, a space reflecting the intent of the musical transformations themselves through theoretically infinite possibilities within a theoretically infinite space. This model will consequently tread the ground between qualitative descriptors and defined mathematics, providing a quantitative reading of object transformations.

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he finds it beneficial to use proportions which “reflects an independence from tempo” (Pearsall, “Interpreting Music Durationally,” 208). Though this is a substantial nuance within Pearsall’s approach, accurately measuring tempo indications with metrics can be tenuous at best. Given tempo markings that employ ranges of speeds, the frequency of *accelerando* or *ritardando* markings, coupled with proportional tempi between sections or movements which are different for every conceptualizer or performance realization, I do not see this compensation as necessary within the current model. The essence of this methodology will hold true whether utilizing proportions or operating from a standard base unit.

<sup>19</sup> I have chosen this due to a preference for working with a product. In this system, one aims for precision and should not round; however, because of perceptual limitations as well as ease of representation the rounding of divisions is permitted at the level of ten-thousandths and beyond. For example, in the system of quarter-note = 1, the first half subdivision known as the eighth note measures 0.5, dividing again by 2 the sixteenth notes value is 0.25, continuing along this operation, the next values are 0.125, 0.0625, 0.0315, 0.015625, etc. As we can see, the perceptual limits of hearing the full measurement is pushed, as a result where applicable convention will dictate rounding at the ten-thousandths (0.0001).

<sup>20</sup> Only transformations performed on such structures are able to “remove” time. For a discussion of other duration spaces, see Lewin 2.2.1 – 2.2.6 in *Generalized Musical Intervals and Transformations*. Negative time-spaces could, in a narrative reading, be supported by these transformations and provide potent understandings of motivic process as linked to musical narrative.

<sup>21</sup> To be sure, some transformations will exist in group-like structures such as *Category* (Associativity and Identity) and *Groupoid* (Associative, Identity, and Invertibility).

## Transformational Representation

In representing transformations, this model uses two complementary methods. First, transformational expressions provide labels that describe the nature of the change between two or more motivic events. Second, oriented transformational graphs (event networks) work to illustrate the process as it unfolds in space.<sup>22</sup>

Abstract expressions are vehicles for both clarity and conciseness. In the form of  $TRANSFORMATION_{x,y}(X) = X^I$  the simplicity of the expression provides both analyst and reader with a readily identifiable defined transformation, further refined through variable assignments (such as  $x,y$ ). In this form, where  $(X)$  marks the initial motivic form, the “Transformation” label will be substituted for any of the defined processes described below, the variables  $x$  and  $y$  will refer, for example, to ordered intervallic places in the motive string, specific quantities, or other measures/qualifiers, and the product  $X^I$  will refer to the subsequent motivic object generated. Multiple transformations can be arranged in an additive string for ease of representation.

Oriented transformation graphs (event networks), such as displayed in Figure 2.4 which tracks an Interval Adjacency Series through individual int-node paths, provides an expedited means to survey connected interval relations.<sup>23</sup> Mapping the intervals through their related terms,

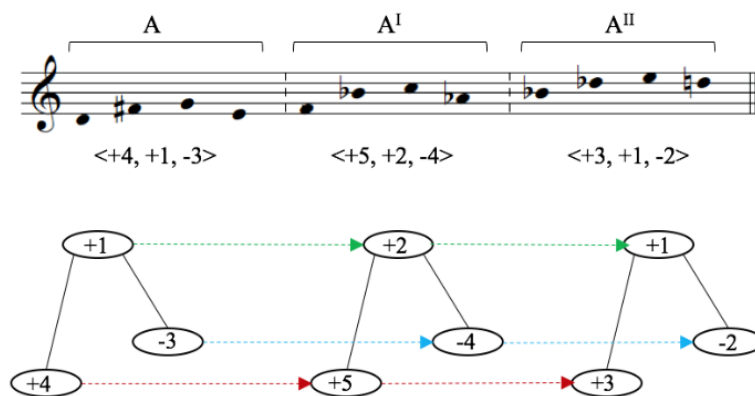
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<sup>22</sup> Once again, I am not tied to mathematical rigor (as expressed, for example, in Rings, *Tonality and Transformation*, 115 or Lewin, *Generalized Musical Intervals and Transformations*, Chapter 7), but will define necessary elements of such mapping procedures below. The preference here will be for the implementation of network forms in analysis; however, further research inquiries may be better suited to realize the expression for form comparison and conciseness.

<sup>23</sup> For further information on graphs and networks, see, Stephanie Lind, “Replicative Network Structures: Theoretical Definitions and Analytical Applications,” PhD Dissertation, University of British Columbia, 2008; Edward Gollin, “Representations of Space and Conceptions of Distance in Transformational Music Theories,” PhD Dissertation, Harvard University, 2000; John Rahn, “Some Remarks on Network Models of Music,” in *Musical Transformation and Musical Intuition: Eleven Essays in honor of David Lewin*, ed. by Raphael Atlas and Michael Cherlin (Massachusetts: Ovenbird Press, 1994): 225 – 235; Jeffery Johnson, *Graph Theoretical Models of Abstract*

one may observe specific int-node modifications plotted along directed arrows. For example, the first interval place (+4), tracked by the red arrow, displays a growth in size from +4 to +5, which is subsequently reduced spatially from +5 to +3.<sup>24</sup> Such processual tracking is the goal and contribution of this methodology which models term-to-term alterations along defined paths between intervals.

Figure 2.4: Tracking Intervals through Graphs, the Interval Adjacency Series Scheme



As David Lewin notes, graphs (such as Figure 2.4) explore “more kinetic intuitions about the music” and are an excellent means to represent the conceptual attributes.<sup>25</sup> Steven Rings further remarks that such dynamic networks explore experiences that may not be captured by expressions or abstracted Generalized Interval Systems (GISs).<sup>26</sup> As noted, the graphic modes of examination in this model do not exhibit or conform to many of the formal elements as explored by Lewin.<sup>27</sup> Although the networks may lack mathematical formalization, the loosening of these

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*Musical Transformation: An Introduction and Compendium for Composers and Theorists* (Westport, Conn.: Greenwood Press, 1997); Steven Rings, *Tonality and Transformation* (Oxford: Oxford University Press, 2011); David Lewin, *Generalized Musical Intervals and Transformations* (Oxford: Oxford University Press, 1987).

<sup>24</sup> One may further observe that tracking ordered pitch intervals in this case is ideal, as from a contour perspective, all three are equivalent forms.

<sup>25</sup> See Lewin, *Generalized Musical Intervals and Transformations*, 176 – 177.

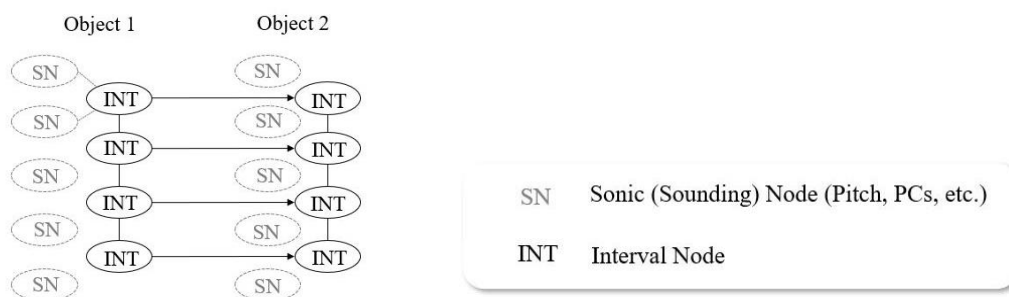
<sup>26</sup> Rings, 104.

<sup>27</sup> Lewin, *Generalized Musical Intervals and Transformations*, 193 – 219. Under certain conditions, certain motivic sets and their groups of operations may produce more formalized graphs. In general, they do not

requirements allows for a flexible graphing technique permitting transformative processes to be observed in experiential, dynamic, and explicit ways.

In many voice-leading methodologies, such as Straus (2005), the object nodes for tracking purposes are pitch-classes themselves.<sup>28</sup> Although these express the sounding pitch-objects (Sonic Node), in this framework the intervallic, spatial, relationships (Interval Nodes) are foregrounded while the pitches themselves move to a more background conceptual level, as demonstrated in Figure 2.5. The pitches themselves are subsequently the realized iteration of the intervallic spaces, acting as the sonic “perceiving vehicle” of the intervallic markers. This model moves away from the idea of pitches-as-objects and towards the idea of intervals-as-objects. This is analogously true for attacks-as-objects shifting to durations-as-objects. The vertical orientation of the network in Figure 2.5 is preferred for ease of reading and comparison, however, other orientations are possible.<sup>29</sup>

Figure 2.5: Graphic Representation of Network Elements (Node Object, Edge)<sup>30</sup>



communicate because the nodes are in different equivalence classes; they are not connected as they do not communicate. Lewin does discuss disconnected graphs of disconnected systems which “can be analyzed into component connected sub-systems that do not communicate with one another” (194). In this way we may track single lines or streams that need not necessarily be related to other int-leading paths.

<sup>28</sup> See Straus, “Voice-Leading in Set Class Space.” In a Lewinian sense, the contents of *s* to *t* are still pitches.

<sup>29</sup> These networks can become spatially cumbersome to graph but are nonetheless possible. Implying consistency, this orientation will result in transferable fluidity as working in the same manner will produce fluency in reading the networks.

<sup>30</sup> The elements involved are fully defined below in Figure 2.6. In this figure, dotted blurred nodes demonstrate a background level which is deeper than the more prominent, solid, foregrounded elements of interval nodes.

The generalized network that will be used to communicate transformational relationships within this framework can be observed in Figure 2.6. Specific components within this network will be addressed in the model discussion below. Within Figure 2.6, as discussed in the figure legends, one can observe the connected nature of similar motivic objects (each identified through Roman numeral assignment) as linked through defined transformational mechanisms. The articulation of motivic objects, as a collection of int-nodes ( $x$ ) utilizes top-down orthography so that term 1 is placed in the top-most node with successive object int-node terms proceeding in order below.<sup>31</sup> In general, these graphs are represented as event networks; that is, they have a temporal component. Within the network, the motivic objects (intervallic arrangements) are as a group typically read with left-to-right orthography, corresponding to the unfolding of motivic events.<sup>32</sup> Individual vertical structures, on the other hand, are typically read through a top-down orthography.

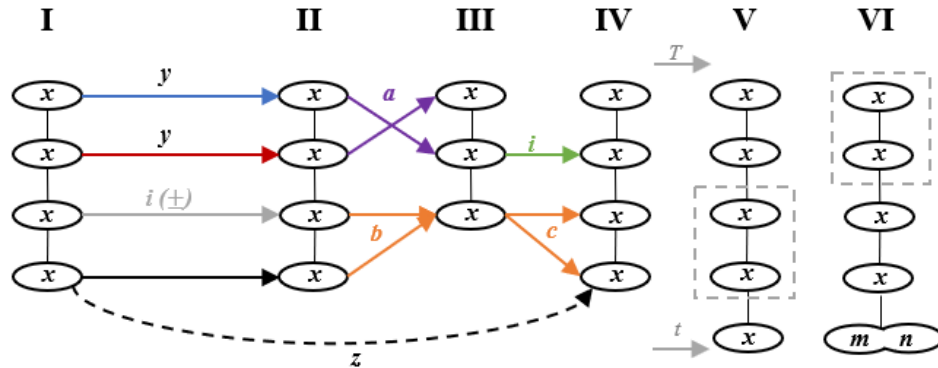
There is an inherent flexibility within the network form as it captures several discrete processes and connects intervallic (int-node) pathways in a simultaneous representation (each directed arrow working as a whole to transform the structure at once). The function(s) (mechanisms) which take(s) statement I *into* statement II and so-forth are discernable through their connected arrows. However, for network (and operational) clarity, null or unchanged nodes will not be connected. This network form will return in the model discussion for clarification and refinement and a number of contextual examples are also presented in Section III.

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<sup>31</sup> In the case of statement VI's "m, n"; this is used for collecting an  $n$ -number of duplicate entries of value  $m$ . Four quarter notes in a row can thus be expressed in a duration node form as: 1, 4.

<sup>32</sup> Rings, 141; This method of representation is sometimes contrasted with spatial networks which depict "out-of-time" theoretical relationships and do not occupy "any a priori locations" (Rings, 141). Although possible, spatial graphs limit discussions surrounding process and instead express a more holistic or *a posteriori* understanding—a valuable perspective.

Figure 2.6: Oriented Transformation Graphs (Event Network)



**RN (I, II, ... N)** = Motive String Object (top-down orthography)  
**x** = Defined int-node variable  
**y** = Defined Transformational Mechanism comparing x to x, several possibilities  
**z** = Transformational Mechanism or Relation (non-adjacent)  
**a** = Transformational Mechanism (int-node switching)  
**b** = Transformational Mechanism (int-node convergence)  
**c** = Transformational Mechanism (int-node subdivision)  
**i** = Int-node inversion  
**t** = Text-qualifier for previously unconnected element  
**T** = Text-qualifier for transformation applied to complete group  
 $\square$  = Sub-set extraction and relation  
**m** = Condensed grouping element representing the repeating value  
**n** = Condensed grouping element representing the number of repetitions

**Colour Index: Arrow Transformational Operations**

	Int-node term expansion
	Int-node term contraction
	Int-node inversion
	Int-node inversion, combined with expansion or contraction; Int-node insertion or removal; TTOs or group-altering operations
	Int-node switch
	Int-node split or compound

**Comparison of Motives as Intervallic Objects**

At the heart of all analytical practices lies a comparative tradition. The comparison of musical objects—either to an original form or as successive statements—allows for the inspection of conformances or divergences. Within this methodology, valuable insights will

ordinarily only be brought to light when comparing two objects that have a degree of contextual resemblance. In Figure 2.6 it is assumed that the labelled structures (statements I – VI) have a motivic affinity with one another. Such similar relations between two objects yield the most convincing analytical results. In this way, we will compare “like” objects. Here, “like” can manifest in several ways.

First, “like” arises from the *Gestalt* psychology sense as an identifiable or defined shape/form that has meaning and creates associations.<sup>33</sup> A Gestalt in music can be based on cardinality, contour, rhythm, orchestration, and other musical attributes. This belies the parallel to the concepts of typical Gestalt formation based upon relations such as proximity, similarity, common-fate, closure, good curve, and past experience. This methodology’s use of “like” in this sense therefore can be liberal in application. It would, however, seem more prudent to align more on the conservative side of likeness as coherent structures that push the boundaries of associative thresholds becoming delicate assertions. Second, the model utilizes “like” as in a similar place or defined location for comparative purposes. For example, items are in “like”-places (temporal placement), arranged in “like”-order (direction/order), or are “like”-measurements in their

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<sup>33</sup> The commonality of experiencing and identifying shared associative values, networks, or segments within a work can be traced to *Gestalt* theory, a sub-discipline of psychology emerging in the late nineteenth century. Emphasizing the study of grouping structures through perception, its main proponents included Christian von Ehrenfels (1880 – 1943) and Max Wertheimer (1859 – 1932). This idea manifests in the *fin-de-siècle* German world, as Brahms, and others including Schoenberg start to think more in terms of *Gestalten* or *Gestalt*-objects which are motivic objects. As Wolfgang Köhler notes, the noun “Gestalt” has two meanings: “besides the connotation of ‘shape’ or ‘form’ as a *property* of things,” it can also mean “a concrete individual and characteristic entity, existing as something detached from *having* a shape or form as one of its attributes.” (See Wolfgang Köhler, *Gestalt Psychology* [New York: Horace Liveright, 1929]: 192). As a result, Christian von Ehrenfels initiated the study of Gestalt theory, investigating the principles of organizing of forms, through both *properties* (discrete elements), as well as the formation of abstracted forms deduced through interaction of such properties (see Mark Reybrouck, “Gestalt Concepts and Music: Limitations and Possibilities,” in *Music, Gestalt and Computing: Studies in Cognitive and Systematic Musicology*, ed. Marc Leman (Berlin: Springer Verlag, 1997): 59). The main, and generally accepted tenets of Gestalt formation include relations based on proximity, similarity, common-fate, closure, good curve, and past experience. Several terminological / nomenclature differences exist between authors; however, the definitions and characteristics remain consistent despite semantic variation.



respective objects. The idea of likeness can naturally raise questions about the nature of the objects one is comparing and the rationale for establishing connections. In analytical practice, this can raise important ontological questions about the process of objects and their inter/intra-relationships. Furthermore, this can also have strong implications in the theoretic writings of composers such as Schoenberg. These discussions, as compelling as they are, shall be saved for a later opportunity.<sup>34</sup> Lastly, the flexibility of likeness permits various segmentation strategies to be co-opted into the present methodology. That is, for certain contexts it may be advantageous to more rigorously define the parameters of similarity measures which are used to extract the objects for comparison. In this situation, one could easily remove the more fluid description of likeness presented above in favour of other similarity measures or segmentation methodologies.<sup>35</sup>

#### Previous Literature: The Nature of Voice Leading Analysis

Before continuing with a presentation of the model itself it is pertinent to situate the approach within existing scholarship. For example, several affinities exist between the conceptualizations of voice leading and the nature of tracking pathways of intervals. Moreover, existing analytical frameworks approaching motive through intervallic relations or structures will also be briefly reviewed. In the following text, I highlight several methodologies and demonstrate their tactics. Contextualizing previous investigatory frames will position the current

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<sup>34</sup> Schoenberg's writings in particular have rich discussions of ideas of *Gestalt / Gestalten* which certainly inform his compositional and analytical practice (see for example: Schoenberg, Arnold. *The Musical Idea and the Logic, Technique, and Art of Its Presentation*, ed., trans., by Patricia Carpenter and Severine Neff (Indiana: Indiana University Press, 2006 [1995]); Arnold Schoenberg, *Style and Idea*, trans. by Arnold Stein and Leo Black (London: Faber & Faber, 1975).

<sup>35</sup> Strategies such as those motivated within Dora Hanninen, *A Theory of Music Analysis: On Segmentation and Associative Organization* (Rochester: University of Rochester Press, 2012); Christopher Hasty, "Segmentation and Process in Post-Tonal Music," *Music Theory Spectrum* 3 (1981): 54 – 73.

endeavour, however, I invite the reader to continue directly to Section II should the supplementary nature of the ensuing discussion be extraneous to individual need.

### Context: Voice Leading and Set Class

Approaches to analysis which inspect voice leading in non-tonal environments have significant relations to the work proposed here. In such scholarly inquiry, authors often deal with networks as they track objects in spatial orientations. This approach typically maps the relative distances between objects via connected pathways of pitch-class nodes. As a result, the nature of the methods below exhibits a degree of similarity to the present strategy of tracking interval nodes. Works by two primary authors merit discussion: Joseph Straus’s “Voice Leading in Set-Class Space” (2005), “Voice Leading in Atonal Music” (1997), and “Uniformity, Balance, and Smoothness in Atonal Voice Leading” (2003); Robert Morris’s “Voice-Leading Spaces” (1998). There is a further body of literature exploring such spaces, but these will have to be saved for another discussion.<sup>36</sup> We will compare the approaches utilized within Straus and Morris to a violin passage excerpted from Schoenberg, shown in Figure 2.7.

Figure 2.7: Schoenberg, String Quartet no. 2, op. 10/III, mm. 15 – 16 (violin 1)



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<sup>36</sup> For example, Lewin, “Some Ideas About Voice-Leading between PCSets,” *Journal of Music Theory* 42, no. 1 (1998): 15 – 72; Lundberg, “A Theory of Voice-Leading Sets for Post-tonal Music,” PhD Dissertation, University of Rochester, 2012; Morris, “A Similarity Index for Pitch-Class Sets,” *Perspectives of New Music* 18, no. 1 (1979-80): 445 – 460; Tymoczko, “Set-Class Similarity, Voice Leading, and the Fourier Transform,” *Journal of Music Theory* 52, no. 2 (2008): 251 – 272.

Joseph Straus is a main contributor to the literature on post-tonal voice leading.<sup>37</sup> As the title suggests, “Voice Leading in Set-Class Space” discusses ideas of parsimonious voice-leading spaces between differing set-classes culminating in a “Law of Atonal Voice Leading.” One of the main concepts to emerge is the notion of an *offset number* (“the amount of deviation”), and idea of a *minimal offset*.<sup>38</sup> The offset is a characterization of sameness or likeness from one object to the next, where *minimal offset* can be conceived as parsimonious voice leading.<sup>39</sup>

In applying the model, Straus considers the movement from pc-nodes of one object to another and explores the varying configurations that produce the smoothest move (minimal offset). “Fuzzy” transformations are also invoked which denote a comparison value.<sup>40</sup> Moreover, Straus introduces the idea of voice-leading spaces between set-classes being multidimensional and produces tiers consisting of rows and columns that are gathered into stacks which form complexes.<sup>41</sup> This creates a five-dimensional space, which although theoretically intriguing possesses a “serious problem for conceptualization, visualization, and representation.”<sup>42</sup> Straus’s analyses are coherent and reveal the manner in which set-class structures of like cardinalities move from one form to another through his “Law of Atonal Voice Leading.”

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<sup>37</sup> See articles Joseph Straus, “Voice Leading in Atonal Music,” in *Music Theory in Concept and Practice*, ed. James Baker, David Beach, and Jonathan Bernard (Rochester: The University of Rochester Press, 1997): 237 – 274; Straus, “Uniformity, Balance, and Smoothness in Atonal Voice Leading,” *Music Theory Spectrum* 25 (2003): 305 – 352; Straus, “Voice Leading in Set-Class Space,” *Journal of Music Theory* 49, no. 1 (2005): 45 – 108.

<sup>38</sup> Straus, “Voice Leading in Atonal Music,” 46.

<sup>39</sup> Similar to Schoenberg’s own idea of the law of the shortest way.

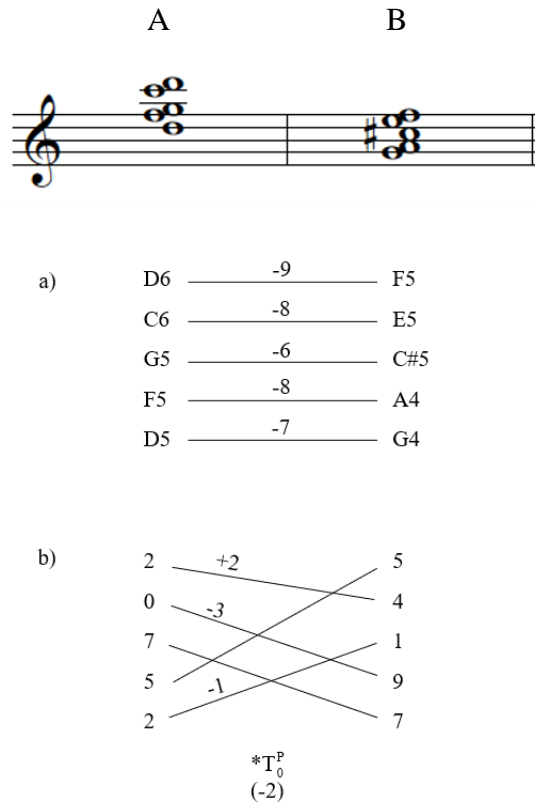
<sup>40</sup> This is almost identical with a minimal offset, see Straus, “Voice Leading in Atonal Music,” 46.

<sup>41</sup> *Ibid.*, 51.

<sup>42</sup> *Ibid.*

Applying Straus’s framework, one can compare the voice leading of the musical objects within Figure 2.8. Observe Figure 2.8 and the two products, revealed in a) and b). Figure 2.8a) reveals the voice leading in terms of register and actual movement (one-to-one and onto, where  $x$  of  $X$  and  $y$  of  $Y$  are like-objects), and b) demonstrates a mapping of the space, in an attempt to produce a “minimal offset value” as defined by Straus. The resultant offset number is  $-2$   $((-1) + (-3) + (+2))$ .

Figure 2.8: Straus, Application of Approach, “Voice Leading”



This framework thus allows the analyst to capture the smoothest move possible from the first object to the second; however, this is not a comparison of the structural arrangement or directed motion that appears on the musical surface. As a result, this perspective proves to be a substantial

abstraction that neglects to deal with a description or qualification of the actual voice leading in terms of structural relations.

### Robert Morris

In a 1998 article “Voice-Leading Spaces,” Robert Morris develops a system to account for what he terms “total voice leading.”<sup>43</sup> The article explores the motions within voice leading, relevant classification schemes, parameter restrictions, and the total possible voice-leading moves of a pcset A to pcset B. Surveying the field, Morris raises the issue that there is little agreement about what a ‘voice’ is or how it ‘leads,’ which is particularly troublesome in non-tonal concepts.<sup>44</sup> Morris turns to a transformational perspective to produce “a simple but effective approach ... examine[ing] the relations of the intervals between the pcs in chords (from low to high) and their influence on the intervals between different chords.”<sup>45</sup>

Morris’s article focuses largely on three parts. The first section reveals a taxonomy of “total voice leading” between two pcsets and the motions possible therein. Secondly, the text examines Cohn’s transformations of triads as a compositional space. Thirdly, Morris proposes a collection of “voice-leading spaces,” which describes approaches to spaces and their construction. Throughout the article total voice leading is defined as:

Given two pcsets A and B, the total voice-leading from A to B includes any and all moves from any pcs of A to any pcs of B – that is, all the ways one can associate the pcs of A with those of B in as many voices as necessary or desired.<sup>46</sup>

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<sup>43</sup> See Robert Morris, “Voice-Leading Spaces,” *Music Theory Spectrum* 20, no. 2 (1998): 175 – 208.

<sup>44</sup> *Ibid.*, 177.

<sup>45</sup> *Ibid.*, 176.

<sup>46</sup> *Ibid.*, 178.

Morris further restricts his approach by giving three limits, labelled R1, R2, and R3. The most important of these restrictions seems to be R2, where each pc of A is connected to one and only one of pc B, related to Lewin's *one-to-one and onto* mapping.<sup>47</sup> Morris additionally describes voice motions (similar, parallel, etc.) as well as conditions to such movements (crossing, shared, unison, etc.).<sup>48</sup>

Pertinent to this project is the section on constructing voice-leading spaces.<sup>49</sup> This portion focuses on generating t-matrices, where all voice-leading procedures can be observed. A t-matrix is constructed from two pcsets: A and B. Pcsets A and B generate a matrix which lists all the intervals from A to B. In summary, Morris's investigation of voice-leading space is thorough, however, perhaps the generalizing nature of a "total voice leading" lessens the applicability of the approach in an analytical framework.

Application of Morris's construction of voice leading can also be applied to the Schoenberg excerpt (Figure 2.7). The two pc sets for comparison represents object A {02257} and the second represents object B {14579}. From this identification we can produce a t-matrix, extracting the total voice-leading possibilities from them.

The matrix produced in Figure 2.9 allows for the calculation of the total voice-leading possibilities from pcset A to pcset B.<sup>50</sup> The number of combinations of row/column so that "no number occupies the same row or column as another and all rows or columns contribute a number" does, however, become cumbersome to work out.<sup>51</sup> With the size of the matrix, the

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<sup>47</sup> Comprising a set X and Y where each member of X is mapped to a unique member of Y, when #X = #Y, see Lewin, *Generalized Musical Intervals and Transformations*, 3.

<sup>48</sup> See Morris, "Voice-Leading Spaces," 180 – 181.

<sup>49</sup> *Ibid.*, 203 – 205.

<sup>50</sup> As limited by Morris's R2 condition.

<sup>51</sup> Morris, "Voice-Leading Spaces," 180.

number of distinct combinations (that is, total voice leadings possible in this transformation) is 120 (5!). As such, we can notice that when comparing pcsets greater than #3 it is difficult to determine the best or minimal voice leading from many possibilities given within these t-matrices.

Figure 2.9: Morris's t-matrix generated from pcset A and B



t-matrix: A = {02257}; B = {14579}

	1	4	5	7	9
0	1	4	5	7	9
2	e	2	3	5	7
2	e	2	3	5	7
5	8	e	0	2	4
7	6	9	t	0	2

Hypothetically, since we can observe that {57} from A is embedded (via inclusion  $\subset$ ) in B {14579}, we could refine our matrix to only consist of a more limited set, where A = {022} and B = {149}. We can make this assumption because the transformation of {57} to {57} will be the smoothest (null), thus the only pcs that must move are {022} of A, and {149} of B.<sup>52</sup>

This approach of total voice leading, although providing a wealth of compositional resources, does not seem particularly useful to the analyst. For instance, including any and all

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<sup>52</sup> This reduction via inclusion relationships is not evident in Morris's writings and is an identified liberty taken up as to produce a manageable number of combinations.

possible moves ignores the presence of “like”-objects for comparison.<sup>53</sup> In a logical analytical context, certain elements should be compared with their corresponding elements (if apparent). Moreover, given its meticulousness in construction, and reflection of many potential transformations, this engenders an approach which neglects to reveal the actual transformation within in the musical passage. Lastly, given all the possible voice-leading combinations of pcsets A and B (120), Morris does not provide a function or mechanism that would reveal the smoothest move in the given space, just the prospects. As a result, although theoretically engaging, the application seems limited in an analytic context.<sup>54</sup>

The two approaches described above demonstrate overarching themes within the voice-leading scholarship: those of abstract generalization, surface-level tracking of pitch classes, and products that have little musical relevance as they remove the transformational function inherent within the moves. This is not to say that the work of Straus and Morris is not valuable. On the contrary, it certainly is helpful in post-tonal contexts and investigations of deeper levels of connections. The criticisms levied above suggest ways in which the approaches are not necessarily helpful to the current context and serve only to motivate new models. From other perspectives, we approach the idea of motive and intervallic comparisons more thoughtfully.

### Context: Motive and Interval

Many methodologies investigate comparisons between intervals and their motivic significance. Here, I focus on presenting analytical frameworks which lie close to my orientation. As a result, I remove the valuable scholarship that focuses on more abstract comparisons of

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<sup>53</sup> See total voice leading definition (Morris, “Voice-Leading Spaces,” 178).

<sup>54</sup> See also Morris’s commentary on Forte’s K and Kh complex structures, Morris, “K-, Kh- and Beyond,” in *Music Theory in Concept and Practice*, ed. James Baker, David Beach, and Johnathan Bernard (New York: University of Rochester Press, 1997) for discussion of similar issues.



interval content, such as the literature surrounding set-class inspection. Several authors, divided between interval versus motivic approaches, warrant discussion within this section.

## Interval

Four primary authors represent several approaches to compellingly describing and representing relationships among intervallic entities. In chronological order, Alan Chapman's "Some Intervallic Aspects of Pitch-Class Set Relations" (1981), Edward Pearsall and John Schaffer's "Shape/Interval Contours and Their Ordered Transformations: A Motivic Approach to Twentieth-Century Music Analysis and Aural Skills" (2005), and Drew Nobile's "Interval Permutations" (2013) all offer invaluable insights for analysis.<sup>55</sup>

## Alan Chapman

The scholars explored above (Straus and Morris) typically worked with pitch-classes exploring "voices" which "lead."<sup>56</sup> This method is astute given that "voices" are the sonic articulations within the space that we hear move. However, there is another method of measuring, or qualifying, transformations of these objects within the space. This idea was hinted at in the Morris article examined above; however, it came to fruition many years earlier. In 1981 Alan Chapman focused on the movement of pcsets and pc-nodes through an intervallic perspective within "Some Intervallic Aspects of Pitch-Class Set Relations."<sup>57</sup> This approach is

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<sup>55</sup> For additional relevant work in the more theoretic domain concerning intervallic similarity between sets, consult: Eric Isaacson, "Similarity of Interval Class Content between Pitch-Class Sets: The IcVSIM Relation" (1990); Ian Quinn, "Listening to Similarity Relations," *Perspectives of New Music* 39, no. 2 (2001): 108 – 158; Lewin, "Forte's 'Interval Vector, My Interval Function', and Regener's 'Common-Note Function'," *Journal of Music Theory* 21, no. 2 (1977): 194 – 237.

<sup>56</sup> Morris's positioning is intervallic in nature; however, he is still most concerned with the mapping of pcs via intervals.

<sup>57</sup> Alan Chapman, "Some Intervallic Aspects of Pitch-Class Set Relations," *Journal of Music Theory* 25, no. 2 (1981): 275 – 290. Much of this work is based on Chapman, "A Theory of Harmonic Structures for Non-Tonal Music," PhD Dissertation, Yale University, 1978.

one of the preliminary sources for discussing these voice-leading spaces not in terms of pc-nodes, but by intervals within the musical space. The framework is similar to the new approach advocated for in Section II, however differing measurements, qualifications, and comparisons result in divergent conceptualizations and conclusions.

In essence, this article studies voice-leading space via intervals relative to the bass (lowest) voice: AB (Above Bass). Chapman terms the outcome of these combined measurements of sonorities as an “interval set.”<sup>58</sup> This provides a method of comparison of objects as defined by a distance from—and relative to—the bass pitch. However, as presented in the article, only the same set-classes, or their subsets can be compared in a meaningful manner. This condition is a result of the approach being centred on “voice pairs (VP)” which show the movement of one defined interval above the bass, and its place in each structure. As a result, the same interval distances above the bass must occur in each object, but do not require the same order above the bass. In fact, the unordered nature of the progression of interval sets is where the utility of such a method is found. This mapping system therefore demonstrates the path of a single interval value through a progression of identical- or sub-set-classes.

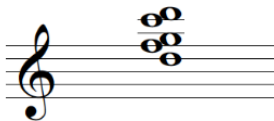
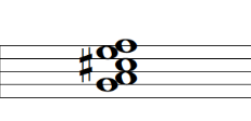
From a quantitative perspective “above the bass” is no different from the notion of intervals between pitch classes, but a conceptualization in this manner fails to note the individual transformations that structure new objects as a result of individual (*one-to-one*) motions. Furthermore, the analyst is always comparing relative integers. Chapman’s approach therefore describes a mapping system that is highly specific with limited analytic promise.

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<sup>58</sup> Chapman, “Some Intervallic Aspects,” 278; this interval set seems to be an unordered interval vector measurement.

Chapman’s method centers on mapping interval classes (interval sets) above the bass as a preliminary step. When attempting to pair them, however, one can recognize that it is not always possible given certain sets. Such a demonstration can be shown in an application once again to Figure 2.7’s objects. Here, one can notice that the set-classes (and interval class vectors) are different, and therefore the interval structure of these set-classes are unrelated in his methodology because no pairs exist. Thus, although Chapman starts with a promising premise of mapping and comparing specified intervals of sets, the applications are limited, as shown in Figure 2.10.

Figure 2.10: Chapman’s “Above the Bass” Interval-Set System and Voice-Pairs

<p>sc4-23</p> 	<p>sc5-30</p> 
<p>[AB:] 0 t 5 3</p>	<p>[AB:] t 9 6 2</p>
<p>[VP:] No Pairs Exist</p>	

### Edward Pearsall and John Schaffer

An excellent work with many possible applications, Edward Pearsall and John Schaffer’s “Shape/Interval Contours and Their Ordered Transformations: A Motivic Approach to Twentieth-Century Music Analysis and Aural Skills” (2005) presents an analytic paradigm that closely models the motivation and results of this project.<sup>59</sup> As they reveal, their work

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<sup>59</sup> Edward Pearsall and John Schaffer, “Shape/Interval Contours and Their Ordered Transformations: A Motivic Approach to Twentieth-Century Music Analysis and Aural Skills,” *College Music Symposium* 45 (2005): 57 – 80; Pearsall’s earlier work, Pearsall “Transformational Streams: Unravelling Melodic Process in Twentieth-

“advocate[s] a return to analysis based on ordered motives” which deviates from the traditional emphasis on operations of pitch-class set theory and unordered inspections.<sup>60</sup> Within their approach they are sensitive to both shape (as contour) and order, describing a single ordered shape/interval motive.<sup>61</sup> Utilizing ordered pitch-interval sets, they contextualize transformations on the set (defined as “O” for original) as inversion (I), retrograde (R), and retrograde inversion (RI), in sympathy to previously established twelve-tone operators (TTOs), as well as notions of transposition.<sup>62</sup> Their labelling scheme allows them to persuasively parse, gather, and realize surface-level and deeper structural manifestations of original motivic shape/interval allegiances. Hoping to also represent overlapping motives, they further discuss ideas of shared pitches and inserted pitches (imbricated and interpolated, respectively).<sup>63</sup> Defining alterations, they limit their approach to transformations which change the size or order of the intervals.<sup>64</sup> In all, their conceptual framework is sound and results in a powerful tool. Such an orientation provides a useful labelling apparatus; however, in practice it sometimes falls short of describing the processes which connects motivic objects. This is especially true for describing motivic development practices which transform motives outside of their defined operations. As a result, as a labelling scheme to demonstrate identity salience of certain motivic forms it is a cogent apparatus, however, it does not well encapsulate a large suite of processes of development.

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Century Motivic Music” in the *Journal of Music Theory* 48, no. 1 (Spring, 2004), presents further application and demonstrates more transmutations of the forms described in the 2005 article.

<sup>60</sup> Pearsall and Schaffer, 57 – 58.

<sup>61</sup> *Ibid.*, 60.

<sup>62</sup> *Ibid.*; the notion of transposition in this paradigm is moot theoretically as generic intervals and shape operate above transpositions themselves; however, in application this describes links cogently.

<sup>63</sup> *Ibid.*, 63.

<sup>64</sup> *Ibid.*, 67.

Another author contributing to the literature of intervallic comparisons is Drew Nobile's 2013 article, "Interval Permutations."<sup>65</sup> Within this work, Nobile takes the object approach to interval series as an "ordered set of pitch-class intervals that arise between successive members of the segment."<sup>66</sup> The primary focus of this work is to set out definitions to reordering schemes of interval series, labelled "interval permutations."<sup>67</sup> This can occur through cycling through the starting interval of the series (rotations), through retrograde forms (reversals), and through the cleverly defined use of swaps. Such conceptions are remarkably simple yet absent from other discussions as pointed out by Nobile.<sup>68</sup> Utilizing a handful of songs from Schoenberg's *The Book of the Hanging Gardens*, op. 10, Nobile demonstrates the application of such a paradigm. This approach of order-altering mechanisms is melded into the heart of the current framework describing order-inducing transformations in Section II.

In summary, these authors—Chapman, Pearsall and Schaffer, Nobile—take the interval as their main object of focus for conveying similarities between objects. In such successful approaches, the interval has demonstrated its utility as the source for identifying content comparisons. Although their strategies vary to the extent of practical application, it remains clear that intervals allow one to see (and hear) past surface pitches.<sup>69</sup> In comparison to voice-leading

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<sup>65</sup> Drew Nobile, "Interval Permutations," *Music Theory Online* 19, no. 3 (2013).

<sup>66</sup> Nobile, ¶2.

<sup>67</sup> *Ibid.*, ¶3.

<sup>68</sup> *Ibid.*, ¶49.

<sup>69</sup> Further publications which demonstrate similar, interval-centric perspectives include: Richard Chrisman, "Describing Structural Aspects of Pitch-Sets Using Successive-Interval Arrays," *Journal of Music Theory* 21, no. 1 (1977): 1 – 28; Eric Isaacson, "Similarity of Interval Class Content between Pitch-Class Sets: The IcVSIM Relation," *Journal of Music Theory* 34, no. 1 (1990): 1 – 28.

practices briefly explored above, such an orientation permits inspection of forms and their related configurations.

## Motive

Now, let us move away from intervals generically and toward their use specifically within motivic analysis. A number of previous studies fruitfully engage intervals in their lenses. This section will explore three such approaches and the strengths of their results. I have chosen more pragmatic than abstract writings given that I am interested in application more so than theoretically intriguing features.

## Jeffery Gillespie

Exploring both pitch and duration elements, Jeffery Gillespie presents coherent motivic transformations between multiple iterations of motives within “Nacht” from Schoenberg’s *Pierrot Lunaire*.<sup>70</sup> Establishing a GIS orientation in the style of Lewin, Gillespie presents group relations through network derivations of the “MOTH” motive. Using defined transformations, the paper articulates various connected chains of moves involved in permutating the initial and subsequent forms.<sup>71</sup> A clear focus is on the intervallic orientation of the constituent components of the motive. The networks themselves, then, communicate the relationships between occurrences of interval series. Forming various defined transformations, such as RICH and TCH,

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<sup>70</sup> Jeffrey Gillespie, “Motivic Transformations and Networks in Schoenberg’s ‘Nacht’ from *Pierrot Lunaire*,” *Intégral* 6 (1992): 34 – 65.

<sup>71</sup> Motivic chains are also explored in a similar way in Joseph Straus’s “Motivic Chains in Bartók’s Third String Quartet” which presents the idea of travelling through a *Tonnetz* structure to arrive at varying configurations of motives, through operations of transposition, inversion, retrograde, and retrograde-inversion. Straus demonstrates the capability within an analysis of Bartók’s Third String Quartet. I would caution the reader that such an application may yield limited results on other repertoires. See Straus, “Motivic Chains in Bartók’s Third String Quartet,” *Twentieth-Century Music* 5, no. 1 (2008): 25 – 44.

Gillespie is in a position to reveal the interaction of the forms plotted through succinct network/group connections. The product of such an investigation yields new insight into the links between motivic forms within “Nacht.” The research produces succinct transformational operations which permit new pathways for future exploration. What remains however, is the work’s ability to contribute to further investigations of motive beyond this specific, contextual application. Taken as a very successful approach into network representations of motivic manipulation, Gillespie inspires the analyst to convey the dynamic relationships in abstract—yet perceptible—ways.

### Lora Gingerich

Taking Schoenberg’s motivic conception as the starting point, Lora Gingerich engages a motivic frame for inspecting works by Charles Ives.<sup>72</sup> Utilizing Ives’s music as the source for defining a number of unique transformations of motive strings, Gingerich adds a significant contribution to the analysis of motivic forms. Gingerich defines fifteen motivic transformations such as Transpose, Insert, Delete, Sharp, Flat, Contract, Invert, and Exchange. As a collection, they are closely connected with the formalized definitions presented in Section II. The paper aptly demonstrates how such transformational processes “play several roles in shaping the melodic structure” of the works examined.<sup>73</sup> If there is one shortcoming to Gingerich’s approach, in my view, it is the lack of compelling visual representations of the processes themselves. In this fault—if we should call it such a thing—I propose the network constructions below as a solution.

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<sup>72</sup> Lora Gingerich, “A Technique for Melodic Motivic Analysis in the Music of Charles Ives,” *Music Theory Spectrum* 8 (1986): 75 – 93.

<sup>73</sup> Gingerich, 92.

In all, the methodology through its definitions offers a rich starting point as a way into the manipulation of motivic objects, whether in the music of Ives or elsewhere.

Matthew Arndt

Taking Berg's Piano Sonata op. 1 as the analytical focus, Matthew Arndt takes aim at procedures of motivic development in a 2017 *Theory and Practice* article: "Toward a Renovation of Motivic Analysis: Corrupt Organicism in Berg's Piano Sonata Op. 1."<sup>74</sup> Framing development in an organicist perspective, Arndt works diligently to propose a motivic analysis which can work out-of-time, relating characteristic forms and structural entities across a work (at the mainly local level). The complete article is a valuable addition to the literature; however, the appendix in particular, offering "methods of variation", proves exceptionally persuasive.

Although Arndt does outline the mechanisms that may be applied to the analysis, there is little follow-through to present a reading that cogently relates the processes in a clear analytical manner. Various form labels with superscripts and directed arrows attempt to relay change, but the lack of defined pathways puts the responsibility of defining which specific processes are employed to the reader. Though not a conceptual burden, the practice becomes burdensome when multiple developmental procedures are in play simultaneously. In all, the pros certainly outweigh the cons, as Arndt presents further considerations when dealing with the motive as an analytic object.

In summary, Gillespie, Gingerich, and Arndt each present analytical applications of the concept of motive manipulation through exploration of its intervallic features. Whether

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<sup>74</sup> Matthew Arndt, "Toward a Renovation of Motivic Analysis: Corrupt Organicism in Berg's Piano Sonata Op. 1," *Theory and Practice* 42 (2017): 101 – 140.



presentation occurs through networks, expressions, or definitions, each orientation demonstrates a successful practice of taking interval as the transformation object subject to alteration in motivic music. Tracking the defined changes between objects, these authors have shown the viability of such a scheme for illuminating surface-level connections between forms. Inspecting the similarities and differences between the statements through various methods, they have demonstrated the prevalence of intervallic change as a defining feature of a repertoire steeped in twentieth-century practices (Schoenberg, Berg, and Ives).

Section I has explored the conceptual space, defined the objects under inspection, and introduced the model's representation schemes. As explored above, the principal value of this methodology is expressed through its commitment to expressing intervallic relationships via transformational processes. Section II will continue this objective through defining specific intervallic transformations.

## II. Model

### A Schoenbergian Starting Point

Let us now turn our focus away from musical space and previous approaches toward the new model motivated by first considering an analytical sketch from Schoenberg. Examine Figure 2.11 which excerpts, in chronological order, passages selected from Schoenberg's *Gedanke* manuscript, as compiled by Patricia Carpenter and Severine Neff within *The Musical Idea and the Logic, Technique and Art of its Presentation* (1995) and further discussed within J. Daniel Jenkins's *Schoenberg's Program Notes and Musical Analyses* (2015).<sup>75</sup> Within Figure 2.11 we

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<sup>75</sup> Sketches excerpted from Arnold Schoenberg, *The Musical Idea and the Logic, Technique, and Art of its Presentation*, ed., trans., by Patricia Carpenter and Severine Neff (Indiana: Indiana University Press, 2006 [1995]); J. Daniel Jenkins, *Schoenberg's Program Notes and Musical Analyses*, ed. J. Daniel Jenkins, Sabine Feisst, and

may glimpse Schoenberg's conception of motivic variation/development through tracing his annotations of a passage from his Chamber Symphony no. 1 (1906). Selections labelled II to VI continually refine and reinterpret various motivic relationships within the passage, in this figure originally given as statement I.

In his first sketch of the excerpt (I), Schoenberg denotes "a" and "b", suggesting in the accompanying text that these express a "connective technique" linking formal sections.<sup>76</sup> In his annotated statement II Schoenberg further highlights the third relationships (previously "a") present in both descending and ascending forms as well as a prominent C#. In its third iteration (III), the sketch encompasses more relations through bracket and arrow references. As we approach statement IV, we see inscriptions such as "development," "reduction," and "retrograde inversion." Evidently, Schoenberg begins to discern a series of abstract relations. Coupled with the addition of integers reflecting generic interval distances, the specificity of this example demonstrates a refined notion of quantifiable relations within his thought and music. This idea is taken up with renewed vigor in statements V and VI. Here, Schoenberg denotes rhythmic developments, pitch relations, and gestural similarities. Perhaps most relevant to the forthcoming work is the final form of Schoenberg's analytical ascriptions. In the VI iteration in particular, Schoenberg places, on the staff, an intervallic string: <[+]4, +4, +2, -2, -2>. He then demonstrates the continuance of this intervallic pattern within a later sounding.

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Severine Neff (Oxford: Oxford University Press, 2015). These sketches principally exist as handwritten notes in Schoenberg's notes and are accessible through the digital records/database at Arnold Schoenberg Center.

<sup>76</sup> J. Daniel Jenkins, *Schoenberg's Program Notes and Musical Analyses from Schoenberg in Words* vol. 5, ed. J. Daniel Jenkins, Sabine Feisst, and Severine Neff. (Oxford: Oxford University Press, 2015): 161.

Figure 2.11 Schoenberg's Deconstruction of a Theme from Chamber Symphony no. 1

The image displays a musical score analysis of Schoenberg's Chamber Symphony no. 1, divided into two main sections, V and VI. Section V (top left) illustrates the deconstruction of a theme through various transformations: 'The upbeats R transformation', 'R a-red reduction', 'R a2 diminution', and 'R a'. Section VI (top right) shows further transformations: 'interval of a third', 'diminished 5 (c + 4)', and 'way of the development from c# up to f# back down to c#'. The score includes various musical notations such as notes, rests, and dynamic markings. Section IV (bottom right) shows 'retrograde inversion' and 'development of the top note'. Section III (bottom middle) shows 'x-x' and 'x-x-x' markings. Section II (bottom left) shows 'x' and 'x' markings. Section I (top left) shows 'a' and 'b' markings. Section V (bottom left) shows '11/3' and 'M' markings. Section VI (bottom right) shows '4 + 4 + 2 - 2 - 2' and '22' markings.

Within Figure 2.11 we can observe that, although initial brackets denote gestures and certain descriptive relations, by the end of the discussion a quantitative refining of relations has emerged, exploring intervallic measures. Measuring distances and comparing such spatial moves as more literal relations of segments allows both similarities and coherent developments to be grasped from the outset. What was at first qualified, is now quantified.

Perusing Schoenberg's writings, sketches, and analyses it is apparent that a more enlightened perspective of Schoenberg's music may be gained through aligning our inspections with his intervallic thinking of ordered relations and their developmental potential. From materials, it is explicit that Schoenberg is thinking intervallically when constructing his motives.<sup>77</sup> As a result, it should prove ostensibly helpful to analyze, much like he has done, his works through such a perspective. Given the infinite possibilities of intervallic transformations, however, it is first necessary to develop a defined system of mechanisms that can be applied to these processes. As such, I propose a toolbox of transformational procedures that embody several fundamental moves and principles which can be used to tease-out relationships within Schoenberg's early motivic compositions. The propositions put forward offer an initial avenue of investigation and do not seek to define all possible transformational mechanisms possible, probable, or necessary to fully engage a complete reading of process within Schoenberg.

### A Proposal

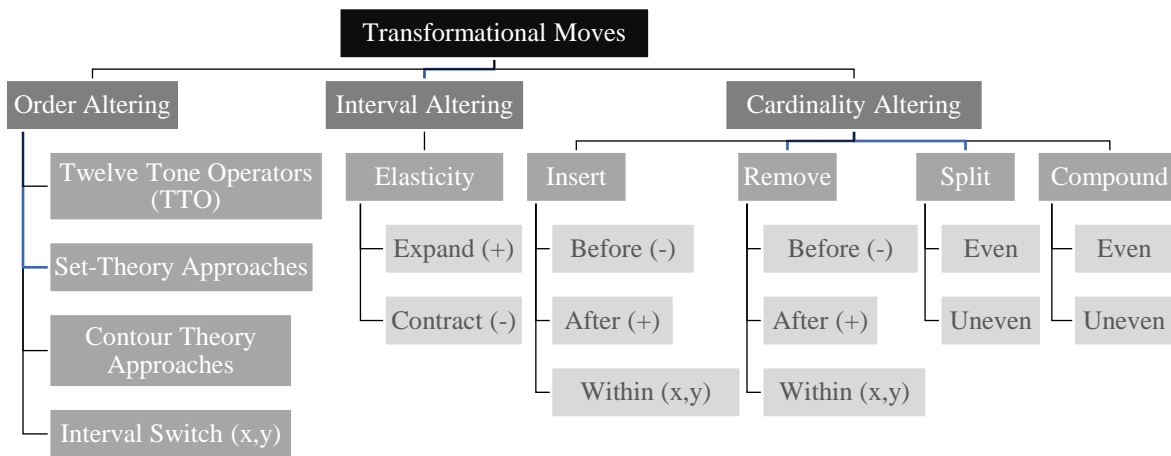
Although one may entertain the understanding (and possibility) of infinite processes through which a musical unit can change through infinite degrees, the reality of our musical

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<sup>77</sup> Recall that this sentiment is reflected in essence by Carl Dahlhaus's assertion, mentioned earlier: "to put it paradoxically: Schoenberg *thought* 'motivically', even when he did not *compose* 'motivically.' Only detailed analyses would demonstrate how in a single work or movement the process of spinning out formal connections from interval structures relates to the events that are escribed by gestural patterns" (Dahlhaus, 77).

experience rests mainly on a subset of that universe. Parsing our infinite possibilities into more conceivable units creates a more accessible tool for analytical and conceptual purposes. When we think of a string of musical elements (a set), we may conceptualize three main processes as invoking change. First, we could change the order of all or some of the elements of the set labelled “Order Altering.” Second, we may change the size or proportions of the set or any of its elements. This manipulation of existing material is called “Interval Altering,” as the interval is altered by some degree. Third, we might add or subtract certain elements to/from the original set. This process changes the overall number of elements within the set and is termed “Cardinality Altering.” Figure 2.12 highlights the summary structure of mechanisms that will be explored and defined within this chapter.<sup>78</sup> These three larger categories, as transformational families each with a theoretically infinite subset of possibilities, presents a strategy for relating processes together based on fundamental mechanisms of manipulations.

Figure 2.12: Possible Transformational Mechanisms



<sup>78</sup> Development of specific transformations is unending. With the possibility for perpetual categorization and development too much specificity could likewise become equally as problematic as vagueness. Without trying to define the endless list of possible transformations, this project aims to stick to some more “canonical” uses and their possible alterations.

## Order-Altering Transformations

One of the simplest methods to ensure motivic connection and comprehensibility between two or more segments is to use the same intervals in construction. This strategy allows listeners to connect and map familiar events (through their similar structural intervals) between two or more sets and is also a common strategy for more abstract relations of pitch collections. Transforming a set (motive string) through shuffling or displacing its elements into new orders offers a rich means of variety while promoting sameness through intervallic measures of pure distance.

Consider Figure 2.13. We may explore the development of X through  $X^I$  and  $X^{II}$  by first describing similar features within the three segments. We may point to the same set-class 3-6 (024), interval-class vector  $\langle 020100 \rangle$ , and perhaps most apparently, the repeated use of intervals  $-2, +2, -4$  in various orders (here, retrograde ( $X^I$ ) and rotation ( $X^{II}$ )).

Figure 2.13: Order Alteration of Motive String  $\langle -2, +2, -4 \rangle$

The figure shows a musical staff in treble clef with a key signature of two sharps (F# and C#). Three segments are shown, each with a bracket above it and an interval-class vector below it. Segment X consists of four notes: G4, A4, B4, and C5. Segment X<sup>I</sup> consists of four notes: C5, B4, A4, and G4. Segment X<sup>II</sup> consists of four notes: A4, G4, F#4, and E4.

Order, in this case, has not altered their directional relationships as this is tied to the intervallic strings' inherent content. Abstractly, one must remember we are changing the order of intervals, not necessarily the order of any one specific pitch. The intervals, as quantified measures, remain both intact and identical in successive iterations. Pitch-centric analyses might deem the two

variants as identical to X as the set-class labels and interval class vector's (ICVs) are indistinguishable. This, however, does not account for the temporal alteration.

A survey of previous methodologies reveals this thinking as foundational within the theoretic and analytic disciplines.<sup>79</sup> For example, the notion of retrograde (R) in the standard Twelve-Tone Operators (TTOs) changes the order of a given row by reversing its relations.<sup>80</sup> Additionally, within the contour literature the idea of order altering is prevalent given the limited nature of the elements involved (+, -, =).<sup>81</sup> In this context, scholars have provided the concept of rotations. For example, taking a Contour Adjacency Series (CAS) and displacing elements by one or more places is a typical move in the methodologies of Michael Friedman as well as Elizabeth West Marvin and Paul Laprade.<sup>82</sup> Edward Pearsall makes additional strides through refining contours to intervallic measurements and states that patterns of rhythm are also subject to such processes of “reordered, reversed, or rotated.”<sup>83</sup> Additional operations of re-ordering

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<sup>79</sup> Although largely based on transpositions, early procedures of finding similarity of contrapuntal lines lies in the spirit of this investigation. This premise is also rooted in the set-class theory tradition: a variety of representation of related set material (compiled intervallic relations). This ordered-versus-unordered distinction makes set-class analysis a potent and effective tool for understanding elemental composition, but less suited to process thereof.

<sup>80</sup> Importantly, one must not forget that this row exists as a series of intervallic relationships and that an analogous collection could be likewise manipulated. For a quick-reference summary see discussions within: Joseph Straus, *Introduction to Post-Tonal Theory*, 4<sup>th</sup> ed. (New York: W.W. Norton & Co., 2016); Joseph Straus, *Twelve-Tone Music in America* (Cambridge: Cambridge University Press, 2009); Robert Morris, *Class Notes for Atonal Theory* (1991); Miguel Roig-Francoli, *Understanding Post-Tonal Music* (Boston: McGraw Hill, 2008); and John Covach, “Twelve-Tone Theory,” in the *Cambridge History of Western Music Theory*, (Cambridge: Cambridge University Press, 2002): 603 – 627.

<sup>81</sup> See Michael Friedmann, “A Methodology for the Discussion of Contour: Its Application to Schoenberg’s Music,” *Journal of Music Theory* 29, no. 2 (1985): 223 – 248; Elizabeth West Marvin and Paul A. Laprade, “Relating Musical Contours: Extensions of a Theory for Contour,” *Journal of Music Theory* 31, no. 2 (1987): 225 – 267. Edward Pearsall and John Schaffer, “Shape/Interval Contours and Their Ordered Transformations: A Motivic Approach to Twentieth-Century Music Analysis and Aural Skills,” *College Music Symposium* 45 (2005): 57 – 80.

<sup>82</sup> *Ibid.*

<sup>83</sup> Pearsall, 2004; Edward Pearsall, “Interpreting Music Durationally: A Set-Theoretic Approach to Rhythm,” *Perspectives of New Music* 35, no. 1 (1997): 212.

ordered sets are well defined in other set-class, serial, and transformational theories and these approaches need not be fully extrapolated in our current context.

A recent scholar whose work is relevant to current discussions of order is Drew Nobile in the *Music Theory Online* article “Interval Permutations” (2013).<sup>84</sup> In this work, Nobile takes the idea of interval re-orderings as salient musical relationships describing “interval series” under operations such as swaps and rotations while contextualizing the relationship of the model to others such as Forte, Morris, Chapman, and Roeder. I find the approach novel and sensitive to the space of interval moves; however, the work is not fully realized within a larger context of intervallic procedures. Further, the concept of adjacent swaps, though similar conceptually to my model below of switch transformations, in many cases seems to muddle surface readings as it necessitates additional analytical steps to draw relations.

Figure 2.14 displays several existing analytical tools for revealing order relationships. The first collection (a) demonstrates a Contour Adjacency Series (<-, +, -) as Rotated and Inverted. It is easy to imagine these contours being further refined distance measures. Pearsall demonstrates such refinement in the second collection of rotation transformations (b). The example within the third collection (c) is excerpted from Nobile’s “Interval Permutations” and reveals how reversal and rotation create compelling transformations which yield overt sonic differences.<sup>85</sup> Figure 2.14 imparts several modes of understanding changes to interval ordering. Transformations such as these offer a wealth of developmental possibilities and can be integrated, as necessary, into the current analytical tool kit.

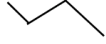
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<sup>84</sup> See Drew Nobile, “Interval Permutations,” *Music Theory Online* 19, no. 3 (2013).

<sup>85</sup> Note that the Interval Series of Nobile is based within pitch-class space and does not reflect the experienced totality of the distance traversed, rather its simplified form. I believe that this impacts our listening in a significant way, and distances ourselves from the distinct surface pitch soundings.

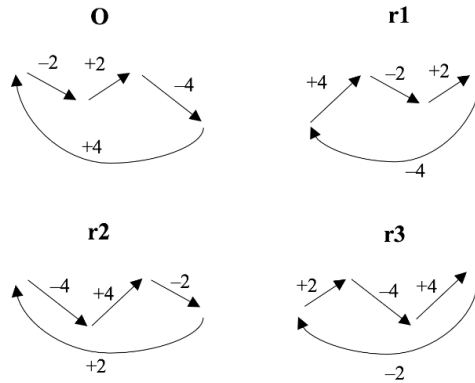


Figure 2.14: Sample Ordering Operations

- a) Rotations and Rotation Inversion, Friedman and Marvin and Laprade (1987).  
 Take for example “Motive A,” whose contour adjacency series (CAS) reads  $\langle -, +, - \rangle$ . A visual shape representation would be thus: 


CAS:  $\langle -, +, - \rangle$   
 CAS Rot. 1:  $\langle -, -, + \rangle$   
 CAS Rot. 2:  $\langle +, -, - \rangle$   
 CAS Inv.:  $\langle +, -, + \rangle$   
 CAS Rot. Inv. 1:  $\langle +, +, - \rangle$   
 CAS Rot. Inv. 2:  $\langle -, +, + \rangle$

- b) Shape/Interval Rotations of  $\langle -2, +2, -4 \rangle$ , after Pearsall (2004):




... figure continued

Notated form:

<b>O</b>	<b>R</b>	<b>I</b>	<b>RI</b>
			
$\langle -2, +2, -4 \rangle$	$\langle +4, -2, +2 \rangle$	$\langle +2, -2, +4 \rangle$	$\langle -4, +2, -2 \rangle$

- c) Reversal and Rotation Orders, excerpted from Nobile “Interval Permutations” (2013)

a) Original segment	b) Reversal	c) Rotation	d) Rotation
			
Interval series: [4, 2, 3, 1]	[1, 3, 2, 4]	[3, 1, 4, 2]	[1, 4, 2, 3]
Set-class: (02368)	(02368)	(01468)	(01368)

Despite previous methodologies accounting for the possibility of sets to be reordered, many of these approaches specify that the set, as a whole, must be reordered.<sup>86</sup> In the case of rotation, every element is displaced, and in the case of retrogrades the entire set is reversed. However, what if only a subset of the set changed its ordering? In this case set-class and interval class vector comparisons would be futile as the elements themselves have not changed and notions of rotations or retrogrades fail to account for the individual element shifts.<sup>87</sup> To compensate for this oversight, I define the transformation Switch (Sw).<sup>88</sup>

A Switch transformation is an exchange between two terms in a set whereby they exchange places in the ordered set. The places can be adjacent terms or temporally distant in the set. Analogously to contour rotations, the ordered terms wrap around (last-first). In the form  $SWITCH_{x,y}(X) = X^l$ ,  $x$  and  $y$  represent the term-places being exchanged.<sup>89</sup> The inverse of such an operation is possible as well,  $SWITCH_{x,y}SWITCH_{y,x}(X) = X$ .

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<sup>86</sup> Notably, Tymoczko's OPTIC transformations exhibit moves that are performed on subsets of a set; however, the operations produce the same set-class whereas my model does not advocate for this limitation (see Dmitri Tymoczko, *A Geometry of Music: Harmony and Counterpoint in the Extended Common Practice* (New York: Oxford University Press, 2011)). Moreover, Tymoczko's Permutation (P) and Cardinality change (C) although at first glance relate to my work, do not reflect the nature of change, but more accurately the distribution of elements (for instance Permutation as reassigning note to a different voice, and Cardinality change as an additional doubling of an already existent pitch). Further, Nobile offers the possibility of "swapping" terms, however, this is mostly concerned with "adjacent swaps," and does not endorse the possibility for non-adjacent swaps. Nobile views these derived from background adjacent swaps stating: "Any interval permutation can be written as a product of adjacent swaps" (Nobile, §7). I would disagree with the premise of tracing only adjacent swaps as the root cause of the order shift, as this pushes our understanding beyond the surface structures into the realm of idealized moves.

<sup>87</sup> Of course, certain collections with certain properties, may be able to achieve the product (an identity element) by virtue of its design.

<sup>88</sup> Joe Argentino includes a similar idea of SWAP and RSWAP regarding manipulation of Dyads and Tetrachordal segments within Hexatonic Systems in the late music of Schoenberg. However, the space and the elements involved therein differ substantially from the more generalized process currently motivated. See Joe R. Argentino, "Transformations and Hexatonic *Tonnetz* Spaces in Late Works of Schoenberg," PhD Dissertation, University of Western Ontario, 2010.

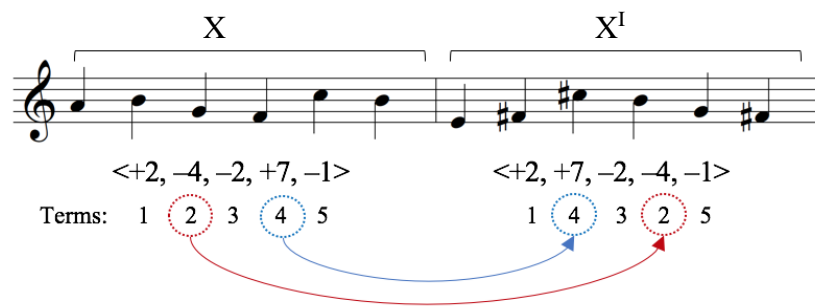
<sup>89</sup> For more than 1 Switch operation, we may separate through the use of semi-colons (;) so that:  $SWITCH_{(x,y;a,b;l,j)}(X)$ .

Examine Figure 2.15 which presents a Switch between the non-adjacent int-node terms 2 and 4 of Motive String (X). Relating the two forms, we may write the expression:

$SWITCH_{2,4}(X) = X^I$ , or express the altering through the paired network, b).<sup>90</sup> In this example, one can still observe +2 as initiating, and with -2, and -1 int-nodes acting as structural pillars. We may consequently draw overt motivic connections, and indeed similarities, between the elements involved and their slight development through variance of term placement.

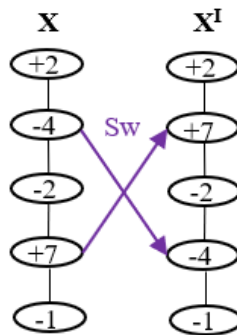
Figure 2.15: Switch Transformation, Pitch Domain:  $SWITCH_{2,4}(X) = X^I$

a) Score Illustration



... figure continued

b) Network



<sup>90</sup> See Figure 2.6 (above) for explanation of node elements and other network details.

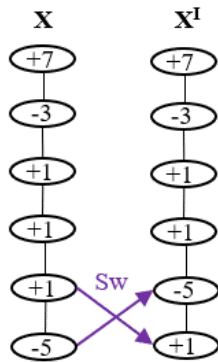
As Figure 2.15 (above) demonstrates, a Switch transformation has the potential to affect only a small portion of the overall motive string allowing a retention of similar (or familiar) elements. In another context, the network of Figure 2.16, we can observe adjacent terms performing ( $SWITCH_{5,6}(X)$ ). As listeners, we can hear a shift between the final moments of the motive strings but would likely be able to connect the common experience of the  $-5, +1$  components of the concluding gesture to the identity of the complete motivic expression.

