STRING QUARTET NO. 1: AN ANALYSIS

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# TABLE OF CONTENTS

Chapter

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>THE FORMAL STRUCTURE</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>MELODIC/RHYTHMIC STRUCTURE</td>
<td>7</td>
</tr>
<tr>
<td>IV</td>
<td>HARMONIC ORGANIZATION</td>
<td>18</td>
</tr>
<tr>
<td>V</td>
<td>CONCLUSION</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>APPENDIX: STRING QUARTET No. 1</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>BIBLIOGRAPHY</td>
<td>55</td>
</tr>
</tbody>
</table>
Chapter I
INTRODUCTION

When the time came to think seriously about a thesis composition, I found myself having to make a choice. I had two works-in-progress of sufficient scope for such a project: a partial song cycle for baritone and chamber orchestra and an unfinished string quartet. After a satisfying performance of the first part of the song cycle, I turned back to the quartet and found myself becoming quite excited about its potential. Not only would the quartet be an appropriate subject for my thesis, it would be an exciting composition for performance.

When I decided to use the quartet, I had no idea of the minefield that lay ahead. The piece offered many challenges for analysis (to put it mildly). It would be necessary to find a method of analysis that would take into account all aspects of a work that lay outside the realm of tonal or serial music. The lack of an historically accepted language based on a large body of works or a set of theoretical propositions made it clear that the analytical method would of necessity come from the piece itself.

The next question was, how to proceed? Knowing that traditional methods would not be appropriate here, I approached the analysis inductively and phenomenologically in order to derive perceptual knowledge of its content. What do you actually hear in the music? Since any musical element becomes an important factor according to its use, it is only as the music unfolds that its style becomes evident. From the smallest motivic cell or rhythmic figure to the largest theme group, what may act as a cohesive element depends on the
composer's choices. The piece creates its own context.

But there are implicit questions. What sort of piece is this? Is there a historical background? What aesthetic category or categories are fulfilled? Is it primarily subjective or objective?

I examined as many facets of the work as possible in order to arrive at a theory as to its form and content. The task was to describe the objective, formal elements occurring in the piece, as well as subjective moods and sensibilities, by means of investigating melodic / rhythmic organization, harmonic structures, large divisions, special gestures, expressive articulations and dynamic and timbral modulations to find out what gives the piece unity, form and character. After considering the work's aesthetic and structural properties, I could then make an appropriate judgment.

There are several principal properties that appear immediately. The quartet obviously consists of a single multi-sectional movement. It is, in fact, in sonata-allegro form, its parts connected by thematic repetition and development. Some areas are tonally ambiguous in that they connect aurally but not functionally. There is a strong sense of unity in the piece due to the repetition of clearly defined motivic cells in all of the sections. These and many other aspects of the music come to the surface in the following chapters.
Chapter II
THE FORMAL STRUCTURE

A. The Large Form

Analysis of the formal structure of the quartet will cover the following: 1) the principal divisions; 2) the relationships of the divisions to each other and to the whole; 3) assignment of the piece to a category of musical form and to a historical context.

An overview of the quartet shows that it is in sonata-allegro form. There are an exposition, development and recapitulation with a clear, well-defined break between the exposition and development and a short bridge passage overlapping the development to the recapitulation. A break of several seconds occurs before the final cadence; this is a structural articulation as well as a dramatic device.

The exposition presents all of the thematic material that will be developed in the piece. It comprises two theme areas which have their basis in the defining motive, the descending semitone. The themes are distinct from each other, separated by cadences of relative importance. Many of the cadences involve extensions.

The development explores many of the characteristic means of thematic transformation and expressive invention common to traditional sonata-allegro form. Heightened tension, shifting tone centers, fragmentation, inversion and regrouping of themes and motives and rhythmic and articulatory variation are all features of the development. It culminates in a suspenseful dissolution which acts as a bridge to the recapitulation.

The recapitulation restates the themes in different guises and mixes but all are recog-
nizable in the relationship with their presentation in the exposition.

The dramatic shape of the quartet is a feature worth exploring briefly. The expressive weight of its material is preponderantly in the development. It occupies the central position and contains the greatest amount of emotional impact. Breaks occur at crucial points: a major one separates the first and second sections of the piece and another provides a dramatic pause before the final cadence. Lesser structural breaks occur at salient points throughout the piece. Static blocks, often functioning as cadential extensions, extended cadences or as highlights to a point of separation between phrase members, are a major component of the quartet.

