

PITCH STRUCTURE IN MORTON FELDMAN'S COMPOSITIONS OF 1952

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ABSTRACT OF THE DISSERTATION  
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During the year 1952, Morton Feldman composed only a few works, each of which possesses several similarities: each work is scored for the piano, each work was premiered by David Tudor, each is rather modest in proportions, and most importantly, each shares a very similar pitch structure with the others, both in terms of the particular sonorities that Feldman employs and in terms of how these sonorities are juxtaposed and progress throughout each composition. This essay will show how Feldman, during this early stage of his career, was using a unified pitch language, and furthermore, how one can perceive his pitch structures not only as isolated sonic events, but with clear and integrated relationships to each other. The primary compositions that will be the focus of the paper are *Piano Piece 1952*, *Intermission 5* and *Extensions 3*. The essay will be in the form of a comparative analysis, using set theory to draw relationships between the pitch structures in each composition.

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# **Pitch Structure in Morton Feldman's Compositions of 1952**

**Paul Steven Undreiner**

## Introduction

During the year 1952, Morton Feldman composed only a few works, each of which possesses several similarities: each work is scored for the piano, each work was premiered by David Tudor, each is rather modest in proportions, and most importantly, each shares a very similar pitch structure with the others, both in terms of the particular sonorities that Feldman employs and in terms of how these sonorities are juxtaposed and progress throughout each composition. This essay will show how Feldman, during this early stage of his career, was using a unified pitch language, and furthermore, how one can perceive these structures not only as isolated sonic events, but with clear and integrated relationships to each other. These relationships will be shown through a comparative analysis of Feldman's three compositions of 1952: *Piano Piece 1952*, *Intermission 5* and *Extensions 3*.<sup>1</sup> Throughout the analysis, set-class theory will be employed, and pitch structures will be analyzed both in their horizontal and linear forms.<sup>2</sup> Fur-

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<sup>1</sup> Erdman, "Zusammenhang und Losigkeit zu Morton Feldmans Kompositionen zwischen 1950 und 1956," p. 70.

<sup>2</sup> When linear harmonic entities occur, an explanation of the segmentation process will be given.

thermore, numerous musical examples within the text, will be provided with analysis.



Piano Piece 1952

*Piano Piece 1952* is a work that some might classify as a precursor to minimalism. The piece contains only isolated pitches distributed evenly between the treble and bass staves, (with no two pitches articulated concurrently), no clear motives or themes, no meter, bar-lines or rhythmic differentiation, and only very minimal performance instructions: “Slowly and quietly with all beats equal.”<sup>3</sup> In an essay on the piano music of Morton Feldman, Art Lange describes *Piano Piece 1952* as a work “which survives without harmony...a sequence of unimpeded intervals.”<sup>4</sup> The texture of the piece, in which no two pitches have the same rhythmic attack or placement, seems to confirm this view of the work, as does the fact that at no time are there more than two pitches sounding simultaneously. However, a purely intervallic analysis of this work would only uncover a preponderance of IC 1 and 2, a smaller quantity of IC 4 and 6, even fewer of IC 5, and a very sparse usage of IC 3.<sup>5</sup> This distribution of intervals could be found in a great many of Feldman’s works, and indeed, in a great many atonal compositions in general, but fails to explain the harmonic or pitch structure inherent in this piece specifically.

In order to more fully understand the harmonic structure of the work, it is first important to point out that although no pitch has the same rhythmic attack as

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<sup>3</sup> Feldman, *Solo Piano Works, 1950-64*, p. 6.

<sup>4</sup> Lange, *A Piano*, p. 3.

<sup>5</sup> This usage of Interval-Class assumes octave and inversion equivalence. See quotations on p. 4 and 7 regarding Feldman’s usage of intervals.

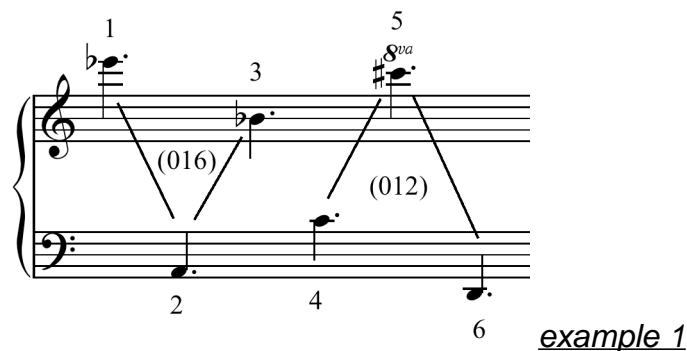
any other, each individual pitch (except for the first and the last) resonates concurrently with two others. For example, the second pitch of the work, A2 (the first pitch in the left hand), resonates first with the Eb6 (which occurs a dotted eighth-note before the A sounded), then with the Bb4 (which occurs a dotted eighth-note after the A is sounded).<sup>6</sup> Consequently, the pitch relations in this work are not only restricted to a succession of intervals, but also to distinct groups of three pitches or trichords. (Feldman himself explained his process of creating chords from different Interval-Classes in a speech prior to the premier of his *Triadic Memories*: “...the music is essentially just two kinds of intervals: a minor second, a major second, which of course is also a minor seventh and a major seventh. And it is by superimposing other like intervals that the chord formations are made.”)<sup>7</sup> It is by segmenting the work into discrete trichordal groups, that the harmonic structure of the work reveals itself.

The two most prominent trichords present in the work are initially stated in the first six pitches of the composition. A (012) trichord, set-class 3-1, follows a (016) trichord, set-class 3-5, in the opening of the work, as shown in *example 1*:

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<sup>6</sup> See *example 1*.

<sup>7</sup> Feldman, *Give My Regards to Eighth Street, Collected Writings of Morton Feldman*, p. 155.



These two trichords represent the what the author designates as the Primary Set Group.<sup>8</sup> After their initial presentation, the Primary Set Group is restated by the composer as the first line of music concludes. However, unlike the initial discrete trichordal presentation, the subsequent eight pitches of music that follow present overlapping trichords. For example, pitches 7-9<sup>9</sup> (F# 6, F4 and E5), make up a (012) trichord, as do pitches 8-10 (F4, E5 and F#2), thereby creating two overlapping (012) trichords. The usage of overlapping trichords as a compositional technique in this work is confirmed with pitches 11-14, which form a (012) trichord and a (016) trichord respectively, as is shown in *example 2*. All but one pitch (the final pitch) of the first line of music belongs either to a (012) or (016) trichord.

<sup>8</sup> Throughout this study, the term Set Group will refer to two or more pitch-class sets, which are harmonically related, just as in tonal theory chords such as ii and IV are grouped together as predominant type chords. The individual components of each group may appear linearly or horizontally.

<sup>9</sup> Since this work does not contain meter or measures, the pitches will be labeled successively, from 1 to 171, for ease of identification.



The opening line of music, except the final pitch, shall be designated as Region 1 in the formal analysis. Although there are no rhythmic or textural alterations in the work to guide the designation of formal divisions, the pitch structure does serve to provide some degree of separation of the work into distinct segments, each of which will be termed Region. The usage of the term Region to denote formal division comes both from the composer, as in works such as *Crippled Symmetry*, as well as from analysis of Feldman's music, such as Thomas DeLio's study of *Last Pieces #3* (1959).<sup>12</sup> Furthermore, Feldman's usage of non-teleological forms seems to preclude the usage of terms such as Exposition, Development, etc. or even more generic binary or ternary letter forms, e.g. ABA. Feldman's description of form, "Form is easy - just the division of things into parts"<sup>13</sup>, also supports non-teleological formal designations.

