Recontextualization and Variation:
Associative Organization in Hans Abrahamsen's *Walden* and *Wald*

by

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Dedication

I dedicate this dissertation to my wife, Amy Chandler, and our two beautiful children, Brandon Emerson Chandler and Elise Marie Chandler.

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Biographical Sketch

Christopher Chandler is a composer and educator currently living and teaching in Richmond, Virginia. Born in Savannah, Georgia in 1986, he graduated *magna cum laude* from the University of Richmond in 2008 with a Bachelor of Arts degree in Composition/Theory and Psychology where he studied with Professor Benjamin Broening. Christopher earned a Master of Music degree in Composition in 2011 from Bowling Green State University studying with Professor Mikel Kuehn, Professor Elainie Lillios, and Professor Marilyn Shrude. He attended the Eastman School of Music beginning in 2011 where his principal teacher has been Professor Ricardo Zohn-Muldoon.

At Eastman, Christopher co-founded the [Switch~ Ensemble], a flexible ensemble dedicated to the creation and performance of new works for chamber ensemble, electronics, and multimedia. He has also been active in promoting new music as vice president of Ossia New Music and coordinator for the Eastman Composers' Sinfonietta. In addition to new music activities, Christopher has served as a teaching assistant for both the Eastman Computer Music Center and Composition Department.

Christopher's acoustic and electroacoustic music is inspired by poetry, nature, the acoustic properties of instruments, and his experiences working closely with sound in computer music studios. His music has been performed across the United States, Canada, and Europe by ensembles including Eighth Blackbird, Ensemble Dal Niente, Ensemble Modelo62, Ensemble Interface, the Cleveland Chamber Symphony, and Le Nouvel Ensemble Moderne. Recent performances include the International Computer Music Conference (Netherlands), June in Buffalo, Domaine Forget, the Florida State University New Music Festival, the New York City Electroacoustic Music Festival, and SEAMUS Conferences. Recognition for his work includes a BMI Student Composer Award, an ASCAP/SEAMUS Student Commission, two first prizes

from the Austin Peay State University Young Composer's Award, winner of the American Modern Ensemble's Annual Composition Competition, and the Nadia Boulanger Composition Prize from the American Conservatory in Fontainebleau, France.

After teaching private composition lessons and computer music courses at Eastman (2012-2014) and the Eastman Community Music School (2012-2014), Christopher joined the faculty of the University of Richmond in 2014 where he teaches courses in Composition and Music Technology and directs the Third Practice Electroacoustic Music Festival.

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I extend my deepest gratitude to my former teacher, current colleague, and close friend, Professor Benjamin Broening. He has been a constant source of wisdom and has provided invaluable advice, guidance, and been an advocate for me in countless ways.

Finally, I would like to thank my parents and family for their unwavering support of my musical and academic pursuits. Most importantly, I wish to acknowledge the support and sacrifice of my wife and constant companion, Amy Chandler, and our two beautiful children, Brandon Emerson Chandler and Elise Marie Chandler.

Abstract

This dissertation analyzes two related compositions by the Danish composer Hans Abrahamsen: his woodwind quintet *Walden* (1978) and his large ensemble work *Wald* (2009). Separated by over thirty years, these two works are representative of Abrahamsen's first and third compositional periods and offer insight into characteristics common across his output, including economy of musical material, tightly controlled processes, and the reuse of materials from a previous work.

Divided into three parts, this dissertation begins with an overview of Abrahamsen's compositional life thus far and focuses on his approach of reusing, recomposing, and referencing earlier music, both his own and others. Part 1 provides a synopsis of Professor Dora Hanninen's framework for musical analysis from her book *A Theory of Musical Analysis: On Segmentation and Associative Organization*. The discussion identifies the framework's terminology and notational conventions and, through musical examples, illustrates these aspects to underscore its suitability for Abrahamsen's music. Part 1 concludes with Hanninen's distinction between "recontextualization" and "varied repetition," which are two concepts that capture how Abrahamsen treats musical segments both within and between *Walden* and *Wald*.

Parts 2 and 3 contain detailed analyses of *Walden* and *Wald*, respectively, and provide background information on their origins. The analyses focus on identifying musical segments, categorizing them into associative sets based on shared sonic and contextual criteria, and describing the sets' distribution over time, which Hanninen calls the associative landscape. Part 2 is centered on four associative sets in *Walden* and the way Abrahamsen recontextualizes them between the first and second movements. Part 3 examines seven associative sets within *Wald* and discusses how Abrahamsen not only recomposes two of *Walden*'s four associative sets but also reuses the structure of paired sections containing recontextualized material.

Contributors and Funding Sources

The faculty members serving on the committee of this dissertation are Professor David Headlam (Theory), Professor Ricardo Zohn-Muldoon (Composition), Professor David Liptak (Composition), and Professor Lisa Jakelski (Musicology). I am deeply grateful for their time, thoughts, and guidance. I am additionally thankful for my colleagues at the University of Richmond whose stimulating questions during a presentation of this paper helped me to articulate several aspects of the dissertation with greater clarity. The analytical foundation of this paper is built upon the work of Professor Dora Hanninen, and I am grateful to Professor Robert Morris for first exposing me to her work. While Professor Hanninen did not personally contribute to the preparation of this dissertation, I am indebted to her scholarship.

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Introduction

Danish composer Hans Abrahamsen's *Wald* (2009), written for sinfonietta, is a series of variations that build on his earlier piece for woodwind quintet entitled *Walden* (1978). These two works are representative of Abrahamsen's first and third periods and exhibit characteristics common across his output, including economy of material, tightly controlled processes, and the reuse of musical materials from a previous work. The shared idea between the two is an imitative repeating call-and-response gesture in which the voices gradually go out of phase. Abrahamsen uses the technique briefly in *Walden* where it serves as the introduction but never returns in any fashion, while in *Wald*, the technique plays a foundational role and is found in many sections. This approach of reusing, recomposing, or otherwise referencing earlier music, both his own and others, has always been a part of Abrahamsen's compositional language but has undergone several changes over the three creative periods of his music to date.

Walden is situated in the middle of Abrahamsen's first period, which lasts from 1970-1987. A precocious composer, Abrahamsen had written a well-received body of work by age 27 (1979), and the works of this first period are characterized by associations with Danish New Simplicity, neo-classicism, and polystylism. New Simplicity is a term drawn from Danish literary criticism[1] and applied to composers who sought "to 'simplify' (at least in the literal sense) material and technique, to establish a perceptible sense of form and to evolve a new relationship with past musical styles and objects."[2] Gavin Thomas proposes in his 1994 profile of Abrahamsen that New Simplicity was less of a style than an attitude towards style, and despite the label, the works need not be simple; they "may *be* simple, but [they] may also be dense, dissonant and entirely 'modern.' "[3] Indeed, the works of this period such as *Ten Preludes for String*

[1]Ernste, "Hans Abrahamsen's *Winternacht:* Reflections on an Etching by M.C. Escher," 8.

[2]Thomas, "Something Amiss with the Fairies. Gavin Thomas on the Elusive Music of Hans Abrahamsen," 268.

[3]Ibid., 268.

Quartet (1973), *Winternacht* (1976-78), and *Walden* (1978), blend a clarity of expression and economy of musical materials with allusions to historical musical styles. For instance, over ten short movements, *Ten Preludes* gradually moves backward in time from a place of complex, chromatic modernism to Baroque pastiche. The final movements of *Winternacht* and *Walden* similarly contain polyrhythmic, polytonal superimpositions of hunting horn calls and Baroque dance rhythms.[4]

Abrahamsen's later first period works, including *Märchenbilder* (1984) and *Lied in Fall* (1987), shed the explicit references to past styles. Along with *Nacht und Trompeten* (1981) and *Six Pieces* (1984), the late first period works show the development of a new approach in reusing his own musical materials. Beginning with *Nacht und Trompeten* (1981), Abrahamsen began more clearly reusing and recomposing recognizable passages of his own music. This orchestral work begins with the allusive, layered melodies that end *Winternacht* and juxtaposes them against more extroverted and exuberant outbursts along with tolling gongs and tam-tams. Of the work, Abrahamsen writes: "The music unfolds in a space, in which the memory of the earlier music has the same reality as the music of today. But the music of the memory is naturally distant and vague, whereas the music of today is present and gesticulated."[5]

The second period, between 1988-1999, was difficult for Abrahamsen and accompanied by a significant decrease in his compositional output. In an interview with the New York Times, Abrahamsen describes being "paralyzed by the white paper" and "[feeling] that his music had become so complex that he no longer had the tools to create what he tried to imagine." He did complete several short works between 1988-1992,[6] but throughout this period, which he calls his "fermata,"[7] his creative crisis stimulated another direction in the use of previous music: arrangement. Abrahamsen arranged works by Carl Nielsen, Per Nørgård, Maurice Ravel, Erik

[4]Ernste, "Hans Abrahamsen's *Winternacht:* Reflections on an Etching by M.C. Escher," 6.
[5]Abrahamsen, "*Nacht Und Trompeten*" Program note.
[6]See the appendix for a chronological list of works and their instrumentations and durations.
[7]Molleson, "A Composer for the Season."

Satie, and Robert Schumann for ensembles ranging in size from woodwind quintet to chamber orchestra.[8] He also revisited and orchestrated his older works for alternate ensembles, including *Winternacht* (alt. 1987) and *Walden* (alt. 1995). A most significant discovery for Abrahamsen was a set of canons by Bach, BWV 1072-1078, which he arranged for septet with a distinctly minimalist aesthetic involving numerous repetitions of the canon (e.g., 58 times in the setting of BWV 1072).[9]

This process of arrangement also included aspects of recomposition. For instance, in his 1991 sinfonietta arrangement of Bach's chorale *Befiehl du deine Wege* (BWV 272), Abrahamsen begins with two melodic fragments drawn from the last three bars of Danish composer Paul Rouders' work *Four Dances in One Movement*. Over a series of varied repetitions, Abrahamsen unfolds and reveals a setting of Bach's chorale melody by gradually add layers of counterpoint to the Rouders' fragments, which happen to be embedded in the chorale.[10]

The reflection and contemplation found through the practice of arranging older music in this second period catalyzed the onset of Abrahamsen's third period from 2000 until the present day (2016). The *Concerto for Piano and Orchestra* (1999-2000) initiated this fertile period of artistic synthesis that combines an increased tendency to reuse previous material along with innovations in compositional technique. Each of the *Piano Concerto*'s four movements, for instance, contains recast music: the first movement's flickering piano arpeggiations revisit the third movement of the *Ten Studies for Piano* (1983-98), the second movement's opening piano solo is a literal repetition of a passage from mm. 45-63 in the second movement of *Märchenbilder*,[11] the second and third movement contain quotations from Mahler's fifth symphony and Ligeti's *Trio for Violin, Horn and Piano*, and the fourth movement is an arrangement of the

[8] Since 2000, Abrahamsen has continued to make arrangements, including works by Claude Debussy, György Ligeti, and Carl Nielsen.

[9] Robin, "Hans Abrahamsen: Fame and Snow Falling on a Composer."

[10] Abrahamsen, "*Befiehl Du Deine Wege*" Program note.

[11] Michelsen, "The Music of Hans Abrahamsen."

Ten Studies's eighth movement "Rivière D'Oubli." In each case, Abrahamsen surrounds the older material with new material and further explores the former's developmental possibilities and orchestration.

With *Schnee* (2006-08) and *Wald* (2008-09), Abrahamsen's style and technique crystalized into one characterized by tightly controlled and limited musical materials, microtonal sonorities, repeated material delineated by repeat signs, frequent changes of meter, tempo modulations, and complex polyrhythms. The two works are drastically different in scope and instrumentation: *Schnee* lasts an hour and is scored for nine musicians, while *Wald* lasts eighteen minutes and is scored for fifteen musicians. Abrahamsen has nonetheless indicated that *Wald* is a "twin piece" to *Schnee*,[12] and indeed they share not only the aforementioned characteristics but also clearly articulated forms and symmetrical ensemble seating arrangements. While *Schnee* has gained greater notoriety, partly due to its striking length, *Wald* better exemplifies the synthesis of Abrahamsen's third period, where previous materials are recast and further developed within new compositional resources.

From the earlier references and allusions to historical styles, to arrangements of his own and others' past works, and finally to the creation of new works from his earlier musical material, the trajectory of Abrahamsen's creative output reveals a composer whose relationship with external material has changed over time. He is an artist continually in dialogue with himself and the works of the past, somewhat like Brahms or Mahler. Abrahamsen's motivation for frequently returning to his "previous works and sketches" stems from a desire to explore "hidden opportunities and ways" to develop them into new works that he may not have seen at first.[13]

Walden and *Wald* are uniquely situated in this context as representative first and third

[12] Abrahamsen, "*Wald*" Program note.
[13] Abrahamsen, "*Ten Sinfonias*" Program note.

period works that have strong connections to each other and to other works, including *Winternacht* and *Schnee*. This dissertation will examine Abrahamsen's economical approach to musical materials through their recontextualization and variation both within and among the works. Abrahamsen has said that the "hidden opportunity" he returns to in *Wald* is the call-and-response technique from *Walden*'s opening,[14] but this dissertation will also argue that Abrahamsen also revisits another aspect of *Walden*, which is the recontextualization of musical materials from the first movement to the second movement. In order to establish the framework guiding the analysis of *Walden* and *Wald*, Part One will present an overview of the methodology in a summary of the terms, naming conventions, and approaches to segmentation and associative organization from Dora Hanninen's book *A Theory of Musical Analysis: On Segmentation and Associative Organization*. The analysis of *Walden* in Part Two and *Wald* in Part Three will then identify the work's shared and unique associative sets and their associative organization.

[14] Abrahamsen, "*Wald*" Program note.

Part 1: Framework for Analysis

Dora Hanninen's book *A Theory of Musical Analysis: On Segmentation and Associative Organization* provides a rich interpretative framework that is intended to be suggestive, leading, and supportive depending on the analyst's own interests and imagination. It does not constitute a rigid methodology to control the analytical process, but rather acts as a "multidimensional conceptual space" that provides "a relatively neutral but precise and highly flexible language" and "interpretative autonomy."[15] As the title suggests, Hanninen's framework primarily involves two principal analytical aspects: segmentation and associative organization. Segmentation concerns how musical objects, or segments, are identified and analytically supported. Associative organization concerns both how segments are categorized into non-hierarchic sets (called associative sets) and ultimately how these sets are distributed in time throughout a passage or piece of music (called an associative landscape).[16]

Given its emphasis on describing the relationship between musical objects, Hanninen's framework is well-suited for analyzing Abrahamsen's approach to reused and varied materials and their recontextualization in *Walden* and *Wald*. The following sections give an overview of the theory and its important concepts, terms, and notational conventions. Musical examples illustrate these aspects and underscore its applicability to Abrahamsen's music.

Terminology

Hanninen frames the analytical process through three domains (sonic, contextual, and structural) and five levels (orientations, criteria, segments, associative sets, and associative landscapes). The three domains identify different kinds of musical experience that shape the

[15] Hanninen, *A Theory of Music Analysis*, 4.
[16] Ibid., 4.

segmentation and association process, while the five levels describe a movement from conceptualizing about music to the concrete details of the music itself. Hanninen schematically diagrams these components and their intersections in Example 1.1 of her book, shown here in Figure 1; the three domains are oriented along the top and the five levels run down the left-hand side.

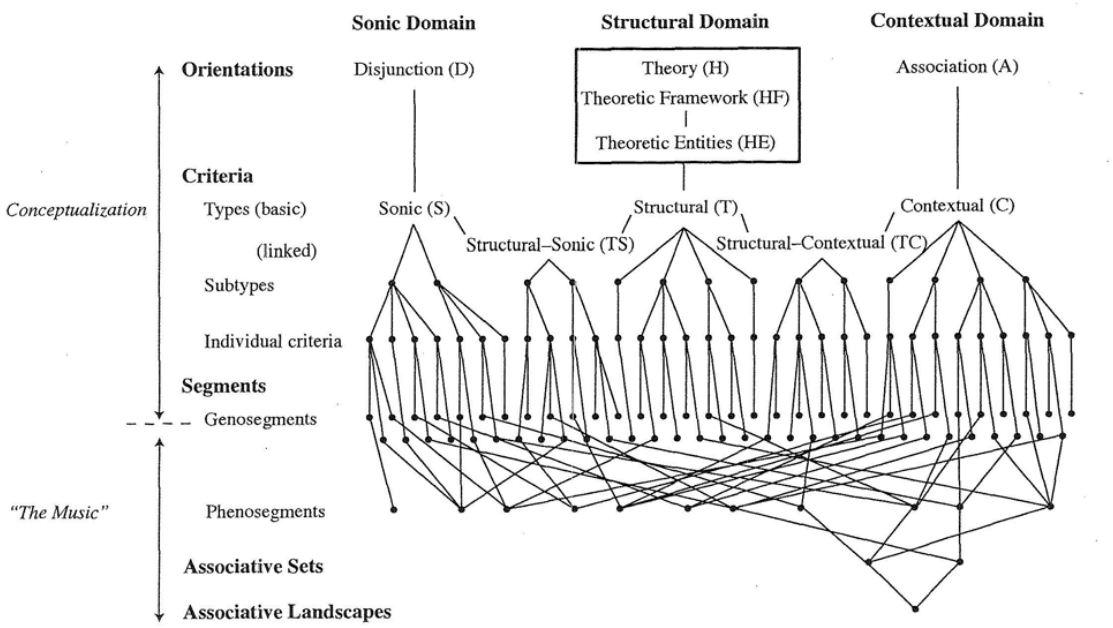


Figure 1: Schematic representation of Hanninen's theory of musical analysis

The *sonic domain* identifies the acoustic attributes of individual notes (such as pitch, dynamics, or duration) and engages with the segmentation process through their disjunction. By tracking changes in each note's sonic attributes, segments are identified when there is a significant change in the attributes. The *contextual domain* encompasses the importance of repetition, association, and categorization. Unlike the sonic domain, the scope now moves outward from tracking individual note attributes to identifying aspects that groups of notes share, such as contour, pitch order, harmonic content, or rhythm. The segmentation process then becomes an associative one where the analyst identifies how separate groups of notes

relate by literal or varied repetition. The *structural domain* incorporates a "theory of musical structure chosen (or perhaps developed) by the analyst that recommends segments and guides or confers interpretations for musical events."[17] Hanninen uses the well-established Schenkerian and twelve-tone theories as examples that one might use to guide segmentation. The first two domains are nearly always active in musical experience given their close relationship with human cognition. The structural domain, however, is not always active and can be "activated or deactivated by the analyst according to his or her interests and the music under consideration, or remain dormant by necessity."[18]

The three domains intersect with the first two levels quite directly. *Orientations*, the first level, describe how one attends to aspects of the music. Three distinct orientations correspond to each of the domains and how they support segments: differences in sonic attributes (disjunctive), groupings of notes connected by related properties (associative), or groupings of notes suggested by a musical theory (theoretic). In other words, to take on a disjunctive orientation, the analyst actively looks for differences in sonic attributes that define a segment's boundaries; to take on an associative orientation, the analyst looks for contextual connections between segments; to take on a theoretic orientation, the analyst looks for musical characteristics suggested by a theory of structure. The second level, *criterion*, describes how one rationalizes segmentation, and again three types of criteria correspond to the three domains and orientations: sonic (S), contextual (C), and structural (T) criteria. These three criteria have several "subtypes" and notational conventions that aid in supporting segments with clarity and precision, which will be detailed in the next section.

Continuing down the schematic in Figure 1, the final three levels arrive at the musical surface, beginning with the third level, *segments*. The result of the segmentation process, a segment constitutes the identification of a musical object from a particular orientation that is

[17]Ibid., 7.
[18]Ibid., 8.

supported by one or more criteria. Segments may be a variety of sizes and are flexible constructs that "can be related by succession, superimposition, embedding, or overlap."[19]

The fourth level, *associative sets*, group two or more segments together based on contextual criteria. Hanninen notes that associative sets are atemporal, meaning that segments do not need to "be adjacent in time, register, timbre, loudness, or any other sonic dimension; indeed, they can even come from different pieces of music, through quotation or resemblance."[20] Segments within an associative set can be quite similar (a uniform associative set) or can vary significantly (a diverse associative set) but each segment must relate to one another by at least one contextual criterion. If there are some segments within an associative set that more strongly associate with one another, they can be grouped into an *associative subset* (not pictured in the schematic) for further specificity or in other cases motivated by convenience for the discussion. Subsets are a way of indicating groups of segments within a set that share certain contextual criteria that other segments within the set do not share.

It is important to clarify that within the context of Hanninen's theory of musical analysis the term "sets" does not carry the same pitch or harmonic connotations as is the case with set theory (e.g., pitch-class sets). Segments within an associative set can, of course, be contextually related by pitch-class set criteria, but Hanninen's term "sets" is more general, referring to how associative sets and subsets create an atemporal grouping of musical objects that share features.

Associative landscape is the fifth and final level of the schematic, and it brings time into the fold by "focusing on the temporal distribution of segments within a set and disposition of sets with respect to one another."[21] Associative landscapes can have internal or external dispositions, where internal dispositions describe the arrangement of segments within one associative set and external dispositions describe the arrangement of several associative sets. Landscapes

[19]Ibid., 12.
[20]Ibid., 98.
[21]Ibid., 12.

can be small, describing a few measures, or large, describing a significant passage or entire piece of music.

This brief overview of the premises of Hanninen's general theory of musical analysis does not begin to cover its comprehensive depth and breadth; such a thorough discussion is beyond the scope of this dissertation. However, these principal concepts of three domains and five levels inform the analyses of *Walden* and *Wald* in Parts 2 and 3. As neither piece is well-suited for a currently established theory of structure or syntax that recommends segments, the structural domain and its theoretic orientation and criteria will not be utilized. The sonic and contextual domains, however, adequately support the analytical interests of identifying, categorizing, and describing the distribution of segments within *Walden* and *Wald*. The following section will describe Hanninen's notational conventions for sonic and contextual criteria, associative sets and subsets, and also discuss the framework within the context of Abrahamsen's music to illustrate its suitability.

Notational Conventions

Hanninen establishes straightforward notational conventions for clearly identifying criteria and associative sets and subsets. The three criteria types are denoted by a single letter, sonic (S), contextual (C), or structural (H), along with a subscript that contains additional information about the criterion within that type. Sonic criteria involve acoustic properties, such as pitch, dynamics, articulation, duration, or timbre, and divide into two subtypes labeled S_1 and S_2. Subtype 1 "assume[s] temporal adjacency as a prerequisite for segmentation,"[22] while subtype 2 allows segmentations of sonic criteria that are not temporally adjacent but are close in proximity. "Whereas S_1 criteria locate notes first and foremost along a temporal contin-

[22] Ibid., 26.

uum, S_2 criteria use some other continuum (e.g., pitch, dynamics, timbre) for this purpose."[23] The acoustic properties that underlie the rationale for segmentation are attached to the subscripts: $S_{1\text{-pitch}}$, $S_{1\text{-dynamics}}$, $S_{2\text{-duration}}$, and so forth. Greater specificity can be given in parentheses: $S_{1\text{-articulation (slur)}}$ or $S_{2\text{-timbre (flute)}}$. Table 1 gives a list of sonic criteria from Hanninen that will be used in the analyses of Parts 2 and 3.

Table 1: Individual sonic criteria from Hanninen Example 2.5

Criterion	Segmentation
$S_{1\text{-pitch}}$	Pitch interval between events that are temporally adjacent
$S_{1\text{-duration}}$	Duration (in beats or seconds) between attack points of events that are temporally adjacent (duration can include sustain and rests)
$S_{1\text{-dynamics}}$	Dynamics between events that are temporally adjacent
$S_{1\text{-timbre}}$	Timbre between events that are temporally adjacent
$S_{1\text{-articulation}}$	Articulation between events that are temporally adjacent
$S_{1\text{-rest}}$	Rest marks boundary between events that are temporally adjacent
$S_{2\text{-pitch}}$	Pitch proximity between events not (necessarily) temporally adjacent
$S_{2\text{-duration}}$	Duration proximity (i.e. lengths of events or rests have proximate values); events not (necessarily) temporally adjacent
$S_{2\text{-dynamics}}$	Dynamics proximity; events not (necessarily) temporally adjacent
$S_{2\text{-timbre}}$	Timbre proximity; events not (necessarily) temporally adjacent
$S_{2\text{-articulation}}$	Articulation proximity; events not (necessarily) temporally adjacent

A short passage from the first movement of *Walden* in Figure 2 illustrates the use of sonic criteria to segment the musical surface. The passage contains two contrasting, homophonic layers sonically differentiated by $S_{1\text{-timbre (fl, ob, cl)}}$ vs. $S_{1\text{-timbre (hrn, bsn)}}$, $S_{1\text{-articulation (legato)}}$ vs. $S_{1\text{-articulation (staccato)}}$, and $S_{1\text{-dynamic (}\textit{ppp}\text{)}}$ vs. $S_{1\text{-dynamic (}\textit{mp}\text{-}\textit{f}\text{)}}$. The trio and duo layers contain five and four segments, respectively, cleanly parsed by $S_{1\text{-rest}}$. The horn and bassoon duo layer also demonstrates the difference between S_1 and S_2 criteria. $S_{1\text{-dynamic}}$ parses the passage into four discrete segments due to their different, temporally adjacent dynamic levels. $S_{2\text{-dynamic}}$ connects the two segments on beat four at the *mf* dynamic level as they are not temporally adjacent but

[23] Ibid., 27.

related through a shared dynamic. These two segments are further related by $S_{2\text{-attack point}}$ and contextually by C_{rhythm}.

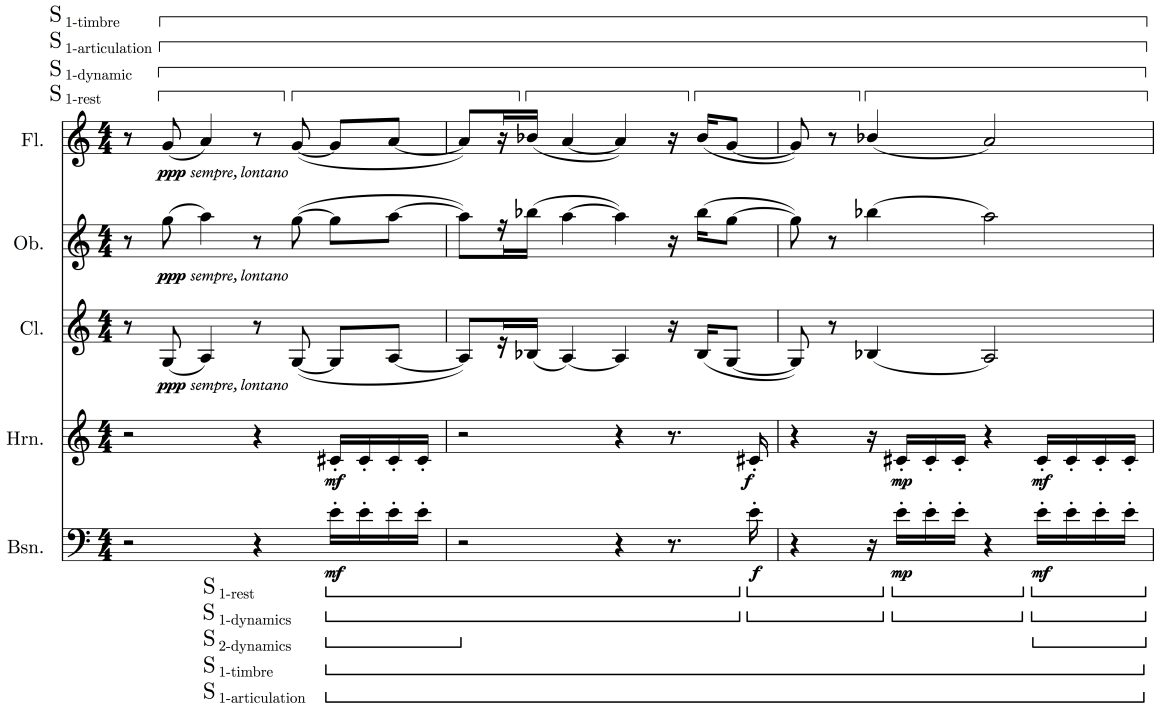


Figure 2: Sonic criteria segmentation in *Walden* I. mm. 57-59

Contextual criteria move the focus from the acoustic properties of a note to groupings of notes, where segmentation is supported through the identification of repetition, equivalence, or similarity between two or more musical objects within a specific context.[24] Segments can be related by literal repetition, where all musical dimensions are the same, or varied repetition, involving equivalence and similarity, where some musical dimension remain the same while others do not. Hanninen defines these two terms such that equivalence is repetition plus "transformation within a set of operations that form a mathematical group" and similarity is equivalence with a transformation that is not captured by a mathematical operation.[25] For example, equivalence might involve a repeated segmented transposed or inverted by an interval,

[24] Ibid., 32.
[25] Ibid., 33.

whereas similarity would involve a segment's transformation by rhythmic fragmentation or another process not captured by logical operators like T_n, T_nI, R, RI, M, MI, etc.