Figure 2.16: Switch Transformation, Pitch Domain:  $SWITCH_{5,6}(X) = X^I$

a) Score Illustration



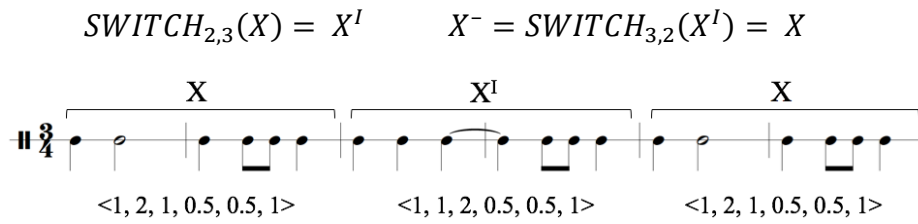
b) Network



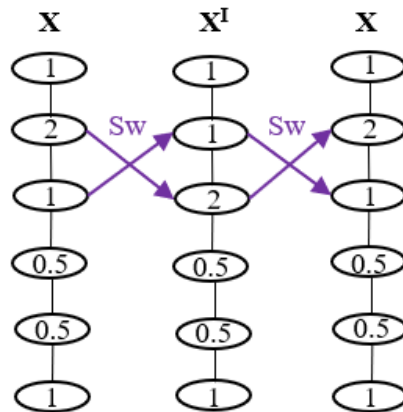
As any pair of intervallic elements in either domain can undergo a Switch operation, Figure 2.17 presents an example  $SWITCH_{2,3}(X)$  from the duration perspective. The latter portion of Figure 2.17 also demonstrates the inverse capability of the operation.

Figure 2.17: Switch Transformation, Duration Domain:  $SWITCH_{2,3}(X) = X^I$

a) Score Illustration



b) Network



Although order-altering transformations modify the chronological articulation of the int-nodes, they do not change the innate intervallic content of the strings themselves. Significantly, these types of maneuvers would be indistinguishable changes in many methodologies as the sets typically exhibit the same set-class or interval-class vectors.<sup>91</sup> From the above examples, Switch transformations work to capture more nuanced manipulations of a segment or segments within a motive string, especially helpful when rotations or retrogrades cannot cope with paired term swaps. In all, exchanging more germinal elements contributes to a sense of musical development

<sup>91</sup> Set-class similarity is true for Rotations and Retrogrades, however, they may not present as the same in the context Switch operations. Z-related sets have a unique position in this discussion as they are two discrete sets which share the same interval class vector.

without changing the distance relations themselves and is a potent compositional method for generating variations.

Order is important when discussing ideas of similarity between two musical objects. Several previous methodologies have coped with alterations primarily through collective manipulations or through generalizing to categorical sameness based on unordered arrangements (set-classes). However, it has been demonstrated that order may only affect a subset of elements in a motive string or be confined to adjacent terms. It thus becomes important, when tracing paths or ideas of development, to understand exactly where an order alteration changed the string to accurately describe the transformational process itself and how such a move shaped its musical outcome. In addition to the Switch mechanism proposed above, several established operational procedures such as rotations (rot), retrograde (R), among others will also be invoked where relevant.

### Interval-Altering Transformations

Switching the order of int-nodes in a motive string presents an opportunity to vary the motive without altering any of the int-nodes themselves, allowing for identical intervallic content to connect two forms of a motivic family. Often, however, motivic development takes place through changing the content of the int-node itself. To this end, consider once again the cello excerpt from Schoenberg's String Quartet no. 2, op. 10/III, Figure 2.18.<sup>92</sup> The general shape, cardinality, and overall ordered form of the motive remains similar throughout the excerpt. Comparing the ordered interval strings of the Roman numeral labelled segments below the staff one can identify certain places where the interval has been altered. For example, the first term of

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<sup>92</sup> Originally presented as Figure 2.1.

statement I: +3, moving to a +4 in statement II, and back to +3 in statement III. Throughout the unfolding, tracking the path of each term (“like”-term places) reveals variance within several int-nodes. These alterations to the motives’ interval content permits a quantifiable change to be identified through a process—a transformation—which takes the intervallic elements from one iteration to the next. We will return to this example shortly.

Figure 2.18: Space Elasticity: Schoenberg’s String Quartet no. 2, op. 10/III, mm. 19 – 23, cello

The image shows a musical score for cello, measures 19-23, in 4/4 time. The score is divided into six statements, labeled I through VI. Each statement is bracketed and labeled with its name and a serial code: I sc4-23, II sc5-7, III sc5-14, IV sc5-19, V sc5-14, and VI sc4-z15. Below each statement, its intervallic content is listed: I: <+3, +2, +5, +2>; II: <+4, +1, +5, +1>; III: <+3, +2, +5, +1>; IV: <+3, +1, +5, +1>; V: <+3, +2, +5, +1>; VI: <+3, +1, +6, +2>. The notation includes a bass clef, a key signature of three flats, and a common time signature.

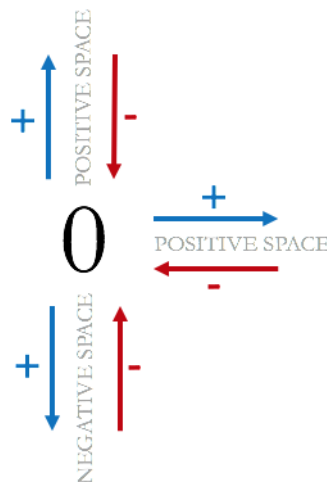
The principle through which we can observe these shifts to the intervallic content of the nodes themselves is called *int-leading*. Tracking int-leading reveals a flexibility of spatial moves and parallels the conceptual framework established in the voice-leading literature, albeit through the inspection of differing objects. The term *interval elasticity* (succinctly, Elasticity) further suggests that the changes in content reflect the dynamic ways in which intervals move from one statement to another.<sup>93</sup> Any difference in intervallic size, such as intervals getting larger or smaller, therefore allows one to hear the malleability (i.e., Elasticity) of a motivic form. Interval Elasticity manifests through two transformative moves: Expansions (EXP; getting larger, +) and Contractions (CON; getting smaller, –). Although these ideas are not mathematical inverses of one another due to an ordered form, one is still able to imagine the inverse move that would undo the expansion or contraction reverting int-values to their original form. Before further delving

<sup>93</sup> Ernst Toch, in *The Shaping Forces of Music* (1948), has a concept called “Melodic Elasticity” which is more about voice-leading moves of “small steps in one directions to be followed by a leap in the other,” and vice-versa (See Ernst Toch, *The Shaping Forces of Music* (New York: Criterion Music Corporation, 1948)). Elsewhere, I have related this concept to the metaphor of musical magnetism and rebound; to use his terms, “shaping forces,” but this concept, as a defined transformation, bears little resemblance to the more formalized measure presented here.

into these moves, let us first explore the mapping and orientation inherent to this specific transformative process.

When investigating these spaces, expansion versus contraction moves operate within a certain orientation. Specifically, a move in pitch or duration space can move in two directions: the change can be seen as positive (adding/expanding, +) or negative (subtracting/contracting, -). We may conceptually orient this movement around 0 as shown in Figure 2.19.<sup>94</sup> In this configuration a directional move away from 0 indicates an increase in space and defines an expansion, whereas directional moves toward 0 indicates contractive moves.

Figure 2.19: Spatial Orientation & Moves (Pitch on vertical axis, Duration on horizontal axis)



Given Figure 2.19, we can discuss preliminary examples of spatial changes (Elasticity) through varying intervallic distances. For instance, given a starting interval of +2 (in either axis), if the “like” interval in the successive iteration moved to +3 this would demonstrate a positive move in positive space: an int-leading move of +1 (the difference between the moves). If the starting interval was -5 and progressed to -3 in its next sounding, then this would represent an

<sup>94</sup> Notice the spatial compatibility between these moves and the space as defined in Figure 2.2.



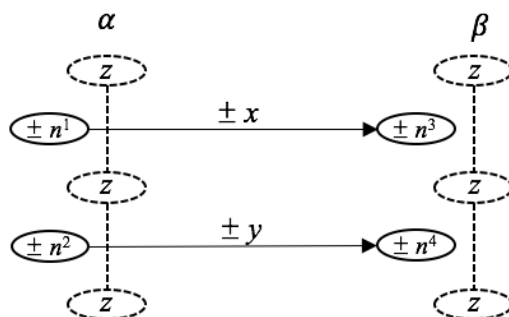
int-leading change of  $-2$ . Another example could see a  $-3$  difference between a starting int-node value of  $+7$  progressing to a  $+4$ . Such moves are demonstrated within Figure 2.20.<sup>95</sup>

Figure 2.20: Elasticity Spatial Orientation



Displaying these motives through int-leading networks allows for a visual inspection of the transformations involved. In an int-leading context, such network representations can be generalized between two motivic objects as shown in Figure 2.21.<sup>96</sup>

Figure 2.21: General Event Network Form of Interval-Altering Transformations (Elasticity)



Where:

$\alpha$  = (Alpha) Object 1, Original Motivic String

$\beta$  = (Beta) Object 2, Transformed Motivic String

$z$  = pitch – class node; or duration – value node (base-1=quarter note)

$\pm n$  = ordered pitch; or inter – onset attack – interval node (INT – node)

$\pm x$  = Distance ( $\pm$ ) comparing  $n^1$  to  $n^3$

$\pm y$  = Distance ( $\pm$ ) comparing  $n^2$  to  $n^4$

Importantly, the arrows labelled  $x$  and  $y$  are functionally associated with the process of change—they become the manipulative argument (amount of alteration between int-nodes) which would

<sup>95</sup> From Figure 2.19 moves in the positive direction are labelled with blue text and directed arrows and moves in negative directions are labelled in red.

<sup>96</sup> It is not necessary to include the dotted pitch-class-nodes as they are implied by the interval-nodes; however, there is an ease of reading and access permitted in some configurations that can be useful. It is at the discretion of the analyst.

lead to the production of the realized *Beta* form (second motivic iteration). The labels  $\pm x$  and  $\pm y$  describe the intervallic change between string arrangements with blue arrows expressing expansions and red arrows conveying contractions.<sup>97</sup> With the pitch domain working in chromatic space for current purposes, the semitone is the base-unit ( $\pm$ ). For the temporal interval, an infinitely divisible base-1 quarter note will demark the duration domain element(s).<sup>98</sup> This graph resembles the Interval Adjacency Series tracking figure from above (Figure 2.4), and can be applied to both pitch and duration spaces.

An expression can also capture the manipulation of the motivic string concisely in the form:  $ELAS_{x,\pm y}(X) = X^I$ , where  $x$  specifies the term in the motive string and  $\pm y$  quantifies the amount (degree) of change with semicolons (;) separating multiple interval alterations, if required. As established, preference within this work is placed upon the network form.

Elasticity is an operation where, given one-to-one and onto mapping, as well as specified term identification in the expression, one can always imagine the inverse operator undoing the transformation returning the int-nodes to their former measures. In lieu of a negated  $EXP^-$  and  $CON^-$ , this model will only use  $EXP$  and  $CON$  as one *is* the other with  $\pm y$  clearly establishing an expansion (+) or contraction (-) of space. As a result, the operation  $ELAS_{x,\pm y}(X) = X^I$  imparts both sentiments.

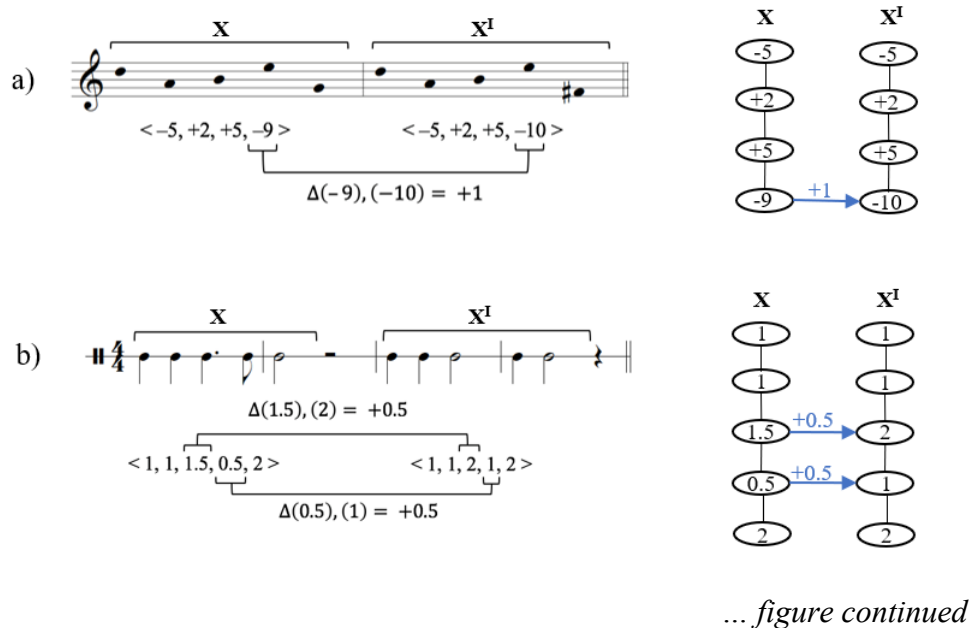
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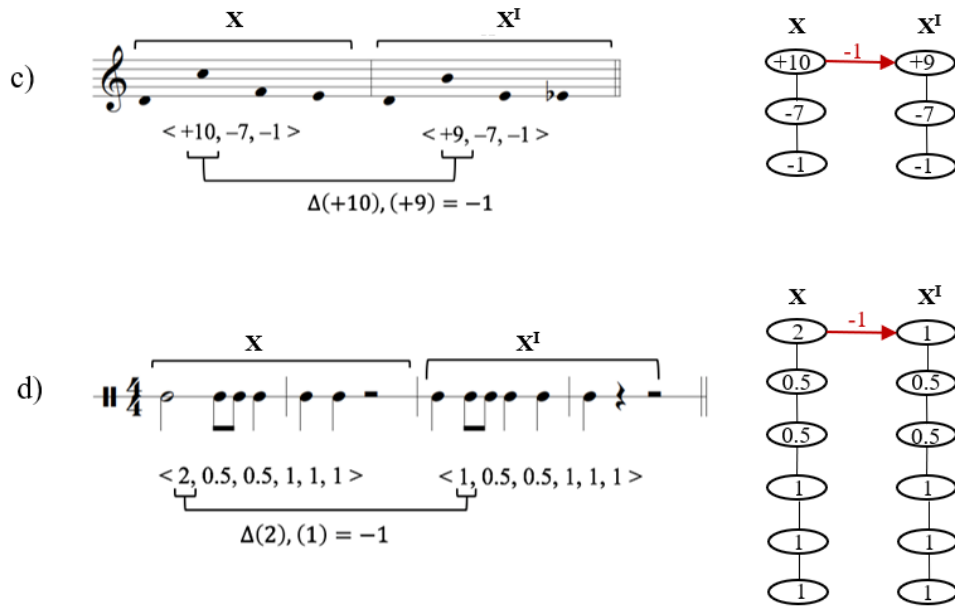
<sup>97</sup> Left-to right and top-down orthographies are rationale choices for ease of reading and will be the practice moving forward unless otherwise indicated.

<sup>98</sup> The space, as discussed above, could be redefined to utilize differing sets, collections, or universes, however for the ultimate application of the model, I have opted for chromatic space. Furthermore, the moves of such processes could be further refined to fit the space. In other forthcoming work, we may attribute processes of parsimoniousness, and other similarity descriptors to the distance moves, qualifying their functional moves more categorically.

Examining Figure 2.22, we can see the operation  $ELAS_{x,\pm y}(X)$  in practice. In Figure 2.22a, X is transformed into  $X^I$  through the fourth term expanding its size by a +1 int-leading (elastic) move (the difference between X and  $X^I$ ). In expression form we can realize the process by writing  $ELAS_{4,+1}(X) = X^I$  or utilizing a network. A durational expansion can be observed in Figure 2.22b where mapping X to  $X^I$  observes the third and fourth terms expanding, each by +0.5. Once again, we may summarize the process by writing:  $ELAS_{3,+0.5;4,+0.5}(X) = X^I$ . Examining Figure 2.22c, we can see an operation  $ELAS_{x,-y}(X) = X^I$  in practice. In this case, X is transformed into  $X^I$  through the first term contracting by -1 (the difference between X and  $X^I$ ). In expression form we can realize the process by writing:  $ELAS_{1,-1}(X) = X^I$ . Figure 2.22d presents an analogous durational example where elasticity is manipulated by  $ELAS_{1,-1}(X) = X^I$ .

Figure 2.22: Example Elasticity Transformations

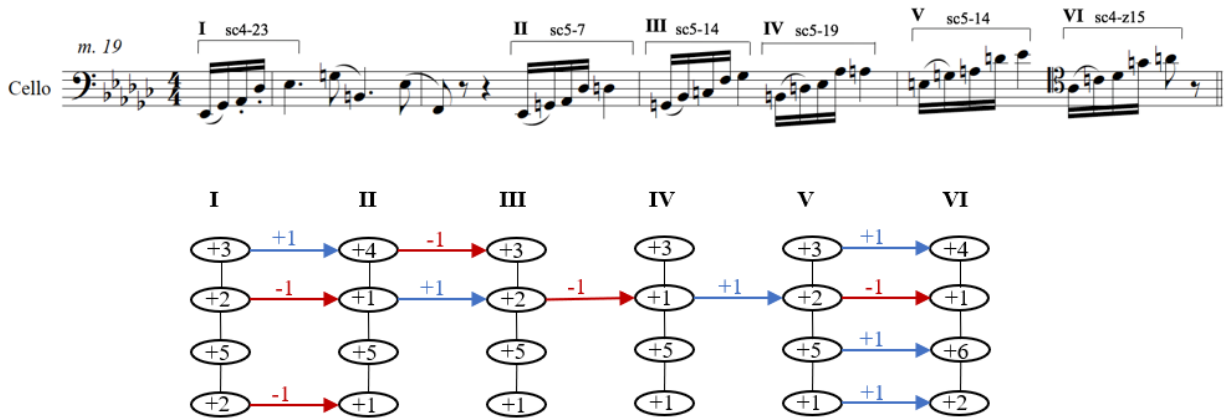




Reinterpreting our opening example (Figure 2.1) through this lens, we may now realize the int-leading motions apparent as revealed in Figure 2.23. A network form effectively illustrates the multiple transformations of intervallic content apparent from the onset of our discussion. One may observe the multitude of moves which present this Motive String X (labelled I in the figure) as undergoing a high degree of elasticity. With moves consistently of  $\pm 1$ , a subtle shift occurs between successive iterations. Durationally, in this figure we may also note the interval alteration between statements I and II where  $ELAS_{5,-0.5}(X^I) = X^{II}$ .

A final situation for elasticity would see a motivic string proportionally increase or decrease, so that each int-node changes by the same degree. If an entire motivic object is changed proportionally, the expression accounts for this move by citing the entire motive in the function:  $ELAS_{(X,-2)}(X) = X^I$ , for example.

Figure 2.23: Event Network, Space Elasticity: Schoenberg's String Quartet no. 2, op. 10/III, mm. 19 – 23, cello



In addition to tracing these moves through the network, we may also begin to categorize the types (degree of changes) employed. Qualifying the labelled moves as degrees of change within spaces allows for further comparisons to be sought. In particular, discussions of parsimonious moves in these spaces proves beneficial, likened to ideas within writings by Robert Cook or Richard Cohn.<sup>99</sup> Measures, such as these, are dependent upon the space and repertoire under consideration. These can be further defined to suit a number of analytical situations. For example, recalling Figure 2.23, given that in a chromatic space a semitone move ( $\pm 1$ ) is the smallest possible move, we may liken a generic understanding of parsimony as the smallest possible move to the changes within the int-leading, here semitones.

Categorizing moves through descriptive qualifiers adds a potent extension to the model. These will label the degree of change. Such a categorization scheme for labelling interval

<sup>99</sup> See for example, Robert Cook, "Parsimony and Extravagance," *Journal of Music Theory* 49, no. 1 (2005): 109 – 140; Richard Cohn, "Neo-Riemannian Operations, Parsimonious Trichords, and Their "Tonnetz" Representations," *Journal of Music Theory* 41, no. 1 (1997): 1 – 66.

elasticity is dependent on the domain.<sup>100</sup> As such, two systems working from least change (null) to increasingly greater degrees of change (ii – iv/v) are utilized. Succinctly, the moves can be labelled and grouped within the pitch domain (mod-12<sup>101</sup>) as:

- i. *Null Move*: The absence of change between two related motive int-nodes. In the pitch and duration domains a null move indicates an elastic “change” of 0. (Pitch domain Ex:  $\leq +2, -1, +3 \xrightarrow{\text{null}} < +2, -1, +3 >$ )
- ii. *Parsimonious Move*: Motion whereby intervallic change between int-nodes is the smallest possible distance in the defined collection. In chromatic spaces, semitone moves ( $\pm 1$ ) define parsimonious changes.
- iii. *Proximal Move*: Motion whereby intervallic change between int-nodes operate as double, triple, or quadruple that of the smallest possible distance in the defined collection. In chromatic spaces where semitone moves define parsimonious changes (smallest),  $\pm 2, 3, \text{ or } 4$  define qualify as proximal changes.
- iv. *Distal Move*: Motion whereby intervallic change between int-nodes operate as  $\geq$  five times that of the smallest possible distance in the defined collection. In chromatic spaces where semitone moves define parsimonious changes (smallest),  $\geq \pm 5$  define qualify as distal moves.

Within the duration domain, the categorization scheme differs in classes iii to v:

- i. *Null Move*: The absence of change between two related motive int-nodes. In the pitch and duration domains a null move indicates an elastic “change” of 0. (Duration domain Ex:  $\leq 1, 0.5, 2.75 \xrightarrow{\text{null}} < 1, 0.5, 2.75 >$ )
- ii. *Parsimonious Move*: Duration - interval alteration which adds or subtracts half the normative beat-count value of the durational proportion. In a system where quarter-note = 1, changes of eighth-notes or less values ( $\leq 0.5$ ) are parsimonious.
- iii. *Discrete Move*: Motion whereby intervallic change between int-nodes operate as half or 1 unit of the normative beat-count value of the durational proportion. The smallest possible distance in the defined collection. In a system where quarter-note = 1, changes of  $\pm 0.56 - \pm 1$  values are discrete.
- iv. *Adjacent Move*: Motion whereby intervallic change between int-nodes operate between greater than one and double the unit of the normative beat-count value of the durational proportion, the smallest possible distance in the defined collection. In a system where quarter-note = 1, changes  $> 1 - \leq 2$  are defined as adjacent.

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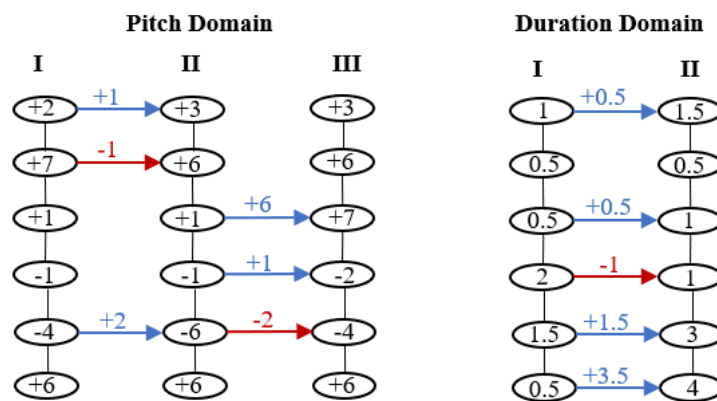
<sup>100</sup> Certainly, perceptual distance spans in one domain do not equal a 1:1 conceptual orientation between the two. A “close” move in space is differentiated by a qualified “close” move in time. These are further defined in each domain’s relation of the temporal and spatial segments.

<sup>101</sup> Mod-12 because the repertoire under consideration here is explicitly chromatic.

- v. *Removed Move*: Motion whereby intervallic change between int-nodes operate greater than double the unit of the normative beat-count value of the durational proportion, the smallest possible distance in the defined collection. In a system where quarter-note = 1, changes  $> \pm 2$  are defined as removed.

A hypothetical network example, shown in Figure 2.24, may help to illustrate this categorization scheme and its usage.

Figure 2.24: Categorization of Elasticity, Qualification Example



In Figure 2.24, within the pitch domain, one can observe three instances of parsimonious moves ( $\pm 1$ ), two examples of proximal moves ( $\pm 2$ ), and one example of a distal move, here +6. In the duration domain, two +0.5 changes are named parsimonious, a single discrete move (-1) is present, as well as an adjacent move (+1.5) and a removed move (+3.5). In larger network structures and musical passages, such qualifiers will help to effectively summarize the degree of elasticity changes that take statements into successive forms.

In summary, altering the intervallic content of a motive string presents a dynamic mechanism for transforming a string of the same cardinality. As cardinality remains the same, string recognition remains cogent and apparent on the musical surface. Relating motives by

inspecting their spatial orientation through ordered intervallic strings demonstrates that transformations of interval content is a powerful tool when developing a motive.

### Cardinality-Altering Transformations

Consider Figure 2.25, Figure 2.26, and Figure 2.27, drawn from Schoenberg's *Verklärte Nacht*, Chamber Symphony no. 1, and String Quartet no. 1, respectively. Within these passages, notice how Schoenberg alters an initial statement through the addition or subtraction of elements. Figure 2.25 adds two terms before the B4 (which was initiating in the previous statement), Figure 2.26 shows a continual process of addition, and Figure 2.27 displays int-node removals.<sup>102</sup> Schoenberg may agree that these motives are varied, if not developed, and perhaps suggest this change through terms such as augmentation or liquidation.<sup>103</sup> Adding or subtracting interval terms to or from a motive string obviously varies the cardinality of the object (number of elements) and, if used strategically, can be a significant transformation which develops content from one statement to another.

Figure 2.25: Schoenberg, *Verklärte Nacht*, op. 4 (1899), mm. 105 – 106



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<sup>102</sup> Here, if we compare segments of m. 8 and m. 72, we can notice that the sets that occupy the same temporal segment are constructed differently. I do not read m. 72's end segment as a beat-3 echo from m. 8, as the higher pitch attack suggests an affinity for the octave shift of m. 8 and as a result, the removal of int-nodes 2 and 3 from A produce B's form.

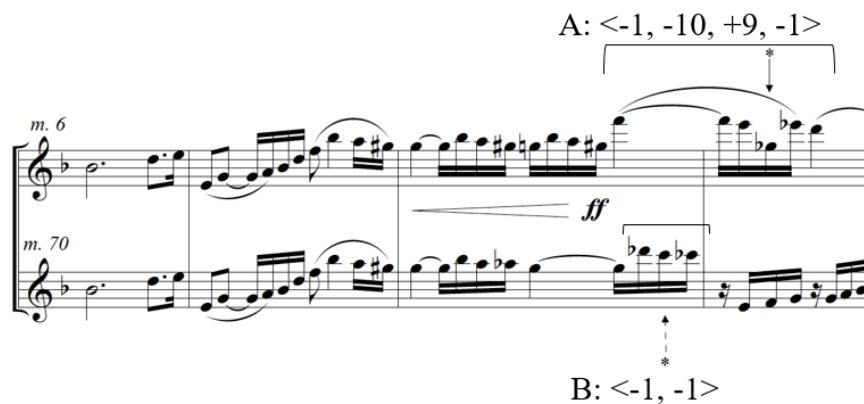
<sup>103</sup> For example, see Schoenberg *Coherence, Counterpoint, Instrumentation, Instruction in Form*, 37; *Program Notes*, 252; or *Musical Idea*, 93. Further commentary specifically on the term "liquidation" can be found within Áine Heneghan, "Liquidation and Its Origins," *Journal of Music Theory* 63, no. 1 (2019): 71 – 102.



Figure 2.26: Schoenberg, Chamber Symphony no. 1 for 15 Solo Instruments (1906), mm. 464 – 466



Figure 2.27: Schoenberg, String Quartet no. 1 (1905), Thematic Comparisons<sup>104</sup>



Furthermore, in Figure 2.28, we can see this idea in the duration domain as Schoenberg demonstrates divisions of rhythms by “an increase [in the number] of attacks,” or through equal or unequal splitting of terms.<sup>105</sup> These ideas of adding terms to increase the cardinality of a motive can likewise be reversed, whereby subtracting elements can also develop the motive through liquidation.<sup>106</sup> Although a possibility exists for term addition and subtraction (Figure 2.25, Figure 2.26, Figure 2.27), as well as several permutations on motive element division and combination (Figure 2.28), I propose two primary ways for cardinality alteration: Insert (ins) and

<sup>104</sup> Graphic generated, cited as “Liquidation” in Walter Frisch, *The Early Works of Arnold Schoenberg, 1893-1908* (Berkeley: University of California Press, 1993): 195.

<sup>105</sup> See Schoenberg, *The Musical Idea*, 168. Schoenberg refers to these as specifically permutations within his section on Coherence of “New Components” in a Varied Repetition (Schoenberg, *The Musical Idea*, 167 – 168).

<sup>106</sup> Schoenberg discusses the premise of liquidation more specifically in *The Musical Idea* edited by Carpenter and Neff, 263 – 264 and 175 – 178.

Split (Even Split (ES) and Uneven Split (UES)), with Remove (rem) and Compound (Even Compound (EC) and Uneven Compound (UEC)) as inverses.

Figure 2.28: Schoenberg, Rhythmic Variation Example from *The Musical Idea*<sup>107</sup>

The rhythm can be varied through [an] increase [in the number] of attacks: [146]

a) through equal splitting (division) of one or all durational components

b) through unequal splitting

The image displays several lines of musical notation. The first line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then 'or' and a sequence of notes with stems, followed by another 'or' and a sequence of notes with stems. The second line shows 'or' followed by a sequence of notes with stems, then 'or' and a sequence of notes with stems, followed by 'or' and a sequence of notes with stems. The third line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The fourth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The fifth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The sixth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The seventh line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The eighth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The ninth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The tenth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The eleventh line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twelfth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The thirteenth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The fourteenth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The fifteenth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The sixteenth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The seventeenth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The eighteenth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The nineteenth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twentieth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-first line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-second line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-third line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-fourth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-fifth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-sixth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-seventh line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-eighth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The twenty-ninth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The thirtieth line shows a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems, then an equals sign and a sequence of notes with stems, followed by an equals sign and a sequence of notes with stems. The thirtieth line is labeled 'Rearrangement 1.39' on the right side.

When adding terms to the beginning of the function  $INS_{(z)}^-(X) = X^I$ , relays  $z$  as a term or terms inserted before (INS<sup>-</sup>) Motive String X. As in the case of Figure 2.26, we may note  $INS_{(+4,-2)}^-(X)$  produces the subsequent form. We can think of this as analogous to prefix forms in languages. In Figure 2.26, we can observe the phenomenon which would be equivalent to suffixes, here described as  $INS_{(z)}^+(X) = X^I$ . The addition of an element to the end of the original

<sup>107</sup> Schoenberg, *The Musical Idea*, 168. See also [Arnold Schoenberg Center T65.03, page 146](#).

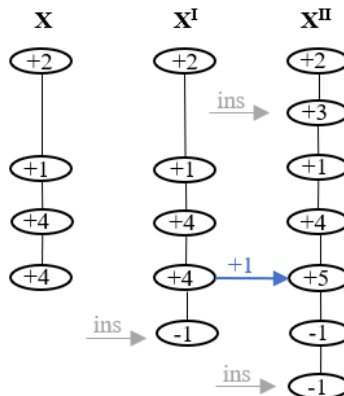
string ( $INS^+$ ) can be observed between a comparison of the first and second forms (the addition of the  $B^b$ ): expressed as  $INS_{(-1)}^+(X) = X^I$ . The third motivic sounding presents a more developed iteration of the motive string. Mapping intervals from the second to third statement, we can notice several subtle variations between  $X^I$  and  $X^{II}$  as shown in Figure 2.27. Aligning  $X^I$  and  $X^{II}$ , we can observe divergences in content, especially clear within the network form. We may first express the addition of another term tagged onto the end of the string as  $INS_{(-1)}^+(X) = X^I$ . However, there remains an additional element that is not currently accounted for within this expression. To account for the added “+3” placed within the string, we may simply write  $INS_{(2,+3)}(X^I)$ , which conveys the addition of a new second term (int-node 2) and the interval itself (+3). We may generally show this form as  $INS_{(x,y)}(X) = X^I$ . The network form of Figure 2.29 demonstrates the use of labelled directed arrows which are unconnected to the previous for to relay such additions.

Figure 2.29: Insert Transformations (ins), Pitch Domain: Schoenberg, Chamber Symphony no. 1, mm. 464 – 466

a) Score Illustration



b) Network



These three forms of  $INS_{(z)}^-(X)$ ,  $INS_{(z)}^+(X)$ , and  $INS_{(x,y)}(X)$  combine to create a means for tracking cardinality changes through the addition of terms. The inverse of these transformations readily exist and we might think of them as remove functions whereby  $REM_{(z)}^-(X)$ ,  $REM_{(z)}^+(X)$ , and  $REM_{(x,y)}(X)$  work to remove certain int-nodes.

Another technique that may be used to create new elements involves dividing an already existing interval as can be observed in the top row of the notated section of Figure 2.28. In this figure, excerpted from Schoenberg's *Gedanke* Manuscript, we can see Schoenberg notes a certain equivalence-relation (=) in overall duration content, but the cardinality from one set to the next changes. In these demonstrations, Schoenberg divides existing durational values into subgroups, varying the cardinality by splitting one int-element into two or more units. Instead of inserting new terms into the strand, we may conceptualize these moves as divisional and will term these transformations Splits.

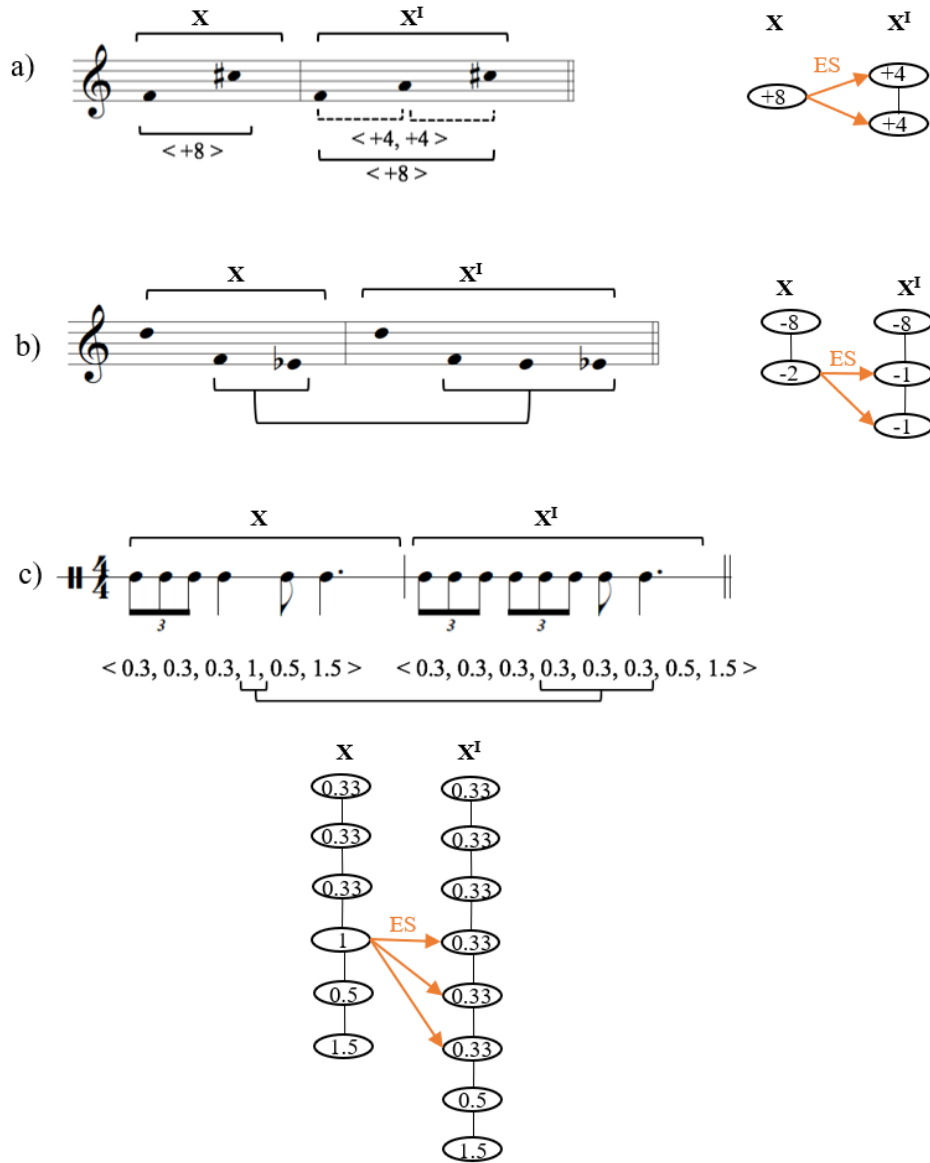
Two separate split transformations are at work in this framework: Even Splits (ES) and an Uneven Splits (UES). These transformations can be paralleled in the subtractive domain through the idea of Compound moves (COMP). Within compound moves, one sees two or more terms combine to make a single intervallic term.<sup>108</sup>

Let us first look at a situation in which a motive is varied through the use of an Even Split (ES). Figure 2.30 presents three examples of such conditions.

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<sup>108</sup> The notion of compound need not be subcategorized.

Figure 2.30: Even Split (ES) Transformations



Within these figures the division of an existing interval is split equally and distributed evenly.

The significance of Split is the inherent generation of two or more new, and here, identical terms.

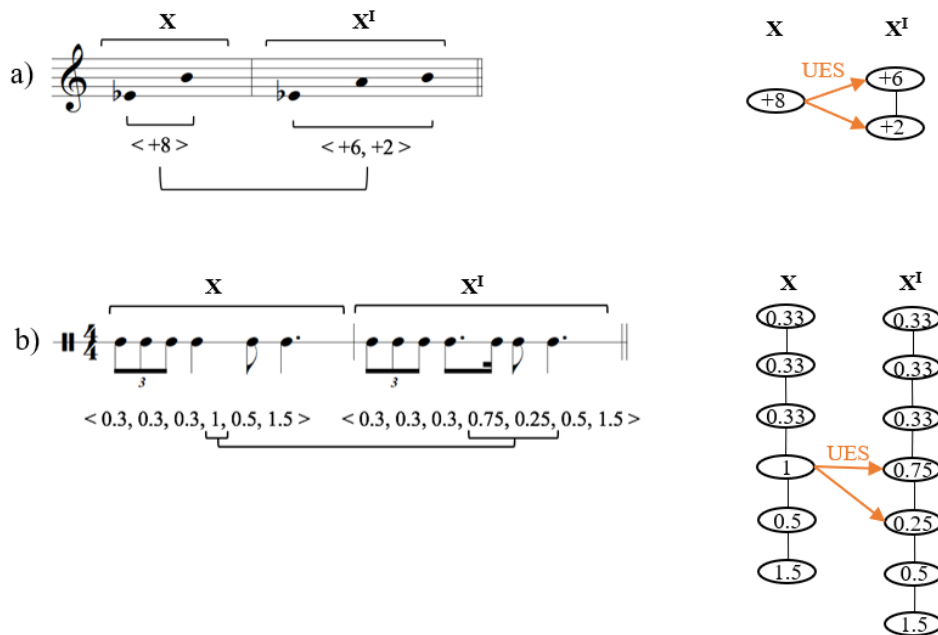
A general form of the expression can be seen as  $ES_{x,y(z,z,\dots z)}(X) = (X^I)$ . Since pitch-domain units in this space are defined as  $\mathbb{Z}$ , our "z" values must be integers in the pitch-domain.<sup>109</sup> In durational-space these values can be any positive real number ( $\mathbb{R}^+$ ). A split can occur as many

<sup>109</sup> That is, a pitch of +3 cannot be Split as two +1.5's, in chromatic pitch space.

times within a space as permitted by the existing interval term. The idea of an Even Compound (EC) transformation takes the inverse of this form, describing an even combination of elements.

The division of an interval term in circumstances that do not produce equal value terms in an even distribution arises from the transformation of Uneven Splits (UES). In these moments, the intervals which divide the existing term vary in distance. That is, the new int-terms are dissimilar in content. An obvious example of an interval requiring such a split is that of the perfect fifth (+7). Given that +7 does not divide evenly or by a multiple, there exists a term inequality such that to fill the existing interval gap of +7 through a split transformation one must choose between several options:  $\langle +3, +4 \rangle$ ,  $\langle +4, +3 \rangle$ ,  $\langle +5, +2 \rangle$ ,  $\langle +2, +5 \rangle$ ,  $\langle +6, +1 \rangle$ ,  $\langle +1, +6 \rangle$ . Intervals prone to equal division can also undergo UES's. As an expression, similar to Even Splits, the form takes:  $UES_{x,y(z,z,\dots,z)}(X) = (X')$ . Examples within Figure 2.31 demonstrate this transformation in practice.

Figure 2.31: Uneven Split (UES) Transformations



In line with Schoenberg's thinking then, new terms can split existing features in either an equal or unequal manner.<sup>110</sup> The above system has embraced this notion by introducing a transformational label demonstrating how these splits have an impact, and indeed arise from, intervals. Split transformations have the capability to decorate or ornament an existing intervallic path through adding more destinations along the route.<sup>111</sup>

Both Insert (ins) and Split (ES/UES) transformations encompass a broad range of processes that can be clarified conceptually in our graphing and labeling system. Refining the types of insertions and splits prove beneficial in an analytical context by allowing the analyst to take note of specific reoccurring forms of these transformations which in turn better support generalizations.

Within this model, three main groups of transformation are highlighted: order altering, interval altering, and cardinality altering. In addition to several established transformational operations, such as inversion or rotation, this section has established a number of further mechanisms that function to manipulate int-nodes from one motivic form into another, developed form. Figure 2.32 summarizes the expression and network representations of such proposed forms.

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<sup>110</sup> See Schoenberg, *The Musical Idea*, 168. Schoenberg refers to these as specifically permutations within his section on Coherence of "New Components" in a Varied Repetition (Schoenberg, *The Musical Idea*, 167 – 168).

<sup>111</sup> The Split and Compound moves also have the ability to divide its proportions among the resulting terms. For example, if the arrow pathway "fills-up" the connected node, it then proceeds to distribute the remaining elements over the next element, and so on. In this way, space and temporal intervals can "flow-over" nodes and distribute along the destination as necessary.

Figure 2.32: Summary Table Mechanism Expressions Form<sup>112</sup>

Transformation	Expression	Variable Summary	Network Representation
Switch	$SWITCH_{x,y}(X) = X^I$	Where $x$ and $y$ represent the ordered int-node elements being exchanged	<b>Sw</b>
Elasticity	$ELAS_{x,\pm y}(X) = X^I$	Where $x$ specifies the int-node term in motive string and $\pm y$ quantifies the amount of change. Semicolons (;) should separate multiple term entries	<b>+/- n</b>
Insert (Pre-Seg; Prefix)	$INS_{(z)}^-(X) = X^I$	Where $z$ is a term or terms inserted before the previously established motive segment form ( $X$ )	<b>ins</b>
Insert (Post-Seg; Suffix)	$INS_{(z)}^+(X) = X^I$	Where $z$ is a term or terms inserted after the previously established motive segment form ( $X$ )	<b>ins</b>
Insert (Within)	$INS_{(x,y)}(X) = X^I$	Where $x$ is the new term's ordered element location within the string, and $y$ denotes the value of the inserted int-node	<b>ins</b>
Remove (Pre-Seg; Prefix)	$REM_{(z)}^-(X) = X^I$	Where $z$ defines the int-node(s) removed from the previously established motive segment form ( $X$ )	<b>rem</b>
Remove (Post-Seg; Suffix)	$REM_{(z)}^+(X) = X^I$	Where $z$ is a term or terms removed from the end of the previously established motive segment form ( $X$ )	<b>rem</b>
Remove (Within)	$REM_{(x,y)}(X) = X^I$	Where $x$ is the removed term's ordered element location within the string, and $y$ denotes the value of the removed int-node	<b>rem</b>
Even Split (ES)	$ES_{x,y(z,z,\dots z)}(X) = (X^I)$	Where $x$ is the ordered element term location in the string, $y$ is the value of the int-node, and $z$ is the value of the items combining (sum of $z$ must equal $y$ )	<b>ES</b>
Even Compound (EC)	$EC_{x,y(z,z,\dots z)}(X) = (X^I)$	Where $x$ is the ordered element term location in the string, $y$ is the value of the int-node, and $z$ is the value of the split terms, with the number of $z$ terms representative of the number of terms combining	<b>EC</b>
Uneven Split (UES)	$UES_{x,y(z,z,\dots z)}(X) = (X^I)$	Where $x$ is the ordered element term location in the string, $y$ is the value of the int-node, and $z$ is the value of the items combining (sum of $z$ must equal $y$ )	<b>UES</b>

<sup>112</sup> The absence of TTO expressions as well as other well-grounded existing approaches is intentional (for example, rotation, inversion, etc.).



Uneven Compound (UEC)	$UEC_{x,y(z,z,\dots z)}(X) = (X')$	Where $x$ is the ordered element term location in the string, $y$ is the value of the int-node, and $z$ is the value of the split terms, with the number of $z$ terms representative of the number of terms combining	UEC
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Within this established toolbox of transformational moves there exists no preference or rules for the order of operations performed on a motive string. That is,  $\langle +1, +2 \rangle$  moving to  $\langle +2, +1 \rangle$  could be mechanically performed either through a Switch transformation or through elasticity moves (here, by adding +1 to term 1 and subtracting -1 from term 2). In the application of this suite of transformations to motivic material, a sensitivity toward context is important. Taking into account previous moves may help to motivate the use of one mechanism above the other. The distinction to be made between how one arrives at a subsequent segment is not to be taken lightly as the developments are functionally distinct units.

### III. Analytical Applications: Schoenberg's *Verklärte Nacht*

Let us now take a preliminary example drawn from Schoenberg's *Verklärte Nacht* [Transfigured Night] (1899).<sup>113</sup> This discussion will prepare the reader for the case studies presented in Chapters 3 and 4. Setting aside the rich scholarship and programmatic aspects associated with this work, we may take this example as a brief foray into the musical surface of motivic analysis using this methodology. Indeed, this tutorial should serve only as a starting base for further study of motive and meaning with the sextet.

Carl Dahlhaus writes that Schoenberg's *Verklärte Nacht* is "covered with a web of thematic and motivic relationships, a web which becomes tighter and thicker as the work

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<sup>113</sup> *Transfigured Night* was composed in 1899 set to text by Richard Dehmel from his 1896 work *Weid und Welt (Woman and World)*.

proceed.”<sup>114</sup> Asking the questions *what* are the motivic relationships and *how* do they become “tighter and thicker”, we come to realize that although poetic, Dahlhaus’s remarks leave these questions unanswered. For context, Schoenberg does set out some provisional motivic connections, however, this single-page “Konstruktives in der Verklärten Nacht” focuses more on pairing motivic pitch-mappings to underlying harmonic structures.<sup>115</sup>

So, what are the motives within *Verklärte Nacht*? In Frisch’s study, eleven primary clusters of motives are presented, as seen in Figure 2.33. One can observe several similarities across motivic forms, which buttresses Dahlhaus’s “web”; however, it is likewise evident that many of the motives have unique intervallic properties. Although Frisch’s forms present only a momentary snapshot of the motive (typically the initiating segment), the methodology can take these objects as the base set to which successive iterations can be compared. From this application, a network of transformational mechanisms emerges.

Figure 2.33: Frisch, Motive Table for *Verklärte Nacht*<sup>116</sup>

The figure shows a collection of musical notations for motives from Schoenberg's *Verklärte Nacht*. The motives are arranged in two columns: Part I on the left and Part II on the right. Each motive is represented by a short musical phrase in a specific staff and key signature, with its starting measure number and any cross-references to other motives.

- Part I:**
  - 1a: Bass clef, 13 measures, starting with a dotted quarter note.
  - 1b: Treble clef, 11 measures, starting with a quarter note.
  - 1c: Treble clef, 22 measures, starting with a quarter note.
  - 2a: Bass clef, 29 measures, starting with a quarter note.
  - 2b: Treble clef, 34 measures, starting with a quarter note.
  - 3a: Bass clef, 50 measures, starting with a quarter note.
  - 3b: Treble clef, 63 measures, starting with a quarter note.
  - 4a: Treble clef, 75 measures, starting with a quarter note.
  - 4b: Treble clef, 79 measures, starting with a quarter note.
  - 5a: Treble clef, 105 measures, starting with a quarter note.
  - 5b: Treble clef, 111 measures, starting with a quarter note.
- Part II:**
  - 6: Treble clef, 231 measures, starting with a quarter note.
  - 7a: Treble clef, 255 measures, starting with a quarter note.
  - 7b: Treble clef, 259 measures, starting with a quarter note.
  - 8: Bass clef, 266 measures, starting with a quarter note.
  - 9a: Treble clef, 279 measures, starting with a quarter note.
  - 9b: Treble clef, 281 measures, starting with a quarter note.
  - 10: Treble clef, 294 measures, starting with a quarter note.
  - 11: Treble clef, 320 measures, starting with a quarter note.

<sup>114</sup> Dahlhaus, 97.

<sup>115</sup> See Appendix 2.

<sup>116</sup> From Frisch, *Early Works of Arnold Schoenberg*, 117.

This brief tutorial will focus on Motive 3A, from Frisch’s figure above.<sup>117</sup> For context, this motive is typically associated with the woman’s unhappiness in her marriage, which one can programmatically hear through the general intervallic focus on semitones and descending leaps.<sup>118</sup> We will examine just several transformational situations to focus our study, excerpted from two passages: Figure 2.34 and Figure 2.35. The examples will reveal primary mechanisms of motivic transformation between two or more statements with some cases tracking two or more categorical moves (order altering, interval altering, and cardinality altering).

Figure 2.34: Schoenberg, *Verklärte Nacht*, mm. 50 – 55, violin 1, violin 2, cello 1, cello 2

The musical score for Figure 2.34 is divided into two systems. The first system, measures 50-53, shows Violin 1 and Cello 1. Violin 1 has two phrases labeled II and IV. Cello 1 has four phrases labeled I, III, V, and VI. The second system, measures 54-55, shows Violin 1, Violin 2, Cello 1, and Cello 2. Violin 1 has phrase VII(a), Violin 2 has VII(b), and Cello 2 has VII(c).

<sup>117</sup> If one is familiar with the work’s structure and Dehmel’s base text, notice that these motives work to demonstrate both the perspective of the woman and man in Parts II and IV. These transformational networks may then lead to narrative associations.

<sup>118</sup> Cherlin, *Schoenberg’s Musical Imagination*, 41.

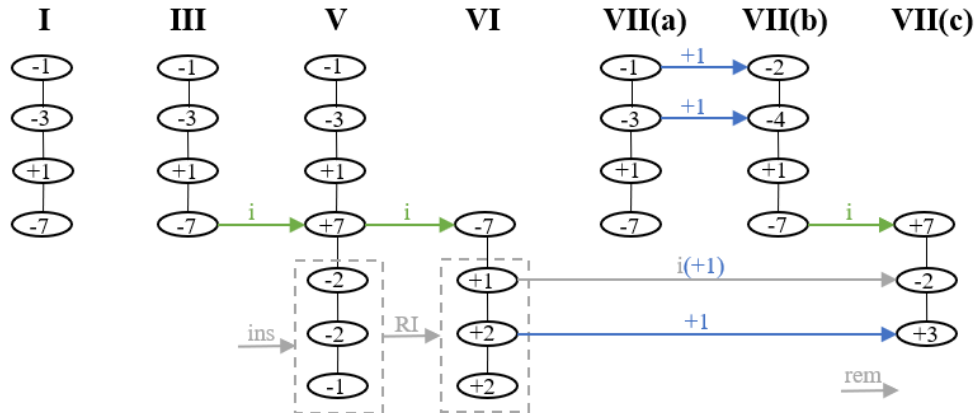
Figure 2.35: Schoenberg, *Verklärte Nacht*, mm. 89 – 90, violin 2, viola 1, and cello 1

The image shows a musical score for three instruments: Violin 2, Viola 2, and Cello 1, covering measures 89 and 90. The key signature is one flat (B-flat). The Violin 2 staff (top) is in treble clef and contains a melodic line with a slur over measures 89 and 90, labeled I(a). The Viola 2 staff (middle) is in alto clef and contains a melodic line with a slur over measures 89 and 90, labeled I(b). The Cello 1 staff (bottom) is in bass clef and contains a melodic line with a slur over measures 89 and 90, labeled I(c). The notes in all three staves are related, showing a transformation of a common motive.

From our first excerpt, shown in Figure 2.34, we can observe several transformations of motivic forms. First, comparing statements in the pitch domain, one can notice mechanisms of order alteration, interval alteration, and cardinality alteration. Comparing similar objects, one may for example examine the connection between statements I, III, V, VI, and VII(a – c). Such comparisons are evident in the event network of transformational mechanisms is displayed in Figure 2.36. Reading the ordered-intervals of pitch within the int-nodes (top-down) reveals the structural construction of the motive under examination. Statement labels as Roman numerals are assigned to each motive string. Tracing the directed arrows within the network displays the changes which the int-nodes themselves undergo as well as establishing unconnected nodes as insertions (ins) and removals (rems). For example, moving from statement III to V, we see a green inversion arrow relaying that the term  $-7$  has transformed into  $+7$  in the subsequent segment. Comparing the dotted “out of time” boxes of statements V and VI, we see the operation RI, describing a retrograde inversion of the elements contained within the box. Notice also, that although the elements of the box (terms 5, 6, 7 of statement V) are inserted (that is, unconnected to previous forms), they may also be compared to similarities of int-nodes terms 1, 2, 3 of statement V. I do not motivate this connection formally as I do not hear such a relation of likeness, but I can understand a listening strategy which may. Moving from statements VII(a) to

VII(b) one will also notice parsimonious interval elasticity moves, which expand int-nodes 1 and 2  $\langle -1, -3 \rangle$  into  $\langle -2, -4 \rangle$ .

Figure 2.36: Schoenberg, *Verklärte Nacht*, mm. 50 – 55, Pitch Domain Network



Second, we may also explore connections within the duration domain where one can observe further alterations to the motivic form. In Figure 2.37, Figure 2.38, and Figure 2.39, such variations can be tracked. Figure 2.37, for instance, describes the removal of int-node 5 and a complete object rotation (rot3). Figure 2.38 displays duration interval expansions, which can be described as adjacent (+2) and parsimonious (+0.25) in their changes. Figure 2.39 further demonstrates the capability of a Switch transformation upon subsets of the object (as it is not just limited to single int-node values). Also included within the figure, I delineate the presence of an ES. This need not be described in detail here. In essentials, I observe int-nodes 1 and 2 of statement VII(a) as combining to form a duration value of 1 that is then evenly split into three terms (int-nodes 3, 4, and 5) within statement VII(b). This summation before splitting is a conceptual move to make better sense of the emergence of triplets and, for me, better describes the relationship.<sup>119</sup>

<sup>119</sup> Splitting int-node 5 of statements VII(a) into 0.33 terms would conversely be a significant move that involves splitting and contracting space which would also leave the 0.5 terms of statement VII(a) unaccounted for.

Figure 2.37: Schoenberg, *Verklärte Nacht*, mm. 50 – 55, Duration Domain Network (I, II)

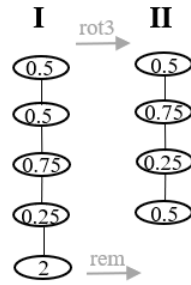


Figure 2.38: Schoenberg, *Verklärte Nacht*, mm. 50 – 55, Duration Domain Network (V, VI, VII(c))

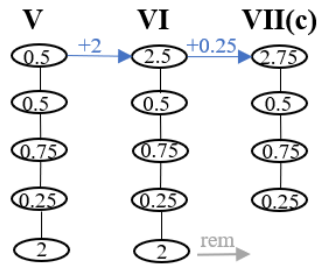
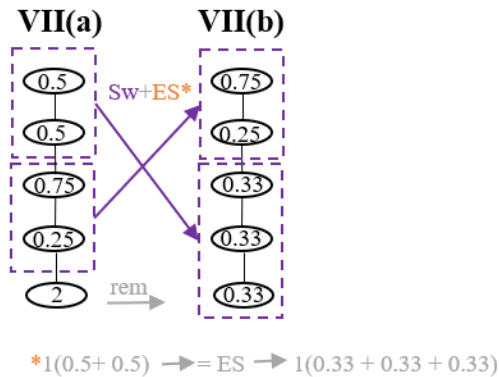


Figure 2.39: Schoenberg, *Verklärte Nacht*, mm. 50 – 55, Duration Domain Network (VII(a), VII(b))

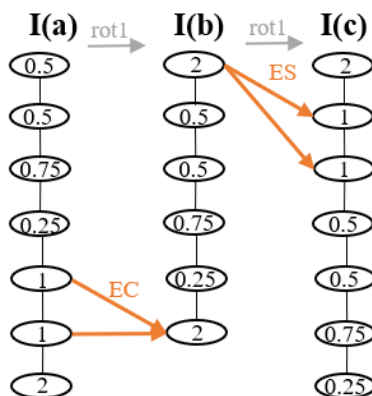


The relations plotted within the networks applied to Figure 2.34 are salient to the unfolding processes at work in the pitch domain of this excerpt. Tracking their connections, one better understands how Schoenberg fosters a sense of continuity and comprehensibility through the discrete motivic forms articulated. Whether more abstract in relation (such as the Sw+ES) or aurally apparent (such as the parsimonious int-node expansions), the networks model the

transformational processes which take objects into subsequent forms and offers new ways to inspect motivic components.

Examining the second excerpt, Figure 2.35, we can more clearly understand the processes of cardinality alteration and order alteration. Although presented here in a “successive” ordering (a, b, c), as these objects are sounded at the same time, there are several alternative orders that could be compared. In any case, no matter the order presented, similar processes would be demonstrated.<sup>120</sup> First, observe the duration int-node rotation which takes the int-nodes of the motivic objects and alters their attack order. As shown in Figure 2.40 these rotations also involve cardinality alterations represented by Even Splits (ES). As the int-node term <2> is divided into two terms of equal value <1> the cardinality (#) of the object is altered, #6 to #7. An analogous ES occurs in the pitch domain.

Figure 2.40: Schoenberg, *Verklärte Nacht*, mm. 89 – 90, Duration Domain Network



Although not an extensive treatment of motivic transformations in *Verklärte Nacht*, these excerpts and their event networks demonstrate how such a model can describe and track development and relations of motivic objects from statement to statement. The analytical

<sup>120</sup> One could create a network that expresses the group of moves that would move any one object into the other possibilities, but such group relations expressing simultaneities is not the focus of the investigation presently.

potential to account for objects of varying set-classes, cardinality, order articulation, and indeed interval components demonstrates a potent tool which accounts for a several variation techniques. Such an application could be further utilized to demonstrate Dahlhaus's "web" of relations among all of the forms that Frisch denotes in his motive table. In summary, ascribing systematic labels which take one object into another facilitates cogent dynamic relationships and relays a transformational perspective often lost in formal, harmonic, and other descriptive traditions of Schoenberg's early works.

### Chapter Conclusion

Utilizing a toolbox of simple well-defined moves, this analytical model presents a comprehensive strategy for tracking motivic development. Taking intervals as the objects of analysis, structural relationships between motivic variations become recognizable and traceable. Through this tracking of process, we come closer to understanding how forms are interrelated—how developed musical ideas emerge and are woven together to create larger coherence. By adopting such a perspective, I have defined categories of intervallic transformations: order altering, interval altering, and cardinality altering. These processes yield a collection of transformations that we may generalize and compare with one another. This analytical methodology examines the similarity relations of intervallic content of motives as they are continually reshaped, allowing the analyst to demonstrate how musical material is interconnected.

Through the development of this model, analytical application may commence. Applying the framework to two case studies excerpted from Schoenberg's early works—his *Pelleas und Melisande* op. 5 and String Quartet no. 2, op. 10—the methodological lens will deepen our



understanding of Schoenberg's practice and, in doing so, address several incongruities between analytical theory and musical composition. These analyses aim to demonstrate new ways into the observing musical connections and transformations. In themselves, they do not serve to validate the approach defined here, but rather initiate a discussion on how such orientations and possible transformations of intervallic material may better serve our analytical needs and reflect the experience of such musical processes. By formalizing a set of transformational moves, discussions regarding motivic process and manipulation will more accurately reflect the nature of the musical development and lead to new modes of listening. To connect the varying forms as links of a chain, to use an oft-cited metaphor, is to connect the composers ideas within a piece and indeed arrive at a transformational perspective (in the style of Lewin) which posits: if I am at *s* than *how* do I get to *t*? This is the paradigm in which the present study operates. A transformational perspective which posits new modes of inquiry and is reflective of Schoenberg's own compositional and analytical allegiances. This interpretative paradigm is not limited to the work of Schoenberg, as the method's adaptability affords the possibility of exploring motivic works by many other composers.

### 3. *Pelleas und Melisande*: Program as Process, or Motive and Meaning

I have begun to immerse myself in *Pelleas* and of course am completely captivated. More than ever I sense an unprecedented miracle of instrumentation here - both as regards sound (as far as I can imagine it) and voice leading. I would say: here there are no longer chords, what we hear as such - as you yourself say - are 'voice leading events.'<sup>1</sup>

This comment from Schoenberg to Berg reflects a revised orientation in Schoenberg's hearing of his own musical events. Here, "voice leading events" now reflect a new sense of direct connections on a horizontal perceptual plane. Prioritization of a more horizontal perspective, over the historic verticality of harmonic expression, leads one to ask: how is Schoenberg "voice leading" between statements? How we can track such events? And what are the objects we are tracking? More generally, if the objects are no longer chords—Schoenberg asserts that they arise by the melody<sup>2</sup>—then we must understand the vehicle for expression not as combinations of stacked pitches, but of unfolding lines of connected pitches, or motives. Continuing this path, Walter Bailey writes: "from a programmatic point of view, Schoenberg's *Pelleas* is ... created from a web of leitmotives that portray the basic themes and conflicts inherent in the drama."<sup>3</sup> The idea of leitmotivic relationships as a primary element of the piece is apparent in all commentary surrounding the work and is an essential for a coherent listening strategy. For example, Carl Dahlhaus writes,

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<sup>1</sup> See Derrick Puffet, "'Music That Echoes within One' for a Lifetime: Berg's Reception of Schoenberg's 'Pelleas und Melisande,'" *Music and Letters* 72, no. 2 (May 1995): 211; See also Alban Berg, Arnold Schoenberg, et al., *The Berg-Schoenberg Correspondence*, ed. Juliane Brand, Christopher Hailey, and Donald Harris (New York: W.W. Norton, 1987): 68.

<sup>2</sup> See Michael Cherlin, *Schoenberg's Musical Imagination* (Cambridge: Cambridge University Press, 2007): 82; See also Arnold Schoenberg, "My Evolution (1949)" in *Style and Idea: Selected Writings of Arnold Schoenberg*, ed. Leonard Stein, trans. Leo Black (London: Faber & Faber, 1975): 82.

<sup>3</sup> Walter Bailey, *Programmatic Elements in the Works of Schoenberg* (Michigan: UMI Research Press, 1984): 71; Schoenberg is explicit about the leitmotivic connection in his Liner Notes to the Capitol Records Release (See J. Daniel Jenkins, ed. *Schoenberg's Program Notes and Musical Analyses* (Oxford: Oxford University Press, 2015): 144).

... the themes which form the basis of the symphonic development [in *Pelleas und Melisande*] are reminiscent of leitmotifs in music drama, both in their melodic-rhythmic character and in the functions they perform ... Either the motifs are used to distinguish a particular scene, or they are associated with a particular character ... by varying and transforming the personal motifs in accordance with the changing situation and affects – grows a musical form which resembles a narrative.<sup>4</sup>

Dahlhaus distills the essence of several scholarly perspectives on the relationship between musical themes (motives) and their narrative capacity. Largely citing Wagnerian precursors, Dahlhaus reviews the inherent connection between character and symbolic, associative, and/or representative meaning.

However, the consensus of authors and analysts diverges significantly when specific object inspection and identity comes into discussion. When several analyses sympathetic to this leitmotivic approach are compared, a clear discord emerges as a result of the multiplicity of motivic forms within *Pelleas und Melisande*. For instance, Schoenberg's 1949 program notes describe the occurrence of approximately eleven thematic moments.<sup>5</sup> These can be distilled further to eight character or scene forms. However, in contrast, Berg's analyses of the piece cite no less than twenty to forty-eight primary motivic occurrences.<sup>6</sup> Further complications arise as analytical discussions by Walter Frisch indicate eight "principal themes," four of which are developed forms of the "Melisande" motive. Lastly, Michael Cherlin's analysis cites eight motives which, perhaps troubling, are not the same eight as Frisch's. Figure 3.1 summarizes

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<sup>4</sup> Carl Dahlhaus, *Schoenberg and the New Music*, trans. Derrick Puffet and Alfred Clayton (Cambridge: Cambridge University Press, 1987): 98.

<sup>5</sup> This number ranges from seven to eleven depending on the reader's positionality to include Schoenberg's remarks on "developed" motives as inherently different, or not. See Bailey, *Programmatic Elements in the Works of Schoenberg*, 63 – 65 or Jenkins, *Schoenberg's Program Notes and Musical Analyses*, 144 – 147.

<sup>6</sup> See Bryan Simms, *Pro Mundo–Pro Domo: The Writings of Alban Berg* (Oxford: Oxford University Press, 2014): 150 – 155; Alban Berg, *Pelleas und Melisande: (nach dem drama von Maurice Maeterlinck) symphonische Dichtung für Orchester, op. 5 von Arnold Schönberg. Kurze thematische Analyse* (Vienna: Universal-Edition, 1920).

concordant interactions, as observed in Jessica Narum’s work.<sup>7</sup> The columned discussion as representative per-author will be discussed below in relation to Pelleas and Melisande. As one no doubt observes, the multiplicity of interpretative ascriptions provides a rich literature to draw upon and foregrounds ontological questions of motivic forms and developmental processes. My model will trace the thematic transformations among motives and will ultimately provide support for various readings, hearings, and understandings of the thematic and narrative processes within the work. Critical to this contribution is a discussion of how tracking such events instills and reinforces varied narrative paths.