The highpoint of the piece occurs around measures 95-101, a little over two-thirds but not yet three-fourths of the way to the end. At measure 99 a static block, consisting of an accumulated tone cluster, thins to one shimmering note which drops one semitone to dissolve into the bridge passage to the recapitulation. If it were a novel or a play, this is the universally agreed upon point of climax of the plot, the so-called ‘golden mean’ of literature and drama.

Up to this point, the characteristics of the quartet’s overall form have been described in terms appropriate to a sonata-allegro movement, with its exposition, development and recapitulation. The piece is obviously an example of three-part form, but what is it that makes sonata-allegro form applicable here? The primary points of argument in favor of the classification are: firstly, the overall structure of the quartet follows the traditional pattern of sonata-allegro form in that there are an exposition, a development and a recapitulation. Further, a definite break occurs between the exposition and development and a bridge passage prepares the way for the recapitulation. Secondly, the exposition is subdivided into theme 1 and theme 2 areas. Thirdly, the themes are developed and restated in the
subsequent sections of the piece in ways consistent with traditional practice in broad terms, yet allowing for the individual expression of the composer. And finally, while key relationships are not present in the traditional manner of sonata-allegro form, there are tone centers bearing on one another throughout the piece. In Chapter IV, below, a rigorous examination of these tone centers will define their interrelated connections and their function to the whole.

B. Divisions Within the Sections

The exposition (mm. 1-35) is a clearly defined unit consisting of two distinct parts, designated theme 1 and theme 2. Theme 1 is further subdivided into 1 and 1A. Theme 1 (mm. 1-13) is really a theme group, terse and motivic, with special gestures, like interjections, separating its three statements. In this area, a statement consists of one phrase, each successively longer than its predecessor.

Theme 1a. (mm. 12-27), so designated because it derives its character from the motivic material of Theme 1 and its variants, develops a long-limbed, lyrical line which, with its single phrase and cadential extension, occupies approximately the same number of measures as the total Theme 1 area. The balance of material in these two sections is nearly equal in that sense. The ratio of phrases is 3:1.

Theme 2 (mm. 27-35) is motivically similar to the previous themes, but there are sufficient variations in its structure to allow it separate status. While the familiar descending half-step motive introduces it, this theme consists primarily of triplet figures moving in close counterpoint in the 'cello and viola in an ascending line. It soon takes on a strained and threatening character as it rises from the depths of each player's lowest register. The long, segmented phrase reaches a point of tension augmented by the ponticello tremolo which interrupts its climb. An abrupt shift of disposition in the second phrase member
alleviates the tense mood, finishing on a tentative cadence in the violins. This theme, with its cadential extension, is a study in contrast between tension and repose. The tautness of the main segment of the theme returns in the cadential extension, only to be relieved by the final sounds of the ‘cello ending the exposition.

The development (mm. 36-109 / 110) presents a variety of approaches to the diversification of material introduced in the exposition. It is divided into four principal subsections which are identified by their counterparts in the exposition that is being developed: Theme 1 (mm. 36-59); Theme 2 (measures 59-76); Theme 1a (mm. 77-101) and the bridge/dissolution (mm. 103-109). Themes 1 and 1a. are further subdivided into two statements each.

Overlapping from the bridge passage, with little perceptible alteration, the recapitulation (mm. 109-140) begins with the reinterpretation of theme 1 (mm. 109-114). The use of motives and phrase structure are similar to their counterparts in the exposition, but the tail gestures are now absorbed into the body of the motive. There follows a simplified restatement of theme 1a. (measures 115-120). The cadence at measure 120 is the third so far in this section of the piece, an area incorporating about the same amount of music as the statements of the theme 1 group in the exposition.

From mm. 121-132, parts of themes 1 and 1a. commingle with parts of theme 2, forming one long phrase with two phrase members. The cadence of this phrase at measure 132 juxtaposes the special gestures of theme 1, in the first violin, with hints of the dissolution in tremolos played by the other three instruments.