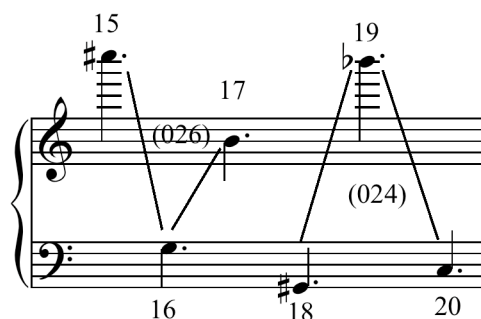
After the statement and restatement of the Primary Set Group, a new grouping of trichords is presented, beginning with the final pitch of the first line, 15, which when combined with the first two pitches of the second line of music, 16 and 17, form a (026) trichord, set class 3-8. This new trichord is then followed by a (024) trichord, set class 3-6, with pitches 18-20. These two new trichords will form the beginning of Region 2, which comprises pitches 15-54, and will be designated as the Secondary Set Group; see *example 3*. Roughly 92 percent of the pitches in *Piano Piece 1952*, (or 157 out of 171), as well as the entirety of the

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<sup>12</sup> DeLio, "Last Pieces #3 (1959)," pp. 46-48.

<sup>13</sup> Rockwell, "Morton Feldman (and Crippled Symmetry)," p. 6.

first three lines of music, are comprised of exclusively of trichords from the Primary and Secondary Set Groups.



example 3

Now that the pitch materials have been presented, it is important to explore some of their salient features, before continuing with the analysis of Region 2 and the rest of the piece. By their placement in the work it is clear that the (012) and (016) trichords function together as a harmonic unit, as do the (024) and (026) trichords, but each contain intervallic structures that link these harmonic units together as well. Both trichords of the Primary Set Group share IC 1, which is the most prominent interval in the opening passage of the piece, while both trichords of the Secondary Set Group share IC 2 (as well as IC 4) and are both subsets of the whole-tone scale. However, there are intervallic relationships between all four of the trichords in question, as a comparison of their interval vectors will show:

Table 1 - Interval Vectors

	IC1	IC2	IC3	IC4	IC5	IC6
<b>012</b>	2	1	0	0	0	0
<b>016</b>	1	0	0	0	1	1
<b>024</b>	0	2	0	1	0	0
<b>026</b>	0	1	0	1	0	1

It is clear from the table that each trichord contains several intervallic relations with the others. Set (012) shares IC 1 with (016) and IC 2 with (024) and (026). Set (016) shares IC 1 with (012) and IC 6 with (026). (024) shares IC 2 with (012) and (026) and IC 4 with (026). Set (026) shares IC 2 with (012) and (024), IC 4 with (024) and IC 6 with (016). This web of intervallic relationships is what allows Feldman to overlap many of his trichords into larger groups of pitches, as has been shown with pitches 7-14, creating larger harmonic units of four, five and as many as nine pitches towards the end of the composition. One other striking aspect of the composition is the absence of IC 3 in any of the trichords. IC 3 can be found only in a few places in the composition, usually as a transitional interval between two trichords, but will be discussed further as the analysis progresses. Finally, it should be noted that each of the two sets of trichords contain one trichord that has 24 possible transpositions and inversions (016) and (026) and one that is limited to 12 (012) and (024).

As the Region 2 continues, following the first statement of the Secondary Set Group, a restatement of the Primary Set Group occurs, (pitches 21-28).

Similarly to the opening of the work, the trichords are first presented discretely, then in overlapping forms. Following this restatement, the Secondary Set Group is first presented in overlapping form (pitches 28-31) elided with the final pitch of the restatement of the Primary Set Group as is shown in *example 4*.

The musical notation for Example 4 shows a sequence of trichords across two staves. The notation includes pitch numbers (21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31) and intervallic structures (016, 012, 024, 026). The trichords are connected by overlapping lines, illustrating the elision technique. The final pitch (31) is elided with the final pitch of the Primary Set Group.

This passage illustrates that in addition to the overlapping technique, Feldman uses elision to connect similar trichords (pitches 21-25, (016)-(012)) and contrasting trichords (pitches 26-30, (012)-(024)). Both the overlapping and elision techniques that Feldman employs are made manifest by his limited use of trichords in the Primary and Secondary Set Groups (only four out of twelve possible sets) in which each trichord shares at least one intervallic structure with every other one, as is discussed above. Furthermore, the elision/overlapping technique also allows Feldman to create larger harmonic/melodic units, through different combinations of trichords. Two such combinations occur within Region 2, the pitch material of which is comprised solely of the Primary and Secondary Set Groups. The Secondary Set Group, being comprised of subsets of the whole-tone scale, may easily be combined to form a larger harmonic/set unit, as is the case with pitches 46-50, in which a (026) and a (024) trichord are elided,



forming an almost complete whole-tone scale, (forming the set (02468), set-class 5-33), based off of the starting pitch C, clearly creating a noticeable pitch contrast. Similarly, and perhaps even more strikingly, the six pitches from 43-48, (which are comprised of (024), (016) and (026) trichords) combine to form six of eight pitches from the octatonic collection (forming the set (013479), set-class 6-Z47). In turn, the whole-tone and octatonic segments overlap one another, creating a harmonic change that is both striking and seamless (similar harmonic procedures will be illustrated below).

Region 3, which starts with pitch 55, continues the process begun in Region 2, of overlapping trichords of the Primary and Secondary Set Groups, to create larger harmonic/melodic structures. For example, pitches 57-62 form a subset of the 01 octatonic collection, pitches 65-70 from a subset of the 12 octatonic collection and pitches 92-96 form a subset of the 02 whole-tone scale; see *example 5*.

The musical notation for Example 5 is presented in a grand staff with treble and bass clefs. It is divided into three sections by vertical dashed lines. The first section, labeled '01 Octatonic' at the bottom, contains pitches 57, 58, 59, 60, 61, and 62. Trichords are identified as (012) for pitches 57-59, (024) for pitches 59-61, and (not Primary or Secondary) for pitches 61-62. The second section, labeled '12 Octatonic' at the bottom, contains pitches 65, 66, 67, 68, 69, and 70. Trichords are identified as (012) for pitches 65-67 and (016) for pitches 67-69. The third section, labeled '02 Whole-Tone' at the bottom, contains pitches 92, 93, 94, 95, and 96. Trichords are identified as (024) for pitches 92-94 and (026) for pitches 94-96. Various accidentals (sharps, flats, naturals) and pitch bends are indicated throughout the notation.

*example 5*

However, the most striking aspect of Region 3 is that it also presents pitches, for the first time in the composition, that are not part of the Primary or Secondary Set Groups, but form new trichordal relationships. Even within the first octatonic collection of *example 5*, there are two pitches that are not part of the Primary or Secondary Set Groups. There are two places within Region 3 that these non-Primary or Secondary pitch materials occur. Region 3 begins with a single pitch (55) that can not be included in the Primary or Secondary Set Groups, but rather forms a (015) trichord, set-class 3-4, with the pitches that immediately precede and follow it. Shortly after the beginning of Region 3, another two pitches occur that are not part of the Primary or Secondary Harmonic Areas, (61 and 62), as seen in *example 5*. These two pitches form another (015) trichord with the pitch that follows and a (013) trichord, set-class 3-2, with the preceding pitch. Pitches 55, 61 and 62, and the trichords that they are comprised of, constitute a third harmonic category, which shall be called Linking/Completion Set Group, since the function of these pitches is either to link two trichords or Regions (as is the case with pitch 55, which links Regions 2 and 3, and a (016) and (012) trichord) or to complete a larger harmonic unit (as is the case with pitches 61 and 62, which are part of the previously mentioned octatonic collection); see *example 6*. Throughout the course of the composition, one other trichord (014), set-class 3-3, will be considered as part of the Linking/Completion Set Group, which like (013) and (015), contains an IC 1 followed by a larger interval. Furthermore, it is only within the context of the Linking/Completion Set Group that IC 3 appears in the composition (as it is found only in the trichords (013) and (014)).