Figure 3.1: Table of Varying Motivic Interpretations, from Narum

BERG	SCHOENBERG	FRISCH	CHERLIN
Introduction (in the forest)		Melisande 1	Melisande Lost
Fate	“destiny”		Fate
Melisande	“Melisande in her helplessness”	Melisande 2	Melisande
Golaud	“Golaud”	Golaud (includes wedding bond)	Golaud
Wedding Band/ Wedding Ring	Golaud’s theme, transformed		Wedding Bond
Pelleas I	“Pelleas”	Pelleas 1	Pelleas
Fate (ref. to harmony)		Destiny (& Fate) (ref. to melody)	
Pelleas 2		Pelleas 2	
<i>Scene at the fountain in the park</i>	“Melisande’s playing with the ring”		
Melisande’s awakening to love [no name, but associated with Melisande]		Melisande 3	Eros
<i>Falling Golaud</i>		Melisande 4	
Golaud’s Suspicion and Jealousy	“Golaud’s jealousy”		Jealousy
Fountain motive			
Farewell- and Love-scene between Pelleas and Melisande	“Love”	Love	Love
A “new theme in the reprise”	“a new motif appears in the death scene”		Death Drive
A “new theme in the reprise”	“entrance of the servants as a premonition of the death of Melisande”		alluded to as the “cortege” but not treated as thoroughly as other motives

<sup>7</sup> See Jessica Narum, “Sound and Semantics: Topics in the Music of Arnold Schoenberg,” PhD Dissertation, University of Minnesota, 2013, 89 (Table 3.1).

Concerning the program of *Pelleas und Melisande*, my analytical discussion will inspect connections between motivic forms and their function of producing character development.<sup>8</sup> This analysis will focus on motivic representations of the title characters, Pelleas and Melisande. Limiting my analytical objects to two characters is strategically motivated by five main factors. First, Melisande's musical representations are highly varied in the existing literature and the many soundings provide ample material to engage new discussions. Second, despite Pelleas's notoriety in the title, and as a primary figure of the drama, his motivic connections remain largely absent from the literature and thus my work will shed new light on the developments of his material. Third, Pelleas and Melisande present chromatic material more so than other characters allowing for more robust variety (Fate, for instance, is clearly presented in a major-triad forms (F#-major)).<sup>9</sup> Fourth, it is important that these motives first be discussed individually, in-situ before conversations about their structured counterpoint with other motives are engaged. We must first isolate their primary developments before we can begin to discuss contrapuntal interactions, inclusions, and larger relations. Fifth, for brevity, given that this work is of such great length and complexity there exists the possibility to see every moment—every note—as motivic, and though commendable in some analytical writings, it is not possible within the scope of this current research.

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<sup>8</sup> The text basis of the work comes from Maurice Maeterlinck's drama of the same name. Although Schoenberg significantly abridged the text, he has maintained that he sought to "mirror every detail of it" (see Arnold Schoenberg, *Pelleas und Melisande*, The Symphony Orchestra of Radio-Frankfurt, Conducted by Winfried Zillig, Capitol P-8069 mono, 1949, LP).

<sup>9</sup> Being rooted in what is described by many authors as a still tonal work, the chromatic nature of these motives will offer more opportunity for alteration against the tonal paradigm whereas more tonal forms seem to lay comfortably within diatonic space.

## Literature

Research regarding the motives of *Pelleas und Melisande* exists in a small, isolated network of scholars. These scholars cross-reference each other's work and position themselves either for or against varying methodological or epistemological orientations. However, despite a small research cluster, the readership is diverse. For example, varying levels of details and intent are conveyed as target audiences change: audio listeners in the case of Schoenberg's liner notes, to informed concert goers through Berg's *Short Thematic Analysis*, to scholars and academics in the case of Frisch, Puffet, and Cherlin.

### Berg's Thematic Analyses

Every strand of this dialogue, including the present endeavour, starts with Alban Berg. Berg's 1920 text functions as the initial source for commentary on this work.<sup>10</sup> Scholarly consensus maintains that Schoenberg likely approved of the analytical discussion in general.<sup>11</sup> Schoenberg was aware of his students' work and Berg's analyses for several early pieces were well regarded by Schoenberg.<sup>12</sup> There was a clear limit to this support, however, as Schoenberg demanded clarity and ease of understanding within the documents that reflected his music. In some cases, he believed that Berg went too far in his abstractions which muddled the analytical

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<sup>10</sup> Alban Berg, *Pelleas und Melisande* (Vienna: Universal-Edition, 1920). For more information on the genesis of Berg's study as well as a timeline see Bryan Simms, *Pro Mundo – Pro Domo*, 161 – 165, and Derrick Puffet's article, "'Music that Echoes Within One' for a Lifetime: Berg's reception of Schoenberg's 'Pelleas und Melisande'".

<sup>11</sup> Alban Berg, Arnold Schoenberg, et al., *The Berg-Schoenberg Correspondence*, 293. See also Cherlin's, *Dramatic Conflict in Pelleas and Melisande* chapter in his book *Schoenberg's Musical Imagination* (Cambridge: Cambridge University Press, 2007): 89.

<sup>12</sup> It is worth observing that Berg was just starting as a student of Schoenberg during the compositional period of *Pelleas und Melisande* and that although the guides were written somewhat later, given the power-imbalance and influence that Schoenberg exerted, this early relationship may have resulted in some bias in Berg's analytical approach and indeed produced some shortcomings.

utility of such texts.<sup>13</sup> Fortunately, the analysis on Pelleas and Melisande did not fall victim to such a circumstance.

Elements within both the *Thematic Analysis* and *Brief Thematic Analysis* are codified by the 1920 “final version”, with addenda penned in 1933.<sup>14</sup> These analyses primarily functioned as guides for concert audiences. In general, Berg avoids a discussion of programmatic features, opting typically to discuss musical signifiers of form, which are not necessarily connected to function.<sup>15</sup> Within Berg’s *Brief Thematic Analysis* he lists 20 prominent motivic attacks. The longer *Thematic Analysis*, on the other hand, more than doubles this primary list to 48 variant motivic structures.

Berg’s ascriptions for the character Melisande can be observed in his *Brief Thematic Analysis* in two locations: “Melisande” (his example 3) and “Melisande’s Awakening” (his example 14). At first glance, and as shown in Figure 3.2, the two examples seem only distantly related. Upon closer examination, one observes a flexible treatment of Melisande’s representation where a number of the “awakening” elements emerge from the previous form.

In the figures of his longer analysis, Berg directs the listener to Melisande’s appearance 20 times within his 48 examples.<sup>16</sup> Significantly, this listing reveals several variances between Melisande’s statements. For instance, in some cases Berg adds a harmonic context to the single-

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<sup>13</sup> *Berg-Schoenberg Correspondence*, 293. Here, Schoenberg makes a comment about the mathematical nature of some analyses of Berg’s to which he most certainly prefers a more lay-audience / listener-centric approach to the bulky apparatus.

<sup>14</sup> See Simms, *Pro Mundo–Pro Domo*, 161 - 163 and 165.

<sup>15</sup> However, as Bryan Simms observes, “[Berg] also adds headings of scenes in the play to identify certain sections of the music, and he inserts quotations from its text to reinforce the alignment of music and drama” (Simms, 164). It is clear that the line between programmatic discussion as it reinforces the musical elements is difficult to mitigate and can cause a blurred boundary of interpretative claims, often siding on the premise of form versus content in Berg’s case.

<sup>16</sup> This is made overt through Berg pointing to the examples by number (See Simms, 123).

line motive (his example 15), in other cases he demonstrates a temporal delay of fragments (his example 27), and in yet further situations, he removes the motive from an existing phrase, ignoring its embedded nature (his examples 13, 17, 26, 34, 37, 43, and 45). From such variety, it is no surprise that the cardinality of the motive spans from 7 to 21 members. Such variation can be seen in Figure 3.2.<sup>17</sup>

In general, Berg's treatment of *Melisande* ignores the developmental process between statements. In its stead is his intention to demarcate significant moments for a form-focused listening experience. His analyses, therefore, serve to signpost more formal or structural elements rather than the motives proper. This shall be remedied, at least in part, through my analysis.

Similar to his treatment of *Melisande*, Berg's analytical labels reflective of *Pelleas's* musical moments appear in several locations and demarcate various formations. Grouped between *Pelleas I* and *Pelleas II*, Berg annotates several forms across his examples.<sup>18</sup> Figure 3.3 displays the *Pelleas*-specific references in the examples. These excerpts do show a certain consistency between forms, an aspect which may be attributed to the clearer articulation within the music itself.

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<sup>17</sup> Excerpted from Berg, *Pelleas und Melisande* (Vienna: Universal-Edition, 1920).

<sup>18</sup> See Berg's Exs. 12, 13, 14, 17, 21, 22, 27, 29, 31, 33, 34, 35, 38, 43, 44, 45.



Figure 3.2: Summary of Berg's Melisande Forms<sup>19</sup>

The figure displays musical notation for various forms of Berg's Melisande motif. The notation is organized into two main sections separated by a horizontal dashed line. The top section includes measures 15, 16, 17, 18, 19, 20, 25, and 26. The bottom section includes measures 3, 5, 8, 9, 11, 13, and 14. Each measure shows a melodic line with various ornaments, triplets, and articulations. Measure 20 includes the text "etc.".

... figure continued

<sup>19</sup> Excerpted from Berg, *Pelleas und Melisande* (Vienna: Universal-Edition, 1920).

27

etc.

etc.

etc.

28

31

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34

36

also Melisande -----

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Figure 3.3: Summary of Berg's Pelleas Forms

*Pelleas's 1st Theme*

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*Pelleas's 2nd Theme*

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45

Detailed description: The image displays two columns of musical notation for Pelleas's 1st and 2nd Themes. The first column (measures 12-27) is in treble clef with a key signature of three sharps (F#, C#, G#). The second column (measures 29-45) is in bass clef with a key signature of one flat (Bb). The notation includes various musical symbols: slurs, accents (>), ornaments (x), and dynamic markings (mf, f). Measure numbers are placed below each staff. A dashed horizontal line separates the two columns.

Derrick Puffett has extensively reviewed Berg's work and reception of *Pelleas und Melisande*.<sup>20</sup> Regarding the music itself, Puffett suggests that this composition captures "... flesh-and-blood people who stalk through the forests of counterpoint like characters in the *Ring*."<sup>21</sup> Puffett's writing on Berg's analytical text is valuable as it sheds new perspective on assumptions one makes when reviewing such a historic document. Given this thorough critique of Berg's writing about Schoenberg, see Puffett's invaluable writing.<sup>22</sup> More generally, Berg's thematic analyses highlight the complex and dense nature of the thematic surface structures. As the epicenter for the many dialogues that surround *Pelleas und Melisande*, Berg's analyses may present challenges when compared to other scholars.

### In Schoenberg's Words

In his 1949 program notes for a Los Angeles performance, Schoenberg wrote that he "... tried to mirror every detail of [Maeterlinck's play], with only a few omissions and slight changes ..."<sup>23</sup> As Cherlin discusses, Schoenberg moved beyond mere interpretation and representation and toward reconception. When one attempts to directly correlate the narrative representation between Maeterlinck's text and Schoenberg's music there are moments, scenes, and characters that are removed from the former, and the result is an experience disassociated with a 1:1 text relationship. However, as discussed below, the overarching narrative remains uncompromised as

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<sup>20</sup> See Derrick Puffett, "'Music that Echoes Within One' for a Lifetime: Berg's Reception of Schoenberg's 'Pelleas und Melisande'," *Music and Letters* 72/2 (1995).

<sup>21</sup> Puffett, 230. This is yet another reference to leitmotives as encountered in the Wagnerian tradition.

<sup>22</sup> Puffett generally regard Berg's analysis as "...granted a certain authenticity, an indisputable quality, however much one may like to disagree with it. Its truth is a historical truth - a representation of a certain way of seeing things, a way which we know from all kinds of evidence to have been characteristic of Schoenberg and his circle - rather than the correctness of an analysis that proves its worth on epistemological grounds" (See Puffett, 234).

<sup>23</sup> See Liner notes to Arnold Schoenberg, *Pelleas und Melisande*, The Symphony Orchestra of Radio-Frankfurt, Conducted by Winfried Zillig, Capitol P-8069 mono, 1949, LP.

confirmed by Schoenberg's commentary on the work. In its final form then, the music displays the essentials of the drama, and though we may not be able to assert a direct text-music relationship (as in Schoenberg's vocal music), we are equipped to navigate a narrative trajectory within the work.<sup>24</sup>

Schoenberg's own writings on *Pelleas und Melisande* are limited to six primary occurrences, as discussed in J. Daniel Jenkins *Schoenberg's Program Notes and Musical Analyses*.<sup>25</sup> These discussions culminate in his presentation of motive within the 1949 liner notes for an LP release on Capitol Records.<sup>26</sup> Prior to the 1949 text, Schoenberg's musings about the work first appear around 1902 through a brief outline of the program,<sup>27</sup> followed by a substantial hiatus until a 1918 response to Zemlinsky's request for a cut within the work,<sup>28</sup> and finally, with brief notes within his *Harmonielehre* (1911/1922).<sup>29</sup> The score, first published by Universal Edition in 1911, gives no indication of a programmatic reading or motivic associations.<sup>30</sup>

Figure 3.4 displays the *Pelleas and Melisande* motives excerpted from the liner notes. For a piece as intricate as it is lengthy, these motives certainly suggest a simplicity to the aural surface that may be otherwise absent or reductionist within the context of long-range listening.

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<sup>24</sup> See Cherlin, "Dramatic Conflict," 69.

<sup>25</sup> See Jenkins, 129 – 149.

<sup>26</sup> See Arnold Schoenberg, *Pelleas und Melisande*, The Symphony Orchestra of Radio-Frankfurt, Conducted by Winfried Zillig, Capitol P-8069 mono, 1949, LP. As the 1949 publication presents the most substantial document with respect to motivic forms, it serves as the primary source to examine. However, with such a time discrepancy from the original composition, and because Schoenberg had developed a radically different aesthetic style in later years, his words should be read cautiously. I do maintain, and others seem to agree (Cherlin, for example), that he had a hand in confirming many (if not all) elements of Berg's thematic analysis, and can therefore imagine the scenario whereby Berg's earlier document was referenced for his own liner notes. In any case, as composer, he should be read as an appropriate authority on intention and associations (even if, at times, conflicting ideas emerge).

<sup>27</sup> See Cherlin, "Dramatic Conflict," 129 – 130.

<sup>28</sup> See for example Bailey, 66 – 69.

<sup>29</sup> See pp. 438, and 450 – 451 (1911); or 470 – 471 and 483 – 484 (1922).

<sup>30</sup> Arnold Schoenberg, *Pelleas und Melisande* (Vienna: Universal Edition, c1939 [1911]).

Schoenberg's approach here seems to indicate first occurrences of motives as representative of primary forms. The accompanying text outlines these as "themes, in the manner of Wagnerian leitmotifs", where Schoenberg is prepared to take these manifestations as starting points for a developmental process which unfolds over the course of the work.<sup>31</sup> In this way, his outlining of the motives proves useful in the sense of generic associations, but lack the power to connect the listener with the experiential paths of the characters over time.

Figure 3.4: Schoenberg's LP Liner Notes, *Pelleas and Melisande* Character Forms<sup>32</sup>

Melisande in her helplessness is pictured in 1)



Pelleas is contrasted distinctly by the youthful and knightly character of his motif, 5)



## Walter Frisch

Moving beyond the early-mid twentieth century, a later perspective on the motivic content of *Pelleas und Melisande* can be found in the writing of Walter Frisch.<sup>33</sup> In the introductory remarks to Frisch's chapter on *Pelleas und Melisande*, he maintains:

<sup>31</sup> See liner notes from Arnold Schoenberg, *Pelleas und Melisande*, The Symphony Orchestra of Radio-Frankfurt, Conducted by Winfried Zillig, Capitol P-8069 mono, 1949, LP.

<sup>32</sup> Excerpted from Jenkins, 144 – 145.

<sup>33</sup> Walter Frisch, "Chapter Seven – *Pelleas und Melisande*", in *The Early Works of Arnold Schoenberg, 1893-1908* (Berkeley: University of California Press, 1993): 159 – 179.

Schoenberg's strategy seems to be to introduce in part I a core of themes that are deployed almost continuously throughout the rest of the work. Like leitmotifs, they are associated with certain characters or more abstract concepts, and they undergo development that reflects the psychological or dramatic course of the play.<sup>34</sup>

Frisch spends a substantial portion of his chapter discussing harmonic, tonal, and formal relations, and pauses briefly to convey his impressions of thematic relationships. With eight examples, four being varying forms of *Melisande*, Frisch (as compared to Berg) appears conservative in his ascriptions for such a lengthy work. The developed forms of *Melisande* appear within previously presented analyses and offer no substantial additional insights.<sup>35</sup> Frisch does observe several instances that link the intervallic content of the motivic ideas between characters. In particular, he emphasizes pitch intervals, contour, and relative durational intervals shared between *Pelleas* and *Melisande*. Figure 3.5 displays Frisch's summary breakdown of motives. Schoenberg's comment regarding "extratonal" intervals as the motivation for shaping the harmonic content and movement inspires Frisch to say less about the intervals themselves, instead choosing to pursue the resultant harmonies and shared voice-leading moves.<sup>36</sup> Though largely unproblematic in its analytical content, Frisch's predisposition to only cursorily examine the thematic relationships results in a fleeting understanding of motivic elements.

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<sup>34</sup> Frisch, *Early Works of Arnold Schoenberg*, 160.

<sup>35</sup> For example, Frisch's *Melisande* III is the passage Cherlin refers to as the "Eros" theme and is Berg's Example 27 in his longer analysis.

<sup>36</sup> Frisch, *Early Works of Arnold Schoenberg*, 160 – 169. See Schoenberg, "My Evolution," 82.

Figure 3.5: Frisch’s Summary of Pelleas und Melisande Motivic Forms<sup>37</sup>

The image displays a collection of musical motifs from the opera Pelleas und Melisande, arranged in a grid-like fashion. Each motif is presented on a single staff with its name above it. The motifs are:
 

- MELISANDE 1:** A bass clef staff in 3/8 time, starting with a piano (*p*) dynamic. It features a melodic line with a slur and an 'x' above it.
- MELISANDE 2:** A treble clef staff in 3/8 time, starting with a piano (*p*) dynamic. It features a melodic line with a slur and 'x<sup>III</sup>' above it.
- GOLAUD:** A treble clef staff in 4/4 time, starting with a piano (*p*) dynamic. It features a melodic line with a slur.
- FATE:** A treble clef staff in 4/4 time, starting with a fortissimo (*fff*) dynamic. It features a chordal texture with a slur.
- PELLEAS 1:** A treble clef staff in 4/4 time, starting with a piano (*p*) dynamic and *cresc.* marking. It features a melodic line with a slur and 'x' above it. The end of the motif is labeled 'DESTINY (& FATE)' with a *fp* dynamic.
- PELLEAS 2:** A treble clef staff in 4/4 time, starting with a forte (*f*) dynamic. It features a melodic line with a slur and 'x<sup>III</sup>' above it. The end of the motif is marked with *fp* and *p*.
- MELISANDE 3:** A treble clef staff in 4/4 time, starting with a piano (*p*) dynamic and *cresc.* marking. It features a melodic line with a slur and a triplet of eighth notes marked with a '3'.
- MELISANDE 4:** A treble clef staff in 4/4 time, starting with a mezzo-forte (*mf*) dynamic. It features a melodic line with a slur and a triplet of eighth notes marked with a '3'.

Michael Cherlin

Michael Cherlin’s writings on this piece starkly contrast Walter Frisch’s. Cherlin is evidently concerned with the portrayal of the representations of narrative and drama (and their conflicts) through the leitmotivic writing. Particular attention is given to the interactions of the characters and thematic relations. Here, Cherlin separates character themes from other “basic forces” or “emotional complexes.”<sup>38</sup> He maintains that Schoenberg’s compositional adaptation depicts “the vicissitudes of the leitmotivic and thematic constituents of the work” and cites their relevance as “first and foremost in our hearing.”<sup>39</sup> I agree with Cherlin’s idea of motivic primacy in this work. I further sympathize with his endeavor to understand the forms of these motives as

<sup>37</sup> See Frisch, *Early Works of Arnold Schoenberg*, 161.

<sup>38</sup> Cherlin, “Dramatic Conflict,” 90.

<sup>39</sup> *Ibid.*, 86.



fluid entities (i.e., not static) that develop, take on new meanings, and participate in various modes of temporal engagement.<sup>40</sup>

Cherlin’s primary motive chart acts as a middleground between the interpretations of Berg and Frisch.<sup>41</sup> Melisande’s motive is limited to two forms: introductory (“Melisande Lost”) and primary (“Melisande”).<sup>42</sup> The discussion regarding the importance of “Melisande Lost” comes to fruition as he discusses temporal conflict and alignment during the later death scenes, which recollect this motivic idea. Pelleas, in Cherlin’s view—and contra Frisch—is one extended motive. Examining Figure 3.6, we can observe Cherlin’s motivic identities.

Figure 3.6: Cherlin’s Summary of *Pelleas und Melisande* Motivic Forms

The figure displays ten musical motifs, each on a separate staff with its own key signature and time signature. The motifs are:

- 1.1. MELISANDE LOST: Treble clef, 3/8 time, key of D major.
- 1.2. FATE: Bass clef, 3/8 time, key of D major.
- 1.3. MELISANDE: Treble clef, 3/8 time, key of D major.
- 1.4. GOLAUD with embedded WEDDING BOND: Treble clef, 3/8 time, key of D major. A bracket labeled "WEDDING BOND" spans a portion of the melody.
- 1.5. PELLEAS: Treble clef, 3/8 time, key of D major.
- 1.6. EROS: Treble clef, 3/8 time, key of D major.
- 1.7. JEALOUSY: Bass clef, 3/8 time, key of D major.
- 1.8. LOVE: Treble clef, 3/8 time, key of D major.
- 1.9. DEATH DRIVE: Treble clef, 3/8 time, key of D major.
- 1.10. LOST INNOCENCE: Treble clef, 3/8 time, key of D major.

<sup>40</sup> Ibid., 91 – 92.

<sup>41</sup> The rationale for the labels for the themes is extensively discussed in his chapter.

<sup>42</sup> Importantly, Cherlin separate’s Frisch’s MIII and Berg’s Ex. from Melisande directly and instead moves to the label “Eros”. This reframing is motivated well in his writings; however, it does prevent 1:1 character associations to clearly asserted.

Similar to Frisch, Cherlin emphasizes essential elements in the motives which recur or form connections across the motives, noting in particular the abundance of representations and transformations as limitations to in-depth tracking within his study.<sup>43</sup> Here, Cherlin is partial to considering intervallic profiles and their segments as “genetic source idea[s]”; however, he limits process-driven readings.<sup>44</sup> The current work will play a role in treating and interpreting such intervallic profile affinities in more depth. In all, Cherlin maintains that “Schoenberg’s musical vehicle for dramatic association is his adaption of Wagner’s leitmotiv technique” and that we may trace such drama throughout the work as one would for other nineteenth-century programmatic works.<sup>45</sup>

### Summary of Existing Analytical Commentaries

All authors examined present convincing, though varied, readings of *Pelleas und Melisande*. An absent element from the dialogue stems from the avoidance of analytical content which asks the primary question: what are the mechanisms employed for motivic development in this work? The commentary on this work, analytical or otherwise, leaves substantial room for further interpretation in this line of questioning. The multiplicity of motivic forms examined in the literature can perhaps be remedied by such an endeavour. Although each author presents a group of themes, and in some cases speaks to their development, the work as a whole is more than *just* these “ideal” character forms or scenes. Indeed, though these writings are helpful in orienting the listener to important signposts, characteristics, moods, movements, or formal areas,

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<sup>43</sup> Cherlin, “Dramatic Conflict,” 107. Note that Cherlin does present two in-depth *Melisande* excerpts/readings.

<sup>44</sup> Take the theme “*Melisande Lost*,” for example, and Cherlin’s notes about the chromatic incipit of <+1, +1> as fundamental to the proceeding developed forms in this and other motives (see Cherlin, “Dramatic Conflict,” 92 – 94).

<sup>45</sup> Cherlin, “Dramatic Conflict,” 86.

they do little to guide the listener through *what* is happening and *how* it is happening; instead, preferring the *where*, *who*, and *why* (i.e., narrative rhetoric). To fully realize the complexity and scope of this composition one must dive deeper into the relations themselves. As Bailey informs us, “it is also possible to trace the course of a single leitmotive throughout the score, observing how its alteration and development reflect the course of the drama.”<sup>46</sup> The following analytical section will answer the what and how through the inspection of intervallic relations within statements of Pelleas and Melisande.

## Analysis

Completed in 1903 and premiering in 1905, this symphonic poem is well-placed within Schoenberg’s early works.<sup>47</sup> The music represents core writing strategies that exist in other contemporary pieces and re-affirms a tendency to write lengthy, complex compositions.<sup>48</sup> The reception, as Mark Berry notes, was not entirely positive for the work stating: “the audience did not on the whole react kindly, but the piece certainly made a splash.”<sup>49</sup> Other critical words paint similar pictures. Paul Stauber recounted “although it is madness, it still has its methods” continuing, however, that “it is not music at all, but an assassination of sound, a crime against nature” which “wants to renounce the natural path of musical development.”<sup>50</sup> It is clear that audiences and critics alike were discovering a difficulty that comes with Schoenberg’s compositions as he penned new music which extended his harmonic complexity (set relations) to melodic innovation.<sup>51</sup>

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<sup>46</sup> Bailey, 71.

<sup>47</sup> Work on this composition starts after *Verklärte Nacht* and before the String Quartets Op. 7 and Op. 10.

<sup>48</sup> Arnold Schoenberg, *Verklärte Nacht* (Berlin: Dreililien, [1905]), 20.

<sup>49</sup> Mark Berry, *Arnold Schoenberg* (Great Britain: Reaktion Books Ltd., 2019): 45 – 46.

<sup>50</sup> See Bailey, *Programmatic Elements in the Works of Schoenberg*, 16 – 17. Review by Paul Stauber in *Montagspresse*, Feuilleton, 30 January 1905.

<sup>51</sup> Berry, 46 – 47.

Before commencing with an analysis which discusses musical motives as representative of meaning, it is necessary to first set the parameters of my engagement with the idea of musical meaning. To be sure, many authors assert a clear evocation of narrative associations between the meaning brought about by Maeterlink's drama and Schoenberg's music. In my positioning, I support an approach which blends several "meaning" paradigms promoting a framework that suits the nature of the material and my experience and engagement. Below, I briefly summarize some of the base tenets that I hold true and which are necessary to understand my perspective on the music and transformational analysis as motivating the program. I am overall hesitant to demarcate or indicate one singular approach as I believe such a rigorous exercise to be superfluous to the cause herein. As ontologically precarious as this positioning may be, I should not like to make concrete aspects of the phenomenological or hermeneutic orientations which facilitate sensitive listener and open-ended approaches.

Moving forward, as Bailey suggests "it is possible to trace the course of a single leitmotif throughout the score, observing how its alteration and development reflect the course of the drama."<sup>52</sup> Indeed, one of Cherlin's achievements in his article "Dramatic Conflict in *Pelleas und Melisande*" (2007), is the association of motivic ideas as they reflect the drama and subtext.<sup>53</sup> Motive and meaning in my forthcoming analysis, more often than not, engenders a hermeneutic approach. Blending practical foundations grounded within Robert Hatten's notions of narrative as arising through markedness, correlation, and gesture (where gesture here signifies

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<sup>52</sup> Bailey, 71.

<sup>53</sup> See Cherlin, "Dramatic Conflict in *Pelleas und Melisande*," in *Schoenberg's Musical Imagination* (Cambridge: Cambridge University Press, 2007): 68 – 154.

motivic instantiations) with theoretical elements of Byron Almén and Eero Tarasti, among others, my approach is multifaceted and flexible.<sup>54</sup>

From Robert Hatten’s work, I utilize the idea of markedness to define a more pragmatic approach to, as he references, “energetic shapings of time”, or motives. More specifically, the notion of markedness and rank are what lead to reading motive as imbuing narrative significance. Through “the asymmetrical valuation of an opposition,” Hatten demonstrates that “otherness” denotes meaning when compared against the unmarked (normalized) term.<sup>55</sup> Thus, when a motive, for example, goes against an established formulation/representation, it becomes marked and therefore can onboard meaning. This meaning can be evaluated through rank, which “assigns relative value to the distinctive features.”<sup>56</sup> As one may imagine, approaching motivic meaning through a system which demarcates change as *the* signifier offers a rich environment to discuss transformational change as narratively significant. The result holds a promissory note for a reading that can map meaning and transformation from a program to a musical work with objects being inspected, compared, marked, and ranked.<sup>57</sup>

Connecting seamlessly with Hatten, Byron Almén’s work, *A Theory of Musical Narrative* (2008), convincingly frames the idea of “narrative transgression” which “arise[es] through the introduction of marked elements” as the motivator of narrative.<sup>58</sup> In this seminal text, Almén reviews the established perspectives and critiques surrounding the possibility of musical narrative and music as narrative. One of the key takeaways of the opening positioning is the

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<sup>54</sup> For more information on topics and tropes in Schoenberg’s oeuvre, see Jessica Narum’s work “Sound and Semantics: Topics in the Music of Arnold Schoenberg,” PhD Dissertation, University of Minnesota, 2013.

<sup>55</sup> See Hatten, *Musical Meaning in Beethoven: Markedness, Correlation, and Interpretation* (Bloomington: Indiana University Press, 1994): 34 – 44.

<sup>56</sup> Byron Almén, *A Theory of Musical Narrative* (Bloomington: Indiana University Press, 2008): 47.

<sup>57</sup> Hatten, *Musical Meaning in Beethoven*, 291.

<sup>58</sup> Almén, *A Theory of Musical Narrative*, 41.

confirmation of an analytical tradition which suggests “the relations between elements and not the elements themselves that are the foundation of narrative” as cited within the works of Vladimir Propp, Joseph Campbell, and Northrop Frye.<sup>59</sup> Such an approach becomes syntagmatic, to use Saussure’s term, which takes at its core “a consideration of the relations between elements in a sequence or combination.”<sup>60</sup> Ultimately, using a narrative paradigm following that of James Liszka, Almén favours a “system of signs” approach. Through the process of transvaluation, “a hierarchy set up within a system of signs which is subjected to change over time...” where shifts within or against the system are marked and designate meaning.<sup>61</sup> In a clear positioning, using passages from Liszka, Almén frames narrative as an act of transvaluation, which is to say:

... transvaluation is a rule-like semiosis which reevaluates the perceived, imagined, of conceived markedness and rank relations of a referent as delimited by the rank and markedness relations of the system and its signans and the teleology of the sign user ... the referent is given a certain order and valuation by means of revaluating its signans.<sup>62</sup>

As Almén summarizes, signans, for our purposes, may be best understood through Eero Tarasti’s context of isotopies, stating:

Tarasti’s analytical method ... can be characterised as parametric in organization. He segments the musical work into isotopies: passages rendered distinct by the employment of redundant semantic categories. Within each isotopy, he highlights the dynamic role played by certain discursive [sic] categories, which roughly correspond to traditional musical parameters... [or to] transformation of theme- and motive-actors discursive [sic] categories, which roughly correspond to traditional musical parameters ... [or to] transformation of theme- and motive-actors.<sup>63</sup>

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<sup>59</sup> Ibid., 36.

<sup>60</sup> Ibid., 45; see also, Saussure, *Course in General Linguistics*, trans. Wade Baskin (New York: McGraw-Hill Book Company, 1959 [1916]): 123.

<sup>61</sup> Ibid., 46; Saussure, 1959 [1916]: 123.

<sup>62</sup> Ibid., 51.

<sup>63</sup> Ibid., 21.

Isotopies can be derived from motivic features, therefore the playing-off of such units can produce narrative claims. Such ideas of tracking object-units maps fortuitously onto the ideological framing of motives as discrete dynamic objects.

In addition, I would be remiss not to invoke Fred E. Maus's notion that "listeners can hear actions in music by understanding musical events in relation to imagined intentions ..."<sup>64</sup> In this case, relaying Schoenberg's manipulation and development of musical events which garner explicit actions heard as emerging from the music with intentioned meaning and prompting narrative conveyance. Vera Micznik's "Music and Narrative" posits a similar description of morphological and syntactical levels.<sup>65</sup> Here, the former defines the source object (musical element or motive) and the latter, describes their meaning through connections based on function. Micznik's terminology would certainly be useful in future work where every motive and character are analyzed in a more connected fashion.

Lastly, before moving into analysis and interpretation, it is important to present the narrative context of the work. An overview of the play will allow the reader to grasp the developmental connections that I posit later as signified by the motives. Written in 1892, Maurice Maeterlinck's work *Pelléas et Mélisande* tells a story of love, jealousy, and loss. Three main characters, Golaud, Pelleas, and Melisande are the focal point of the drama. Briefly, Golaud meets Melisande in a forest, falls in love with her, and takes her back to his kingdom. Golaud's younger half-brother, Pelleas, also falls in love with the young Melisande. They form a relationship, of which Golaud has suspicion of an affair. Golaud then becomes jealous of the

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<sup>64</sup> Fred E. Maus, "Classical Instrumental Music and Narrative," in *A Companion to Narrative Theory*, ed. James Phelan and Peter Rabinowitz (Malden, Mass.: Blackwell, 2005): 468.

<sup>65</sup> Vera Micznik, "Music and Narrative Revisited: Degrees of Narrativity in Beethoven and Mahler," *Journal of the Royal Musical Association* 24/1 (2000): 200 – 201.

pair's interaction as his relationship with Melisande turns out to be less than ideal. Golaud's jealousy eventually results in him killing Pelleas and wounding Melisande when they are found in each other's company. Melisande dies shortly thereafter of the wound and gives birth to a baby. Who's the father? It is unclear. A complete summary of the scenes and events from the original Maeterlinck source is found in Appendix 3. Musical connections within the drama have been described briefly above, with a more thorough formal layout of relations and associations available in Appendix 4.

With theoretical, contextual, and paradigmatic orientations set, let us now examine Schoenberg's methodical unfolding of the title characters' motives.

## Melisande

From the literature examples reviewed above, notice that Melisande's motivic identity is formed through a network of intervallic signifiers. Studying the similarities expressed in her forms, as presented by Berg, will orient our forthcoming inspection of her motivic segments. These similarities present an opportunity to examine sub- and super-set inclusions and affinities. From my perspective, the literature presents five main Melisande motivic frameworks that merit analytical scrutiny:

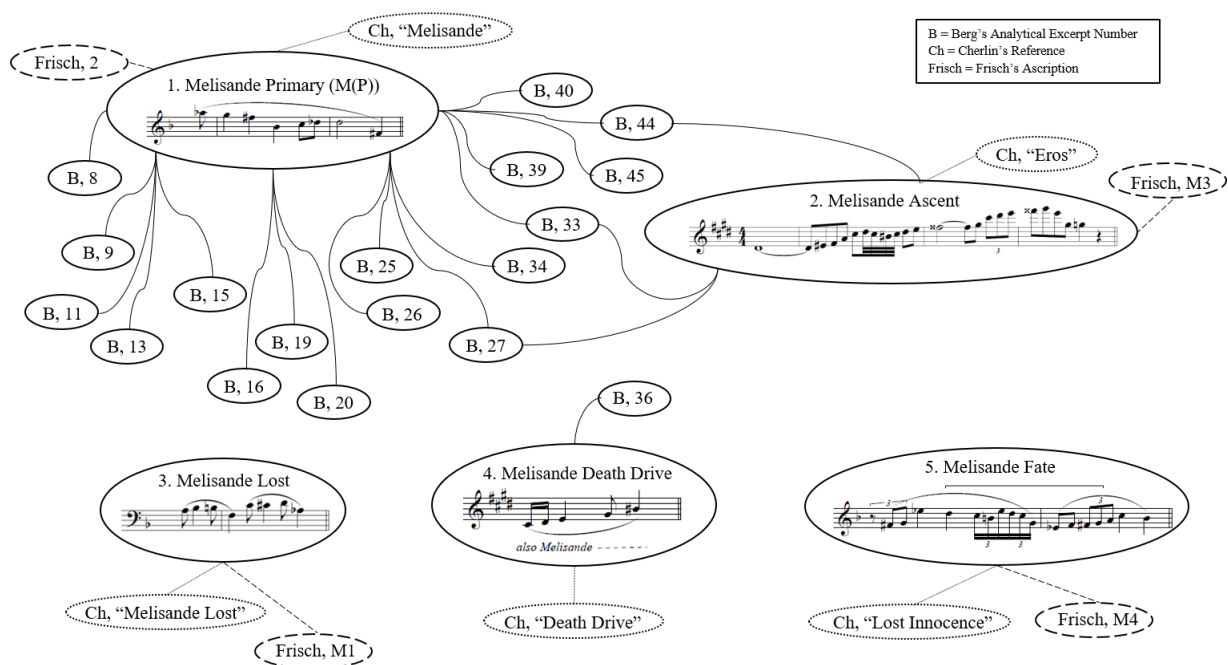
1. Melisande Primary (Berg Ex. 3, Frisch M2, Cherlin's *Melisande*)
2. Melisande Ascent (Berg Ex. 14, Frisch M3, Cherlin's *Eros*)
3. Melisande Lost (Frisch M1, Cherlin's *Melisande Lost*)
4. Melisande Death Drive (Berg Ex. 36, Cherlin's *Melisande Death Drive*)
5. Melisande Fate (Berg Ex. 17, Frisch M4, Cherlin's *Lost Innocence*)

These motivic frameworks share a degree of intervallic similarity as shown through Figure 3.7, revealing how the above examples fit into each category (with some obvious alterations between



statements<sup>66</sup>). Each of these five areas continue beyond their reference point listed, developing as the drama unfolds. Through score inspection, and Figure 3.7, it is evident that Melisande Primary (M(P)) is favoured within the work. The remaining four motivic perspectives (2 – 5) provide further nuanced motivic significations of particular dramatic situations, as Cherlin discusses in his writings.<sup>67</sup>

Figure 3.7: Melisande, Similarity Among Motivic Forms



Given such extensive referencing and multiplicity of forms, it is necessary for reasons of scope that my analysis focuses on Melisande Primary (M(P)) as the main motive under inspection. The analysis will cover several key moments of Melisande's musical material from parts one through four of the symphonic poem.<sup>68</sup> Common developmental strategies explored

<sup>66</sup> Readers may trace the similarities and differences between connected nodes at their leisure.

<sup>67</sup> See Cherlin, "Dramatic Conflict"; See also Jessica Narum's work.

<sup>68</sup> Please consult the Formal Diagram in Appendix 4 as required.

below include: the influence of Golaud's presence on the form of M(P); the fragmentary nature of M(P) when the trio (Melisande, Golaud, and Pelleas) interact together (having overt narrative implications); and the overall use of development transformations that yield products which are unquestionably related to the source motive (M(P)), but differ through subtle changes in int-node content, order, and cardinality. The structure of the analysis is based on the development within and between narrative scenes. Rehearsal numbers and their associated drama will sign-post the analysis.

## Part I

### Rehearsal 1 – 5: The Forest

The first musical scene of this piece corresponds to Scene II in Maeterlinck's drama. Here, Melisande is lost in a forest and Golaud, who is similarly lost, discovers and approaches her. Melisande's weeping can be attributed to the semitone-rich "Melisande Lost" motive and the water can be heard textually in the supporting string timbre. The "Melisande Lost" and Melisande Primary motives alternate soundings in this section with Melisande Primary first sounding in the oboe at R1. Tracking Melisande's Primary motive in this section as compared to the drama, reveals two main ideas. First, the unstable forms (i.e., alteration between two significantly different iterations) are reflective of Golaud's gaze and uncertainty as to *who* she is – her motivic essence. Here, the more focused transpositions of a consistent form demonstrate her identity, from her perspective (see mm. 19 – 30). And second, the representation of Melisande's fear and trembling as a result of Golaud's initial touch, demonstrated through a transformation focused on shorter durations (See Figure 3.10). This increase in attack rate establishes a narrative connection, which will continue in other contexts within the work.

A more structured approach to the opening measures (R0 – R5) divides the music into four parts, and the narrative in two.<sup>69</sup> Programmatically, one can read a “before” Golaud and “during” Golaud context. This separation is clearly articulated by the stable musical divide of a singular G major triad in m. 31, after which Golaud enters. Four musical sections unfold as: 1) scene-setting “Melisande Lost” 2) Melisande Primary (R1) 3) Golaud’s entrance (in *wieder langsamer*) and 4) Golaud’s touch (in *Heftig*). My analysis will focus on Melisande’s Primary motivic soundings, sections 2 – 4 within R0 – R5.

During Melisande’s Primary motive in the opening forest scene, one traces the material through a number of transpositions and minor alterations, as shown in Figure 3.8 (pitch network) and Figure 3.9 (duration network).<sup>70</sup> Within these figures, the “zone of transposition” immerses the listener into a stable Melisande-focused environment in terms of intervallic content; however, although transpositions proliferate the analytical networks, the musical unfolding presents a less clear aural environment as the attacks sound in a canon-like counterpoint. The dense and overlaid texture conveys the unsettled atmosphere of being “lost”, here however, through unfolding itself and not through the use of the “lost” motive proper.

Within the pitch domain, Figure 3.8, one can see the opening (and primary) sounding of Melisande. Uneven Splits and Compounds briefly change the form in statement III but the motive becomes stabilized in statements V – VII. Through statements VII – IX, one can observe an insertion, removal, and a parsimonious expansion of +1. From statement IX, the motive

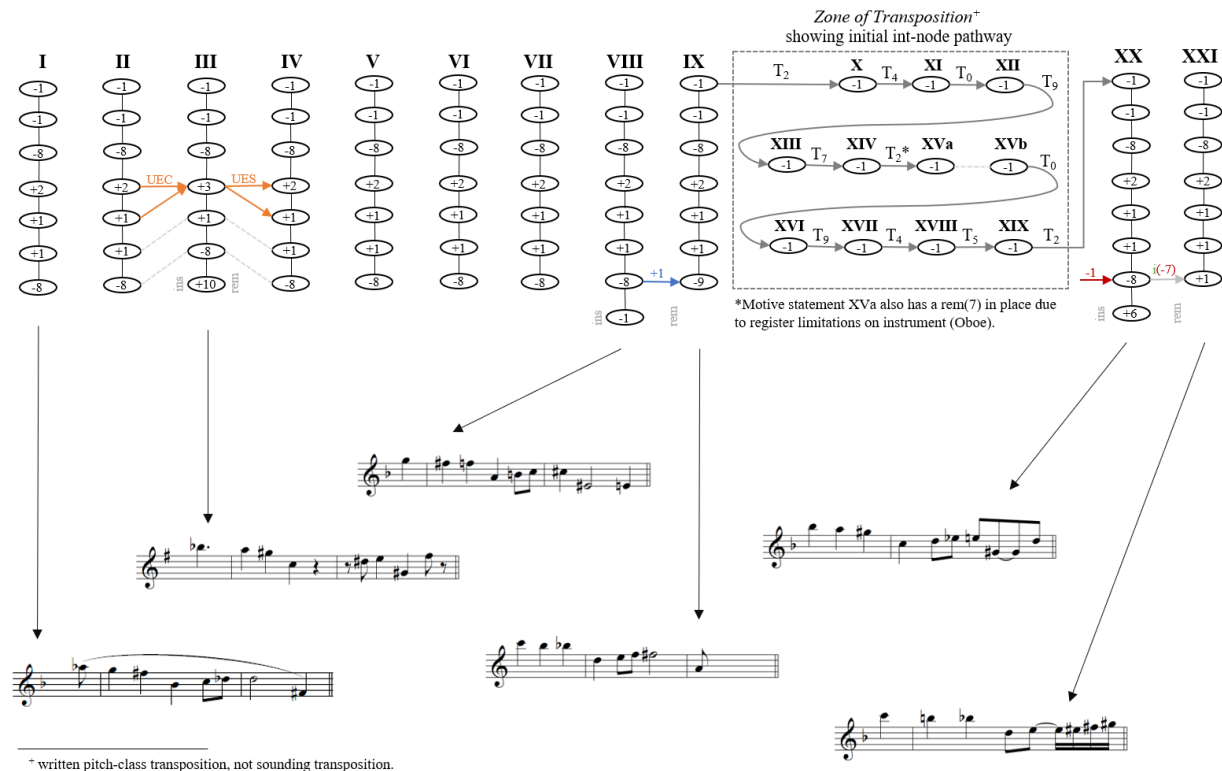
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<sup>69</sup> In many Figures, passages have been excerpted from the score itself to facilitate a greater ease of comparison on the part of the reader. In some cases, however, it may be best for the reader to have the score within reach as a passage length may be prohibitively lengthy to merit inclusion. In such cases where the score is absent, I have often provided excerpts that are contextually relevant.

<sup>70</sup> For a summary review of the mechanisms possible, please refer to Figures 2.6, 2.13, 2.33, or the Glossary (Appendix 1).

undergoes contrapuntal passagework which sees the form transposed (written, not concert aural transposition) several times. As suggested, such overlaid attacks (with only one simultaneous attack occurring – statements XVa and XVb) present a confused character polyphony which may be read as contributing to the “lost” ascription in the text source. The final two statements of this section (statements XX and XXI), as can be seen from the accompanying notated passages, significantly alter the original form, with two negative elastic moves, one parsimonious and one distal (combined with inversion). The final statement, statement XXI, is abruptly cut-off by a singular G major triad in the horns. This moves the listener out of Melisande’s personal world, and into a world where Golaud is also present.

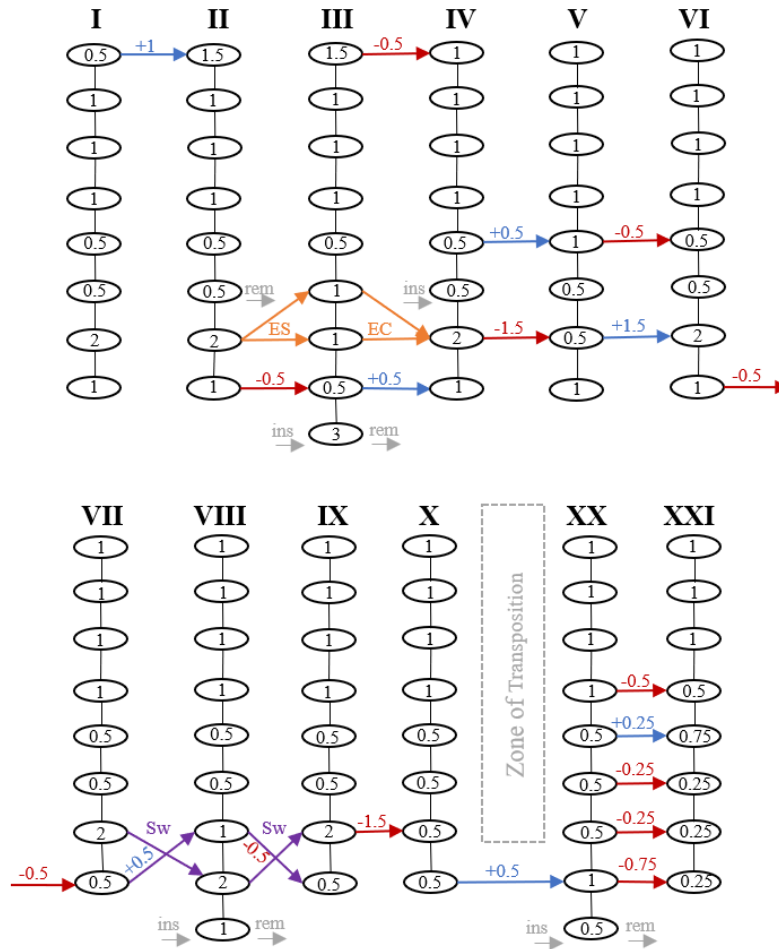
Figure 3.8: Melisande Primary, Forest Identity, R1 – R4, Network (Pitch)



The duration domain within section 1 (Figure 3.9) presents similar developmental alterations. As shown in Figure 3.9, durational values are not static or identical to the opening

primary version (M(P)). Ten main transformations occur, as heard in statements II – X, and XX – XXI.<sup>71</sup>

Figure 3.9: Melisande Primary, Forest Identity, R1 – R4, Network (Duration)



Examining the figure, one can view slightly more durational transformations in comparison to the pitch-domain network. What is further apparent, despite the number of transformations, is Schoenberg's tendency to apply inverse mechanisms to revert significant alterations back to the more archetypal form, M(P). Such operations occur between statements II – IV, IV – VI, and VII

<sup>71</sup> Please note that the network is in open-form (no condensed node-groupings), used for clarity of comparisons.

– IX. Within the network, there is a diversity of elasticity changes, with parsimonious moves (13 occurrences), discrete moves (2 occurrences), and adjacent moves (3 occurrences). Although cardinality-altering moves such as splits/compounds (ES/EC) occur, these are isolated and, as mentioned, revert immediately. An order-altering transformation (Switch) also exists between statements VII and IX. In all, many of the moves observed in the figure are subtle transformations that work to keep a durational profile uniform throughout the section. Working with pitch-domain transformations, Schoenberg is strategically altering and reverting duration intervals for continuity and clarity. Suggestively, this motivic segment is only beginning to explore its developmental potential (and realization), much like the character of Melisande.

Golaud's initial touch of Melisande has significant repercussions within the musical material. Figure 3.10 presents variation which occurs at the narrative moment where Golaud first touches Melisande and her resulting response, "do not touch me!" This is effectively conveyed through semitone clusters (for instance, see the addition of <-1> at the beginning of statement I and the post-motive chromatic descent), the Fate motive foreshadowing Melisande's entrance (beats 1 and 2), and the *fortissimo* dynamics (where previously Melisande's motivic presentation solely existed at a *piano* dynamic).

As shown in the networks of Figure 3.10, the pitch intervals of the segment demonstrate a strong contour relation with Melisande Primary, marked M(P). The difference of only a term addition and parsimonious expansions and contractions in the final two terms of statement I reveals the close similarity relation. Statement II shows a mid-motive term removal (node 4) as well as a removal of the final interval. These minimal changes are mapped in the network and, as can be seen from the score, demonstrate the clear relation to Melisande's primary motivic form (M(P)).

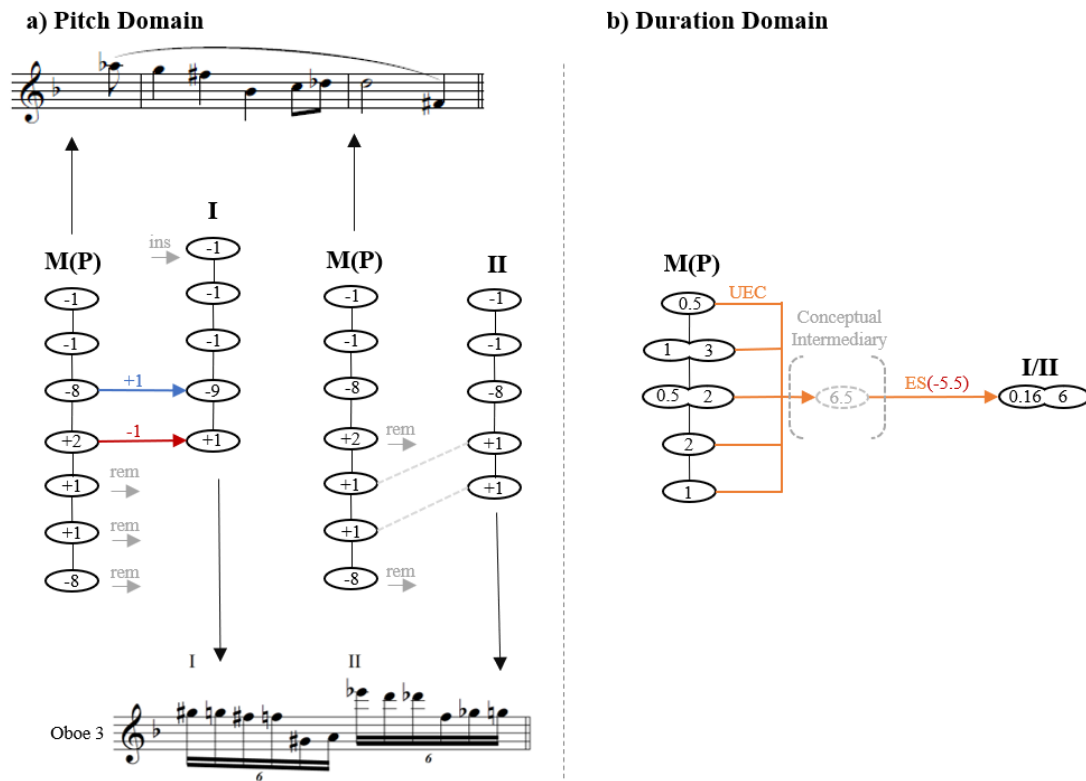
Within the duration domain in particular, one can observe extensive transformation through the re-forming of varied durations from the original presentation (M(P)) and the statement's new and even sextuple unfolding. This element, as demonstrated within the figure, can be seen as an Even Split of the combined motivic group. Given its quick attack rate, the temporal span has been significantly reduced through a removed interval-altering elastic move. It is indeed reflective of a quick shriek from Melisande.

Figure 3.10: Golaud's Touch, Fate and Melisande, R4 (*Heftig*)

a) Score Excerpts (two measure before R5, woodwinds system)

The image shows a woodwind system score excerpt from Wagner's *Tristan und Isolde*. The system includes parts for: Kl. Fl., 3 gr. Fl., 3 Ob., E.H., Es Klar., 3 Klar.(A), Bss.-Klar.(B), 1.2., 3 Fg., and Ktr. Fg. The score is marked with *rit.* at the beginning and end, and *Heftig* in the middle. Above the staves, there are labels: 'Fate' above the first staff, 'Melisande I II' above the second and third staves, and 'Chromatic Dissolution' above the fourth staff. The music features complex rhythmic patterns, including triplets and sextuplets, and dynamic markings such as *f* and *ff*. The key signature has one flat, and the time signature is 4/4.

b) Networks (Pitch and Duration Domains)



As can be seen, these opening measures (to R5) communicate many thematic elements that will be continually referenced throughout the work as a whole. Motives of *Melisande Lost*, *Melisande Primary*, *Golaud*, and *Fate* set the programmatic scene. Absent is *Pelleas's* motive, which does not enter until much later, at R9.<sup>72</sup> Two important programmatic elements of the opening include: 1) the musical foreshadowing of tragic *Melisande* moments (losing the ring, and her death) through use of the transformational mechanisms shown in Figure 3.10 (durational transformation through acceleration of articulation, and flexible parsimonious elasticity which adds narrative tension), and 2) the use of horns as a hunting topic/trope for *Golaud's* soundscape.<sup>73</sup> In the drama, *Golaud* is similarly lost in the woods while hunting and

<sup>72</sup> *Pelleas's* motive, as noted, will be examined separately.

<sup>73</sup> Occurring in m. 31 as a single G-major sonority.



Schoenberg's use of the timbre of the horns signifies not only his royal status (horns as fanfare trope), but also the more pastoral horn as associated with the hunt. Take, for example, the use of the horns G-major triad (m. 31) which signals the imminent arrival of Golaud's motive. The opposition of the horn to Melisande's sounding in the woodwinds and strings may also hold further narrative meaning.

#### Rehearsal 5 – 9: Main Section and Transition

Between R5 – R9, Berg's narrative analysis focuses heavily on the Bond of Matrimony/Wedding Bond and the transition.<sup>74</sup> The Matrimony/Wedding Bond motive does not share significant features with Melisande. My analysis will continue to focus on Melisande in this section as the positioning of her motive against the Matrimony/Wedding Bond motive seems to convey a darker and ominous underlying meaning.

At R5, as Berg suggests, the Wedding Bond/Matrimony motive sounds, heard prominently in the oboe and first violins. With this articulation, however, a version of Melisande's Primary motive captures our ear as an inverted line in the bass voices. This registrally low voicing and unaccented relationship suggests a subliminal message about Melisande's opposition to the union. Although this may present as a tenuous assertion at first glance, when one continues to trace the melodic line's transformations (from the contrabass at R5) the relationship becomes clear as the initial contour changes and is set into context and relief. Figure 3.11 demonstrates such considerations. As one traces the transformational paths, notice that the primary form M(P) compared with statement I reveals a close inverse relationship.

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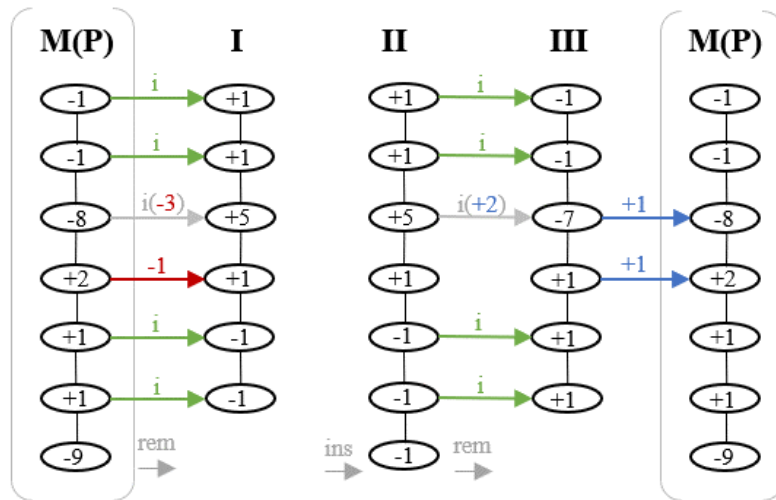
<sup>74</sup> In Maeterlinck's drama, Scene III is a hall in the castle and it has already been 6 months since they (Golaud and Melisande) married. So, the "wedding" ascription is a significant divergent from the source text.

Such a marked contour alteration casts Melisande's identity as not quite herself. That is, the transformations do not fully realize Melisande in her normal form. The opening segment durations, in particular, create rhythmic confusion against her more normative form, perhaps reflective of her own internal struggle as she comes to terms with the Marriage Bond/Matrimony context.

Figure 3.11: Melisande's Union Opposition, R5 – R6

a) Score (contrabass)

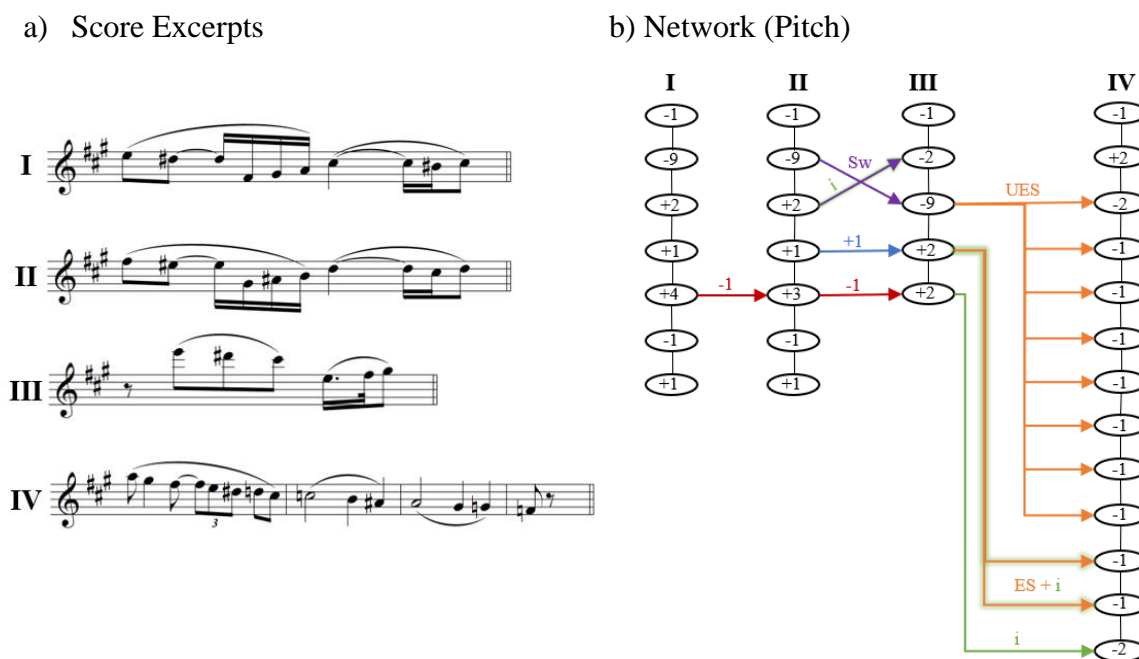
b) Network (Pitch)



Rehearsals 6 – 8 present further variation of Melisande's Primary motivic form. In analysis, Berg highlights the "intensification" between the combinations of Golaud and

Melisande.<sup>75</sup> The analysis, Berg’s Example 8, does not track the further developmental processes within the section, and the “intensification” is left to the reader/listener to interpret. In Figure 3.12, I examine relevant transformations. As one can see from the pitch network, extensive modifications are present. Through the four primary forms (statements I – IV) one can observe increasingly complex modification through several transformational operations. The duration domain is likewise complex.

Figure 3.12: Melisande, R6 – R8<sup>76</sup>



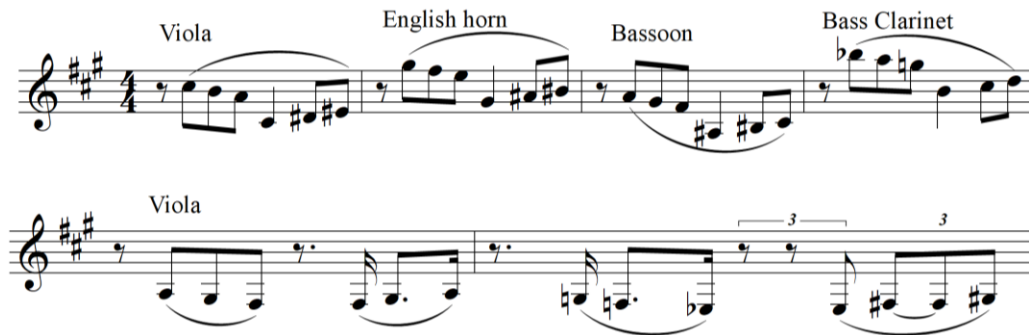
These forms which can be understood as breaking down Melisande’s character, ultimately lead to a prominent “fate” motive sounding at R8. The descending semitones of

<sup>75</sup> See Simms, 127.

<sup>76</sup> In his Example 8, Berg includes the last pitch of the preceding measure as connected to the motive statement I, which would add a -1. Although an argument can be made for its inclusion given its intervallic relationship of -1 and the typical Melisande opening of two -1's, its use as a concluding pitch within a two-note slur gesture, for my reading, disassociates its potential connectedness to the downbeat of R6. This differing interpretation keeps the segmentation more consistent between other voices within the passage as well.

statement IV in Figure 3.12 presents a more-or-less lament-bass association with her form. Fate then sounds and Melisande’s reprise is highly fragmented, as show in Figure 3.13 in the formal transition.<sup>77</sup>

Figure 3.13: Melisande, R8 Fate Reference - Fragmentary Results



#### Rehearsal 9 – 15: Subsidiary, Awakening to Love, Reprise of Main Section

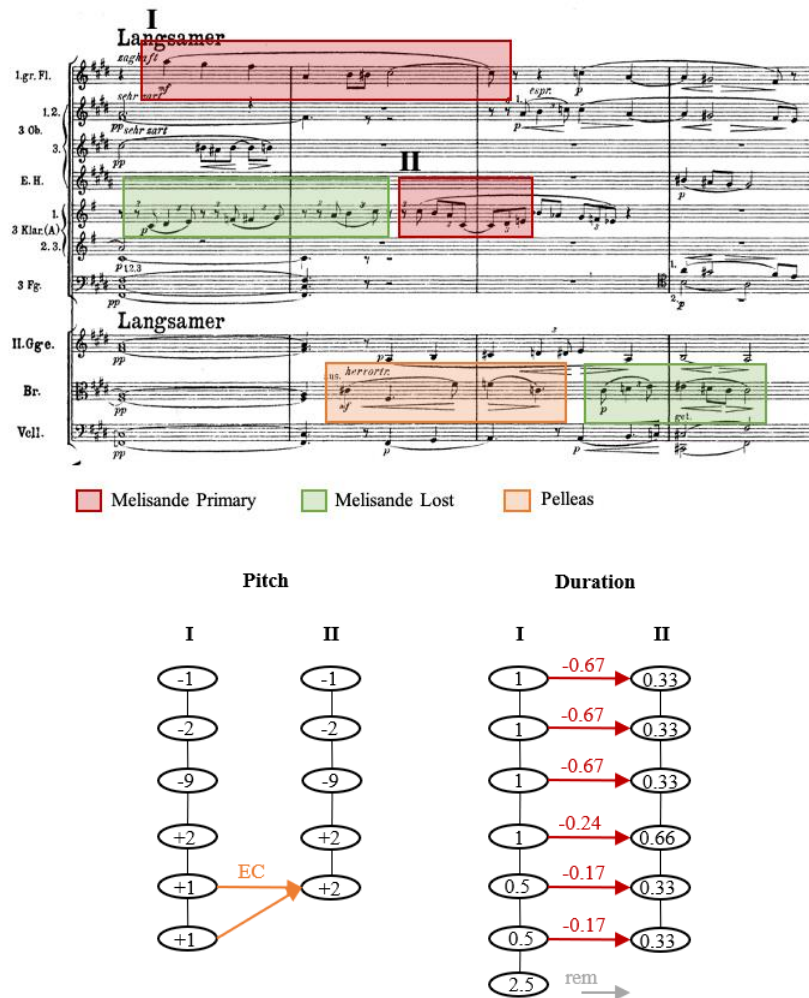
Rehearsal 9 introduces Pelleas’s motivic form. Although Pelleas is examined separately below, it is worth noting that this section presents the first character interactions between Pelleas and Melisande. This interplay has consequences within Melisande’s motivic forms throughout the section. Mainly, her marked quick and even form (from Figure 3.10) reappears as if she is caught by surprise and overwhelmed (see fourth measure of R9 in the clarinet). The Melisande Lost figuration also returns (four measures before R12), shown in Figure 3.14. Melisande’s Awakening to Love (Frisch’s MIII, Cherlin’s “Eros”) enters in R12 (Figure 3.17).