There is a moment of relative repose at measure 124, but apart from that there is no break in the music until the rather tentative cadence at measure 132. Several seconds of silence set off the final cadence, giving it greater emphasis and a sense of true finality.
Chapter III
MELODIC/RHYTHMIC STRUCTURES

An overview of the quartet shows two separately identifiable themes, the first subdivided into themes 1 and 1A. These themes are interrelated in that they all develop from a single generative motivic cell, the descending semitone. This motivic cell is the thesis of the quartet. It creates shadows of itself, deconstructs, reconstitutes and forms linkages with other factors.

The themes, generally, are either short, with a distinct head motive and a tail gesture, or they are long, segmented phrases which incorporate the tail gesture in various guises and positions. In other words, the basic figures may be retained but they are varied and recombined in different ways. These processes are a primary source of unity in the quartet.

Overlapping is another important feature of the thematic structure of the quartet. Frequently, the first pitch of a theme is the last pitch of the preceding cadence. This blurring of boundaries creates certain ambiguities while heightening the sense of organic flow of the music.

A. Themes/Exposition

The first statement of theme 1 consists of the brief setting out of the main motive, the descending semitone, with its semi-detached tail gesture. It also makes use of pitch reiteration and dynamic modulation to reinforce the significance of the motivic cell.

Most of the substance of the quartet grows from the motivic material presented over the
space of the first three measures.

Ex. 1 mm. 1-4

The second and third statements of theme 1 are variations and extensions of the first. Measures 2-3, specifically, introduce the motivic cell G-F#. The structural note here is obviously G, the range of the motive a descending semitone. The tail gesture in measure 3 is a sharp punctuation, ending this statement. It provides the main pitch for next phrase which, though the cell is varied, seems like a logical extension of the first. (See measure 4 in the above example.)

Measures 5-7 further the developmental process until all twelve notes of the chromatic scale have been used. The motivic cell of Theme 1 is heard in measure 8 and again picks up its starting pitch from the cadence of the preceding phrase.

The building of the tone cluster, the *raison d'être* of the Theme 1 area, is accomplished by measure 10. Tension builds as the cluster accumulates. The tail gestures leading to the cadence in measures 11-12 are greatly expanded, now heard in all voices in succession and embracing the range of slightly more than four octaves. Resolution is accomplished by means of the descending semitones in the cadence and the thinning of the
texture to a single harmonic on the structural note A, overlapping the beginning of the next phrase. The tension does not abate, however, until theme 1A arrives eight beats later. The following example illustrates this process in mm. 12-16.

Ex. 2 mm. 12-16

Theme 1A is so designated because it derives its character from the motivic material of theme 1 and its variants, but it develops a longer, more conjunct line whose purpose is not the building of the dense, complex harmonies as seen in the culmination of theme 1. The motivic cell varies and extends itself while retaining important linkages to its progenitor, at the same time allowing enough differentiation to give it separate status. Other intervals and rhythmic figures elongate this theme, whose single phrase and cadential extension occupy about the same number of measures as the total Theme 1 area. The balance of material in these two sections is nearly equal, but the ratio of phrases is 3:1. The melodic line is shared the violins, the viola’s harmonic creating tension and keeping the pitch A in our minds. In an act that will become more familiar as the piece progresses, the tail gesture from theme 1 detaches itself from its position at the end of the theme and migrates into the body at measure 18 in the ‘cello. This is shown in the following example of the contin-
This grouping forms a kind of sub-theme based on the tail of theme 1 and is present in a number of guises throughout the piece.

It returns at the cadential extension, beginning with measure 22, and evolves into a new pattern, based on that of the tail gesture but contrasted in subjective feeling. From a loud, intrusive interjection, it evolves into a smooth, almost sweet diversion, destined to become an important element later in the quartet.
The motivic cell, a descending semitone which begins theme 2, is embedded in the cadence of theme 1A. Theme 2 (mm. 27-35) is motivically related to the previous themes, but is profoundly different in structure and effect.

Ex. 5 mm 24-30

Through a series of ascending, chiefly triplet motives, this theme rises through the lowest registers of the 'cello and viola in a gradual crescendo to its climax in the violins at measure 31. It is structured as a long phrase, composed of two phrase members and a cadential extension. The ascent is interrupted between phrase members at mm. 29-30 by a rhythmic figure which reiterates the pitches of the first arrival, while the phrase finishes in the second violin with a modification of the Theme 1 tail gesture. The Exposition ends as the cadential extension (mm. 32-35) reiterates the descending semitone cell in the lowest voice set against the static vertical sonority in the upper three voices.