52 53 54 55 56 57 58 59 60 61 62 63

(016) (015) (012) (013) (015)

Linking Octatonic → Completion

*example 6*

Region 4 begins with pitch 97, a pitch that is not part of either the Primary or Secondary Set Group, but is rather part of a Link/Completion Set Group, forming a bridge between Region 3 and 4. Together with pitches 95 and 96, a (013) trichord is formed, a trichord first introduced in *example 6*, while a (014) trichord is created between pitches 96, 97 and 98. These trichords not only serve to link the two harmonic regions, Region 3 ending with a whole-tone segment (part of the Secondary Set Group) and Region 4 beginning with a (016) trichord after pitch 97 (part of the Primary Set Group), but also serves to complete a large 12 octatonic segment, from pitches 93-100, that provides a large-scale pitch continuity between the two regions, as is shown in *example 7*.

Region 3 Region 4

93 94 95 96 97 98 99 100

(024) (026) (013) (014) (016)

Whole-Tone Linking/Completion 12 Octatonic

*example 7*

Within Region 4, several other instances of Linking/Completion Set

Groups occur: 1. between pitches 102-104, a (015) trichord, which links the Primary and Secondary Set Groups; 2. between pitches 109-111, a (014) trichord, which also links the Primary and Secondary Harmonic Areas; 3. between pitches 122-124, a (015) trichord, which links two sections of the Primary Harmonic Area; see *example 8*.

The musical score for Example 8 is a piano reduction. It features a grand staff with a treble and bass clef. Pitches are numbered from 100 to 126. Trichords are labeled with set classes in parentheses: (012), (015), (026), and (014). A vertical dashed line separates the score into two sections. The first section contains pitches 100-114, and the second section contains pitches 120-126. The trichord (015) is highlighted between pitches 102-104 and 122-124.

*example 8*

The final two regions, Regions 5 and 6, present a return to the Primary Set Group. The final trichord of the Secondary Set Group occurs from pitches 137-139, after which a Linking/Completion trichord (013) from pitches 140-142 is used to transition into Region 5, which is comprised entirely of pitches from the Primary Set Group - other than initial and closing Linking/Completion trichords - beginning with pitch 141. After a final Linking/Completion trichord that begins Region 6, (pitches 163-165, (014)), the final six pitches of the work return to the opening trichord of the piece (016) and repeat it twice, so that there is a very

strong sense of pitch return or reprise at the end of the composition;<sup>14</sup> see *example 9*.

*example 9*

Having examined the trichordal set structure of *Piano Piece 1952*, the superset structures that the various groups of trichords belong to will be examined in order to show Feldman's overarching usage of pitch hierarchy within the work. Firstly, each of the two trichords groups that comprise the Primary and Secondary Set Group are made up of one specific K-set,<sup>15</sup> a tetrachord that contains both trichords. For example, the two trichords of the Primary Set Group are (012) and (016). When these trichords are combined, they form a tetrachord (0126), set-class 4-5, with an interval vector of [210111]. Likewise, when the two trichords of the Secondary Set Group, (024) and (026), are combined they form the tetrachord (0246), set-class 4-21, with an interval vector of [030201]. These

<sup>14</sup> Within the non-thematic, atonal musical language of the work, any sort of teleological reading of this pitch return to the Primary Set Group at the end of the composition is unlikely.

<sup>15</sup> For an condensed explanation of K-sets and Nexus-sets see: Cope, *New Directions in Music*, p. 21. Originally from: Forte, *The Structure of Atonal Music*.

two K-sets account for roughly 95% of the pitch material in *Piano Piece 1952*.

However, as can be seen from their interval vectors, neither set contains interval-class 3, which is present in two of the three trichords that make up the Linking/Completion Set Group, (013) and (014). It is only in the combination of the two K-sets that one arrives at a set which is inclusive of all the trichordal material that makes up the work, a Nexus-set,<sup>16</sup> (01246), set-class 5-9, with an interval vector of [231211]. This Nexus-set alone can produce all of the pitch materials of the work, including the Linking/Completion Set Group, and is even stated verbatim roughly halfway through the work, pitches 90-94, as an elision of (012) trichord and a (024) trichord, as is shown in *example 10*.

The diagram shows a piano score for five measures, labeled 90 to 94. The notes are: 90 (F4), 91 (F#4), 92 (F#3), 93 (F#4), and 94 (B3). Lines connect the notes to form two trichords: (012) for measures 90-91-92 and (024) for measures 91-93-94. The entire sequence is labeled 'Nexus-set (01246)'.

*example 10*

The generation of the two K-sets and the Nexus-set are shown below:

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<sup>16</sup> Ibid.

Table 2 - K-set and Nexus Set Generation

<b>Trichords</b>	(012)	+	(026)		(024)	+	(026)
		=				=	
<b>K-sets</b>		(0126)		+		(0246)	
				=			
<b>Nexus-set</b>				(01246)			

Before moving on to the application of the Set Groups, K-sets and the Nexus Set in *Intermission 5* and *Extensions 3*, a further explanation of the delineation of the six Regions of *Piano Piece 1952*, and their characteristics will be provided. In a work such as *Piano Piece 1952*, in which both rhythmic differentiation (between all pitches of the composition) and meter are absent, determining formal divisions within the work can be precarious. The segmentation of the work into six Regions by the author is based on Feldman's practice of formal division based upon Set Groups, which shall be seen more clearly in the following two analysis. This is also done to to illustrate the salient features of each Region. For example, three Regions of this work are comprised entirely of pitches belonging to the Primary Set Group: Regions 1, 5 and 6 (other than the Linking/Completion Set Group pitches that precede Region 5 and 6) while the last of these Regions contains only the first trichord of the work, (016). Region 2 first illustrates the Secondary Set Group, while the beginning of Regions 3-5 each

show the usage of Completion/Linking Set Groups. The pitch material of each Region and its duration are shown below:

Table 3 - *Piano Piece 1952*: Form

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6
<b>Pitches:</b>	1-14	15-54	55-96	97-140	141-164	165-171
<b>Set Groups</b>	Primary	Primary + Secondary	Primary, Secondary + Linking/ Completion	Primary, Secondary + Linking/ Completion	Primary + Linking/ Completion	Primary, (only (016)) + Linking/ Completion

In many instances, the Linking/Completion Set Groups occur only at the point of transition between two Regions e.g. between Regions 4+5 or 5+6, hence the last two Regions only have a few pitches that are outside the Primary Set Group. In addition, dividing the work into these six Regions elucidates Feldman's usage of a quasi-arch-form construction in *Piano Piece 1952*, in which the work begins and ends with a (016) trichord, the first and last two Regions are comprised of Primary Set Group pitches, and the Secondary Set Group Pitches occur only in the central Regions of the work.



### Intermission 5

Unlike that of *Piano Piece 1952*, the two analysis that follow, *Intermission 5* and *Extensions 3*, are of works that are parts of a series. The *Intermission* series, of which there are six works, were all written for piano,<sup>17</sup> were all composed between the years 1950 and 1953 and were all premiered by David Tudor. *Intermission 6* was premiered by Tudor and John Cage. These works were not necessarily meant to be performed as a cycle and David Tudor usually only performed selections from them. Furthermore, Feldman only had four of these works published, choosing to leave *Intermission 4* and *Intermission 3* unpublished.<sup>18</sup> Feldman said of these works: "Intermission means between; I wrote a number of them as part of living, that is, I did many other things during the day than just writing music. The writing of them never took more than two hours."<sup>19</sup>

The pitch structure of *Intermission 5* is somewhat simpler than that of *Piano Piece 1952* or *Extensions 3*, the analysis of which is to follow. In fact the pitch materials of the *Intermission 5* can be derived almost entirely from the two trichords of the Primary Set Group, combinations of their intervallic structures, as well of course as the K-set and Nexus-set to which they belong, including the three trichords which comprised the Linking/Completion Set Group. Noticeably

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<sup>17</sup> *Intermission 6* may be performed using either one or two pianos, the other five works were composed for solo piano.