Examining Melisande’s motives which conclude R11, one observes two main iterations: Melisande Lost, and variants of Melisande Primary. As shown in Figure 3.14, red boxes outline

<sup>77</sup> Hatten, 2004, 287. I will not invoke Hatten’s 2018 “virtual agency” addition to his approach, however, it may offer a unique perspective on mapping motive within *Pelleas und Melisande*. See Hatten, *A Theory of Virtual Agency* (Bloomington: Indiana University Press), 2018.

Melisande Primary and its transformation. Green boxes further denote the triplet-rhythm styling of Melisande Lost. In the network, first notice int-node 3 has expanded from its M(P) form (<-8> to <-9> in statement I). Moving from statement I to II, we can observe limited change (one Even Compound) in the pitch domain accompanied by significant alteration in the duration domain. As statement II onboards the triplet figures (<0.33>) all of the int-nodes of statement II undergo transformation in the form of a contraction of intervals. Here, these are both parsimonious (0.24 and 0.17) as well as discrete (0.67).

Figure 3.14: Melisande, R11



The re-introduction of Melisande Lost and new transformations of Melisande Primary (M(P)) produces narrative significance. Recall that Pelleas has just entered the story at R9 and the first hint of Pelleas-Melisande interaction four measures into R9 established the fear that was initially associated with first meeting Golaud (*Fate-Heftig* discussion above). Now, before Melisande’s first utterance of her “love awakening” motive, to borrow Cherlin’s descriptor of Frisch’s Melisande III (MIII, R12 clarinet ascension), one can identify associated elements of the Melisande Lost duration profile. This transformation within R9 – R12, from fear, to a lost identity (questioning?), to complete re-invention is well represented by the extent of change in Melisande’s intervallic content. The aspirational climb of Melisande III, introduced in the clarinet in R12’s *Langsamer* section, is the first instantiation of a love-enlightened Melisande (Figure 3.15 displays this passage). It is worth noting that although introduced here and briefly re-attacked at R13 in a solo violin, the motive is used sparingly until R26 (the castle tower scene).

Figure 3.15: Melisande III / “Eros”, clarinet R12



As a result, the fleeting passages of MIII / “Eros” can be read more as a memory as opposed to a foregrounded, passionate and intense character interaction, as heard in the later castle tower interaction.

It is now necessary to examine the M(P) motivic development after she has met the acquaintance of Pelleas and begins to come to terms with her new context. In a sense, the transformations within this section reveal a renewed flexibility within Melisande. See Figure

3.16 where corresponding score excerpts of statements V(a) and VI from Figure 3.17 have been excerpted.

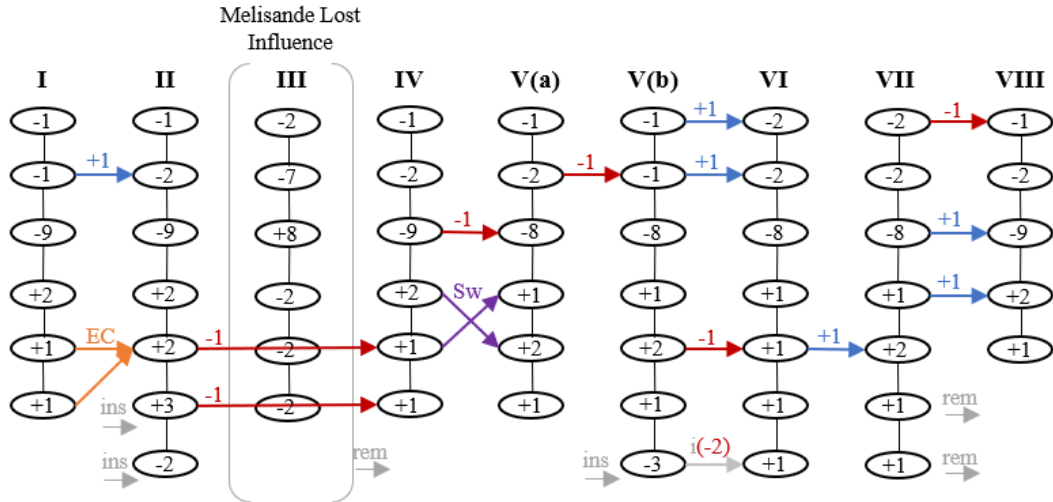
Figure 3.16: Melisande, R12 Score Excerpts



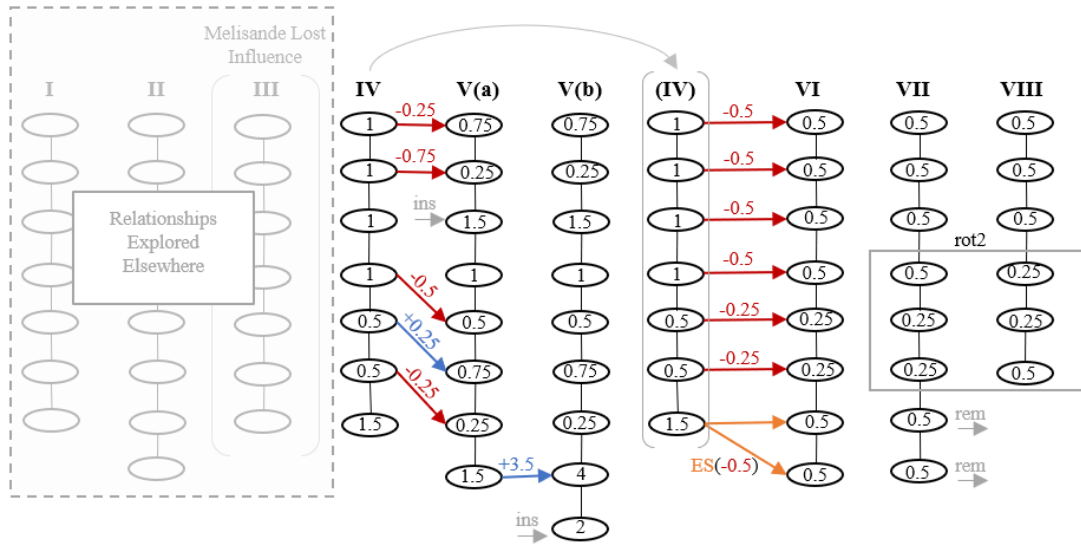
Exploring the relationships within Figure 3.17 a), one can notice mainly parsimonious transformations ( $\pm 1$ ) applied to interval content. With one exception (i(-1) from statement V(b) to VI), moves from statement to statement in the pitch domain remain reasonably consistent in contour and pitch interval content. Turning our attention to Figure 3.17 b), the duration domain promotes similar uniformity. In addition to a few cardinality changes (applied mainly to the end of statements), three main transformational processes are underway within this section. First, from statement IV to V(a) one can notice significant diminution of duration intervals. Second, basing a comparison of statement IV (for a more “like” comparison), moving to statement VI has likewise reduced the durational int-nodes values. Third, observe the duration interval segment rotation occurring as statement VII moves to statement VIII. Such moves, as expressed through network forms, traces Melisande’s subtle alterations to her primary form. Variations of such extent are only heard at key narrative moments for Melisande’s material; as such, we can read the introduction of Pelleas as igniting change within Melisande’s motivic essence. Further note that transformations applied to Melisande’s motive have been of different orders to the specific developments undergone here (that is, more mechanisms proliferate the network statements).

Figure 3.17: Melisande, R12

a) Network (Pitch)



b) Network (Duration)



Rehearsal 15 – 16: Developmental transition to Part II

Following Melisande’s development within R12 – R14, “Melisande’s Fate” is presented.<sup>78</sup> The motive, as displayed in Figure 3.18, includes several affinities with the

<sup>78</sup> Identified in the literature as Berg’s Ex. 17, Frisch’s M4, Cherlin’s “Lost Innocence”.



Melisande Primary motive. Of most obvious note is the overarching contour that still exists, but which is now initialized by a step-and-leap gesture in Figure 3.18a). Moreover, the inner intervals are now ornamented by additional pitches and the application of a new rhythmic profile. This comparison does not merit its own network as they are self-evident. Continuing to track the statement, this new form of Melisande is subsequently fragmented and sequenced leading up to R16, concluding the developmental transition.

Figure 3.18: Melisande, Melisande IV / Lost Innocence, R15 Excerpts

The figure displays four musical excerpts labeled a) through d). Excerpt a) is for Clarinet, showing a melodic line with a triplet of eighth notes, a sixteenth-note triplet, and a sixteenth-note triplet. Excerpt b) is for Violin, showing a melodic line with a sixteenth-note triplet and a sixteenth-note triplet. Excerpt c) is for Cello, showing a melodic line with a sixteenth-note triplet and a sixteenth-note triplet. Excerpt d) is for Cello, showing a melodic line with a sixteenth-note triplet and a sixteenth-note triplet.

As demonstrated above, Melisande Primary presents a motive that is reflective of character interaction and context, informed by the program. Inspecting the pitch and duration interval networks, one can observe how Schoenberg transforms the material of Melisande through part I. These developmental procedures do more than just transpose material or apply consistent transformations. Instead, a variety of mechanisms are utilized to produce connected material which presents variation upon variation, yielding new thematic material that is connected to the source-input (M(P)), but diverse enough to convey programmatic signifiers. Thus, the changes to Melisande Primary's form can be read as marked statements and as such, begin to convey narrative meaning and intent.

## Part II

The second part of the symphonic poem (R16 – R32) deals with Melisande and Pelleas growing more acquainted, Melisande losing the wedding ring, and culminates in a castle tower love scene between Pelleas and Melisande. Of developmental recourse, we will examine the closure of Pelleas's and Melisande fountain scene (end of R22) and their tower scene (R25 - R27).<sup>79</sup>

Following the ending climax of Part I, the fountain scene, ushered in at R16 with a 3/8 meter and gentle texture, offers a original narrative backdrop for the new scene. The opening measures of this section are dedicated to development of Pelleas's motive (explored below), and the end-segment of Melisande III (Cherlin's "Eros"). From a Melisande Primary perspective, the main transformational processes occur between R22 – R24, as displayed in Figure 3.19. As one can see from the score and networks, Melisande's Primary motive is not stable in this section; rather, it fluctuates in terms of cardinality and int-node elements.

For example, considerable pitch-interval node transformations occur as the initiating int-nodes of statements I and II add elements that precede the more archetypal Melisande unfolding  $\langle -1, -1, -8, +1, +1 \rangle$  (see Figure 3.19 b)). This is further augmented through the end-element addition in statement I of  $\langle +1, +1, -8 \rangle$  which acts as an echoed Switch mechanism of nodes 5 and 6. Also observe the connected inserts of statements III and IV with statement I (dotted line) where the carryover seems to link the forms as well as the use of only elastic expansions.

The duration domain reveals similar interval and cardinality alterations, in combination with an order-altering move (see Figure 3.19 c)). In particular, examine the consistent use of the

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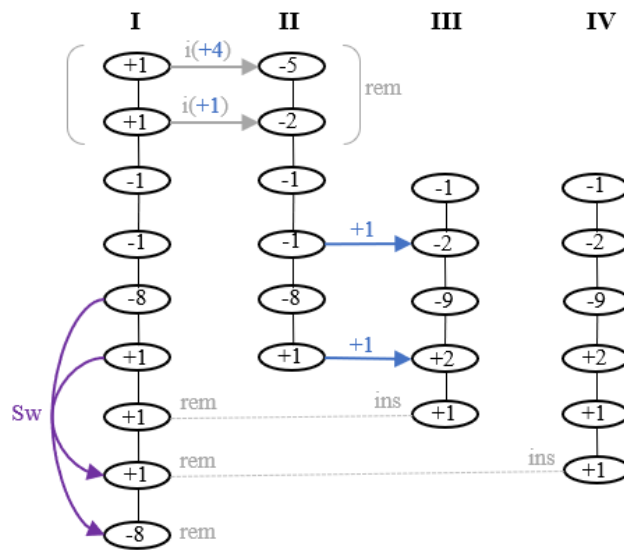
<sup>79</sup> There continues to be a form of MIII working to support the main themes.

same modifying transformational mechanisms, the rotation from statement II to III, and the statement I similarity with statement III (nodes 3 to 9 and 1 to 7 are identical in ordered comparison). In all, the complexity of changes promotes a marked segment—a sign/signifier—of Melisande’s conflict, perhaps arising from seeing Pelleas and combined with a desire to conceal show her true self in front of the scrutiny of Golaud’s presence.

Figure 3.19: Melisande, R22 – R24

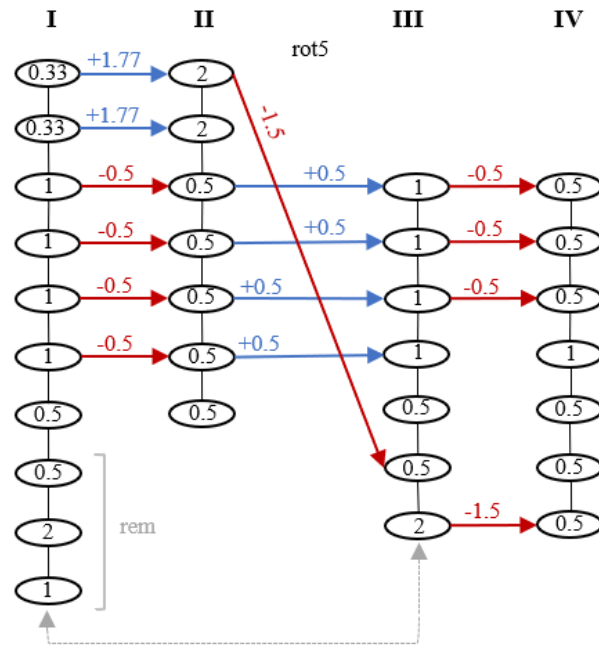
a) Score Excerpt

b) Network (Pitch)



... figure continued

c) Network (Duration)



As the Fate motive re-establishes prominence one measure before R24, Melisande follows, once again transformed from the material just discussed. Through four statements, shown in Figure 3.20, Melisande Primary undergoes significant durational alteration (statements I – III). As demonstrated by the pitch-domain network, and in comparison to M(P), Melisande’s passage is evidently marked. This signifies a new, contextual meaning. Initiating with only a single step or semitone move is unusual, especially when the larger (leap) int-node is a term other than -8 or -9 (here, -7). Moving into statement II one observes a more archetypal Melisande Primary, but here again, an insertion marks the motive.<sup>80</sup> The last M(P) iteration in this section sounds in the solo viola’s upper range (statement III) and is noticeably dissimilar to the more standard combination of opening  $\pm 1$ ’s or  $\pm 1$ ’s and  $\pm 2$ ’s; here, in favour of only -2’s, as well as the Even Compound (EC) of the final two nodes of statement II. Moreover, Schoenberg

<sup>80</sup> Similar to that of Figure 3.19 (above), statement IV.

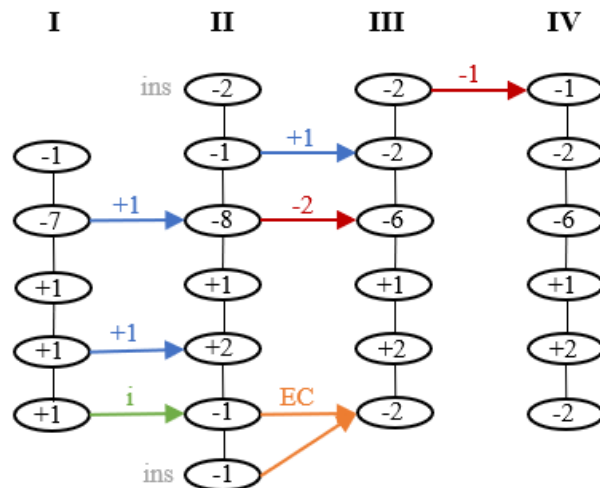
continues to explore such space reduction in the leaping node (node of greatest value distance), now articulating a -6 term, the smallest distance observed in a Melisande Primary motive thus far. Durationally, one can inspect the great deal of flexibility within this section as a variety of values articulate an unease, or unsteady Melisande. Programmatically, this may have to do with Golaud's lingering presence and the prominent Fate interaction. Notably, Pelleas's motive is absent from this passage.

Figure 3.20: Melisande, R24 – R25

a) Score Excerpts

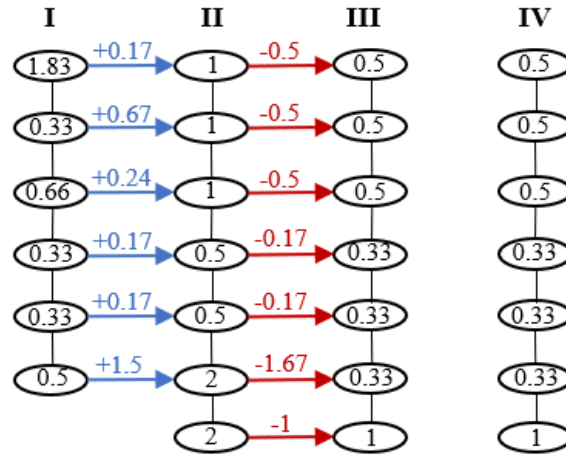


b) Network (Pitch)



... figure continued

c) Network (Duration)



Between R25 and R27 exquisite counterpoint exists between motives expressing Melisande and Pelleas. This section reflects the scene at the castle tower where Pelleas, occupying the space outside of Melisande’s tower window, interacts secretly once more with Melisande. Importantly, this time, without the gaze of Golaud. Listening to the gentle *piano* and *pianissimo* passages Schoenberg represents an intimate moment between the fated duo. There is no hint of Golaud, a wedding motive, or fate; it is a pure interaction of their forms. While Pelleas sounds in the solo cello, starting at R26, which then mixes with a Melisande statement (statement 33) before continuing, Melisande Primary occupies the flutes and violins (with MIII/“Eros” articulated in the clarinets). Over forty-five statements of Melisande Primary sound within fourteen measures, shown in Figure 3.21.<sup>81</sup> Notably, these are not solely transpositions (although the first two measures are, for establishing purposes) or re-applied transformations; unique transformational mechanisms punctuate the aural experience. Five measures after R26 reveals

<sup>81</sup> The score is given for examination to confirm the multiple statements, not for display of segmentation or labels. Figure 3.21 b) will assist the reader in parsing the surface for the changed articulations occurring within the section.

Figure 3.21: Melisande, R25 – R27

a) Score

The image displays a musical score for the opera *Melisande*, specifically measures 25 through 27. The score is divided into three systems, each beginning with a measure number and the tempo marking "Sehr langsam".

- System 1 (Measures 25-26):** Includes parts for 2 Flutes (1st and 2nd), 3 Oboes (1st, 2nd, 3rd), 3 Clarinets (1st, 2nd, 3rd), 3 Bassoons (1st, 2nd, 3rd), 1 Horn, 2 Trombones (1st and 2nd), 2 Trumpets (1st and 2nd), 2 Solo Trombones (1st and 2nd), 2 Solo Trumpets (1st and 2nd), and 1 Solo Violin.
- System 2 (Measures 26-27):** Includes parts for 1.2 Flute, Horn, 3 Clarinets (1st, 2nd, 3rd), Bassoon, 3 Bassoons, Horn, 4 Trumpets (1st, 2nd, 3rd, 4th), 1.2 Horn, 2 Horn, 3 Solo Trombones, and Solo Violin.
- System 3 (Measures 27-28):** Includes parts for 1.2 Flute, Horn, 3 Clarinets (1st, 2nd, 3rd), Bassoon, 3 Bassoons, Horn, 2 Horn, 2 Solo Trombones, and Solo Violin.

Measures 27 and 28 contain vocal parts for "Die Königin" (Soprano), "Viel" (Soprano), and "Kirchba" (Soprano). The score is written in a complex, multi-measure format with various musical notations such as slurs, accents, and dynamic markings.

... figure continued

b) Selected passages which articulate changes<sup>82</sup>

The image displays a musical score in a single system with five staves. Each staff contains several measures of music, with specific measures highlighted by Arabic numerals (1, 13, 14, 15, 16, 18, 19, 20, 24, 25, 26, 29, 30, 31, 33, 34, 40, 46) above them. The music features complex rhythmic patterns, including triplets and sixteenth-note runs, and is marked with various articulation symbols such as slurs, accents, and breath marks. The key signature is one sharp (F#), and the time signature is 2/4. The passages are separated by double bar lines, indicating one-measure statements.

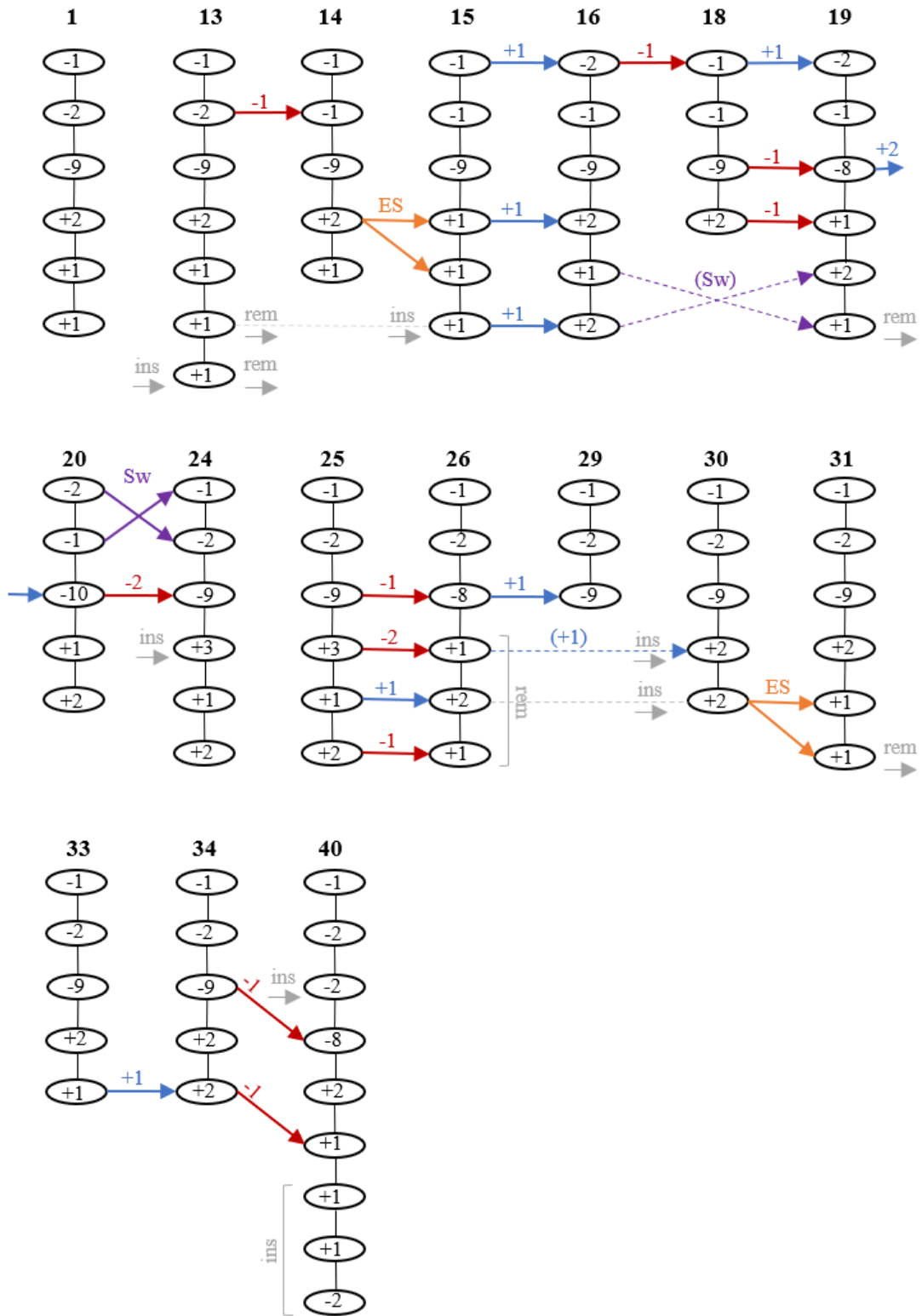
... figure continued

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<sup>82</sup> Order based on attack-onset, and a change between two successive statements, excepting one. Arabic numbers used for this example instead of Roman numerals for ease of reading. Statements are confined to one-measure and are separated by double-bar lines. Excerpts are as written, not at concert pitch (as is the established practice in this project).



c) Network (Pitch)



the moment where Melisande's hair falls to Pelleas. The doubled M(P) contour in the strings, accompanied by quick oscillations in the woodwinds marks the new texture as the harp cascades down (a metaphoric falling of the hair by my account). Figure 3.21 marks the statements of the section, with the networks extracting the transformation processes occurring between iterations. Observe that the network tracks the process temporally by attack-onset of the statement, and not by parsing instrumental lines.

Figure 3.21 c) displays the pitch interval network transformations of the tower scene. From the figure, we can immediately notice the lack of statements 2 – 12. This is due to Schoenberg once again employing a zone of transposition (similar to Figure 3.8). Without reading every node transformation, one can observe some general trends. First, observe the primary use of  $\pm 1$  interval altering moves between statements 1 – 19 and 26 – 40, while the inner sections (statements 19 – 26) employ an equal number of  $\pm 1$  and  $\pm 2$  moves. Second, we can see a flexibility to the cardinality of motivic M(P) statements. There seems to be no internal logic to this observation; it may be arbitrary or perhaps based on the number of statements sounding, connections with metric downbeats/off-beats, or for textural/timbral reasons. Third, dotted lines suggest connections that space immediately successive iterations. These connections reveal that Schoenberg may have thought on varying levels of connections (indeed, perhaps not solely based on attack-order). Overall, the duration domain mirrors the cardinality elements presented in the pitch domain, and I invite the reader to compare for themselves some of the development durational procedures employed.

Figure 3.19, Figure 3.20, and Figure 3.21 have demonstrated that Melisande's character motive, M(P), exists extensively throughout the fountain and castle tower scenes of Part II. Within these figures and networks, observations have been made about the presence of Golaud's

motive as a context in which M(P) changes, as well as the more intimate and subtle motivic development that occurs when Pelleas and Melisande are alone together. Although transformations exist in both situations, one can understand that Melisande's identity undergoes significant transformational mechanisms in the presence of Golaud as a signifier of an attempt to hide her identity, or perhaps how Golaud's presence alters her character (as if the glance were to change her mood or essence). During her intimate interaction with Pelleas, on the other hand, M(P) displays more subtle and connected developmental mechanisms, which in many ways keeps her identity (through similarity) intact. To be sure, the context in which M(P) exists is a key factor in the amount and extent of transformational moves. It can, therefore, be of no doubt that the motives are reflective of the programmatic environment, connected in an almost 1:1 relation of form and function, character sign and signified.

### Part III

Section three of the work presents Pelleas and Melisande's last character interaction in the form of a love and farewell scene. Also included in Part III is Golaud's discovery of the shared affection between Pelleas and Melisande resulting in the eventual murder of Pelleas and wounding of Melisande. Examination of the Pelleas-specific transformations will be revisited during his separate motivic discussion. In this section, we observe how Melisande Primary's motivic developments demonstrate a clear narrative function of true love and distress in Melisande before Pelleas dies. One would expect numerous iterations of Melisande within this section, and this is true, however, the main presentations are through Melisande III ("Eros"). As a result, the limited soundings of Melisande Primary function more as punctuating moments between the Pelleas interactions with her alternative motivic group. Although limited in

iterations, narrative meaning is rich upon examination of her thirteen main statements. I divide this section into two groups, pre-Golaud (R33 – R46) and Golaud’s Revenge (R46 – R48).

The first section of Part III, from R33 – R46, demonstrates Pelleas and Melisande’s meeting at a fountain in a park and represents their love and affection. Within the music, their motives interweave, taking on contours and intervals of each other and creating an associative musical texture. Let us examine how Schoenberg develops the pitch interval content of Melisande Primary within this section. Score excerpts are shown in Figure 3.22.

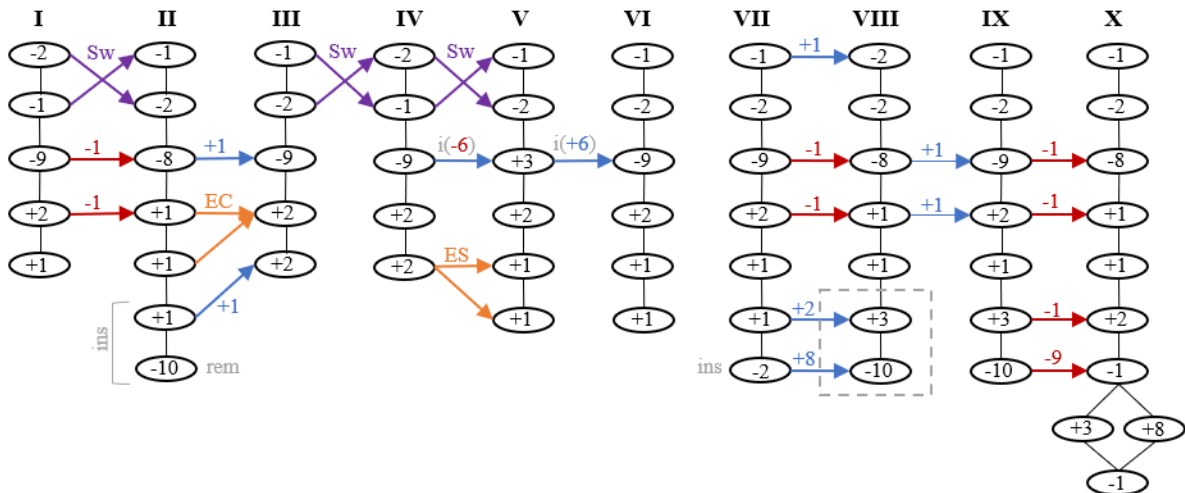
Through 10 form statements, as displayed in Figure 3.22 b), transformations between attacks subtly change Melisande’s content. Prominently within the figure, one can observe ten parsimonious interval-altering moves, several proximal or distal moves, as well as a Compound, Split, inversions, and Switches. What one will notice is that the categories of operations often occur in regions, near each other as an “away-from and back-to move.” For example, the Switches all occur in the first five statements (I – V), the parsimonious moves are often  $\pm$  into then out of statements (that is, they negate each other); which is the case even for the inversion  $\pm 6$  ( $i(\pm 6)$ ) into and out of statement V. Two other elements that are notable in the network include the dotted-box outlining  $\langle +3, -10 \rangle$  which comes most directly from Pelleas’s motivic influence in this section, as well as statement X demonstrating two pathways ( $+4/+8$ ) which express two motivic options (depending on instrument pathway). In all, the consistency between the pitch interval patterns in Figure 3.22 reveal subtle—but identifiable—developments in Melisande’s Primary statements. Readers may, at their leisure, observe a similar situation in the duration domain through comparison of the score excerpt duration values.

Figure 3.22: Melisande, Fountain Love Scene, R33 – R46

a) Score Excerpts

Figure 3.22a displays ten musical score excerpts, labeled I through X, from the Fountain Love Scene in Melisande. Each excerpt shows a melodic line with various accidentals (sharps, flats, naturals) and phrasing marks (slurs, accents). Excerpts III and IV feature a sixteenth-note triplet. Excerpt VII is in bass clef, while the others are in treble clef.

b) Network (Pitch)



Golaud's discovery of Pelleas and Melisande together can be heard seven measures into R46. As a result of Golaud's entrance, character development through motivic transformations in

Melisande's part is conveyed, as seen in statement I of Figure 3.23.<sup>83</sup> Specifically, one can hear Schoenberg's re-introduction of the quick rhythmic passage from before (see Figure 3.10). Notice especially where Schoenberg elongates the duration compared to Figure 3.10's sextuplet, now a quintuplet with a clear irregularity in the rhythmic realm of Melisande. From statement I to II, Melisande returns more to her primary form, M(P). Notably, this is paired together with Pelleas executing a similar "original" statement. With Pelleas in the strings, Golaud in the lower woodwinds (bassoons and bass clarinet), and Melisande in upper woodwinds (flutes, oboes, clarinet), this is the final statement of the trio in essential elements before Golaud delivers his fatal strike to Pelleas (two measures before R48).<sup>84</sup> Evidently the characters are seeing themselves and each other in their purest form, with Golaud reading (hearing?) the palpable connection between Pelleas and Melisande. From this more essential form, Melisande moves to statement III. Crucially, the transformation of her motive from statement II to III involves significant durational development, a signifier of intense change for her character. To convey her astonished reaction to Golaud's strike only two measures previously, her rhythmic instability conveys her witness to the abhorrent act. Within the duration network of Figure 3.23 observe the discrete interval changes of nodes 1 – 4 (+0.8) and node 7 (-1), as well as the parsimonious move (+0.3) of node 5. With five positive moves and one negative between statements I and II, Schoenberg inverts such elements between statement II and III articulating five negative and one positive move. The interval alterations between statements II and III are discrete in two cases (nodes 3 and 4), parsimonious in three (nodes 2, 5, and 6), and adjacent in one (node 7). In both

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<sup>83</sup> One can hear the Melisande III ("Eros") motive still articulated between Pelleas and Melisande even after Golaud's entrance – they are attempting to hide nothing at this juncture.

<sup>84</sup> Further, notice the differing dynamic levels of the interaction as symbolic with Golaud as *forte*, Melisande as *mezzo-forte* with a "weich" [tender] expressive marking, and Pelleas at *piano* with a "weich und warm" [tender and warm] expressive marking.

moves, node 7 undergoes the most change in the duration realm, however, one must also note the finesse of the variety and differing alteration values as something that marks such an iteration of Melisande Primary.

Within the pitch network of Figure 3.23, one important process to observe is the move between statements I, II and III which sees the first two pitch-interval nodes move from  $\langle -1, -1 \rangle$  to  $\langle -2, -2 \rangle$  and back to  $\langle -1, -1 \rangle$ . Two further features in the pitch domain include the second half of statement I (bracketed) where Melisande offers a promissory note to start the typical form again at longer durations, only to be thwarted by a  $\langle -3 \rangle$  and dissolution. This interrupted “restart” is marked and helps to further signify Golaud’s presence as cutting the two off. Second, statement II’s  $\langle +1, +1, +4, -9 \rangle$  mirrors a later interval series present in Pelleas (dotted-box), securing the strong bond between the two characters.

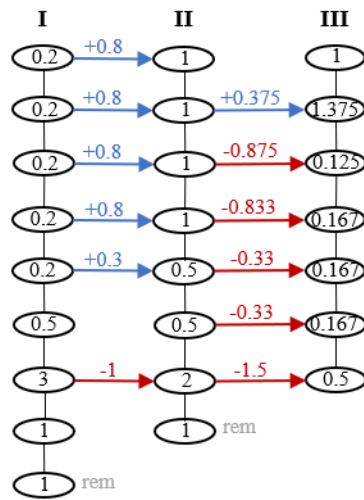
Figure 3.23: Golaud's Fountain Interruption and Pelleas's Death, R46 – R48

a) Score Excerpts

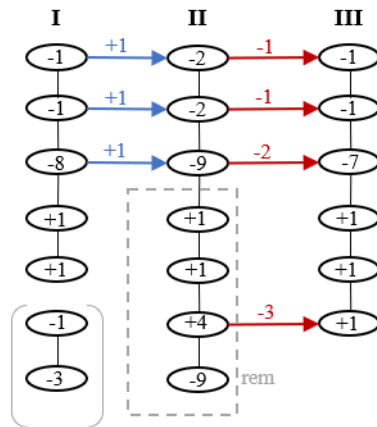
The figure displays three musical staves, labeled I, II, and III, representing excerpts from a score. All staves are in G major (one sharp) and use a treble clef. Staff I shows a melodic line starting with a quintuplet of eighth notes, followed by a dotted quarter note and a quarter note. Staff II shows a melodic line starting with a dotted quarter note, followed by a quarter note and a half note. Staff III shows a melodic line starting with a quarter note, followed by a triplet of eighth notes and a quarter note.

... figure continued

b) Network (Duration)



c) Network (Pitch)



The conclusion of Part III, programmatically communicating the final love scene and death of Pelleas at Golaud's hands, is effective in its musical evocation of the source program. The variance between the forms of the Melisande Primary motive marks the passage with rich narrative associations. As a result, the build-up to Pelleas's death statement, which I assert is represented in R49 (see Figure 3.24, below), adequately sets the scene for Melisande's own death and demonstrates Schoenberg's developmental techniques that mark motivic statements, assigning meaning and asserting a narrative function.



## Part IV

As the final section of the symphonic poem (R 50 – end), Part IV functions as a recapitulatory section with two key narrative features: 1) the death of Melisande, 2) Golaud’s final thoughts. In this section, we will examine how Melisande’s parting moments are signified motivically.

Immediately following Pelleas’s death in R49 the Melisande Primary motive is directly connected with her initial “lost” motive at R50. This, like the beginning, introduces the listener to a new Melisande form; however, this form now represents the physically wounded, not lost, Melisande. After Pelleas’s death, one hears the fate motive in the trombones, accompanied by descending thirds in the bassoons, and then the first post-Pelleas death statement of Melisande Primary (see Figure 3.24). These thirds will come to confirm death, here Pelleas’s and later for Melisande’s own passing, which we will examine shortly.

Figure 3.24: Pelleas’s Death and Melisande’s Context, R49

The musical score for Figure 3.24 is divided into two systems. The first system includes staves for Bassoon, Horn in F, and Trombone. The Bassoon staff is annotated with "Pelleas, Death Statement" and a downward arrow. The Trombone staff is annotated with "Fate" and an upward arrow. The second system includes staves for E. Hn., Bsn., and Tbn. The E. Hn. staff is annotated with "Melisande Primary" and a downward arrow. The Bsn. staff shows a descending third interval marked with a brace and the number "8". The Tbn. staff also shows a descending third interval marked with a brace and the number "8". A "Death Confirmation (Descending Thirds)" annotation with a downward arrow points to the descending thirds in the Trombone staff of the first system.

From Pelleas's death, we move to a new Melisande framing, in R50. Here, Schoenberg ensures that the listener understands that something is different about Melisande's material – Schoenberg marks the event. The prominence and variety of Melisande Primary forms marks the passages, as observed in the score excerpts of Figure 3.25. Although listeners will be familiar with transformations of Melisande's Primary form, they are most often presented with gradual alterations to a single form, a tradition which is broken in the forthcoming measures. For example, Schoenberg connects Melisande Lost with Melisande Primary (statement II), a rotation of the motive moves the characterful opening descent (statements IV and V), and the durational elements are developed through multiple moves (statements I – VII). It is programmatically evident, therefore, that Melisande's character is undergoing parallel transformations as the extent of her physical wound is made clear. Quite simply, the music marked as different from normative Melisande presentations expresses the programmatic reframing of Melisande's life as coming to an end – in all, her essence is changing.

Such transformations of Melisande's physical ailments and deterioration within the world can be observed in the networks of Figure 3.25. First, moving from statement I to II, we can notice the pitch and duration interval insertion (ins) of the "Melisande Lost" motive. This linking of the two previously discrete forms provides a signification that her beginning and middle are merged to become suggest the start of her end. As statement II moves to statement III, the pitch domain remains stable with parsimonious interval alterations and an Even Compound move (EC). The rhythmic stability is further redefined through parsimonious and discrete moves which alter every int-node element. The pitch domain, moving from statement III to IV, IV to V, and V to VI presents significant transformational moves as interval-altering mechanisms modify the pitch content with parsimonious and distal moves and order altering switches transform the

sequence of events. Notice that the switch operation here acts on complete passages rather than paired int-nodes. Statements VI is best compared with its “like”-object segment as seen in statement II (connected via dotted boxes). Statement VI sounds pitch interval and duration interval alterations which are largely parsimonious in the duration domain and statement VII incurs minimal duration modifications.

In all, over a short span (~20 measures), Melisande Primary has undergone significant and frequent change. Such a rate and variety of transformations has not been heard thus far, and signals to an attentive listener that Melisande’s character is likewise changed, in this case, through bodily harm and injury. Moving from such transformational processes, the bassoons once again foreshadow death through their R53 descending thirds, bringing the listener to the final overt Melisande scene – her death.

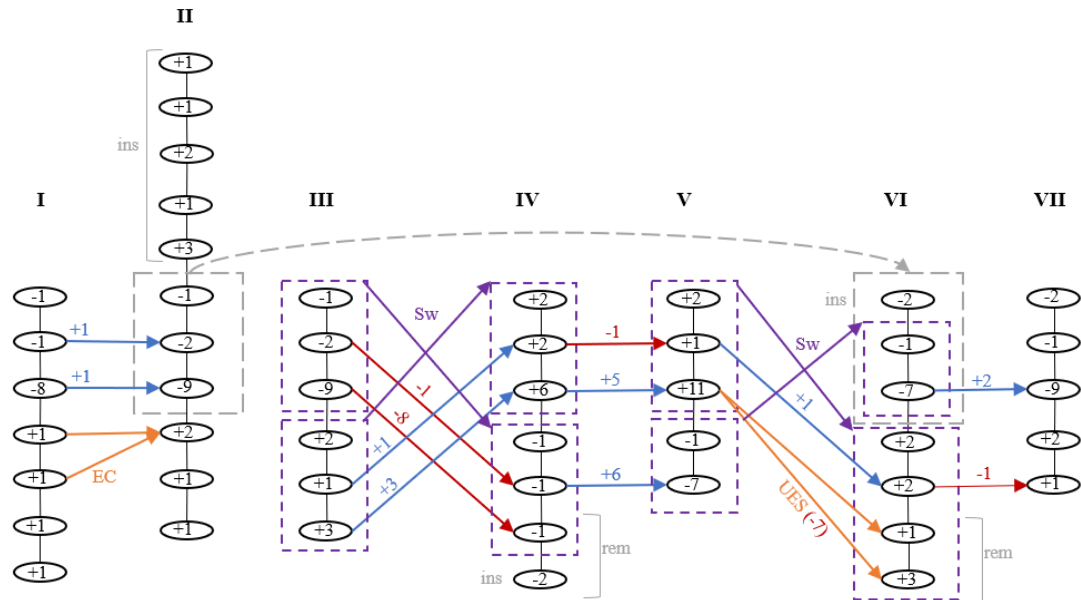
Figure 3.25: Melisande’s Wounded Change - Death Process, R49 – R52

a) Score Excerpts

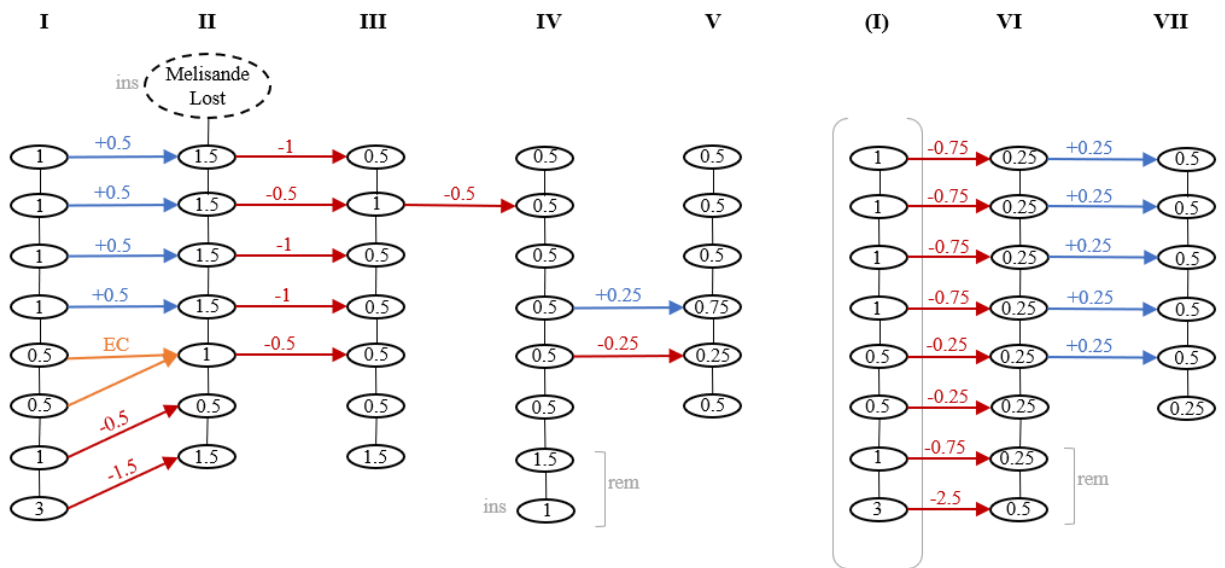
The figure displays seven musical excerpts, labeled I through VII, arranged in two columns. Excerpts I, II, IV, and VI are in treble clef, while III, V, and VII are in bass clef. All excerpts are in the key of D major (two sharps). Excerpt I shows a melodic line with a slur over the first four notes. Excerpt II features a slur over the first six notes. Excerpt III has a slur over the first four notes. Excerpt IV includes a slur over the first five notes. Excerpt V shows two slurs, one over the first four notes and another over the last four notes. Excerpt VI has a slur over the first six notes. Excerpt VII features a slur over the first four notes. Each excerpt ends with a double bar line.

... *figure continued*

b) Network (Pitch)



c) Network (Duration)



Opening in Rehearsal 55, following an ironic use of the marriage motive, we hear the beginning of the end for Melisande. These last few minutes of the piece are as extraordinary as any in Schoenberg's early works. The interweaving texture, timbral richness, and programmatic

conveyance are a tribute to his ability to develop material strategically and sympathetically. Figure 3.26 presents eleven statements for consideration, as score excerpts and through a pitch network.<sup>85</sup> These Melisande Primary manifestations represent the final iterations of her character in life (statements I – III), death (statement IV), and afterlife (statements V – XI).

Within Figure 3.26, statement I presents Melisande Primary modified through cardinality extension (ins) and when compared to the opening excerpt utilize a new eighth and eighth-triplet rhythmic expression. Segmentation here is sympathetic to my aural experience. The transformation into statement II observes a removal of the extended  $\langle +3, -1, -1, \dots \rangle$  descent and an even split (ES) of int-node 5. Moving into statement III, the pitch domain showcases a repeated articulation of the interval pattern established in statements I and II, which have development traces most accurately tracked within the duration domain. In fact, the pitch domain remains straightforward through the statements leading up to her death (statement IV). The developmental transformations in the duration domain become so varied in fact that tracking their 1:1 relation becomes difficult. In particular, we can observe that statement II (in the oboe and English horn) presents a dotted-rhythmic passage in 12/8 that has not been associated with the articulation of Melisande Primary's pitch content, which moves to the even tuplet executions, then to a developed statement IV. Such diverse int-nodes could perhaps motivate a narrative association of a steady heart struggling and becoming irregular – moments before death. Moving from statement II to III develops the attack-rate of the passage ending with a long-pause  $\langle 2 \rangle$ , in comparison to the preceding note values.

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<sup>85</sup> Durational transformations can, at the readers pleasure, be imagined from the score note-value comparisons.

Finally, in statement IV we come to what one may interpret as the articulation of Melisande's death. This location is motivated presently for four main reasons: 1) the irregular duration lead-up in statements II and III, 2) the articulation used on the last two pitches of the primary segment, 3) the proceeding passages in R59 in their capacity to evoke a more ethereal/heavenly timbral atmosphere, so different to that of the strong (and final sounding) English horn delivery, and 4) the use of the English horn, where the oboe in its similar timbre introduced Melisande initially a similar sound closes her character's physical presence.

Post-death Melisande statements (statements V – XI) have their own transformations and unique programmatic functions. Statement V, for example, alters the normal interval values of Melisande Primary from  $\pm 1$ 's (semitones) to  $\pm 2$ 's (whole tones). Such an alteration presents a listening scenario which may suggest Melisande escaping the earthly pain and tension of the semitone. The marked difference in interval content, which has been reasonably steady for the entirety of the work in ascertaining a "semitone-ness", encourage programmatic parallels of this nature. Statements VI – XI are most interesting not in their developmental networks, but in their contextual associations. Take for example statement VI, in the entire score Melisande III (Eros/Love) re-joins the texture, promoting a sense of reunification with Pelleas in the afterlife. Such a trend continues as Pelleas's motive (for the first time since his death) rejoins at R64. Within R64 and the statements VII to X, the accompaniment texture recalls that of the love and fountain scene and offers a new dance-like character into post-death Melisande and Pelleas articulations. Lastly, statement XI, in R66, joins elements of Pelleas and Melisande together for the last time. For example, the  $\langle -7, +12 \rangle$  pitch domain segment and as well as the dotted-eighth-to-sixteenth often heard within Pelleas's motive. I assert that every Melisande and Pelleas reference that follows these passages is strictly Golaud's memory as he reflects on Melisande's

death and their life. The fragmentary nature of these cursory reflective moments leaves associations and networks difficult to productively construct and motivate.

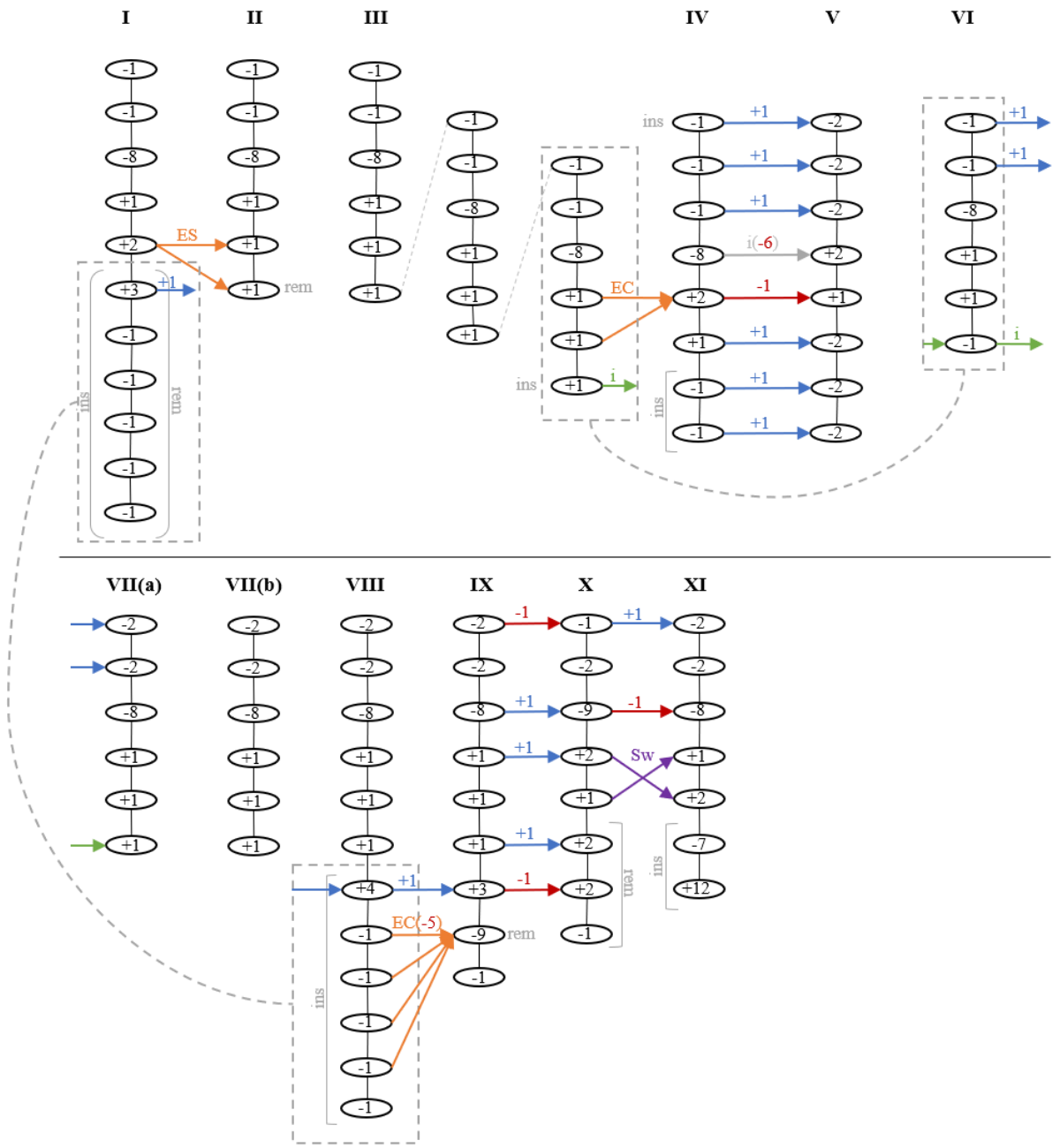
Figure 3.26: Melisande's Death, R55

a) Score Excerpts

The figure displays eleven musical excerpts, labeled I through XI, arranged in two columns. Each excerpt is written on a single staff in treble clef. The key signature is B-flat major (two flats). Excerpt I features a triplet of eighth notes. Excerpt II includes a triplet of eighth notes and a triplet of sixteenth notes. Excerpt III contains a sextuplet of sixteenth notes and a triplet of eighth notes. Excerpt IV shows a long melodic line with a slur. Excerpt V consists of a series of chords with a slur. Excerpt VI features a sextuplet of sixteenth notes. Excerpt VII(a) and VII(b) show different melodic lines with slurs and triplets. Excerpt VIII includes a triplet of eighth notes. Excerpt IX features a sextuplet of sixteenth notes and a trill. Excerpt X shows a triplet of eighth notes. Excerpt XI features a triplet of eighth notes.

... figure continued

b) Network (Pitch)





## Summary of Melisande

In summary, Melisande's character motivic statements are varied throughout the work, presenting developed forms that reflect her context and narrative arc. Part I of the work presented Melisande Lost and Primary soundings as narratively significant, asserting from the beginning certain signs and contextual significations. As an identifier, greater transformational variety and events have typically associated with Melisande's interaction with Golaud. This element can be observed Schoenberg's practice of lessening (liquidating?) the durations of the M(P) motive. Considered against areas of stability through transpositions, these alterations present marked events and start to present Melisande's identity as "fuzzy" or vague, as if to promote a loss of—or intentional hiding of—identity. Within Part I, we furthermore observed that inversion, in particular, represented Melisande as opposing a narrative idea, that of marriage to Golaud. Berg's framing of "intensification" within M(P) was also shown to be a statement aimed at addressing the cardinality extension through split transformations which produce more semitone motions. Lastly in Part I, the introduction of Pelleas to Melisande results in durational transformations, just as it does for Golaud. Here, however, the unevenness (as opposed to quick and even in the case of Golaud's influence) can be linked more functioning to a "heart skips a beat" or undulating pulse of a shared moment of arousal and/or love.

Part II demonstrated that interactions with Pelleas's motivic structure results in Melisande's attacks being more "normal" to her opening material. As a result, Schoenberg's heavy use of parsimonious moves indicate that M(P)'s relationship with Pelleas may be more natural or uncomplicated. Part III revealed that M(P), now transformed by the love of Pelleas, begins to start taking on elements of Pelleas. This causes moves away from her normal form, but not for the sake of change; instead, for the sake of connecting with Pelleas. Rehearsal 26, for

example, conveyed that Melisande's death incorporated elements of Pelleas's form after death to perhaps signify their unity after death. Setting them free to be together, so to speak.

In all, the primary motive of Melisande (M(P)) undergoes significant transformations within the work. These transformations assert particular contexts and create meaning through interaction with other character forms. The int-node segments move beyond simple transposition and inversion; instead, the mechanisms of change between statements reveal a variety of ways in which to manipulate their basic shapes. These intentional reshaping's have narrative repercussions and permit Schoenberg to articulate nuanced expressions of Melisande's character and context(s).

## Pelleas

From the literature review opening this chapter, one can notice that Pelleas's motivic identity is, analogously to Melisande, formed through a network of intervallic signifiers. Pelleas's motive is of considerable length, with many authors/analysts parsing the character statement into two or more forms. Recall, for example, Berg's separation of Pelleas into two groups, as displayed again in Figure 3.27.

Figure 3.27: Berg's Pelleas Primary Form



Whereas Cherlin groups Pelleas under one long phrase/passage, I am more inclined to align my position with Berg's division, citing a P(1) and P(2). Given the length, I would further assert a segmentation of motivic elements that aligns more closely with the phrase markings indicated within Figure 3.27. In some cases, the "linking interval" between such segmental divides will be expressed within a dotted outline or omitted (with segment separation indicated through a dotted horizontal line). It should be noted that Pelleas's motive shares some common contour, rhythms, and other musical elements with other characters and moods. For example, the step-leap of P(2) is very heavily linked with fate (for narrative signification – perhaps foreshadowing, even), the dotted-eight to sixteenth as associated with Golaud's duration profiles, and the connection with jealousy.<sup>86</sup>

This portion of my analyses will focus on five instances of developmental passages of Pelleas. These are: i) the introduction of Pelleas (R9 – R15), ii) the fountain scene with Melisande (R16 – R25), iii) the castle tower scene (R26 – R33), iv) the park pool scene and love scene (R33 – R48), and v) Pelleas's Death (~R48 – R50). Common developmental strategies employed by Schoenberg, as demonstrated through the networks are: narrative scenes and their mechanisms are typically constrained to discrete sections, connection to Melisande forms (elisions and proximity associations blend the forms), the splitting and compounding of often many nodes to alter the cardinality of Pelleas (allowing for a longer temporal span in which to sound or support beneath Melisande's soundings), and a general "back-to" approach which inverts/reverts changes to a previous form (ensuring maximal coherence). Rehearsal numbers and their associated drama will once again signpost the analysis.

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<sup>86</sup> Cherlin's chart in Figure 3.6 may assist the reader in observing such connections.

## Part I

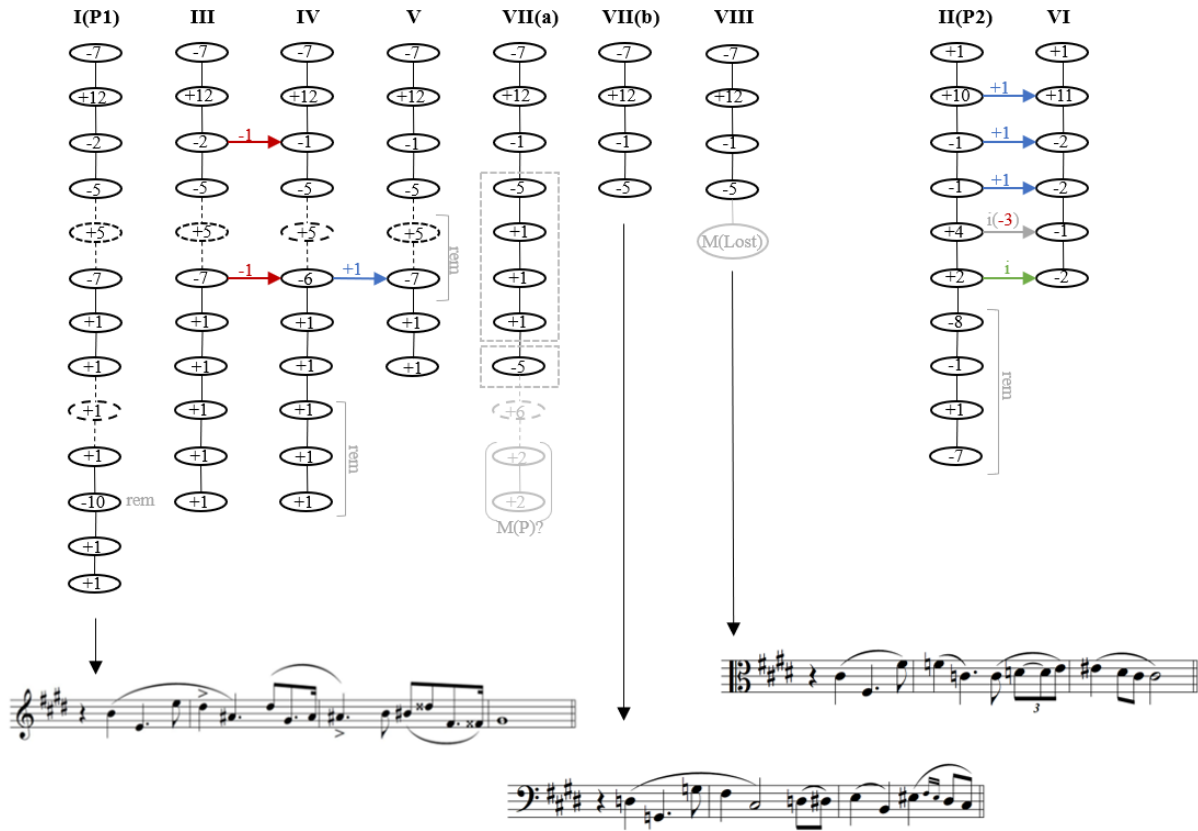
### R9 – R15: Pelleas’s Entrance

Pelleas’s princely entrance occurs at R9. P(1) first sounds in the trumpet accompanied by light harmonic support. The second half of his character, motive P(2), is more richly presented in woodwinds, horns, and strings. In this entrance section, Pelleas has 17 overt statements or motivic fragments. As shown in Figure 3.28, Pelleas’s initial statements exert minimal developmental mechanisms between iterations.

Tracking P(1), one can notice cardinality alterations through removals and parsimonious int-node value changes. In the P(1) stream, alterations between statement II and VI demonstrate a higher rate of change, mainly through total number of int-node transformations. Continuing through the P(1) statements, notice statement VII(a) presents a “starting over” sequence as int-node 8 beings the with the <-5> section again, but then moves rather deliberately away from anything previously heard, and in more of a decorated M(P) ending. This is in contrast to statement VII(b) where the motive is “cut-off” before such a developmental digression. However, P(1) in statement VIII re-affirms such a Melisande connection by starting nominally and moving directly into a Melisande Lost articulation. Such inclusion and immediate reference join the introductory connection between the two characters in the musical realm. From the start, then, they are not just operating against or with each other, but in direct relations.

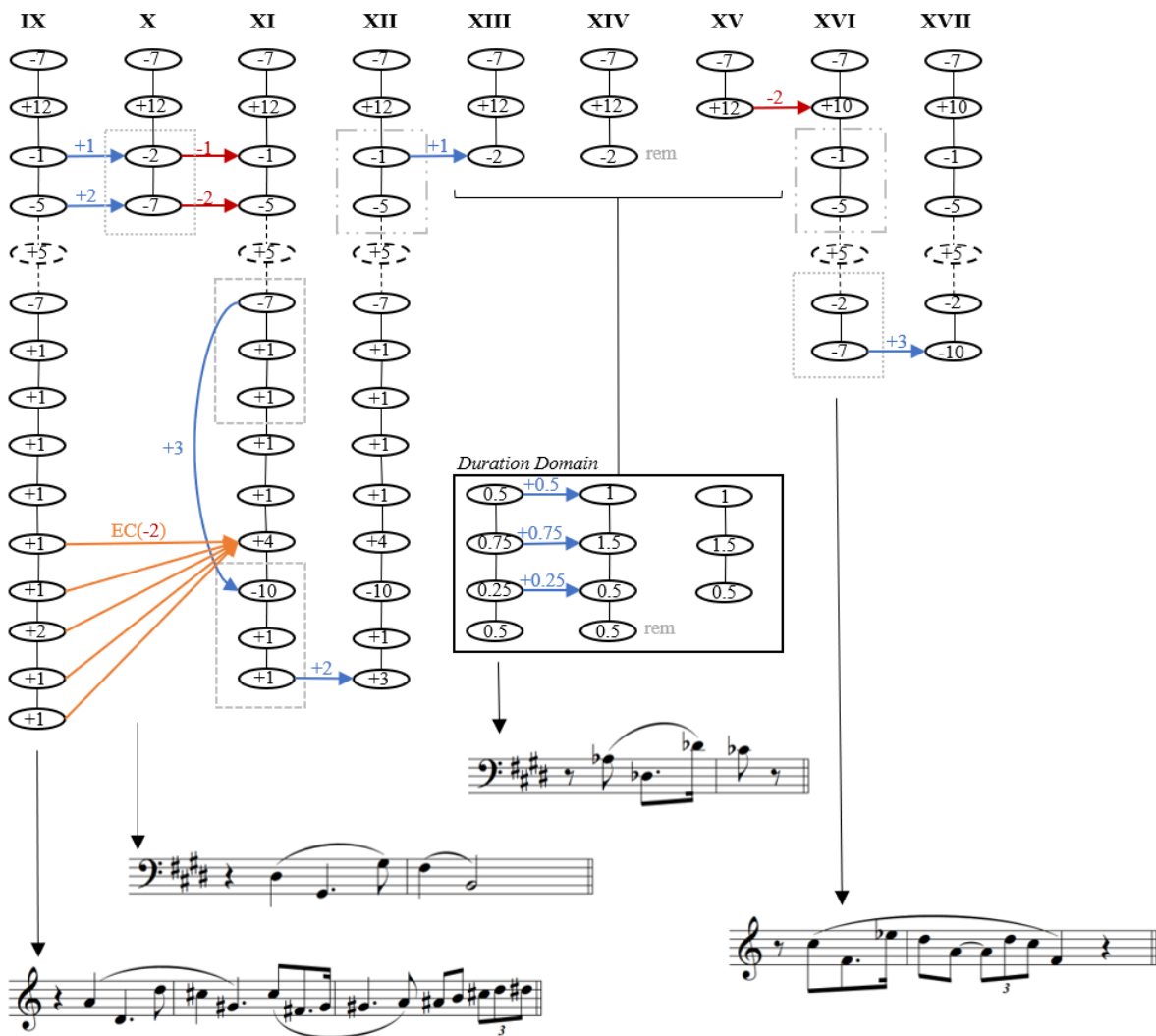
Moving through statements IX to XI one can observe significant cardinality extension as final terms are added, along with an efficient Even Compound used to “gather up” the chromatic extension. Once again, in statement XI, see the “starting over” sequence of nodes 5,6,7 with 11,12,13 (boxed). Until statement XIII the duration domain has remained reasonably static. In

Figure 3.28: Pelleas's Entrance and Transformations



... figure continued

... continued



statements XIII through XV, however, we can notice not only the pitch domain's substantial cardinality reduction but also the changes to int-node values in the duration domain. Statement XVI, removed temporally from statement XV and earlier articulations by a large number of measures, displays a confluence of motivic segment combinations which takes the motive string outside the normal mechanisms for alteration. The linking segments, with nodes 3 and 4 taken

from statement XII and nodes 5 and 6 from statement X, is comprised of a combination of two segment endings. Here, it is as if Schoenberg is displaying the two options which end Pelleas.<sup>87</sup>

Statements XVI and XVII present further durational developments as the nodes are effectively halved in comparison to their earlier soundings (as can be examined in the score excerpt). Further, inspecting the opening nodes of statements XVI and XVII one can now notice, for the first time, an opening of  $\langle -7, +12 \rangle$  to  $\langle -7, +10 \rangle$ . A final observation arising from the pitch-domain network demonstrates the “start over” interval of change in statement XI (between,  $\langle -7 \rangle$  and  $\langle -10 \rangle, +3$ ), now occurs between last node comparison of statements XVI and XVII.