Contextual criteria have many subtypes and individual criteria. Subtypes reflect characteristics of a grouping of notes that can be used to associate two or more segments (e.g., pitch set, pitch-class set, set-class, pitch interval, contour, etc), and the individual criteria are the specific qualities of that subtype. Table 2 gives a list of contextual subtypes and an example individual criterion within it.

Table 2: Individual contextual criteria from Hanninen Example 2.8

Subtype	Description	Example Individual Criterion
C_{cseg}	Pitch contour	$C_{cseg\ <0132>}$
C_{pitch}	Pitch set (unordered); pitch segment (ordered)	$C_{pitch\ \{C\sharp3,\ A2\}}$; $C_{pitch\ <C\sharp3,\ A2>}$
C_{ip}	Pitch interval (directed and undirected)	$C_{ip\ 8}$; $C_{ip\ <81>}$; $C_{ip\ <+8,\ -1>}$
C_{pc}	Pcset (unordered); pcsegment (ordered)	$C_{pc\ \{9A10\}}$; $C_{pc\ <9A10>}$
C_{ic}	Interval class	$C_{ic\ 5}$
C_{int}	Pc interval	$C_{int\ 5}$
C_{SC}	Set class	$C_{SC\ 3\text{-}4[015]}$
C_{rhythm}	Rhythm or rhythmic pattern	$C_{rhythm\ <}$ 

A contextual segmentation of the same passage from *Walden* I. mm. 57-59 in Figure 3 reveals a number of associative connections. The segments of the trio layer associate through $C_{pc\ \{79A\}}$ which Abrahamsen articulates through a mixture of interval classes 1, 2, and 3. Interval class also divides the five clear sonic segmentations into two groups via $C_{ic\ 2}$ and $C_{ic\ 1}$, which is further supported by $C_{cseg\ <01>}$ and $C_{cseg\ <10>}$. The duo layer's four segments associate through $C_{pitch\ \{C\#4,\ E4\}}$, and the second segment in m. 56 fleetingly associates with the trio layer through $C_{ic\ 3}$. As with the case of $S_{2\text{-}dynamic}$, the duo's first and fourth segments also associate

through C_{rhythm}. Disjunctive and associative orientations and their sonic and contextual criteria encourage two mindsets as displayed in these readings of the same passage; disjunction parses segments and layers by their differences while association connects segments within and between the layers. Both orientations have guided the analysis in Parts 2 and 3 of identifying and categorizing Abrahamsen's musical material in *Walden* and *Wald*.

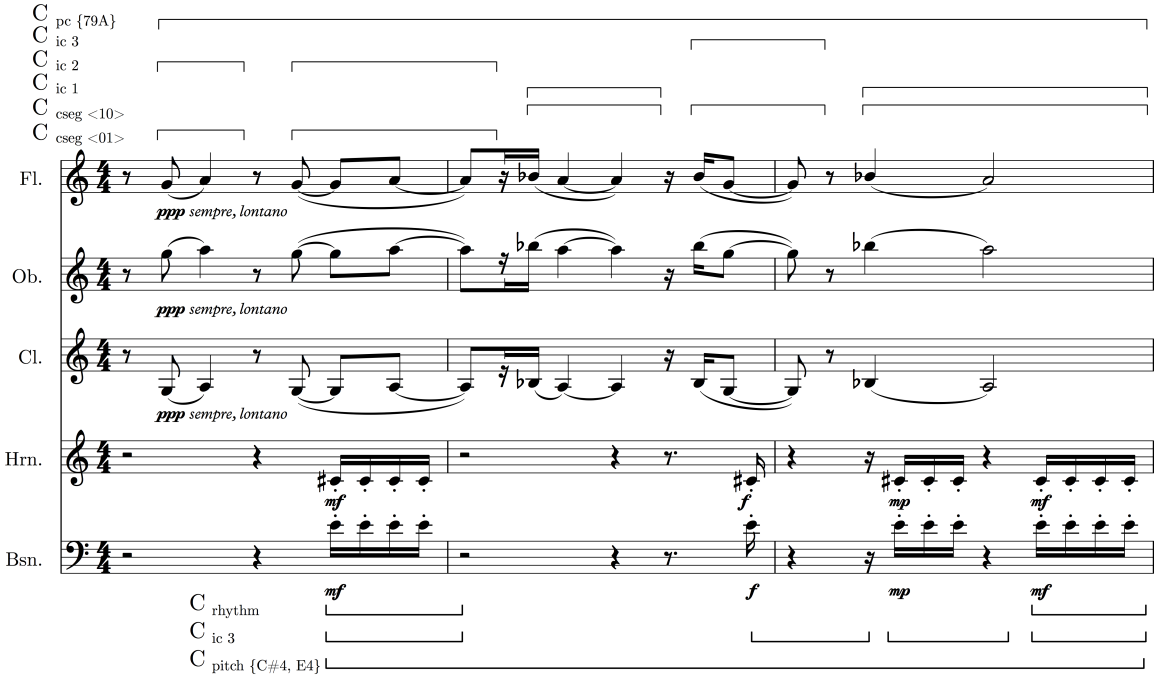


Figure 3: Contextual criteria segmentation in *Walden* I. mm. 57-59

Contextual criteria constitute the foundation of associative sets, which are notated by an italicized capital letter or in some cases a short word succinctly describing a defining characteristic, for instance set *A*, *X*, or *LEAP*. Large associative sets might contain numerous and diverse segments throughout a piece. In these cases, associative subsets serve as subcategories of segments that more strongly connect to other segments within the set through contextual criteria. Associative subsets are notated with the letter of the associative set followed by a slash and an additional lowercase letter, for instance *A/a* or *A/b*. An indication of *A1* or *A/b2* references a specific segment within an associative set or subset where the number indicates the segment's

position in the passage or piece at hand.

In order to demonstrate these notational conventions, Figure 4 provides an example of three associative subsets using four prototypical segments of set *A* from *Walden*. Each segment is a member of associative set *A* and is further specified as a subset through the labels *A/a*, *A/b*, and *A/c*. All four segments associate through criteria $C_{ic\ 5}$ and $S_{2\text{-timbre (horn)}}$, but additional contextual criteria not shared by all encourage the formation of subsets. For instance, segments within subset *A/b* and *A/c* share the additional criterion of $C_{SC\ 3\text{-}11[037]}$, which does not characterize *A/a*. Subset *A/c* is further differentiated from *A/b* through C_{rhythm} and $S_{2\text{-articulation}}$. The segment *A/a5* is an example of a specific segment found in measures 1-38 of the first movement of *Walden*. Within this passage, the segment is the fifth instance of subset *A/a* (hence the numerical indicator), and it also differs from the other given prototypical segment of *A/a* through $C_{pitch\ F4}$. Abrahamsen's treatment of this segment within the context of the passage suggests it is not a new subset but rather a small variation within subset *A/a*.

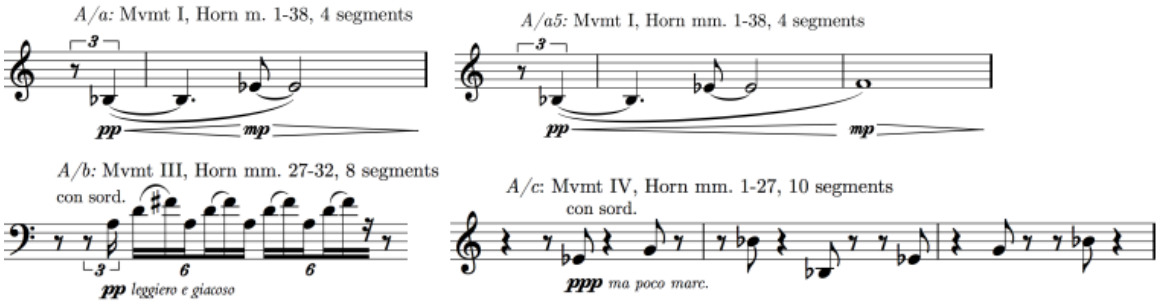


Figure 4: Examples of associative subsets within set *A* from *Walden*

In addition to labelling conventions, Hanninen draws upon graph theory to present several ways of depicting an associative landscape.[26] An *association map* is one such way that graphically displays an associative landscape through a two-dimensional diagram, where the y-axis contains rows for subsets or sets and the x-axis displays time and appearances of seg-

[26]Ibid., 118–23.

ments.[27] Segments appearing within the map can take the form of fragments of musical notation (called cutaway score maps) or horizontal bars indicating duration (called bar-graph schematic maps).[28] The maps reveal how segments of associative sets and subsets are configured in time, focusing on their dispositions and distributions that give rise to an associative landscape.[29]

An example association map depicting the landscape of the first sixteen measures of *Walden*'s first movement can be found in Figure 5. This bar-graph schematic map highlights the phasing process that occurs over four phrases between associative set *A* and the three subsets of set *B*. The external disposition of these two sets shows them exchanging relative order, while the internal disposition of *B* subsets show segments remaining in order but increasing in relative distance. This visual representation illustrates how association maps can reveal aspects of associative organization in a clear and cogent way.

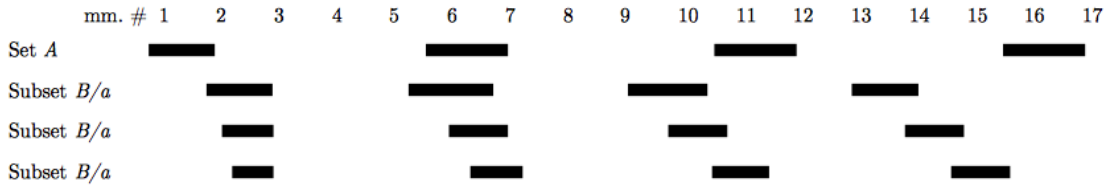


Figure 5: Bar-graph schematic map depicting landscape of *Walden* I. mm. 1-16

In both *Walden* and *Wald*, Abrahamsen is highly economical with segments and associative sets. This economy arises from musically minimal material that Abrahamsen reuses and varies both within and among each piece. Segments or sets appearing within and among both pieces can be described with different degrees of similarity and variance through their sonic and contextual criteria. One term that captures much of Abrahamsen's compositional approach to reused material is *recontextualization*. The definition for this term, as it applies to the analyses later in this dissertation, again comes from Hanninen where she says, "Recontextualization

[27] Ibid., 160.

[28] Hanninen also discusses additional map types, including running text format and several other kinds of schematic maps. See pages 160-163.

[29] Ibid., 163.

indicates a (listener's perception of) phenomenal transformation of repetition … induced by a change in musical context. It is a strange kind of repetition–better, an estranged repetition, in which repetition doesn't sound (primarily) like repetition."[30]

With this definition in mind, it is conceivable to argue that when Abrahamsen reuses musical material, he is engaged in a process of recontextualizing that material. New musical contexts arising from pairing reused segments (or sets) with new material or situating reused segments in different processes effectively "estrange" the reused material and encourage hearing it anew. However, depending on the musical context, it is also equally conceivable to argue that Abrahamsen is engaged in *varied repetition*, and Hanninen is careful to make a distinction between the connotations of those two terms:

> "Varied repetition" focuses on repetition that survives a change of context; it essentially disregards changes in musical context and their influence. Conversely, "recontextualization" emphasizes a change of context that transforms (literal or varied) repetition into a phenomenally estranged repetition. This phenomenal transformation contradicts the standard meaning of "repetition." In this sense, recontextualization is not a kind of varied repetition but its opposite, signaling perception not of repetition but of *change*."[31]

To ground these two terms in Abrahamsen's music, consider the two similar passages from *Walden* presented in Figure 6. The top passage (which was also segmented in Figures 2 and 3) is a reduction of three voices appearing at the end of the first movement, while the bottom passage comes from the first measures of the second movement. At a glance, the second passage appears to be an equivalent varied repetition related by T_5, however, contextual details surrounding the segments in this passage allow for a reading of it as a recontextualization of the first movement material. Abrahamsen articulates the second movement passage with a slower tempo and a different timbre, pairs it with other recontextualized associative sets, and shapes the associative landscape of its segments through retrograde and filtering. The specifics of these

[30]Hanninen, "A Theory of Recontextualization in Music," 61.
[31]Ibid., 64.

contextual differences will be expounded on in Part Two's analysis, but this figure nonetheless introduces the concept of recontextualization especially as it relates to the relationship between *Walden*'s first and second movement.

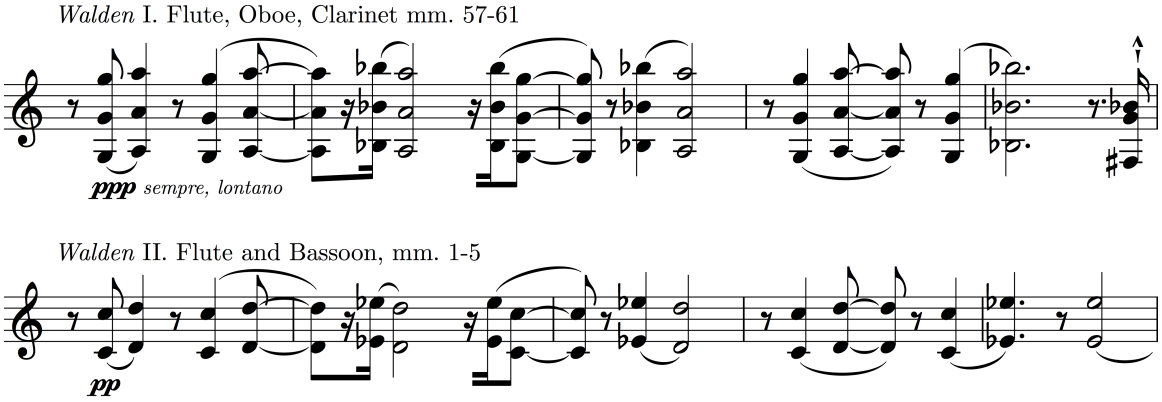


Figure 6: Recontextualized passage in the first and second movement of *Walden*

Abrahamsen's reuse of material is not completely captured by recontextualization. In fact, this dissertation will argue that Abrahamsen's associative organization of *Wald* is rooted in both recontextualization and varied repetition. The existence of both approaches in *Wald*, a third period work, suggest a combination of Abrahamsen's first period practice of recontextualization and his second period practice of arrangement. These aspects will be illustrated in the following analyses of *Walden* and *Wald* in Part Two and Three. Both parts contain introductory sections providing background details on their commission, inspiration, and instrumentation, as well as analytical sections that go into great detail describing their forms, associative sets, and associative organization. With its focus on identifying and categorizing segments through sonic and contextual characteristics and examining their organization over time, Hanninen's theory of musical analysis is well-suited for this task and provides a deep framework for analyzing Abrahamsen's approach to recontextualization and varied repetition.

Part 2: An Analysis of *Walden*

Background

Abrahamsen's *Walden*, from 1978, is deeply inspired by nature and, like other first period works, directly references a work from another artistic medium.[32] The title is taken from the literary work of the same name by 19th-century author Henry David Thoreau (1817–1862). Thoreau's text is a poetic and introspective reflection on self-reliance, simplicity, and society. It documents his two-year experiment living in austere conditions at Walden Pond in Concord, Massachusetts. Abrahamsen's program note for *Walden* touches on the connection to Thoreau as well as the kinds of musical material found in the piece:

> The title is taken from the American philosopher and poet Henry David Thoreau's novel from 1854 about living in the woods, which Thoreau did for two years. His stay there was an experiment, an attempt to strip away all the artificial needs imposed by society and rediscover man's lost unity with nature. In that particular sense his novel is a documentation of social inadequacy and a work of poetry (Utopia) as well. All though Thoreau himself never completed any actual social analysis he was way ahead of his own time in his perception of the economy and cyclic character of Nature, today known as ecology.
>
> *Walden* was written in a style of re-cycling and "new simplicity." A lot of superfluous material has been peeled away in order to give space to different qualities such as identity and clarity. Various layers are encountered in the quintet such as the organic (growth, flowering, decay), concretism (mechanical patterns) and finally the descriptive (distant horn calls and other ghost-like music of the past enter our consciousness like a dream).

The connection between Thoreau's rejection of excess and Abrahamsen's economy of materials in this piece is a clear one. *Walden*'s simple and unadorned musical ideas, limited

[32] Ernste (2006) points out that Abrahamsen often references art, literature, poetry, or other music in his first period works. For instance, he dedicates the first and fourth movements of *Winternacht* (1976-78) to Austrian poet Georg Trakl, the second to Dutch graphic artist M.C. Escher, and the third, the most neo-classical in nature, to Igor Stravinsky. This practice extends to borrowing titles, including *Märchenbilder* and *Trauemlieder* from Robert Schumann and *let me tell you* (2014) from the novel by Paul Griffiths.

harmonic palette, recurring segments, and interconnected movements exemplify these aspects of stripping away and recycling. Despite their clear poetic kinship, the inspiration to write *Walden* did not come directly from Thoreau, since Abrahamsen discovered the book and decided on the title after completing the piece.[33] He was attracted its association with the forest, "something pastoral," and Abrahamsen's discovery of Thoreau's book prompted him to "rediscover some qualities in [his] music, as Thoreau had tried to write about in his book."[34]

The qualities mentioned in the program note, organicism, concretism, and descriptive, reflect how the material unfolds in each movement. Organicism is central to the first and second movements where Abrahamsen develops segments through additive processes like melodic expansion, augmentation, and diminution and organizes segments in cyclical configurations. Concretism[35] applies perhaps most clearly to the third movement for its use of "mechanical patterns" via heterophonic polyrhythms and oscillating patterns that compress in speed, ascend in register, and coalesce into an interlocking rhythmic texture. The description, "ghost-like music of the past," is relevant to both the pastoral horn calls in the first and third movements as well as the contrapuntal texture in the fourth movement, which is stylistically reminiscent of Baroque music.

Instrumentation and Arrangement

Abrahamsen composed *Walden* in 1978 on a commission from the Funen Wind Quintet for a standard instrumentation of flute, clarinet in A, oboe, French horn, and bassoon. The work consists of four movements without titles that differ in duration and tempo while maintaining an

[33] Kullberg, "Konstruktion, Intuition Og Betydning I Hans Abrahamsens Musik."

[34] Ibid.

[35] Theo van Doesburg, founder of Art Concret, describes in his 1930 manifesto "The Basis of Concrete Art" a desire to reject "nature's formal properties," "sentimentality," "lyricism, dramaticism, symbolism, etc." Concretism, with its emphasis on abstraction, seems at odds with the nature-inspired *Walden*, but in this context, likely refers to Abrahamsen's use of strict processes and techniques.

introspective and restrained expressivity. In 1995, Abrahamsen created another arrangement for the Calefax Reed Quintet scored for oboe d'amore (doubling oboe), clarinet (doubling A and E♭), bass clarinet in B♭, alto saxophone, and bassoon. The reed quintet arrangement contains several differences, from smaller adjustments like tempi changes[36] and new descriptive markings to larger adjustments like re-metered movements and orchestration.

Unlike much of Abrahamsen's other music, the original version of *Walden* contains remarkably few interpretative markings beyond isolated instances of descriptions such as *lontano*, *giocoso*, or *calmo*. The reed quintet version adds tempo markings including "Moderato fluente," "Alla marcia," "Andante," and "Allegretto giocoso" (first through fourth movements, respectively). The lack of textual description in the original version as well as the traditional tempo markings of the arrangement underscore the strong vein of neo-classicism that runs throughout Abrahamsen's first-period works.

The most significant modifications in the arrangement are to meter and orchestration. In the second movement, Abrahamsen changed the original meter of $\frac{4}{4}$ and tempo of ♪ = 76 to a meter of $\frac{4}{8}$ in the arrangement to better reflect the underlying pulse. The rhythmic complexity of the original fourth movement is also simplified through re-metering. While notated in $\frac{4}{4}$, the original contains two polyrhythmic layers of $\frac{6}{8}$ and $\frac{3}{4}$ groupings indicated through brackets that often extend over bar lines. Abrahamsen re-meters the reed quintet arrangement in $\frac{3}{4}$ and $\frac{12}{16}$ to more clearly articulate the three-against-four polyrhythm inherent in the two layers. The re-metering of this movement also facilitates a metric modulation between the third and fourth movements, which are played attacca, where the speed of the quarter note at the end of the third becomes the speed of the dotted half note in the fourth.

The majority of the changes in orchestration reflect Abrahamsen's straightforward reassignment of instrumental lines. For movements I, II, and IV, Abrahamsen assigns each in-

[36]The first movement is slightly faster, while the second is slower, and the third and fourth remain the same.

strument of the original quintet to another instrument in the reed quintet. For instance, both versions have a clarinet in A, but in the first movement of the 1995 quintet, the clarinet performs the flute material from the 1978 quintet, while the alto saxophone performs the original clarinet material. The third movement contains several exceptions to this rearrangement process. Abrahamsen reassigns the original clarinet, horn, and bassoon material among multiple reed instruments for the duration of the movement. Table 3 gives an overview of the instrumental arrangement between these two versions. In all the subsequent discussions of *Walden*, the score for the original woodwind quintet will be the referenced version.

Table 3: Instrumental arrangement between versions

Wind Quintet		Reed Quintet I.	Reed Quintet II.	Reed Quintet III.	Reed Quintet IV.
Flute	→	Cl. in A	Al. Sax	Cl. in E♭	Cl. in E♭
Oboe	→	Ob. d'amore	Oboe	Oboe	Oboe
Cl. in A	→	Al. Sax.	Cl. in A	multiple	Al. Sax
Horn in F	→	Bs. Cl.	Bs. Cl.	multiple	Bsn.
Bassoon	→	Bsn.	Bsn.	multiple	Bs. Cl.

Form

Abrahamsen's compositional process begins with formal structure, since he believes that in order to "make a piece that hangs together as music" one must have a "strong structure that makes it stick together in time."[37] His approach to controlling the macro-level formal structure is evident in two elements that successively decrease with each movement: the total duration and number of sectional divisions. Abrahamsen has used the technique of controlling formal structure through proportion in many works; for instance, the movements or sections of *Winternacht*, *Schnee*, and *Wald* also decrease in duration over time, while the sections of

[37] Ibid.

Märchenbilder increase over time.[38] In *Walden*, the decrease is not linear with respect to measurement in seconds but, nonetheless, each movement is shorter than the previous. On the other hand, the number of sectional divisions does decrease linearly; the first movement has with four sections, the second three, the third two, and finally, the fourth concludes as a single continuous statement. Abrahamsen delineates sections by changes in texture, harmonic collection, and compositional technique. Table 4 displays these decreasing durations and number of section divisions. The two duration columns reflect the timings listed in the original score as well as the timings of the 1994 recording of the Scandinavian Wind Quintet.[39][40]

Table 4: *Walden* movement proportions

	Tempo	Score Duration	Recording Duration	Section One	Section Two	Section Three	Section Four
I.	♩ = 63-66	3:35	2:57	1-20 (20)	20-41 (22)	41-56 (16)	57-67 (11)
II.	♪ = 76	3:10	2:51	1-9 (9)	10-18 (9)	19-30 (12)	
III.	♩ = 52	2:30	2:33	1-10 (10)	10-32 (23)		
IV.	♩ = 112	1:00	1:04	1-28 (28)			

Abrahamsen's harmonic language in *Walden* is multifaceted and suggestive, blending a mixture of tonal elements, including triads, diatonic collections, and key areas, along with other interval-based elements, including symmetrical and inversionally related collections. This reflects the neo-classical and polystylistic qualities of Abrahamsen's New Simplicity works and is consistent with other works of the first period, such as *Winternacht*, which Ernste (2006) frames as having both tonal features and "borrowings from serialism (the aggregate, inver-

[38] Abrahamsen, "*Märchenbilder*."

[39] Abrahamsen, *Wind Quintets*.

[40] The Calefax Reed Quintet recording more closely reflects the listed score durations, but combined with the reed arrangement's adjusted tempi, the second movement ends up being slightly longer than the first.

sional symmetry, pitch invariance, interval/rhythm mapping)."[41]

The first movement of *Walden* contains three dichotomies that play out over the course of the movement: 1) tonal ambiguity to tonal clarity, 2) heterophony to homophony, and 3) ensemble as soloists to ensemble as subsets. The beginning of the movement is tonally ambiguous and heterophonic in texture, but by the end, the quintet is grouped into subsets (and eventually tutti) that perform homophonically and end with a bright triadic sonority. The first section features a call-and-response pattern transformed over four phrases via a process of rhythmic displacement. The second section consists of a legato three-voice mensuration canon, while the third section is a variation on this canon paired with an interjecting staccato gesture in the horn and bassoon. Finally, the fourth section introduces a homophonic three-octave melody paired with the increasingly insistent staccato segment before abruptly transitioning into a tutti repeated D major chord.

The second movement is a recontextualization of associative sets from the first. In contrast to the development and organic growth of the first movement, the second is about transformation through decay and subtraction. Over the course of three nine-measure phrases, Abrahamsen recasts three associative sets in a cyclical and periodic ordering shaped by retrograde. The reused material from the first movement includes the three-octave melody, the horn and bassoon's staccato punctuation segment, and the oboe's F♯-C♯ melodic segment. The music unfolds seamlessly over these three cycles, and with each successive cycle, Abrahamsen uses a strict process to filter segments from the texture.

Abrahamsen shapes the two sections of the third movement through rhythmic procedures of augmentation and diminution. The polyrhythmic and heterophonic first section, quite similar to the opening of the eighth movement of Ligeti's *Ten Pieces for Wind Quintet* (1968),[42] gradu-

[41]Ernste, "Hans Abrahamsen's *Winternacht:* Reflections on an Etching by M.C. Escher," 6.

[42]Thomas, "Something Amiss with the Fairies. Gavin Thomas on the Elusive Music of Hans Abrahamsen," 272.

ally slows down over ten measures, while the second section accelerates over sixteen measures. At the climax, the oscillating segments characterizing the second section's accelerando project a symmetrical set class 6-20[014589] fuse into a mechanical, sixteenth-note, arpeggiating pattern. The return of the first and second movement's oboe F♯-C♯ melodic segment initiates the disintegration of this pattern in to an increasingly sparse texture containing a muted, triadic horn call evoking allusions to hunting and the forest.

The fleeting minute-long, polytonal finale of *Walden* is notated in $\frac{4}{4}$ yet contains a composite texture of a duo for flute and bassoon in $\frac{3}{4}$ and a trio for oboe, clarinet, and horn in $\frac{6}{8}$. The curious choice of $\frac{4}{4}$ for the base meter perhaps connects to the "ghost-like music of the past" that Abrahamsen mentions in his program note; it is as if this music is entering from a distant time and place, suggested by its nonconformance to the given meter. The two layers begin in distant tonal key areas, C♯ minor in the duo and E♭ major in the trio. They modulate toward one another and eventually join in D major by the last three measures. Despite their harmonic arrival, the duo and trio retain a sensation of occupying different worlds. Their clear and balanced classical phrasing never quite coincides, and the movement ends abruptly, mid-phrase "like a music box cutting out."[43]

The following sections will detail *Walden*'s four primary associative sets and their various manifestations throughout its four movements. The bulk of the discussion, though, will focus on the segments and associative organization present within the first and second movements due to the way Abrahamsen recontextualizes associative sets between them. The process connects directly to associative organization in *Wald*, and the two works further share common compositional techniques, processes, and similar associative sets. Examining these aspects will establish a foundation from which to make comparisons to *Wald*.