B. Themes/Development

The theme 1 area (mm. 36-58) in the development is a continuous extension of sound blocks which develop motivic material from the first three phrases of the piece. A sixteenth
note ostinato radically transforms the original motive, the descending semitone, whose restatement is shared by the tail gesture providing half of the cell. The example given here details the interaction between the violins and viola.

Ex. 6 mm. 37-39

Here there is no sustained figuration. Reiteration of the structural tones is constant and sharply punctuated by the intrusion of the tail gesture, which has now become integrated into the motivic cell. These gestures play a more complex role here. Where before they had a primarily cadential function they now move into the mainstream and develop the head motive, itself.

The Theme 1 area is set off by a faster tempo, Mm. 86/quarter-note. Meter changes and off-beat accents further underscore the nervous, hyperactive quality of this portion of the development. Though syncopation is present in the exposition’s theme 1 due to the offbeat dynamics and timbral accents, it occurs here physically fractured and re-formed.

The second member of this long phrase inverts the direction of the ostinato. At measure 48, the tail gesture disappears and the pattern of the ostinato solidifies. The B-Bb descending semitone is replaced by the motivic cell F-F# ascending. The texture is made
up of ostinatos, the whole forming a nearly static block which leads into the extended cadence.

Theme 2 returns out of place, so to speak, and with it the music undergoes a radical shift in mood. The tempo returns to the original Mm. 58. The theme evolves into a long structure, a single phrase composed of three segments. The ‘cello growls slowly and laboriously upward from the depths of its lowest register in a succession of sustained double stops. The notes in the lowest voice are paired with the descending semitone cell in the upper. The leaps at the end of each phrase member become progressively wider as the theme rises.

Ex. 7 mm. 58-63

The moving voice shifts at measure 63, the semitone motive predominating. In the third segment of this theme, both voices carry the motive for two measures before dropping an octave, then rising and finally falling nearly two octaves. It is as though the climber has pushed the rock up the hill only to fall back lower than he began, a sort of nutshell Sisyphus. This is a point of extreme emotional transition, as in the next measure the mood changes to contented resignation. The figure heard in the cadential extension, which ended
theme 1a. and prepared for theme 2 in the exposition, now returns in the cadential extension that ends theme 2 in the development.

Ex. 8   mm 70-73

The cadential extension reinforces the mood of resignation. An aggregate of sound is heard against an echo of the 'cello's motives in measures 68-69. The whole texture shrinks into itself at the cadence and becomes an accompanimental pattern, still based on the theme 1 tail gesture. The passage creates a smooth transition into the last thematic area of the development, that of theme 1A.

Ex. 9   mm. 76-78
This single phrase theme is stated twice: first in the second violin, then by violin I. The differences lie in the structure of phrase members, their length and complexity and the relative strength of their respective cadences. The cadence of the first anticipates the second statement of the theme, while the cadence of the second brings the development proper to a close. Please refer to the full score of the quartet in the appendix, (mm. 85-86), for the first statement and to mm. 99-100 for the second.

The second cadence overlaps into the dissolution of the development. This is the high point of the piece. The thick texture, with its motor-driven rhythmic figures, builds to an intense state before it thins to one single pitch, Bb. This pitch is a semitone lower than the B which opens the development and, through a sudden change in dynamics and articulation, forms the beginning of the dissolution.

The next eight measures (101-109) introduce an area of extreme instability. This brief passage is a harmonic structure of a single phrase, its unstable character heightened by tremolos sul ponticello and shimmering harmonics. It bridges to the recapitulation by means of a gradual intensification of rhythm and timbral modification through three voices on F# (measure 108).

Ex. 10   mm. 107-110
C. Themes/Recapitulation

The recapitulation of theme 1 begins on the final F# of the dissolution. The single pitch sounds over one full measure before a descending semitone completes the motivic cell. The statement is brief, confining itself to the restatement of the head motive in combination with the tail gesture.