## Part II

### R16 – R25: Pelleas’s Development: Fountain Scene

The fountain scene sets the stage for the more intricate work to be completed within the forthcoming castle tower scene. Within the narrative, Pelleas and Melisande meet in a park and Melisande plays with her wedding ring.<sup>88</sup> In the scene, there seems to be less interplay between the characters proper (Melisande being preoccupied with her ring); however, there still remains developmental devices employed. As observed in Figure 3.29, Schoenberg develops the P(2) motivic segment. Although no variation occurs between statements I and II, between statements II and III one sees expansion of int-node values (+1 and +4). Statement III’s transition into IV, as compared with statements I – III, presents significant change. As shown, Splits extend the int-node cardinality of the motive from 10 to 12. In addition to these Splits, further observe the way

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<sup>87</sup> There may be narrative significance to this combination effect. Metaphorically, Pelleas’s two endings as one path leads with Melisande while another to his non-Melisande life trajectory.

<sup>88</sup> Berg describes the section corresponding to “Pelleas: What are you playing with?; Melisande: With the ring he gave me” (See Simms, 127).

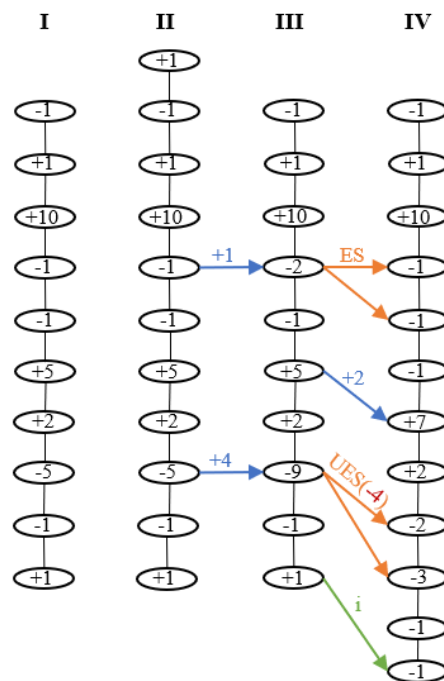
in which the +2 expansion is somewhat balanced by the removal of -4 in the UES. This balance enables the total interval moves to remain similar, with the shape and distances of the preceding figurations. The inverse of the final term  $\langle +1 \rangle$  to  $\langle -1 \rangle$  takes the neighbour motion to a complete descending line, almost as if a concluding (cadential) gesture. Analogous transformations can be found in the duration domain; observing these differing values is facilitated through score excerpt comparisons.

Figure 3.29: Pelleas, R16 – R23

a) Score Excerpts



b) Network (Pitch)





## R26 – R33: Pelleas’s Castle Tower Articulation

The castle tower scene—an intimate moment where Pelleas and Melisande are alone and Melisande’s hair falls to him—demonstrates the significant degree to which the musical motive development relates to its narrative source. In such a scene of intense realization of love and connection, we come to hear (and observe) just how much Pelleas’s motive can be transformed. Brought on by Melisande’s dense contrapuntal texture beginning at R26 in the solo cello, Pelleas enters the scene to join Melisande at the tower. Figure 3.30 displays the solo cello line that accompanies Melisande in this section, with some dotted-vertical lines indicating surface-level parsing.<sup>89</sup>

Figure 3.30: Pelleas’s, Castle Tower Love Scene, R26



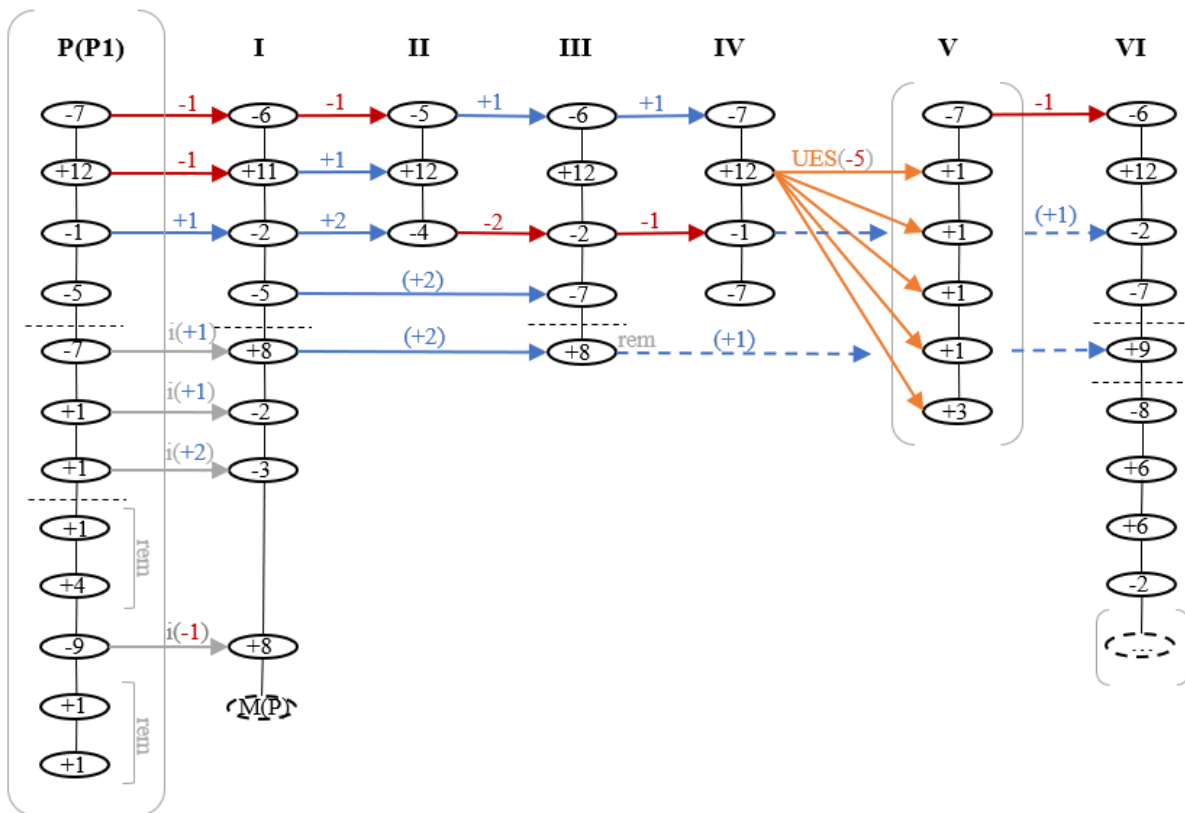
Examining the six statements, we can see that Pelleas’s form is highly transformed throughout the section. Figure 3.31 reveals the connected transformational paths as developmental mechanisms take Pelleas’s primary form through several iterations. The marked

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<sup>89</sup> Here, I opted to remove the connecting int-node (dotted above in Figure 3.18) between discrete motivic sections.

instability conveys the influence of Melisande and promotes an ethereal experience where Pelleas does not quite know how to express his whole self, but rather offers pieces to Melisande. Melisande's motive, as explored in Figure 3.21, is likewise altered. As demonstrated by Figure 3.31, Pelleas undergoes significant alterations: pitch-interval nodes are subject to parsimonious, proximal, and distal changes, a UES breaks down the signature node-2 distance (from statements IV – V). The duration domain is similarly changed, with a comparison of the score rhythms in Figure 3.30 clearly indicating such differences.

Figure 3.31: Pelleas, R26 Network



## Part III

### R33 – R48: Love Scene

Seven statements of Pelleas's motive (not including some transpositions of forms), sound within the love scene. Other statements may be found, but their origins can be ambiguous given the presence of a plethora of fate and jealousy motivic signifiers, which, as mentioned above, can be tied intimately with Pelleas (they have markers that share some common interval and contour features).

The initial two statements relay a P(2) form, with minimal alteration (as seen in Figure 3.32). From statements III to VII, P(1) undergoes some developmental alterations. Figure 3.32 demonstrates these changes, as compared to the initial P(1), and the subsequent paths. The pitch network reveals minimal alteration to the form. Indeed, when a substantial change occurs, such as the moves from III to IV, they become all the more significant as markers of narrative. Statement III to IV, for example, demonstrates an initiating Melisande insert (where previously in the castle tower scene, her motive was tagged on – now it appears at the forefront of Pelleas's identity (see Figure 3.28, statements VII(a) and VIII; Figure 3.31, I; and Figure 3.32, statement III)) and int-node two as the greatest value for the entire piece. As a result, the love scene articulations of Pelleas, as indicators of motivic development, track processes that reveal changes to the character and narrative dimension.



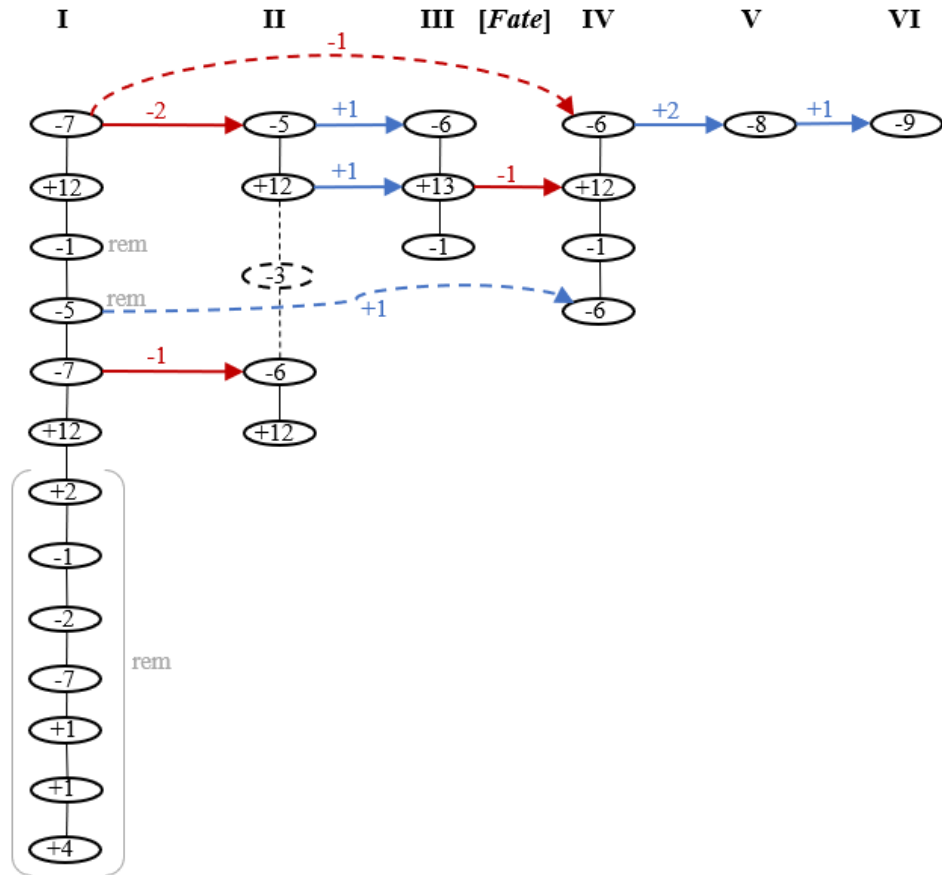
through four statements, Pelleas's character form diminishes, just as his life does. Statement I occurs in combination with a full statement of Melisande Primary (see Figure 3.23, statement II). This is the last time their motives sound together in their more archetypal form. From statement I to II, we can observe a significant cardinality reduction as well as interval-altering moves (parsimonious and proximal).<sup>90</sup> Statement III is a trumpet echo of the horns (from statement II). Notice that the int-nodes values pass the octave (+12), a rare occurrence in Pelleas's motivic form (only occurring once before in this analysis – in the love scene, Figure 3.32). Such a move marks this response as it pairs with a pronounced Golaud rhythmic profile (see horns, four measures before R49). Between statements III and IV, the Fate motive sounds in almost all voices at *fff*. This represents the fatal strike from Golaud to Pelleas. Following the dramatic strike, low brass confirm the blow in their punctuating gesture. Pelleas's last form emerges out of this texture and context in the object seen in statement IV. Here, we can compare Pelleas's content to the original four nodes of statement I (his more archetypal form). These are parsimoniously altered (and balanced, that is a space move of net zero). Although the first four nodes present a similar object to statement I, nodes 5 and 6 present a “false-start” environment. We can read such a single gesture as Pelleas attempting to continue on, however, death is imminent. Indeed, the expansion of the int-nodes from <-7> to <-8> to <-9> metaphorically represent the departure from the physical world. The reduction of the usual terms, through cardinality alteration, emphasizes that Pelleas cannot continue. Pelleas's motivic journey, as representative of his characters narrative and transformations, has come to an end. Following this

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<sup>90</sup> One should also note that the instrumentation of Pelleas turns from a delicate (heavenly?) violin sounding at *piano* to a *fortissimo* brass fanfare-like passage. This stark transformation to the timbre and texture environment further suggests character transformation and supports the development as significant between statements I and II. Further consensus can be garnered by examining Narum's discussion stating, “the increase in chromaticism in this instance ... suggest a turn to the dysphoric” (See Narum, 95).

departure, only fleeting passages allude to Pelleas, heard more as Melisande's memories than of Pelleas proper.

Figure 3.33: Pelleas, R48



### Summary of Pelleas

Pelleas, as a character form, does not often garner much analytical attention in the literature. His lack of prominence, when compared to the almost continued dialogue of Melisande and Golaud, typically promotes a reading which demonstrates the consistency of his forms. Although brief, this analysis has demonstrated that Pelleas's motive does develop and transform throughout the work. As observed, Pelleas's character is intimately connected with

Melisande, and their interactions largely determine the degree of change between motivic statements. It is further evident that, from a narrative perspective, the castle tower scene is the most impactful on Pelleas's character form; solidifying his change from appreciating Melisande more cordially to a form which has, in all its elements, been transformed (see Figure 3.31). Such marked alterations which break from normative statements act as rich opportunities to understand Pelleas's character development musically in relationship to the programmatic source text. In all, Pelleas's musical articulation demonstrates a character which grows as the work progresses, and whose motivic components, in the end, reflect his relationship to others and swift demise.

## Chapter Conclusions

Schoenberg has stated that “the three main characters are presented by themes, in the manner of Wagnerian Leitmotifs, except that they are not as short.”<sup>91</sup> As has been examined Pelleas and Melisande's leitmotifs offer an opportunity to examine narrative and meaning.

Dahlhaus asserts:

From a programmatic point of view, Schoenberg's *Pelleas und Melisande* is a combination of a depiction of the scenes which form Maeterlinck's drama and a Wagnerian music drama created from a web of leitmotifs that portray the basic themes and conflicts inherent in the drama. Thus, it is possible to cite specific relationships between scenes of the drama and semi-independent portions of the score ... It is also possible to trace the course of a single leitmotive throughout the score, observing how its alteration and development reflect the course of the drama.<sup>92</sup>

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<sup>91</sup> Bailey, 61; See Arnold Schoenberg, *Pelleas und Melisande*, The Symphony Orchestra of Radio-Frankfurt, Conducted by Winfried Zillig, Capitol P-8069 mono, 1949, LP.

<sup>92</sup> Dahlhaus, 71.

As we have explored within the chapter, these statements ring true as we are able to compare, contrast, and assign characters to their motivic statements, leading to assertions of programmatic meaning. Dahlhaus continues, "... the motifs are used to distinguish a particular scene, or they are associated with a particular character... by varying and transforming the personal motifs in accordance with the changing situation and affects – grows a musical form which resembles a narrative."<sup>93</sup> The reshaping of these motives thus permits the analyst and listener to determine pathways of developmental process—transformations—which promote dramatic depiction.

Cherlin has noted that "the conflicted view of *Pelleas* by recent analysts is due to understanding the work as motivated by formal and structural concerns instead of by the interaction of the leitmotifs that depict and enact the drama of the work."<sup>94</sup> Under the methodological lens proposed in Chapter 2, we may begin to place the motives into the foreground and move away from formal sectional analyses as the main tool for associative meanings. Indeed, if we follow Frisch's notion of an elaborate transformation of themes, more so than any of Schoenberg's earlier works, we may find that Schoenberg's compositional process demonstrates a new focus on such motivic working, as opposed to formal structures.<sup>95</sup>

In Schoenberg's essay "My Evolution," discussing an example from *Pelleas und Melisande*, he clarifies that "here the intervals of the melody demand a rich movement of the accompanying voices."<sup>64</sup> That is, the intervallic composition of his melodic motivic structures dictate the realization of support through extended harmonies, not vice-versa. From

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<sup>93</sup> Ibid., 98.

<sup>94</sup> Narum, 86.

<sup>95</sup> Frisch, *Early Works of Arnold Schoenberg*, 160.



Schoenberg's compositional philosophy then, the intervals act as the primary agent of transformation of other musical parameters—of narrative possibilities. These relationships act as a refined grammar within Schoenberg's musical language. The motives themselves are not solely bullet points of a story, but carefully woven together, developed, and varied. These processes are the instantiation and heart of the musical experience and are the site for engaging in discussions of Schoenberg's musical voice and compositional signature in this research. Moreover, Schoenberg once again in his "Self-Analysis" (1948) asserts that

... my tendency to endow every work with an extravagant abundance of musical themes. In the works of my first period this caused extension to a length that soon began to annoy me ... I became aware of the aesthetic inferiority of this technique when I composed the final section of the tone poem, *Pelleas and Melisande* ... I knew that restriction could be achieved by two methods, condensation and juxtaposition ...<sup>96</sup>

This condensed writing and juxtaposition of motivic ideas has been a main idea examined above in the analysis. These are specific ways in which Schoenberg thought motivically about certain mechanisms of change. As Frisch concludes: "there are actually relatively few recurring themes."<sup>97</sup> Thus, the comparison of such divergences allows the leitmotifs to reflect the "psychological or dramatic course of the play."<sup>98</sup>

To date, relatively few analyses have permitted such an inspection of local developmental mechanisms. This is mainly due to a methodological gap. Taking intervals as the objects of analysis has allowed one to glimpse the transformational mechanisms which take the listener from one object into the next. By utilizing a suite of defined mechanisms, we are better able to consistently understand—and represent—the ways in which Schoenberg manipulates his musical

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<sup>96</sup> Schoenberg, *Style and Idea*, 76 – 78.

<sup>97</sup> Frisch, *Early Works of Arnold Schoenberg*, 159.

<sup>98</sup> *Ibid.*

ideas and their shapes. As Jack Boss advocates, examining such a practice of “workings-out of an idea, whatever form they take”, be it tonal, atonal, or twelve-tone, is an important endeavor if one wishes to understand Schoenberg’s works.<sup>99</sup> This working-out can be brought from the higher-level of Boss’s work to the lower, motivic cell development at a local level in my own work. For my purposes, I find that no matter the scale, Schoenberg is taking a form and re-working it.

In summary, examining the character’s motivic workings-out at the local, statement-to-statement level, permits a tracking of change both in their musical space and as reflective of their narrative and programmatic space. Assigning divergences (read as transformational processes) between statements presents the new opportunity to relay specific marked events and posits new meanings and associations, grounded in musical signifiers. Such a treatment reinforces existing analyses that take a more high-level perspective on process and relations. This close inspection has permitted a window into how he “express[es] moods and characters in precisely formulated units.”<sup>100</sup>

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<sup>99</sup> Boss is more specifically discussing the large-scale conflict-resolution working out in his own works (see Boss, *Musical Idea*, 258).

<sup>100</sup> Arnold Schoenberg, “Foreward to a Broadcast Recording of *Pelleas und Melisande*,” *The Music of Arnold Schoenberg*, vol. 2, Columbia M2S 694 (1963): 2.

## 4. The Air of Other Planets

In his 1911 analytical commentary, Egon Wellesz describes Schoenberg's style of the early 1900s as

more subjective; in order to let his melody trace the subtlest arousal of emotion, he now builds it from a number of tiny, sequential motive cells which, like the daubs of color on an Impressionist painting, seem at first to have been randomly placed together. But when one considers the totality, it becomes clear that these motives combine organically to shape the work's "endless melody", which itself is a constituent component of the overall form ... every motivic component is conclusive in and of itself – and yet is capable of melding with others to form a loftier whole.<sup>1</sup>

This commentary paints an eloquent picture of the analytical reception of Schoenberg's new path, set in contrast to his more traditional late-romantic writing. Wellesz's privileged position as a member of Schoenberg's circle demonstrates that listeners, sympathetic to Schoenberg's cause, were becoming increasingly aware of his compositional direction and the importance of motivic meaning and connections. This view is in stark contrast to critics' ears, as they heard nothing but cacophony at the premiere of Schoenberg's 1908 premiere of his String Quartet no. 2, op. 10.<sup>2</sup> Wellesz's early nod to Schoenberg's method and compositional technique demonstrates the overt emergence of his music as categorically defined by motivic cells and their unfoldings and relations.

In this chapter, I explore the developmental devices Schoenberg applies to motives in his String Quartet no. 2, op. 10 (1908). This quartet is the culmination of his small-ensemble

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<sup>1</sup> Egon Wellesz, excerpts from "Arnold Schönberg," *Zeitschrift der internationalen Musik-Gesellschaft* 12 (1911). See also Severine Neff, *The Second String Quartet in F-Sharp minor, Opus 10*, ed. Severine Neff, trans. Grant Chorley (New York: W.W. Norton & Company, Inc., 2006): 268 – 271.

<sup>2</sup> For reception documents on the premiere and other performances, see Severine Neff, *The Second String Quartet*, 188 – 247.

instrumental writing of the early period and functions as his transitional piece away from tonality.<sup>3</sup> Given the limited number of instrumental voices present, Schoenberg's writing must clearly and decisively articulate motivic forms through melodic and rhythmic variation.<sup>4</sup> Indeed, Schoenberg's motivic writing at this juncture is focused on an attunement to shape manipulations and the String Quartet no. 2, op. 10 acts as an excellent case study when examining Schoenberg's early approach to motivic transformations.

Following a brief examination of the quartets preceding the String Quartet no. 2, op. 10 (String Quartet in D major and String Quartet no. 1, op. 7) and a review of existing analyses of these works, my analysis will present a new transformational lens, sensitive to intervallic process. Surrounding literature includes a wide range of topics and analytical approaches, from quasi-Schenkerian readings of tonality, structure, and harmony, to considerations of *Grundgestalt* and motive more generally.<sup>5</sup>

Schoenberg's treatment of motive in his compositions for string quartet can be observed first through his unnumbered String Quartet in D major (1897), written in a conventional romantic style, and his String Quartet no. 1, op. 7 which presents a more unified approach to motive.<sup>6</sup> Motivically, the String Quartet in D major utilizes themes that are tonally and

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<sup>3</sup> Although, notably, movements three and four contain a vocal line.

<sup>4</sup> This is in contrast to larger early ensemble writing, such as *Pelleas und Melisande* and the Chamber Symphony No. 1, which may permit a greater degree of freedom to vary motivic statements through a wider range of timbral, textural, and contrapuntal devices; a result of more instrumental voices.

<sup>5</sup> See Catherine Dale, *Tonality and Structure in Schoenberg's Second String Quartet, Op. 10* (New York: Garland Publishing, Inc., 1993); Kyung-Eun Kim, "The Harmonic Language of Arnold Schoenberg's Second String Quartet, op. 10," MA Thesis, McGill University, 1990; Severine Neff, "Aspects of Grundgestalt in Schoenberg's First String Quartet, op. 7," *Theory and Practice* 9 (1984): 7 – 56; Walter Frisch, "Thematic Form and the Genesis of Schoenberg's D-Minor Quartet, Op. 7," *Journal of the American Musicological Society* 41, no. 2 (1988): 289 – 314; Stephen Collisson, "*Grundgestalt, Developing Variation, and Motivic Processes in the Music of Arnold Schoenberg: An Analytical Study of the String Quartets*," PhD Dissertation, King's College, University of London, 1994.

<sup>6</sup> Cherlin also cites the lost String Quartet in C major composed in 1894 as another example of Schoenberg's early quartet writing (See Cherlin, "Schoenberg and the tradition of chamber music for strings," in *The Cambridge Companion to Schoenberg*, ed. by Jennifer Shaw and Joseph Auner (Cambridge: Cambridge

harmonically interconnected.<sup>7</sup> In this way, Schoenberg's thematic working-out connects with previous strategies for common-practice motivic development, and lacks the subtle integration and transformation that would come to define his later compositional style.<sup>8</sup> Additional commentary on this work can be found in the writings of Gradenwitz, Frisch, Collisson, and Cherlin.<sup>9</sup>

Schoenberg's String Quartet no. 1, op. 7 (1904 – 1905), on the other hand, begins to pose challenges for the listener and analyst as Berg highlights in his article, "Why is Schoenberg's Music so difficult to understand?"<sup>10</sup> Berg specifically discusses developmental combinations and motivic variance as some of the barriers to comprehension, an argument which will come to define reception of the Schoenberg's later compositions. Examining sketches, Frisch further demonstrates Schoenberg's effort to create a "... larger form [that] was to be heard to grow logically, inexorably, out of a continuous thematic process."<sup>11</sup> Gradenwitz also acknowledges the work's affinity for heavily connected material writing, mentioning "... each new theme or motive in the work is in close relation to the material stated in the ten bars of the main theme, and the variety of forms derived from it is truly amazing."<sup>12</sup> For a discussion of theme areas and

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University Press, 2019): 31; Scholars such as Cherlin and Frisch, among others, cite the D major quartet as very much in the style of Brahms and even Dvorak with its discrete use of a "theme and variation" movement and salient motivic connections within movements, while no. 1, op. 7 insists more on a more thorough working-out of motive across the movements (See Cherlin, 2010, 31; and Frisch, 1993, 4 – 20, 195, 212, and 215).

<sup>7</sup> See Michael Cherlin, "Schoenberg and the tradition of chamber music for strings," in *The Cambridge Companion to Arnold Schoenberg*, ed. Jennifer Shaw and Joseph Auner (Cambridge: Cambridge University Press, 2010): 31 – 32.

<sup>8</sup> The writings of Walter Frisch more thoroughly present the surface-level differences between variations in the "theme and variation" movement as well as elements within the other movements, see Frisch, 1993, 46 – 47.

<sup>9</sup> See Peter Gradenwitz, "The Idiom and Development in Schoenberg's Quartets," *Music and Letters* 26, no. 3 (1945): 123 – 142; Frisch, "Thematic Form and the Genesis of Schoenberg's D-Minor Quartet, Op. 7"; Collisson, "*Grundgestalt, Developing Variation, Motivic Processes in the Music of Arnold Schoenberg: An Analytical Study of the String Quartets*"; Cherlin, "Schoenberg and the tradition of chamber music for strings".

<sup>10</sup> Alban Berg, "Warum ist Schönbergs Musik so schwer verständlich?" *Musikblätter des Anbruch* 6 (1924): 329 – 341, trans. Bryan Simms in *Pro Mundo – Pro Domo: The Writings of Alban Berg* (Oxford: Oxford University Press, 2014): 183 – 194.

<sup>11</sup> Frisch, "Thematic Form," 311.

<sup>12</sup> Gradenwitz, 129.

a more intimate review of the musical surface, Frisch's Chapter 8 from *The Early Works of Arnold Schoenberg* proves insightful.<sup>13</sup> Throughout the literature one thing remains clear about this work: the piece has developed the idea that motives, largely in and of themselves, can form the basis of the work and act as the *modus operandi* for the piece.<sup>14</sup> With this tendency beginning to assert itself within the String Quartet no. 1, op. 7, one can apply such a lens to the next iteration of the form, the String Quartet no. 2, op. 10.

### New Music, New Worlds: String Quartet no. 2, op. 10 (1907 – 1908)

Schoenberg's String Quartet no. 2, op. 10, was premiered to much scandal by the Rosé String Quartet in Vienna on December 21, 1908.<sup>15</sup> Whether received favourably or not, in 1912, Erich Steinhard noted that

the four-pitch motive of the quartet's theme is nothing other than a stylized inversion of the motive from *Pelleas* ... and yet, despite the diatonic aspect at the outset, we are dealing with an advanced style; with a unique, organic growth of the main figure from the motive (no sequences), and with naturalistic new formations from one and the same root. The eye often perceives the motives' delineation in the score as having geometrically spatial sense.<sup>16</sup>

Steinhard was not alone in such a review of the quartet's resonance with previous works, nor in the opinion of a new "advanced" style which arose from the organic growth of motives.<sup>17</sup>

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<sup>13</sup> Schoenberg also wrote a short analysis on the work, which J. Daniel Jenkins has compiled, named "cues for a 1935 lecture on the First String Quartet." See J. Daniel Jenkins, ed. *Schoenberg's Program Notes and Musical Analyses*, ed. J. Daniel Jenkins, Sabine Feisst, and Severine Neff (Oxford: Oxford University Press, 2015): 151 – 160.

<sup>14</sup> Cherlin's writing "Motive and memory in Schoenberg's First String Quartet" presents this case well from a variety of perspectives (See Michael Cherlin, *Schoenberg's Musical Imagination* (Cambridge: Cambridge University Press, 2007): 155 – 173). As with the D major String Quartet, further commentary on this work can be found in the writings of Gradenwitz, Collisson, Cherlin, and Neff.

<sup>15</sup> See for example discussions by Neff, 2006, 113 – 120; as well as Darla Crispin, "Arnold Schoenberg's Wounded Work: 'Litanei' from the String Quartet in F sharp minor, op. 10," *Austrian Studies*, 17 (2009): 62.

<sup>16</sup> Erich Steinhard, "Die Kunst Arnold Schönbergs: Eine Vorstudie," *Neue Musik-Zeitung* 33/18 (1912): 49 – 51. Reproduced in Neff, *The Second String Quartet*, 274.

<sup>17</sup> See for example, Neff, *The Second String Quartet*.

Likewise, Webern reveals Schoenberg's compositional ideas had come through asking the reader to compare the vocal line of the third movement to the thematic statements within *Verklärte Nacht*.<sup>18</sup>

Analyses of the quartet vary, from inspections of Schoenberg's self-representation within the work and the programmatic implications of extramusical events to the role of a woman's voice or the expansion of harmonic practices and tonal traditions.<sup>19</sup> Indeed, there are many contexts for analysis of this work. Discussing a handful of orientations, I review the early analytical work of Jalowetz and Zemlinsky (1909), and Schoenberg's own writings (1945, 1949), and then proceed to more contemporary scholarly perspectives by Frisch (1993), Dale (1995), Neff (2006), and Collisson (1994).<sup>20</sup>

### Jalowetz and Zemlinsky

According to Neff, Jalowetz and Zemlinsky's analytical discussion from 1909 is the first published analysis of any of Schoenberg's music.<sup>21</sup> The publication was created for audience members to follow along during concert performance. The style of analysis is similar to the analytical guides that Berg eventually produced for a number of other works, such as *Pelleas und*

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<sup>18</sup> Neff, *The Second String Quartet*, 273. The excerpt can also be found in Anton Webern, "Schoenberg's Music," trans. Barbara Z. Schoenberg, in *Schoenberg and His World*, ed. Walter Frisch (Princeton: Princeton University Press, 1999).

<sup>19</sup> See Bryan Simms, "'My dear Hagerl': Self-Representation in Schoenberg's String Quartet, No. 2," *19<sup>th</sup>-Century Music* 26/3 (2003): 258 – 277; Paul Hindemith, "Analysis of Schoenberg's Second String Quartet," reproduced in David Neumeier and Giselher Schubert, "Arnold Schoenberg and Paul Hindemith," *Journal of the Arnold Schoenberg Institute* 13/2 (1990): 13 – 46; David Lewin, "Women's Voices and the Fundamental Bass," *Journal of Musicology* 10 (1992): 464 – 482; Henry Ballan, "Schoenberg's Expansion of Tonality: 1899 – 1908," PhD Dissertation, Yale University, 1986; Catherine Dale, *Tonality and Structure in Schoenberg's Second String Quartet, Op. 10* (New York: Garland Publishing Co., 1993); Philip Friedheim, "Tonality and Structure in the Early Works of Schoenberg," PhD Dissertation, New York University, 1963. For a further summary of most (but not all) analytical references for this work, see Neff, *The Second String Quartet*, 326 – 330. For a form analysis, see Appendix 5.

<sup>20</sup> Contemporary meaning 1980s and beyond.

<sup>21</sup> Neff, *The Second String Quartet*, 250.

*Melisande*. An introductory comment by Richard Specht claims that this analysis originates “from the composer’s circle” and is “intended to disprove the allegations” of the individuals who created an uproar of criticism following the first performance.<sup>22</sup> Specht continues:

the examination below should make it clear to everyone that almost excessive consistency, rather than arbitrary willfulness, governs here, that the formal structure and logical development of the motivic material in no way deviate from the “rules,” and that neither the composer’s skill nor his consistency can be called into question.<sup>23</sup>

Evidently, Schoenberg’s circle seeks to rally the audience to a listening approach that is sensitive to motivic structures and their coherence. Such a scheme prioritizes the experience and foregrounds the motivic process in contrast to a typical listening strategy focussing on harmony, form, or tonality. As a result, Jalowetz and Zemlinsky discuss overall relations of formal areas and motives. The analysis presents concise writing displaying the main thematic events, groupings, and examples of content manipulation. The excerpts work to demonstrate a connectedness over long-range listening between the movements. Authors who follow this early analysis largely confirm the themes or primary motivic events and only come to refine smaller groupings that exist within Jalowetz’s and Zemlinsky’s annotations.

## Arnold Schoenberg

Schoenberg’s own analytical commentary on this work survives within two main sources: a sheet of motives used for teaching purposes around 1945, and his program notes from 1949.<sup>24</sup> From the teaching material, which unfortunately only contains references to the first and second

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<sup>22</sup> Ibid., 250 – 251; Opening comment by Richard Specht (editor of the journal *Erdgeist*).

<sup>23</sup> See Richard Specht as noted in Neff, *The Second String Quartet*, 251.

<sup>24</sup> This sheet is housed at the Arnold Schoenberg Center [Ref. TM4684]. For a transcription see Neff, *The Second String Quartet*, 305; or, Jenkins, 181 – 183.



movement, we can observe Schoenberg's attention as split between conveying motivic relations across both the pitch and duration domain. This aligns with his writings on developmental variation techniques.<sup>25</sup> Schoenberg cites three main pitch motives (labelled a, b, c) as being prominent and traces instances where these proliferate the music, displayed in Figure 4.1.

Figure 4.1: Motivic Labels and Relationships, Class notes from Schoenberg's Variation Seminar<sup>26</sup>

Significantly, Schoenberg's motivic segment "a" appears primarily as a neighbour figuration which highlights that, for him, motives can be very small segments.<sup>27</sup> Motivic

<sup>25</sup> See discussion in Chapter 2.

<sup>26</sup> From Jenkins, 182; See also Neff, *The Second String Quartet*, 305.

<sup>27</sup> This expresses his "building block" comments when discuss the differentiation between motivic cells, phrases, themes, etc. See for example Norton Dudeque, *Music Theory and Analysis in the Writings of Arnold Schoenberg (1874-1951)* (Aldershot, Hants, England : Ashgate, 2005): 144; Jairo Moreno, "Schenker's Parallelisms, Schoenberg's Motive, and Referential Motives: Notes on Pluralistic Analysis," *College Music Symposium* 41 (2001): 91 – 111; Pieter Van Den Toorn, "What's in a Motive? Schoenberg and Schenker Reconsidered," *The Journal of Musicology* 14, no. 3 (1996): 370 – 399.

segments “b” and “c” are clearly bracketed in the score; however, segment selection seems outside of their phrasal context.<sup>28</sup> Within these class notes, Schoenberg also groups phrases arising from rhythmic means and speculates other possible rhythmic scenarios which could transform the material. Although this document displays how Schoenberg communicated certain aspects of the work, it seems to overlook some critical aspects of motive that may have been raised only in discussion. For instance, what is the content of mm. 1 – 2 and how is it derived or motive-producing in its form? I should like to think that Motive “a”, as indicated by Schoenberg, would not be the primary figure due to its spread across phrasal boundaries in its first instantiation and its dismissal of the first measure.

The other Schoenberg source, his 1949 program notes, offers further insight. As a companion to a recording or performance it demonstrates Schoenberg’s listener-centric values, highlighting significant sections and their relations. Speaking directly to concerns (and earlier critiques) of formal logic, Schoenberg asserts that the “Wagnerian leitmotivic technique” and subsequent variations are expressive and create thematic unity.<sup>29</sup> Remarks within the first two movements are presented freely and lack motive brackets with labels applied to entire themes and developmental sections. Once readers (and listeners) reach the third movement, they are presented with labelled opening themes (a – d), as shown in Figure 4.2.

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<sup>28</sup> For example, a case may be made for the inclusion of m. 59 in “c”, as it could compare better with further “c” segments. Moreover, Motive “b” seems to be a constellation of ascending and descending events. This segmentation strategy may suggest that motivic components are more about the interval subsets rather than the entire gestalt/shape of the phrase, in some cases.

<sup>29</sup> Neff, *The Second String Quartet*, 300.

Figure 4.2: Schoenberg's 1949 Guide for Motives, String Quartet no. 2, op. 10

The image displays a musical score for Schoenberg's String Quartet no. 2, op. 10, specifically the 1949 Guide for Motives. The score is written in 4/4 time and features a key signature of three flats (B-flat, E-flat, A-flat). It consists of two systems of staves. The first system includes a treble staff and a bass staff. Motive 'b' is indicated by a bracket above the treble staff, spanning the first two measures. Motive 'a' is indicated by a bracket above the bass staff, spanning the first two measures. Motive 'c' is indicated by a bracket above the bass staff, spanning the last two measures. Motive 'b1' is indicated by a bracket below the bass staff, spanning the last two measures. The second system includes a treble staff and a bass staff. Motive 'd' is indicated by a bracket below the bass staff, spanning the last two measures.

Within the fourth movement analysis Schoenberg reaches an analytical compromise: combining figured and non-figured examples with text based on moods, extramusical signification, and notes on function. In particular, he describes the middle section as “elaborat[ing] fractions of previous thematic material, continuously illustrating, with *leitmotival* [sic] technique, every expression of the poem, finally arriving at a greatly varied and expanded repetition of Ex. 21.”<sup>30</sup> This comment reveals Schoenberg’s desire to convey the material as connected through variation and development arising from previous statements. Thus,

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<sup>30</sup> Ibid., 304.

Schoenberg instills the view that his musical elements are to be heard as emerging from transformational mechanisms. That is, motivic variance as the primary generator of content.

Stephen Collisson

Stephen Collisson's rarely cited 1994 dissertation "*Grundgestalt, Developing Variation, and Motivic Processes in the Music of Arnold Schoenberg: An Analytical Study of the String Quartets*" is a tour-de-force of historical, methodological, and analytical inquiry into Schoenberg's compositional practice. With a broad scope covering works from several decades and stylistic periods, Collisson endeavours to trace Schoenberg's "idea" and "development" concept across his entire string quartet output.<sup>31</sup>

Collisson first orients the reader to Schoenberg's compositional philosophy, motivic thinking, and commentary on *Grundgestalten*. The work dissects the contemporaneous analytic perspectives and writings on the quartets and paves a unique path. Saving much of my dialogue with Collisson's analysis for when they are relevant to my own, two main features of the approach merit discussion here. First, methodologically, which is neatly summarized by Figure 4.3, Collisson's adherence to strict categorizations of developmental process is a worthy analytical framework. Collisson's categories combine various elements (contour, rhythm, interval, and boundary) to arrive at a generalized labelled process. This approach is high-level as the processes within each category could exert any number of transformations. As a result, I understand Collisson's grouping to be reflective of my own high-level transformations in Chapter 2: order altering, interval altering, and cardinality altering.

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<sup>31</sup> Admirably, this project delivers on thoroughness and discussion while drawing out connections that are otherwise absent from the literature.

Figure 4.3: Summary of Stephen Collisson’s Methodology<sup>32</sup>

Contour + Rhythm	+	Interval + Boundary	=	Repetition
C + R	+	I or B	=	Fixed Class 1
C + R	-	I + B	=	Fixed Class 2
C or R	+	I + B	=	Dev'd Class 1
C or R	+	I or B	=	Dev'd Class 2
C or R	-	I + B	=	Dev'd Class 3
		I +/- B	=	Transformation

Second, Collisson’s analytic figures, which are severely limited within the text, fetishize the smallest units of identity for motivic ascription. That is, in many cases the semitone or generic interval in-and-of-itself is motivic in function as opposed to larger thematic strings of such elements. In reference to the summary thematic charts (appearing within a back insert) commentary includes:

each chart attempts to show clearly the connections with the *Grundgestalt* and how the subsequent thematic shapes beget others or combine to do so. My intention is the demonstrate the *Grundgestalt*’s periodic growth rather than its continuous motivic development: a kind of ‘middleground’ (though not in the Schenkerian sense).<sup>33</sup>

Evidently, these graphs as shown in Figure 4.4 act as summaries for more general development procedures and connections. Inspecting the charts, one comes to realize that many connections are presented in a new way; however, the vast number of statements, lines, and absence of

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<sup>32</sup> From Collisson, 84.

<sup>33</sup> Collisson, 44. At the time of research, access to such charts are also limited as they do not exist within scans of Collisson’s work, rather only at the physical holdings within King’s College London’s (UK) library.

contextual labels makes understanding these charts difficult.<sup>34</sup> From deciphering the content, it is clear that Collisson is focused on relations of small segments or expressions of the *Grundgestalt* and not necessarily on a holistic view of motivic representations. The acknowledgment of “middleground” as opposed to the more continuous development is the key distinction between Collisson’s work and my own.

Figure 4.4: Collisson’s Motivic Analysis of Schoenberg’s String Quartet no. 2, op. 10<sup>35</sup>

In any case, Collisson’s study aptly demonstrates motivic connections as can be seen in Figure 4.5. Although the approach is reductionist, it permits relatively clear connections between

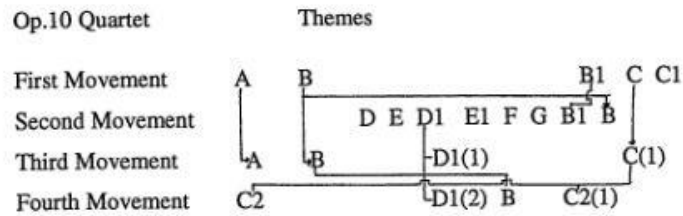
<sup>34</sup> Indeed, the directed arrows can be read as operational, but are left undefined by Collisson and are unaccounted for within his analytical perspective.

<sup>35</sup> Upper-left quadrant of the analytical leaf. See Collisson, “Thematic Chart No. 2”, in back insert.

movements and statements, in their arguments they lack a complement to the listening experience which a more local-level inspection may permit.<sup>36</sup> Levels B and C in Figure 4.5 reflect the capacity for a stratified approach; however, one may note that these figures only define elements and not their pathways or development.

Figure 4.5: Collisson’s Motivic Relations (Varying Analytical Levels)

a) Work Level



b) Movement Level

Bar	motive-form
1 - 12	A
12 - 33	B
33 - 40	A
40 - 43	Trans
43 - 57	B1
58 - 70	C
70 - 82	C1
82 - 86	C
87 - 89	A
90 - 106	A + C
106 - 145	B1 + C
146 - 159	A + C
159 - 186	B
186 - 195	A (+ B)
196 - 201	B1
202 - 214	B
214 - 218	Trans
218 - end	C (+ B1)

c) Motive Level



<sup>36</sup> This is not to say that Collisson forgoes all discussion of motive presence at varying levels, but that it sparingly exists.

In summary, Collisson's study presents a sensitive analysis of all of Schoenberg's quartets and is an invaluable primer on overarching relationships and developmental techniques utilized within Schoenberg's quartets. Moreover, the extensive orientation and contextualization permits an insightful review of twentieth-century scholarship on these pieces.

### Severine Neff

The *Norton Critical Scores*, edited by Severine Neff, for Schoenberg's String Quartet no. 2, op. 10 is a masterclass on thorough research practices. Neff spends the bulk of the work describing the premieres, reception history, Schoenberg's personal life during the time of composition (in particular, the Gerstl relationship), as well as analytical considerations.<sup>37</sup> Methodologically, Neff's sympathies favour harmonic and formal perspectives. To this end, there are numerous discussions of key areas, harmonic regions, and sonority configurations such as the *Luft* chord [0257] as seen in the first movement and the *Paradiso* chord [016] in the final movement. Neff is clearly sensitive to voice leading between harmonies within the first movement as representing—or thwarting—the established practice, ultimately concluding that Schoenberg creates a “tonally “untamed” sonata movement.”<sup>38</sup> Ultimately, the practice of viewing the work from a traditional tonal lens starts to break down, in my opinion, when Neff (citing Frisch and others) begins to use “roving” as a description of a motive's key area.<sup>39</sup>

Neff further explores how the notion of juxtaposition within Schoenberg's thematic writings is introduced regarding the content of the second movement. The idea of juxtaposition is re-introduced in the third movement's voice-instrument and music-text contexts. Arriving at

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<sup>37</sup> For more information on the Gerstl link, see Mark Benson, “Schoenberg's Private Program for the String Quartet in D Minor, Op. 7,” *The Journal of Musicology* 11, no. 3 (1993): 374 – 395.

<sup>38</sup> Neff, *The Second String Quartet*, 140.

<sup>39</sup> See, for example, Neff's Thematic Chart, *The Second String Quartet*, 142.



Neff's study of third movement, I was elated to discover discussions of motivic unity and aspects of *leitmotive*. As with most scholars, Neff draws the parallel between the reprised motives of the first and second movements as having a developmental foothold within the movement.<sup>40</sup> Of consequence, Neff cites the vocal entry as Schoenberg's *Grundgestalt* for the movement, but presents no argument why this should necessarily be the case.<sup>41</sup> Neff proceeds to the fourth movement with the brief discussion of leitmotivic cohesion. In this movement, an argument is made that exact repetitions, which are rare within Schoenberg's compositional output, exist throughout the opening to "shift the listeners attention from the realm of pitch and motivic variation to that of register and dynamics" noting a relation to *Klangfarbenmelodie*.<sup>42</sup> Commenting further on "ghost chords", pitch cycles, and Schoenberg's evasion of triadic tonality and final cadential progression, Neff certifies the work, and this movement, as Schoenberg's "new way."<sup>43</sup> The *Norton Critical Score* encompasses valuable perspectives related to, however, in its path to establish an array of critical review functions, it seems to fall short of exposing a more nuanced reading of Schoenberg's use of motive at larger scales. In all, this is a valuable resource for initial insights into the work with references and compelling research grounding sound scholarly discussions.<sup>44</sup>

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<sup>40</sup> See Neff, *The Second String Quartet*, 155 – 156.

<sup>41</sup> As the vocal line combines elements from the various motives and as it expresses a certain prominence and foregrounding of a musical idea (being the voice entry), I remain skeptical that this label functions appropriately.

<sup>42</sup> Neff, *The Second String Quartet*, 167.

<sup>43</sup> *Ibid.*, 184.

<sup>44</sup> Some scholarship, particularly outside of the United States of America or Germany regions, seems absent. For example, Collisson's 1994 dissertation does not appear in the selected bibliography – an addition of such a source would seem prudent given other PhD dissertations mentioned for their analytical contribution.

In 1993, Catherine Dale completed two writings that present musical relationships and structures of Schoenberg's String Quartet no. 2, op. 10. One is a book-length study on tonality and structure while the other exists as an article describing Schoenberg's concept of variation form as it relates to the third movement.<sup>45</sup> *Tonality and Structure in Schoenberg's Second String Quartet, Op. 10*, has been overall sensitively reviewed by Catherine Nolan and Severine Neff.<sup>46</sup> Despite the generous scope of the work and the mainly positive reviews, Dale's methodological lens presents a challenge for the reader and listener through utilizing Schenkerian-style voice-leading graphs as its main analytical means. While Dale's tonal perspective is valuable the piece seems to stretch such an analysis to its very limits. In my view, the analyses miss the mark when presented through this paradigm as tonality and structure evidently seem, through primary and secondary literature as secondary to Schoenberg's main musical expression through the vehicle of motives.<sup>47</sup> Following the techniques used within the book, in Dale's article "Schoenberg's Concept of Variation Form: A Paradigmatic Analysis of 'Litanei' from the Second String Quartet, Op. 10", Dale remains concerned with the motives of the third movement "Litanei" specifically as they relate to a Schenkerian voice-leading paradigm and notions of connectedness across the formal scheme.<sup>48</sup> In many cases Dale demonstrates how motives are expressed at

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<sup>45</sup> See Catherine Dale, "Schoenberg's Concept of Variation Form: A Paradigmatic Analysis of 'Litanei' from the Second String Quartet, op. 10," *Journal of the Royal Musical Association* 118, no. 1 (1993): 94 – 120; Catherine Dale, *Tonality and Structure in Schoenberg's Second String Quartet, Op. 10* (New York: Garland Publishing, Inc., 1993).

<sup>46</sup> Catherine Nolan, "Tonality and Structure in Schoenberg's Second String Quartet, Op. 10 (Book Review)," *Music Theory Spectrum* 16, vol. 2 (1994): 250 - 260.; Severine Neff, "Tonality and Structure in Schoenberg's Second String Quartet, Op. 10 (Book Review)," *Notes*, Second Series 51, no. 3 (1995): 914 – 915.

<sup>47</sup> Dale's study therefore presents an exhaustive examination of features, that although insightful, should not be taken as the only perspective.

<sup>48</sup> For an example of Dale's pre-occupation with this paradigm, examine p. 99 of the manuscript to find substantial discussion on hierarchies, surface versus subsurface structures, and middle- and foreground.

deeper structural levels, an approach Nolan marks as Salzerian,<sup>49</sup> which give rise to an interconnectedness between hierarchal levels. However, such connections could be seen as analytically dubious, as it is often the case that the deeper levels extract tones which may not be of foreground consequence and the method relies on exact motivic statements, not developed.<sup>50</sup> Instead, the diminutions shown through Dale's analysis (in graphs) are meant to demonstrate almost inconsequential surface-level decorations. The analytical approach wielded through my analysis in this chapter should remedy such a lack of motivic inspection through mechanisms that operate independently of tonal and formal boundaries.

### Walter Frisch

As I have discussed elsewhere, Frisch's inquiries into the early works of Schoenberg focus on high-level discussions of formal schemes, tonal relations, and motivic statements. These high-level and mostly qualitative investigations, like so many analytical guides, fall short in demonstrating local transformations and ultimately revealing connectedness at the processual levels of musical listening. Sympathetic to his endeavours, I recognize that Frisch's work allows for general comments to be conveyed to lay audiences but posit that it holds little power when read by listeners wanting more information about how Schoenberg moves between motivic statements.

In the final chapter (Chapter 10) of his book, *The Early Works of Arnold Schoenberg*, Frisch principally guides the reader (and listener) through the work's formal underpinnings, sketchbook observations, harmonic suggestions, as well as a handful of thematic statements. The

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<sup>49</sup> See Nolan, 250.

<sup>50</sup> See also, Nolan 257: "A further problem is that a number of smaller motivic components of these that she identifies function essentially as tonal motives in the Schenkerian sense; that is, they are manifestations of the most basic passing and neighbour motions" (257).

writing does, however, fail to inspect all the movement's main motivic or even thematic events.<sup>51</sup> The choice to refrain from an in-depth exploration for this work remains at odds with the work's exhaustive treatment of motives. Overlooking such discussions may be a result of space and time allotted to his overall project. This omission, however, must be remedied to produce a more complete picture of the devices and elements at work within this piece.

The scholarship reviewed above demonstrates several approaches to the early string quartets. It can be discerned that Schoenberg's work has been extensively studied; however, there is room for further exploration. Deviating from most of the established harmonic and formal practices referenced above, but in sympathy to Collisson's and other researchers' motive-centric endeavours, the following analysis section will demonstrate how a lens sensitive to more local transformations and developments may inform our knowledge base on the ways in which Schoenberg invokes variation. Thus, the question of *how* becomes the primary research motto rather than *where* or *what*.

### Analysis: String Quartet no. 2, op. 10 (1907 – 1908)

From the brief literature review, it is evident that analyses of this work's motivic aspects leave considerable room for further discussion. A more in-depth rendering of intervallic relationships will demonstrate a new transformational perspective of content and offer insight into motivic manipulations. Regarding motive within Schoenberg's quartet writing, Gradenwitz explains that there is "hardly a note or a motive that cannot be thematically accounted for ..."<sup>52</sup> In this vein, let us explore such pathways.

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<sup>51</sup> This is in stark contrast to Frisch's very detailed earlier chapter on motives within *Pelleas und Melisande*, for example.

<sup>52</sup> Gradenwitz, 125.

## Movement I

### *Motive A*

As it opens the movement and work, Motive A presents an analytical (and listening) challenge from the outset. This is largely a result of segmentation issues that arise from hearing Motive A as either the first twelve measures, or its first four-note subset. Although both interpretative avenues are possible, the smaller subset yields more manageable pathways to track as the primary motivic identity.<sup>53</sup> This approach is supported by Collisson's breakdown of the first phrase into this smaller motivic segment as can be seen in Figure 4.6. Within Collisson's example observe the bar numbers (stanza labels) referencing the larger phrase structure while the individual staves exhibit more discrete motive-level events.

Figure 4.6: Motive A Elements, Reproduced from Collisson (Ex. 4.2.18), mm. 1 – 12, String Quartet no. 2, op. 10/I

The image shows a musical score for Motive A Elements, consisting of five staves of music. The staves are labeled with bar numbers: 1, 2, 8, 9, and 10-12. The music is written in treble clef with a key signature of two sharps (F# and C#). The first staff (bar 1) shows a four-note motif with an intervallic label '(x)'. The second staff (bar 2) shows a similar motif with an intervallic label 'ic2-1'. The third staff (bar 8) shows a more complex motif with an intervallic label '(x) ic1 (Maturing of Urmotiv)'. The fourth staff (bar 9) shows a similar motif with an intervallic label '(x)'. The fifth staff (bars 10-12) shows a more complex motif with an intervallic label '(x)'. The music is written in a style that suggests a string quartet.

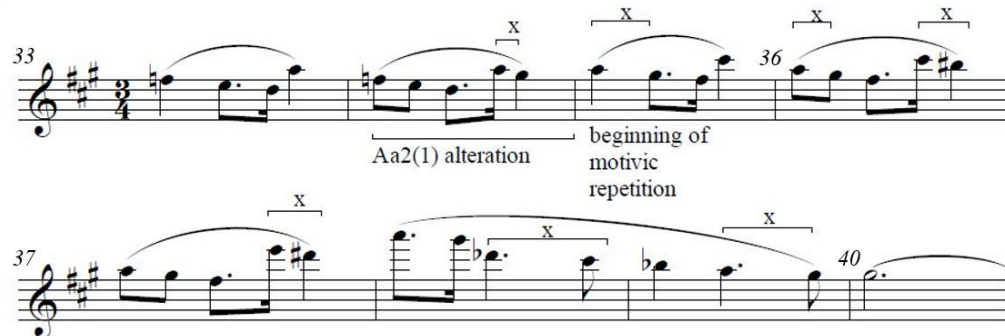
As shown in Figure 4.6, Motive A is a series of four pitches with distinct interval and rhythmic components. Varying statements of Motive A exist beyond the first segment (slur) and within the opening measures (such as mm. 33 – 40), as seen in Figure 4.7, where one can observe

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<sup>53</sup> The more extended segment may, however, be useful when discussing more phrasal elements or concerns regarding theories of form.

substantial modifications. Four main passages will demonstrate Schoenberg's transformational development of Motive A's material throughout the first movement: i) mm. 1 – 10 and 33 – 63, ii) mm. 73 – 89, iii) mm. 146 – 154, and iv) mm. 186 – 192.

Figure 4.7: Motive A Elements, Reproduced from Collisson (Ex. 4.2.22), mm. 33 – 40, String Quartet no. 2, op. 10/I<sup>54</sup>



In mm. 1 – 10 and 33 – 63, as partially observed within Figure 4.6 and Figure 4.7, one can note certain affinities between motivic statements, including the semitone “x” fragment ( $\pm 1$ ) that Collisson favours; however, there are also many differences. The transformational network shown in Figure 4.8 demonstrates intervallic variation between Motive A statements. Within this network configuration, connected nodes (along the vertical) represent interval values between ordered pitch-classes (read top-to-bottom) allowing for each vertical segment (successive motivic statements labelled with Roman numerals) to serve as the manifestation of the motivic object in intervallic terms.<sup>55</sup> Transformational processes are tracked between statements within the network through directed arrows labelling specific mechanisms.<sup>56</sup> Although the analytical

<sup>54</sup> Collisson, 119.

<sup>55</sup> For a summary review of the mechanisms possible and/or network configuration please refer to Figures 2.6, 2.13, 2.33, or the Glossary (Appendix 1).

<sup>56</sup> For a more in-depth tutorial on reading the transformational networks, please consult Chapter 2. A reminder that pitch-domain networks measure the intervals between two pitches, while duration-domain network nodes are the duration values of single attack time spans (where a value of 1=quarter note).

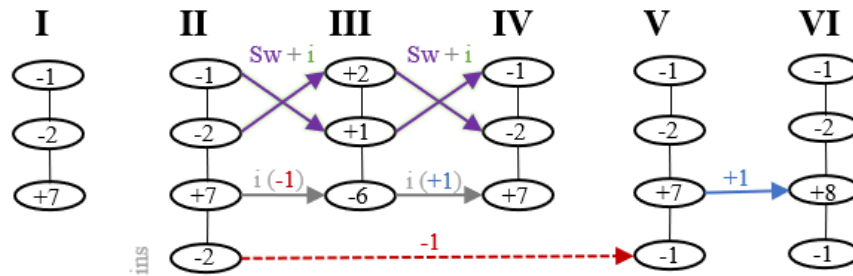
figures display a certain graphic complexity, a clear message of connected paths and similarity can be observed. In Figure 4.8 b), first, note that a term addition (ins) occurs as a node as statement I transitions to statement II. A variation of Motive A also sounds through pitch-interval inversion and Switch transformation, shown as statement II moves to III. Within the duration domain shown in Figure 4.8 c), observe how the first segment interval is expanded twice in statements II and III (+1) then contracted through an Even Split function (-2) between statements IV and V. Further durational development occurs in statements IV, V, and VI (mm. 7 – 12). Overall, the operational elasticity in the durational domain expands over the phrase. This expansion is particularly prominent in the +5 change between statements V and VI. These transformations work to convey subtle compositional alterations which are clearly methodical in application.

Figure 4.8: Motive A Score and Network, Movement I, mm. 1 – 12

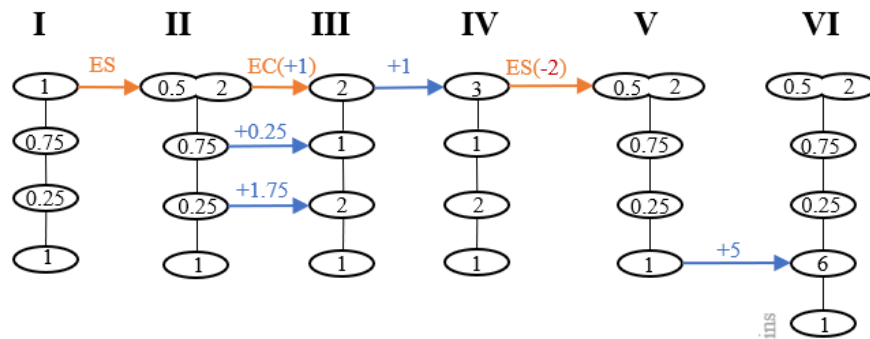
a) Score

... continued

b) Network (Pitch)



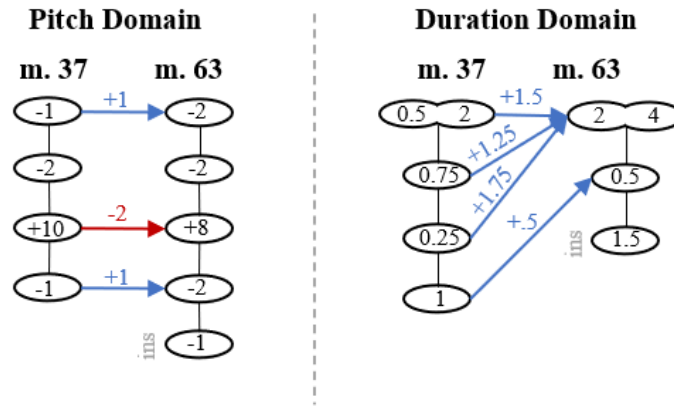
c) Network (Duration)



Within the opening section, Motive A returns in mm. 33 – 37 in violin 1. Intervals in both the pitch and duration domain starting in m. 33 are composed similar to the first opening segment, just discussed. Motive A then disappears for several measures, reappearing as a solo in the cello at m. 63. This statement, unlike those presented thus far, sounds pitch and duration intervals that vary significantly from previous forms. Figure 4.9 displays the variation between the last Motive A segment (heard in m. 37) with that of m. 63. Between these two statements we can observe the pitch interval expansion of +1 in int-nodes 1 and 4, interval contraction of -1 between int-nodes 3, and the addition of an element (ins). Within the duration domain, we can note further parallel elastic expansion of terms.



Figure 4.9: Motive A Network, Movement I, m. 37 compared to m. 63



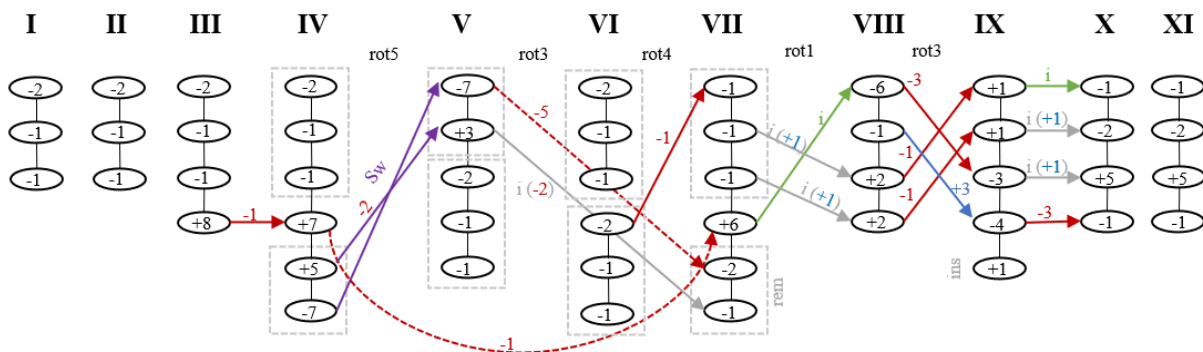
Although beginning with a repeated segment (statements I and II), mm. 73 – 89 present continual alterations to Motive A. As shown in Figure 4.10, the motive emerges from a segment similar to that of the opening measure proceeding through a series of cardinality extensions coupled with various durational alterations.

Figure 4.10: Motive A Statements, Movement I, mm. 73 – 89

Figure 4.11 demonstrates the pitch domain transformations. First, statements IV – IX demonstrate a clear shuffling of interval components through switches and rotations. Dotted boxes show the motive's rotation through statements IV to VIII with the first four elements of statement VIII continuing this rotation strategy through two more operations (statements VIII and IX). Although a removal exists from statements IV to V (+7), this element reappears in the final rotated form (statement VII), albeit contracted by  $-1$  (connected via dotted curved red line). The first rotation between statements IV and V contains a switch operation coupled with a contraction of space ( $-2$ ). During the second transformation of this group, from statements V to VI, the terms are rotated and repeated, removing the second segment and perhaps thwarting expectations. Transformations between statements VII – VIII and IX – X reveal inversional relationships. In each case, one element is inverted without intervallic change, while two other voices invert and combine with interval expansion operations ( $i(+1)$ ).

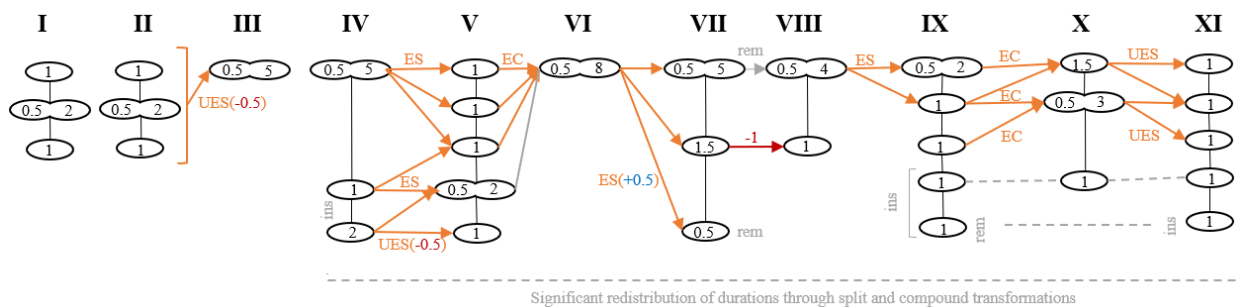
Inspecting the elastic moves, one can see a prevalence of parsimonious ( $\pm 1$ ) alterations. The spatial manipulation emphasizing tone- ( $\pm 2$ ) and semitone-motion ( $\pm 1$ ) throughout the section expresses Schoenberg's affinity for parsimonious and proximal moves, resulting in coherent and closely related structures. As a result, motivic identity is continually altered and redefined in terms of constituent members.