[43] Ibid., 268.

Associative Sets Overview

The limited number of associative sets and the overlapping sonic and contextual criteria that support them drive the cohesive and constrained expressivity of *Walden*. Four associative sets constitute the principal musical material for much of the work, especially in the first and second movements. Figure 7 displays prototypical segments for each set labelled *A*, *B*, *C*, and *D*. As Abrahamsen notes in his program note, "superfluous material has been peeled away." This quality is evident both through these segments' relative simplicity but also from the number of shared sonic and contextual criteria, including legato articulation, generally soft dynamic, simple contours, and small intervallic leaps (particularly for sets *A*, *B*, and *C*).

Despite their overlapping criteria, Abrahamsen distinguishes the sets through nuanced variation and contextual relationships. Sets *A* and *C* closely associate through $C_{ic\ 5}$ and remain timbrally uniform for first the horn (set *A*) and second the oboe (set *C*). Set *A* contains little variation and is bound to the opening two sections of the first movement, while set *C* is more pervasive and varies in intervallic size and duration. Abrahamsen presents set *B* in many manifestations, including canonic textures and melodic homophony, making it the most widely used material. Set *D* is a punctuated and interjecting staccato motive appearing most prominently in the first and second movements.

Abrahamsen organizes each of these distilled associative sets through strict processes and techniques pertaining to the domains of rhythm (augmentation, diminution, displacement, subdivision), pitch (limited harmonic collections, canons, retrograde, permutation), and orchestration (texture, subsets, layers, phrasing). An individual examination of each associative set, the contexts in which they appear, and the way Abrahamsen varies them will illustrate his economy of musical materials and approach to recontextualization.

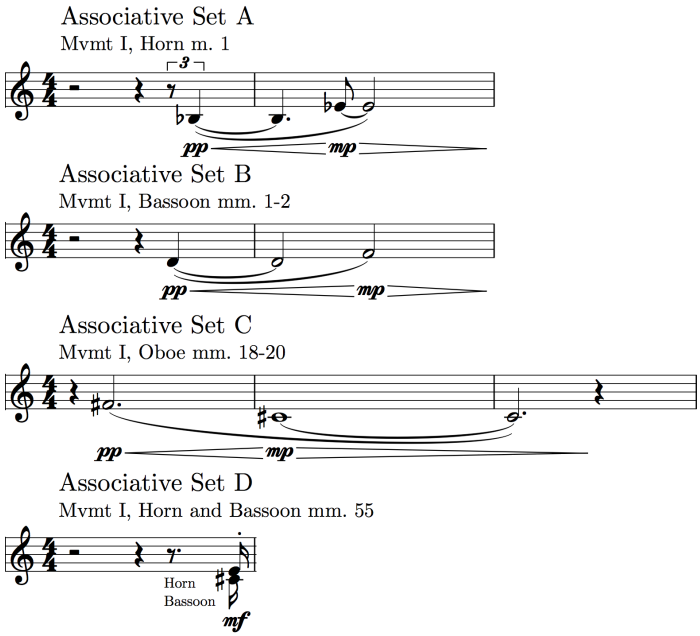


Figure 7: *Walden* Associative Sets *A*, *B*, *C*, *D*

Analysis

Associative Set *A*

Associative set *A* is the initial idea and the germinal material with which Abrahamsen began composing *Walden*.[44] It contains the fewest number of segments, the least amount of variation, and three associative subsets, shown earlier in Figure 4. Common characteristics of these subsets include orchestration for French horn, soft dynamics, range of pitch material within an octave, lower boundary of a $C_{ic\ 5}$, and melodic extension above this lower boundary.

Four segments of subset *A/a* related by literal repetition open the first movement of *Walden*. This opening material evokes allusions to hunting horn calls due to its ascending $C_{ic\ 5}$ and the imitative responses from other voices. Segments of *A/a* remain uniform in nearly all musical dimensions with the only variation occurring as a simple melodic extension of an F

[44]Kullberg, "Konstruktion, Intuition Og Betydning I Hans Abrahamsens Musik."

above the principal B♭-E♭ $C_{ic\,5}$, shown as segment *A/a5* in Figure 4. The tonal ambiguity of this opening material contrasts with the tonal clarity of the movement's D major ending.

Eight segments of subset *A/b* occur at the end of the third movement and retains the same horn call allusions as segments of subset *A/a*, but they project a rhythmically faster and staccato triadic D major sonority. Subset *A/b* further associates with *A/a* through the same lower boundary $C_{ic\,5}$ and upper melodic extension, except that both have expanded outward by semitone. More diverse than *A/a*, the eight segments forming *A/b* differ by rhythmic truncation and changes in contour.

The harmonic foundation of the tonal trio layer in the fourth movement consists of subset *A/c*. Abrahamsen presents the ten segments continuously from beginning to end and retains the same contour and triadic content of subset *A/b*. Segments of subset *A/c* are sonically uniform in marcato articulation but modulate through four key areas: E♭ major, E♭ minor, E♭ diminished, and D major.

Beyond their sonic and contextual differences, each subset of set *A* also occupies contrasting locations in their respective movement's associative landscape. Segments of *A/a* define the opening of the first movement and initiate the unfolding of the associative set *B* material, which will be detailed in the next section. Subset *A/b* segments occur only at the ending of the third movement, functioning as kind of shift in perspective as they seamlessly cross-fade out of the work's climactic material. Finally, Abrahamsen presents *A/c* segments for the entire fourth movement, where they maintain a foundational role.

Abrahamsen organizes the opening sixteen measures of *Walden* through an imitative call-and-response texture consisting of associative sets *A* and *B*. As previously indicated in the association map of Figure 5, these sets undergo a process of rhythmic displacement, or phasing. More commonly associated with American minimalists, phasing is a process where two or more

musical voices gradually shift out of an initial rhythmic configuration. Over the first sixteen measures, Abrahamsen presents four phrases containing literal repetitions of subset *A/a*'s horn call at a periodic rate of four whole notes. The flute, clarinet, and bassoon respond with an ascending D4-F4 segment. With each phrase, these echoing responses remain consistent in duration but shift earlier in rhythmic position by fixed amounts causing displacement both with one another and the horn call (see Figure 8). By the fourth phrase, the horn call is isolated from the responses having rotated to the end.

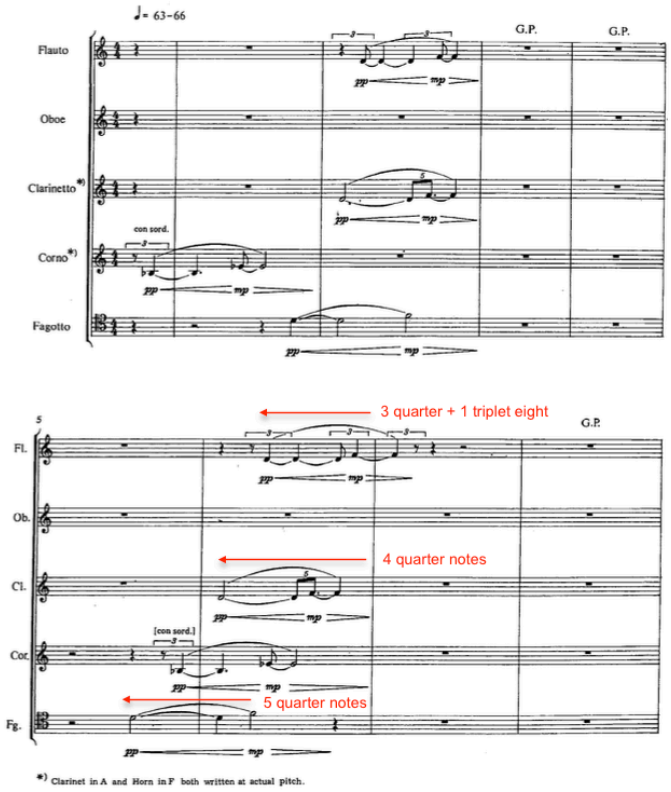


Figure 8: Horn call and responses

Abrahamsen's elegant but strict procedure controls not only the unfolding of sets *A* and *B* but also the point at which to move on to new material. A continuation beyond the fourth phrase would begin the process again with segments returning to their initial rhythmic position, but instead the oboe enters with segment *C/a1* to end the first section. The horn call of subset *A/a*

is the only material from the first movement that Abrahamsen does not recontextualize in the second movement or revisit throughout the entire work. Considering Abrahamsen's motivation for returning to earlier material in order to explore "hidden opportunities," it is easy to see how this idea, along with its process of rhythmic displacement, demanded further consideration and development within *Wald*.

Associative Set *B*

Associative set *B* represents the largest and most prevalent group of segments in *Walden*. Tracking appearances of the set highlights how Abrahamsen approaches variation and recontextualization of literal segment repetitions. Set *B* contains three associative subsets bound together by $C_{cseg\ <01>}$, $C_{cseg\ <10>}$, $C_{SC\ 3\text{-}2[013]}$, and $C_{SC\ 3\text{-}6[024]}$. Abrahamsen uses the subsets for different contextual purposes throughout the work; *B/a* and *B/c* generate polyrhythmic, heterophonic textures, while *B/b* projects a permutational melody. Common attributes shared by many segments of *B* subsets include: two note groupings separated by a short rest, small melodic bandwidth of $C_{ic\ 1}$, $C_{ic\ 2}$, and $C_{ic\ 3}$, and legato articulation with an occasional staccato punctuation. Subset *B/a* and *B/c* are found in the first and third movement, and *B/b* in the first and second movement. Figure 9 gives a few examples of segments from each subset.

The techniques Abrahamsen uses to generate the heterophonic textures of subsets *B/a* and *B/c* include canon and rhythmic displacement. With both subsets, Abrahamsen organizes them in three separate layers of segments differentiated by rhythmic subdivision: one layer subdivides in quarter or eighth notes, one in quintuplet sixteenths, and one in triplet eighths. This organization is evident in the two canonic trios that define the second and third sections of the first movement.

Abrahamsen presents the first canon from measures 21-38 in the flute, clarinet, and bas-

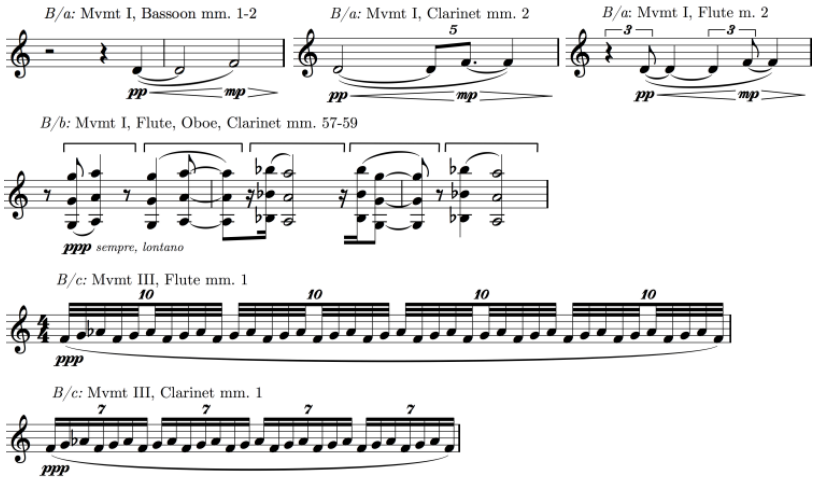


Figure 9: Segments from subsets of associative set *B*

soon, and in the second canon, from measures 42-56, he substitutes the oboe for the bassoon. Both passages consist of three streams of different rhythmic subdivisions containing fourteen segments of subset *B/a*. Figure 10 displays the first canon's *B/a* triplet subdivision layer of the flute, which is grouped in three phrases. Abrahamsen shapes the pitch order of the canonic layers through retrograde, where the sustained single-note F segments act as both a point of symmetry and a cadential point concluding phrases. Through the combination of this limited pitch collection and the retrograde ordering, the melody expresses all possible non-repeating permutations of two- and three-note groupings.

In addition to retrograde construction of phrasing and pitch ordering in the first canon, Abrahamsen uses the trio's contrasting rhythmic subdivisions to articulate a prolation canon with a ratio of 1:2:4 between the voices. For every one quarter note in the bassoon, the flute plays two triplet eighth-notes, and the clarinet plays four quintuplet sixteenth-notes. This creates a situation where the flutist works through the triplet subdivision segments the quickest, leading to a longer period of rest at the end of the canonic second section before moving on to the third section. There is a nuanced reversal of order here in the internal disposition of these three *B/a* rhythmic layers' associative landscapes. In the first section's rhythmic displacement

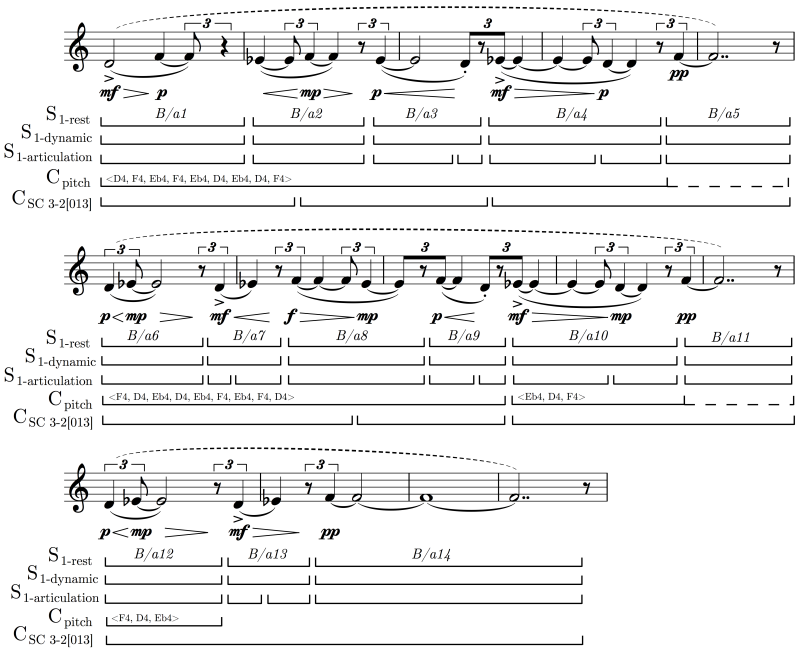


Figure 10: *Walden* I mm. 21-38 flute segments of subset *B/a*

process, the order of *B/a* segments always follows quarter-note subdivisions (bassoon), quintuplet eighths (clarinet), then triplet-eighths (flute), whereas this order is reversed in the second section (mm. 21-) due to the speeds of the prolation canon (see Figure 11).

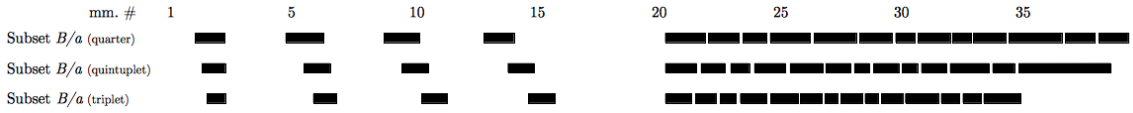


Figure 11: *Walden* I. mm. 1-38 subset *B/a* segments internal disposition

The second canon, occurring between mm. 42-56, is a variation on the first. In terms of pitch, it is equivalent through transformation by T_0I which produces a collection of G-A-B♭ and a perceptible inversion of the segments' contour. However, the pitch retrograde and prolation canon procedures from the first canon are absent. There are moments of retrograde, particularly for unordered two-note groupings, but it is not consistent like the first. The second canon begins with nearly the same prolation canon ratio, but it stops by the fifth segment. The change in prolation canon is related in part to instruments' exchanging of rhythmic subdivisions

over the course of the passage. For instance, the oboe begins with quarter note subdivision segments in mm. 42, changes to quintuplet sixteenths in mm. 47, and changes again to triplet eighths in mm. 52.

Figure 12 shows a graph of the durations for each segment of the two canons. The left hand side shows the clear ratio of 1:2:4 maintained for the entirety of the canonic passage, while the right hand side shows its absence. There is, however, a general trend toward shorter durations over the course of the second passage. This trend contributes to an increase in energy, supported by the interjections of associative set *C*, and prepares for the entrance of the homophonic melody of subset *B/b* in measure 57.

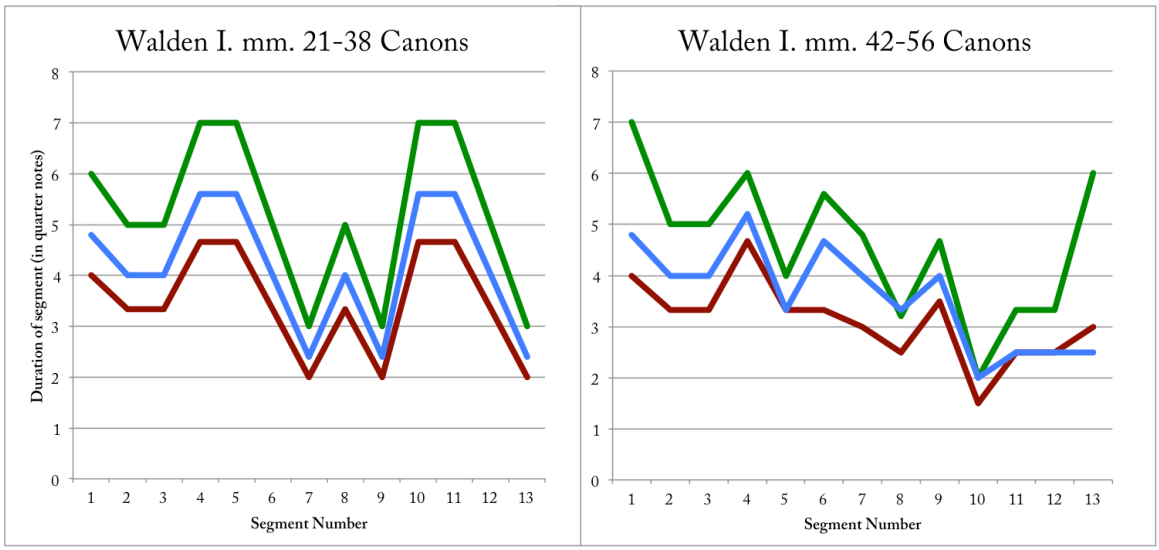


Figure 12: *Walden* I prolation canon speeds

Subset *B/b* associates with subset *B/a* through legato articulation, two-note groupings delineated by short rests, constrained intervallic motion, and set class 3-2[013] from notes G-A-B♭. However, subset *B/b* segments differ in dynamics, texture, register, and rhythm. Abrahamsen articulates *B/a* segments through heterophony limited to a narrow minor 3rd bandwidth with a dynamic range between ***pp*** and ***mf***, while segments of subset *B/b* project a homophonic texture spanning one or more octaves maintaining a ***ppp*** dynamic level.

Abrahamsen's contrasting sonic and contextual treatment of the two subsets' segments in both the first and second movement support an interpretation of *B/b* as a recontextualization of *B/a*. In the first movement, Abrahamsen presents seven *B/b* segments between mm. 57-61, which he abruptly cuts off with a sudden transition to the homophonic subset *D/b*. This point of juxtaposition becomes a point of retrograde in the second movement. The second movement is constructed around three cycles containing a decreasing number of subset *B/b* segments: mm. 1-9 (14 segments), mm. 10-18 (7 segments), and mm. 19-27 (4 segments). The fourteen segments within the first nine-measure cycle divide into two parts, where the first half is equivalent to the first movement's *B/b* segments related by T_5 and the second half is a retrograde in pitch and rhythm. The second and third nine-measure cycles filter out segments. Compared to the first cycle, the second removes every other segment (leaving only odd-numbered segments), while the third removes every two segments (leaving only multiples of three).

Figure 13 shows the three cycles from measures 1-27 with $S_{1\text{-rest}}$ forming each segment and C_{pc} indicating the retrograde organization. The increasing amount of rest between segments leads to the perception of a ritardando, and considering Abrahamsen's description of "decay" in his program note, this process is a kind of disintegration through subtraction. It is as if Abrahamsen initially presents a fully blossomed, symmetrical flower in the first cycle, but over the course of the movement, the flower decays and the petals fall off one by one.

Abrahamsen's treatment of subset *B/b* segments in the first and second movement recontextualize *B/a* segments. In the first movement, contextual differences in *B/b* segments such as a wider registral bandwidth, homophonic texture, and different rhythms support hearing the melody as a new musical object, rather than a varied repetition. This ephemeral foreground melody in the first movement becomes the melodic middleground of the second movement. Abrahamsen varies *B/b* segments through transposition, but most importantly the retrograde and cyclical organization of segments produces new contexts and interactions with associative

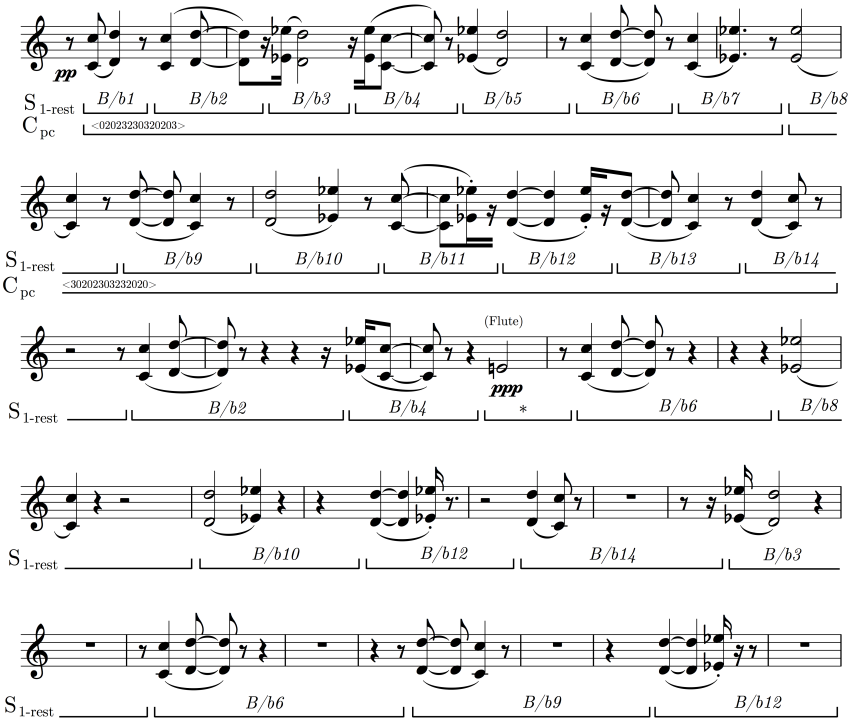


Figure 13: *Walden* II. Flute and bassoon mm. 1-27 cyclical retrograde melody

sets *C* and *D* that further recontextualize subset *B/b*.

Associative Set *C*

Associative set *C* is closely connected to set *A* through contextual criteria such as simple contour and emphasis on $C_{ic\ 5}$, but Abrahamsen's different treatment of these two sets suggests they are separate. The development of set *A* is very limited, and it appears only in the first movement. Set *C* appears in each movement, is more significantly varied, and takes on several functions.

Set *C* consists of two subsets related by $S_{2\text{-timbre (oboe)}}$, $C_{ic\ 5}$, and $C_{cseg\ <10>}$ (see Figure 14). Segments of subset *C/a* are characterized by a downward leap, and while each segment of *C/a* is uniform in this contour, they are diverse in intervallic content. Abrahamsen presents

C/a segments in perceptually salient ways, and the thirteen segments within the first three movements represent a significant and recognizable recurring oboe melody in *Walden*. Subset *C/b* is found only in the duo layer of the fourth movement. It associates with *C/a* through the descending interval class 5 motion, but this intervallic space has been filled in with scale tones corresponding to the local key area in the fourth movement. In a way, this scalar fill is analogous to how Abrahamsen adds melodic extensions above the defining interval class 5 of set *A*; instead with the case of *C/b* this extension is turned inward rather than outward, filling in the interval.

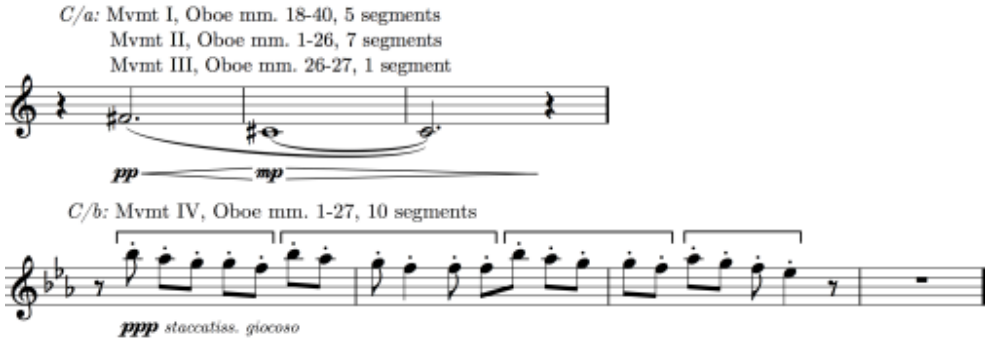


Figure 14: Segments from subsets of associative set *C*

An examination of subset *C/a* in the first and second movement again displays Abrahamsen's recontextualization of segments. In the passage between measures 18-40 of the first movement, Abrahamsen presents tightly controlled material using two different techniques. The first is the prolation canon of subset *B/a* which produces a highly ordered yet heterophonic surface texture. The second is a cycle of five literal repetitions of call-and-response in the oboe and horn using segments *C/a1-5* and *A/a5-8*, which support the heterophonic texture. One layer projects the same pitch sequence at different rhythmic speeds, while the other layer projects a repeating pitch sequence at a consistent rhythmic speed.

The periodic organization of *C/a* segments from the first movement is absent in the second. Instead, Abrahamsen shapes segments of the subset through rhythmic diminution and

augmentation. From measures 1-26 in the second movement, the oboe performs seven melancholic foreground phrases in which the proportions compress and then expand over the course of the movement. Each phrase begins with an instance of *C/a* followed by segments from a different associative set. Differences in contour and pitch content encourage segmentation as separate sets, but the two segments form a distinct phrase whose combined duration follows the compression and expansion highlighted in Table 5. The top stave of Figure 15 shows the first of these combined phrases, while the lower fragments display only the *C/a2-8* segments to demonstrate their diversity in intervallic content and duration.

Table 5: *Walden* II oboe melody phrase durations

Phrase	Duration
1	15 ♩
2	9 1/2 ♩
3	6 1/2 ♩
4	4 1/3 ♩
5	9 1/2 ♩
6	9 1/2 ♩
7	9 1/2 ♩

As with associative set *B*, Abrahamsen recontextualizes subset *C/a* segments in the second movement through sonic and contextual differences. In the first movement (mm. 18-40), *C/a* segments maintain a background and accompanimental role, which is reinforced by uniform rhythms, durations, and a periodic relationship with subset *A/a* French horn segments. In the second movement (mm. 5-26), Abrahamsen elevates *C/a* segments to the foreground through $S_{1\text{-dynamic}}$ and $S_{1\text{-register}}$ and further changes contextual criteria that remained fixed in the first movement, including C_{rhythm} and C_{pitch}. The new associative set segments appended to *C/a* segments in the second movement further support an interpretation of Abrahamsen's treatment of subset *C/a* as recontextualization.