<sup>18</sup> Feldman, *Solo Piano Works, 1950-64*, pp. 58-59.

<sup>19</sup> Feldman, "Extensions, Intermissions and Intersections," p. 1.

absent in *Intermission 5* are the two trichords that comprised the Secondary Set Group, (024) and (026). The simplified pitch structure of this work is no doubt a reflection of the short amount of time in which the work was composed, as well as the fact that the piece contains numerous amounts of repetition and long periods of rest. The work also features an interesting textural element that can lead to difficulty in analysis: triple-forte cluster chords followed by triple-piano chords or single pitches. Since Feldman requires that the sustain pedal be held throughout the work, the triple-piano chords are often enveloped by the sound of the preceding cluster chords.<sup>20</sup> However, in each instance, specifically m. 1 and mm. 23-24,<sup>21</sup> Feldman places the triple-piano chords in a separate register from the cluster chords so that they can be more audibly distinguished.<sup>22</sup> In this analysis, the cluster chords will be considered as separate harmonic entities from the triple-piano sonorities that follow them. Finally, before proceeding to the pitch analysis of *Intermission 5*, it should be noted that since the sustain pedal is to be held throughout the work, any adjacent pitches will be resonating together. Consequently, much of the formal designation that will be made, both at the phrase level and at the structural level, will be made based upon the placement of rests,

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<sup>20</sup> Feldman's only instructions for the work are the tempo marking, "Slow" and the pedal indications, "Hold sustain and una corda pedals throughout."

<sup>21</sup> This work is notated more traditionally than *Piano Piece 1952*, hence particular sonorities will be referred to by their measure numbers. Although there is no time signature written, the meter is consistently 3/8, so that a particular sonority will be identified by its measure and beat placement e.g. the chord in m. 23.2, (measure 23, beat 2).

<sup>22</sup> Erdman, "Zusammenhang und Losigkeit zu Morton Feldmans Kompositionen zwischen 1950 und 1956," p. 83.

which in many cases are long enough to allow the sound of the previous sonorities time to decay to inaudible levels.

The opening sonority of the work is one of the two previously mentioned cluster chords. This chord contains eleven of the twelve pitches of the chromatic aggregate. The chromatic aggregate of course comprises all pitch sets, but in its most simplistic form, is just a series of IC 1 vertically stacked, which is the building block of the trichord (012) from the Primary Set Group. Following the cluster chord are a sequence of triple-piano pitches, followed by a rest with a fermata, which will be considered as one harmonic unit, mm. 1.2-2.2, (with the opening chord, this material constitutes a sub-phrase). In their unordered form (0,1,2,3,8,9) the pitches form a hexachord, which when segmented into trichords, indeed yields the two trichords of the Primary Set Group; the pitches C,Db,D form (012) and the pitches Eb,Ab,A form (016). Another clear indication that the pitch material of *Intermission 5* is in fact the same as that of *Piano Piece 1952* occurs with the chord following the rest at the end of m. 2. The tetrachord that begins m. 3 is the K-set of the Primary Set Group, (0126) and is followed by a (016) trichord in m. 3.1-4.2. From the beginning of the piece until m. 4.2 every single pitch, of which there are 28, is part of the Primary Set Group and the K-set that is formed from that group. The opening phrase of the work, from mm. 1-5, with sub-phrases from mm. 1-2 and 3-5, closes with another familiar sonority, a (014) trichord from mm. 4.3-5.2, which comes from the Linking/Completion Set Group and does in fact help to link the opening phrase of the work with the sec-

ond phrase, that begins in m. 8. The opening phrase of the work and the segmentation of the various sets contained therein are shown in *example 11*:

Chromatic Cluster (012)      (012) + (016)      K-Set (0126)      (016)      (014)

*example 11*

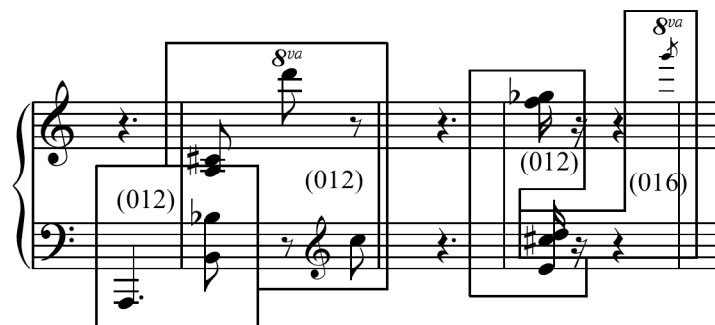
Following two measures of rest, a second phrase occurs, beginning with the grace-note to m. 8 and concluding with m. 11. As is the first phrase, this second phrase is divided into two sub-phrases, m. 8 and mm. 9.2-11.1, each of which contains only five pitches; each can be considered a harmonic unit. The first sub-phrase mirrors the final two trichords of the previous phrase, with a (014) trichord (pitches D#,E,G), appearing melodically, to form a harmonic link with the (014) trichord that preceded it in mm. 4.3-5.2, and a (016) trichord occur in the extreme registers of the sub-phrase, (pitches G,Ab,C#). Just as in *Piano Piece 1952*, where trichords are presented discretely after the initial materials, here they occur in overlapping form, as the pitch G is shared by both the (014) and the (016) trichords. Several more overlapping trichords occur in the second sub-phrase of the second phrase, which contains another striking triple-forte chord,

though not in cluster form. The four pitches of this chord, B,C,F#,G, (m. 9.2), overlap to form two separate (016) trichords, C,B,F# and F#,G,C, while the fifth pitch of this sub-phrase, Eb, (the C's that occur in m. 9.3 and m. 11.1 being pitch repetitions of the C in m. 9.2), overlaps to create two distinct (014) trichords, (pitches B,C,Eb and G,F#,Eb). The second phrase of *Intermission 5* is shown in *example 12*:

The image shows a musical score for piano, consisting of a treble and bass staff. The notation includes various notes, rests, and accidentals. Several trichords are highlighted with boxes and labeled with numbers in parentheses: (014), (016), and (014). A diamond-shaped box highlights a specific trichord. Above the treble staff, there are labels for '8va' and 'Pitch repetition'. The score is divided into measures, with some measures containing multiple notes and others containing rests.

*example 12*

Like the two previous phrases, the third phrase of the composition, mm. 14-17, is comprised of two sub-phrases (mm. 14-15 and m. 17) and contains only pitches belonging to the Primary Set Group. The first sub-phrase consists of two separate (012) trichords, one presented linearly (pitches C#,D,C) and one presented vertically (pitches B,Bb,A, with a pitch repetition of A), while the second sub-phrase contains an overlapped grouping of a (012) and a (016) trichord, as shown in *example 13*.

*example 13*

The fourth phrase of *Intermission 5*, mm. 19-24, is the last of Region 1<sup>23</sup> and like the previous three, contains two sub-phrases, mm. 19-21 and mm. 22-24. The first sub-phrase is comprised of only three pitches, F,B,A#, which form another (016) trichord. The second sub-phrase is the textural opposite of the first, containing two cluster chords, (from which numerous (012) and (016) trichords may be derived, since the combined clusters form a complete chromatic aggregate), followed by four pitches, which contain overlapping (012) and (016) trichords. More importantly however, is that the four pitches that follow the cluster chords represent another statement of the K-set (0126), with the pitches E,F,Gb,Bb. The second sub-phrase resembles greatly the opening phrase of the composition. In both cases a cluster chord(s) is heard triple-forte followed by triple-piano sonorities in the extreme registers of the instrument and a clear statement of the K-set that controls the large majority of the sonorities of the work. The final phrase of Region 1 is shown in *example 14*:

<sup>23</sup> Although using a traditional letter-name system e.g ABA, to delineate form may be a more viable method in *Intermission 5* than in *Piano Piece 1952*, for consistency, the term Region will be employed throughout the paper to signify larger formal structures.