Figure 4.11: Motive A Network (Pitch), Movement I, mm. 73 – 89



Although, as seen in Figure 4.11, many elements are altered, Schoenberg bookends the section with repeated motivic segments. The extended use of order alteration has also permitted Schoenberg to vary little in the way of sounding pitch intervals. Durational manipulations work in much the same manner, as apparent within Figure 4.12. That is, rhythmic elements combine and split for cardinality adjustments. Rotation schemes do not accurately capture the process, as they did in the pitch domain, due to displacements of duration elements which do not consistently move elements a set number of places established within the chain. For this reason, it seems that Schoenberg is more concerned with redistributing the eighth-note subdivision through combining and splitting the totality of the duration segments. This redistribution allows Schoenberg to keep a similar cardinality (typically with only a difference of one element), yet significantly alter the temporal unfolding of the motive. Recall that when the cardinality-altering processes of Even Splits (ES), Uneven Splits (UES), and Even Compounds (EC) can account for the total interval value of a node-element it moves the remaining interval allotments (if any) to the next element, and so on. Through this distribution mechanism one may note that elasticity in the duration domain is rarely employed here as the totality of the segment duration can often be accounted for through a combination of distribution operations and removals/inserts, as shown in Figure 4.12.

Figure 4.12: Motive A Network (Duration), Movement I, mm. 73 – 89



Analysis of the Motive A within mm. 73 – 89 has demonstrated Schoenberg’s technical ability to rotate pitch segments and to redistribute durational values across collections of varying cardinalities. After such intricate Motive A development within mm. 73 – 89, Schoenberg immediately returns in m. 90 to a reprise of the main form of Motive A.

Measures 146 – 156 create a unique interplay between the viola and cello voices. Although the two voices sound simultaneously, they operate independently of one another. Working in counterpoint, red brackets in Figure 4.13 display segmentation of the viola line while blue brackets show the path of the cello. The voices draw upon the similar initial motivic material as seen in statements I(a) and I(b) in Figure 4.14 and Figure 4.15.

Figure 4.13: Motive A Score, Movement I, mm. 146 – 155

The image displays a musical score for Motive A, Movement I, measures 146-155. The score is written for viola and cello. The key signature is three sharps (F#, C#, G#) and the time signature is 3/4. The score is divided into two systems. The first system (measures 146-149) shows the viola part in the upper staff and the cello part in the lower staff. Red brackets above the viola staff label segments I(a), II, III(a), and IV. Blue brackets below the cello staff label segments I(b) and III(b). The second system (measures 150-155) shows the viola part in the upper staff and the cello part in the lower staff. A red bracket above the viola staff labels 'Motive C'. Blue brackets below the cello staff label segments V and VI. The score ends with a double bar line in measure 155.

In the pitch domain (see Figure 4.14), the motive is developed in a similar fashion to the opening measures. Unlike earlier articulations, however, between statements II and III(a) Schoenberg employs a contraction (-1). This is the first occasion whereby Motive A begins with

<-1, -1>. Furthermore, the distal transformation which adds +5 between statements III(a) and IV is also aurally significant.<sup>57</sup> Within the cello, variation primarily occurs in the duration domain alongside a unique inversional echo (see statement transition V to VI).<sup>58</sup> Here, rotation coupled with inversional intervals ground the relation to Motive A.

Figure 4.14: Motive A Network (Pitch), Movement I, mm. 146 – 155

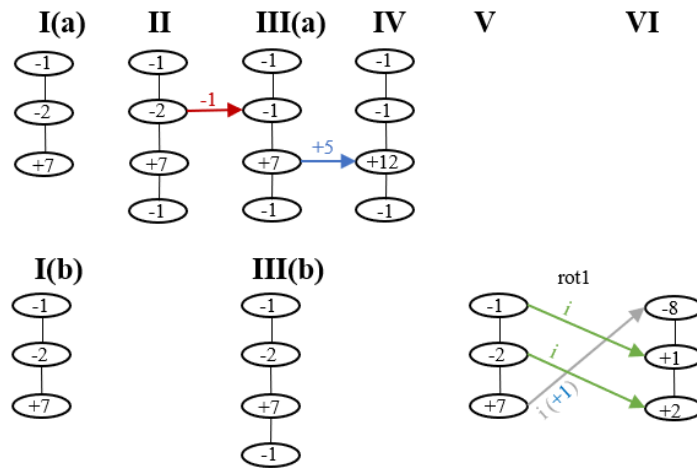


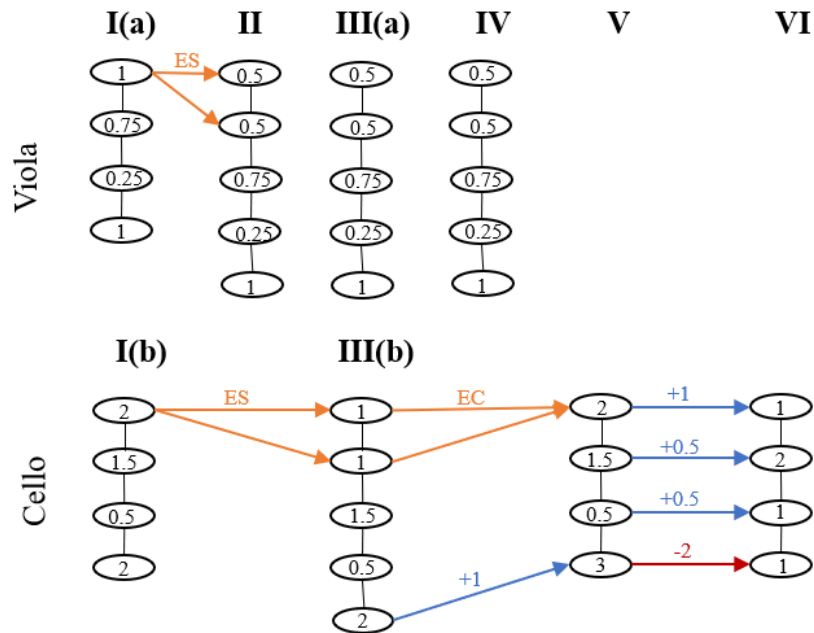
Figure 4.15 presents the analogous duration perspective for this mm. 146 – 156. Two items are notable within this section. First, observe that despite their separation, both instrumental lines initially develop by means of an Even Split (ES). Second, the cello moves to operationally invert such a modification (through and EC) and begins a series of elastic alterations on all motivic elements (see statements V – VI).<sup>59</sup>

<sup>57</sup> This large leap may be Schoenberg's way of connecting with the m. 6 octave leap continuation of Motive A, or perhaps a nod to the forthcoming statement of Motive C in m. 150 where he reaches for such a registral span.

<sup>58</sup> This transformation, to my ear, acts in a quasi-cadential manner, presenting oblique motion against the upper violin line.

<sup>59</sup> Intriguingly, the expansions and contractions values within the statements V – VI transformation net zero as if to split the developmental difference, if you will.

Figure 4.15: Motive A Network (Duration), Movement I, mm. 146 – 155



Through seventeen unique attacks, Motive A in mm. 186 – 193 progressively develops its form as it proceeds to a climax in m. 193. As with other instances of simultaneous soundings, various tracking strategies reveal differing transformational processes at work due to comparison of elements within different networks. One segmentation option for this section sees grouping by instrument. Such a strategy, however, does not seem the most effective as the articulations clearly unfold one after which would result in stratified, unconnected layers.<sup>60</sup> A second option would be to track a listening scheme sensitive to each motivic onset (attack). This proves easier than attempting to differentiate individual instrumental lines based on timbre.<sup>61</sup> For this reason, I have segmented according to attack onset, shown in Figure 4.16.

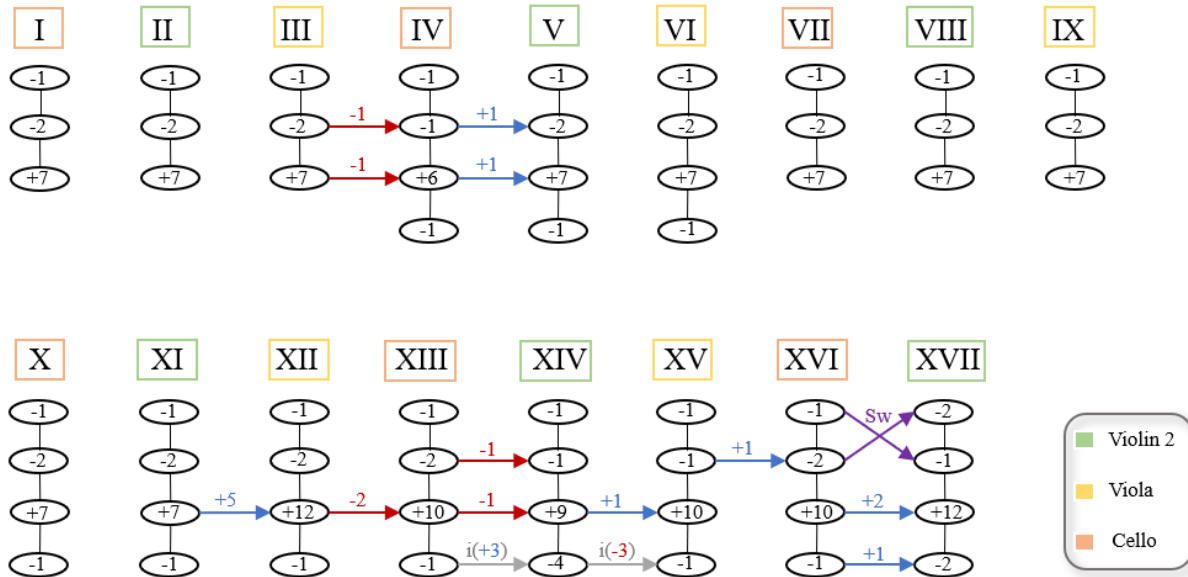
<sup>60</sup> Within Figure 4.17 I have colour-coded the statements should the reader wish to compare this sequence.

<sup>61</sup> In a live concert setting auditory cues may be more easily connected to motivic segments based player's physical moves, but this is not my preferred segmentation logic.

Figure 4.16: Motive A Score, Movement I, mm. 186 – 192

From a pitch-domain perspective, mm. 186 – 193 contain several identical statements appearing at varying transpositions, as shown in Figure 4.17. Statements VI through XI contain the same intervallic profile, yet they begin on different pitch classes (perhaps heard as a variation in itself). Reflecting a nod to traditional functional harmony, a faster rate of change through statements XI – XVII parallels an idea of harmonic rhythm acceleration for a cadential approach. Schoenberg is methodical regarding the operations within this contrapuntal passage, opting mainly for interval-altering moves with only two instances of inversions and one instance of a Switch. The Switch occurs at a climactic moment and is the first instance when the opening element in this section is not its archetypal <-1>. Given the number of variants present within the pitch domain, Schoenberg opts for a more static unfolding within the duration domain.

Figure 4.17: Motive A Network (Pitch), Movement I, mm. 186 – 192



Motive A in the first movement reflects a tight-knit strategy of transformation whereby Schoenberg methodically alters pitch-intervals through interval-, cardinality-, and order-altering functions. Each path is comparatively clear and easily traced from statement to statement lending a salience to comprehension of passage similarity. The duration domain is manipulated largely through splits and compound strategies where segments are durationally similar in total interval content, however redistributed among new interval boundaries. Such a reformatting allows the listener to grasp a similar pitch profile within the same time span, albeit utilizing different rhythmic divisions. This rhythmic variety is highlighted in various Schoenberg composition treatises and class notes.<sup>62</sup>

<sup>62</sup> See Chapter 2 for examples.



## Motive B

From the outset, Motive B presents material that is ontologically difficult to track in comparison to Motive A. Three primary ideas are contained within Motive B, presented in Figure 4.18. The figure contains the prevalent  $\pm 1$  interval (annotated “a” and “b”) as a defining feature of the first segment. Such a segment can be found within many surface-level soundings, leading to concerns regarding validity of segmentation claims. For this reason, tracking the initial upper-neighbour figure would be analytically precarious.<sup>63</sup>

The second portion of Motive B sounds a less ubiquitous passage in terms of interval content. Although one can excerpt moments where Schoenberg utilizes the segment in clear terms, such as in mm. 187 – 193 inverted in violin 1, this portion is typically underused within the first movement. It does, however, develop within the other movements.<sup>64</sup> Within all the movements, Schoenberg spends greater energy on developing other motives, moving Motive B(2) to a largely background role.

The third notable attribute within the Motive B is the descending chromatic line, typically found in bass or accompaniment passages. Such chromatic lines can be seen, for example, in the cello from mm. 24 – 40. However, such a section (mm. 24 – 40) begins to demonstrate the precarity of labelling motivic process given the saturated musical surface.

Throughout the work, most cases of Motive B transformations occur in the duration domain through cardinality-altering moves (primarily insertions) as well as interval-altering

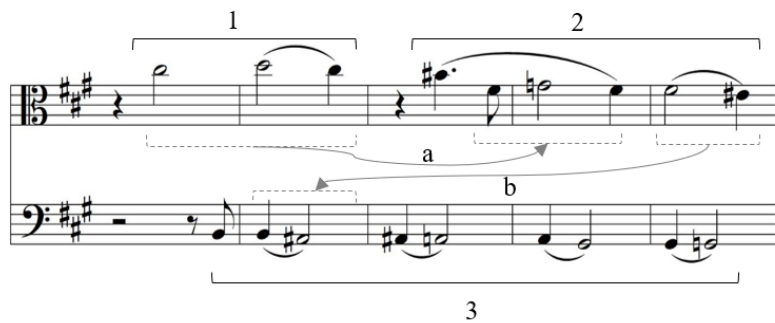
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<sup>63</sup> Several clear examples exist in mm. 43 – 51, 107 – 115, and 123 – 125. In the examples, variance clearly exists but these statements typically occur as one-offs separated by large temporal spans making the surface-level experience tenuous to track.

<sup>64</sup> See for example, Movement III: mm. 31 – 32 (voice), m. 40 (cello) and Movement IV: mm. 25 – 32 (cello).

mechanisms (mainly expansions and contractions). From Figure 4.18, one can not only notice the three primary components of the motivic constellation, but also the inter-motive relations noted “a” and “b” (which, in analysis, raise further issues of identity and development). In all, the reader and listener should be able to easily track the minimal motivic transformations between the statements within the movement without further exploration here.

Figure 4.18: Motive B Summary Forms, Movement I



### Motive C

Motive C is the site for many developmental mechanisms throughout the four movements of this work. As will be shown, its form significantly varies between and within movements. In the first movement, Motive C emerges out of pianissimo statements within the violin 2 and viola of mm. 50 – 53. In this passage, intervals parallel those in the first Motive C event (m. 58). This section can be seen in Figure 4.19 from which the reader may compare the segments to be discussed below for their convergences and divergences.

Figure 4.19: Origins of Motive C, Movement I, mm. 50 – 53 and m. 58



As shown within Figure 4.19, Motive C presents a distinct arpeggiated gesture comprised of a consistent large-span leap and ending with an appoggiatura-like figure, including a suspension element. In what most scholars identify as the first instance of the motive (in m. 58), violin 1 articulates the melodic pitch content of Motive C over a harmony of c-minor. The pitches of the melody, however, do not punctuate an arpeggiated or decorated c-minor harmony. Such a lack of correlation between harmony and melody creates a listening disconnect and suggests an approach to the motivic statement from a solely melodic perspective. Further qualities about Motive C include its function in unfolding an octave segment (here, E<sup>b</sup><sup>6</sup> to E<sup>b</sup><sup>5</sup>) and its incorporation of a dotted-eighth to sixteenth rhythm coupled with a leap (also present within Motive A).

Motive C is sounded at various moments in the first movement, typically in concise—yet varied—passages, 3 – 12 measures in length. Even within short segments, ample developmental procedures are applied to the intervallic content, with Schoenberg's variations moving beyond simple transposition of the set. Instead, transformational operations consisting of inversional iterations, switches, parsimonious expansions and contractions, as well as both additive and subtractive procedures are applied. I will examine five segments of Motive C (mm. 58 – 70, 94 – 103, 115 – 119, 140 – 145, and 218 – 229), each demonstrating varying degrees of change between iterations. Listening for these alterations, one is able to attune to manipulations more advanced than just differences of interval qualities (such major or minor thirds), understanding Schoenberg's space as more reflective of subtle transformations of individual int-node elements.

The opening iteration of Motive C, from mm. 58 – 70, demonstrates Schoenberg's fluid motivic configuration, exhibiting neither a fixed nor stable presentation. Through the statements

in Figure 4.20, one notices total transformational inversions (statements II – III), parsimonious interval-altering moves of  $\pm 1$  between all elements of statements III – VIII, cardinality liquidation from statements VI – IX (restored in statements X – XIV), and significant repeated alterations between statements XI – X and XIV – XV as the passage crescendos to its climax over a cello statement of Motive A in mm. 63 – 66. After climax, Schoenberg fragments the last portion of the motive through removal of opening terms (see statement XV), dissolving the statement into emergent Motive B material.

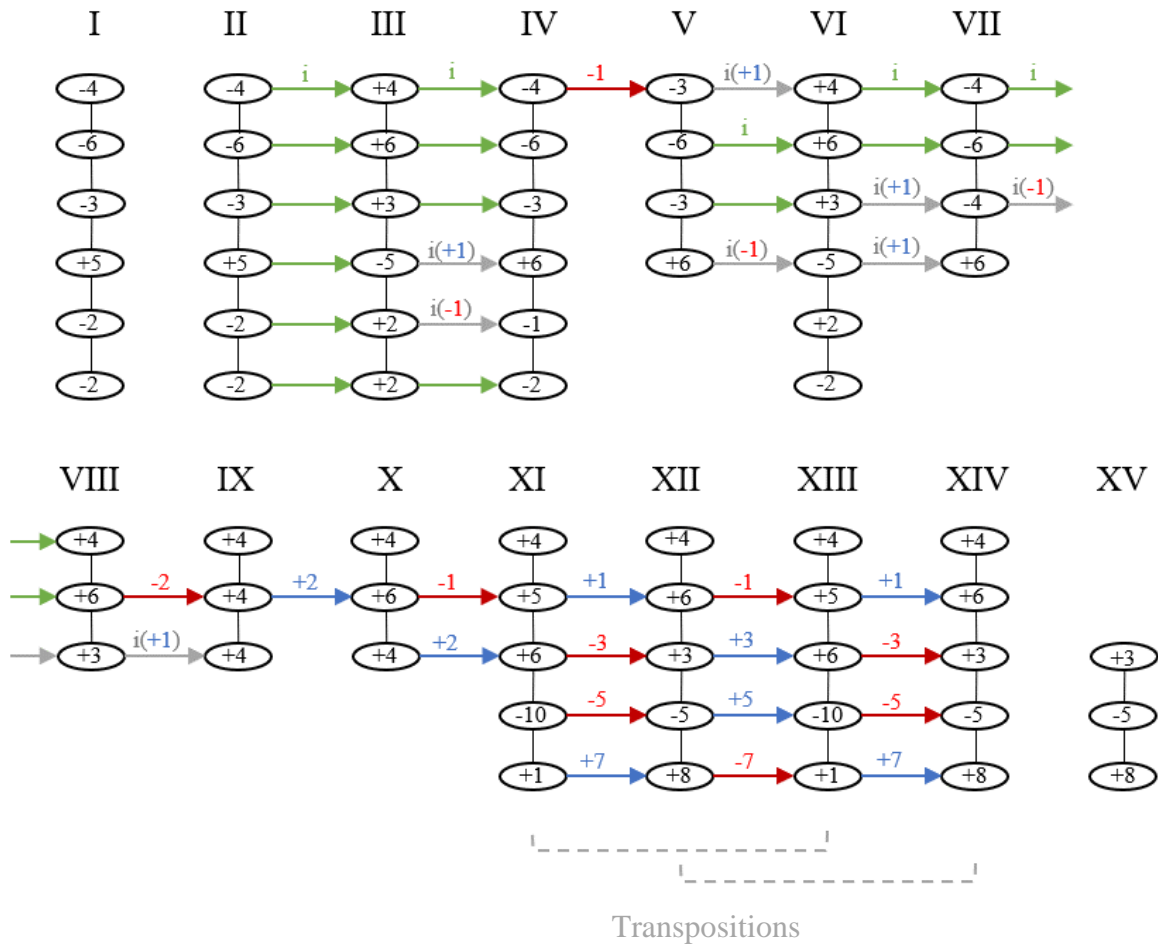
Figure 4.20: Motive C Network (Pitch), Movement I, mm. 58 – 68

a) Score

The musical score is presented in three systems. The first system (mm. 58-62) includes Violin 1, Violin 2, and Cello. Statements I, II, III, IV, and V are marked. The second system (mm. 63-66) includes Violin 1, Violin 2, and Viola. Statements VI, VII, VIII, IX, X, XI, XII, and XIII are marked. The third system (mm. 67-68) includes Violin 1 and Viola. Statements XIV and XV are marked. The score shows various intervallic relationships and transformations between these statements, such as total inversions between II and III, and significant alterations between XI and X, and XIV and XV.

... figure continued

b) Network (Pitch)



While the duration domain of Motive C is static throughout the region of mm. 94 – 103, the pitch domain invokes a series of moves which alter motivic content. Figure 4.21 tracks this space. As one can inspect, Schoenberg once again almost exclusively utilizes  $\pm 1$  moves to manipulate the set.<sup>65</sup> In Figure 4.21 a  $\langle 0 \rangle$  interval is displayed, however epistemologically challenging this may be to the notion of interval, in order to demonstrate the fact of another pitch-attack as connected to the opening form, shown in three possibilities in Figure 4.22.<sup>66</sup>

<sup>65</sup> The abundance of such changes from statement to statement removes the suggestion that it is a static harmonic device presented through arpeggiation. Thus, it motivates the understanding that it is melodically derived and altered for variety.

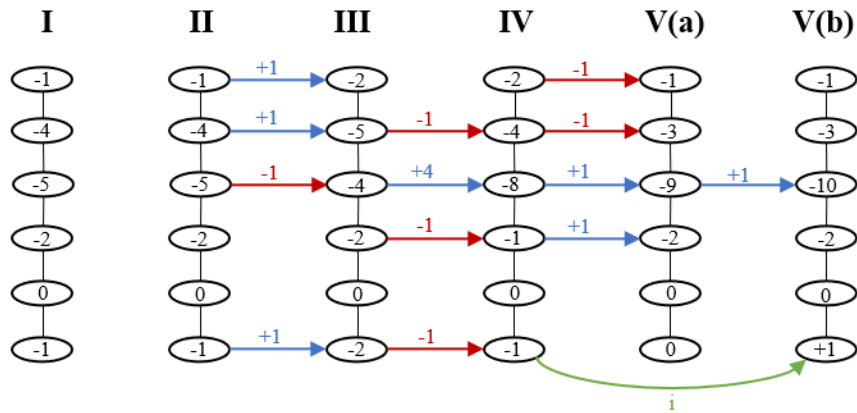
<sup>66</sup> Whichever way we choose to arrive at the form may be missing the point as we know that Motive C is more fluid than just comparing m. 94 to the form of m. 58 and that beyond the pitch domain the duration profile unquestionably links the passages. What Figure 4.22 contributes to the discussion is a sense of a highly developed pitch domain which can be derived from several transformational paths.

These origin hypotheses demonstrate that although Schoenberg utilizes smooth transformations (here, meaning less disruptive and more closely related) between temporally adjacent segments, and in his working between larger groups (such as m. 94 related to the opening form<sup>67</sup>), manipulations can be more distant and thoroughly developed.

Figure 4.21: Motive C Network (Pitch), Movement I, mm. 94 – 103

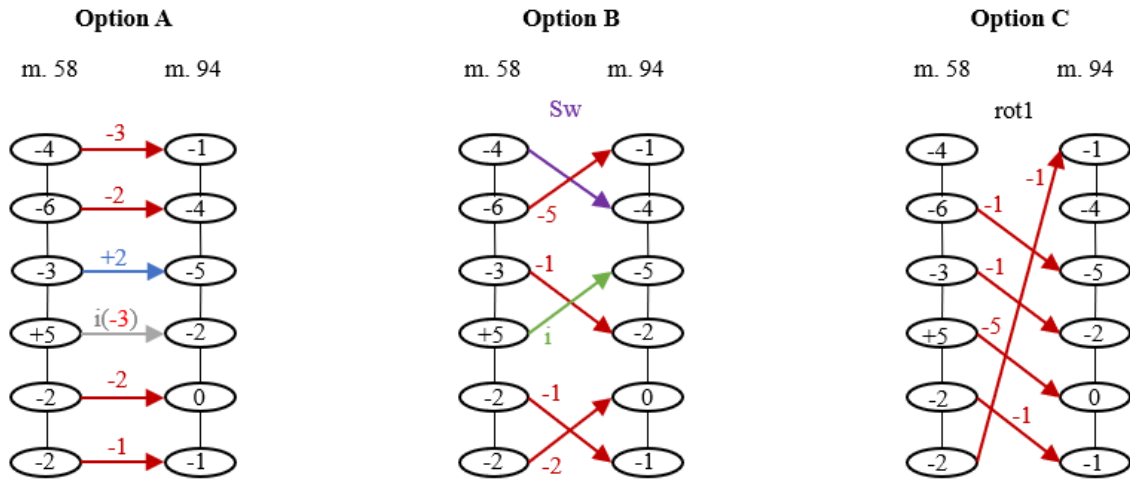
a) Score

b) Network (Pitch)



<sup>67</sup> See Figure 4.20 for m. 58 context.

Figure 4.22: Motive C, Origin Options for m. 94<sup>68</sup>



Measures 114 – 119 present an interplay between directional and inversive relationships of Motive C. Its prominent inclusion in my analysis stems from the fact that here, unlike the statements between mm. 94 – 103, Schoenberg has opted to primarily use the inversive transformation shown in Figure 4.23.

Figure 4.23: Motive C Network (Pitch), Movement I, mm. 114 – 119

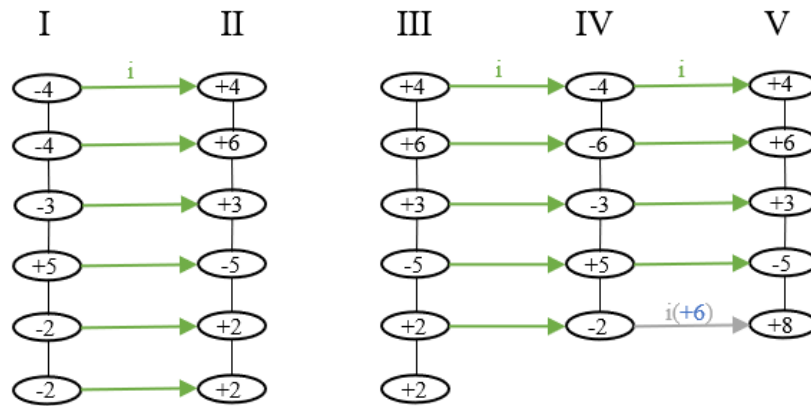
a) Score

The musical score shows three staves: Violin I (top), Viola (middle), and Cello (bottom). The key signature is two sharps (F# and C#). The score is divided into five sections labeled I through V, each containing Motive C. Section I is in the Cello, II in the Violin I, III in the Viola, IV in the Cello, and V in the Violin I. The notes are connected by slurs and some have ties.

... figure continued

<sup>68</sup> See statement I of Figure 4.20.

b) Network (Pitch)



The compositional restraint wielded to forego altering the spatial footprint (Elasticity) of the motive beyond inversion demonstrates that Schoenberg is making choices sensitive to the idea that too much developmental variance may lead to a comprehension gap. This same restraint is held within the duration domain.<sup>69</sup>

Thus far, Motive C has predominantly undergone alteration through inversion and expand or contract functions. In mm. 140 – 145, however, the motivic fragments transform via order-altering mechanisms, as demonstrated in Figure 4.24. From statements VI(a) to VII and VIII(a) to VIII(b) we can observe Switches (Sw) which, in three instances, combine with interval-altering moves. This idea may be hinted at through statements III to VI(a) in their final two elements which I prefer to hear as unrealized Switches as opposed to generic term removals. Figure 4.25 examines select durational statements that also work to modify Motive C. Although additions are required as the cardinality changes, we may also note the interval-altering changes prevalent in the final terms as well as a tremolo articulation in the viola.<sup>70</sup> I am convinced that

<sup>69</sup> Segmentation between attack or per instrument line does little to affect the comparison of transformational moves as variants occur regardless of network mapping.

<sup>70</sup> The tremolo within the viola (mm. 143 – 145), expressed as <0.25/5> represents that there are still only five elements present but that each one is attacked twice at the durational interval of 0.25.



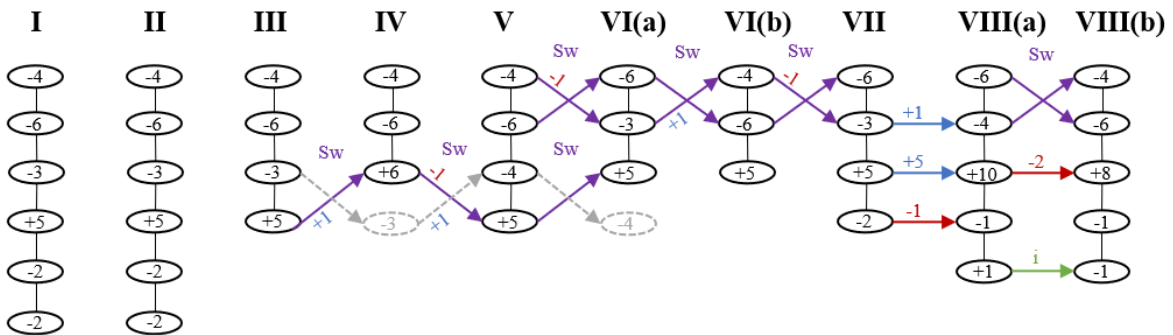
the tremolo is an instance of texture and colour variance and not arising as a result of durational modifications.<sup>71</sup>

Figure 4.24: Motive C Network (Pitch), Movement I, mm. 140 – 145

a) Score

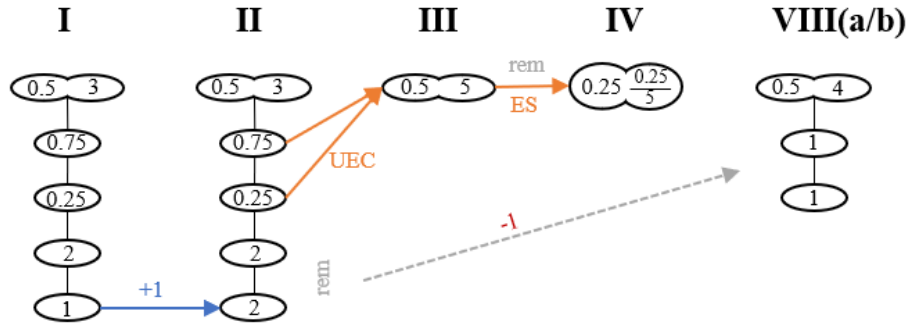
The musical score shows four staves: Violin 1, Violin 2, Viola, and Cello. The key signature is three sharps (F#, C#, G#). Measure 142 is marked with a '142' and a 'II' above the staff. Brackets and Roman numerals identify Motive C across the staves: I (Violin 1), II (Violin 1), III (Cello), IV (Viola), V (Violin 2), VI(a) (Viola), VI(b) (Cello), VII (Violin 2), VIII(a) (Viola), and VIII(b) (Cello).

b) Network (Pitch)



<sup>71</sup> The process could, however, be accounted for as an Even Split (ES).

Figure 4.25: Motive C Network (Duration), Movement I, mm. 140 – 145

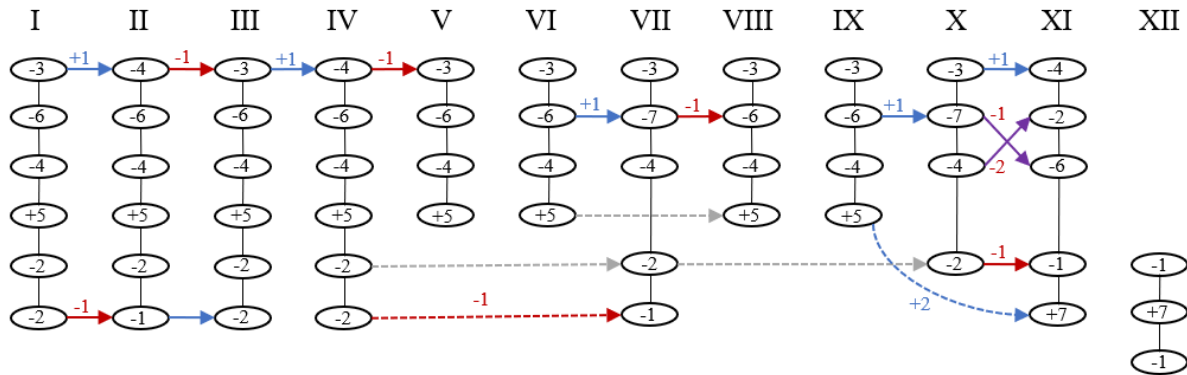


As the final moments of the movement are approached in mm. 218 – 229, displayed in Figure 4.26, Motive C sounds once more. As presented in the network of Figure 4.26, the motive operates with minimal alterations until statement IV transitioning to V, which sees a cardinality change with the removal of the two final terms. These terms reappear connecting statements IV to VII, a procedure repeated between statements VII and X. As can be observed, the pitch domain statements are similar in many ways across the section with only a handful of parsimonious interval alterations. Evidently Schoenberg is utilizing the subsets as a diminutive echo as the movement draws to a close.

Figure 4.26: Motive C, Score and Network (Pitch), Movement I, mm. 218 – 230

a) Score

b) Network



Through Motive C passages examined above, one can grasp the specific ways in which Schoenberg alters motivic content. Multiple procedures of alteration are implemented, from operations of parsimonious expansions and contractions to switches and inversions. Despite these variants, a shape continuity exists between all forms of Motive C, asserting salient surface-level relations.

Motives A, B, and C proliferate the first movement. With firm harmonic support complementing unique melodic profiles, a stylistic elision is present as Schoenberg straddles late-Romantic chromatic chamber writing with a more emergent, motive-cell dominated practice. The motivic analyses provided have, in some cases, raised ontological complications through pervasive structures such as elements of Motive B. These analytical challenges, however, do not negate the benefits of inspecting intervals as the source of motivic unity and coherence. Rather, the confluence of the various motivic forms through intervallic relations begins to demonstrate the interconnectedness of the musical fabric and accounts for varying threads of the musical surface in a new way.

## Movement II

According to Collisson, the second movement presents three “character” motives that are tightly related through “interval content similarity.”<sup>72</sup> Such distinct “character” motives are recognizable given their unique contours, rhythms, and pitch-intervals. In addition to the three primary “character” motives, Collisson suggests two additional motives, resulting in five motivic ideas as summarized in Figure 4.27.<sup>73</sup>

Figure 4.27: Motive Summary, Movement II

Figure 4.27 displays five musical motifs labeled D, D', E, F, and G. Motive D is in treble clef, 2/4 time, starting with a quarter rest followed by eighth notes. Motive D' is in treble clef, 2/4 time, starting with a half note. Motive E is in bass clef, 2/4 time, starting with a quarter note. Motive F is in treble clef, 2/4 time, featuring triplet eighth notes. Motive G is in bass clef, 2/4 time, starting with a quarter note.

<sup>72</sup> Collisson, 132.

<sup>73</sup> Collisson does include the five motives labelled in the figure, but they are absent from his own figure which leads one to believe that F and G function as secondary in Collisson's mind. To be sure, Motives F and G occupy limited formal or developmental positions in the movement. I largely concur with Collisson's general noting of these motives as primary, however, Motive D connections across a break seem tenuous at best in terms of aural comprehension (the first part sounding in mm. 5 – 6, the second half sounding in mm. 14 – 16). I also question the use of his annotated X and Y intervals as the focus of relationships. Although these can certainly be drawn out of the motives they exist at the same time as too local (as in the case of  $\pm 1$ ) and ubiquitous, as well as too abstract (in the case of Y). In practice then, as Collisson continues the analysis; the connections portray more about the semitone “as motive” and the hierarchy of interval relations (here, his Schenker-style abstractions, for example on Collisson, 136), rather than the unfolding musical surface.

The current analysis of the second movement will focus on the iterations of Motive D and D<sup>I</sup>. These two motives present a wealth of material allowing for the tracking of not only interval-altering transformations but also cardinality-altering moves as Schoenberg fragments and extends elements of the passages.<sup>74</sup>

### Motive D and D<sup>I</sup>

Motive D presents material with specific articulation, contour, and rhythm. Indeed, the arpeggiated arc of the passage is characteristic and is well-formed against the other motives. Although interval subsegments of this group permeate other motives, the motive as a whole is self-sustaining. Collisson explores Motive D as shown in Figure 4.27. However, to my ears, I believe it is better to parse the motive into two constituent motivic parts (a and b), giving rise to two separate attacks, shown in Figure 4.28. Segmenting into these two halves, the analysis becomes more flexible as the ascending (a) and descending (b) portions are often fragmented or stand-alone objects in themselves.

Figure 4.28: Segmentation of Motive D, violin 2 (mm. 5 – 6)



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<sup>74</sup> Motive E will be largely overlooked in the analysis as the prevalence of the uni- and bi-directional chromatic lines presents a difficulty in attending to transformations of Motive E proper. Its ubiquitous chromatic and scalar lines, often punctuating accompaniment structures, become difficult to justify. As such, Motive E holds a lower prominence within the current analysis. Discussions of the relatively rare and consistent Motive F and Motive G will also be saved for another time.

Regarding Motive D, Collisson expresses that: “its internal construction of rising fourths and falling thirds otherwise seems a little arbitrary.”<sup>75</sup> He continues by stating that the internal intervals only become coherent when one reduces the passage to harmonic sonorities. While the fourths and thirds may appear to Collisson as inconsequential, one must remember that Schoenberg was in control of his choices and manipulating these inner intervals are nonetheless transformational operations. In fact, a reductionist approach which treats the pitches as a collective vertical sonority alienates many identifiable aural qualities to a background level, a perspective that I believe severely hinders a motivic context.

The opening measures (mm. 1 – 13) present Motive D clearly, as many elements remain static for maximum initial comprehension of contour and rhythm. After two full statements in the violin 2 and viola, the motive is fragmented into its secondary elements (my segments a and b) starting in m. 9 and continuing to m. 13 (see Figure 4.29).

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<sup>75</sup> Here, Collisson is clearly identifying the relationships between pitches 3 – 7 of my “a” and pitches 2 – 5 of my “b”. See Collisson, 133.

Figure 4.29: Schoenberg, String Quartet no. 2, op. 10/II, mm. 1 – 13

The musical score is presented in four systems. The first system (measures 1-4) is marked 'Sehr rasch (♩ = ca 116)' and includes the instruction 'stacc. sehr kurz u. leicht' and 'pp' dynamics. The second system (measures 5-8) continues with 'pp' dynamics. The third system (measures 9-13) begins with a boxed measure number '10', includes a 'rit.' marking, and features 'pizz.' dynamics. The fourth system (measures 14-17) is marked 'etwas langsamer' and features 'ppp' dynamics. The Viola and Cello parts are labeled 'Bogen'.

An important relationship between the viola and cello in m. 10 reveals, in part, the blurred boundary between Motive D and Motive D<sup>I</sup> (the later which has yet to be introduced). Figure 4.30 demonstrates a wedge where the upper pitches within the viola sound Motive D initial form, and the lower pitches display an inverted form in the cello line. This inversional

shaping relays a potential relationship with Motive D<sup>I</sup>.<sup>76</sup> As shown within the figure, an intervallic elasticity occurs along the flipped center-segment axis. The complementary cello line, arising from Motive D, proves to anticipate the upcoming Motive D<sup>I</sup> configuration while simultaneously keeping the listeners' ear rooted in the sectional Motive D.

Figure 4.30: Motive D Inversional Affinity with Motive E, Movement II, mm. 10 – 11



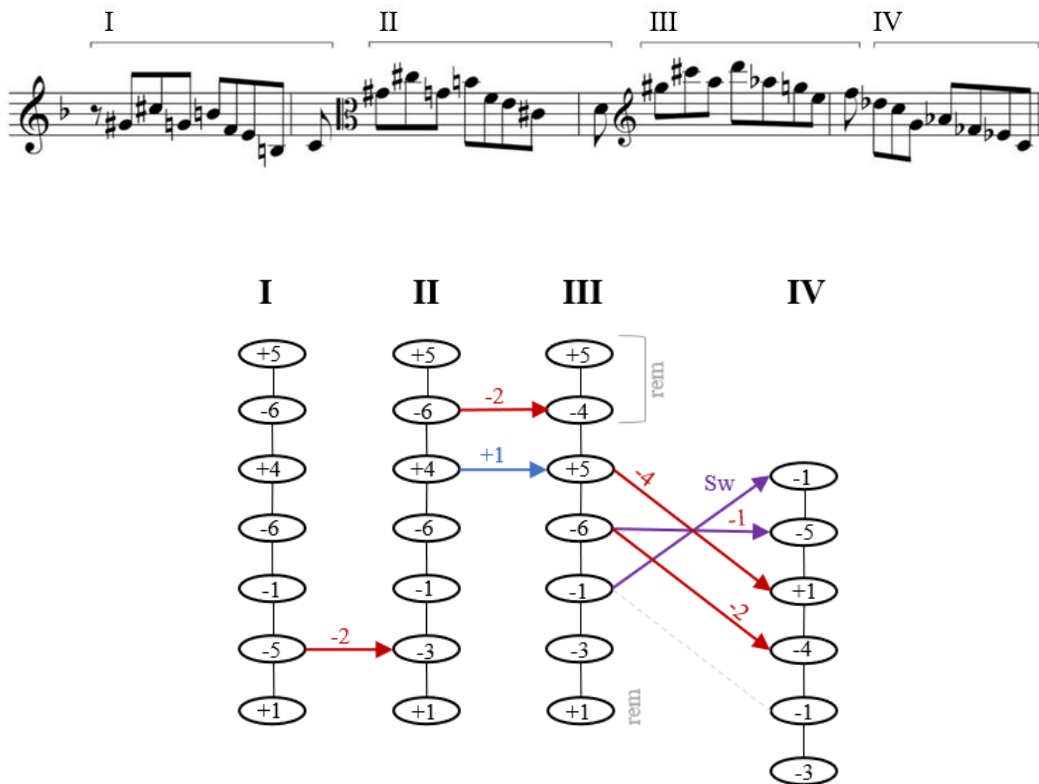
Further mechanistic examinations of the opening statements of Motive D reveal additional internal developments that are evidently more thoughtfully executed than Collisson's above arbitrary "thirds and fourths" comment posits. As shown in Figure 4.31, segment "b" of Motive D transforms throughout the introductory material (mm. 1 – 13). Many motive node elements remain unchanged throughout statements I, II, and III (parsimonious and proximal interval alterations), with the move to the final statement (IV) acting as a space of significant transformations. Notably, the last statement (IV) initiates with pitch intervals that are switched (these originate from the mid-point of this previous string). This manipulation of intervallic content seems thoughtfully executed and not, *pace* Collisson, arbitrary or only understood through harmony.<sup>77</sup>

<sup>76</sup> Instead of inversion along an axis, one might also hear a Switch transformation between nodes 1 and 3.

<sup>77</sup> Collisson does maintain that his system of motive-tracking seemed to not be able to capture this and resulted in him turning to harmonic elements as the main motivator.



Figure 4.31: Motive D, Score and Network (Pitch), Movement II, mm. 11 – 12

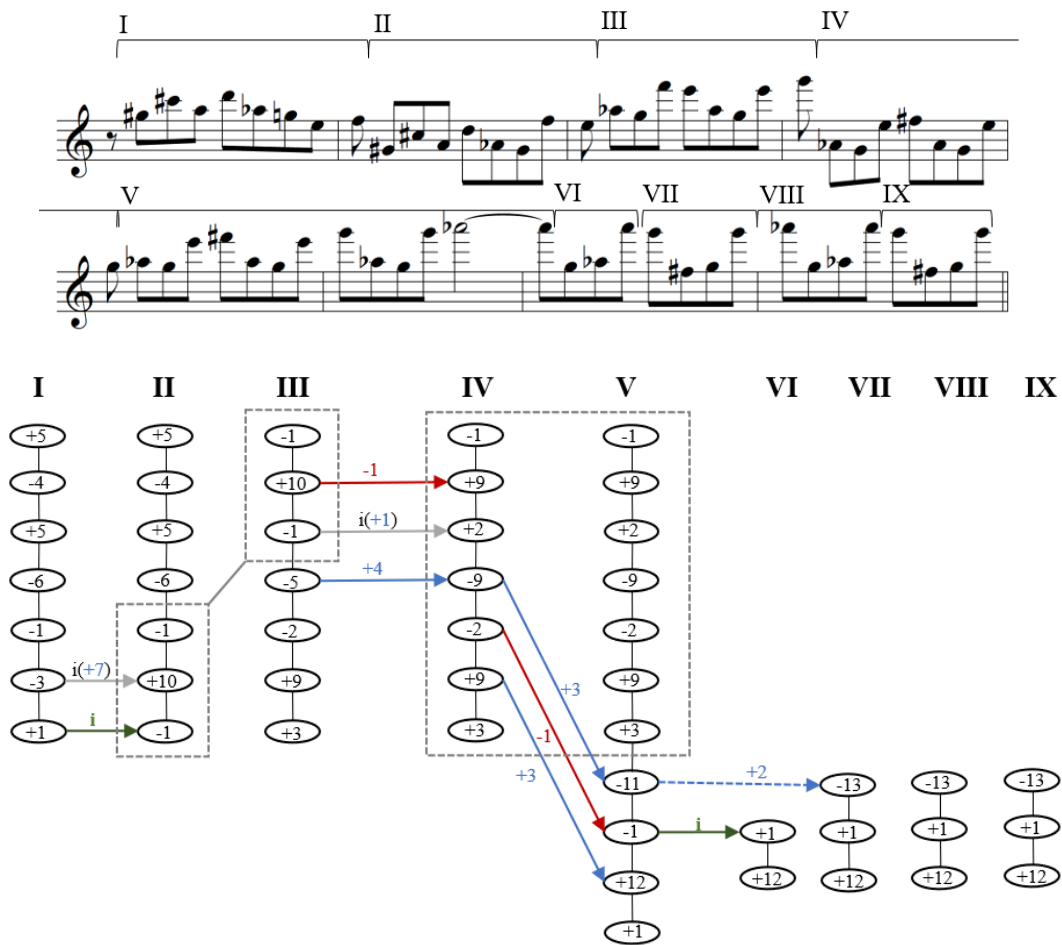


Development of Motive D within mm. 26 – 34 demonstrates a quasi-back-relation to the opening violin 1 phrase (mm. 7 – 9). As displayed in the transformation network shown in Figure 4.32, the intervallic relations of mm. 26 – 34 can be linked through developmental mechanisms. As shown, the fragment in the violin 1 part of m. 25 acts as the typical descending portion of Motive D. Significant transformations emerge to define the subset:  $\langle -13, +1, +12 \rangle$ .<sup>78</sup> For instance, subgroups between statements II and III present clear connections that further undergo parsimonious transformations as statement III becomes IV. One can also note the proximal (+4)

<sup>78</sup> One can further observe the similarity between the  $\langle +12, -1 \rangle$  and  $\langle +12, \pm 1 \rangle$  from with the m. 7 violin 1 line in the introduction.

and distal (+5) moves between statements III and IV as significant interval-altering moments. Moving from statement IV to V, we see that statement V defines a new segment (as marked by the interval-altering moves) that becomes important fragmentary features of the motivic unfolding. A consistency through construction marks statements I – IV, where it is clear that Schoenberg works with the constituent intervals sympathetically to exploit relations that promote unity, yet developmental difference.

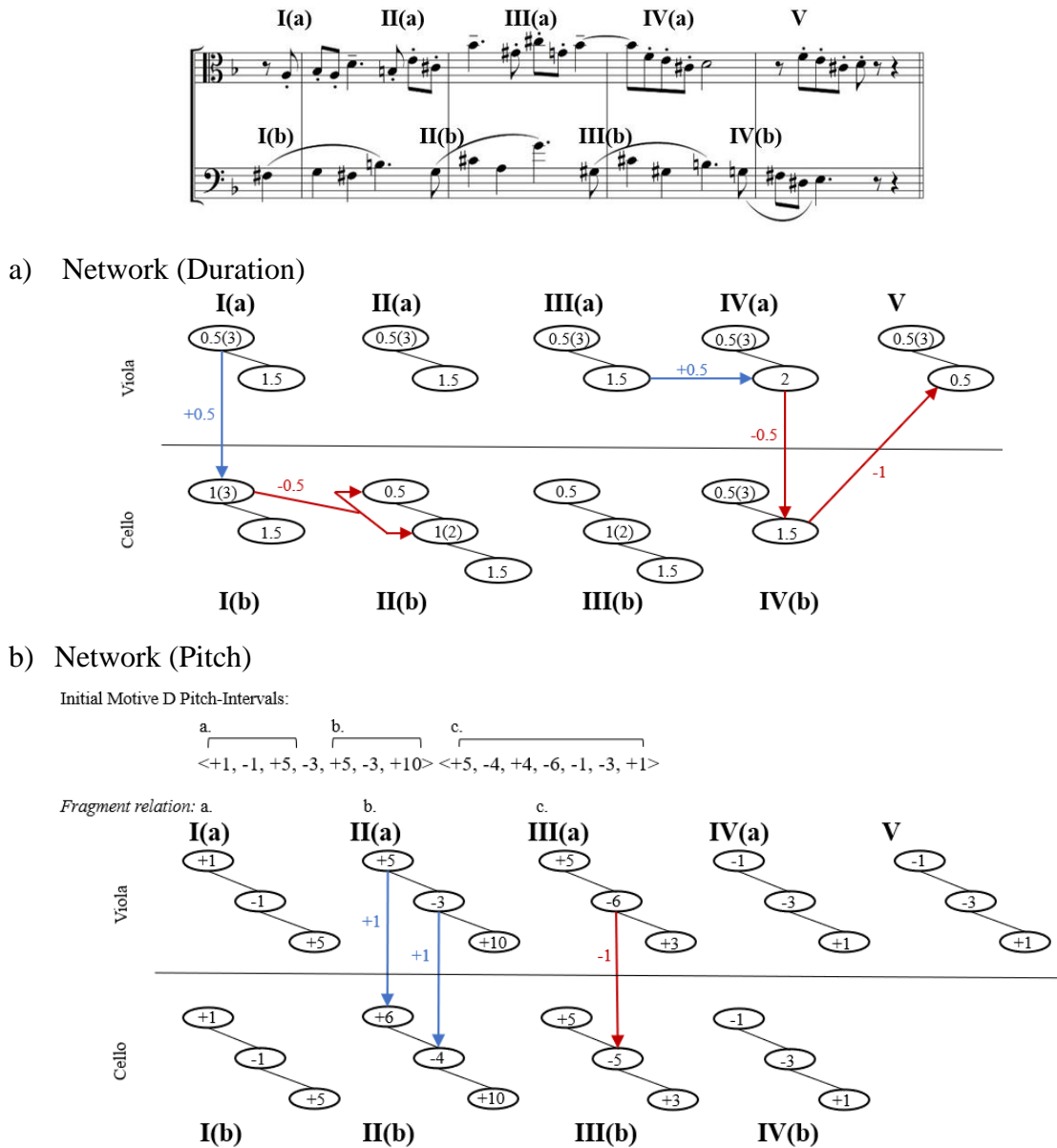
Figure 4.32: Motive D, Octave “back-relation”, Movement II, mm. 25 – 32



Until m. 80, durational development within Motive D is almost non-existent. Schoenberg, however, initiates such transformational processes within the contrapuntal writing starting at m.

80 in the cello and viola. As represented in Figure 4.33, a developmental process is underway at any given time, switching between the pitch-interval and duration-interval domains.<sup>79</sup> Moves in either domain are parsimonious in nature and work through a series of reductions, what Schoenberg might term as liquidations. A similar process occurs again between mm. 240 – 250.

Figure 4.33: Motive D Score and Network (Pitch and Duration), Movement II, mm. 80 – 84



<sup>79</sup> Perhaps this was a strategic decision for comprehensibility.

The last passage of Motive D under examination is the finale, *Sehr rasch* (mm. 259 – 275). Though we may continue to understand elements of the eventual ascent at m. 267 and beyond as related to elements of Motive D<sup>I</sup>, the fact that this passage arises out of a prominent Motive D group at m. 268 motivates a continued Motive D process. With few alterations, which accommodate registral limitations of instruments, Schoenberg writes this section in unison. Figure 4.34 demonstrates the network transformations of the pitch-intervals. Here, it is essential to be cautious of tracking “like”-objects, comparing A and B segments 1:1 and their possible relations to each other. Statements III – VII indicate parsimonious and proximal interval-altering processes as well as cardinality changes as the passage is fragmented. A significant transformation from statements VII – VIII takes the listening back into the realm of A material, which is then mostly parsimoniously altered (except for one proximal move). As the second-row transformations demonstrate (statements XI – XXI), fragmentation is an important developmental mechanism that allows for motivic variety through cardinality changes. Below the main network of Figure 4.34, I have singled out comparative segments which demonstrate clearly certain like-object relations. These alternative comparisons reveal potential emergent transformations which facilitate comprehension of the “origins” for statements XII, XIV, and XV. In all, intervallic diversity created by extrapolating upon the initial idea of Motive D moving to a climax showcases Schoenberg’s transformational ingenuity.

Figure 4.34: Motive D Networks (Pitch), Movement II, mm. 259 – 275

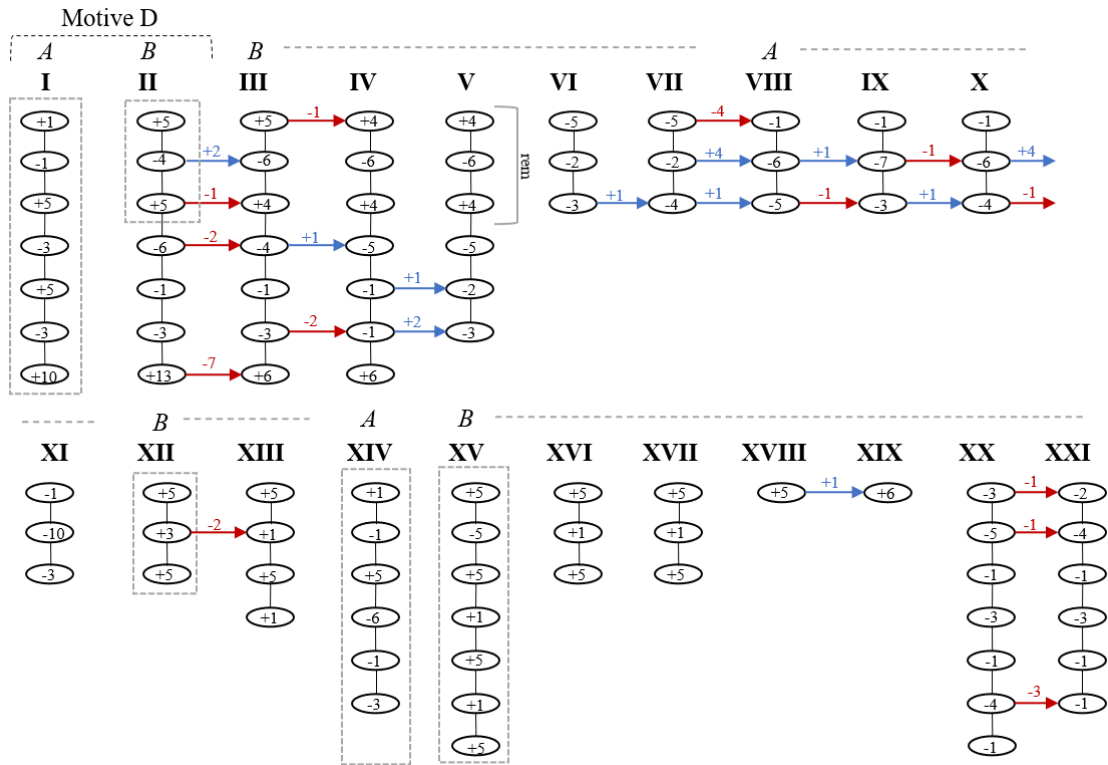
a) Score

The musical score is presented in five systems, each containing three staves (treble, alto, and bass clefs). The key signature has one flat (B-flat), and the time signature is 3/4. The tempo is marked "Sehr rasch (Presto)".

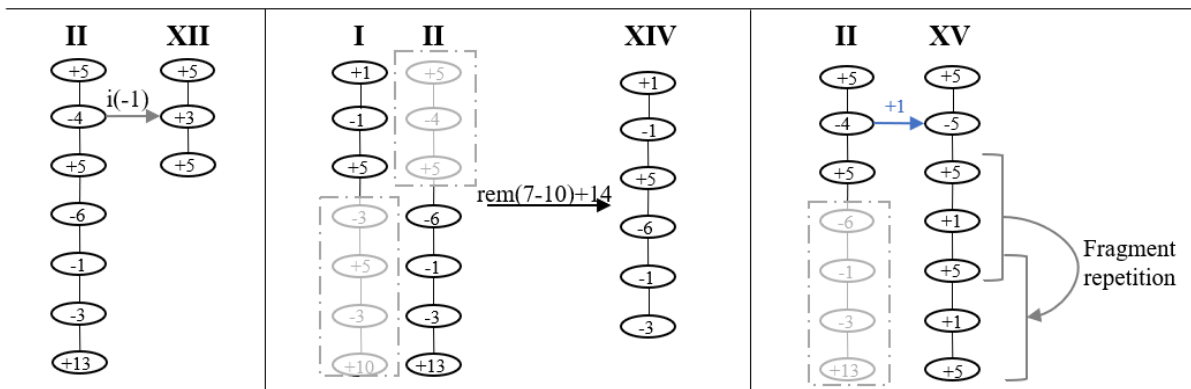
- System 1 (mm. 260-262):** Starts with a box around measure 260. Dynamics include *f* and *sf*.
- System 2 (mm. 263-265):** Continues the rhythmic and melodic patterns.
- System 3 (mm. 266-268):** Includes dynamics *sf* and *ff*.
- System 4 (mm. 269-271):** Starts with a box around measure 270 and the marking "accel.". Dynamics include *ff* and *p*.
- System 5 (mm. 272-275):** Ends with dynamics *pp* and *pizz.* (pizzicato).

... figure continued

b) Network (Pitch)



Comparative Segments



Let us now examine Motive D<sup>I</sup> (see Figure 4.27). Two main sections reveal extensive development: first, violin 1 in mm. 35 – 49 which demonstrates various durational and pitch alterations; second, mm. 49 – 62 as it reveals the importance of attuning to consistent perceptual planes for relating motivic structures.

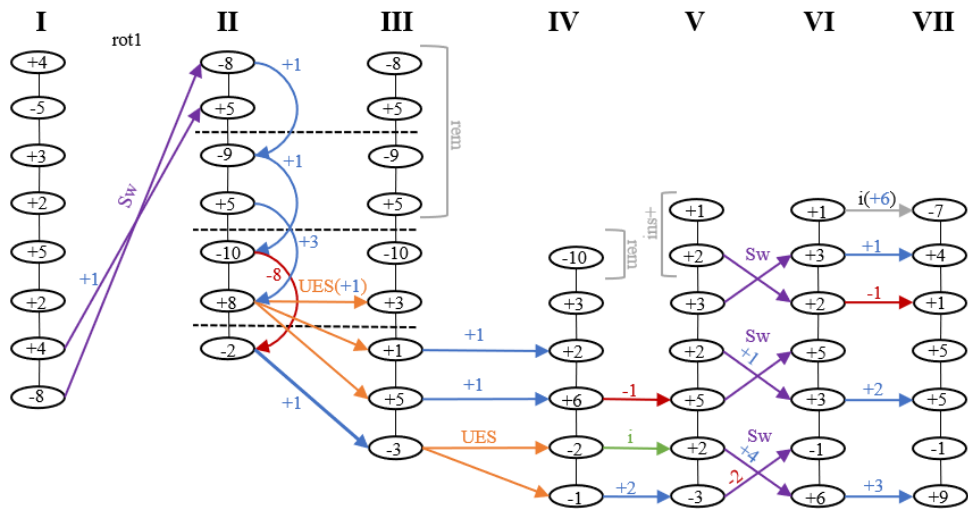
As shown in Figure 4.35, various transformations are applied to Motive D<sup>I</sup> from its outset in m. 35 to m. 49. Pitch-interval fragmentation, rotation, expansions, and contractions dominate the melodic aspects and durational Switches alter the temporal unfolding of the motive string. Fragmentation can be clearly observed as statement III (m. 38) can be parsed into four subgroups (separated by dotted horizontal lines). The first subgroup Switches the final elements of statement I, the second and third subgroups then expand the initiating interval of this segment. The start of a fourth subgroup dissolves such process with a distal elastic contraction. Take care to further observe UES splits of terms between statements II – III and III – IV. Statements IV – VII demonstrate clear order-altering mechanisms as well as elemental inserts and removals of other prominent Motive D<sup>I</sup> features.

The durational transformations of Figure 4.35 present mechanism that are easily identified, however, in their simplicity are relationships which hitherto have been overlooked. For example, the Switches which operate between statement I – V and I – II, cardinality-altering mechanisms adding or removing a significant number of int-nodes, and the lack of many interval-altering moves (which are abundant in the comparative pitch domain), all suggest extensive motivic re-working.

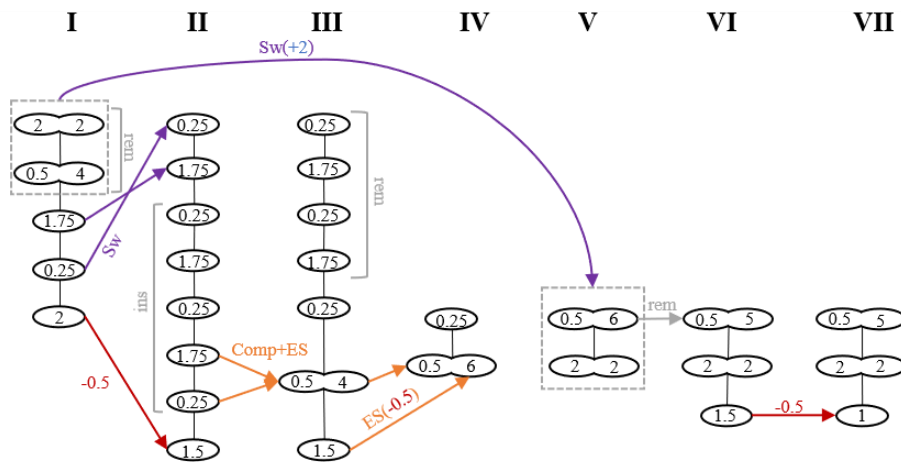
Figure 4.35: Motive D<sup>I</sup> Networks (Pitch and Duration), Movement II, mm. 35 – 49

a) Score

b) Network (Pitch)



c) Network (Duration)





With many motivic events on the musical surface, tracking the transformational process of Motive D<sup>I</sup> in mm. 49 – 62 from statement to statement is best parsed through comparison of “like”-objects. Other ways to parse the musical surface into motivic sequences include by instrument or initial attack sequence. This challenge is remedied here as network rows 2 and 3 of Figure 4.36 group +3 and +4 initiates, respectively. A significant perceptual and analytical complication of logical segmentation sequence emerges as an issue within the passage following the seventh segment (as a direct result of the texture and contrapuntal writing). Simultaneously sounding objects also raise ontological and logistical questions of co-operative transformation.

Figure 4.36 tracks the substantial pitch transformations of Motive D<sup>I</sup> in mm. 49 – 62. Statements I – VII present interval-altering transformations, largely parsimoniously, with a few noted exceptions between statements II – III(a), III(a) – III(b), and III(b) – IV. Attacks VII through XV(b) compare “like”-initiating nodes producing default groupings as represented by opening pitch interval value, each stream shown in a separate row of the figure (grouped by initiates, +3 and +4).<sup>80</sup> That is, if both motives sound at the same time there is certainly a question of which form to give preference of origin. Even if they may be transformed through an inverse operation to arrive at the identity, in terms of process this becomes a causality dilemma. This approach is used once more in the fourth row when statement XV develops into segments of greater cardinality. By far, the most notable developmental feature of Motive D<sup>I</sup> is the abundance of expansions and contractions, the majority of which are parsimonious moves. One may also be alerted to a relatively even balance of both expansions and contractions. This ebb and flow of

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<sup>80</sup> If this was not prioritized, null transformations would clutter the network. Here, by null I mean an operation that is immediately inversed at its next opportunity bringing the object back to its identity. For example, a +1 change between statements I and II and a –1 change between statements II and III.

interval size assures a degree of similarity as no interval is continually expanded or contracted in more than two successive transformations. Taken as a group, the processes demonstrate Schoenberg's motivic objects as subjected to constant developmental moves, resulting in a state of uniqueness and variety present in almost all forms. Yet, when compared to their context, no transformation is so great that its relations to surrounding objects is too far removed or severed, assuring coherence out of similarity.