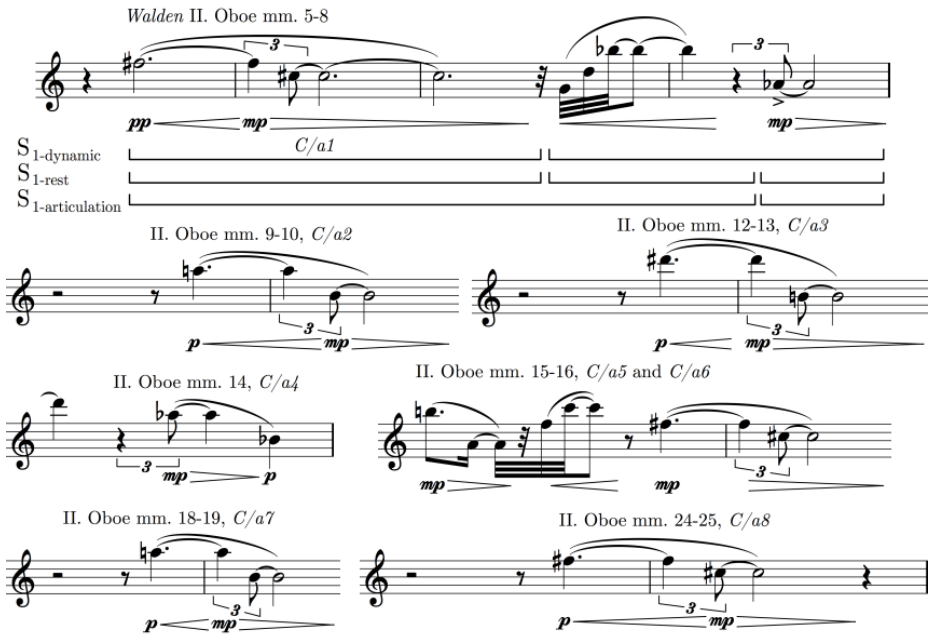


Figure 15: Segments of subset *C/a* in the second movement

Associative Set *D*

Associative set *D* serves as the final example of how Abrahamsen recontextualizes a modest, unadorned musical object between the first and second movement. Set *D* contains two subsets that associate through attributes like metrical placement and articulation but which differentiate in register, timbre, pitch content, and function in the associative landscape. Figure 16 displays prototypical segments of the two subsets. Subset *D/a* is defined by placement in the middle register, $S_{1\text{-articulation (staccato)}}$ and $C_{\text{pitch }\{C\#,\,E\}}$. It maintains an interjecting or disrupting quality throughout the first and second movement. Subset *D/b* is also characterized by $S_{1\text{-articulation (staccato)}}$ but spans several octaves and generally opens registral spaces compared to other associative sets. Abrahamsen places it at pivotal movements in both the first and third movements.

Fourteen segments of *D/a* and eight segments of *D/b* appear in the first movement's third (mm. 41-56) and fourth sections (mm. 57-67), respectively. Abrahamsen uses rhythmic com-

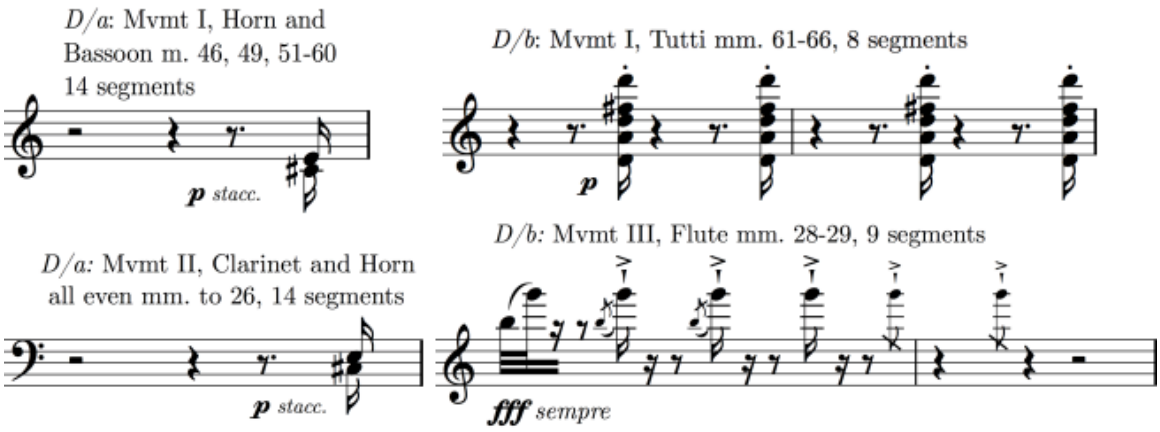


Figure 16: Segments of Associative Set *D*

pression and expansion in contrasting ways with both *D/a* and *D/b*. Between measures 46-60, the fourteen segments of *D/a* comprise two interwoven rhythmic threads. Thread one is a single dyad attack located on the last sixteenth-note of the measure in which the dynamic increases incrementally with each segment. Thread two consists of a dyad in which the number of attacks grow from two to five and whose dynamic level increases each time a new attack is added. Figure 17 highlights this process through $S_{2\text{-dynamic}}$ and $S_{2\text{-number of attacks}}$ and also shows how the duration between segments of thread one successively decrease by four quarter notes.

Abrahamsen's process of duration compression in thread one and attack increase in thread two propel this passage to a dramatic break in texture to a homophonic subset *D/b* in measure 61. The accretion of energy is liquidated over the eight segments of *D/b* through duration augmentation. Beginning with a periodic duration of seven sixteenth-notes between *D/b* segments, the duration increases for the last three segments to eight, eleven, and eighteen sixteenth-notes.

Abrahamsen's use of subset *D/b* to both to dissipate accumulated tension and end the first movement mirrors the ending of the third movement, where the subset retains a similar function. Subset *D/b* arrives at the climax of the third movement's long rhythmic accelerando, and while the segments of *D/b* do not end the movement directly, there is a notable connection between

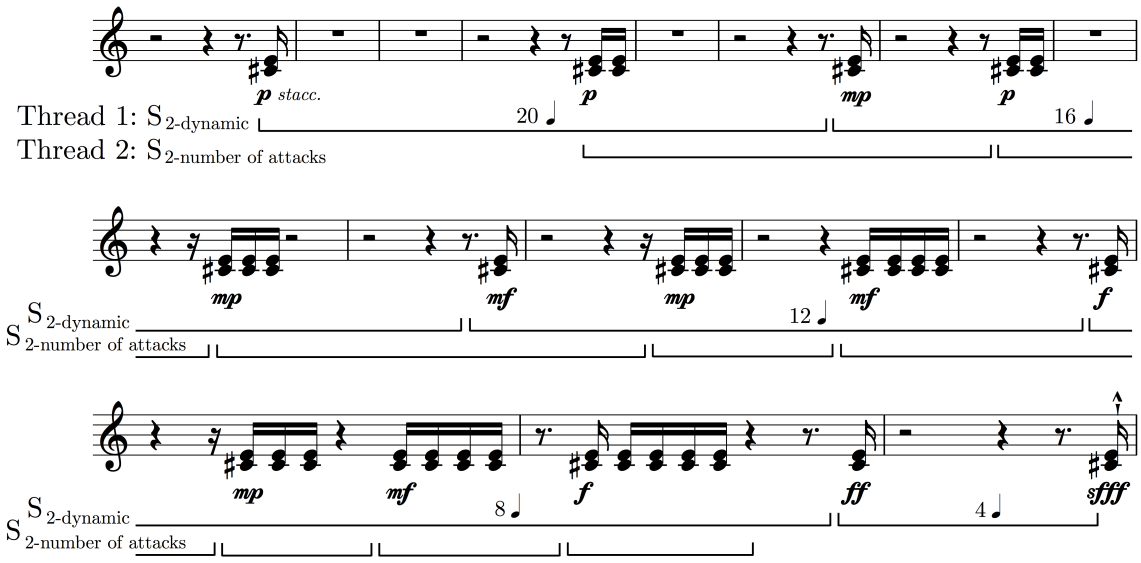


Figure 17: Subset *D/a* process in I. mm. 46-60

D/b and the subset *A/b* horn call segments that do. From mm. 27-32 in the third movement, Abrahamsen shapes *A/b* segments through a process of truncation where successive segments have fewer notes than the previous. This reduction of attacks to two- and one-note segments by the end creates a sort of associative morphing where segments of *A/b*, which at first associate closely to set *A*, slowly take on properties characteristic of set *D*. So again while *D/b* does not conclude the movement, the change in properties of *A/b* as well as the sparse texture of the ending creates parallels in the associative landscapes of the first and third movements.

In the second movement, subset *D/a* is recontextualized by its different function in the associative landscape. Segments in the first and second movement are almost literal repetitions, as they associate through attack point, $S_{1\text{-articulation (staccato)}}$, and $C_{\text{pitch }\{C\sharp, E\}}$, yet differ in octave ($C_{\text{pitch }\{C\sharp 4, E4\}}$ vs. $C_{\text{pitch }\{C\sharp 3, E3\}}$) and orchestration ($S_{1\text{-timbre (horn, bassoon)}}$ vs. $S_{1\text{-timbre (clarinet, horn)}}$). However, Abrahamsen removes the first movement's qualities of incremental growth and rhythmic propulsion, and instead, he organizes the fourteen segments of *D/a* in a completely periodic and static way. Abrahamsen places the attacks of *D/a* on every even measure's last sixteenth-

note, producing a perpetual plodding quality throughout the movement. Despite its periodicity and static nature, Abrahamsen avoids monotony by appending and prepending segments of other associative sets to *D/a* segments, similar to his treatment of subset *C/a*.

Recontextualization in *Walden*

Zooming out from the local details of subset and segment recontextualization, Figure 18 displays two associative landscapes of the first and second movement containing sets *A*, *B*, *C*, and *D*. These four sets represent the material that Abrahamsen clearly recontextualizes in the second movement. The landscapes, realized in Figure 18 as schematic association maps, represent the four sets' external disposition and roughly account for the total movement durations. However, they do not account for other associative sets that have secondary roles within the two movements, and they are also limited in segment detail, as they show only duration and no granular detail.

Despite the limitations, these two maps capture the most perceptually salient material and illustrate how Abrahamsen organizes the four sets with respect to distribution and pacing. Changes in texture and density indicate the four sections of the first movement; the phasing process between sets *A* and *B*, the two canons of set *B*, and the increasingly insistent set *D* are all clearly apparent in the first movement's map. Set *B* is the only associative set present in every section, while the other three are limited to one (set *C*) or two sections (sets *A* and *D*). As a result of this sectionalized distribution, set *D* segments never appear alongside set *C*, and while not depicted in this landscape, subset *D/a* segments do not appear with subset *B/b* segments.

In the second movement, Abrahamsen distributes these sets in a way that removes or alters many aspects of the first movement's associative landscape. From a global perspective, the

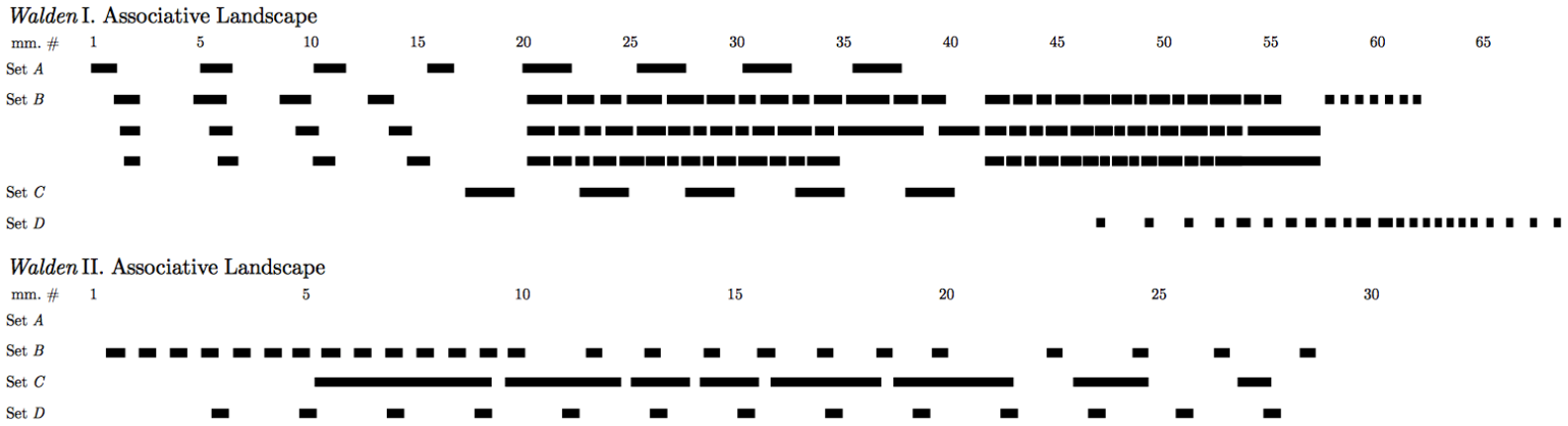


Figure 18: Associative landscapes of *Walden* I. and II.

first movement's textural variety and sectionalized set distribution are absent, as is any instance of associative set *A*. Given the lack of textural variety to define sectional boundaries, the movement's three cycles are instead evident through the increasing relative distance between set *B* segments. Set *B* is no longer defined by heterophony, as its homophonic orchestration at the end of the first movement returns for the entirety of the second. Abrahamsen reverses set *C*'s periodicity and secondary role in the first movement and gives it greater durational variation and a principal melodic function in the second.[45] Finally, the rhythmic elasticity and insistence defining set *D* becomes rhythmically static and periodic in the second movement.

Due to the close temporal proximity between several of these sets and subsets near the end of the first movement and the beginning of the second movement (particularly *B/b* and *D/a* segments), it is undoubtedly easy to hear Abrahamsen's reuse of material. However, the contextual details shaping the distribution and disposition of sets within the associative landscape, as well as the nuanced contextual changes to the segments themselves, encourage hearing this process as recontextualization. While one can hear that material is returning in some fashion, the perception is not principally of repetition but rather of change in something familiar, thus fulfilling a component of Hanninen's definition of recontextualization.

Abrahamsen returns to two of these associative sets in *Wald* and his compositional language continues to be informed by recontextualization. As the work is series of variations, the Part Three analysis of *Wald* will identify not only recontextualized sets and segments but also differentiate recontextualization from the varied repetition which shape his approach to variation.

[45] In Figure 18's association map of the second movement, the bars indicating set *C* depict the entirety of the oboe phrases, which includes both the *C/a* segments that begin the phrase and the segments of another associative set that follow it.

Part 3: An Analysis of *Wald*

Background and Instrumentation

Abrahamsen completed *Wald* in 2009 on a co-commission from the Asko|Schönberg Ensemble (Netherlands) and the BBC for the Birgmingham Contemporary Music Group (United Kingdom). Asko/Schönberg and conductor Reinbert de Leeuw gave the world premiere on January 14, 2010 at the Muziekgebouw aan't IJ in Amsterdam, while the BCMG gave the UK premiere with George Benjamin conducting during the 2010 BBC Proms on August 6 at the Royal Albert Hall in London. The title is the German word for "forest" or "woods" and shares the first four letters of Abrahamsen's woodwind quintet, an appropriate choice given *Wald*'s literal meaning and the subtitle for Thoreau's work (*Walden, or Life in the Woods*). Abrahamsen often draws upon a variety of languages for his titles, including German, Danish, English, and occasionally Italian. He has said, "the language of the title means a lot to me and to which associations it arouses the listener. There may, for instance, be a world of difference between a *Traumlied*, a *Drømmesang*, and a *Dream Song*."[46]

Beyond the wordplay made possible by the German title, the choice of *Wald* strongly associates it with the ethos and musical literature of German Romanticism. Abrahamsen invokes this relationship in his program note by implicitly comparing his own work to Schumann's *Waldszenen* (1848-49), a suite of nine piano pieces depicting forest scenes. In interviews, program notes, and descriptive markings in the piece, Abrahamsen uses a variety of terms and poetic images that further support a connection to German Romanticism: "hunting horn," "flocks of birds that when agitated take off," "sense of a hunt followed by galloping horses," "Nachtmusik," "wood spirits," "nature wakes," "sudden awakening," and "waking from a dream." While Abrahamsen's music is generally not programmatic, it is not difficult to hear some these

[46] Abrahamsen, "*Ten Studies*" Program note.

scenes throughout *Wald*. Hunting and horn calls figure prominently in the first sections of Part I, agitated flocks of birds abound in the third sections of Part I, mysterious night music ("a meeting of wood spirits," as Abrahamsen calls it) occupies the majority of the work's middle in Part II, and a sudden and dramatic awakening begins Part III and is followed by a tense and rhythmic galloping hunt.

The piece is scored for a sinfonietta ensemble of fifteen musicians: bass flute, English horn, bass clarinet, bassoon, French horn, trumpet, bass trumpet, percussion, harp, piano/celesta, 2 violins, viola, cello, and double bass. The percussionist instruments include marimba, large timpani, B♭ crotale, and kalimba, an African thumb piano placed on the head of the timpani for resonance. The lower tessitura created by the non-standard use of bass flute and bass trumpet (as well as the more common English horn and bass clarinet), imbues the work with a distinctive timbre further strengthened by the use of microtonal tunings. The harp is instructed to tune the lowest string to B♭0 and to flatten strings D3 and G3 slightly by a $1/6^{th}$ tone to approximate a natural 7^{th} harmonic. In addition to the harp, several instruments participate in this flattened natural harmonic tuning, including the bass flute, bass trumpet, French horn, two violins, cello, and bass. The bass trumpet produces these microtones by slightly pulling out the third valve, while the French horn performs them by the harmonic of a fundamental frequency which produces the natural 7^{th}.[47]

The musicians sit in an unconventional semi-circle configuration containing four groups of duos and two groups of trios with the piano occupying the central position outside of any group. Figure 19 shows the tree-like diagram of this seating plan. Abrahamsen arranges the six groups symmetrically in three circles; the inner circle contains Group I (bassoon and bass clarinet) and Group II (viola and English horn), the middle circle contains Group III (bass flute, cello, percussion) and Group IV (harp, bass, and horn), and the outer circle contains Group V

[47]This is a technique used extensively by Abrahamsen's teacher György Ligeti in his *Hamburg Concerto*. See Cheung (2010) for a thorough overview of Ligeti's use as well as the mechanics of how it works.

(two violins) and Group VI (two trumpets).

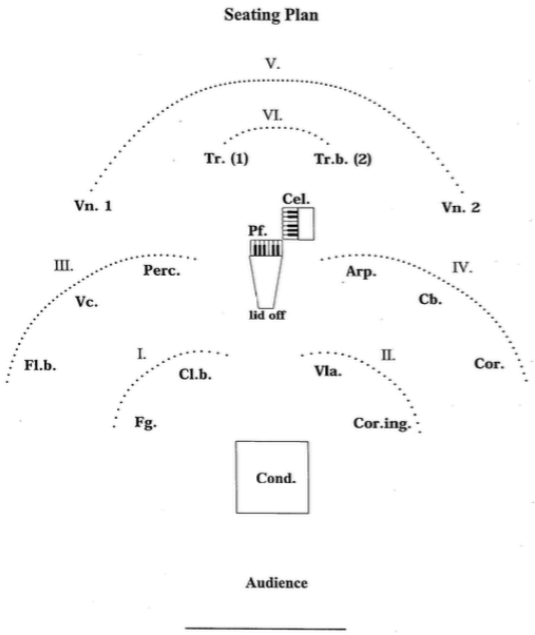


Figure 19: *Wald* seating plan

The seating arrangement creates a distinct left and right side of the ensemble that mirror one another. For Groups III and IV, this mirroring is even reflected in the order of the instruments within the group. The outer seats contain a wind-powered instrument, the middle seats a string, and the inner seats an attack-based instrument. The arrangement is intimately connected to the way Abrahamsen handles orchestration and transfers musical material between groups and sides. He does this in a way that is generally balanced and symmetrical wherein phrases performed by one group of instruments are answered by phrases from a corresponding mirror group. For instance, in the second sections of Part I, the middle circle's marimba (Group III) and harp (Group IV) exchange percussive, chromatic lines while their inner circle counterparts (Group I for the marimba, Group II for the harp) sustain the pitches of their attacks. The relationship between orchestration and seating arrangement is not always active or perfectly symmetrical but nonetheless shapes a significant part of *Wald*.

Abrahamsen and the Horn

The opening of *Walden* and *Wald* feature imitative call-and-response gestures inspired by hunting horn calls. Allusive horn calls also appear in *Winternacht* and *Nacht und Trompeten*. Abrahamsen has featured the horn in other works as well (albeit not directly related to horn calls), most notably in his *Six Pieces* (1984), for horn, violin, and piano, which he wrote as a companion piece to accompany the Danish premiere of Ligeti's *Horn Trio*.[48]

The horn has a special significance for Abrahamsen musically and personally. He was born with cerebral palsy, which affects the right side of his body.[49] He walks with an uneven gait and has only two functional fingers on his right hand leaving him unable to pursue most instruments to professional proficiency.[50] Since the French horn can be played with only the left hand, it became his principal instrument early on and inspired some of his first compositions. The first performance of his own music took place in 1969 with a piece called *October*, for horn and piano.[51] Abrahamsen performed both instruments with his left hand and projected "natural harmonics of the horn directly into the open strings of the grand piano to create resonance."[52] This early use of the horn and natural harmonics is notable considering the important role that microtonality has taken up in the works of Abrahamsen's third period, including in *Wald*.

Form

In an interview with the BBC prior to its UK premiere, Abrahamsen noted that *Wald* could bear the subtitle of "Variations" or "A Theme from *Walden*." The form of the work consists of an introduction and seven variations in which the principal thematic material comes from the

[48] Abrahamsen, "*Six Pieces*" Program note.
[49] Robin, "Hans Abrahamsen: Fame and Snow Falling on a Composer."
[50] Ibid.
[51] Abrahamsen, "*Left, Alone*" Program note.
[52] Ibid.

ascending interval class 5 horn segment (subset *A/a*) and the rhythmic displacement process in the first sixteen measures of *Walden*. Table 6 details the eight major formal divisions within *Wald*, which can be both segmented into smaller sectional divisions and grouped into four parts based on shared material: I, II, III, and IV.

Part I takes up almost half of *Wald*'s duration and establishes the work's principal associative sets and compositional techniques. It consists of the Introduction, Variation 1, and Variation 2, and each of which can be further divided into four sections differing in tempo, harmony, density of activity, and number of active associative sets. As in the relationship between *Walden*'s first and second movements, the four sections group into pairs where the second and fourth sections recontextualize the same associative sets from the first and third sections, respectively. Abrahamsen further constructs each variation within Part I as a highly related varied repetition of the previous variation's four sections.

Part II, containing Variations 3 and 4, contrasts with the first part through its quiet, introverted stasis and absence of sectional subdivisions. The two variations in Part II are bound together not only by slow tempo but also by the mysterious and winding low melody scored for cello, double bass, and timpani. Part III only includes Variation 5 but it functions as the climax, with the loudest, most chaotic, and texturally dense music. It divides into three sections; the first suddenly breaks the pensive atmosphere of Part II, while the second and third consist of a build up in energy through galloping rhythms. Finally, the last two variations of Part IV combine recontextualized material from the third sections of Part I along with literal repetitions of segments from the fourth sections of Part I.

Abrahamsen juxtaposes the various sectional subdivisions, variations, and parts with little to no transitional material. Their boundaries are clearly demarcated sonically by abrupt changes in dynamics, timbre, texture, and register as well as visually in the score by different tempi, meters, descriptive markings, and double bar lines. Abrahamsen facilitates these abrupt

juxtapositions through the use of metric modulations, which is a common characteristic of his third period. Table 6 provides a comprehensive list of every tempo change and descriptive marking that accompanies a variation or sectional subdivision and also identifies the variations that group together as parts (evident through explicitly returning tempo and descriptive markings) and indicate the durations for variations and their sectional subdivisions (measured from the only commercially released recording by Asko|Schönberg Ensemble[53]).

Table 6: *Wald* formal divisions

Part	Section	Duration	Measures	Tempo	Descriptive markings
I	Intro	3:10	1-108		
		0:45	1-36	Tempo I ♩. = 88	Allegro con brio “wie aus der Ferne” (“as if from a distance”)
		0:48	37-72	Tempo II 𝅗𝅥 = 66	Poco meno ma maestoso poco grottesco e ironico
		1:00	73-90	Tempo III ♩. = 100	Allegro vivace e agitato “aufgeregt” (“excited”)
		0:36	91-108	Tempo IV ♪ = 88	Meno mosso, soave e fluente
	Var 1	2:38	109-267		
		0:36	109-170	Tempo I ♩. = 92	Allegro con brio ma un poco piu mosso ancora “wie aus der Ferne” (still “as if from a distance”)
		0:43	171-237	Tempo II 𝅗𝅥 = 77	Poco meno maestoso ma un poco piu mosso ma poco lamentoso
		0:48	238-253	Tempo III ♩. = 100	Allegro vivace e piu agitato “sehr aufgeregt” (“very excited”)
		0:30	254-267	Tempo IV ♪ = 88	Meno mosso, soave e fluente
	Var 2	2:16	268-408		
		0:31	268-321	Tempo I ♩. = 94	Allegro con brio ma sempre poco piu mosso
		0:38	322-381	Tempo II 𝅗𝅥 = 82	Un poco meno ma ancora piu mosso

[53] Abrahamsen, *Hans Abrahamsen: Walden/Wald*, 2013.

Part	Section	Duration	Measures	Tempo	Descriptive markings
					lamentoso e melancolico
		0:41	382-401	Tempo III ♩. = 100	Allegro vivace e agitato “wieder aufgeregt” (“excited again”)
		0:25	402-408	Tempo IV ♪ = 88	Meno mosso, soave e fluente
II	Var 3	2:28	409-442	𝅗𝅥 = 32	Adagio misterioso “Nachtmusik”
	Var 4	1:59	443-473	𝅗𝅥 = 32	Stesso tempo
III	Var 5	1:39	474-581		
			474-489	♩. = 64	Con nuova energia “Wie ein plötzliches Erwachen” (“Like a sudden awakening”)
			490-521	♩ = 144	Vivo furioso “vielleicht eine Jagd” (“perhaps a hunting”)
			522-561	♩ = 165	Presto volante “galoppierend, immer vorwärts” (“galloping, always forward”)
			562-581	♩. = 132	Più mosso
IV	Var 6	1:31	582-594	♪ = 66	Andante mesto
	Var 7	1:18	595-605	♪ = 64	Piu lento

The introduction and seven variations of *Wald* successively decrease in duration similar to *Walden* and *Schnee*. The compression of proportions at the variation-level is obscured somewhat both by the variations containing sections and by the related variations forming parts. For instance, the sectional divisions within the variations of Part I encourage a more granular listening experience that makes perceiving the longer-range variation compression difficult at first. These sections follow a particular ordering from longest to shortest (section 3, 2, 1, and 4) and also mirror the variation-level compression by decreasing in duration from variation to variation (see the duration timings in Table 6). But rather than pointing to any sort of deficiency in Abrahamsen’s form, this multi-level proportion structure instead allows one to engage with *Wald* on the section-, variation-, or part-level. See Figure 20 for a diagram that maps these

three proportion levels.

Throughout the following discussion of *Wald*, the term part will be used to refer to those variation groupings listed in Table 6. Variation will of course be used to refer to an individual variation instance, while section will refer to those subdivisions within a variation. Given the close relationships between the variations and sections of Part I, a convenient short-hand notation of Intro:Sec1 or Var2:Sec1 or Var3:Sec1 will be used to clearly specify the section at hand. Phrases like "the fourth sections of Part I" or PartI:Sec4 apply to multiple instances of a recurring section (e.g., Intro:Sec4, Var1:Sec4, and Var2:Sec4).

Associative Sets Overview

The musical material throughout *Wald* can be categorized into nine associative sets (see Figure 21 for prototypical segments of each set). The sets vary in their number of subsets and segments but share many overlapping sonic and contextual criteria, which imparts cohesion and economy of materials. Associative set *F* consists of a repeated simultaneity ranging from a simple dyad to a dense chord, and Abrahamsen scores it for piano, harp, marimba, or celesta. Set *G* is defined by either a polyrhythmic repeated note texture or an unmeasured tremolo which Abrahamsen places most often in the two violins of Group V. Sets *H* and *J* correspond closely with sets *A* and *B* of *Walden*, but they are differentiated here with a new letter name to emphasize the recontextualized relationship between them. Like *A* and *B*, set *H* is an ascending interval class 5 call and set *J* is an imitative response. Abrahamsen similarly binds them together in a displacement process during the first and second sections of Part I.