Ex. 11 107-110

Theme 1A returns (m. 115) in a simplified version over accompaniment that hints of the dissolution of the development. It cadences on Eb in measure 119 and overlaps to another reminiscence of the tail of theme 1A. This long, segmented phrase (mm. 121-132) has a more complex role to play: 1) hooks the tail of theme 1A to the tail of theme 2 (mm. 123-124), 2) joins the theme 2 tail motives in the viola and second violin (mm.126-129), and 3) closes on a tentative cadence which brings back the tail gestures of theme 1 in the first violin as the lower three voices dissolve into tremolos. Looking at this next to last phrase of the quartet, it is evident that the tail motives from all three themes assume great importance. Forming interdependent constructions, these rhythmic motives and simple two to three note cells might be viewed as, under a microscope, moving organically to create
new growth. Example 12, below, illustrates the sequence of events.

Ex. 12 mm. 119-131
Since the quartet is non-tonal, it is necessary to adopt a method of analysis that will take into account all of the elements that create the harmonic structure without the aid of a traditionally accepted language such as that which applies to diatonic harmony. We must deal with what is actually heard in the music in order to form conclusions as to the relationships of details, large and small, that govern the harmonic landscape.

The importance of the logic of the harmonic relationships is paramount. One of the most important, the sense of directed movement, is intrinsic in diatonic music. Because of the lack of tonic "pull" in non-tonal music, other factors must act to create a sense of continuity and direction. It is a matter of compositional choice. Any consistently asserted patterns and progressions, anomalous as they may be, will act as cohesive elements if utilized as such.

In this quartet, the most important devices acting to achieve that goal are found in the consistent use of particular motivic cells in creating patterns and progressions, additive vertical sonorities, static sound blocks and the formation of tonal centers.

A. Building Harmonic Unity With Motivic Cells

The music is a web of motivic cells. They combine to create patterns of varying degrees of harmonic and textural density. Motivic patterns that are common to the whole of the piece are amply demonstrated in the first twelve measures. We encounter the three cells
which make up a large part of the material basis of the music in example 13 (a), (b) and (c) below.

Ex. 13

(a) Semitone, closed and open form:

(b) Same notes tied together with leap at beginning or end of figure:

(c) Rhythmic figure on one note, varying rhythms and lengths:

All three of the motives shown above are used alone and in combinations to form harmonic figurations that comprise whole areas of the quartet. Cell (a) frequently combines with versions of itself to create areas of harmonic and textural density. It is the main component not only of the themes, but it carries much of the burden in building the additive vertical sonorities which are such important features in this music. Further, cell (a) and cell (b) combine to shape a different sort of harmonic area, instances of which occur in mm. 5-7, 17-18 and 38-47, to name a few. They are stacked contrapuntally, contrasting to the dense sound blocks, sometimes in juxtaposition to them. meandering rather than marching in step.

Cell (c) is a prominent component of the head of theme 1 and the tail of theme 1A. It
is, as well, the entire harmonic makeup of mm. 9-10. Example 14, below, details these local areas from the beginning of the quartet in which harmonic growth takes place as the result of this synthesis of motivic cells.

Ex. 14

mm. 5-7 (a), (b) mm. 9-10 (c)

The P5th is a prominent harmonic component of the quartet. It appears in combination with other intervals, mainly m6ths and M7ths, over diverse areas of the music. For instance, it occurs in tandem with the theme 1 tail gesture as a motivic cell in the theme 1 area of the quartet, in the cadences at measures 7 and 12.

Ex. 15

(d) m. 7  (d) m. 12  (d) m. 12

P5ths often form harmonic areas in interlocking formations in two voices. These figures are loosely derived from the tail gesture of theme and while they bear resemblance to the motivic cells shown in Example 15, they have different roles. They serve an interruptive function, as in Example 16 (e-1), a connective role (e-2) or an accompanimental role (e-3)
and (e-4).

Ex. 16

In areas built on cells (e-1), (e-2) and (e-3) the harmony is basically static, with little or no movement within the given sector. In (e-4), the harmony is in motion. It moves in a wedge pattern, outward in the bass line from Eb-Bb to Ab-Eb, then upward from D-A to Bb-F, then B-F#, always in P5ths. The viola follows at the same ratio. The added semitone at the inner edge of each arpeggiated figure is an example of the motivic complexity created throughout the piece by such extensions. They also appear in aggregate harmonies at cadence points, creating tonal ambiguities (discussed below).