The musical score for Example 14 is written for piano on two staves. It consists of six measures. The first measure has a treble clef with a whole rest and a bass clef with a whole note G. The second measure has a treble clef with a whole rest and a bass clef with a whole note B. The third measure has a treble clef with a whole rest and a bass clef with a whole note D. The fourth measure has a treble clef with a whole rest and a bass clef with a whole note F. The fifth measure has a treble clef with a whole rest and a bass clef with a whole note A, marked with *fff*. The sixth measure has a treble clef with a whole rest and a bass clef with a whole note C, marked with *ppp*. Above the sixth measure is an *8va* marking. Below the first measure is a bracket labeled (016). Below the fourth and fifth measures is a bracket labeled Cluster Chords (Chromatic Aggregate). Below the sixth measure is a bracket labeled K-Set (0126). Below the sixth measure is an *8ba* marking.

example 14

The second part of *Intermission 5*, Region 2, is quite different from the first. Specifically, the texture is much sparser in Region 2 and the periods of rest are much longer,<sup>24</sup> although both of the first two Regions contain exactly four phrases. The cluster chords of Region 1 are absent in Region 2 and many more rhythmically isolated pitches occur, often only as grace notes. In addition the pitch content is greatly reduced in Region 2, only featuring a few prominent tri-chords and no larger pitch groupings. Finally, Region 2 is comprised mainly of trichords of the Linking/Completion Set Group, as this middle part of the work serves mainly as a bridge or transition between the first and last Regions of the work. Region 2 comprises mm. 25-54.

The first phrase of Region 2 (which does not contain any distinct sub-phrases due to the sparsity of pitches and long periods of rests), mm. 27-31 (excluding the preceding rests), is made up of two overlapping trichords, (014) and (013), both of which are from the Linking/Completion Set Group, pitches B,D,Eb and C,D,Eb, respectively. The (013) trichord appears again in the second phrase

<sup>24</sup> Because of the long periods of rest, musical examples of pitch segmentation will be shown in rhythmic reduction.

of Region 2, which contains only three distinct pitches, mm. 33-37, D#,E,F#, while the two chords that comprise the third phrase, mm. 40-42, comprise two overlapping (012) trichords, one in the upper pitches of the two chords and one in the lower, G#,A,A# and B,C,Db<sup>25</sup>. Finally, the last and longest phrase of Region 2, mm. 44-50, contains only two pitches, D# and Gb. These two pitches clearly reference the central triple-forte/triple piano (013) trichord of m. 33, pitches D#E,F#, which is the most prominent sonority of the Region. Such an interval, when so rhythmically isolated yet containing a direct pitch reference to a specific set or trichord, shall be designated an Incomplete Trichord. The entirety of the pitch content of Region 2 in rhythmic reduction is shown in *example 15*:

The image shows a rhythmic reduction of Region 2, spanning measures 33 to 50. It is presented on a grand staff with treble and bass clefs. The notation is divided into five measures, each containing a boxed segment of the reduction. The first measure (mm. 33-37) contains a (013) trichord in the treble and a (014) trichord in the bass. The second measure (mm. 40-42) contains a (013) trichord in the treble and a (012) trichord in the bass. The third measure (mm. 44-50) contains an 'Incomplete (013)' trichord in the treble and a (012) trichord in the bass. The notation includes various accidentals (sharps, flats, naturals) and dynamic markings (8va, 8va).

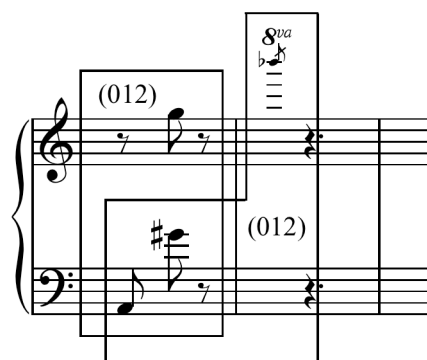
*example 15*

From Region 1 to 2, Feldman greatly reduces the pitch content, however in Region 3 he takes it to the extreme. The entirety of Region 3, which last from mm. 55-72, consists of only four distinct pitches, which are repeated a total of

<sup>25</sup> The C in m. 40 is a pitch repetition of the C that occurs as the top note of the chord in m. 41. In *example 15* the lower C is moved to the treble staff for ease of reading and segmentation.



nine times each.<sup>26</sup> The pitch content of these four pitches is quite simple, they comprise two overlapping (012) trichords and the pitches are separated by their respective registers to emphasize this overlap, as is shown in *example 16*:



*example 16*

Much like *Piano Piece 1952*, the form of *Intermission 5* is based upon the pitch structure. In both works, the outer Regions are constructed mainly with the Primary Set Group, while the inner Regions employ the pitch materials of the Linking/Completion Set Group.<sup>27</sup> In fact, in Region 1 of *Intermission 5*, the only trichord outside of the Primary Set Group is (014), which occurs four times, while Region 3 is comprised entirely of trichords from the Primary Set Group. To contrast, the only trichord outside of the Linking/Completion Set Group in Region 2 is (012), which appears twice. Finally, it should be mentioned that in addition to the Secondary Set Group, the trichord (015) from the Linking/Completion Set Group also does not occur in *Intermission 5*, leaving (012), (016), (014), and (013) as

<sup>26</sup> The significance of these repetitions, as well as many of the other proportional aspects of the work, are analyzed clearly in: Borio, "Morton Feldman e l'Espressionismo astratto: La costruzione di tempo e suono nelle miniature pianistiche degli anni Cinquanta e Sessanta," p. 3-4.

<sup>27</sup> Of course *Piano Piece 1952* also features the Secondary Set Group prominently in the inner Regions of the work as well.

the only trichords that appear in the work, while the K-set of the Primary Set Group is the only significant tetrachord that appears. Of course each of the four trichords present in this work are derived from the Nexus-set (01246). The formal layout, along with the prominent pitch material, is shown below:

Table 4 - *Intermission 5: Form*

	Region 1	Region 2	Region 3
Measure #'s	1-24	25-54	55-72
Set Groups	Mainly Primary Set Group (012) (016) + two statements of the K-set  Occasional (014)	Mainly Linking/ Completion Set Group (013) (014)  Occasional (012)	Entirely Primary Set Group (012)

### Extensions 3

Of Feldman's three compositions of 1952, *Extensions 3* is the most complex, both in terms of its pitch content and its overall structure. Feldman described his *Extensions* series of works, of which there are six, as such, "By extensions I do not mean continuities. I had the feeling of a bridge where you don't see the beginning or the end, where what you see seems transfixed in space."<sup>28</sup> Like *Intermission 5*, *Extensions 3* features many repetitive passages, which consequently add to the effect of not seeing "the beginning or the end". This effect has also been described as "...a special type of time. The feeling for the duration of the repeat becomes uncertain, the concentration is directed totally towards a sound similar to a river, always new yet still the same and long ago faded away."<sup>29</sup> In addition the very slow tempo and extremely soft dynamics, which are indicated "Soft as possible",<sup>30</sup> also add to these temporal effects.<sup>31</sup>

The pitch content of the work is very similar to that of *Piano Piece 1952*, in that trichords from the Primary, Secondary and Linking/Completion Set Groups are all found within the work. Feldman also uses dyads more in *Extensions 3* than in the previous two works, however Feldman does not employ Incomplete Trichords, which occur in *Intermission 5*, but rather overlaps and combines dyads

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<sup>28</sup> Skempton, "Morton Feldman's Early Piano Pieces," p. 2.