Associative set *K* contains numerous agitated, pentatonic-based segments located primarily in the third sections of Part I. Set *L* consists of cascading segments that alternate between piano and a duo of harp and marimba. Abrahamsen constructs set *L* from harmonizations and

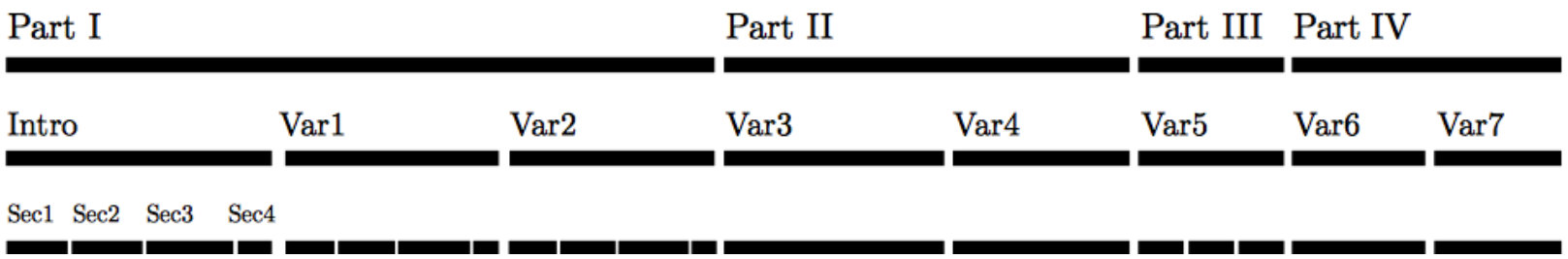


Figure 20: Schematic map of sectional compression in *Wald*

superimpositions of set *K* segments. Set *M*, which is always paired with *L*, consists of legato, melodic segments drawn from the more harmonically complex statements of set *L*. Abrahamsen shapes the fourth sections of Part I with sets *L* and *M* and later returns to verbatim *M* segments and a recontextualized set *L* in Part IV. Segments of set *N* project the slow and mysterious "Nachtmusik" melody found in only Part II, while nearly the entire ensemble performs segments of set *O* only during the first two sections of Variation 5. Unlike other sets, *O* segments are defined by large intervallic leaps, loud dynamics, and a wide registral bandwidth.

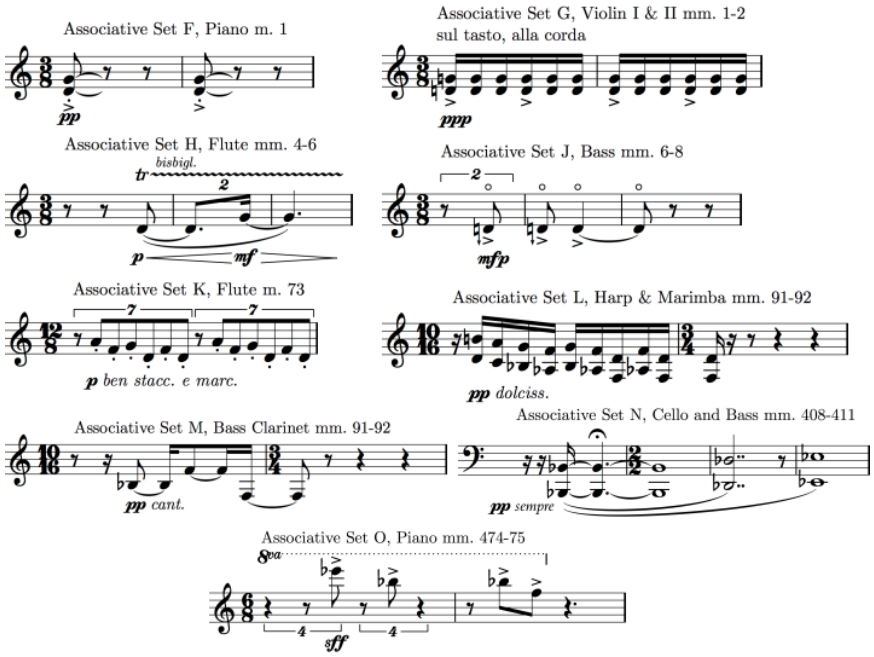


Figure 21: *Wald* associative sets

Figure 22 displays the associative landscape of these sets for the entire work through a proportional association map.[54] This global perspective does not indicate a detailed view of the number of segments but rather shows approximately when and which sets Abrahamsen activates in a variation or section. Several aspects of associative organization stand out in Figure 22. Like the first movement of *Walden*, the distribution of associative sets is fairly compart-

[54]Small breaks between the bar lines in this figure indicate the section divisions within a variation, unlike the previous, more granular association maps for *Walden* where bar line breaks indicated segment boundaries.

mentalized throughout the work and often organized in pairs. This is especially apparent in the bifurcated associative landscapes of the introduction and variations within Part I. The first two sections form a pair due to the consistency of associative sets *F*, *G*, *H*, and *J*. The third and fourth sections of Part I contrast by a reduction in the number of active sets. While not apparent in the map, set *K* and *L* share several contextual criteria, which also contributes to the perception of the third and fourth sections as a pair. Part II is characterized by very few active associative sets and clearly divided into a pair of variations. Part III is the only significant section that does not have a paired variation, although its second and third sections do maintain similar sets. Finally, Variation 6 and 7 form a pair in Part IV and the return to sets *L* and *M* connect to the landscapes of PartI:Sec4.

The following analysis will focus only on the associative sets and paired variations and sections in Parts I and IV. Each set will be examined in turn, identifying sonic and contextual criteria, associative subsets, processes Abrahamsen applies to sets and subsets, and the landscapes that result from these features. Parts I and IV capture the large majority of the associative material in *Wald* and more importantly illustrate Abrahamsen's approach to recontextualization and varied repetition, in particular through the associative organization of the four sections within each variation of Part I. Section 1 is shaped by rhythmic displacement process and call-and-response material from first movement of *Walden*. Section 2 is a close recontextualization of the Section 1 sets with louder dynamics, chromatic harmony, different processes, and different associative subsets. Section 3 features a web of polyrhythmic set *K* segments evoking the "agitated flocks of birds" mentioned in the program note, while Section 4 recontextualizes aspects of set *K* through a sequence of cascading *L* segments paired with sustained segments of *M* subsets. In Part IV, Abrahamsen recontextualizes sets and segments from PartI:Sec4 and concludes the work by providing closure to unfinished business left open in Var2:Sec4.

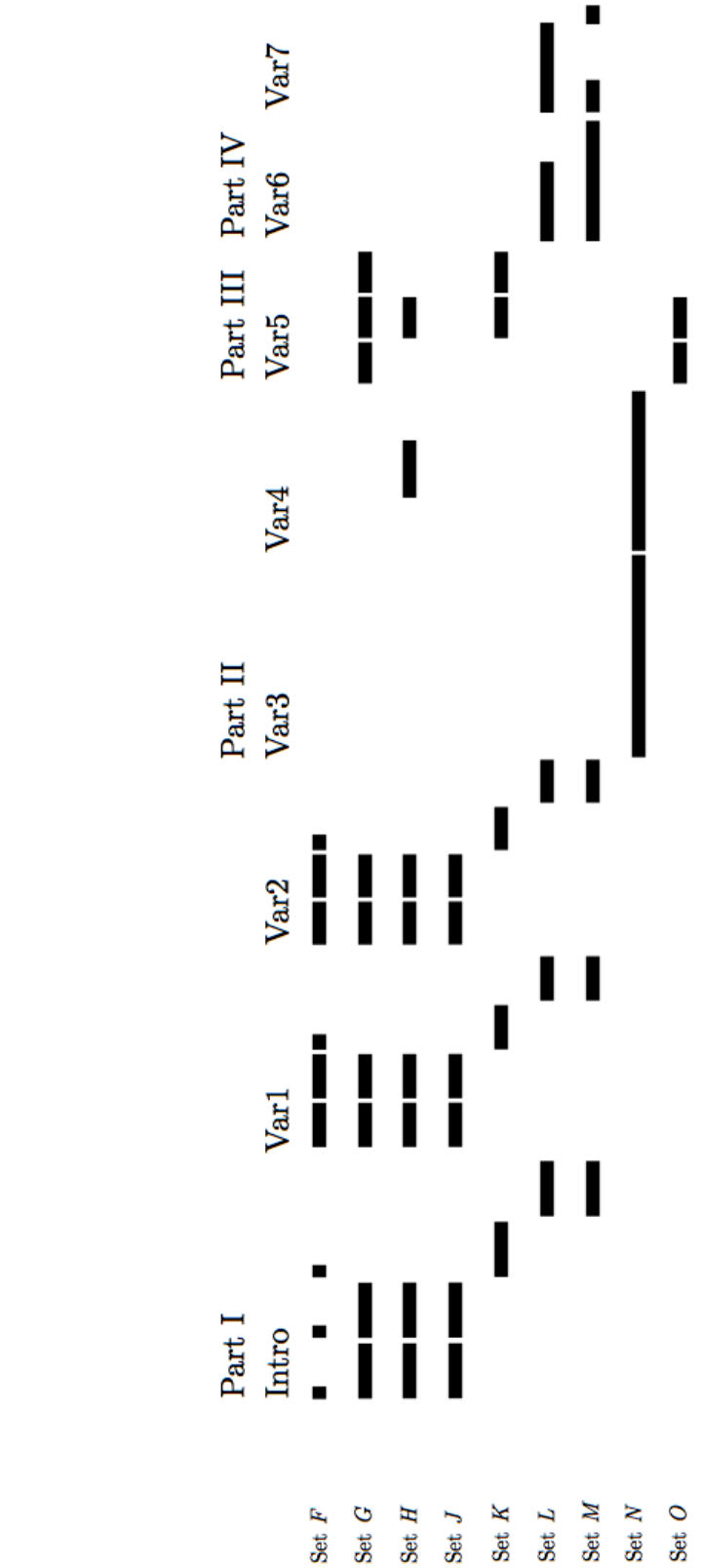


Figure 22: Associative landscape of sets in *Wald*

Analysis

In Part I, Abrahamsen shapes associative sets *F*, *G*, *H*, and *J* through several organizing principles: metrical groupings delineated by repeat signs and double bar lines, antiphony between symmetrically seated groups, and fixed pitch spaces. An overview of these aspects will be useful to establish before examining the individual associative sets and subsets.

Metrical groupings and subdivision plays a subtle but pervasive role throughout *Wald* where frequent markings of "3-Taktig" and "2-Taktig" indicate subdivisions where a measure is conducted in two or three.[55] Abrahamsen connects these markings to surface-level details like changes in harmony and patterns of accents. For instance, during the 3-Taktig subdivision in Intro:Sec1 mm. 3-11, the two violins performing set *G* accent every third note and switch between equal temperament and just intonation every three measures. During 2-Taktig subdivisions, the accents occur every other note and the harmony alternates every two measures. These changes in Taktig subdivision stem from how Abrahamsen groups measures in discrete units.

Figure 23 summarizes the metrical groupings of Sections 1 and 2, which frequently differ by one measure and are bounded by repeat signs or double bar lines. Across groupings, Abrahamsen distributes phrases through antiphonal spatial symmetry and alternates the sonic attributes of segments, such as temperament, articulation, and ornamentation. Comparing the metrical groupings of Intro:Sec1 in Figure 23 to the sonic attributes in Table 7, Abrahamsen's orchestration of sets *H* and *J* in phrases containing nine measures differ from phrases containing eight measures. In nine-measure phrases, the equally-tempered bass flute of Group III performs a timbre trill ornamentation of a set *H* segment, while the Group IV trio performs set *J* segments in just intonation ($1/6^{th}$-tone flat) with no ornamentation. These characteristics flip in the even phrases; the French horn of Group IV performs a just intonation unornamented

[55] Abrahamsen, "Wald" Performance Notes.

Introduction: Section 1

$\frac{3}{8}$ 2 mm. ||: 9 mm. :||: 8 mm. :||: 9 mm. :||: 8 mm. :||

Total: 70 measures (repeats included)

Variation 1: Section 1

$\frac{3}{8}$ 2 mm. || 8 mm. || 7 mm. || 8 mm. || 7 mm. || 8 mm. || 7 mm. || 8 mm. || 7 mm. ||

Total: 62 measures

Variation 2: Section 1

$\frac{3}{8}$ 6 mm. || 6 mm. || 6 mm. || 6 mm. || 6 mm. || 6 mm. || 6 mm. || 6 mm. || 6 mm. ||

Total: 54 measures

Introduction: Section 2

$\frac{2}{4}$ 2 mm. ||: 8 mm. :||: 9 mm. :||: 8 mm. :||: 9 mm. :||

Total: 70 measures (repeats included)

Variation 1: Section 2

$\frac{2}{4}$ 7 mm. || 8 mm. || 7 mm. || 8 mm. || 7 mm. || 8 mm. || 7 mm. || 8 mm. || 7 mm. ||

Total: 67 measures

Variation 2: Section 2

$\frac{2}{4}$ 8 mm. || 7 mm. || 8 mm. || 7 mm. || 8 mm. || 7 mm. || 8 mm. || 7 mm. ||

Total: 60 measures

Figure 23: *Wald* PartI:Sec1 and PartI:Sec2 metrical groupings

segment of *H*, while the Group III trio performs ornamented *J* segments in equal temperament.

Part of Abrahamsen's logic in connecting seating arrangement and orchestration is apparent here, as the detuned harp, bass, and horn of Group IV can idiomatically perform these just intonation pitches. One additional subtle detail emerges in these attributes of ornamentation and temperament: the just intonation versions of *J* segments are unornamented, while the equal temperament versions are ornamented with flutter tongue and tremoli, thus muddying the "clarity" of the equal temperament.

Table 7: Alternating sonic attributes in Intro:Sec1 sets *G* and *H*

Set	Attribute	Odd Phrases	Even Phrases
H	Temperament	equal temperament	just intonation
	Articulation	legato	legato
	Ornamentation	timbre trill	none (con sordino)
	Group	III: bass flute	IV: horn
J	Temperament	just intonation	equal temperament
	Articulation	accent	accent
	Ornamentation	none	flz / salt trem.
	Group	IV: harp, bass, horn	III: perc, cello, bs. fl

The harmonic language of *Wald* incorporates both equal temperament and just intonation and is grounded in fixed pitch spaces consisting of minimal collections. Abrahamsen's use of just intonation temperament stems from the previously mentioned retuned harp and other instruments that perform 1/6th-tone flat pitches approximating the natural 7th of the harmonic series. Figure 24 depicts the equally tempered pitch spaces for each section within Part I. The y-axis contains the total pitch space from A0 to C8 while the x-axis shows the active pitches in a given section.

As evident in this graph, there are a number of harmonic intersections between these formal divisions. Throughout Part I, Sections 1 and 3 contain transparent and simple pitch collec-

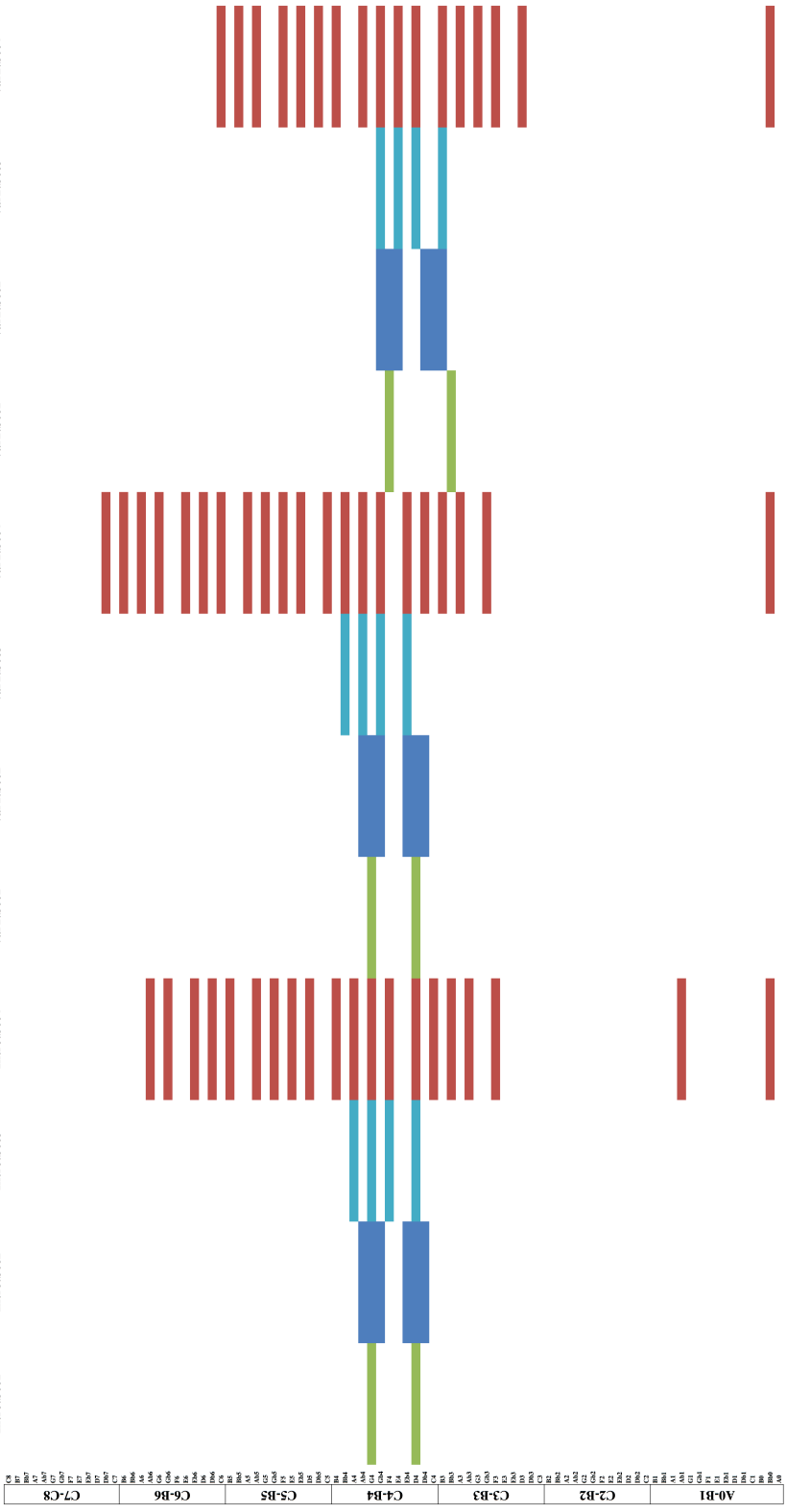


Figure 24: Fixed registers in Part I

tions, while Sections 2 and 4 superimpose the same minimal collections to create more complex harmonies. PartI:Sec1 consists of a single instance of interval class 5 and just intonation shadings of that interval. In Intro:Sec1 and Var1:Sec1, the interval is D4-G4, but in Var2:Sec1, it is B♭3-F4, a pitch class transformation of T_0I. Abrahamsen articulates harmony in PartI:Sec2 through three superimpositions of interval class 5 related by semitone, which form set class 6-6[012567]. Intro:Sec2 and Var1:Sec2 maintain the same pitch space of <C♯4, D4, E♭4, F♯4, G4, A♭4>, while Var2:Sec2 is related by T_7I and forms <B3, C4, C♯4, E4, F4, F♯4>.[56] PartI:Sec3 returns to a transparent pitch space that projects set class 4-22[0247]. In the returning sequences of Section 3, Abrahamsen transposes Intro:Sec3's initial set of <D4, F4, G4, A4> by T_1 and T_9 in Var1:Sec3 and Var2:Sec3, respectively. The pitch space in PartI:Sec4 is constructed from several superimpositions of 4-22[0247] and its superset 5-34[02469], which creates a significantly richer harmonic palette. Like PartI:Sec3, Abrahamsen also applies the same transpositions scheme of T_1 and T_9 to the returning segments in Var1:Sec4 and Var2:Sec4. Most notably PartIV:Sec4 stands apart due to its significantly wider registral bandwidth as compared to narrow constraint of previous three sections. Figure 24 highlights Abrahamsen's carefully controlled harmonic framework and use of simple transformation techniques (like transposition and inversion) to shape changes in harmony in successive variations.

Associative Sets *F* and *G*

Abrahamsen begins *Wald* with sets *F* and *G* and ties them closely to the aforementioned framework of grouped measures. Set *F* is comprised of a twice-articulated interval class 5 simultaneity that appears forty-three times throughout Part I. In Intro:Sec1, a single *F* segment appears in mm. 1-2 prior to the beginning of the repeating measures, while in Var1:Sec1 and Var2:Sec2, Abrahamsen places the segments on the downbeats following double bar lines

[56]Changes of segment contour within Var2:Sec2 suggest this transformation of T_7I rather than T_{10}.

thereby pacing the appearances of set *F*. Examining the segments of *F* across PartI:Sec1 reveals diversity in both the instruments performing the dyad and the duration between its two articulations.

The Introduction's single segment will serve as a model to compare to Variation 1 and 2. The pianist articulates the segment by directly striking the interior strings with marimba mallets and adds resonance with the sostenuto pedal. The duration between attacks is three eighth notes which situates the figure on the downbeats of the first and second measure. Here the *F* segment serves an initiating function as it demarcates the beginning of the piece, and Abrahamsen's placement of *F* segments at the start of Intro:Sec2 and Intro:Sec3, where it abruptly triggers new material, further supports this function.

During Var1:Sec1 and Var2:Sec1, Abrahamsen distributes *F* segments throughout the section varying orchestration ($S_{2\text{-timbre}}$) and duration between attacks ($S_{1\text{-duration}}$), which moves it from an initiating function to an interjecting one. Tables 8 and 9 show the pattern of orchestration and duration compression underlying these two variations. Each column displays the onset measure of one or more *F* segments and the duration between its two attacks. Throughout Var1:Sec1, Abrahamsen decreases not only $S_{1\text{-duration}}$ but also the duration between an instrument's appearance. For instance, the piano appears in the first, four, sixth, and seventh instances, creating a decreasing period of rest between each piano segment. In Var2:Sec1, the orchestration is less diverse, and the duration pattern is cyclical rather than compressed, mirroring the symmetry of the equal six-measure groupings (see Figure 23).

Table 8: Var1:Sec1 *F* segment pattern

Measures	111	119	126	134	141	149	156	164
Piano	9 ♪			6 ♪		3 ♪ 2/5 ♪	3 ♪	
Harp		6 ♪		3 ♪ 2/5 ♪	3 ♪			
Kalimba			9 ♪			6 ♪		3 ♪ 2/5 ♪
2 Trpts					9 ♪			6 ♪
Bsn + Bs Cl							9 ♪	
Vla + Eng Hn							9 ♪	

Table 9: Var2:Sec1 *F* segment pattern

Measures	268	286	304
Piano	9 ♪		
Marimba		6 ♪	
Harp			9 ♪

Across PartI:Sec2, *F* segments maintain the same initiating and pacing roles within their respective variations. The *F* segment appearing at the onset of Intro:Sec2 in m. 37 creates an abrupt sonic disjunction through $S_{1\text{-dynamics }(\mathit{f})}$, $S_{1\text{-timbre}}$, and $S_{1\text{-articulation (marcato, staccato)}}$, which forms a clear boundary between the two sections. PartI:Sec2 *F* segments differ from those in PartI:Sec1 not only through these sonic attributes but contextually through $C_{SC\ 6\text{-}6[012567]}$, as it conforms to the section's pitch space of three interval class 5 superimpositions. Like Var2:Sec1, the segments in Var1:Sec2 and Var2:Sec2 begin on the downbeats following double bar lines, and show stable, cyclical patterning of orchestration and duration between attacks (see Tables 10 and 11).

Table 10: Var1:Sec2 *F* segment duration pattern

Measures	171	178	186	193	201	208	216	223	231
Piano	8 ♪			12 ♪			8 ♪		
Harp		12 ♪			8 ♪			12 ♪	
Marimba			8 ♪			12 ♪			8 ♪

Table 11: Var2:Sec2 *F* segment duration pattern

Measures	322	330	337	345	352	360	367
Piano	12 ♪			8 ♪			12 ♪
Marimba		8 ♪			12 ♪		
Harp			12 ♪			8 ♪	

Abrahamsen's spatial distribution of the *F* segments between sections is one final quality to consider. A comparison of the seating arrangement in Figure 19 with the patterns in the previous tables shows that PartI:Sec1 *F* segments originate from the center of the ensemble in the Introduction, propagate to the outer and inner circles in Variation 1, and then contract back to the center of the ensemble in Variation 2. While in PartI:Sec2, segments remain only in the central, percussive instruments across the three variations.

Along with set *F*, set *G* begins *Wald*, and it contains two subsets. Subset *G/a* is scored for the two symmetrically seated violins of Group V that articulate measured or unmeasured tremolo dyads continuously throughout PartI:Sec1 and PartI:Sec2. Subset *G/b*, appearing only in Var2:Sec2, consists of a spiccato, detached single-note rearticulation scored for cello and bass. Figure 25 displays segments from these subsets in Part I. Given the continuity of this material, it does not sonically segment into discrete units easily; it acts more as a continuous background texture containing understated sonic nuances in temperament and articulation which are tied to the Taktig subdivisions as previously described and shown in Figure 23 (page 57).

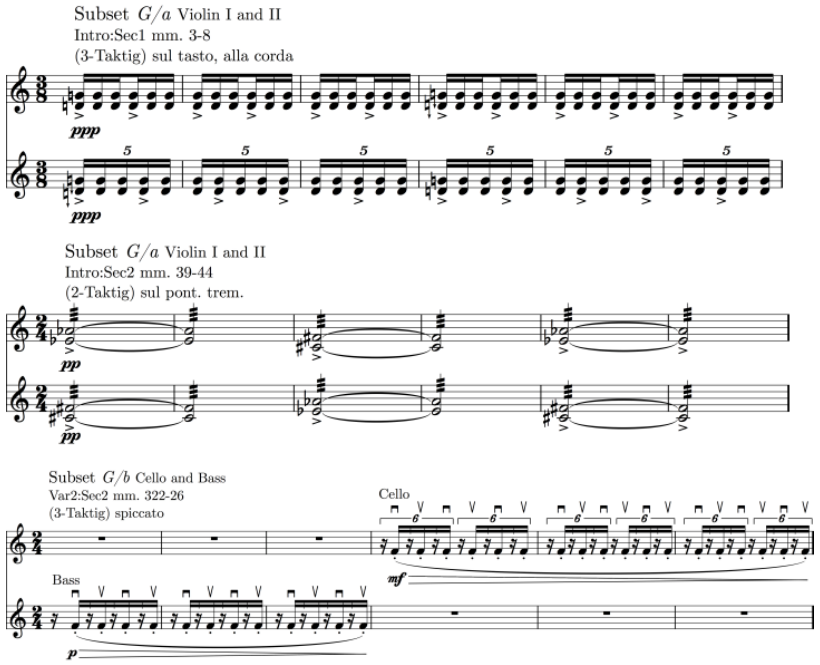


Figure 25: Segments of subsets *G/a* and *G/b* in Part I

Like set *F*, the variations in *G* segments between PartI:Sec1 and PartI:Sec2 involve the sonic domain ($S_{1\text{-timbre (sul tasto)}}$, $S_{1\text{-timbre (sul pont)}}$, $S_{1\text{-articulation (accent)}}$, $S_{1\text{-articulation (marcato)}}$, and $S_{1\text{-articulation (spiccato)}}$) and the contextual domain ($C_{\text{pitch }\{D4,G4\}}$, $C_{\text{pitch }\{C\sharp4,E\flat4,F\sharp4,A\flat4\}}$, $C_{\text{pitch }\{E4,F4,G\flat4\}}$, and C_{rhythm}). The spatial location of *G* segments is relatively uniform over time. They remain in the distant outer Group V violins for the majority of Part I through subset *G/a*. However, in Var2:Sec2, Abrahamsen retains timbral uniformity in the string family but moves *G/b* segments from the outer group to the middle Group III and IV cello and double bass.