Figure 4.36: Motive D<sup>I</sup> Network (Pitch), Movement II, mm. 49 – 62

a) Score

Violin 2  
Viola  
Violin 1  
Violin 2  
Cello

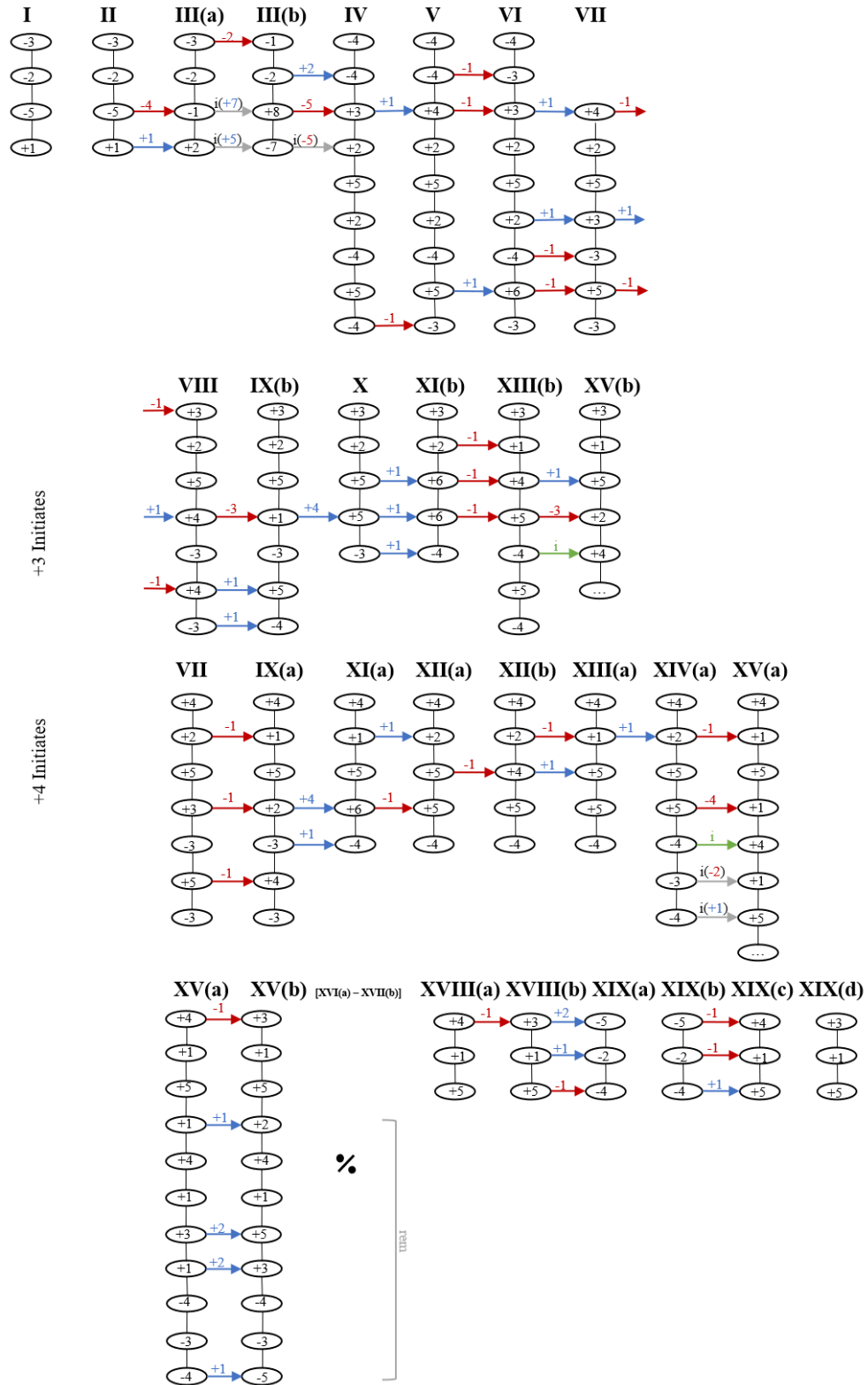
Violin 1  
Violin 2  
Viola  
Cello

Violin 1  
Violin 2  
Viola  
Cello

X = +3 Initiates  
X = +4 Initiates

... figure continued

b) Network (Pitch)



Motives D and D<sup>I</sup> have presented convincing examples of motivic development within the second movement. In the case of Motive D, both pitch and duration domains experiences transformations which, *pace* Collisson, amount to more than just arbitrary changes of thirds and fourths. Primary developmental devices used to vary the motive include fragmentation through cardinality-altering moves and alteration of the fragments by means of interval-altering procedures. Schoenberg's change-inducing mechanisms, although abundant, do not seem to conform to a strategic pattern.

### Movement III

The third movement is a critical section to examine when exploring Schoenberg's developmental process. Regarded as the development section for the entire work, Schoenberg himself sees this movement as the place "to expose my brain, through variations, rather than my heart."<sup>81</sup> Collisson and others maintain that the source of each motive presented at the beginning of the movement can be gleaned from the first and second movements.<sup>82</sup> The thematic resonance with the preceding movements can be seen in Figure 4.37, as excerpted from Collisson.<sup>83</sup> Collisson's work, as demonstrated in his "Motivic Progressions" example, displays the appearance of each of the four primary motivic forms in each of the variation sections. Inspecting his categorical labels of these developments, in Figure 4.38 we see altered forms of

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<sup>81</sup> Robert Nelson, "Schoenberg's Variation Seminar," *Musical Quarterly* 50/2 (1964): 143. Notably, in Nelson's writings Schoenberg also discuss the first and second movement development: "Schoenberg considered the variations to be the elaboration section of the entire quartet ...the scherzo second movement has no elaboration," he said; "the first movement has little" (ibid).

<sup>82</sup> See, for example, Collisson, 142; Neff, *The Second String Quartet*, 155.

<sup>83</sup> Collisson, 143.

each motive throughout the movement sections. As discussed previously, Collisson’s diagram does limit discussion on how Schoenberg manipulates the forms.<sup>84</sup>

Figure 4.37: Collisson’s Movement III Motivic Origin Summary, Reproduced from Collisson (Ex. 4.2.43)

The diagram illustrates the motivic origin summary for Movement III, showing how motives from different movements are related. The motives are labeled A, B, D1, C, and C2. The connections are as follows:

- Motive A (1st movt. bar 1 (vln 1)) is related to Motive B (1st movt. bar 12 (viola)) and Motive D1 (2nd movt. bar 14 (vln 1 & viola)).
- Motive B (1st movt. bar 12 (viola)) is related to Motive A (1st movt. bar 1 (vln 1)) and Motive D1 (2nd movt. bar 14 (vln 1 & viola)).
- Motive D1 (2nd movt. bar 14 (vln 1 & viola)) is related to Motive A (1st movt. bar 1 (vln 1)) and Motive B (1st movt. bar 12 (viola)).
- Motive C (1st movt. bar 58 (vln 1)) is related to Motive D1 (2nd movt. bar 14 (vln 1 & viola)) and Motive C2 (3rd movt. bars 44-5 (vlns 1&2) retrograde).
- Motive C2 (3rd movt. bars 44-5 (vlns 1&2) retrograde) is related to Motive C (1st movt. bar 58 (vln 1)) and Motive C1 (3rd movt. bar 5 (vln 2 & cello)).
- Motive C1 (3rd movt. bar 5 (vln 2 & cello)) is related to Motive C2 (3rd movt. bars 44-5 (vlns 1&2) retrograde) and Motive C2 (4th movt. bar 1 (cello)).
- Motive C2 (4th movt. bar 1 (cello)) is related to Motive C1 (3rd movt. bar 5 (vln 2 & cello)) and Motive C2 (3rd movt. bars 44-5 (vlns 1&2) retrograde).

<sup>84</sup> In fact, the limited accompanying text of just two paragraphs spends more space discussing the merger of Motives A and B to a “developed variation” form rather than investigating changes existing between statements. In general, Collisson does make the astute observations with his tool showing that the four motives “remoteness” increases as the work progresses, and that Motives C and D<sup>1</sup> are highly elaborated in this movement (something that he does not view as characteristic of the previous movements treatments). See Collisson, 143.

Figure 4.38: Collisson’s Movement III Variation Component Summary<sup>85</sup>

Var.	1	2	3	4	5	Coda
Bars	9 - 17	17 - 26	26 - 33	33 - 41	41 - 50	50ff.
<b>A</b>	Rep	Rep Fix1	Fix2 Fix2	Dev2 Fix1	Rep	Fix2 Fix2
<b>B</b>	Rep Fix1	Dev1 Dev1 Fix1	Fix1 Dev2(?)	Dev1 Fix1/Rep		Dev2 Dev2 Fix1
<b>D1</b>	Rep Dev1	Rep Fix2 Fix2	Fix1 Fix2	Dev3 Dev1 Dev3	Dev2	Dev2 Dev1 Dev1 Dev3
<b>C</b>	Rep Dev1	Dev1 Dev1	Dev1(X6) Dev2	Dev1	Dev1 Dev3 Dev2 Dev2 Dev2	Dev1 Dev1 Dev2 Dev1 Rep Dev3(liq)

Specifically speaking of this movement, Catherine Dale maintains:

... although the text may serve to inspire the character of the material and to determine the psychological shape of the movement, the musical syntax of *Litanei* relies more closely on abstract formal and motivic processes than on the succession of dramatic events.<sup>86</sup>

Dale continues, stating that “... the derivation of virtually every figure within the movement itself [is] from the motivic material”, a comment that reflects a generalized sense of continuity and coherence through the movement.<sup>87</sup> Within these statements lies a transformational promise, one of interrelated and logically connected material.

<sup>85</sup> Ibid., 144.

<sup>86</sup> Catherine Dale, “Schoenberg’s Concept of Variation Form: A Paradigmatic Analysis of ‘Litanei’ from the Second String Quartet, op. 10,” *Journal of the Royal Musical Association* 118, no. 1 (1993): 95.

<sup>87</sup> Ibid., 96.

A brief note before continuing centers on the score used for examination in this project. Within the edition, German nouns are not capitalized, going against the established language conventions. However, the edition does such to mirror the Stefan George source from which this text is drawn. As this is a convention of at least this edition of the score, I will keep the established practice and not capitalize the nouns within the text of the scores or their references.

The motivic treatment within this movement, as opposed to movements one and two, will be grouped into their variation sections and not through discussion of collected summaries of motivic alterations. Once again, as with earlier treatments of Motive B, the semitone  $\pm 1$  moves that exist as a cell identity will not be tracked due to prevalence of the segment forms.<sup>88</sup>

#### *Variation I (mm. 9 – 17)*

#### Motive A

In Collisson's analysis of Motive A, he asserts that within Variation I only repetition of the material occurs. This is perhaps a logical result of the viola's mm. 1 – 3 and the violin 1 repetition in mm. 9 – 11. However, the vocal entry (m. 14) and its parallel pitch and rhythm content in the violins presents a Motive A form which is not purely a duplication. Figure 4.39 demonstrates the vocal passage in mm. 14 and 16 as compared to the opening m. 1 form of Motive A. From the network, one can observe extensive interval and order alteration. The Switch of end and beginning interval segments as well as parsimonious expansion and excessive contraction demonstrate relationships to Motive A's original form.<sup>89</sup> The duration domain maps

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<sup>88</sup> If one wishes to understand the prevalence of such a move, consultation Dale or Collisson's writings proves helpful.

<sup>89</sup> The contraction of  $-6$  in this case may be observed as varying the motive to produce a resultant relationship, that of  $\langle +1, -1 \rangle$  which has affinities to Motive B. If this is taken as the motivation, it would be clear

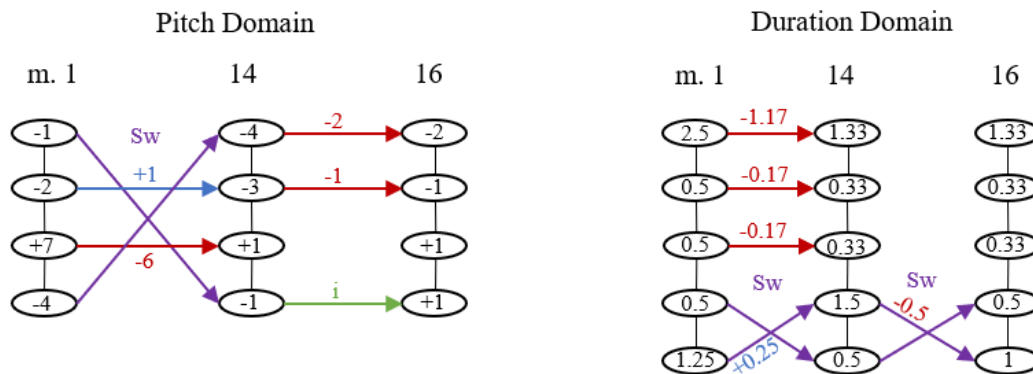
similar procedures, featuring switches and interval-altering transformations. Here, as elsewhere within the movement, the motives are not simply repetitions, as convenient as this descriptor may appear.

Figure 4.39: Motive A Score and Network (Pitch), Movement III, mm. 1 – 16

a) Score



b) Networks



Here, I believe Collisson might have overlooked how this variant would align with his Fix1 category where “contour + rhythm, + interval or + boundary” remain reminiscent of a previous grouping. For example, the <-, -, +, -> contour exists as the first segment of each statement and the duration profile, although varied, declares the similar long-short-short initial profile.

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that Schoenberg is attempting to vary motives through integrated elements within each other, establishing this practice prominently in the vocal line from the outset.



## Motive D<sup>I</sup>

Motive D<sup>I</sup> in the third movement is drawn from mm. 15 – 16 of the second movement. Significant alteration occurs in its first formation within the third movement as the initial pitch interval of <+3> has been removed, the ascending quartal figure has an increased rhythmic profile, and it now includes a repetition of the final leaping gesture.<sup>90</sup> These differences, as well as several similarities, can be clearly seen in Figure 4.40.

Figure 4.40: Motive D<sup>I</sup> Movement Comparison (II v. III)

Motive D<sup>I</sup>, Second Movement, mm. 14 – 17

Motive D<sup>I</sup>, Third Movement, mm. 2 – 4

The development of D<sup>I</sup> in the first variation is limited to a small number of statements due to the short length of the variation. Within the section, as bracketed within the score of Figure 4.41, one can recognize recurring similarities of Motive D<sup>I</sup>.<sup>91</sup> Figure 4.41 compares the forms of Motive D<sup>I</sup> and displays the transformational paths such as parsimonious and proximal moves between statements II and III as well as an inverted Uneven Split (UES). Statement III(b), acting as violin 1 support for the vocal line, continues this split function as it subdivides the final two terms of statement III(a) (which is perhaps heard as primary) through further Uneven Splits.

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<sup>90</sup> One can also note from Schoenberg's annotations that he stops the motive in m. 4, cutting the phrase short of the final sixteenth-quarter segment.

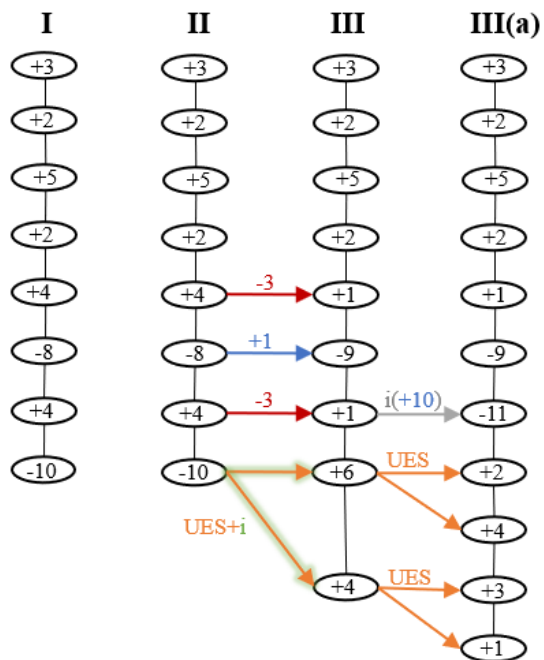
<sup>91</sup> Within this section, Collisson records a repetition and Dev1 marking (Contour, Interval and Boundary similarities) as the primary relations, presumably referencing m. 15 – 16 for Dev1. I concur with this observation; however, the intervals do deviate slightly, and the boundary is not achieved through the same mechanism. My model not only confirms Collisson's reporting but also demonstrates the inherent passage transformations.

Figure 4.41: Motive D<sup>I</sup> Score and Network (Pitch), Movement III, Variation I

a) Score

The musical score consists of three staves: Voice, Vln I, and Vla. The key signature has three flats (B-flat, E-flat, A-flat). The score is divided into measures 3, 12, 15, and 16. Measure 3 shows a triplet in the Vla staff. Measure 12 shows a triplet in the Vln I staff. Measure 15 contains the lyrics 'die mich um du - stert, ein tret ich' with a triplet in the Voice staff. Measure 16 shows a triplet in the Vln I staff. The score is marked with 'I', 'II', 'III', and 'IIIa'.

b) Network (Pitch)



Variation II (mm. 17 – 26)

Motive A

Motive A is heard in further varied formations within Variation II. The relationships highlighted in Figure 4.42 demonstrate an interpretation of the unfolding. From the figure, observe how the complex transition from statement III to IV both rotates the segment, switches elements (2,3), and further inverts an int-node. Statement V can be more appropriately compared to its “like”-statement I, adding a new initiating int-node to the string and modifying the intervallic space of the final two terms (excessive moves). Although statement V displays a high degree of alteration (proximal and distal moves), as Collisson notes, the contour remains the same resulting in Motive A identifiers.

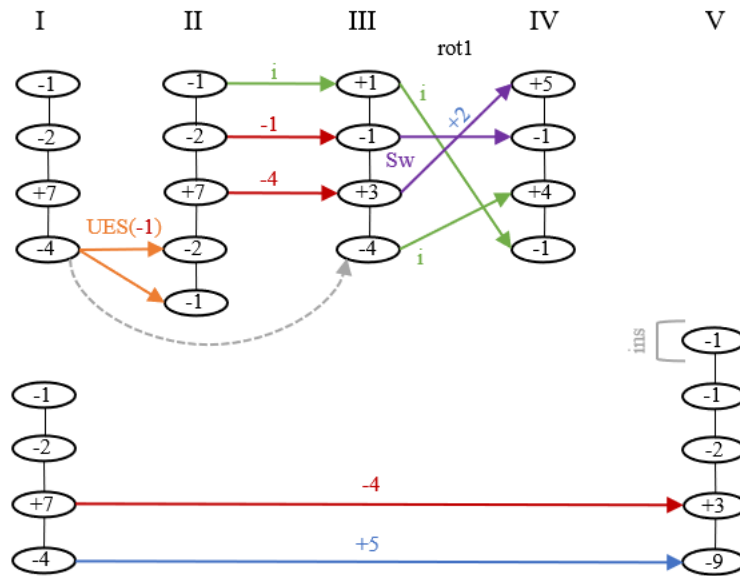
Figure 4.42: Motive A Network (Pitch), Movement III, Variation II

a) Score

The musical score for Variation II, Movement III, shows Motive A network in Voice and Violin 2 staves. The score includes measures 17-26. Motive A statements I, II, III, IV, and V are marked with brackets above the notes. The lyrics are: Lang war die rei - se, matt sind die glie - der, leer sind die schrei - ne.

... figure continued

b) Network (Pitch)



Motive C

In order to identify Motive C within Variation II, one must attune to the violin 1 stream as expressing two simultaneous statements. That is, every first pitch of the two-note groupings executes one path while the second pitch of the group sounds another. This relationship can be observed in Figure 4.43 where “Stream1” corresponds to the first note of the two-note group (upward stem) and “Stream2” the second pitches of the two-note group (downward stem).<sup>92</sup> Uniquely, and apart from the general interval-altering moves, Schoenberg has inserted int-nodes (elements 5 – 8 of the streams) to extend the cardinality of the motive. This is in stark contrast to the use of Split transformations often executed elsewhere. Furthermore, one may also notice the

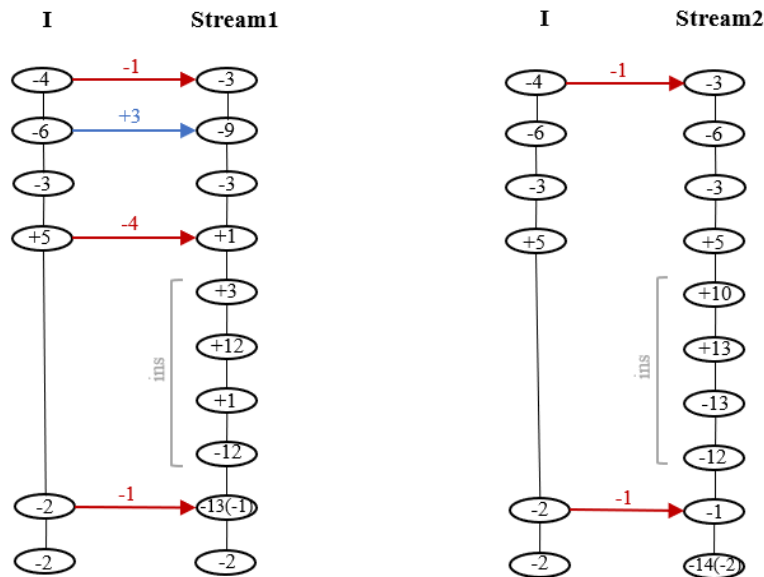
<sup>92</sup> Int-node 9 within both Stream1 and Stream 2 have both the pitch-space and pitch-class space move in the diagram. I have added the pc move in brackets as I believe here, more so than anywhere else in the analysis, that Schoenberg is moving beyond an octave for emphasis and that the move itself is not meant to be a disjunct developmental difference; rather, I believe that this is an example where pitch-class space may be better used to articulate why the move is still developmentally subtle, despite the auditory leap on the surface. Of course, I have indicated both within this passage only as the distinct products produce varying conceptual results, dependent on listening experience.

rhythmic profile of the motive has transformed to become even, with exclusive employment of duration value <0.33>. This fractured, double-presentation, of Motive C from mm. 21 – 25 is resolved through a viola and cello unison statement in mm. 25 – 26.

Figure 4.43: Motive C Score and Network (Pitch), Movement III, Variation II, mm. 21 – 25

a) Score

b) Network (Pitch)



Motive D<sup>I</sup>

Motive D<sup>I</sup> has numerous, fragmented iterations throughout Variation II. Initiating the motive, the cello reintroduces the theme in m. 19, exactly as written when it first appeared in the

movement. After two beats, Schoenberg introduces a modified inversionsal form in the viola (m. 20). Although one could move between the instrument lines, comparing statements via attack-onset (as has been done elsewhere in the present analyses), this passage is more dialogic, with each instrument asserting their own line. Figure 4.44 demonstrates such pathways.<sup>93</sup> Notice how the moves between the statements exert largely parsimonious and proximal expand and contract transformations. In the cello, for example, all moves are parsimonious ( $\pm 1$ ). Separating the instrument lines, I treat the tremolo articulation of the violin 2 voice (mm. 22 – 25) as independent—but related—in essential pitch-interval moves to a fragmented Motive D<sup>I</sup> line. This tremolo attack, marked *deutlich* (distinct, clear), briefly emerges above the viola and cello lines acting mainly as a timbral variation.

Figure 4.44: Motive D<sup>I</sup> Network (Pitch), Movement III, Variation II

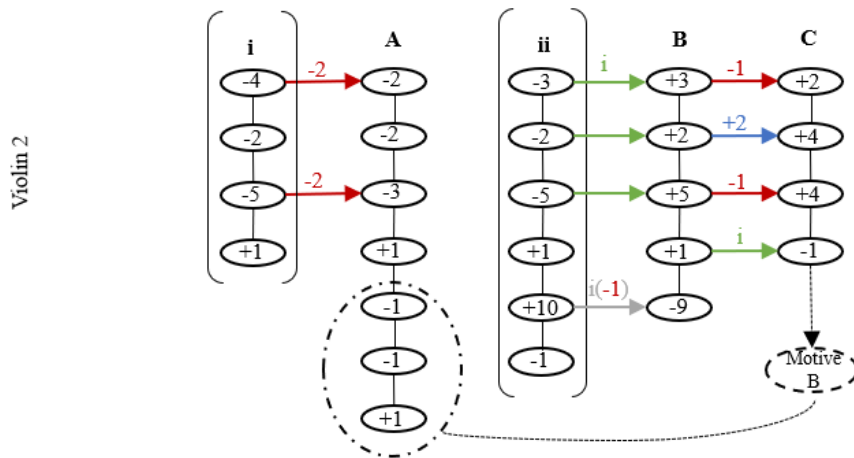
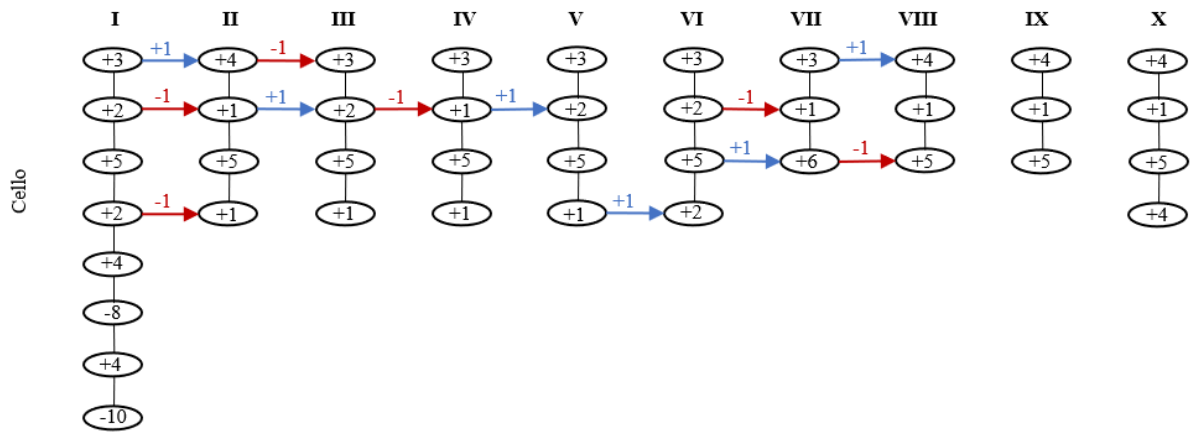
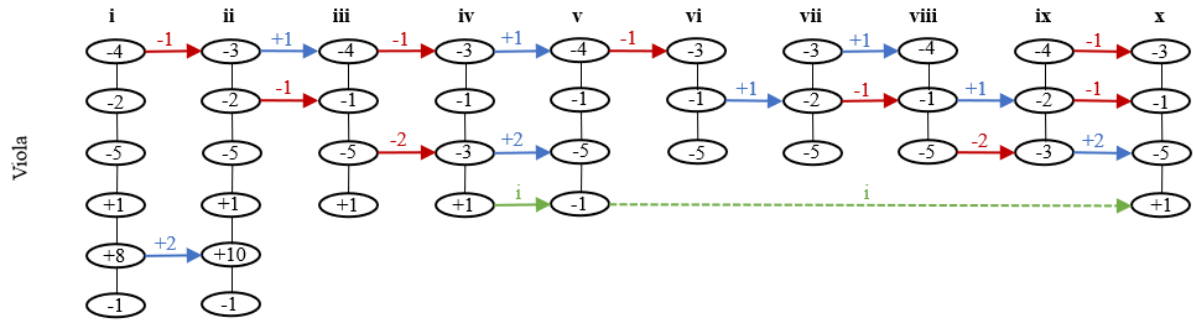
a) Score: Primary Alterations, viola and cello

The image displays three systems of musical notation for Viola and Cello. The first system shows the Viola and Cello parts. The second system shows the Viola and Cello parts with a tremolo articulation in the Viola. The third system shows the Viola and Cello parts with a tremolo articulation in the Cello.

... figure continued

<sup>93</sup> Violin 2's tremolo segments can be observed within the relevant full score.

b) Network (Pitch)



\*Violin 2 passage from m. 22 – 25

Variation III (mm. 26 – 33)

Motive A

Contrapuntal statements of Motive A open Variation III (m. 26). Segmentation of this passage aligns with Schoenberg's phrase markings. Once again, the overlapping statements make it difficult to determine which paths to track (whether attack-onset or instrumental line). Given the density of the writing, I have opted to compare individual instrumental lines as their continuity suggests a more natural grouping than segment attack-onset. Readers may, at their discretion, compare the temporal sequence as I have used Roman numerals and network spacing to reveal attack order of the motivic statements. Figure 4.45 demonstrates the parsimonious and proximal pitch space alterations that occur within Motive A's Variation III. From the interval content and the adherence to the Motive A rhythmic scheme, these segments are clearly related, yet variations between each attack work to override what would otherwise be repetitions at various transpositions.

Figure 4.45: Motive A Network (Pitch), Movement III, Variation III

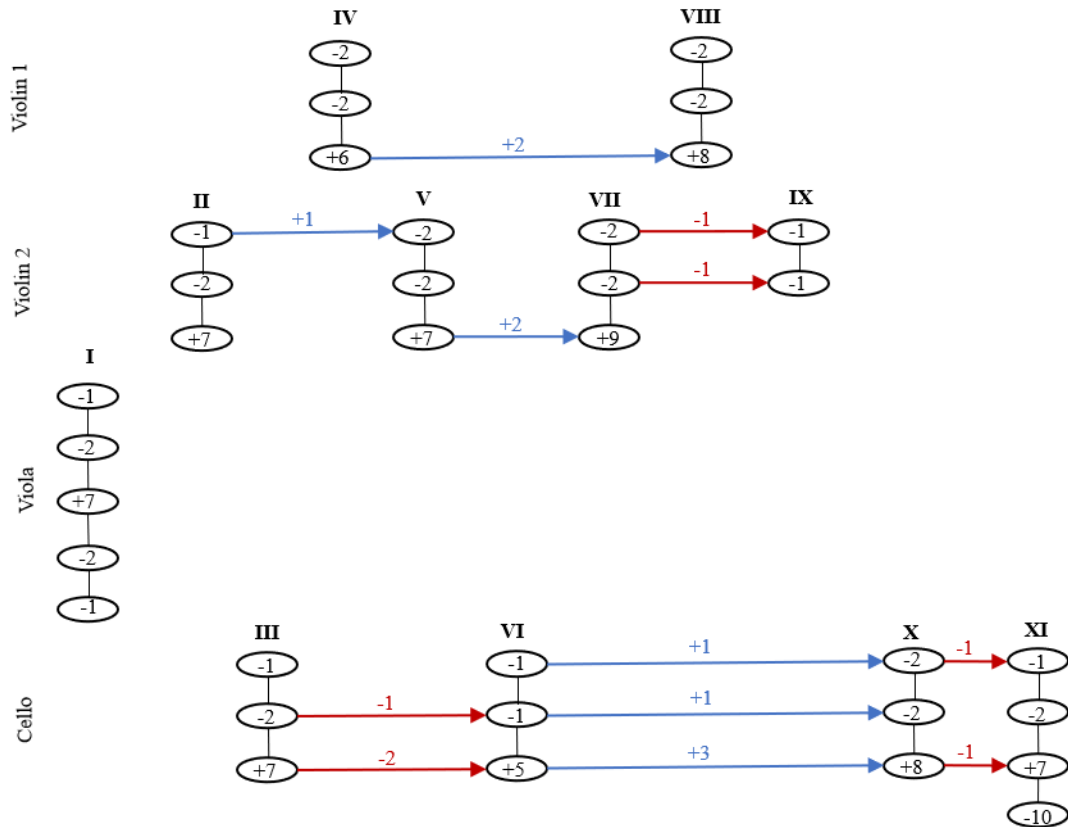
a) Score

The image shows a musical score for Variation III, Movement III, starting at measure 26. It features four staves: Violin I, Violin II, Viola, and Cello. The key signature is three flats (B-flat, E-flat, A-flat) and the time signature is 3/4. The score is annotated with Roman numerals I through XI, indicating different statements of Motive A. The Violin I staff has markings IV and VIII. The Violin II staff has markings II, V, VII, and IX. The Viola staff has marking I. The Cello staff has markings III, VI, X, and XI. The notation includes various rhythmic values and accidentals, with some notes beamed together to show the flow of the motive across different instruments.

... figure continued



b) Network (Pitch)



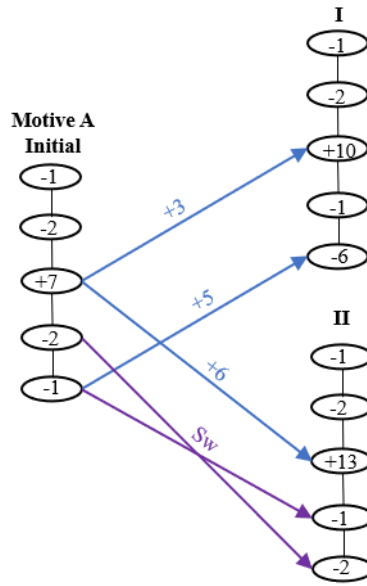
The vocal line in Variation III, *Durstende zunge darbt nach dem weine* [My thirsting tongue yearns for the wine] starting in m. 29, further varies Motive A in a new manner through extension of interval sizes. The additions of distal interval expansions show a development which may be seen as related to the yearning expressed within the text. The statements also present more of a through-composed segment when juxtaposed to the string passage of the same Variation (just examined). Figure 4.46 shows vocal line statements I and II in mm. 29 – 31 as compared against the initial Motive A form. Within the figure, one can observe the inner leap expanding by +3 in the first iteration and +5 in the second. Within the same leap segment in Statement II, one can see that the space is almost double the primary reference, +6 to +13.

Figure 4.46: Motive A Network (Pitch), Movement III, Variation III (Voice)

a) Score



b) Network (Pitch)



### Motive C

Motive C in Variation III accompanies the vocal line through tremolos in the upper register of the violins. Uniquely, variation between segments is perhaps underdeveloped with only two intervallic changes ( $\pm 1$ ). Here, Schoenberg principally transposes statements. Upon closer inspection, the levels of transposition reflect the intervallic unfolding of initiating motivic pitches. That is, the starting pitch relationships between the statements repels the main statement itself:  $\langle -4, -6, -3, +5, -2 \rangle$ . Thus, although the statement remains static within transformation process of the parts themselves, the constituent elements give rise to the

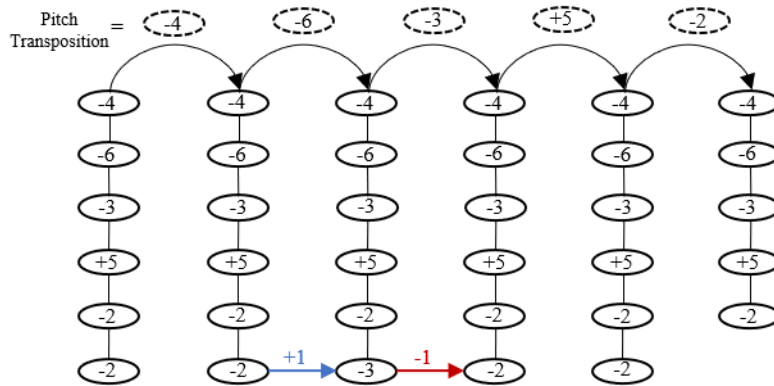
transpositional relations between groupings. This finding is consistent with Dale’s analysis of the same passage and can be examined in Figure 4.47.<sup>94</sup>

Figure 4.47: Motive C Score and Network (Pitch), Movement III, Variation III

a) Score

The musical score consists of two staves, Violin 1 (Vln 1) and Violin 2 (Vln 2). The key signature has three flats (B-flat, E-flat, A-flat) and the time signature is 3/4. The score is divided into two systems. The first system contains measures 29 and 30. The second system contains measures 31, 32, 33, and 34. The notation includes eighth and sixteenth notes, rests, and triplets indicated by a '3' and a bracket. The music is written in a complex, rhythmic style characteristic of Schoenberg's Variation Form.

b) Network (Pitch)



<sup>94</sup> See Dale, “Schoenberg’s Concept of Variation Form,” 100.

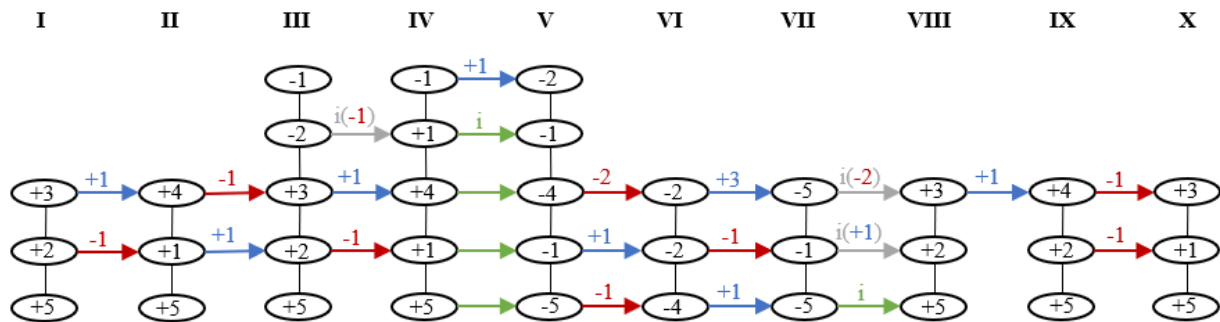
## Motive D<sup>I</sup>

Variants of Motive D<sup>I</sup>, identified largely by its characterful final leaps favouring quartal chord articulation, are prominent in the viola in Variation III. Figure 4.48 displays the consistent development of the motive.<sup>95</sup> The section reveals a prominent use of inversion, as well as parsimonious and proximal transformations.

Figure 4.48: Motive D<sup>I</sup> Network (Pitch), Movement III, Variation III

### a) Score

### b) Network (Pitch)



<sup>95</sup> Such varied content is not easily connected through set-class ascriptions or other collections-based single-product relations (most similarity measures). Though it is possible to discuss inclusion and similarity relations between classes, the abstraction makes such a process difficult to translate into practical, or surface-level, understandings.

Variation IV (mm. 33 – 41)

Motive A

Motive A modification within Variation IV is pervasive, presented as a dialogue between the violin 2 and viola. Instrumental interplay emerges from a linking phrase with Variation III (violin 2, mm. 32 – 33) and further sounds within the voice (mm. 36 – 38) and cello (mm. 36 – 37). Through duplication, Schoenberg utilizes the beginning int-node element of  $\langle -1 \rangle$  repeatedly to create longer (higher cardinality) objects. Moreover, in statement IV he adds a  $\langle +7 \rangle$  leap which is then returned through an equal distance element ( $\langle -7 \rangle$ ), “back-to-original” as it were. This is in lieu of his previous practice in earlier motives where he does not often use identical terms return the passage to the former interval structure. These developed end-segment elements further reveal the embedded Contour Adjacency Series (CAS) of  $\langle -, -, +, - \rangle$  within the final four terms, characteristic of Motive A. These features are represented in Figure 4.49.

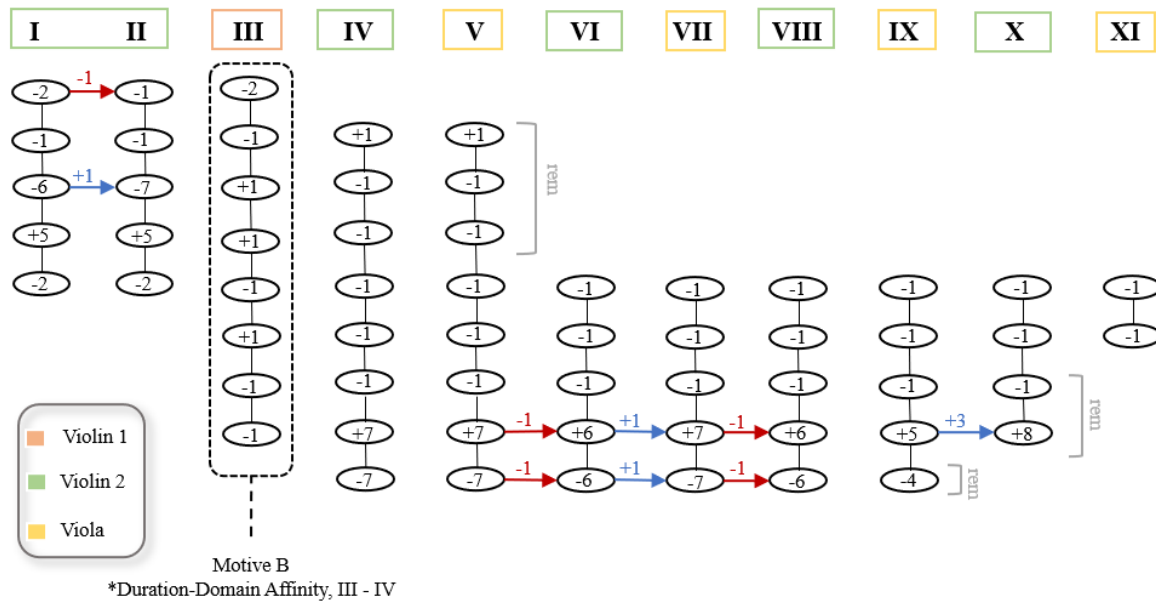
Figure 4.49: Motive A Network (Pitch), Movement III, Variation IV (Strings)

a) Score

The image shows a musical score for Violin 1, Violin 2, and Viola. The score is divided into two systems. The first system covers measures 32-33, and the second system covers measures 34-37. The key signature is three flats (B-flat, E-flat, A-flat) and the time signature is 4/4. The score is annotated with Roman numerals I through XI, indicating different statements of Motive A. Brackets and arrows connect these statements across the different instruments, showing how the motive is modified and interwoven. Triplet markings (3) are present throughout the score. The score is presented in a standard musical notation with treble clefs for Violin 1 and 2, and a bass clef for Viola.

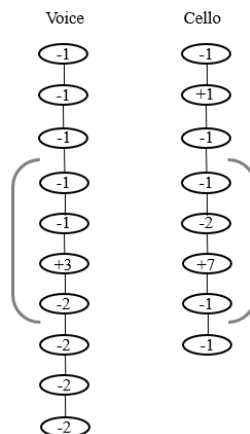
... figure continued

b) Network (Pitch)



Schoenberg employs similar developmental ideas to the vocal and cello lines of Variation IV as seen in Figure 4.50. One of the primary differences between the voice and cello groupings as compared to the violin 2 and viola (Figure 4.49) is the rhythmic continuity within the violin 2 and viola. Specifically, compare these to the more diverse and longer rhythms in the vocal part (mm. 36 – 38). Observe, once again, the persistence of the CAS <-, -, +, -> as readily excerpted from a middle segment that is clearly related to Motive A’s initial structure (bracketed in figure).

Figure 4.50: Motive A Network Comparison (Pitch) for voice and cello, Movement III, Variation IV (m. 36)



## Motive C and D<sup>I</sup>

Regarding Motive C, rhythmic variation is the main feature differentiating this iteration from previous statements. A dotted rhythm now articulates the arpeggiation in a new long-short pattern. This configuration is not itself extensively transformed within the short variation apart from the final element value. Motive D<sup>I</sup> is likewise only momentarily present and most noticeable within the voice between mm. 39 – 41. The intervallic profile of the passage clearly demonstrates the Gestalt we have come to hear as Motive D<sup>I</sup>, the characteristic leaping quartal gesture. Tracking this form here adds little to the existing discussion; however, I have excerpted the passage for inspection in Figure 4.51.

Figure 4.51: Motive C Score, Movement III, Variation IV



### *Variation V (mm. 41 – 50)*

In Variation V, Motives C and D<sup>I</sup> submit to transformational processes that render their identity somewhat obscured due to the highly developed nature of forms. Deciding on motivic affiliation becomes difficult as pitch-interval profiles begin to merge, suggesting that Schoenberg may have arrived at a true “developing variation” where modifying procedures have resulted in segments that are unique and ontologically fuzzy. The clearest motivic material within the section is almost exclusively related to Motive C, examined briefly below.

## Motive C

Collisson suggests many developed forms of Motive C operate within this variation.<sup>96</sup> In fact, this is true to the extent that even by inspecting the extensive developed forms within the variation, one can discern no distinct full statement of Motive C as it has existed previously. This remains the case until a cadential punctuation concludes the variation in m. 49 with a more typical Motive C expression. It is evident through slight abstraction, however, that Motive C's general Gestalt does manifest within the variation. For example, content such as dotted ascending gestures, leaps in one direction followed by steps in the opposite (appoggiatura-like) suggest Motive C-“like” shaping's. Some of the clearest developments are found within statements between mm. 44 – 48 where Motive C ideas from the first movement are apparent, as shown in Figure 4.52.<sup>97</sup> Within Figure 4.52 statements I – X show transformations in the form of interval expansions and contractions as well as cardinality changes through addition and removal.<sup>98</sup> The remainder of Variation V material does not demonstrate substantial variation structures that have not been employed previously.

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<sup>96</sup> See Collisson's generic variation chart, Figure 4.38.

<sup>97</sup> Collisson's large *Grundgestalt* chart insert demonstrates the inversional connection of C. Moreover, Collisson connects it to the fourth movement opening arpeggiation.

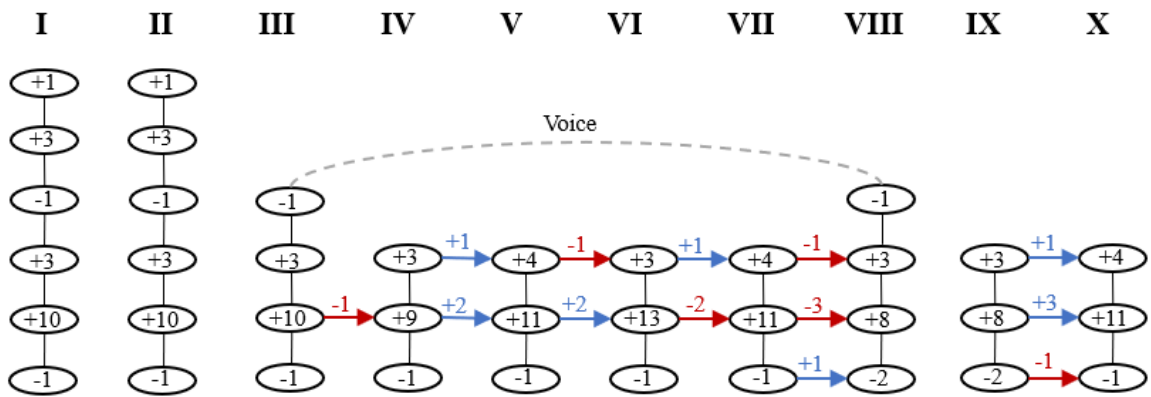
<sup>98</sup> Transformations exist no matter if tracking instrument or attack-onset. Here, I have displayed attack-onset given the back-and-forth quality.



Figure 4.52: Motive C Score and Network (Pitch), Movement III, Variation V

a) Score

b) Network (Pitch)



*CODA/Postlude (mm. 50 – end)*

Schoenberg maintains that there is both a coda and a short instrumental postlude within this movement.<sup>99</sup> Regardless of the formal ascriptions, Catherine Dale understands the final sections as abandoning the theme and variations process as established (variations one through five). Dale still remains convinced, however, that motivic variation is the primary process.<sup>100</sup> I concur that the content of mm. 50 – 77 is consistent with motivic working-out and is imbued with fragmentary and varied forms of previous motivic elements. Many of these developed forms have sources or exist elsewhere in the third movement. Within the instrumental parts dynamics, texture, and register become audibly foregrounded functioning more as accompaniment to the climatic vocal declamation. Given the fragmentary nature of the passages, tracking the motivic relations in the strings becomes more of an exercise on segmentation than on strictly transformational operations. It is possible to relate the forms within the section to previous material; however, I will focus solely on the vocal line as it exhibits suggestive doublings of the string parts and clearly demonstrates connections between this section and movement.

Within Figure 4.53 the annotated vocal line displays the motivic origins of the sung material. The first Motive A segment shows that Schoenberg has taken the developmental extension heard in Variation IV and applied it to the vocal line, he then removes much of the cardinality-altering additions for the second Motive A sounding. The third Motive A material <+1, +1, -5> (m. 57), inverts the typical contour of the segment, while the last Motive A vocal statement (and last vocal utterance) connects unquestionably to the first measures of the entire piece with a slightly altered form, <-2, -2, +6, -1>. Motive B, which has been largely overlooked

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<sup>99</sup> Neff, *The Second String Quartet*, 302.

<sup>100</sup> Dale, "Schoenberg's Concept of Variation Form," 118.

in this analysis, is heard in mm. 58 – 62. Here again, one can compare these statements directly with viola statements from the first movement, mm. 12 – 16. Motive C segments, heard in mm. 54 – 56, present the familiar associated pitch material and a developed durational series.

Figure 4.53: Motivic Associations in Vocal Line, Movement III, Coda

The image shows a musical score for a vocal line in Movement III, Coda. The score is written in 4/4 time and features a key signature of three flats (B-flat, E-flat, A-flat). The lyrics are in German. The score is divided into four systems, each with a treble clef and a key signature of three flats. The first system starts at measure 50. The lyrics are: "Leih dei - ne kuh - le, lo - sche die bran - de, til - ge das hof - fen sen - de das". The second system continues the lyrics: "licht! Glu - ten\_ im her - zen lo - dern noch of - fen in - nerst im". The third system continues: "grun - de wacht\_ noch ein schrei... To - te das\_ seh - nen schlie - sse die\_ wun - de!". The fourth system concludes with: "nimm\_ mir die\_ lie - be gib\_ mir dein gluck!\_". Above the first system, a bracket labeled 'A' spans measures 50-52, and a bracket labeled 'C' spans measures 53-55. Above the second system, three brackets labeled 'C' span measures 56-58, 59-61, and 62-64. Above the third system, brackets labeled 'A' span measures 65-67, 'B' spans measures 68-70, and 'B' spans measures 71-73. Above the fourth system, a bracket labeled 'X' spans measures 74-76, and a bracket labeled 'A' spans measures 77-79. Measure numbers 50, 60, and 60 are indicated at the beginning of their respective systems.

The climax of the vocal line (marked X), *nimm mir die liebe* (mm. 63 – 66) presents material that can largely be heard as extraneous to forms heard throughout the movement and, significantly, the entire work. The pitch content  $\langle -7, +4, +5, +1, -25 \rangle$  is not easily related to pitch intervals presented thus far. The individualistic character of this content suggests possible text-music relations. Here, I believe that the unfamiliarity of elements relates specifically to the “away” and removed idea of something being gone. This is starkly contrasted to the following

material (*gib mir dein glück* [give me your happiness]) which presents as something more familiar; here, suggested through a restatement of Motive A which has been almost ever-present and so thoughtfully treated and present throughout the work.

As we have observed in analysis of the motivic workings, and in line with Collisson, “the remoteness of all four motive-forms can be seen to increase as the [third] movement unfolds.”<sup>101</sup> Erich Schmid continues this line of thinking, maintaining that despite the rigour and compactness of material, within the third movement connections are even more concealed, achieving an appearance of free flux.<sup>102</sup> This concealment, or perhaps better labelled abstraction, will take center-stage and come to define the operating parameters of motivic connections within the fourth movement.

#### Movement IV

The well-known fourth movement, with its dramatic and evocative “Ich fühle luft von anderem planeten”, presents musical material that further demonstrates Schoenberg’s advancement of a compositional practice centred on motivic relations. Setting another poem by Stefan George, this movement liberates intervallic relationships from more traditional harmonic complexes to an emphasis on functional motive-sets. The implementation of this compositional thinking is hitherto unseen within Schoenberg’s early period. Indeed, the fourth movement largely treats interval cells more as abstract collections, pushing the movement closer to the realm of set-theory relations.<sup>103</sup>

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<sup>101</sup> Collisson, 143.

<sup>102</sup> Neff, *The Second String Quartet*, 290: See also Erich Schmid, Excerpt from “A Study of Schoenberg’s String Quartets, II”, *Schweizerische Musikzeitung* 74 (1934).

<sup>103</sup> In their thesis, Kim analyzes the entire movement in this approach. As can be imagined, examining a transitional piece through such an advanced and abstract lens has both positive and negative results. See Kyung-Eun



Schoenberg's own program notes further discuss motivic primacy, writing that the "... middle section elaborated fractions of previous thematic material, continuously illustrating, with *leitmotival* [sic] technique."<sup>105</sup> However, although Schoenberg argues such a position, no overt examples exist within his work to explore these connections. As a result, despite directing the listener and analyst to attune to such features, it is up to the individual to determine the relations.<sup>106</sup>

Treating the movement as they have other movements of this work, Jalowetz and Zemlinsky dedicate a substantial number of examples (exs. 38 – 55) of their listening guide to this section. Demarcating several relations, the figures and statements excerpted for their readers reference are difficult to trace back to specifics within the score. As a result, the reader is left to determine what elements they are motivically comparing for themselves, creating a certain ambiguity. Their analysis, to its merit, discusses several connections between developed forms of motivic segments. In their examples even cursory glances can discern similarities and differences to the score material.

### Harmonic Perspective

The harmonic perspective, as observed in the writings of Kim, Annicchiarico, and Neff present an opportunity to examine a more vertical interpretation of the movement.<sup>107</sup> Kim and

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<sup>105</sup> Neff, *The Second String Quartet*, 304.

<sup>106</sup> Writing decades after-the-fact, it is unclear if Schoenberg is trying to reconcile a later compositional development and direction (set-class, twelve-tone, etc.) in this description. In any case, it is apparent that motive segments, however they exist in the movement, are of primary importance to Schoenberg's compositional practice within the fourth movement.

<sup>107</sup> See Michael Annicchiarico, "A Study of 'Entrückung': From the Second String Quartet of Arnold Schoenberg, Op. 10," PhD Dissertation, Brandeis University, 1994; Kyung-Eun Kim, "The Harmonic Language of Arnold Schoenberg's Second String Quartet, op. 10" (MA thesis, McGill University, 1990); Neff, *The Second String Quartet in F-Sharp minor, Opus 10*, ed. S. Neff, trans. G. Chorley (New York: W.W. Norton & Company, Inc., 2006).

Neff offer the greatest contribution in this area, with Kim collecting interval cells and ascribing set-class nomenclature to their forms. Kim's approach recognizes the employment of intervallic patterns, but largely relates entire collections to one-another and maintains that "the harmony is a result of exhaustive motive working ... featur[ing] their own distinct pitch collections."<sup>108</sup> Lastly, Kim asserts that the pitch content of "atonal motives" function as the main structural element.<sup>109</sup> While I agree with much of the context of Kim's approach, utilizing set-class labels seems premature for this work, as Schoenberg's musical language was only beginning to form such products and did not yet exist in the overt execution-phase of this new practice.

As discussed previously, Neff discusses specific harmonic collections within this movement. For example, the *Paradiso* chord [016] in Neff's view comes into a functional role within the harmonic language of the fourth movement. Pitch cycles are also discussed as well as timbral elements of the collections.<sup>110</sup> Neff further spends time discussing the evasion of triadic tonality and Schoenberg's avoidance of traditional functional elements.<sup>111</sup> In all, motivic forms in their phrasal or melodic functions are overlooked and a preference for harmonic interactions is advocated.

## Analysis

Evidently, shortcomings are present within any one perspective within the existing literature. In its transitional function, bridging Schoenberg's early motivic and harmonic compositional techniques with his forthcoming "atonal" works, the fourth movement presents

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<sup>108</sup> Kim, 93 – 94. Support for such a perspective is garnered through Jim Samson's work (1977) which references the movement's "predominantly non-tonal musical language."

<sup>109</sup> Kim, 94.

<sup>110</sup> See Neff, *The Second String Quartet*, 174.

<sup>111</sup> *Ibid.*, 179 – 184.

challenges to many methodological paradigms, including the present approach. This section will mainly focus on transformations of Motive C and its continuance from the previous movements as it is developed into motivic subsets which continue through their own developmental paths. Formal ascriptions divide the analysis between introductory, expositional, and developmental areas of the movement.

With timbral expressiveness permeating the registral changes of Schoenberg's opening presents a platform for a consistent interval pattern. Collisson maintains that much of this opening material is related to Motive C, and I share this position.<sup>112</sup> Figure 4.55 demonstrates Motive C as it exists in several locations across the work and offers visual cues for intervallic similarity (pitch intervals, contour, rhythms, cardinality, etc.).

Figure 4.55: Motive C Origins for Movement IV Material

Movement   Measure	
I   58	
III   29	
III   38	
IV   1	
IV   3	

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<sup>112</sup> Collisson, 145 – 150.



As observed in Figure 4.55, there are clear similarities to previous motivic soundings. In fact, a significant portion of the material used within the fourth movement exhibit some relation to Motive C (as Collisson generally explores). Investigating the development of such motivic content, I have opted to define sub-groups of Motive C statements. I excerpt such structures because they become largely independent of one-another within this movement. Tracking these strands of developed forms results in more accurate relations within—and between—local passages.<sup>113</sup> Ontological questions about the original “Motive C”-ness of any given statement or segment may arise as a result of this scheme, however, I believe the analytical positives outweigh the negatives. I propose five forms of developed Motive C material within this movement as defined by their intervallic components, shown in Figure 4.56. Each of these segments will be examined in due course.

Figure 4.56: Motive C Subforms, Movement IV

**Motive C(arp)**



**Motive C(arc)**



**Motive C(leap)**



**Motive C(st)**



**Motive C(osci)**



<sup>113</sup> In contrast to back-relating segments to the general Motive C soundings elsewhere. After all, the primary concern here is to investigate the developmental progression itself through whatever varied pathways arise. Breaking free from one version of Motive C permits fruitful avenues of object comparisons.

Introduction (mm. 1 – 15)

The opening measures of the fourth movement sound string arpeggiations of Motive C(arp), expressing pitch and duration segments that remain largely unchanged. Evidently, Schoenberg does not wish to push developmental procedures as he sets the stage for the forthcoming non-traditional material. After over twenty statements, and as shown in Figure 4.57, Schoenberg begins to develop int-nodes.

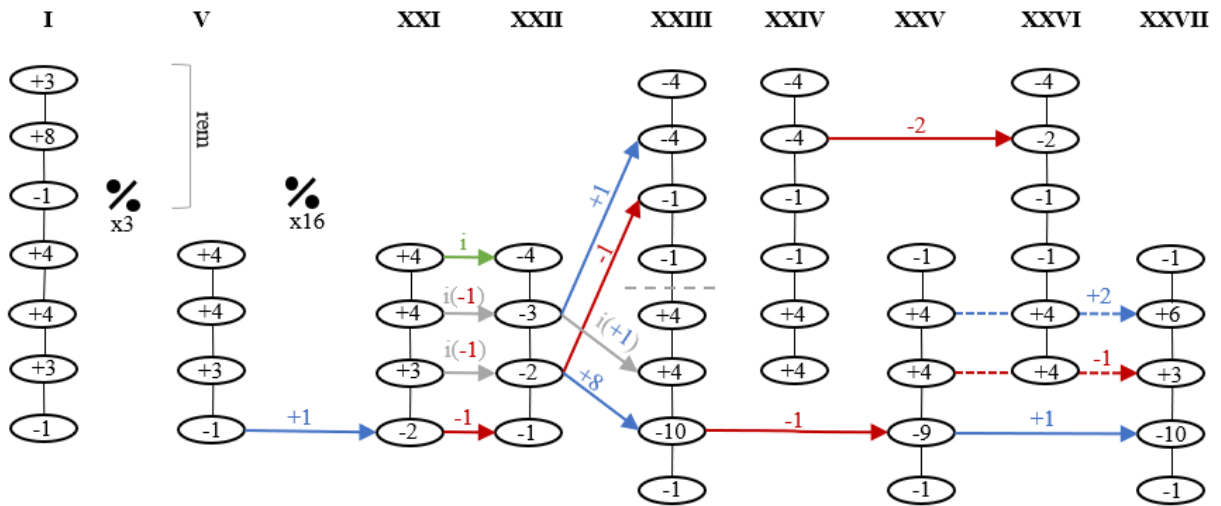
Figure 4.57: Motive C(arp) Network (Pitch), Movement IV, Introduction

a) Score

The image displays a musical score for the introduction of the fourth movement, marked "Sehr langsam (gehende Achtel)". The score is written for Soprano and strings. The Soprano part is marked "mit Dämpfer" and "ppp". The string parts are also marked "mit Dämpfer" and "ppp". The score shows the initial arpeggiations of Motive C(arp) in the strings, with the Soprano part providing a melodic line. The score is divided into measures, with measure numbers XXII, XXI, XXIV, XXV, XXIII, and XXVI indicated. The string parts are marked "pp" and "etc." at the end of the section.

... figure continued

b) Network (Pitch)



For example, he expands an interval in statement XXI while also inverting and contracting pitch intervals in successive statements. Statement XXIII, presented in violin 2 (m. 5), then acts as source material for passagework between violin 1 and 2 (see statements XXIII – XXVII). As demonstrated in Figure 4.57, alterations are largely parsimonious in this opening section.

Starting in m. 6, the violin 1, viola, and cello soundings relay new material. These motives can be derived from the viola and cello passages in m. 3. Figure 4.58 displays the intervallic transformations and relational affinities. Through rotations, inversions, and interval-altering moves we can connect relational pathways, modelling links that are otherwise overlooked when hierarchal harmonic or set-class lenses are employed. Within Figure 4.58 the networks demonstrate how the longer segment in m. 3 can be fragmented into Motive C(Leap) and Motive C(osci) gestures (which are unique enough to create aural disjunction and therefore separation) and how Motive C(arc) emerges as a further transformation of the Motive C(Leap) form. Further motivic associations arise through the similarity of the rhythmic profile of m. 3's

viola and cello lines utilizing the final rhythm of Motive D<sup>I</sup> from the second and third movements. Already in the opening phrases of this work, Schoenberg has demonstrated that this movement will be built upon significantly transformed relations which effect proportionally more motivic elements and that are developed through operations that produce changes of new degrees.<sup>114</sup>

Figure 4.58: Motive C Forms, Score and Network (Pitch), Movement IV, Introduction, mm. 3 – 4 and m. 6

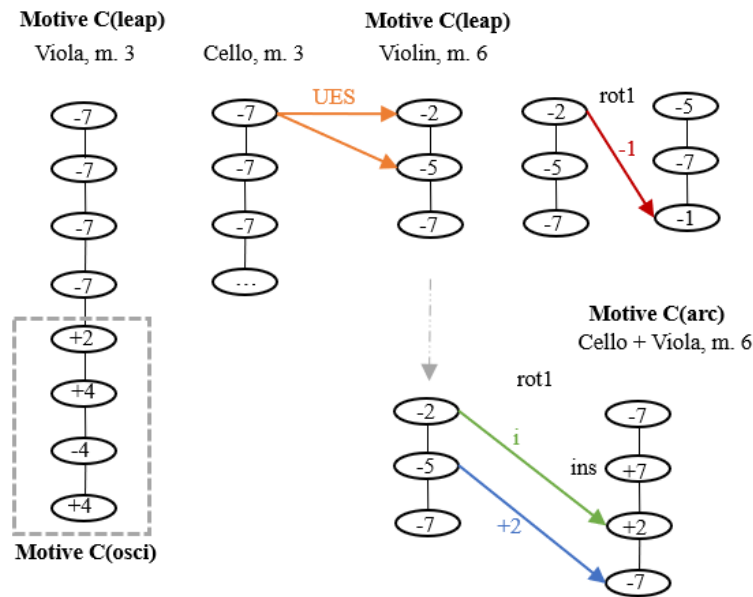
a) Score

The musical score for Motive C in Movement IV, Introduction, mm. 3–4 and m. 6 is presented in two systems. The first system, labeled 'm. 3', shows the violin and viola parts with 'Motive C(leap)' and the cello part with 'Motive C(osci)'. The second system, labeled 'm. 6', shows the violin and viola parts with 'Motive C(leap)' and the cello part with 'Motive C(arc)'. The score is written for violin, viola, and cello.

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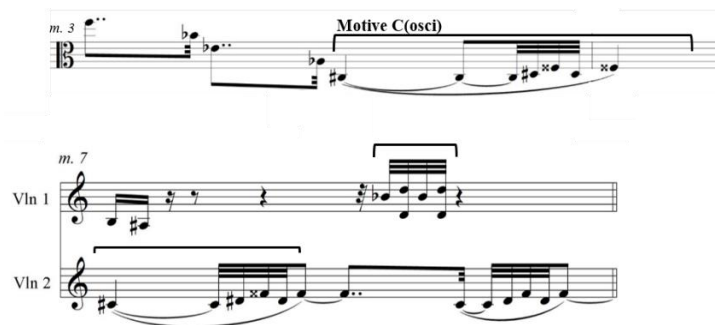
<sup>114</sup> That is, the moves create more distantly related motivic segments. Take for example the sole use of parsimoniousness interval-altering moves as compared to the use of rotations, inversions, and interval-altering transformations between two segments.

b) Network (Pitch)



After developing the first segment of Motive C(Leap) from m. 3 in m. 6, Schoenberg then introduces the Motive C(osci) segment from m. 3  $\langle +2, +4, -4, +4 \rangle$  to m. 7 (see Figure 4.59). The segment exists as pitch-interval repetition, however, the duration domain undergoes variation in its first and last terms, where the segment  $\langle 1.625, 0.125(3), 1 \rangle$  becomes  $\langle 1.125, 0.125(3), 1.375 \rangle$ . Here, the first term contracts and final term expands. In the second iteration of m. 7 the first term is contracted further to  $\langle 0.25 \rangle$ . Accompanying these more complete soundings in violin 2 and viola, violin 1 articulates  $\langle +4, -4, +4 \rangle$  fragments. These fragmentary soundings are incorporated in the second half of m. 8 as the more complete segment is liquidated.

Figure 4.59: Motive C(osci) Score, Movement IV, Introduction (m. 3 and 7)



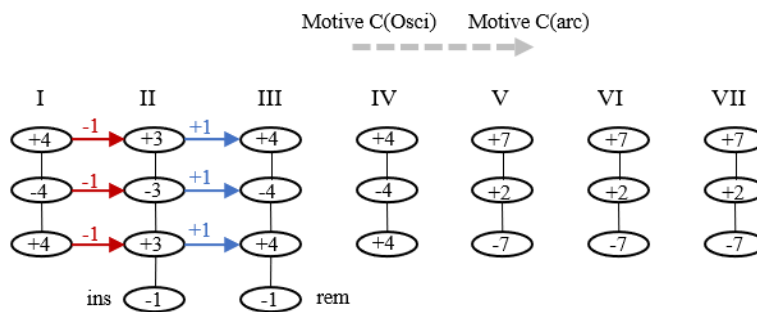
Variants of Motive C(osci) also appear in m. 13 as demonstrated in Figure 4.60. Through statements I – IV we can notice a complete parsimonious contraction (statement I – II) and an addition which is then negated through a transformational return between statements III and IV. We can also notice that Motive C(arc) emerges from the segment (see directed arrow above network, modified to a #3 pitch-interval string in m. 15 (statement V), as opposed to the 4-term initial group which included an initial <-7> term (see m. 6).