<sup>29</sup> Straebel, "Untitled notes to: Aki Takahashi Plays Morton Feldman," p. 5.

<sup>30</sup> Feldman, *Solo Piano Works, 1950-64*, p. 8.

<sup>31</sup> The idea of a musical work being "transfixed in space" could also be an effort on Feldman's part to correspond in some way to the visual arts. Feldman was particularly interested in painting, which by its very nature is frozen in time. For more on Feldman and visual arts, see Feldman, *Give My Regards to Eighth Street*, pp. 83-89.

to create trichord groups.<sup>32</sup> In addition, for any of the three pieces analyzed in this study, the passage that closes the work, mm. 123-137, is the most complex in terms of the pitch material and usage, involving vertical combinations of various trichordal groups. Finally, like the previous two works, Feldman does not indicate any meter at the beginning of *Extensions 3*, however, like *Intermission 5*, the durations of the measures remain consistent throughout the piece, which indicate a meter of 6/16. The metronome marking, dotted eighth-note = 52, supports this metrical interpretation.<sup>33</sup>

The opening eight measures of the work provide an example of all of the different types of trichords used within the piece, (as well as the other works in this study).<sup>34</sup> *Extensions 3* begins with a clear statement of the (012) trichord in its vertical form. Two dyads follow in mm. 2-3, which when viewed independently are both IC 1. However, when combined, these two dyads form overlapping (014) trichords, which help to link the opening (012) trichord with the other member of the Primary Set Group, (016). The (016) trichord occurs in its vertical form in measure 4. Two overlapping (013) trichords are used to link two trichords of the Primary Set Group, just as the preceding (014) trichords were; in this case two (016) trichords, the second of which appears in overlapping form in mm. 6-7. In addition, the first (013) trichord also serves to complete an octatonic segment that occurs from mm. 3-5, a usage first explored in *Piano Piece 1952*. This open-

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<sup>32</sup> See examples 17-25.

<sup>33</sup> More so than in *Intermission 5* or *Piano Piece 1952*, the sense of meter can at times be felt in *Extensions 3*, as in example 17.

<sup>34</sup> See example 17.

ing passage concludes with a melodic statement of the (026) trichord from the Secondary Set Group, from mm. 7-8, with the dyad IC 2, being repeated until m. 11. The opening eight measures, which are part of the first full phrase of the composition, are shown in *example 17*:

*example 17*

Following the first eight measures are three repetitions of the last measure, which extends the first phrase to m. 11, and three measures of rest, after which another repetitive gesture occurs that reiterates the trichord (013), pitches E,D#,C# almost four full times. The final repetition (m. 20) is elided with the beginning of the next passage. This repetitive gesture is preceded by a pitch that is not part of the pattern, F#, but is rather a link to the preceding pitches Eb and F, which together form yet another (013) trichord. This passage acts as a transition between the opening phrase and the second phrase of the composition, which begins in m. 21.<sup>35</sup>

<sup>35</sup> This transition passage will be shown with the following phrase in *example 18*.

The second phrase of the composition last from mm. 21-28 and concludes Region 1 of the composition. The eight measure phrase consists of primarily linear combinations of the Primary and Secondary Set Groups. In fact, the top line of music is entirely comprised of Secondary Set Groups; in other words, it is entirely made up of segments of the whole tone scale. The first trichord, which is elided from the last pitch of the transition, forms a (024) trichord m. 20-21, and is followed by another linear (024) trichord in mm. 22-23, pitches Eb,F,G and F#,G#,Bb respectively. The second of these two trichords form the basis for the rest of the pitch material of the top staff of this passage, with the only additional pitch (excluding the grace note pick-up to m. 29) being E. These pitches combined form the K-set of the Secondary Set Group. The harmonic underpinning for this whole-tone melody is exclusively (016), which occurs first twice in an overlapping form in m. 23 (pitches Bb,A,E and Bb,B,E) and then a third time in a linear form in mm. 27-28. The transition passage and the second phrase of the composition that follows, is shown in *example 18* (due to the length of the passage, repetitions and durations are removed in the example).

The musical score for Example 18 consists of two staves. The top staff contains several boxed pitch sets: (013), (013), (013), (024), (024), and K-set (0246). The bottom staff contains boxed pitch sets: (013), (013), (016), (016) with a '+' sign, and (016). Below the staves, three measures are bracketed and labeled: mm.11,15; mm.11-20 (transition); and mm.21-28 (second phrase).

example 18

Region 2, which last from mm. 29-72, consists of a series of repeated gestures, pitches or Set Groups, which in some instances are repeated up to sixteen times.<sup>36</sup> Region 2 also features numerous Incomplete Trichords and series of reiterated dyads that form trichords with pitches that precede or follow them, as is the case with the opening ten measures of the Region. The first dyad that occurs, G#/Eb IC 5, beginning with the grace-note to m. 29,<sup>37</sup> is an Incomplete Tri-chord, implying either a (015) or (016) trichord. Considering that three (016) tri-chords occur immediately preceding this dyad, it is most likely heard as (016). A similar case occurs in the next six measures, in which a dyad, C#/Bb IC 3, is reiterated five times. In this instance, the dyad is followed by the pitch C, which forms a (013) trichord in mm. 37-38. The opening phrase of Region 2 (mm. 29-

<sup>36</sup> See mm. 53-60

<sup>37</sup> The grace-note is included in this instance because the same pitch occurs in the same register in the following measure.

41) concludes with a series of trichords from each of the three Set Groups, as is shown in *example 19*, (again in rhythmic reduction).

The diagram illustrates the pitch material of Example 19 in rhythmic reduction. It features a grand staff with two staves. The notation is organized into three measures, each containing a trichord (a set of three notes). The trichords are labeled as follows:

- Measure 1 (mm. 29-32): IC 5 (b, e, g) and Incomplete Trichord (016) (b, e, g).
- Measure 2 (mm. 33-38): IC 3 becomes (013) (b, e, g) and (014) (b, e, g).
- Measure 3 (mm. 38-41): (012) (b, e, g), (024) (b, e, g), and (014) (b, e, g).

The trichords are shown in boxes, and the notes are represented by stems and flags. The labels (014), (012), and (024) are placed below the trichords. The measure numbers are indicated at the bottom of the diagram.

*example 19*

The second phrase of Region 2 is one of the most extreme in terms of pitch repetition, featuring six measures of a single dyad in repetition (mm. 45-50) as well as eight measures of a single pitch repetition (mm. 53-60). Because of these repetitions, this phrase is extended greatly, lasting a total of nineteen measures, (mm. 43-61). Despite the length of this phrase, the pitch material is quite simple, reducing to a (024) trichord, followed by two overlapping (012) trichords and concluding with two overlapping (026) trichords. The large majority of this phrase is constructed with the pitches of the Secondary Set Group, as the overlapping (012) trichords only appear in one measure, m. 51. The construction pitch material of this second phrase of Region 2 is shown in *example 20*:



Example 20 is a musical score snippet for piano and violin. The piano part (left) shows measures 43-50, 51, and 51.2-61. The violin part (right) shows measures 51 and 51.2-61. Trichord labels are placed above the notes: (024) for piano mm. 43-50; (012) + (012) for piano m. 51; (026) + (026) for piano mm. 51.2-61; and 8<sup>va</sup> (012) for violin m. 51 and 8<sup>va</sup> (026) for violin mm. 51.2-61. Measure groupings are indicated by brackets below the piano staff.