Abrahamsen's variation of sets *F* and *G* in Part I is primarily driven by changes in timbre, harmony, duration, and spatial distribution. Within the context of carefully crafted pitch and metrical environments, he subtly alters *F* and *G* segments in ways that might not always be salient, especially during a first listening, but they nonetheless show a composer whose meticulous attention to nuance extends to the smallest details.

Associative Sets *H* and *J*

Sets *H* and *J* represent the material from *Walden* which Abrahamsen recasts in *Wald*. Segments from subsets of *H* and *J* are not literal rearrangements of segments from *Walden*, which is an approach he uses in other works like *Nacht und Trompeten* and *Six Pieces*. Instead, Abrahamsen recomposes the material into similar segments related by a variety of criteria. For instance, sets *H* and *A* both share criteria like $S_{2\text{-articulation (legato)}}$, $S_{2\text{-timbre (horn)}}$, $C_{cseg\ <01>}$, and $C_{ic\ 5}$, but *H* segments are more timbrally diverse than *A* as they alternate between several instruments, equal temperament and just intonation, and contain ornamentation. Most importantly, Abrahamsen situates sets *H* and *J* in similar associative landscapes as *A* and *B* where they form an imitative call-and-response pair that displaces over several phrases. The process that controls the phasing of these sets will be addressed in detail after establishing the sonic and contextual criteria that define *H* and *J* subsets.

The paired sectional structure of Part I divides sets *H* and *J* into two and four associative subsets, respectively, which are split between Sections 1 and 2. Abrahamsen distributes fifteen segments of *H/a* eight, six, and one times across PartI:Sec1. Through the three sequences, *H/a* segments stay relatively uniform in several dimensions: $S_{2\text{-timbre}}$, $S_{2\text{-duration (7 eighths)}}$, $S_{2\text{-articulation (legato)}}$, $S_{2\text{-dynamics (}\textit{pp-mf}\text{)}}$, $C_{seg\ <01>}$, and $C_{ic\ 5}$. Variations within these attributes primarily come from orchestration, interval size, temperament, and duration. Most notably, Var2:Sec1 contains the most divergent segment stemming from $S_{2\text{-duration (42 eighths)}}$ and $C_{ip\ <+7>}$.

Subset *H/b* contains greater diversity in both the number of segments and variance in attributes. Abrahamsen distributes thirty-two, seventeen, and twelve segments across the three sequences of Section 2, and many are related to subset *H/a* segments by equivalence. In PartI:Sec1, Abrahamsen alternates *H/a* segments between only bass flute and horn, while in PartI:Sec2, he harmonizes *H/b* segments, which contributes to the significant increase in the

subset's cardinality. The diversity of subset *H/b* is captured in Table 12. It indicates how attributes vary not only from odd- to even-numbered phrases within sections but also from variation to variation. Var2:Sec2 contains noticeable disjunctions in dynamics, duration,[57] and contour, which continues the trend of Variation 2 having a greater degree of change than Variation 1. In Intro:Sec2 and Var1:Sec2, Abrahamsen alternates phrases between symmetrical groups of instruments; odd-numbered phrases contain a left-side group (I) and an outer circle symmetrical pair (VI), while even phrases balance this with a right-side group (II) and a middle circle symmetrical pair (III and IV). Over the three Section 2 sequences in Part I, *H/b* segments move from timbral diversity (woodwinds, brass, and strings) in the Introduction to timbral uniformity in Variation 2 (strings only).

Table 12: Section 2 *H/b* attributes

Criteria	Intro:Sec2	Var1:Sec2	Var2:Sec2
$S_{2\text{-articulation}}$	Accent, Legato	Marcato	Pizzicato accent
$S_{2\text{-duration}}$	7 triplet eighths	7 triplet eighths	$S_{1\text{-duration (3 1/3 eighths)}}$
$S_{2\text{-dynamics}}$	***mf - fff***	***mf - fff***	***p***
C_{group}	Odd: I, VI Even: II, III (Vc), IV (Db)	Odd: VI Even: III (Vc), IV (Db)	Odd: II (Vla), V (Vn 2) Even: III (Vc), V (Vn 1)
C_{cseg}	<01>	<01>	Odd: <01> Even: <10>
C_{ic}	5	4, 5	4, 5
C_{SC}	6-6[012567]	4-16[0157]	4-16[0157]

Across PartI:Sec2, the variation of C_{ic} in Table 12 reveals that not all *H/b* segments contain the ascending interval class 5 that defines Walden's set *A* and most segments of set *H*. In Intro:Sec2, Abrahamsen strongly establishes *H/b* segments as an ascending interval class

[57]The change to pizzicato articulation in Var2:Sec2 preserves the attack points of prior segments but loses the previously consistent sustained duration. This is reflected in Table 12 through the change to $S_{1\text{-duration}}$ from $S_{2\text{-duration}}$ criteria. $S_{1\text{-duration}}$ describes duration between attack points, while $S_{2\text{-duration}}$ describes total duration of a segment.

5 whose transpositions form a chromatic realization of set class 6-6[012567]. However, in Var1:Sec2 and Var2:Sec2, the linear intervallic motion of *H/b* segments consist of a harmonized ascending (or descending) interval class 4 and 5. This voice leading motion produces the two $C_{SC\ 4\text{-}16[0157]}$ subsets possible within the 6-6[012567] collection: $C_{pc\ \{0157\}}$ and $C_{pc\ \{0267\}}$. Despite this variation, segments of *H/b* in Var1:Sec2 and Var2:Sec2 still strongly associate contextually through $C_{ic\ 5}$ and the displacement relationship they maintain with segments of associative set *J*.

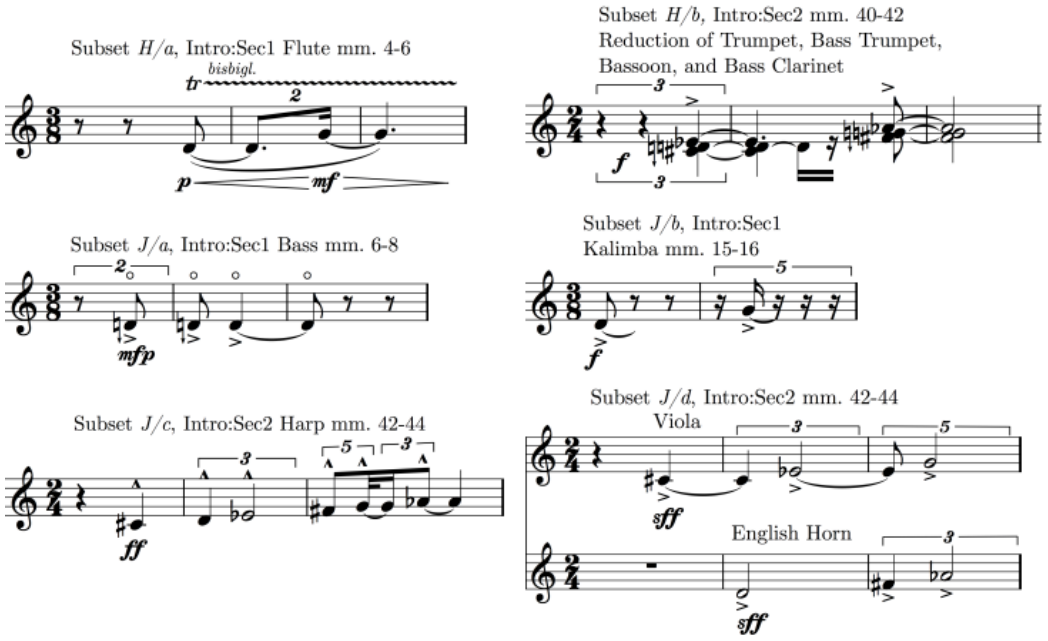


Figure 26: Prototypical segments of *H* and *J* subsets

Figure 26 gives prototypical segments for the two *H* subsets and four *J* subsets from Part I. Like subsets of *H*, the four associative subsets of *J* are evenly split between Sections 1 and 2. Subsets *J/a* and *J/b* appear in PartI:Sec1 and are associative in pitch, articulation, and temperament yet distinct in duration and rhythmic subdivision. Segments of *J/a* involve three attacks of D4, G4, B♭3, or F4, and *J/b* involves two attacks projecting an ascending D4-G4 (or B♭3-F4). Abrahamsen develops subset *J/a* through rhythmic augmentation or diminution across each segment, while *J/b* remains uniform in most musical dimensions. Subset *J/b* strongly

associates with subset *H/a* through $C_{ic\ 5}$ and $C_{cseg\ <01>}$ but is differentiated by $S_{2\text{-duration}}$ and $S_{2\text{-timbre (harp, marimba)}}$ and its consistent appearances alongside *J/a* segments.

Subset *J/c* is central to all three sequences of PartI:Sec2, and Abrahamsen orchestrates it for the symmetrical and spatially central harp, piano, and marimba. Segments of *J/c* project a chromatic six-note sequence derived from three embedded interval class 5 segments, one of which comes from subset *J/b*. Abrahamsen controls the development of *J/c* segments across PartI:Sec2 through a rhythmic displacement process that contrasts with his treatment of *J/a* segments. Accompanying this process in both Intro:Sec2 and Var1:Sec2, the Group I and II duos articulate subset *J/d* segments, which consist of two melodic lines sustaining the pitches articulated in the percussive *J/c* segments. The segments of *J/d* consist of non-intersecting trichordal partitions of the six-note sequence whose voice leading is different for each segment (see Figure 26).

Section 1 and 2 Associative Landscapes

Figure 27 displays three comparative associative landscapes of PartI:Sec1, accounting for the durations and dispositions of subsets from *F*, *G*, *H*, and *J*. The top map of Intro:Sec1 explicitly notates the repeated measures in order to make a more direct comparison to the later variations. The locations of the repeat signs and double bars are evident from the onsets of set *F* and the small breaks in the lines of subset *G/a*, which do not indicate breaks in continuity but rather moments where the violins exchange rhythmic subdivision. In all three maps, both attacks within *F* segments are notated in order to give more detail about how the duration between attacks change.

Abrahamsen controls the internal and external disposition of *H* and *J* segments in PartI:Sec1 through a process of rhythmic displacement which is determined by augmentation

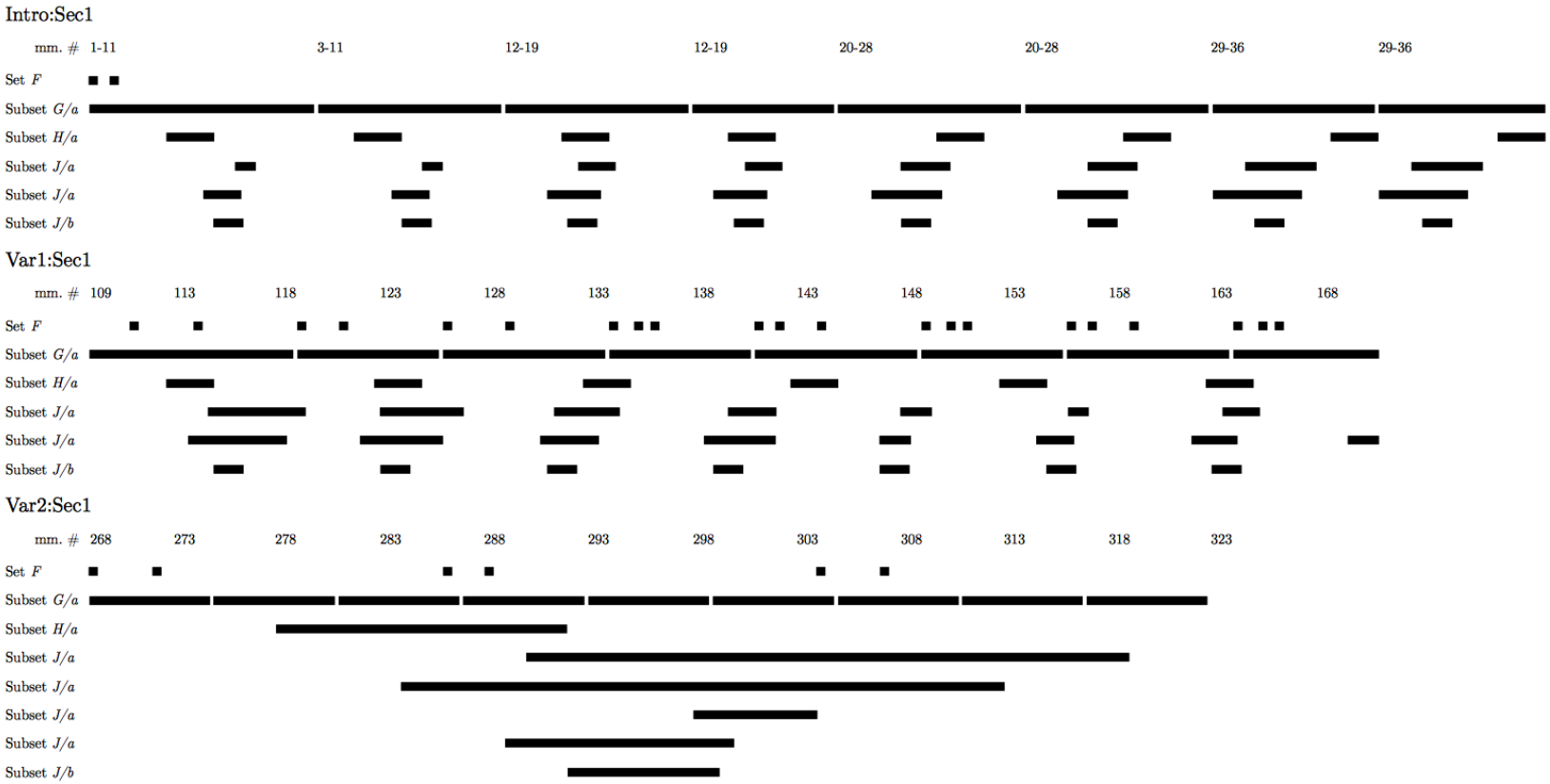


Figure 27: Comparative associative landscapes of PartI:Sec1

and diminution. Segments displace both internally between the two sets as well as externally with respect to other associative sets. In Intro:Sec1, segments of *H/a* and *J* subsets are bounded by repeat signs, which can be seen in how their segments in Figure 27 remain within the confines of the *G/a* segment lines. But in the later two variations, *H/a* and *J/a* segments extend over the boundaries of the double bar groupings. Throughout Var1:Sec1, there are eight double bar divisions and thus eight onsets of set *F* and changes in subset *G/a*, as Abrahamsen directly ties them to double bar appearances. However, segments of *H/a* and *J/a* have six and seven segments, respectively, and do not adhere to the double bar groupings, thus phasing occurs in the external disposition of these two associative set groups (*F* and *G/a* vs. *H/a* and *J* subsets).

The rhythmic displacement process of subsets *H/a*, *J/a*, and *J/b* segments differs from the one opening *Walden*. Instead of shifting metrical placement and preserving duration as he does with sets *A* and *B/a*, Abrahamsen expands and compresses the duration of *J/a* segments to control displacement. The elasticity of *J/a* durations is set against the uniformity of *H/a* and *J/b* segments. Throughout PartI:Sec1, these segments remain static in duration (seven eighth notes for *H/a* and six quintuplet divisions for *J/b*) and periodicity (every ten measures for *H* and every eight measures for *J/b*). Their periodic arrangement is obscured, however, in Intro:Sec1 by the eight- and nine-measure repeat signs which produce shorter periods than ten measures on repeats.

The asymmetry of this process, where some subsets change but other do not, is reflected in how Abrahamsen transforms the durations of subset *J/a* attacks. *J/a* segments contain three articulations of a single note falling within the given section's active pitch space. Starting with Intro:Sec1, each articulation within *J/a* augments by a different rhythmic duration that creates a pattern of <+1.5 ♪, +1 ♪, +0 ♪>. From segment to segment, Abrahamsen prepends the rhythmic value to the first attack causing the segment to "shift" earlier with respect to the

unchanging and periodic *H/a* and *J/b* segments. Figure 28 highlights the augmentation process using the four *J/a* segments in Intro:Sec1.

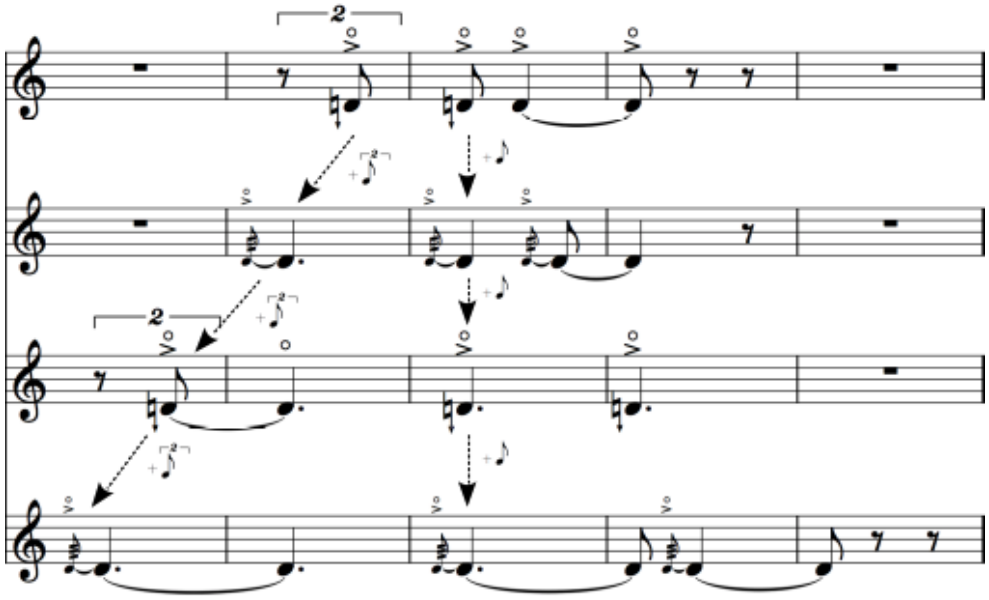


Figure 28: *Wald* Intro:Sec1 *J/a* augmentation

As evident in Figure 27's Var1:Sec1 associative landscape, Abrahamsen reverses the phasing process by using diminution rather than augmentation. Segments of *H/a* and *J/b* still remain the same duration, and due to the absence of repeat signs, their ten-measure and eight-measure periodicities are unencumbered. The first *J/a* segment of Var1:Sec1 is a varied repetition of the last segment in Intro:Sec1 where Abrahamsen switches the positions of the first and second durations. The pattern of rhythmic diminution applied to each attack follows this reordering: <-1 ♪, -1.5 ♪, -0 ♪>.

There are three augmentations between segments in Intro:Sec1 and six diminutions in Var1:Sec1. *J/a* segments in Var1:Sec1 compress to a point of near elimination and then return to the original configuration of the Intro:Sec1 opening. The *J/a* segment in the bass in mm. 147-48 represents the end point of the process. It contains only a single attack (what would be the third attack) as the subtraction of 1 and 1.5 eighth notes from the first and second attack

removes them completely. The *J/a* and *J/b* segments that follow in mm. 154-56 and mm. 162-65 return to the same rhythmic and duration configuration as mm. 6-8 and mm. 14-17 in Intro:Sec1, effectively beginning a new cycle (see Figure 27 to compare the visual similarity of these segments' dispositions).

Var2:Sec1 contains no phasing process like the prior sequences of Section 1. Instead, Variation 2 is characterized by a significant augmentation of duration proportions by a factor of six. Abrahamsen scales the single segment of *H/a* in the bass flute (mm. 279-91) from the original seven eighth note duration to forty-two eighth notes. *J/a* segments maintain the same growth factor; for instance, the bass's *J/a* segment in Var1:Sec1 mm. 113-18 expands from <4 ♪, 6 ♪, 4.5 ♪> to <24 ♪, 36 ♪, 27 ♪> in Var2:Sec2 mm. 284-312.

Having described the sonic and contextual criteria forming sets *F*, *G*, *H*, and *J* and examined the processes that shape their associative landscapes, it is apparent that these passages constitute a recontextualization of the rhythmic displacement process and two sets found in the opening *Walden*. The addition of new sets, the timbral variation of the reused sets, and the contextual modification of the displacement process all produce a considerably different musical environment that does not sound like a repetition of *Walden*.

However, the experience of hearing these three sections within *Wald* is a different matter. As Figure 27 depicts, the associative landscapes of PartI:Sec1 are clearly derived from one another and contain a narrow range of variance. There are, of course, many nuanced contextual changes in the four associative sets' segments, but as Hanninen notes, "Changes in the activity of contextual criteria constitute potential for recontextualization but do not guarantee it; the two are related not by logical implication but by matters of degree and analytical interpretation."[58] Thus, despite the changes, Abrahamsen's compositional approach in PartI:Sec1 is better understood as a series of varied repetitions. When these sections return, the experience is not like the

[58]Hanninen, "A Theory of Recontextualization in Music," 72.

first and second movement of *Walden* but rather encourages the perception of familiar music being repeated.

Recontextualization does play a significant role in *Wald* beyond the reuse of sets and processes from *Walden*. It comes in the form of associative sets that Abrahamsen recontextualizes between the paired sections and variations within Part I and Part IV. In other words, the recurring instances of sections between variations signify varied repetitions but the paired sections within variations contain recontextualization. An examination of the displacement processes forming the associative landscapes of PartI:Sec2 with further illustrate these points.

Throughout PartI:Sec1, Abrahamsen controls the external disposition of associative sets *H* and *J* through periodicity (subsets *H/a* and *J/b*) and augmentation/diminution (subset *J/a*). In PartI:Sec2, Abrahamsen uses the same principles but controls the displacement process through different means. *H/b* and *J/b* segments remain periodic at a rate of ten measures and eight measures, but Abrahamsen embeds the periodic *J/b* segment within *J/c* as one of its three chromatic interval class 5 segments. Unlike *J/a* segments in PartI:Sec1, the embedded interval class 5s within *J/c* segments do not change in duration but instead shift earlier and later in time at different polyrhythmic speeds. This process alters the global duration of *J/c* segments and produces a sensation of augmentation and diminution, but its underlying mechanism contrasts with PartI:Sec1.

Like Figure 27, Figure 29 depicts global perspective of PartI:Sec2 associative landscapes through three association maps. Again, the locations of the repeat signs and double bars are evident from the two attacks of set *F*. There are two subtle but notable changes compared to the association maps of PartI:Sec1. First is the greater number of *G/a* and *G/b* segments, which arise from $S_{1\text{-articulation (accent)}}$ rather than exchanges in rhythmic subdivision. Second is the depiction of attack points for subset *H/b* in Var2:Sec2, which results from Abrahamsen's orchestration of these segments for pizzicato strings. The overall disposition of these sets appears visually sim-

ilar to PartI:Sec1. However, Abrahamsen varies the resulting musical unfolding both through sonic variation, as detailed previously, and the contextual realization of the phasing process through subsets *J/c* and *J/d*.

The harp and marimba alternate statements of *J/c* segments in Intro:Sec2, the first two of which are shown in Figure 30. The top stave displays the composite six-note segment while the lower three staves tease out the three embedded segments of interval class 5, including the *J/b* segment. These rhythms of the these embedded segments project a composite polyrhythm of 4:5:6 (quarters vs. quintuplet eighths vs. triplet quarters) and remain consistent in duration (3 and 2 quarters vs. 6 and 4 quintuplet eighths vs. 3 and 2 triplet quarters). The periodic *J/b* segment occupies the central position in the rhythmic sequence, mirroring its central position in fixed pitch space. While the embedded *J/b* segment always occurs on the downbeat, the quarter note segment (C♯4-F♯4) shifts earlier and the triplet quarter note segment (E♭4-A♭4) shifts later at a rate of one quarter note and one triplet quarter, respectively, per segment (see Figure 30). This process occurs for each of the four repeated phrases in Intro:Sec2.

In Var1:Sec2, the *J/b* segment continues to serve as the central axis of displacement, but Abrahamsen varies the density of the embedded segments by appending and prepending another interval class 5 to each such that both contain a sequence of $C_{pitch\ <C♯4,\ F♯4,\ E♭4,\ A♭4>}$. As in the previous section, the quarter note segment shifts earlier while the triplet quarter note segment shifts later with each *J/c* segment. Abrahamsen no longer alternates statements between the harp and marimba as in Intro:Sec1; rather, he presents two superimposed segments where each instrument articulates not only the central, embedded *J/b* segment but also one embedded segment from each rhythmic subdivision.