Figure 4.60: Motive C(osci) Network (Pitch), Movement IV, m. 13

a) Score (Statements I – IV)



b) Network (Pitch)



Material included in m. 10 may lack overt relations to the articulated Motive C leaps as heard in mm. 3 and 6 thus far; however, the primary pitch-domain elements of <-6> and <-7> can be heard not as a string of descending leap elements as in m. 3, but as a combination of the leap and oscillation attributes.<sup>115</sup> Here, Schoenberg combines the oscillation ( $\pm$ ) pattern of Motive C(osci) with the larger intervals of Motive C(leap). This gesture seems to have a stronger

<sup>115</sup> A different reading, following a train of thought contra Collisson, sees a highly developed variant of the neighbour-motion figure present Motive B. Although durationally diverse, the pedal-point present mainly causes the  $\pm 1$  relation of the top voice. This option may, however, disassociate the aural experience with the intervals present, and favours a hierarchical reading.

affinity to the oscillation pattern, and as such I will label it as Motive C(osci), while keeping its emergent roots in mind. As observed in Figure 4.61, Schoenberg gradually expands the leaps through mm. 11 – 13, ultimately reaching a  $\langle -11 \rangle$  term in the viola voice. The consecutive term-leaping figure is then restored as violin 2 prominently articulates a consecutive descent gesture in m. 13,  $\langle -1, -4, -10, -6 \rangle$ . This type of fragmentary manipulation distinguishes the developmental procedures in this movement, opposing more complete transformational treatments in earlier sections. Through such progressive and continuous mechanisms, Schoenberg works toward entire reconstructions as opposed to minor revisions of singular interval nodes within motivic objects.

Figure 4.61: Motive C(osci) Score, Movement IV, Introduction, m. 10

The image shows a musical score for the Introduction of Movement IV, starting at measure 10. The score is divided into two systems. The first system (left) is marked '10 etwas langsamer' and includes parts for Flageolet (pp), Violin I (pp), Violin II (pp), Viola (pp), and Cello/Double Bass (pp). The second system (right) is marked 'Tempo I rit.' and includes parts for Violin I, Violin II, Viola, and Cello/Double Bass. The score features complex rhythmic patterns and dynamic markings.

### Exposition (mm. 16 – 66)

As one listens to the opening of the exposition, associations are made once more between motivic Gestalts. While the introductory material presented cogent motivic forms and developed initial relations, the exposition further transforms the motive strings. This section explores four

main development regions: Motive C(osci) from mm. 16 – 21 and 46 – 49, Motive C(arp) from mm. 39 – 41, Motive C(st) at m. 38 and from mm. 51 – 60, and Motive D<sup>I</sup> between mm. 29 – 31.

### Motive C(osci)

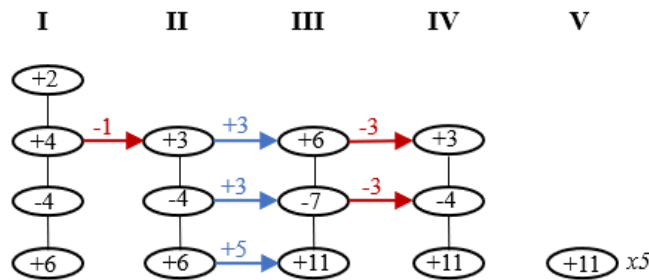
Motive C(osci), as presented in the introductory material (mm. 1 – 15), prepares the scene for the expositional vocal entry in m. 21. Through pitch-interval alteration and cardinality changes, shown in Figure 4.62, Motive C(osci) instills a sense of instability through the proximal and distal transformations of intervallic space as well as through the line's preoccupation with the  $\langle +11 \rangle$  (major seventh) term. The emphasis on  $\langle +11 \rangle$  establishes, as per the common-practice tradition, an expectation of resolution. Schoenberg denies such conventional tactics and proceeds with his motivic working instead.

Figure 4.62: Motive C(osci), Movement IV, Exposition, mm. 16 – 21

a) Score



b) Network (Pitch)



Motive C(osci) appears, and is once again liquidated, in mm. 46 – 49, see Figure 4.63.

Although all motivic segments articulate the established  $\langle +4, -4, +4, -4 \rangle$  repeated pitch-interval pattern, Schoenberg creates motivic interplay between the two segments as the duration intervals



invert their ordered unfolding: violin 1 reads  $\langle 0.25(3), 0.75, 0.25 \rangle$  with longer durations in its second half as compared to the longer durations in the first part of the violin 2 and viola lines,  $\langle 1.25, 0.25(3) \rangle$ . The motive proceeds in m. 48 through term removal, fragmenting the motivic form. These items can be observed in the score presentation in Figure 4.63.

Figure 4.63: Motive C(osci), Movement IV, mm. 46 – 49

### Motive D<sup>I</sup>

In the opening measures of the exposition and during the first vocal entry (m. 21) Motive D<sup>I</sup> is clearly referenced. As shown in Figure 4.64, after an initial attack, Motive D<sup>I</sup> proceeds to have its pitch-domain intervals split during the second ascent through the “von anderm planeten” recitation, perhaps a result of the singular “air” statement becoming plural among “planets.”<sup>116</sup> This split creates two distinct grouping of Motive D<sup>I</sup> statements, a short version and the longer split version. Each group has inter-relations among “like”-objects as well as across group boundaries. Given the texture and the clear successive relations tracking the statements is straightforward. Figure 4.64 presents the vocal phrase in its capacity to demonstrate both

<sup>116</sup> Please consult the score for excerpt segments beyond a and b forms.

statement forms of Motive D<sup>I</sup> (grouped a and b). Examining the score, notice the transition from disjunct motion (in a) to scalar ascent (in b) which, in both cases, emphasize <+10>. From the networks, it is evident that there are a significant number of transformations to discuss. In the network, strand “a” operates in the upper regions and strand “b” works through the lower region. One can observe that the two groups interact, cross-over, and can be read as influencing each-other. From statement I to II (a to b in the score), we can notice the Uneven Split (UES) transformation in action. Let us first examine the top-justified statements ((a): I, IV, VII – XI). Notice the movement into and out of statement IV where a rotation, inversion, and inversion with parsimonious interval elasticity moves are the mechanisms which move the listener to statement IV and that are almost exactly inverses from statements IV to VII (a second interval-altering mechanism is invoked). From statements VII to VIII the int-nodes are inverted and expanded and contracted proximally. Throughout the remaining statements, one hears more subtle elastic moves in both positive and negative directions. Examining the lower region of the network ((b): II, III, V, VI) one can detect a few key developments. In addition to the UES that doubles the cardinality and allows for “like”-passages in cardinality to be parsed from the surface, we can see that the constitutive groupings within these passages eventually consist of many of the same elements from statement I. From statement III to V we can see their development through a Switch(1,3) function. Statements V to VI engenders minimal change in the current context and we can also see that statement VI can suggest an alternate (and more efficient) transformation into statement VII.

In all, it is important to note the abundance of transformational processes and the strong tendency toward interconnected, interrelated, and interdeveloped forms. Indeed, the networks demonstrate a plethora of mechanisms and possible relations. The amount of developmental



## Motive C(arp)

As established in the opening measures of this movement, Motive C(arp) has been shown to exhibit intervallic consistency. This remains more-or-less true of all other iterations of Motive C(arp) throughout the movement (such as mm. 49 – 50, 74 – 78, 97 – 100), with two notable exceptions: mm. 39 – 41 and mm. 152 – 154.<sup>118</sup> Let us examine mm. 39 – 41 as an example of such change.

Study the statements of Motive C(arp) in mm. 39 – 41 displayed in the score of Figure 4.65. From this excerpt, observe the rigorous motivic transformations as Schoenberg highly varies the duration domain. Three transformational comparisons seem appropriate here: first, violin 2's expressive m. 39 statement as compared to the opening form of Motive C(arp); second, the tremolo treatments between violin 1 and viola; third, the voice fragment(s) of mm. 39 – 40.

Figure 4.65: Motive C(arp) Score and Network, Movement IV, Exposition, mm. 39 – 41

### a) Score

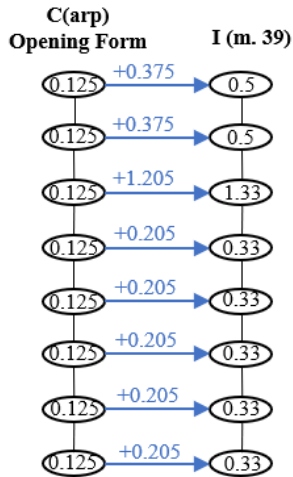
The musical score for Motive C(arp) in Movement IV, Exposition, measures 39-41, is presented in 4/4 time. It consists of four staves: Voice, Violin 1, Violin 2, and Viola. The Voice part has lyrics: "und du lich - ter ge - lieb - ter schat - ten". The Violin 2 part features a triplet of eighth notes in measure 39. The Viola part features a tremolo of eighth notes in measures 39-41. Roman numerals I, II, III, and IV are placed above the staves to indicate specific transformations of the motive. Measure numbers 39 and 40 are indicated at the beginning of the first and second measures respectively.

... figure continued

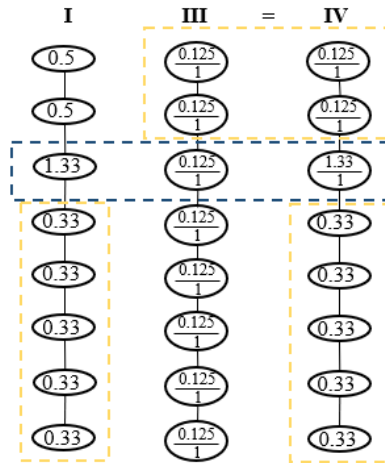
<sup>118</sup> Measures 152 – 154 can be discerned by the reader and is not a large enough section to constitute full analytical treatment.

b) Network (Duration)

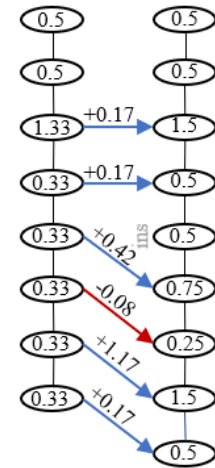
Comparison A



Comparison B



Comparison C



First, although the pitch content remains the same when comparing the opening Motive C(arp) form and violin 2's statement ( $\langle +3, +8, -1, +4, +4, +3, -1 \rangle$ ) the durational profile has been transformed, as shown in comparison A. The consistent and even  $\langle 0.125 \rangle$  intervals are subjected to a more varied opening segment as well as intervallic expansions. Second, in the same manner that violin 2 expressed a varied treatment of the first form, violin 1 varies the consistent tremolo durations first sounding in the viola (mm. 39 – 49), shown in comparison B. Notably, whereas the transformations were previously applied to the opening of the violin 2 line, here violin 1 (statement IV) varies the end of the viola statement through combining the ending triplet durations from the violin 2 (statement I) into the segment. Statement IV, then, can be heard as combination of statements I and III (marked by yellow dotted boxes). The darker dotted box here in the mid-region is the only true transformational combination where the motive takes elements from statements I and III, duration value from statement I and tremolo effect from statement III. Development in this section mainly takes the form of combining the previously

varied forms, with the effect of creating a unique statement that is not dissimilar (at least intervallically) from other forms. Lastly, as revealed in comparison C, the vocal iterations of Motive C(arp) differ when compared the established statement I. A pitch-domain alteration in the comparison of I and II reports a +3 expansion when comparing term 6 of each statement.

### Motive C(st)

As labelled above, Motive C(st) is another prominent addition to the movement which does not overtly exist in other movements, but rather can be seen as developed out of the primary Motive C form. Collisson draws such a connection as shown in Figure 4.66. I believe this is a fair connection and predecessor of Motive C(st). It is a relationship that is particularly poetic given the *ich sie kaum mehr kenn* [so that I barely recognize them] vocal text. Schoenberg, in absolute control of the musical material, mirrors the content of the text, giving the listener confirmation that the elements should be familiar but only in a barely recognizable form. Given the abstractions and transformations it has taken to arrive at such material, the passage is aptly set.

Figure 4.66: Motive C(st) Emergence, Collisson's Observation, Movement IV

The image displays a musical score with three systems of staves. The top system shows a piano accompaniment in G major, with a circled measure 1 and annotations 'x' and 'y' above it. The middle system shows a vocal line with the text 'kaum mehr ken-ne' and a circled measure 38. The bottom system shows a piano accompaniment with the text 'ich lö-se mich' and a circled measure 51. Brackets and arrows indicate the relationship between the piano accompaniment and the vocal line, showing how the piano accompaniment's Motive C(2) is derived from the vocal line's Motive C(st).

With an understanding of where the Motive C(st) is drawn from, examination of its successive transformations can commence. In the expository section Motive C(st) occurs most evidently in m. 38, m. 48, and mm. 51 – 58. Figure 4.67 displays the soundings and their relationships. Notably, these statements appear only in the vocal line, making the relationships easier to aurally comprehend and relate. Of prominence is the inversive relation of the middle element and the subsequent retrograde fragmentation and contraction. The processual changes, although temporally discrete, are clear and used evocatively on the musical surface. The development section continues this motivic development of Motive C(st).

Figure 4.67: Motive C(st) Networks (Pitch), Movement IV, Exposition (m. 38, 48, and mm. 51 – 58)

a) Score

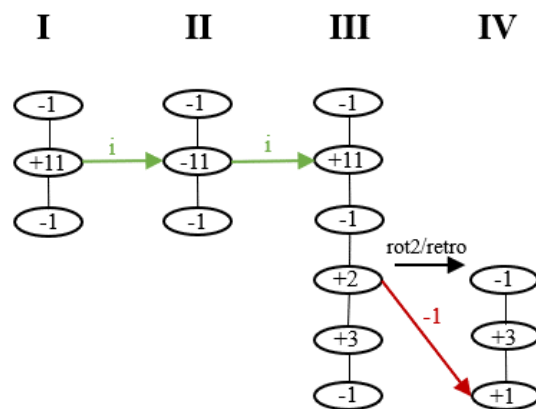
39 **I** sie kaum mehr ken - ne

48 **II** an - zu - mu - ten

52 **III** Ich lo - se mich in to - nen

56 **IV** krei - send we - bend

b) Network (Pitch)



## Development (mm. 67 – 99)

Moving from the exposition into the development section, two main observations will be discussed: the continuance of Motive C(st) development and the working-out of Motive C(osci).

### Motive C(st)

As Kim notes, “the first part of the development section features the chromatic motive [Figure 4.67] ... in canon.”<sup>119</sup> Through thirteen statements, shown in Figure 4.68, one can inspect the pathways which alter the iterations. The opening statements in both pitch and duration domains produce clear and stable intervallic similarities, however, as one moves from statement X through XIII, observe how forms shuffle the initial segments elements and highly vary the content. These final moves express an affinity with the distances traversed by Motive C(leap), the semitone turns of Motive C(arp), as well as the up-and-down contour of Motive C(osci). I invite the reader to also compare the final forms of Motive C(st) in mm. 75 – 77 as they relate to the vocal line in mm. 92 – 93 and mm. 95 – 96.

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<sup>119</sup> Kim, 78. Kim’s use of harmonic/set-class analysis does not however best capture the relations between the motive-form sets.



Figure 4.68: Motive C(st) Score and Networks (Pitch and Duration), Movement IV, mm. 65 – 78

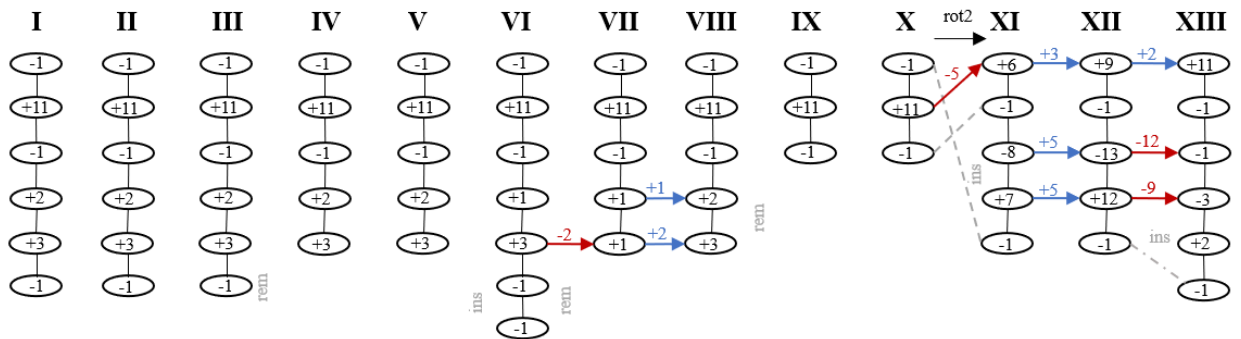
a) Score

65  
Viola II  
Cello I III IV  
70

73  
Voice IX  
Violin I V VIII  
Viola VI  
Cello VII  
X XI  
Mich u - ber-fahrt ein

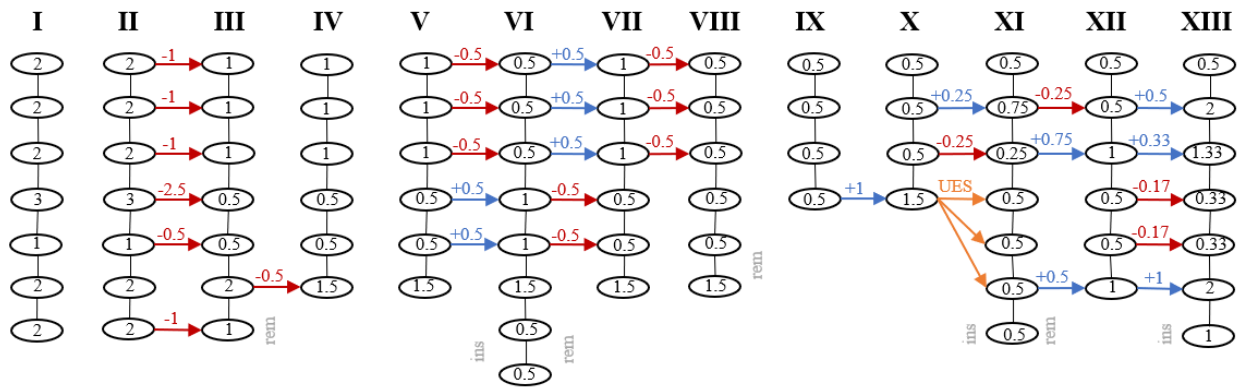
75  
Voice XII XIII  
un - ge-stu-mes we - hen im rausch der wei - he wo in - brun - sti - ge schrei - e

b) Network (Pitch)



... figure continued

c) Network (Duration)



Motive C(osci)

Although figures reminiscent of Motive C(arp) punctuate mm. 85 – 88, and mm. 93 – 99, the development of Motive C(osci) is the primary element of the aural passagework.

Commencing with Motive C(osci) in the second violin at m. 67 articulations of  $\langle +3 \rangle$  and  $\langle +4 \rangle$  oscillations mirror developmental tendencies heard previously. Measure 70 takes this sixteenth-note  $\langle 0.25 \rangle$  oscillation scheme and uses it as auxiliary descending punctuation which complements the viola and cello lines. I invite the reader to listen to these cascading chromatic third passages and contrast such descending trajectories with the more typical ascending lines that precede the passage. Immediately after the vocal entry (m. 74) Schoenberg begins to transform the pitch and duration interval content of the oscillation movements.<sup>120</sup> As shown in Figure 4.69, from mm. 74 – 81 continual transformation of Motive C(osci) exists throughout the entire development section. The figure also excerpts a configuration from m. 89 to show additional alteration of the motivic form. Figure 4.69 first excerpts passages for context then places the objects within networks.

<sup>120</sup> For original material reference see mm. 3, 7, or 16. The larger pitch-interval spans are clearly related to mm. 10 – 13.

What one will notice when inspecting Figure 4.69 is the abundant segmentation that occurs. Int-nodes in both the pitch and duration domains are removed, inserted, and partitioned. For example, in the pitch network notice the three-element segmentation boxes in statements VI – VIII and then the four nodes in statements VIII – IX. Embedding these intervals into subsequent statements transforms the motive by placing elements within different contexts.

When tracking the pathways in the pitch network, it becomes increasingly clear that Schoenberg is pushing the developmental boundaries as interval-altering moves are distal and numerous and as one moves from statements IX – XI a general disassociation becomes apparent. Motive C(osci), guided by similar durational profiles, should resonate with earlier forms, however a 1:1 network comparison seems to stretch the limit of “like”-object comparison. This dissolution of motivic identity, and yet familiarity more abstractly, is one of the ways in which this fourth movement displays a “one foot in the future” Schoenberg.

The duration domain, Figure 4.69 c), is less problematic when compared to the pitch network; as can be observed within network, there are cogent 1:1 mappings that do not present segmentation or identity challenges. As examined within the duration network, rhythmic changes promote a large degree of variance between segments as Schoenberg alters both the cardinality, order, and intervals. Truly, the rate of change between the statements and the variety exceed much of his early processes creating a complex string of manipulated motivic forms.

Figure 4.69: Motive C(osci) Score and Network (Pitch and Duration), Movement IV, Development, mm. 74 – 81, 89

a) Score (mm. 74 – 81, 89)

74 *belebter*  
 Mich ü - ber - ein

75  
 un - ge - stü - mes II hen im rausch der wei - he wo

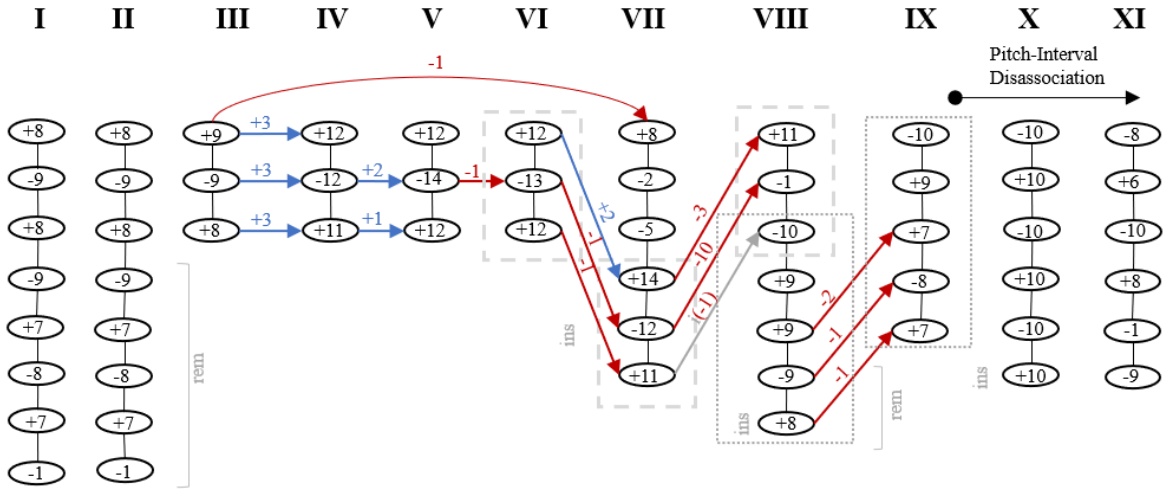
77 *molto rit.*  
 IV V VI  
 beim stu - ge - schü - in

80 *dim*  
 VII VIII IX  
 staub - ge - worf - ner be - ter - ren - föh - en: *poco cresc.*

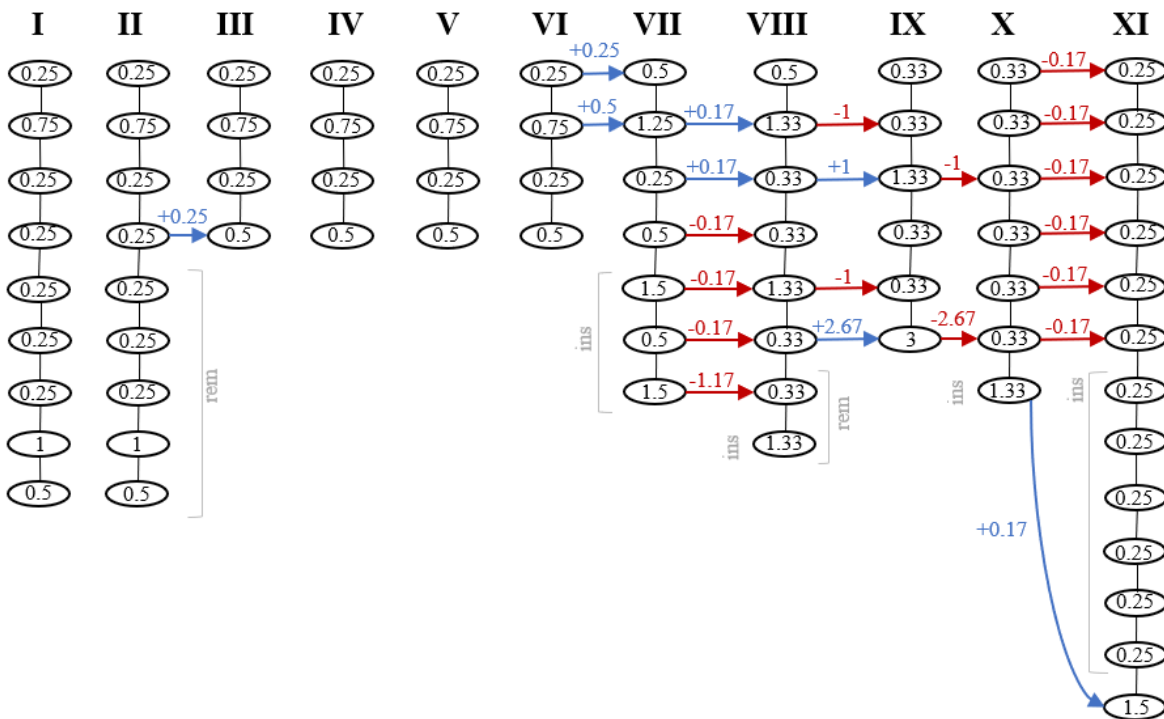
89  
 XI  
 ber - ges - schlup - fen.  
*so (wenn es möglich)*  
*ppp legato*  
*pp hervortretend*

... figured continued

b) Network (Pitch)



c) Network (Duration)



Such transformation mechanisms continue throughout the development section in various capacities. I have presented several clear examples of how a number of such processes function in new ways and invite the reader to explore more relations as desired. The recapitulation and coda formal areas continue such motivic development in a similar manner and cataloguing the extent of motivic re-workings would be a worthy contribution in future studies.

In general, relations outside of the Motive C network are difficult to trace within this movement as Schoenberg's content is in many cases new or highly developed, leading to issues of parsing the musical surface. In this "rapture," Schoenberg evidently wishes to disassociate the familiar, placing disorienting motivic figures in its stead. This foreign nature evocatively captures the poetic content through a motivic metaphor. For example, glimmers of previous materials within, for example, the vocal line, and the cello parts presentation of Motive B or D<sup>1</sup> statements work to frame the inner workings of the new content, yet remain largely referential as if Schoenberg is giving the reader fragments to contextualize his development.

As shown in the analysis, the fourth movement presents advanced mechanisms of pitch and durational manipulation. New motivic segmentation structures built upon previous motives and which lay outside the more clear-cut or defined relations shown in earlier movements motivate new aural orientations. Ambiguity within surface-level relations at this stage in Schoenberg's *oeuvre* demonstrates an emergent compositional shift from real interval transformations (trackable through ~1:1 comparisons) to more abstract interval relations. That is, the fourth movement expresses new content forms through more distant relationships between developed forms. The tracking of the motive strings thus becomes difficult as they push the boundaries of similarity at the ordered interval level, becoming more abstract in their properties. As a result, similarity relations are best demonstrated not through transformational paths that

map elements 1:1, but rather entire gestalts of intervallic identities. Manipulation in this more abstract domain thus diminishes the methodological power of tracing transformational paths.

In summary, the lack of other referential motivic forms in the fourth movement, an preference to move statements beyond motivic similarity into freer collections, and varying content relations demonstrates Schoenberg's shift to a style that largely breaks from the logic of motivic working-out. Instead, Schoenberg emphasizes more abstract content similarities which are not readily available to the listening experience motivated here. In its musical working, I agree with Gerald Abraham's 1938 comment that the fourth movement " ... is unlike anything that had hitherto been considered melodic," which follows the rationale that motivic fundamentals are also presented in a new manner.<sup>121</sup>

#### Chapter Conclusion: Schoenberg's Evolution and the Paths to Hearing Other Planets

The analyses of motives within Schoenberg's String Quartet no. 2, op. 10 have investigated the transformational pathways of developmental processes. Although the harmonic, formal, and musical atmospheres change from the first movement to the last, the idea of shaping intervals remains. Schoenberg's increasingly advanced treatment of material throughout the movements presents insights into his developing style. Principally, the transition from clear contiguous motivic paths of similar content within the first movements to more distantly related material and abstract connections in the later portions demonstrates a compositional trajectory that departs from archetypal manipulations and moves the listener and analyst to construct

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<sup>121</sup> Gerald Abraham, *A Hundred Years of Music* (Oxford: Kemp Hall Press, Ltd., 1938): 335.

meaning through another constellation of signifiers, to attempt to understand something so new as the air of other planets.

In Dale's analysis of the third movement, she asserts that it is often the case that "the criteria for motivic selection remain obscure, and any harmonic or voice-leading activity which operates beneath the immediate surface of the music is often conveniently ignored."<sup>122</sup> While I cannot refute the argument that segmentation and selection criteria remain eschewed in my analysis (and many others), I motivate an understanding motivic *process* within this work has necessitated ignoring most elements beneath the surface.<sup>123</sup> Though my analysis has neglected harmony, set-class relations, and traditional voice-leading paradigms, it has generated and examined salient connections between surface-level motivic statements and their variant forms. The transformational paths articulated with this approach, although only part of the picture, demonstrate concrete, quantifiable means through which Schoenberg manipulated his motivic material. The insights gathered as a result of this study demonstrate that Schoenberg's path to thinking in terms of abstract intervals is in play within this movement and motivates his rationale for abandoning traditional tonal orientations as we move from this piece as a stylistic launch-point and beyond.

Previous analytical literature surrounding Schoenberg's String Quartet no. 2, op. 10 sees the foregrounding of thematic statements as signposts of formal sections. More often than not, the guides treat general global formal concerns and referential passages as the main content of interest. However, an element often missing from such discussions is the similarity of passages being compared, the significance of such transformational change, and indeed the question of

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<sup>122</sup> Dale, 97.

<sup>123</sup> That is, formal and harmonic components.



*how* we move from one musical object to another. This analysis contributes a more local surface-level reading of motivic process, bringing the discussion of *how* into the dialogue. As themes, motives, ideas, Gestalten, et cetera, were primary to Schoenberg's teaching, analytical remarks, and overall compositional philosophy, such an examination displays, for the first time, the workings of specific devices within his quartet. Although referring to a particular theme, a comment by Neff reflects well the relational approach taken here: "the essential technical aspect of thought-processes functioning ... consists of spinning out pitch-ideas like varied links in a chain ..."<sup>124</sup> Tracing these motivic chains through intervallic inspection and comparison in both the pitch and duration domain enables one to understand better Schoenberg's technical compositional method. In conclusion, my analysis presents relationships that reveal a musical fabric which is richly interwoven with closely related motivic material and crafted with a sensitivity to similarity relations.

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<sup>124</sup> Neff, *The Second String Quartet*, 275. Note that this chain metaphor becomes the way Steinhard expresses elisions and relations.

## 5. Conclusion

For over a century, Schoenberg's music has resonated with composers, audiences, and analysts alike. From the early concert program guides of Berg, Jalowetz and Zemlinsky, and others, there have been significant attempts to make sense of his music. As a major figure within art music of the twentieth century, it is hard to overstate the ripples that Schoenberg sent through the musical world. Scholars time and again have returned to his works to find new meanings and contexts of analysis. Yet, although the list of published investigations is long indeed, there still remains more to say about Schoenberg.

In this dissertation I have taken a novel positioning of intervals as structural signifiers of motivic forms to compare developmental tendencies within two early works, *Pelleas und Melisande*, op. 5 (1903) and String Quartet no. 2, op. 10 (1908). The resultant work has demonstrated that by aligning an analytical framework to intervallic markers, we are well positioned to examine how Schoenberg manipulates motive.

As discussed in Chapter 1, motivic development can take many forms. In the infinite variety possible, one thing that remains clear is that motivic identity over time permits similarities to be traced. In a quest to trace similarities and differences between forms, Chapter 2 proposed a model which took a developmental position and asked, what are the ways composers can manipulate and transform melodic material? The answer to this question prompted establishing a suite of transformational mechanisms used to label such processes of change: order altering, interval altering, and cardinality altering. Placing some existing analytic methods and scholarship within these categories, I further proposed new orientations in which to track intervals sensitively on the musical surface. Through its network and expression form, this

methodology is a potent tool for tracing development between similar musical objects, such as motives.

Applying the methodology to two pieces demonstrated that Schoenberg's motivic structures undergo transformations that can be both identified and quantified. The case studies revealed that Schoenberg's developmental tendencies often fall into the established categories proposed in Chapter 2. This confirmation, although perhaps not surprising given Schoenberg's compositional and theoretical writings, shows that the analyst can say more about *how* Schoenberg moves from one object to another in defined ways. This noteworthy addition to the analytical literature of these works fills in the gap between qualitative descriptors that use metaphor (in the style of Walter Frisch and Rudolph R  ti) and the set-class or mathematically rigorous treatments of motive in his later works (in the style of Jack Boss, Allen Forte, and others). This contextual toolkit therefore provides the means to inspect, collect, and compare the ways in which Schoenberg developed motivic forms in his early works. Such an exploration has not previously been applied to his early works and thus proposes new ways to listen and engage with the musical materials.

Chapter 3 further demonstrated that one could pair narrative development and programmatic meaning with the tracking motive. Examining the title characters, Pelleas and Melisande, the case study produced new support for existing readings of programmatic processes within the work. Moreover, this toolkit has allowed certain narrative choices to be more discretely grouped as compositional choices that Schoenberg enacted, connecting threads of the drama over the course of the composition. Where previous scholars diverged on the identity of the primary motives and their developed forms throughout the work, my analysis takes each divergence as a new object and collects it into a family of related motivic forms based on varying

applications of transformational mechanisms. In all, we may reflect on Paul Stauber's review that "although it is madness, it still has its methods."<sup>125</sup> Taking a close reading of surface-level and local processes of the motivic material, I have revealed that there are close connections to be drawn between objects. It is furthermore evident that Schoenberg was thinking about structural changes between motivic forms, as he described in his later theory and composition treatises. Varying the content of motivic forms was therefore undertaken with a sensitivity to the similarities between structures. Inspecting such connections, a "web of leitmotifs" to use Carl Dahlhaus's phrase, the analysis has buttressed existing readings of character relations and process by providing clearly defined transformational paths between objects.<sup>126</sup>

Chapter 4 continued the analytical application of the model to Schoenberg's transitional work String Quartet no. 2, op. 10. Although this work has been studied more extensively than *Pelleas und Melisande*, it is evident that a gap in the literature exists if one views the local motivic development within all of the movements. The in-depth exploration presented reveals ordered intervallic relationships and their operational manipulations as a fundamental compositional strategy of Schoenberg's, and as such offers a new transformational perspective. As previous scholars have suggested, there is "hardly a note or a motive that cannot be thematically accounted for ..."<sup>127</sup> This claim, however, as an analytical basis has not often been taken-up by the analyst in any great level of detail. Nevertheless, I have decidedly onboarded the challenge to demonstrate just *how* Schoenberg is producing such variations of motivic content. As revealed through the networks, a clear progression of compositional thinking is present from

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<sup>125</sup> See Walter Bailey, *Programmatic Elements in the Works of Schoenberg* (Michigan: UMI Research Press, 1984): 16 – 17. Review by Paul Stauber in *Montagspresse*, Feuilleton, 30 January 1905.

<sup>126</sup> Carl Dahlhaus, *Schoenberg and the New Music*, trans. by Derrick Puffet and Alfred Clayton (Cambridge: Cambridge University Press, 1987): 71.

<sup>127</sup> Peter Gradenwitz, "The Idiom and Development in Schoenberg's Quartets," *Music and Letters* 26, no. 3 (1945): 125.

the first movement to the last. In this way, I speculate that Schoenberg's compositional practice and path to the "air of other planets" starts to take form through the recontextualizing of intervals as a constituent element in an ordered motive string to more abstract qualities of a set. This assertion, which has been made by several authors' discussions of this work as transitional, is now supported by analytical graphs and motive discussion, offering a new perspective on Schoenberg's increasingly advanced treatment of material. Where previous literature mainly discussed formal, harmonic, or other operational paradigms at typically high-level inspections, this project has sought to demonstrate, more concretely, *how* Schoenberg moves between objects. Tracing these motivic pathways through intervallic inspection and comparison in both the pitch and duration domains, I have suggested new avenues in which to understand better Schoenberg's technical compositional method.

Taken as a totality, this dissertation has addressed several incongruities between theory and practice when examining the early works of Arnold Schoenberg. Applying a lens more sensitive to his compositional and analytical endeavors, that of intervals and their manipulations, one is able to align his compositional philosophy with the framework allowing insight into the work and its internal relations. With scholarship to date typically forgoing simple approaches of ordered interval relations and their interactions, current understandings of Schoenberg's early craft are often relegated to formal, harmonic, or anachronistic paradigms. To summarize Dahlhaus once more, extrapolating the relationships between objects at various levels allows one to examine the work as a signifier of a compositional practice or technique.<sup>128</sup> By applying such a lens to the work of Schoenberg through examining motives as ordered intervals of pitch and duration, this project's case studies have brought us closer to understanding

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<sup>128</sup> Ibid., 19.

Schoenberg's early works as the foundations of a path which will take us to atonality and beyond.

More broadly, let us now return to the research questions posed at the outset of the work. Inspecting the overarching question of how Schoenberg manipulates and develops his motives in his early works, I set out to investigate what objects are needed for inspecting such change, how can we meaningfully compare those objects, and what insights these comparisons foster when traced through works. As one may recall, the interval-as-object paradigm was proposed to create the motivic objects under inspection. By moving "voices" to a background level, thus away from traditional voice-leading frameworks, one can trace the more tangible structural elements themselves. To trace the pathways of change between objects, I reviewed the transformational pathways themselves, applying mechanical labels to intervallic changes tracing how  $s$  moves into  $t$ . The defining of a suite of analytically relevant processual labels empowered an analysis that drew more upon relations between structures than the sounding structures themselves. The outcome of such application to two case studies was entirely fruitful and compelling. In summary, one was able to observe the common ways in which Schoenberg moved from object to object and how, stylistically, such a practice advanced from chronologically different works. One will have no doubt noticed a vivid difference between the likely transformations used within *Pelleas und Melisande* as compared to the last movement of the String Quartet no. 2, op. 10. Order-altering, interval-altering, and cardinality-altering transformations thus remain the higher categorical understandings of how, in general, Schoenberg manipulates his objects. The various

operations within such larger categorical families serve to mitigate the compositional philosophy gap between his early period and later styles.<sup>129</sup>

### Research Impact

The impact of this research is threefold. First, it provides a novel approach to understand and track motivic connections in works which focus on motivic development. While several authors take various positions to address such a tracking, this model proposes a simple, yet effective, use of intervals which can be applied to a broad range of repertoires and composers.<sup>130</sup> Second, the treatment of motive within this project can be applied to other works in Schoenberg's earlier catalogue, engaging new perspectives and promoting insights into their craft. Third, composers and other musicians can use this frame of thinking and deconstruction as a way into musical understanding, either through creation or experiential means. This point can be directed further into two streams: one that uses the toolkit as a means to reverse-engineer compositional practices that would stylistically employ developmental devices (*à la* Schoenberg), and one that onboards the mechanisms as conceptual metaphors that can be aurally appreciated in listening sensitive to motive. Each of these streams establishes novel musical dialogues, either through creation or consumption. In all, these impacts flow into several avenues for future research.

On the question of perceptibility of such devices I can only speak to personal experience. Though the mechanisms analyzed within this project do push the boundary of my listening ability, I believe that the devices wielded have assisted my ear through conceptual orientations of

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<sup>129</sup> For example, the reliance in his twelve-tone compositions on order alterations becomes significant. Further, interval alterations allow for set-class congruities between objects at an abstract level.

<sup>130</sup> Many of the methodologies cited in Chapter 2 and throughout this dissertation primarily focus on atonal environments and do not deal with motive in extended-harmony situations or tonal contexts. As a result, simplifying the inspection to surface-level intervals takes the material as primary and relegates abstract mathematical or set/group properties to a background level.

process engaging a new sensitivity to musical space and shape transformations. In all, I sympathize with Schoenberg's positioning that "whether or not the ear recognizes the device, it feels instinctively the connection..." continuing, "the composer knows the devices, the connections, but the audience must not see them, must only feel that the piece is good."<sup>131</sup> In such a way, I can attest to the power of connecting with a new sense of coherence and logic in listening to these two works of Schoenberg's via the transformational pathways pursued within the analyses.

### Avenues for Future Research

Through the current project I have demonstrated the success of the developed model's deployment on two early works by Schoenberg. I propose two main avenues for future investigations that might intersect with the work herein: first, through extensions of the methodology both in terms of tool development and application to further works by Schoenberg, and second, in its application to repertoire beyond Schoenberg.

### Extensions: Questions for Further Schoenberg Research

Though the strength of my investigatory model has been demonstrated through the case studies invoked, there is significant work to still be done applying this model more broadly to Schoenberg's early works.<sup>132</sup> I believe that further application to other instrumental works such as *Verklärte Nacht* (1899) and Chamber Symphony no. 1, op. 9 (1906) are merited. In these examples, *Verklärte Nacht* would serve as an earlier orientation, framed in even more tonal terms

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<sup>131</sup> Lovina May Knight, "Classes with Schoenberg," *Journal of the Arnold Schoenberg Institute* 13, no. 2 (1990): 158.

<sup>132</sup> Further explorations into Schoenberg's later works could also benefit from incorporating this approach. For example, Jack Boss's recent work *Schoenberg's Atonal Music* (2019) relies heavily on a motivic perspective which, at the same time as inciting set-classes analysis, also utilizes ordered intervals.



than *Pelleas und Melisande*, and represent initial techniques for motivic development in a programmatic instrumental work by Schoenberg. Within the piece, one might expect to find more consistency between forms and operations that serve the harmony, more so than the other way around. This hypothesis should be explored and contextualized and/or plotted within the compositional trajectory suggested above and throughout this dissertation. As Catherine Dale has argued, the Chamber Symphony no. 1 “crystallized” Schoenberg’s move to a new form (hinting at his move to atonal space).<sup>133</sup> As this work comes just before the String Quartet no. 2, op. 10, which was examined in Chapter 4, it should reinforce the larger compositional trends and techniques of Schoenberg’s transitional years. Further examination within such a large orchestrated work could also expose how motivic forms relate to larger questions of multi-instrument coherence and use, as briefly explored in *Pelleas und Melisande*. Moreover, along the lines of narrative motivic objects and their usage and transformation as found in the *Pelleas und Melisande* examination, application to early vocal works should demonstrate new engagement in intersections between narrative, musical meaning, and motivic manipulations. Additional avenues in which to examine *Pelleas und Melisande* include the tracking of other motivic forms outside the title characters and their interactions. Such an exploration has been thoughtfully initiated by Michael Cherlin; however, employing the methodological lens above new insights may be gained.<sup>134</sup> The results in the pitch and duration domain could furthermore be used to motivate and spur investigations into compositions which take the same mechanistic transformations and apply them to any number of motivic features, such as textural, timbral, and harmonic devices.

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<sup>133</sup> See Catherine Dale, *Schoenberg’s Chamber Symphonies: The Crystallization and Rediscovery of a Style* (Burlington, Vt: Ashgate, 2000).

<sup>134</sup> See Cherlin, “Dramatic Conflict in *Pelleas and Melisande*,” in *Schoenberg’s Musical Imagination* (Cambridge: Cambridge University Press, 2007).

Furthermore, within the Schoenberg Center's archival documents in Vienna, and now readily available through digital scans, there exist fragments and sketches of Schoenberg's compositional process. To examine the materials through inspection of technical differences in motivic forms, we may gain better insight into Schoenberg's preferences of motivic forms and their use, insofar as choosing certain forms over others. Such a study of manuscripts and sketches would contribute heavily to the scholarship surrounding Schoenberg's writing process and compositional craft.

In the applications to Schoenberg, and others suggested below, I advocate for further research to transform the analytical methodology into a computer program which is equipped to translate scores into inputs which can be compared and contrasted without the bias of human analysts. By developing such an operational protocol, further computer science tools such as artificial intelligence and machine learning could suggest more similarity relations and plot new pathways which relate material. This would produce new knowledge and should have the ability to output analyses in a fraction of the time required of human analysts. The initial development time may be significant, however, enabling objective comparisons upon exponentially greater data inputs would yield and generate statistical likelihoods for using certain transformations allowing one to speak to prevalence and use more thoroughly.

#### Further Applications: Beyond Schoenberg

The model proposed in Chapter 2 has presented an Occam's razor-like perspective to inspect motive in a variety of musical works. Working with a simple basis that has the ability to be extended to suit any number of universes or specific transformational processes, the model's application to other composers' works should be effective. Spurring new investigations into the

use of motive in other contemporaneous composers to Schoenberg, or in the decades before or after, perhaps offer the most relevant starting points. For example, revisiting motive in Johannes Brahms, Richard Wagner, Franz Liszt, and Richard Straus through this methodological lens may lead to better understandings of process and techniques of musical development. Likewise, applications to quasi- or extended-tonal repertoires such as Benjamin Britten, Dmitry Kabalevsky, Alexander Zemlinsky, Dmitri Shostakovich, among many other twentieth-century composers should prove sympathetic to the insights gained here.

## Conclusion

“A musical idea” Dahlhaus notes “... cannot be understood as anything other than the essence of the relationships by means of which a musical phrase reaches beyond itself and its immediate existence.”<sup>135</sup> The motive, as musical idea, is perhaps the ultimate form of a weaving together strands of varied—yet similar—musical content to create coherence within a work. Connecting such ideas and showing the consequences derived from the manipulation of objects, motivic strings, reveals how composers move from one object into another. Thus, we return to Schoenberg’s postulate which has shaped this work from the beginning: “Whatever happens in a piece of music is nothing but the endless reshaping of a basic shape.”<sup>136</sup> Schoenberg continues

Or, in other words, there is nothing in a piece of music but what comes from the theme, springs from it and can be traced back to it; to put it still more severely, nothing but the theme itself... (I say that a piece of music is a picture-book consisting of a series of shapes, which for all their variety still (a) always cohere with one another, (b) are presented as variations (*in keeping with the idea*) of a basic shape, the various characters and forms arising from the fact

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<sup>135</sup> Dahlhaus, 106.

<sup>136</sup> Arnold Schoenberg, *Style and Idea*, ed. Leonard Stein, trans. Leo Black (London: Faber & Faber, 1975): 290. This statement originally appears in Schoenberg’s 1931 essay “Linear Counterpoint.”

that variation is varies out in a number of different ways; the method of presentation used can either ‘unfold’ or ‘develop’.)<sup>137</sup>

Within this dissertation, Schoenberg’s statement has been taken literally. Establishing a toolkit to examine the reshaping’s has enabled a thorough investigation into motivic process and transformational development within the early works, revealing his motivic metamorphosis.

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<sup>137</sup> Ibid.

## Appendices

### Appendix 1: Glossary

**Cardinality (#):** the number of elements in a set or motive string.

**Compound:** A cardinality-altering transformation which combines multiple int-nodes into a singular more int-node term. This transformation redistributes the interval segment between additional terms. Represented by orange arrows in networks. Compounds can be:

- a. Even (EC): Where all newly generated int-nodes are identical in size
- b. Uneven (UEC): Where all newly generated int-nodes are dissimilar in size

Inverse operation: Split (ES, UES)

**Elasticity (Elas):** The general term for an interval-altering transformation which expands or contracts the defined interval space of an int-node. Expansions or contractions are categorically qualified in both the pitch and duration domains by the extent of their change as follows:

- a. Pitch Domain:
  - i. *Null Move:* The absence of change between two related motive int-nodes. In the pitch and duration domains a null move indicates an elastic “change” of 0. (Pitch domain Ex:  $\leq +2, -1, +3 > \xrightarrow{\text{null}} < +2, -1, +3 >$ )
  - ii. *Parsimonious Move:* Motion whereby intervallic change between int-nodes is the smallest possible distance in the defined collection. In chromatic spaces, semitone moves ( $\pm 1$ ) define parsimonious changes.
  - iii. *Proximal Move:* Motion whereby intervallic change between int-nodes operate as double, triple, or quadruple that of the smallest possible distance in the defined collection. In chromatic spaces where semitone moves define parsimonious changes (smallest),  $\pm 2, 3, \text{ or } 4$  define qualify as proximal changes.
  - iv. *Distal Move:* Motion whereby intervallic change between int-nodes operate as  $\geq$  five times that of the smallest possible distance in the defined collection. In chromatic spaces where semitone moves define parsimonious changes (smallest),  $\geq \pm 5$  define qualify as distal moves.
- b. Within the duration domain, the categorization scheme differs in classes iii to v:
  - i. *Null Move:* The absence of change between two related motive int-nodes. In the pitch and duration domains a null move indicates an elastic “change” of 0. (Duration domain Ex:  $\leq 1, 0.5, 2.75 > \xrightarrow{\text{null}} < 1, 0.5, 2.75 >$ )
  - ii. *Parsimonious Move:* Duration - interval alteration which adds or subtracts half the normative beat-count value of the durational proportion. In a system where quarter-note = 1, changes of eighth-notes or less values ( $\leq 0.5$ ) are parsimonious.

- iii. *Discrete Move*: Motion whereby intervallic change between int-nodes operate as half or 1 unit of the normative beat-count value of the durational proportion. The smallest possible distance in the defined collection. In a system where quarter-note = 1, changes of  $\pm 0.56 - \pm 1$  values are discrete.
- iv. *Adjacent Move*: Motion whereby intervallic change between int-nodes operate between greater than one and double the unit of the normative beat-count value of the durational proportion, the smallest possible distance in the defined collection. In a system where quarter-note = 1, changes  $> 1 - \leq 2$  are defined as adjacent.
- v. *Removed Move*: Motion whereby intervallic change between int-nodes operate greater than double the unit of the normative beat-count value of the durational proportion, the smallest possible distance in the defined collection. In a system where quarter-note = 1, changes  $> \pm 2$  are defined as removed.

**Developing Variation**: compositional technique employed by Arnold Schoenberg whereby a motive is successively transformed through variations which eventually sum to produce a new, distinct (discrete) musical unit. The resultant object is no longer conceptually relatable to the first in a 1:1 relation, rather only exists as a relationship which traces logical growth.

**Gestalt (pl. Gestalten)**: (a) an identifiable or defined shape/form that has meaning and creates associations. Used in reference to the practice of *Gestalt psychology* motivated by Christian von Ehrenfels (1880 – 1943) and Max Wertheimer (1859 – 1932).

(b) an idea of music which refers to certain immutable characteristic features. Often used synonymously with motive in German traditions; however, variations about size and constituent elements occur. See also *Grundgestalt*.

**Grundgestalt**: A Schoenbergian technique of composition and analysis which posits a single basic form as the genesis of the entire works material. Can be the opening idea but can also be the idea of the piece in more fuzzy terms.

**Int-Leading (Interval Leading)**: A reframing of voice leading, this perspective connects the pathway between int-nodes and demonstrates their relationships. Analogous to tracking pitch-classes in a traditional voice-leading framework.

**Int-Node (Interval Node)**: A singular element/term within a motivic segment. Reference can be ordered, such that “int-node-*n*” is highlighted in a string of *n*-elements. A collection of int-nodes defines a motive string.

**Insert (ins)**: A cardinality-altering transformation which adds an int-node term to the motive string (inverse operation: remove).

**Interval**: any measured distance between two points/attributes or assigned length value

**Motive**: a recurring segment of a set of musical features (specific pitches relations, durations, intervals) that produce associative relationships and permit a significant unit identity for the listener.

**Motive String:** a collection of ordered int-nodes which satisfy the definition of motive.

**Network:** An oriented transformation graph whose nodes are connected through arrows reflective of transformational process/mechanisms.

**Remove (rem):** cardinality-altering transformation which removes an int-node term to the motive string (inverse operation: insert).

**Retrograde (R):** order-altering transformation which takes the last term of a motive string as first term and continues working backwards until all int-nodes have been realized, a reversal of term order. Same use as in within twelve-tone literature.

**Rotation (rot):** order-altering transformation which performs a displacement operation on all terms of the motive string, terms wrap last-first. Permits different terms to start the motive string and then continue in subsequent, predetermined order. Same use as within contour literature.

**Split:** A cardinality-altering transformation which divides a single int-node term into two or more int-nodes. This transformation redistributes the interval segment between additional terms. Represented by orange arrows in networks. Splits can be:

- a. Even (ES): Where all newly generated int-nodes are identical in size
- b. Uneven (UES): Where all newly generated int-nodes are dissimilar in size

Inverse operation: Compound (EC, UEC)

**Surface-Level:** the musical structures that, when realized, produce the aural product of the score. Used in comparison with hierarchal abstracts which posit deeper levels of relationship that exist beyond the musical score as written (connections out of time or that are unconnected at a more foreground reading).

**Switch (Sw):** An order-altering transformation where an exchange between two terms in a set whereby they swap places in the ordered set. The places exchanged can be either adjacent or distant terms in the set.

**Twelve-Tone Operators (TTOs):** A group of transformational process which include Transposition (T), Retrograde (R), Inversion (I), and Retrograde Inversion (RI).

**Variation:** the degree of change between two similar objects.

Appendix 2: Schoenberg's "Konstruktives in der Verklärten Nacht"

Transcription excerpted from J. Daniel Jenkins, *Schoenberg's Program Notes and Musical Analyses*, Schoenberg in Words vol. 5, ed. J. Daniel Jenkins, Sabine Feisst, and Severine Neff. (Oxford: Oxford University Press, 2015): 118 – 119.<sup>1</sup>

The image shows a musical score for Schoenberg's "Konstruktives in der Verklärten Nacht" with several systems of music and annotations. The score is divided into sections I through VII. Section I includes a treble clef staff with a key signature of one sharp (F#) and a common time signature, with a measure number [34]. Below it is a bass clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [51]. Section II includes a treble clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [75]. Below it is a bass clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [320]. Section III includes a treble clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [34]. Below it is a bass clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [320]. Section IV includes a bass clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [50]. Section V includes a treble clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [105]. Section VI includes a treble clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [255]. Section VII includes a treble clef staff with a key signature of one flat (Bb) and a common time signature, with a measure number [279]. Annotations include "g# (Minor)", "D = Minor", "Eb = Major", "D Major", "D minor", "Eb minor", "D(Major)", "D", "D : Eb : D : Db : D", "(D)", "minor seconds", "IV transposed to form I", and "here the result is different, since g-f belongs here. Therefore, maybe this means the phrases".

<sup>1</sup> For an accessible plate reproduction of Schoenberg's handwritten note, see Walter Frisch, *The Early Works of Arnold Schoenberg, 1893-1908* (Berkeley: University of California Press, 1993): 124; or Walter Bailey, *Programmatic Elements in the Works of Schoenberg* (Michigan: UMI Research Press, 1984): 36 – 37. For a copy of the original, see the digital version within the [Arnold Schoenberg Center Database](#), ref: T35.26, pages 1 and 2



Appendix 2: continued

VI once again

VIII

[255]

a# bb f# gb d# eb g# c# e# g#

Eb minor Db Major

[229]

D Major

XI

[279]

eb bb gb = Eb Minor d!!

Db Major Eb minor

[264]

X

[52]

and

[57]

Of all these motivic and constructive connections, I was only conscious of the one marked III a-b-c-c1. All others are the diligent work of my brain, who did it "behind my back," without my consent.

## Appendix 3: Events and Scenes in *Pelleas und Melisande*<sup>1</sup>

### *Act I*

1. The castle gate  
Servants scrub the threshold but cannot get it clean, foreboding future disaster.
2. In a forest  
Golaud discovers the enigmatic and childlike Melisande weeping beside a spring.
3. In the castle  
King Arkel, Golaud's grandfather, Genevieve, Golaud's mother, and Pelleas, his younger half-brother, read Golaud's letter detailing his discovery of and subsequent marriage to Melisande.
4. In the castle garden  
Melisande and Genevieve discuss the castle's gloominess. Pelleas enters and meets Melisande, who is much closer to his age than to that of Golaud.

### *Act II*

1. A fountain in the park  
Pelleas and Melisande play beside the spring, into which Melisande drops her wedding ring.
2. Golaud's chamber in the castle  
Golaud was injured in a fall from his horse at the moment Melisande lost her ring. As she nurses him, he notices that the ring is missing and tells her to find it.
3. Before a grotto  
Pelleas and Melisande approach the grotto where she told Golaud she had lost the ring. Inside they see three sleeping beggars.
4. In the castle  
Arkel forbids Pelleas to leave on a visit to a dying friend.

### *Act III*

1. In the castle  
Pelleas, Yniold, Golaud's young son from his first marriage, and Melisande, at her spinning wheel, await Golaud's return. Yniold has a premonition that Golaud will not return and that Melisande will go away.
2. A castle tower  
Melisande leans from her window to talk to Pelleas. Her hair falls down around him as their conversation becomes warmer. Golaud overhears them, interrupts, and leads Pelleas away.
3. In the vaults beneath the castle  
Golaud and Pelleas explore the dark inner recesses of the castle vaults.
4. A terrace at the vault exit

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<sup>1</sup> Excerpted from Bailey, *Programmatic Elements in the Works of Schoenberg*, 59 – 61.

Golaud warns Pelleas to stay away from Melisande.

5. Before the castle

Golaud attempts to stem his jealousy by holding Yniold to spy on Pelleas and Melisande through an open window.

*Act IV*

1. A corridor in the castle

Pelleas intends to leave that night. He and Melisande agree to meet later to say goodbye.

2. In the castle

King Arkel promises Melisande that things will be brighter now that Pelleas's father is over his illness. Golaud enters announces that Pelleas will leave that night. He is angered by Melisande seeming innocence and is abusive towards her.

3. A terrace before the castle

Yniold tries to move a heavy stone behind which he has dropped something. He cannot move it. He sees a small lamb that has run away from its shepherd and he wonders where it will sleep that night.

4. A fountain in the park

Pelleas and Melisande meet and suddenly realize their love for one another. Golaud overhears them, kills Pelleas and wounds Melisande.

*Act V*

1. A servants' hall in the castle

The servants discuss the tragedy.

2. Melisande's chamber in the castle

Melisande is confined to bed, watched by a doctor, Golaud, and Arkel. The serving women enter one by one in silence. Melisande dies from a very slight wound after giving birth to a tiny child. Golaud grieves but is still uncertain whether she betrayed him.

#### Appendix 4: Form in *Pelleas und Melisande*

Summarized through comparison and combination of readings.<sup>1</sup>

Formal Label	Rehearsal	Primary Characters /Motives Present	Significant Narrative Elements
<b>PART I</b>			
Introduction	R0	Melisande Lost Fate Golaud	In the Forest
Main Section	R5	Golaud Wedding Ring/Bond of Matrimony Golaud	Castle Scene, Golaud Marries Melisande
Transition	R8	Fate Wedding Ring/Bond of Matrimony Melisande	
Subsidiary Section	R9	Pelleas Fate Melisande	Melisande meets Pelleas
Concluding Section (Codetta)	R12	Melisande's Awakening to Love	
Reprise (Recapitulation)	R14	Melisande Golaud Pelleas	
Developmental Transition	R15	Pelleas Melisande	
<b>PART II</b>			
Scherzo-like	R16	Wedding Ring Pelleas Golaud	Fountain Scene Melisande loses ring Golaud is injured
Postlude	R22	Golaud	Golaud's Suspicion and jealousy
	R25	Melisande Pelleas Fate	Castle Tower Scene
	R30.6	Pelleas Melisande	Scene in the castle vaults

<sup>1</sup>A variety of formal readings are possible, this particular reading is an amalgamation of forms which endeavors to present simplicity between sections and scene alignment. See Walter Frisch, *The Early Works of Arnold Schoenberg, 1893-1908* (Berkeley: University of California Press, 1993): 171 and 174; Alban Berg, *Pelleas und Melisande: (nach dem drama von Maurice Maeterlinck) symphonische Dichtung für Orchester, op. 5 von Arnold Schönberg. Kurze thematische Analyse* (Vienna: Universal-Edition, 1920); Michael Cherlin, *Schoenberg's Musical Imagination* (Cambridge: Cambridge University Press, 2007): 72; Derrick Puffet, "Music that Echoes within One' for a Lifetime: Berg's reception of Schoenberg's 'Pelleas und Melisande'," *Music and Letters*, 72/2 (May 1995): 209 – 265; Walter Bailey, *Programmatic Elements in the Works of Schoenberg* (Michigan: UMI Research Press, 1984): 70 – 71.

		Golaud	
<b>PART III</b>			
Introduction	R33	Melisande Pelleas Fate	The pool in the park Scene of farewell (love scene)
Quasi Adagio	R36	Melisande Pelleas Fate Golaud	Pelleas and Golaud Fight
Nach un nach langsamer	R49	Pelleas Melisande	Death of Pelleas
<b>PART IV</b>			
Recapitulation of Introduction	R50	Melisande Lost Melisande	
Recapitulation of Main theme	R55	Golaud Melisande	
Recapitulation of Adagio	R56	Golaud Melisande	
Episode	R59	Melisande	Melisande's Sickroom and Death
Epilogue	R62	Golaud Melisande Fragments	Thoughts that it was not Golaud's Fault

## Appendix 5: Form in Schoenberg's String Quartet no. 2, op. 10

Primarily excerpted from Severine Neff, *The Second String Quartet in F-Sharp minor, Opus 10*, ed. Severine Neff, trans. by Grant Chorley (New York: W.W. Norton & Company, Inc., 2006). Neff's work is often informed by Schoenberg's own analyses.

### *First Movement*

Formal Label and Measures	Content	Key
<i>Exposition</i>		
First Theme Group		
mm. 1 – 12	Theme 1a	F# minor, A minor
mm. 12 – 32	Theme 1b	F# minor, “roving”
mm. 33 – 43	Theme 1a	D minor, F# minor
Second Theme Group		
mm. 43 – 58	Theme 2a	F# minor, “roving”
mm. 58 – 84	Theme 2b	E $\flat$ minor, “roving”
mm. 84 – 89	Closing Theme 3	F# minor
<i>Development</i>		
mm. 90 – 145	-	D minor, C major, “roving”
<i>Recapitulation</i>		
mm. 146 – 201	-	F major, D minor, “roving”, A minor, F# major, F# minor
<i>Coda</i>		
mm. 202 – 233	-	F# minor

### *Second Movement*

Formal Label and Measures	Content	Key	
<i>Section A</i> (Exposition of 3 Themes, Schoenberg labels 1 – 16 as “introduction”)			
"Introduction "	mm. 1 – 13	Theme 1	D minor
	mm. 14 – 17	Theme 2	“roving”
mm. 17 – 19	Theme 3	“roving”	
<i>Section A Development</i>			
mm. 20 – 34	Theme 1 Development	D minor, “roving”	
mm. 34 – 62	Theme 2 Development	D minor, “roving”	
mm. 62 – 80	Theme 3 Development	D minor, “roving”	
<i>Section A Transition</i>			
mm. 80 – 84	Theme 1 (augmented)	“roving”	
<i>Section A Reprise</i>			
mm. 85 – 97	Theme 1	D minor	
<i>Section B: Trio</i>			
mm. 98 – 122, 123 – 150, 151 - 164	Theme 4	F# major/minor, C major, “roving”, E $\flat$ minor	

mm. 165 – 195	“Augustin” Theme / Transition	D major, “roving”
<i>Section A (Return)</i>		
mm. 195 – 202	Theme 1	F# minor, D minor
mm. 203 – 214	Theme 2	F major, “roving”
mm. 215 – 218, 219 – 238	Theme 3 (augmented)	“roving”, D minor
mm. 238 – 249	Theme 1	D minor
mm. 250 – 258	Theme 1, “Augustin Theme”	D major/minor
<i>Coda</i>		
mm. 259 – 275	Theme 1	D major/minor

### ***Third Movement***<sup>1</sup>

Formal Label and Measures
Theme, mm. 1 – 8
Variation 1, mm. 8 – 16
Variation 2, mm. 17 – 25
Variation 3, mm. 25 – 33
Variation 4, mm. 33 – 40
Variation 5, mm. 40 – 48
Coda: <i>Section 1</i> , mm. 49 – 53
Coda: <i>Section 2</i> , mm. 53 – 57
Coda: <i>Section 3</i> , mm. 57 – 68
Postlude, mm. 68 – 76

### ***Fourth Movement***

Formal Label and Measures (Neff <sup>2</sup> )	Formal Label and Measures (Kim <sup>3</sup> )	Formal Label and Measures (Annichiaro <sup>4</sup> )
Introduction	Introduction	Introduction
mm. 1 – 9	mm. 1 – 15	mm. 1 – 21
mm. 10 – 15	Exposition	Exposition and Dissolution
mm. 16 – 20	mm. 16 – 66	mm. 21 – 52
Section A		Second Exposition
mm. 21 – 51		mm. 52 – 66
Section B	Development	Interlude
mm. 51 – 99	mm. 67 – 99	mm. 66 – 74

<sup>1</sup> Severine Neff, *The Second String Quartet in F-Sharp minor, Op. 10*, 160 – 161.

<sup>2</sup> Severine Neff, *The Second String Quartet in F-Sharp minor, Op. 10*, 173.

<sup>3</sup> See Jyung-Eun Kim, “The Harmonic Language of Arnold Schoenberg’s Second String Quartet, op. 10,” MA Thesis, McGill University, 1990: 67 – 94.

<sup>4</sup> See Michael Annichiarico, “A Study of ‘Entrückung’: From the Second String Quartet of Arnold Schoenberg, Op. 10,” PhD Dissertation, Brandeis University, 1994: 17.

Section C	Recapitulation	Intensification & Heightened Awareness
mm. 100 – 119	mm. 100 – 120	mm. 74 – 100
Coda	Coda	Denouncement
mm. 120 – 156	mm. 120 – 156	mm. 100 – 120
		Instrumental Postlude
		mm. 120 – 152
		Part II:
		+87 measures



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