*example 20*

Like the previous phrase, the final phrase of Region 2 is comprised of only a small grouping of pitches and many of the groups repeat several times. In fact, within the eleven measures of this third and final phrase of Region 2, there are only two large groupings of pitches. The first grouping, mm. 62-69, is comprised of three overlapping trichords, (012), (012) and (024), from bottom to top respectively. The second grouping is comprised of only two (013) trichords, which occur from mm. 69.2-72. As is the case with most of the Linking/Completion Set Group trichords in the work, these (013) trichords serve to transition from one Region to the next, as the first pitch materials of Region 3 begin in m. 73. The two pitch groupings of the final phrase of Region 2 are shown linearly, for ease of analysis, in *example 21*:

Example 21 shows two linear pitch groupings. The first grouping, mm. 62-69, consists of the trichords (012), (012), and (024) shown as overlapping sequences of notes. The second grouping, mm. 69.2-72, consists of two (013) trichords shown as overlapping sequences of notes.

*example 21*

Region 3, mm. 73-122, is the longest Region in the work, however paradoxically, it has the most limited pitch groupings. This is due both to the numerous repetitions found in this Region, as well as the frequent periods of between such repetitions. In fact, in the fifty measures of this Region, only five distinct pitch groups are present, furthermore, the number of repetitions of each group grows as the Region progresses. For example, the first pitch group occurs once, the second pitch group twice, the third group four times, etc. Perhaps because the pitch material is so limited, Region 3, unlike the first two Regions, uses only trichords from the Primary and Secondary Set Groups and begins and concludes with (012) trichords. These five pitch groups may each be considered as a distinct phrase of the Region, using the word “phrase” in a rather liberal sense. A reduction of each of the five pitch groups/phrases and the trichords that they contain is shown in *example 22*:

The musical notation for Example 22 shows five distinct pitch groups from Region 3, measures 73-122. Each group is represented by a box containing a trichord and its corresponding measure range. The trichords are labeled as (012), (012), (016), (026), (024), and (012). The measure ranges are mm. 73-74, mm. 75-78, mm. 79-89, mm. 90-101, and mm. 102-122. The notation includes a treble clef and an 8va symbol above the final group.

*example 22*

The final Region of *Extensions 3*, Region 4, is by far the most complex, both rhythmically and in terms of pitch, and dense of any other Region, and is

also the shortest, (mm. 123-137). This final section of the work is characterized by large vertical groupings of pitches, which are to be performed “as loud as possible”,<sup>38</sup> that are very reminiscent of those found in *Intermission 5*. This passage is also the only Region that contains pitches found in the bass register of the piano, and the only Region in which the bass clef itself is used. Region 4 is divided into four distinct phrases that are shorter in duration than those of the previous Regions. This is due to the fact that other than the last five measures, this Region does not contain any repetitive pitch groupings.

The first phrase of Region 4 lasts from mm. 123-126 and contains two pairs of (012) trichords (mm. 123-124) and two pairs of (015)/(014) trichords (mm. 122-126), for a total of eight trichords. The trichords in mm. 123.2-124 overlap, while the remaining trichords are discrete. This opening phrase is shown in *example 23*:

The image displays a musical score for a piano piece, specifically focusing on the first phrase of Region 4 (measures 123-126). The score is written for two staves, treble and bass clef. The key signature is one sharp (F#). The notation includes various trichords, which are groups of three notes. These trichords are labeled with numbers in parentheses: (012), (015), and (014). Some trichords are shown as overlapping, while others are discrete. The labels are placed above or below the corresponding notes. For example, in measure 123, the treble staff has a trichord labeled (012) and the bass staff has a trichord labeled (012). In measure 124, the treble staff has a trichord labeled (012) and the bass staff has a trichord labeled (012). In measure 125, the treble staff has a trichord labeled (014) and the bass staff has a trichord labeled (015). In measure 126, the treble staff has a trichord labeled (014) and the bass staff has a trichord labeled (014).

*example 23*

<sup>38</sup> Feldman, *Solo Piano Works, 1950-64*, p. 13

A similar mixture of Primary and Linking/Completion Set Groups occurs in the second phrase of Region 4, mm. 127-130. The most striking example of this occurs with the first of several chords that are to be played “as loud as possible” in m. 127. In this first chord, six notes are present, three of which form a (016) trichord and three of which form a (015) trichord, (pitches D,C#,G# and F,E,C, respectively). The set structure of this chord is immediately confirmed by the two discrete trichords that follow, one of which is (016) and the other (015), mm. 127.2-128. The phrase closes with two overlapping (016) trichords from m. 128.2-129, with the pitch F being repeated, (pitches E,F,Bb and Bb,A,E). This second phrase is shown in *example 24*:

The image displays a musical score for two staves, treble and bass clef, spanning four measures. The notation is as follows:

- Measure 1:** Treble staff has a whole note chord with notes D4, C#4, G#4, F4, E4, C4. Bass staff has a whole note chord with notes F3, E3, C3. Labels: (015) + (016).
- Measure 2:** Treble staff has a whole note chord with notes D#4, C#4, G#4. Bass staff has a whole note chord with notes F3, E3, C3. Label: (016).
- Measure 3:** Treble staff has a whole note chord with notes D#4, C#4, G#4. Bass staff has a whole note chord with notes F3, E3, C3. Label: (015).
- Measure 4:** Treble staff has a whole note chord with notes D#4, C#4, G#4, F4, E4, C4. Bass staff has a whole note chord with notes F3, E3, C3. Labels: (016) + (016).

*example 24*

The pitches from mm. 131-132, which constitute the third phrase of Region 4, present the greatest analytical problem in terms of pitch segmentation. This is due to the extremely fast harmonic motion and the wash of sound that is created with the chords played “as loud as possible”. In fact, this is a very unusual passage in Feldman’s music because of the density and dynamics. However, virtually all of the pitch material can be reduced to trichords of the Primary Set Group. The one exception to this is a trichord of the Secondary Set Group,

which perhaps foreshadows the concluding phrase of this work. It should be noted, that since this passage is so dense, many different segmentations are possible. In *example 25* the segmentations will be shown below their original form in linear form, for ease of analysis, with their corresponding trichords.

*example 25*

*Extensions 3* concludes somewhat differently than *Intermission 5* and *Piano Piece 1952* do. The final phrase of the composition, mm. 133-137, does not contain either of the two trichords of the Primary Set Group, which were so prevalent in the preceding phrase and throughout the composition. Instead, the work concludes with a two-measure sub-phrase (the second measure of which is repeated three times more) which is comprised of a linear presentation of two overlapping (026) trichords and a vertical (014) trichord in the accompaniment. So the final phrase of *Extensions 3* is comprised only of materials from the Secondary and the Linking/Completion Set Groups, unlike the previous two pieces, which both closed with Primary Set Group pitches. This final phrase is also interesting because the (014) trichord, when combined with the concurrent linear

pitches, along with those that immediately precede and follow, (in total pitches C, Db, E, F#, A, Bb), does serve to complete a 01 octatonic segment, a function that Feldman explored greatly in *Piano Piece 1952*. This final phrase of *Extensions 3*, minus the repetitions, is shown in *example 26*:

example 26

Formally, *Extensions 3* is the most complex of Feldman's works of 1952, not only because of its duration and variety of textures, but also because of its pitch language, which freely incorporates and integrates all three Set Groups. The first few phrases of the piece foreshadow this usage, for each of them contain all three groups. Of the four Regions of the piece, only the third contains only two Set Groups, though Region 4 mainly uses Primary and Linking/Completion trichords, until the last phrase. The form of *Extensions 3* is shown below:

Table 5 - *Extensions 3: Form*

	Region 1	Region 2	Region 3	Region 4
<b>Measure #'s</b>	1-28	29-72	73-122	123-137
<b>Number of Phrases</b>	2	3	5	4
<b>Set Groups</b>	All Three	All Three	Only Primary and Secondary	All Three