Figure 31 illustrates this orchestration. The upper two staves display the composite simultaneous segments in the marimba and harp from mm. 173-179 in Var1:Sec2, while the lower staves tease out the three embedded segments. The marimba begins with the triplet quar-

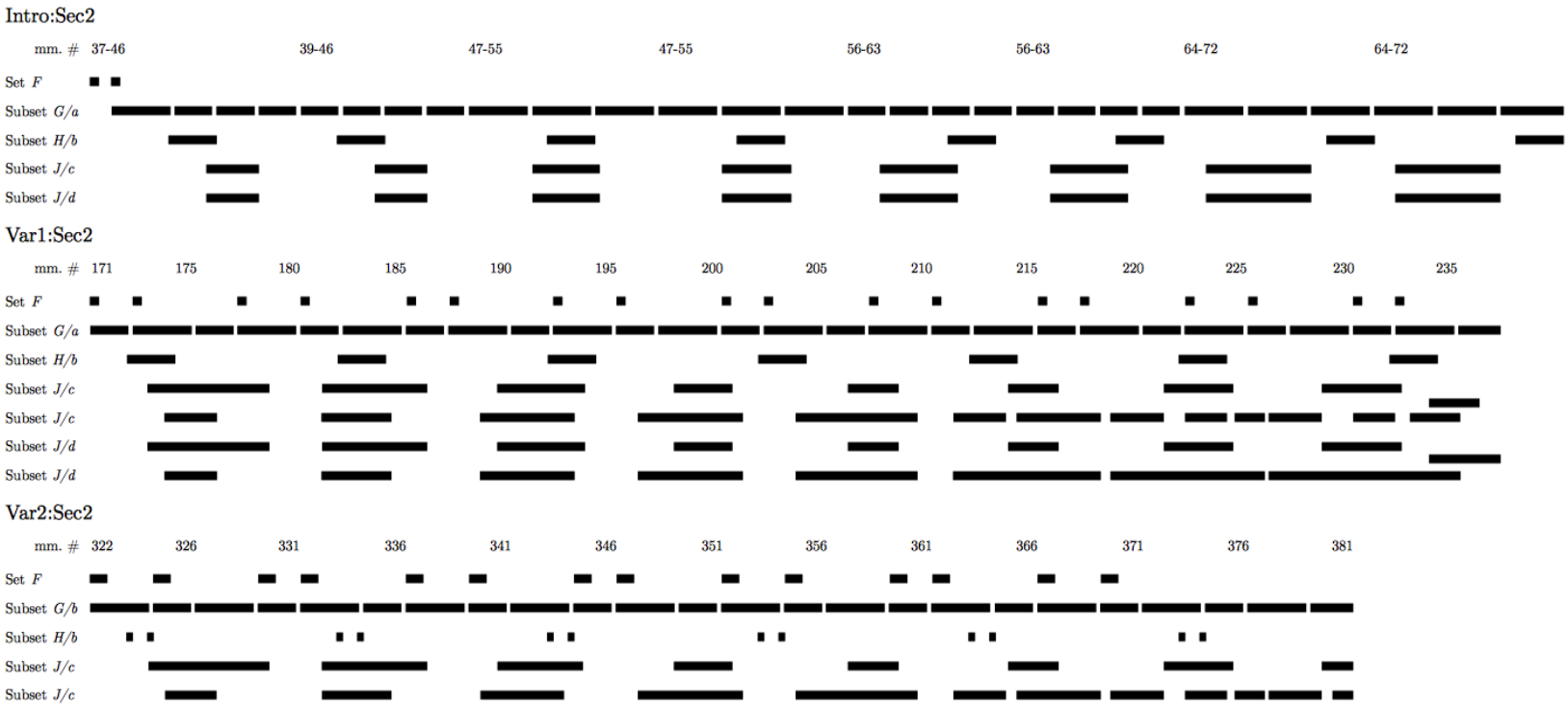


Figure 29: Comparative associative landscapes of PartI:Sec2

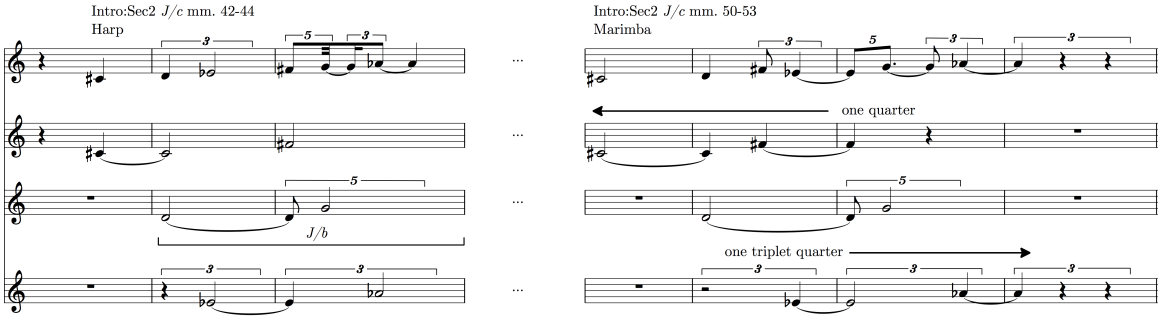


Figure 30: First two *J/c* segments in Intro:Sec2

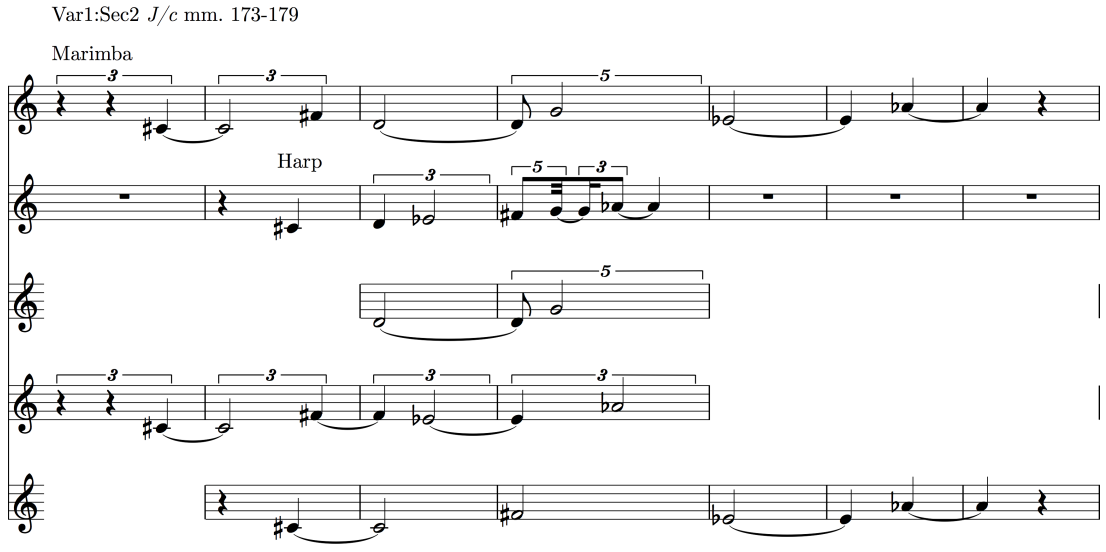


Figure 31: Var1:Sec2 embedded segments within *J/c*

ter subdivision and ends with quarters, while the harp does the opposite. For each segment, marimba and harp alternate their beginning and ending rhythmic subdivision, which creates two sequences of eight *J/c* segments over the course of Var1:Sec2.

Figure 32 shows all sixteen segments of subset *J/c* throughout Var1:Sec2 grouped by the expansion and contraction process shaping them. The upper sequence is related to the four segments of Intro:Sec2 by literal repetition but continues pulling apart for an additional four segments. The lower sequence begins more rhythmically displaced and contracts over five segments before expanding for the last three, which are literal rhythmic repetitions of the first three segments from Intro:Sec2.[59] The expansion and contraction of these segments are clearly visible in Figure 29's Var1:Sec2 association map. As the segments grow longer, the rest between the embedded interval class 5 segments is accounted for through breaks in the segment lines. The final *J/c* segment at the end has expanded to such a degree that it begins to overlap with the next *J/c* segment (necessitating an additional subset layer in order to show this), but at this point, Abrahamsen stops the process and moves on to the third section.

Abrahamsen supports and resonates the expanding and contracting *J/c* segments through sustained *J/d* segments articulated by the inner circle Group I and II duos. Abrahamsen orchestrates the duos symmetrically where the left-side Group I resonates the *J/c* segments of the Group III marimba and right-side Group II does the same for the Group IV harp. *J/d* segments project non-intersecting trichordal partitions of the `6-6[012567]` collection, which Abrahamsen controls by having the duo alternate attacks from the composite *J/c* segments. Each instrument's sequence of eight segments, shown in Table 13, is diverse in trichord ordering, which produces a permutational melodic quality.

[59]N.B. The second segment in the lower half of Figure 32 corresponds to the mm. 182-86 in the harp. In the score, measure 182 is notated incorrectly with the C♯4 falling on the second beat of the measure instead of the downbeat, but it is listed correctly in this figure. It is clear this is a mistake and not intentional because when this process returns in Var2:Sec2, it is occurs on the downbeat (mm. 333-337).

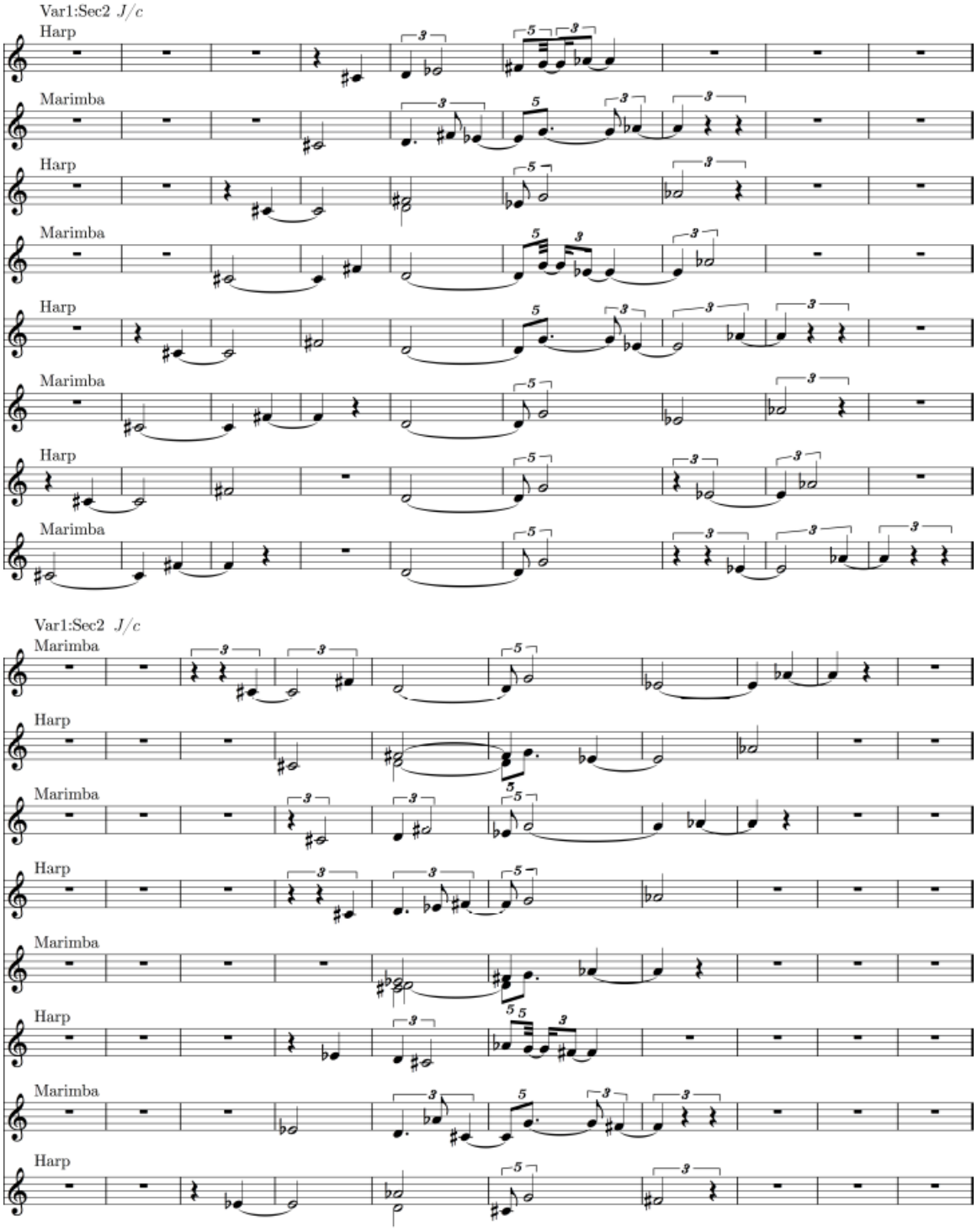


Figure 32: Var1:Sec2 two sequences of *J/c* segments

Table 13: Var1:Sec2 permutational *J/d* segments

		1	2	3	4	5	6	7	8
Group I	Bsn	<678>	<167>	<238>	<123>	<368>	<123>	<216>	<123>
	Bs Cl	<123>	<238>	<167>	<678>	<17>	<678>	<387>	<678>
Group II	Vla	<137>	<678>	<167>	<268>	<123>	<286>	<123>	<876>
	Eng Hn	<268>	<123>	<238>	<137>	<678>	<317>	<678>	<321>

Like *J/d* segments, the pitch sequence of *J/c* segments in nearly all of PartI:Sec1 and PartI:Sec2 is a byproduct of Abrahamsen's embedded segment displacement process. The composite *J/c* segments' pitch sequence changes with each statement, but the internal pitch sequence of each embedded segment remains fixed (e.g., $C_{\text{pitch } <C\sharp 4,\ F\sharp 4,\ E\flat 4,\ A\flat 4>}$ in Var1:Sec2). In Var2:Sec2, Abrahamsen turns his attention to the pitch sequence of these embedded segments more explicitly. While the rhythms relate to Var1:Sec2 by literal repetition (compare Figures 32 and 33), the pitch organization of these *J/c* segments differs in three ways: 1) they conform to Var2:Sec2's T_7I pitch space, 2) they contain a harmonized central *J/b* segment, and 3) they change in pitch sequence and invert in contour from segment to segment. A comparison of the first and second statements of Var2:Sec2 *J/c* segments in Figure 33 illustrates these three characteristics of the de-interleaved segments.

Table 14 displays the complete pitch sequence for each embedded segment, which reveals its retrograde construction. Each rhythmic subdivision is partitioned into two- and four-note segments corresponding to the seven total statements of *J/c* segments in Var2:Sec2. A point of retrograde exists between the third and fourth statements. However, for each rhythmic layer, the retrograde sequence flips to the other rhythmic layer at the point of retrograde. For instance, the retrograde of the quarter-note layer's third tetrachord is present in the triplet quarter layer's fourth tetrachord. Like other sections, Abrahamsen continues beyond the end of the retrograde suggesting that this process could continue with a new ordering.

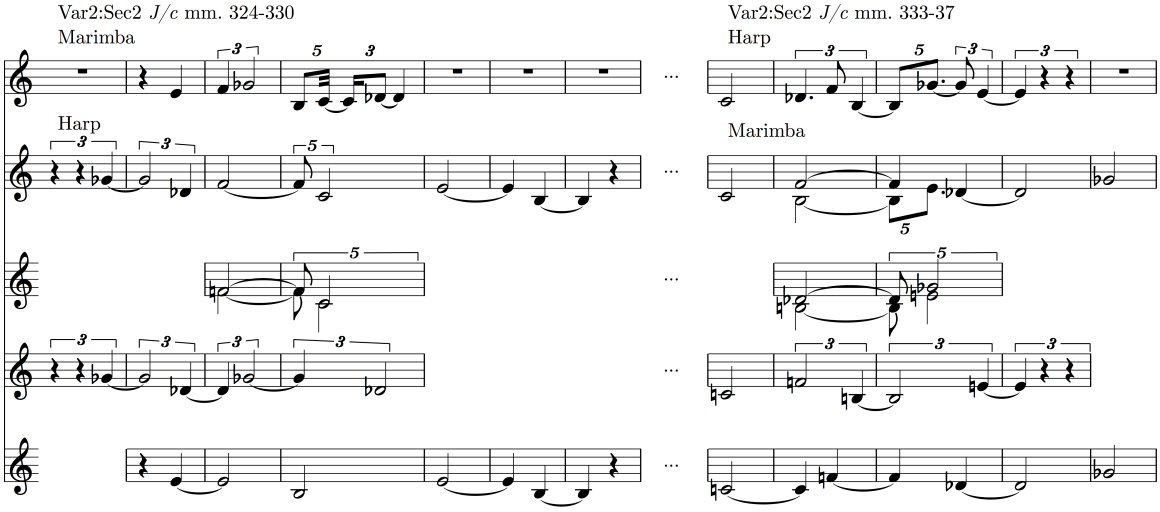


Figure 33: Changing pitch sequence in Var2:Sec2 *J/c*'s embedded segments

Table 14: De-interleaved pitch sequences in Var2:Sec2 *J/c* segments

Layer	Pitch Sequence
Quintuplet eighth	<50 16 61 e4 4e 05 61> (harp)
	<50 e4 4e 16 61 05 4e> (marimba)
Quarter	<4e4e 0516 6150 05e4 4e50 1616 6150 e4e>
Triplet Quarter	<6161 05e4 4e50 0516 6150 e4e4 4e50>

Similar to the three sequences of PartI:Sec1, the associative landscapes of PartI:Sec2 are highly interrelated and distinctly derived from one another. They can again be described as a series of varied repetitions where continuities in the disposition of segments, the rhythmic displacement process, and pitch space encourage the perception of these returning sections as repetitions and not as new takes on familiar material. However, when taking into account the linear experience of the piece where PartI:Sec2 follows PartI:Sec1, the sections can be understood as recontextualizations of PartI:Sec1 segments from associative sets and subsets *F*, *G*, *H*, and *J*.

This interpretation is supported by the many differences in contextual criteria among the segments and subsets of each set. For instance, the variances in C_{rhythm} and C_{pitch} for subset *G/b*, C_{ic} and C_{cseg} for subset *H/b*, and C_{rhythm}, C_{cseg}, and C_{SC} for *J/c* and *J/d* all contribute to new and nuanced internal and external dispositions and intersections between the associative material. Combined with the contrasting realization of the displacement process and the numerous changes in sonic criteria (e.g., timbre, articulation, dynamics), the musical material within PartI:Sec2 is "phenomenally transformed" with respect to PartI:Sec1.

Abrahamsen's varied repetition across section instances and recontextualization between paired sections continues for associative sets *K*, *L*, and *M* in PartI:Sec3 and PartI:Sec4. These sections offer new insights into these two compositional approaches, as they are not shaped by rhythmic displacement and produce substantially different associative landscapes.

Associative Set *K*

Abrahamsen contrasts the relative diversity of Section 1 and 2's number of associative sets with near uniformity in Section 3. Although the first six measures of Intro:Sec3 and Var1:Sec3 include segments of *F*, associative set *K* is undoubtedly the principal focus. The disjunction created by Section 3's abrupt transition, polyrhythms, and heterophonic texture highlight the salience of set *K* and elevate it above the fleeting *F* segments.

Across PartI:Sec3, associative set *K* is defined by $S_{1\text{-articulation (staccato)}}$, $C_{SC\ 4\text{-}22[0247]}$, and a narrow registral bandwidth. While set *K* does not contain any subsets, its segments are diverse in length (ranging between 4-19 eighth notes), contour, and polyrhythmic subdivision. Figure 34 gives prototypical examples of set *K* segments and one reduction describing a representative contour. Despite the unique contours of both examples, Abrahamsen generally emphasizes scalar motion and skip-step patterns within the nearly pentatonic pitch space. Broadly speaking,

the representative contour describes a descent from the upper boundary to the lower boundary. This contour and its retrograde form (which is not depicted in Figure 34) describes the shape of many *K* segments. The contour diversity of individual segments stems from Abrahamsen's mixture of repeated notes and short patterns extracted from this representative contour.

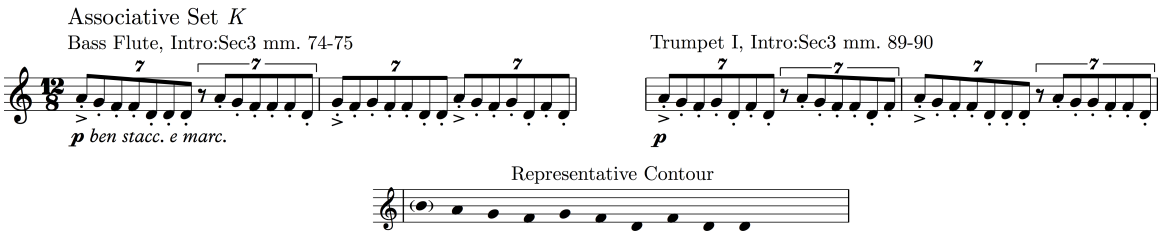


Figure 34: Example segments of associative set *K*

Abrahamsen's heterophonic textural treatment of *K* segments as well as their sonic attributes of staccato articulation and agitated single-note repetition allude to the phrase in his program note: "flocks of birds that when agitated take off." The spatial orchestration of *K* segments further suggests this movement of birds. Consider the first nine measures of Intro:Sec3 (mm. 73-81) which introduces a patterned movement of diverse *K* segments. Abrahamsen orchestrates *K* segments in clear symmetry, starting from the outer edges of the middle circle (bass flute and horn), moving them to the outer instruments of the inner circle (bassoon and English horn), then to the inner instruments of the inner circle (bass clarinet and viola), then to the outer circle duos (2 trumpets and 2 violins), and finally back to the outer edges of the middle circle (see Figure 35). There is some brief back and forth movement between these groups arising from the repeat signs, but the general circular pattern of these segments remains consistent in Intro:Sec3 and Var1:Sec3. The absence of spatial movement in Var2:Sec3 is purposeful. The same groups of instruments still articulate segments of set *K* but do so continuously, and instead of orchestrating them spatially, Abrahamsen exchanges literal repetitions between symmetrical groups, which will be detailed below.

Abrahamsen divides the $\frac{12}{8}$ meter of PartI:Sec3 into 2-, 3-, and 4-equal divisions and places

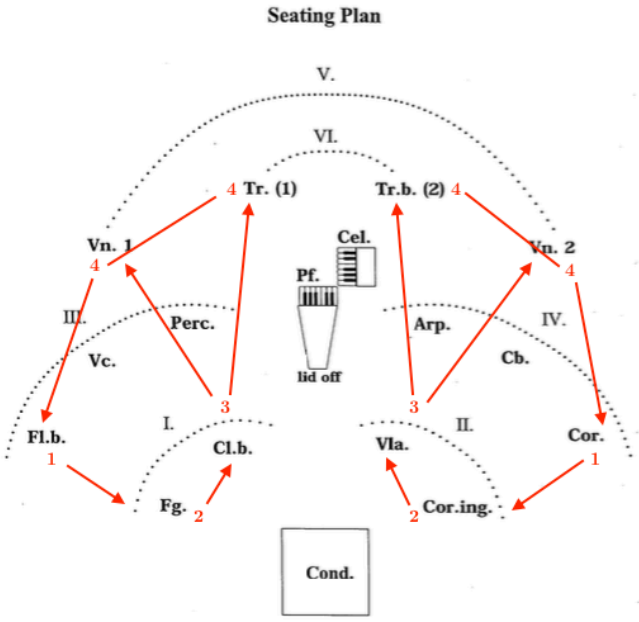
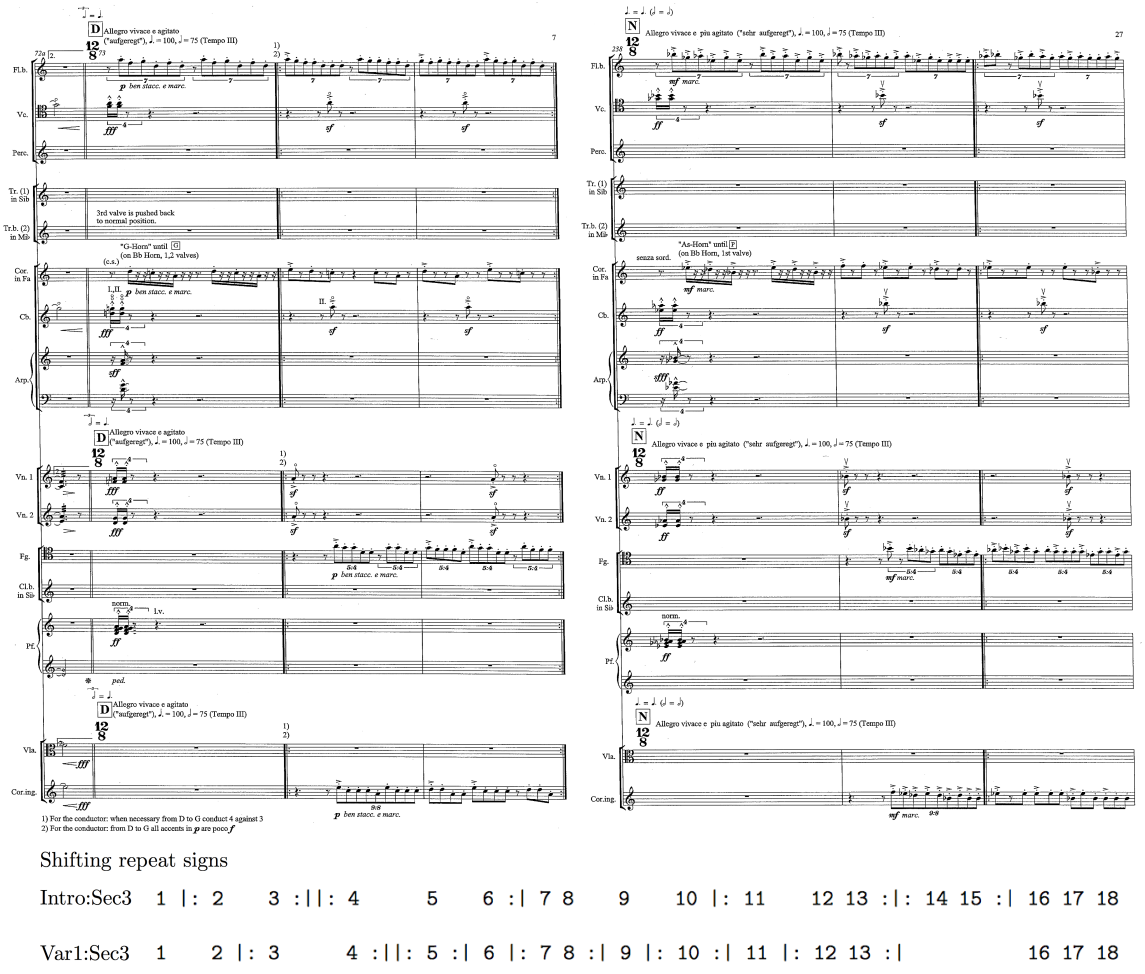


Figure 35: Intro:Sec3 spatial movement of *K* segments

K segments in polyrhythms within those divisions. For instance, when dividing $\frac{12}{8}$ in half, Abrahamsen frequently places seven and nine eighth notes within the six eighths, or when dividing $\frac{12}{8}$ into thirds, he uses 5:4 polyrhythms. Throughout PartI:Sec3, Abrahamsen uses polyrhythms of 20:12, 18:12, 16:12, 15:12, 14:12, and 13.5:12, often presenting multiple divisions simultaneously or chaining subdivisions together to produce notated accelerandi and ritardandi. For example, in mm. 73-75 of Intro:Sec3, Abrahamsen articulates the four layers of *K* segments in polyrhythms of 15:12, 14:12, 13.5:12 (notated as 9:8), and 12:12 (or no polyrhythm), and during this passage the English horn moves between three of those speeds, giving a rhythmically fluid and flexible line that slows then accelerates (see left-hand passage in Figure 36).

Within the sonic, rhythmic, and spatial diversity of the individual *K* segments, Abrahamsen is economical with their associative organization. Intro:Sec3 and Var1:Sec3 contain eighteen and sixteen measures with four and five groups of repeated passages, respectively. Var1:Sec3's sixteen measures contain similar varied repetitions of *K* segments from Intro:Sec3

related by T_1. Abrahamsen alters the order of these segments in Var1:Sec3 by changing the measures enclosed by repeat signs. The top portion of Figure 36 displays two score excerpts of the first three measures of Intro:Sec3 (mm. 73-75, on left) and Var1:Sec3 (mm. 238-40, on right). In Intro:Sec3, the first repeated passage consists of the second and third measure, while in Var1:Sec3, the repeat signs enclose the third and fourth measure. The bottom portion of Figure 36 diagrams how Abrahamsen has altered the repeat signs across Variation 1 and removed the 14th and 15th measures of Intro:Sec3 near the end of the section.



Shifting repeat signs

Intro:Sec3	1	|: 2	3 :||: 4		5	6 :|	7	8	9	10 |:	11	12	13 :|:	14	15 :|	16	17	18
Var1:Sec3	1	2 |: 3		4 :||:	5 :|	6 |:	7	8 :|	9 |:	10 :|	11 |:	12	13 :|			16	17	18

Figure 36: Intro:Sec3 and Var1:Sec3 repeat sign movement

Var2:Sec3 presents a contrasting instance of Abrahamsen's economical reuse of *K* seg-

ments. Rather than reconfigure varied segments through the adjustment of repeat signs, Abrahamsen rotates literal repetitions of eight sequences containing several *K* segments amongst two groupings of four symmetrically spaced instruments; Group III and IV's bass flute, cello, horn, and bass form one group, and the duos of Group I and II form the other. Each of the eight sequences continuously spin out varying numbers of *K* segments that are diverse in length and polyrhythmic speed and form through $S_{1\text{-rest}}$, $S_{1\text{-articulation (staccatissimo, accent)}}$, and $C_{SC\ 4\text{-}22[0247]}$.

Labelling these eight sequences *K1* through *K8*, Table 15 displays Abrahamsen's rotation and literal repetition of these sequences across the twenty measures of Var2:Sec3. The vertical alignment of *K1-8* indicate moments when instruments exchange *K* segments simultaneously, most notably occurring at the ten measure halfway point. Over the course of the section, instruments of Group I and II articulate each of their four *K* segments once, while each instrument of Group III and IV performs three out of the four segments.

Table 15: Var2:Sec3 rotation sequence

Group	Instr	Rotation Sequence	
		10 mm.	10 mm.
III	BFl:	K1	K4 K3
	Vlc:	K2	K3 K4
IV	Hrn:	K3 K4	K1
	Db :	K4 K3	K2
I	Bsn:	K5 K6 K5	K7 K8
	BCl:	K6 K5 K6	K8 K7
II	Vla:	K7 K8	K6 K5 K6
	EHn:	K8 K7	K5 K6 K5

Like PartI:Sec1 and PartI:Sec2, Abrahamsen varies set *K* across Section 3. Whereas the first two sections emphasize contextual changes in proportion and timbre, Section 3 is primarily shaped by varied repetition of *K* segments through repeat signs and rearrangement of literal

repetitions. The process does not significantly change their context but rather continues the trajectory of varying segments from variation to variation and recontextualizing associative sets between paired sections. The attributes and organization of associative sets *L* and *M* will further demonstrate how set *K* is recontextualized in PartI:Sec4 and Part IV through set *L*.