Patterns of the intervallic content of certain aggregate chordal structures is easily demonstrated by constructing tetrachords based on each one. It is not necessary to show them all here, only to collate the findings of the experiment. The most prominent are those in two voice accompanimental patterns, constructed on the interval of the m6th, consistently containing a m3, M3, m2nd, P4 and a P5th. The following examples are typical.

Ex. 17
This is the underlying harmonic construction of the entire section of the development from mm. 71-95. In mm. 71-75 it serves a connective function, in mm. 76-95 it is accompanimental. The reader may also find this ubiquitous construct in the exposition at measure 23, the first cadential extension, and at mm. 25-27 (with all intervals except the P5) in the second cadential extension.

So we have seen that semitonal movement, the simultaneous statement of motivic and thematic cells and the consistent use of certain common intervallic patterns in additive structures are all important players in the development of the complex harmonies that make up the harmonic language of this piece.

B. Tone Centers and Their Role in the Harmonic Structure

The term tone center refers to a pitch or a collection of pitches which acquire(s) significance in a given area of the music through repetition, duration and, occasionally, registral placement and articulation. What are the tone centers and what is their role in this music? There is no functional tonality working in them, no 'pull' to a tonic, nor are there subsidiary tonal areas that relate in the way one expects in diatonic harmony. They are local allusions only, establishing a pitch hierarchy among notes in a region. Or, to put it more concisely, they establish a pitch hierarchy only in that one pitch, cell or theme is the primary tonal center. Other pitches may form subsidiary tone centers on their own. A table of the quartet's primary and subsidiary tone centers is attached for easy reference (see p. 28, this chapter).

At the opening of the quartet, we encounter a strong tone center on G. It is established by means of repetition and duration, making up most of the content of the first three measures. G is repeated and held over in the top voice in measures 4-6. All told, G maintains its tone center over nineteen beats at the beginning of the quartet. A secondary tone center
occurs briefly on F#, the pitch overlapping from the cadence at measure 7 to become the central tone at m. 8. The first two structural pitches form a descending semitone, an example of the macro-structural importance of that interval.

D-A at mm. 11-13, is the first of a succession of P5th tone centers. It yields the A which becomes a very strong structural pitch, establishing its primacy by means of all four criteria (repetition, duration, registral placement and articulation) over mm. 12-16. Further, A remains as an echo through m. 18.

Ex. 18 mm. 12-16

G returns as a subsidiary tone center under A (mm. 16-17). In the rest of this thematic area the structural pitches build a seventh-type chord. Beginning with D at m. 19 and rising to G at m. 20, E and B follow as the second P5th tone center at the cadence in m. 22. While duration is important here, registral placement is of equal consequence.

The tone center Db-C ends the first cadential extension at mm. 24-25 and overlaps to become the first motive of theme 2. Here we see two important tone centers established in the same area. A strong E-G# flavor pervades the second cadential extension (mm. 25-27) and occurs again at the close of the first phrase member of theme 2 at measure 29. A pitch
center forms at the cadence of theme 2 at measure 31 on Gb-Db. But that is not the only thing going on here. It is further supported in measure 32 by the Eb in the ‘cello and the Eb (D#) in the viola in creating the Eb-Gb-Db tone center which may be thought of as a 7th chord with a missing 5th.

Ex. 19 mm. 31-33

Having come through all this, the long, developing pitch pattern of theme 2 eventually lands on the final cadence of the exposition, C-G, the fourth of the P5th cadential tone centers. Though briefly held, this tone center assumes importance due to its position at the end of the exposition and the fact that it stands out from the prevailing Eb-Gb-Db.

The pattern of structural pitch centers in the exposition helps to reinforce the assertion that there are two intervals of primary importance in the quartet, the semitone and the P5th.

As the development begins B is heard in motoric sixteenth notes, first in violin I then, a bar later, in violin II, very much like the G in the opening of the exposition. It is heard as a strong tone center from measure 36 until it is joined by Bb, consistently, at measure 39. The B-Bb center holds until the density and complexity of the harmony grows such that the pitch centers are obscured by their own aggregate. But note, B is heard in at least one
voice, from m. 36 until the whole pitch set changes at m. 48.