## Conclusions

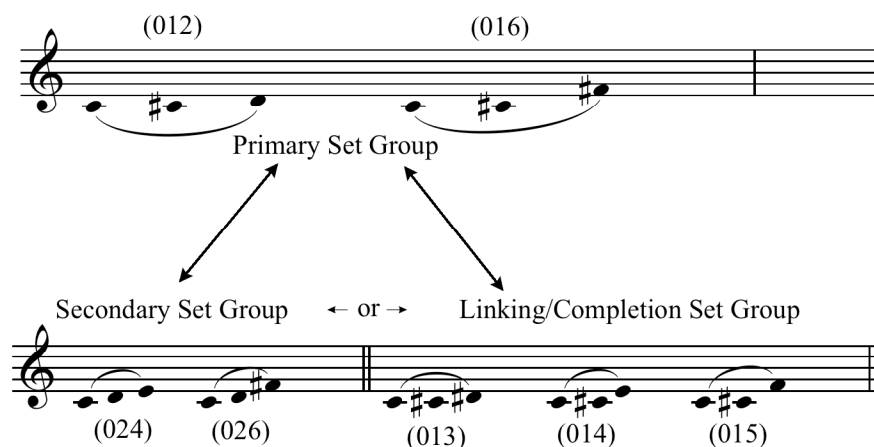
Having analyzed each of Feldman's three compositions of 1952, both in terms of the pitch material, as well as the effect of that pitch material on the form, an expansion of the derivation and usage of this pitch material is provided. This further analysis will attempt to show commonalities of pitch usage in each of the three compositions, as well as elucidate differences in usage from work to work.

As has been shown previously, each of the pieces features a prevalent amount of (012) and (016) trichords, which when combined form the K-set (0126). The K-set is not presented as prevalently, but does occur in several instances in the works, and serves as the generative agent of the two trichords. These two trichords have been termed the Primary Set Group. There are several reasons why these trichords are designated as "Primary". First, each of the three compositions begins with a member of the Primary Set Group and in each of the three compositions the other member of the Set Group follows almost immediately, so although not directly stated, all of the materials of the K-set are presented at the outset of each composition. Second, in two of the three compositions, *Piano Piece 1952* and *Intermission 5*, the closing pitch material is made up of trichords of the Primary Set Group. The third composition, *Extensions 3*, although it does not close with the Primary Set Group, saturates the closing Region with those trichords during the extremely loud passages, only in the quiet closing moments of the piece does the Primary Set Group recede, as was shown in *examples 23-26*. Third, the Primary Set Group is the only Set Group of the



three that is used absolutely consistently throughout each of the three compositions - e.g. the Secondary Set Group - appears only in the longer two compositions, *Piano Piece 1952* and *Extensions 3*; the Linking/Completion Group sometimes includes (015), sometimes does not, etc. Finally, the trichords of the Primary Set Group appear more frequently than any of the other trichords in all three compositions. It is for these reasons that these two trichords are termed “Primary”. Furthermore, the analogy could be made that these trichords serve as a quasi-tonic of the compositions, acting as the central pitch materials for all three works.

A furthering of the tonal analogy between the Secondary and Linking/Completion Groups and Predominant/Dominant might be somewhat tenuous, though one aspect of Feldman’s usage of these chords does in fact correspond. Although the Secondary and Linking Set Groups may follow or precede one another, or occur concurrently (as is the case with the final measures of *Extensions 3*) they always relate back to the Primary Set Group. In other words, there are no passages in which Secondary and Linking Set Groups alternate repeatedly with one another, in the same way dominant and predominant chords that have to relate back to their tonic for their function to remain clear. The relationship between these three Set Groups is shown below in *example 27*:



*example 27*

*Example 27* illustrates all of the pitch materials used in Feldman's compositions of 1952, how they are grouped and how they function and relate to one another. The derivation of these pitch materials has already been partially stated. Each of the Primary and Secondary Set Groups is derived from a generative K-set, (0126) and (0246) respectively, both of which are tetrachords. However, neither of these two K-sets can independently generate the Linking/Completion Set Group. However, in combination, the two K-sets form a singular Nexus-set (01246), which contains all of the intervallic materials of the both the Primary and Secondary Set Groups as well as the Linking/Completion Set Group. In essence, the pitch material of all three compositions in this analysis are all taken from a single pentachord.

Many analysts have viewed Feldman's early compositions as freely atonal works, in which the pitch material can be viewed as individual sounds alone, as

some have put it, “the sounds themselves”.<sup>39</sup> However, at least for a period of a year, Feldman was using a distinct, though somewhat general, system of composition with relation to pitch. This pitch system was based primarily on trichords and groupings of trichords, though as has been shown, these trichord groups are derived from larger K-sets and a Nexus set. Furthermore, these groups of trichords have a clear sense of hierarchy and of function within a composition, with trichords of the Primary Set Group serving as a type of quasi-tonic, while trichords of the Secondary and Linking/Completion Set Groups serving subsidiary harmonic roles. Though Feldman composed only three works in the year of 1952, and though each one is different from the next in terms of duration, texture, register, form, dynamics, and compositional intent, each share a common and unified pitch language.

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<sup>39</sup> Hirata, “The Sounds of the Sounds Themselves: Analyzing the Early Music of Morton Feldman,” p. 6.

## Bibliography

Borio, G. "Morton Feldman e l'Espressionismo astratto: La costruzione di tempo e suono nelle miniature pianistiche degli anni Cinquante e Sessanta," in *Itinerari della musica americana*, (1996) pp. 119-134

Claren, S. *Neither: Die Musik Morton Feldmans*. Hofheim: Wolke Verlag, 2000

Cohen, D. "String Quartet (1979)" notes to *String Quartet (1979)*, Compact Disc, Naxos 8.559190, 2006

Cope, D. *New Directions in Music, Seventh Edition*, Prospect Heights, IL., Waveland Press, 2001

DeLio, T. "Last Pieces #3 (1959)," in *The Music of Morton Feldman*, Westport, CT., Greenwood Press, 1996

Erdman, M. "Zusammenhang und Losigkeit zu Morton Feldmans Kompositionen zwischen 1950 und 1956," in *Musik-Konzepte* 48/49, 1986

Feldman, M. "Extensions, Intermissions and Intersections" notes to a recital by David Tudor, University of Illinois, Urbana, 1953 (Accessed 8 Nov 2008)  
<<http://cnvill.net/mftitles.htm>>

*Give My Regards to Eighth Street: Collected Writings of Morton Feldman*. Cambridge, MA: Exact Change, 2000

*Solo Piano Works 1950-1964*. New York: C.F. Peters, 1998

Forte, A. *The Structure of Atonal Music*, New Haven, CT.: Yale University Press, 1973

Hirata, C. "The Sounds of the Sounds Themselves: Analyzing the Early Music of Morton Feldman," *Perspectives of New Music*, Vol. 34 No. 1 1996

Lange, A. "A Piano" notes to *Morton Feldman: Works for Piano 2*, Compact Disc, hat ART CD 6143, 1994

Paccione, M. and P. "Did Modernism Fail Morton Feldman?" *ex tempore: A Journal of Compositional and Theoretical Research in Music*, vol. 6/1 1992

Rockwell, J. "Morton Feldman (and Crippled Symmetry)," notes to *Morton Feldman: Crippled Symmetry*, Compact Disc, Bridge 9092, 1999

Saxer, M. *Between Categories: Studien zum Komponieren Morton Feldmans von 1951 bis 1977*, Saabrücken, Pfau Verlag, 1998

Skempton, H. "Morton Feldman's Early Piano Pieces," notes to *Morton Feldman: All Piano (1950-1986)*, LondonHALL (do 13), 1996

Straebel, V. "Untitled" notes to *Aki Takahashi plays Morton Feldman*, mode 54, 2006

Villars, C. *Morton Feldman Says: Selected Interviews and Lectures 1964-1987*, London: Hyphen Press, 2006

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