Associative Sets *L* and *M*

Section 4 concludes each variation of Part I and introduces associative sets *L* and *M*, which Abrahamsen also recontextualizes in Part IV. Figure 37 gives example segments from their sets and subsets. Associative set *L* contains eleven segments, which Abrahamsen distributes four, four, and three times across PartI:Sec4. While *L* segments are diverse in rhythmic speed, contour, and duration, they associate through $S_{\text{1-dynamic (}pp\text{)}}$, $S_{\text{1-legato (articulation)}}$, $S_{\text{1-timbre (marimba/harp, piano)}}$, $C_{\text{SC 4-22[0247]}}$, and $C_{\text{SC 5-34[02469]}}$. Abrahamsen unfolds *L* segments across PartI:Sec4 through its contrasting metrical structure of five meter changes ($\frac{10}{16}$ $\frac{3}{4}$ $\frac{6}{16}$ $\frac{3}{8}$ $\frac{3}{16}$) where the last is successively truncated with each variation. Through this framework, the cascading segments of set *L* begin at the first four changes of meter and alternate between the interlocking marimba and harp duo and piano.

Associative set *M* contains three subsets diverse in contour, pitch content, rhythm, and duration. Set *L* and subsets of *M* share a connection where the monodic segments of *M* subsets draw their pitches and contour from the more harmonically and rhythmically active segments of set *L*. Subset *M/a* is a legato three- or four-note melodic segment for the bass clarinet and viola. With the three-note segments, Abrahamsen uses all six possible contour permutations. Subset *M/b* is a two-note segment presented in two voices characterized by $S_{\text{1-dynamic (}pp\text{)}}$, $S_{\text{1-articulation (legato)}}$, and $C_{\text{SC 4-22[0247]}}$. In addition to two segments in the bass flute and horn in Var1:Sec4, Abrahamsen primarily scores *M/b* segments for the cello, bass, and two violins. Segments of subset *M/c* contain two parts, downward leaping major sevenths followed by an

oscillation of interval class 5 or 6. Abrahamsen presents subset *M/c* segments' two parts together in Var1:Sec4 and separated in Var1:Sec4 and Var2:Sec4.

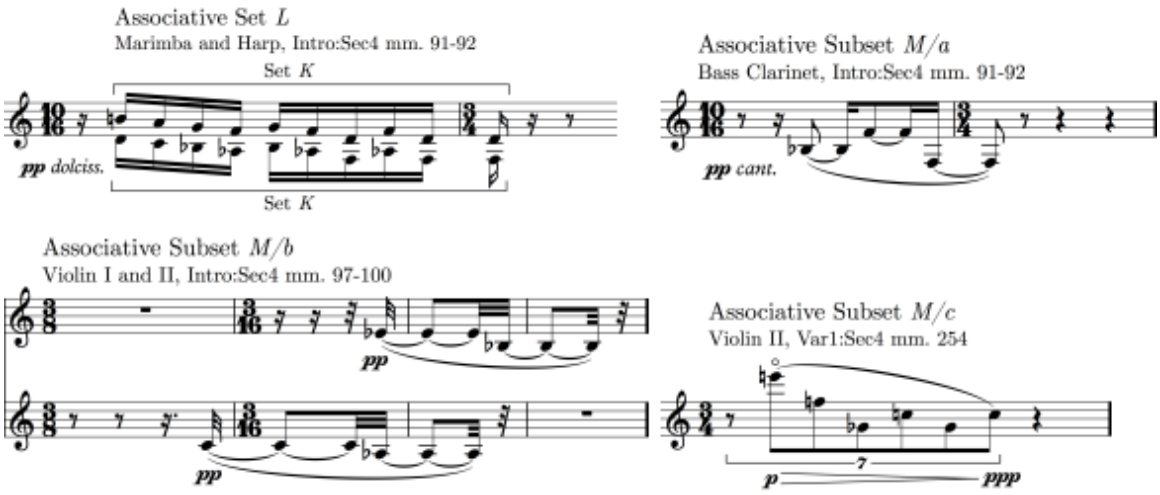


Figure 37: Example segments from associative sets and subsets of *L* and *M*

Segments of *L* and *M* distinctly contrast with previous associative sets through their diversity in registral bandwidth. Abrahamsen confines segments of sets *F* through *K* to the narrow bandwidth of an interval class 5. But with sets *L* and *M*, he distributes their segments in more varied registral spaces and articulates them with wider intervallic voice leading (see Figure 24).

In the same way that he creates the PartI:Sec2 pitch space from chromatic transpositions of the PartI:Sec1 pitch space, Abrahamsen constructs the pitch space for PartI:Sec4 from a series of transpositions of PartI:Sec3's `4-22[0247]` pitch space. This is evident in Figure 24 as each instance of Section 4 retains the same set *K* pitch space from the previous Section 3 and builds upon it through a chain of transposed and elided set classes `4-22[0247]` and `5-34[02469]`.

Figure 38 notates the transposed set classes of Intro:Sec4 in two ways. The right-hand side of the figure shows the chain of set classes arranged linearly, highlighting their elision. The left-hand side displays them as five superimposed voices of set *K*'s representative contour, which more specifically describes how Abrahamsen articulates the pitch sequences of *L*

segments. Each of the eleven *L* segments within PartI:Sec4 recontextualizes set *K* by projecting a sequence of interlaced dyads containing two voices shown on the left side of Figure 38. Within a given section, each successive *L* segment grows from one to four interlaced dyads using different combinations of these five voices.

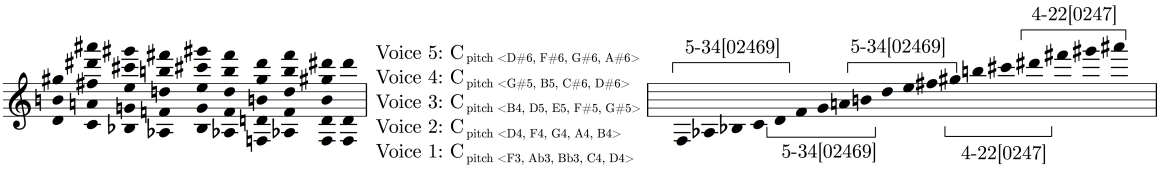


Figure 38: Pitch space of set *L* segments in Intro:Sec4

Figure 39 unravels the interlaced dyads of the four Intro:Sec4 *L* segments. The top staves give the separate voices of the marimba and harp duo and piano, while the lower staves beam the dyad sequences together. Each dyad voice is related by either T_3 or T_9 and adheres to both one contour and pitch sequence indicated in Figure 38.

With every successive phrase, Abrahamsen re-reads the previous dyad sequence but begins the *L* segment with a new interlocking dyad whose starting position is one note further into the representative contour. For instance, comparing Figures 38 and 39, the first phrase begins on pitches D4 and B4 (the first pitches of voices 1 and 2), the second phrase's new dyad begins on C4 and D♯6 (the second pitches of voices 1 and 4), the third phrase's new dyad begins on G4 and E5 (the third pitches of voices 2 and 3), and finally the fourth phrase's new dyad begins on A♭3 and B5 (the fourth pitches of voices 1 and 4). The result is a transformation from a simple sequence of dyads in phrase one to a dense thirty-second note web of interwoven displaced dyads in phrase four.

In Var2:Sec4, Abrahamsen uses equivalent repetitions of *L* segments from Intro:Sec4 transposed by T_9 and removes the fourth phrase for piano. The transposition scheme shaping the pitch space essentially rotates the elided set classes from Intro:Sec4 such that voice 2 ending

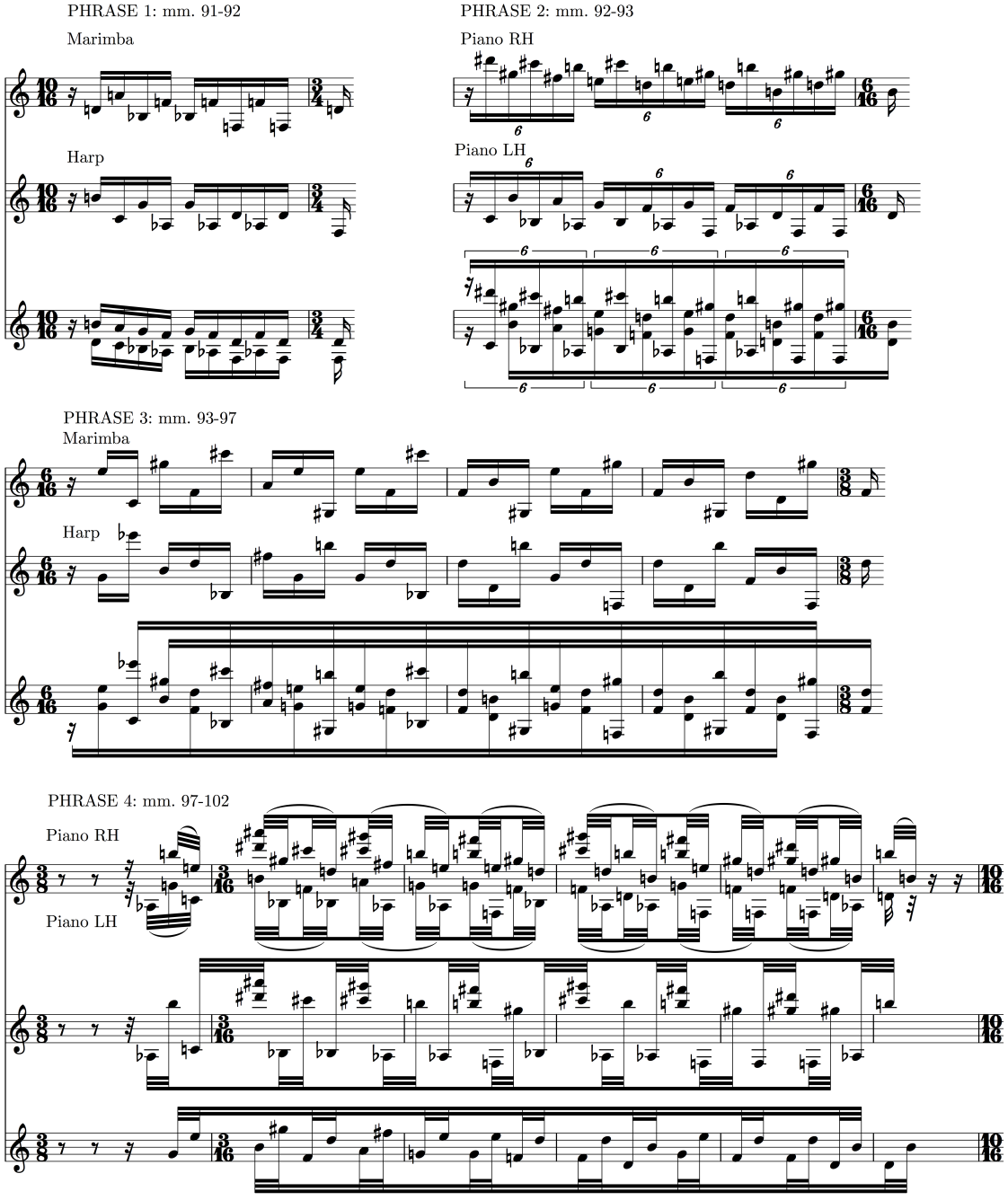


Figure 39: Interwoven dyads of set *K* contour embedded in *L* segments

with D4 occupies the lowest position in Var2:Sec4, while the previously lowest voice ending with F3 rotates to the top of the new pitch space (see Figure 24). Var1:Sec4 is a more significant varied repetition of Intro:Sec4 *L* segments which remain associative in rhythm, duration, and set class but differ in contour, transposition, and density of interlocking dyads. Compared to Intro:Sec4, Var1:Sec4 *L* segments harmonically relate by T_1 but do not successively add interlocking dyads. The first three phrases continue the single dyad texture, while the fourth phrase retains a similar interlocking dyad texture compared to the last segment of Intro:Sec4.

The incongruity in the pattern serves a purpose in Part IV (Variation 6 and 7) when Abrahamsen recontextualizes the lower voice of the fourth phrase *L* segment dyad in Var1:Sec4. After Variation 5's galloping and texturally dense climax, Variation 6 contains a more transparent texture driven by a punctuating ***ff*** piano and harp *L* segment accompanied by segments from *M* subsets. Figure 40 compares the two segments and diagrams how Abrahamsen re-reads portions of the earlier *L* segment's pitch sequence. Despite the differences in rhythm and contour, the Variation 6 *L* segment is related to its Var1:Sec4 counterpart by $C_{\text{pitch } \{D\flat4,\ E\flat4,\ G\flat4,\ A\flat4,\ B\flat4\}}$ and $S_{\text{2-timbre (piano)}}$. The salience of this contextual pitch relationship strongly associate it with both sets *K* and *L*.

This is a different sort of recontextualization than earlier examples which are driven by contrasting phasing processes, embedded segments, and superimposed segments. Instead, Abrahamsen retains the same pitch space but filters out portions of the pitch sequence and significantly augments durations. It is clearly not repeated material, but it does have its origins in the contextual criteria of earlier material. In this way, Abrahamsen recontextualizes it both through new contextual criteria defining the segment and through its contextual surroundings, which consists of segments from *M* subsets that Abrahamsen consistently uses alongside *L* segments in PartI:Sec4.

Throughout PartI:Sec4 and Part IV, Abrahamsen constructs *M* subsets by extracting

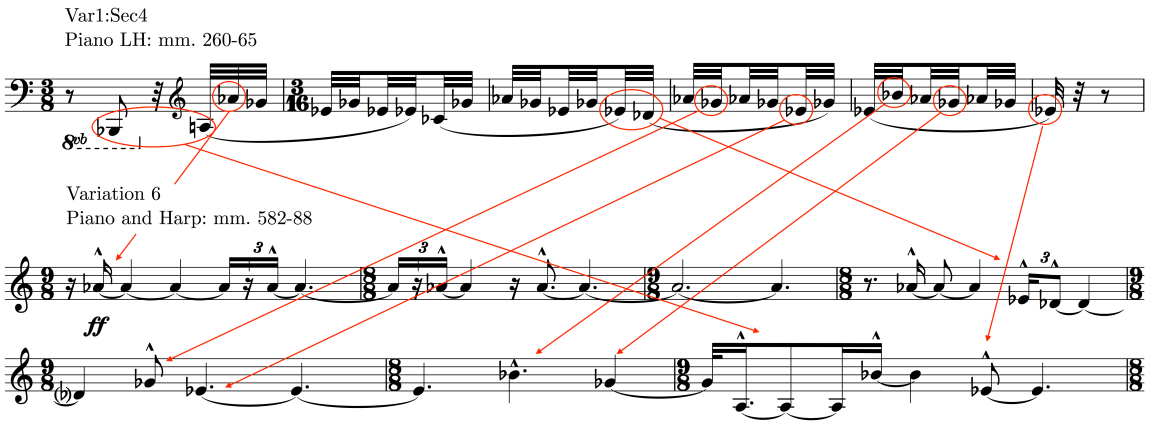


Figure 40: Recontextualization of Var1:Sec4 *L* segment in Variation 6

pitches from the interlocking dyads voices of associative set *L*. *M* subsets are diverse in set class drawn from *L* segments, as they project $C_{ic\ 5}$, $C_{ic\ 6}$, $C_{SC\ 3\text{-}1[012]}$, $C_{SC\ 3\text{-}3[014]}$, $C_{SC\ 3\text{-}5[016]}$, $C_{SC\ 3\text{-}7[025]}$, $C_{SC\ 3\text{-}10[036]}$, $C_{SC\ 4\text{-}5[0126]}$, and $C_{SC\ 4\text{-}22[0247]}$. Comparing the associative landscapes of PartI:Sec4, all three sections contain *M/a* segments, Intro:Sec4 and Var1:Sec4 contain *M/b* segments, and Var1:Sec4 and Var2:Sec4 contain *M/c* segments. Figure 41 displays a synoptic associative landscape through a cutaway score map containing prototypical segments of each *M* subset. The figure does not capture the number of segments across each section but rather highlights how segments change with respect to contour, pitch content, and truncation across PartI:Sec4.

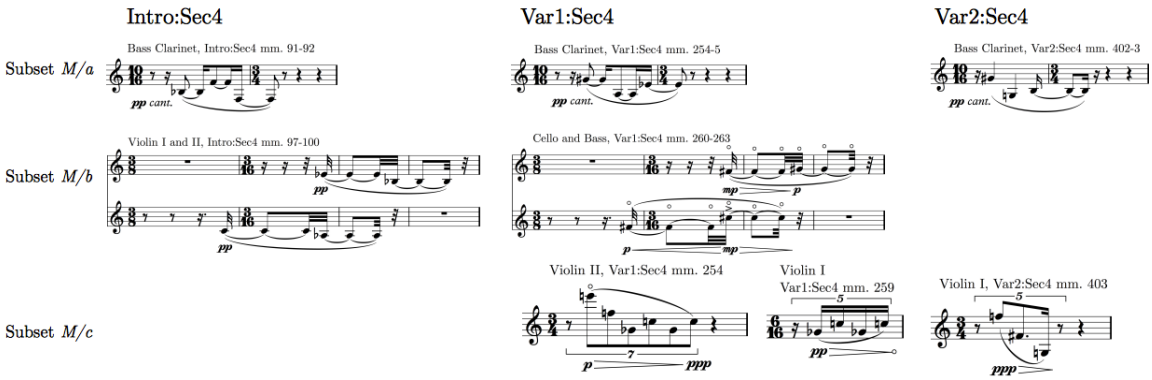


Figure 41: Cutaway score association map of segments from *M* subsets in Part I

Abrahamsen recontextualizes segments of *M* subsets in Variation 6. He does so by using literal repetitions of *M/a* and *M/b* segments from PartI:Sec4 but presents them in retrograde. Abrahamsen does not retrograde these segments themselves but rather juxtaposes and retrogrades the subsets' variation order (ie., their associative landscape's internal disposition). Var2:Sec4 subsets occur from mm. 582-84, Var1:Sec4 subsets from mm. 585-89, and Intro:Sec4 subsets from mm. 589-94. Despite differences between PartI:Sec4 and Variation 6 in tempo (♪=88 vs. ♪=66) and metrical structure (five meter changes vs. alternations of $\frac{9}{8}$ and $\frac{8}{8}$), segments of *M/a* and *M/b* return with the same rhythms and durations between segments as PartI:Sec4 but with notational adjustments accommodating the new metrical context.

This is yet another different kind of recontextualization. The segments of *M* subsets themselves are literal repetitions from PartI:Sec4, but their new contextual environment, stemming from their retrograded disposition and pairing with the recontextualized *L* segment, provides a sense of both freshness and familiarity. Segments of *M* subsets once separated in time by the other sections of Part I occur in sequence and give rise to different interactions and relationships. For instance in mm. 588-89, the returning Var1:Sec4 *M/b* segments are followed by the returning Intro:Sec4 *M/a* segments. Their juxtaposition mirrors the intervallic motion present at the transition between Var1:Sec4 and Var2:Sec1 (mm. 261-68). In Var1:Sec4, the concluding *M/b* segments in the violins, harp, bass flute, and horn (mm. 262-8) end on a B3-F♯4 dyad that descends by half-step to the B♭3-F4 pitch space of Var2:Sec1 and returns to associative sets *F*, *G*, *H*, and *J*. When these segments return in Variation 6, this same half-step descent is present (mm. 589) but articulated by the bass clarinet's first *M/a* segment of Intro:Sec4 which begins with B♭3-F4. It is a nuanced moment of recontextualization arising from contextual parallels in the associative landscape made possible by the voice leading of previously separate associative subsets.

The Intro:Sec4 *M/a* and *M/b* segments conclude the ending of Variation 6 unaccompanied

by any segment from set *L*. In Variation 7, Abrahamsen uses a T_7 equivalent repetition of Variation 6's *L* segment orchestrated for celesta and harp and additionally accented and resonated by other instruments of the ensemble. The *L* segment is accompanied by two *M/a* segments at its beginning, and after it ends, a segment from subset *M/b* concludes the work.

The relationship between Variation 6 and 7 recalls the recontextualization of sets between the first and second movement of *Walden*. Abrahamsen structures the paired variation through a combination of literal repetitions, equivalent repetitions related by transposition, and removal of segments. This produces a similar transparent and sparse texture stemming from the decreased level of density and imparts a sense of decay and closure.

Conclusion

Abrahamsen's treatment of musical material in *Walden* and *Wald* is not unique to these works. As one becomes familiar with a wide range of his music, it is evident that recomposition, recontextualization, and varied repetition play a prominent role in his compositional language. Abrahamsen is one of many twentieth-century composers with a penchant for returning to previous works. Luciano Berio reworked his virtuosic solo *Sequenzas* into ensemble works in his *Chemins* series. Pierre Boulez expanded several pieces into longer, larger, and labyrinthian recompositions (for instance in *...explosante-fixe...* or his *Notations*). Toru Takemitsu incorporated his "sea theme" into a series of works during the 1980s and 1990s (e.g., *Toward the Sea*, *Rain Tree Sketch*, and *I Hear the Water Dreaming*).

Each of these composers' approaches to earlier material is different, as is their motivations for doing so. Abrahamsen is driven by a desire to uncover and rediscover latent possibilities and meaning within the past. He connects his practice to the experience of visiting the Edvard Munch Museum in Oslo where he recalls seeing "how Munch painted the same subject over

and over again, investigating it in many different ways from the small black-and-white sketch to the huge painting. For me it is the same. I have been haunted by these pieces for years and have been challenged to re-investigate the material to understand why."[60]

This notion of "re-investigating the material to understand why" he is drawn to it suggests a sort of dialogue through composition, and in this way, Abrahamsen's works are in communication with each other. They extend, merge, and deviate from possible trajectories suggested by the musical material, and they contain recollections, reminiscences, and echoes of other works. Abrahamsen does so with a fully mature compositional voice that is assured in its technique and powerful in ability to construct interpenetrating meaning.

[60] Johnson, "*Fire Stykker for Orkester*" Program note.

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Appendix

Chronological List of Works

Year	Title	Duration	Instrumentation
1970	*Skum*	14:00	orchestra
1971	*Rundt om og Ind Imellem*	10:00	hn, 2trp, tbn, tba
1972	*EEC sats*	10:00	orchestra
1972	*Efterår*	5:00	vc, fl, gtr
1972	*Landskaber*	8:00	fl, ob, cl, bn, hn
1973	*10 Præludier*	20:00	string quartet
1973	*Flowersongs*	11:00	three flutes
1973	*Glansbilleder [Scraps]*	4:00	cello and piano
1973	*Universe Birds*	4:00	10 sopranos or 5 sopranos
1974	*Gush*	4:00	alto saxophone
1974	*Symfoni*	14:00	orchestra
1975	*Stratifications*	8:00	orchestra
1976	*October*	6:00	horn and piano
1976	*Danmarks-sange*	10:00	soprano and va, fl, cl, perc, pf
1978	*Canzone*	9:00	accordion
1978	*Winternacht*	13:00	fl, cl, cnt, hn, pno, vn, vc
1978	*Walden*	11:00	fl, ob, cl, bn, hn
1981	*Nacht und Trompeten*	11:00	orchestra
1981	*String Quartet No. 2*	15:00	string quartet
1984	*Märchenbilder*	14:00	chamber orchestra
1984	*Seks stykker*	14:00	vn, hn, pf
1985	*Zwei Schneetänze*	4:00	4rec, or fl, cl, vn, vc
1987	*Lied in Fall*	14:00	cello and chamber orchestra
1987	*Winternacht*	13:00	fl, cl, perc, pno, gtr, vn, vc
1988	*Storm og Stille*	3:00	cello
1990	*Capriccio Bagateller*	4:00	violin
1990	*Aarhus Ragtime*	3:00	chamber orchestra
1990	*Hymne*	3:00	cello or viola
1992	*Efterårslied*	6:00	soprano, vn, vc, cl, pno/hpd
1995	*Walden*	11:00	ob, 2cl, bn, asx
1998	*Ti studier*	21:00	piano
1999	*Two Pieces in Slow Time*	7:00	2hn, 3trp, 3tbn, 2tba, 2cnt, 2perc
2000	*Siciliano*	6:12	cello
2000	*Concerto for Piano and Orchestra*	15:00	piano and chamber orchestra
2004	*Fire Stykker for Orkester*	17:00	large orchestra
2005	*Three Little Nocturnes*	9:00	accordion and string quartet

Year	Title	Duration	Instrumentation
2006	*Air*	9:00	accordion
2006	*Schnee*, Canons 1a & 1b	17:00	fl, cl, ob, 2pno, perc, vn, va, vc
2008	*Schnee*	57:00	fl, cl, ob, 2pno, perc, vn, va, vc
2008	*String Quartet No. 3*	12:00	string quartet
2009	*Efterårslied*	6:00	ca, pno/hpd, vn, va, vc
2009	*Traumlieder*	14:00	vn, vc, pno
2009	*Wald*	18:00	chamber orchestra
2009	*Kharon*	7:00	trombone
2010	*Liebeslied*	3:00	bs fl, ob, bs cl, perc, pno, vn, va, vc
2010	*Ten Sinfonias*	20:00	orchestra
2011	*Double Concerto*	22:00	violin, piano, and string orchestra
2012	*Flowersongs*	10:00	fl, ob, and cl
2012	*String Quartet No. 4*	20:00	string quartet
2013	*Schneebilder*	20:00	vn, va, vc, pno
2013	*Let me tell you*	30:00	soprano and orchestra
2014	*Bamberger Tanz*	4:00	orchestra
2015	*Left, alone*	18:00	piano and orchestra

List of Arrangements

Year	Composer	Arrangement	Duration	Instrumentation
1988	Nielsen	*Fantasistykker* op. 2	6:00	ob, vn, va, vc
1988	Satie	*Trois Gymnopedies*	12:00	ob and string quartet
1989	Ravel	*Le Tombeau de Couperin*	20:00	fl, ob, cl, bn, hn
1990	Nielsen	*Three Piano Pieces* op. 59	10:00	fl, ob, cl, bsn, hn, 2 vln, vla, vc, db
1991	Bach / Rouders	*Befiehl du deine Wege*	5:00	chamber orchestra
1992	Nørgård	*Surf*	5:00	chamber orchestra
1994	Bach	*8 Canons* BWV 1072-78	20:00	fl, cl, vib, gtr, pno, vln, vc
1998	Weyse	*Fire Aftensange*	20:00	mezzo-soprano and orchestra
2000	Nielsen	*Festpræludium*	3:00	large orchestra
2005	Schumann	*Kinderszenen* op. 15	19:00	fl, ob, cl, bn, hn
2010	Nielsen	*Symfoni Nr. 6*	32:00	chamber orchestra
2011	Debussy	*Children's Corner*	18:00	orchestra

Year	Composer	Arrangement	Duration	Instrumentation
2012	Ligeti	*Arc-en-ciel*	4:00	chamber orchestra
2012	Ligeti	*En Suspens*	2:15	chamber orchestra
2012	Nielsen	*Commotio*	21:00	orchestra

List of Related Works

Work or Movement	Related Earlier Work
Nacht und Trumpeten (1981)	*Winternacht* (1976-78) IV
Six Pieces (1984)	*Ten Studies* (1984-98)
Concerto for Piano and Orchestra (1999-2000) I	*Six Pieces* (1984) II
Concerto for Piano and Orchestra (1999-2000) I	*Ten Studies* (1984-98) II
Concerto for Piano and Orchestra (1999-2000) II	*Märchenbilder* (1984) II
Concerto for Piano and Orchestra (1999-2000) IV	*Ten Studies* (1984-98) VIII
Four Pieces for Orchestra (2004) I-IV	*Ten Studies* (1984-98) I-IV
Air (2006)	*Canzone* (1978)
String Quartet No. 3 (2008)	*Air* (2006)
Schnee (2006-08) Canon 2A	*Flowersongs* (1973)
Wald (2008-09)	*Walden* (1978) I
Wald (2008-09)	*Schnee* (2006-08)
Traumlieder (2009)	*Six Pieces* (1984)
Ten Sinfonias (2010)	*Ten Preludes* (1973)
Double Concerto (2010-11) I	*Liebeslied* (2010)
Double Concerto (2010-11) IV	*Schnee* (2006-08)
let me tell you (2013) I	*Schnee* (2006-08) Canon 1A