The second phrase member (mm. 48-58) concentrates on an E-F-F# ascending pattern in the upper three strings, creating a fairly strong tonal center. The same process is at work here as in the first phrase member, that of obfuscating a well defined pitch domain. E-F-F# is a strong pitch center as was B-Bb earlier, but the purpose here is to obliterate tone centers, thus rendering the section more unstable. The extended cadence gravitates to the C pedal at m. 55. There is a quality of symmetry between the tone center here and that of the corresponding theme 2 in the exposition. C overlaps to become the main pitch for the theme 2 entry here, much as the Db-C motive at mm. 24-27. In the extended cadence, (mm. 55-59) C is played off against a background aggregate of pitches comprising a B-D#-F# major-type triad stacked with a D-F-Ab diminished-type triad.

Theme 1A presents a clear cut tone center on a seventh-type chord, Eb-G-Bb-Db, in the aggregate harmony. The D natural presented in the theme itself 'resolves' to C# (Db) and eventually settles on Db in m 80. The second statement of the theme beginning at m. 86 retains the Eb tone center but with the subtle change to Gb and the addition of Cb in the aggregate harmony. The shift away from the Eb relationship begins at the third beat of m. 87 when the 'cello drops to Ab, keeping the same interval relationships in its arpeggiation. The viola follows suit. The tone centers begin to shift away from Eb. An aggregate harmony built on D-F-A-Bb from the third beat of measure 90 holds through measure 93, at which point the center moves to Bb-Db-F-Gb. The picture is not so clear at this point since we have a long held E in violin I, made important by means of its duration, registral placement and position as a cadence note. There appear to be two distinct tone centers operating over the span of mm. 92 (beat three) through 96 (beats one and two). Thus far in the theme 1A section of the development, the tone centers have blended theme and
accompaniment. By m. 94, the center is breaking apart. A sound block forms, in the
cadential extension (mm. 94-99), obliterating the relative stability of the sector up to now.

A new center forms from the tritone E-Bb at mm. 99-100 as E drops out and Bb picks
up Eb in the cadence overlapping to the dissolution. We are reminded of that strong E in
violin I at the cadence (mm. 92-96) which acts as a preparation for the Eb. We may hear
this Eb as a 'resolution', coming in at the high point of the piece. The Eb-Bb, now with
the Gb harmonic in the viola, is a constant presence. The other instruments drop out, leav­
ing the Gb center intact from mm. 107 until the dissolution merges into the recapitulation at
measure 110. In addition to duration, repetition and registral placement, Gb is further
strengthened by dramatic changes in articulation at measure 108.

Ex. 20 mm. 107-110

The recapitulation of theme 1 continues the Gb tone center through measure 114. An
aggregate harmony in this domain alludes to D and A, but not in a tonal sense.

The strong A presence in the theme 1A area (mm. 115-119) gives way to Eb again at
the measure 119 cadence. At the end of the first member of this long phrase, F#
establishes itself in a long pedal (mm. 124-129) in an unmistakable reference to the tone
center at the beginning of the recapitulation. The remaining cadential harmony is somewhat blurred. The D-Eb semitone is heard over an accompaniment consisting of minor 3rds: B-D-F-Ab and A-C. It adds up to a diminished 7th chord sound with a diminished triad, A-C-Eb. This is an area of uncertain tone center, as with several previously noted.

There remains only the final cadence (mm.135-140). This complex harmony is built in 4ths over most of its span. Its aggregate harmony yields structures very similar to the additive vertical sonorities encountered so frequently in the music, combinations of pitches that may be described as types of seventh chords with types of triads. The final structure is made up of F#-A-C-E with Db-F-Ab in measure 138 which changes to F-A-C#-E plus Db-F-Ab in measure 139. It is a question then: are two tone centers jostling for supremacy here at the final point of the music? That may be a tempting notion to contemplate. But what is germaine here is that the F#-F tonal centers contain the final descending semitone motive (F#-F) heard in the cello in mm. 138-139. This ‘resolution’ is consistent with the motivic use of the descending semitone throughout the piece and is an appropriate conclusion to what began in the same manner.

A table showing the main tone centers and important subsidiary centers follows.
### Table of Tone Centers

**String Quartet No. 1**

#### Exposition

<table>
<thead>
<tr>
<th>Phrase</th>
<th>Measure</th>
<th>Primary</th>
<th>Tone Ctr.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>G</td>
<td>F#</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td>(A)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>(G)</td>
</tr>
<tr>
<td></td>
<td>7, 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13, 18</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>16-17</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>21-22</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>(E)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26-27</td>
<td>(E)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2A-36</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
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<td></td>
</tr>
<tr>
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<td>32-35</td>
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#### Development

<table>
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<th>Tone Ctr.</th>
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<tr>
<td></td>
<td>36</td>
<td>B4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>47-48</td>
<td>E</td>
<td></td>
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</table>

#### Dissolution of Development

<table>
<thead>
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<th>Phrase</th>
<th>Measure</th>
<th>Primary</th>
<th>Tone Ctr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ext. CAO/Diss.</td>
<td>100 - 103</td>
<td>Bb, G#</td>
<td>Eb</td>
</tr>
<tr>
<td></td>
<td>104</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>105</td>
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<tr>
<td></td>
<td>108</td>
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#### Recapitulation

<table>
<thead>
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<th>Phrase</th>
<th>Measure</th>
<th>Primary</th>
<th>Tone Ctr.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>110</td>
<td>-G#</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>115</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>117-118</td>
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</tr>
<tr>
<td></td>
<td>119</td>
<td></td>
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</tr>
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<td></td>
<td>124-125</td>
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</tr>
<tr>
<td></td>
<td>127</td>
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</tr>
<tr>
<td></td>
<td>129</td>
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</tr>
<tr>
<td></td>
<td>132</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>135</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>137-139</td>
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</tr>
<tr>
<td></td>
<td>141</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c#</td>
<td></td>
<td></td>
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</tbody>
</table>
C. Tonal Ambiguity

Tonal elements are present but they are not functional in the same way as in tonal music. They have an expressive rather than a unifying role and they differ from passage to passage. In this highly chromatic music, tonal allusions may appear to create temporary refuges. These local tonal references use the listeners' experience with diatonic music while not satisfying it. For instance, the chord formations may seem like dissonances to be resolved but, in their own context, they are so tonally ambiguous that it is impossible to say to what they should resolve. The lack of resolutions is one aspect of the music's emotional impact.

The exposition contains a number of tonal references. The 'key' areas that mark major divisions appear to fall into a sort of tonal pattern. This is misleading. There is absolutely no tonic pull acting here, nor are there any subsidiary tonal areas that fall into a diatonic scheme. The exposition begins on G, a very strong tone center, moves briefly to F#, then to D-A at the cadence. Another very strong tone center occurs on A in the theme 1A area, which cadences on E-B. We would seem to be moving according to a 'plan' of P5ths.

To continue, a cadence on C occurs in the first cadential extension in the theme 1A area and theme 2 then opens on C and itself cadences on C-G (m.35). We notice a possible 'dominant-tonic' relationship between the beginning and ending of the exposition. The music establishes no such relationship. It does not arrive at the C-G cadence in any way consistent with tonal practice. There is simply a pattern of P5th cadences which sometimes have a circle-of-fifths relationship to each other. Since we experience areas of high chromatic density here, areas unrelated to any plan of P5th cadences, we can look upon the cadences as areas of varying degrees of relaxation.
'Key' areas sometimes mark important structural points and separate sections as to expressive content. These strongly 'tonal' sectors are frequently juxtaposed to highly unstable ones. The theme IA segment of the development is a case in point. The intention here is to create a great expressive contrast between it and its surroundings. Thus far the development has concentrated upon highly chromatic and fragmented music and the following dissolution will practically vaporize any stability which may have been there. But theme IA is extremely stable, its accompanimental patterns are static and interlocking and it appears to be in some key. The thematic entries both contain areas of agreement with the accompaniment and the whole seems to settle on a semblance of Eb. The accompanimental pattern is solidly Eb and the theme is a part of the 7th chord we might construct from the pitch content.

Ex. 22 mm. 76-78

The theme subsequently wanders off on its own but settles on Ab in a weak cadence. There is no resolution in this cadence, it is merely a resting point signalling the end of one theme entry and setting the scene for the beginning of another. The second theme IA entry moves up a half step to begin on Eb over an accompaniment of rolling arpeggios. The 'key' feeling is now Eb minor, based on the addition of Gb and Cb. However, the accompaniment soon moves to an Ab tone center, then D and Bb, both with a feeling of minor.
formations contain 7th-type chords in combination with triads. These sound blocks are most frequently additive structures that lead to important points of arrival. Example 21 shows the pitch content of three of these figures.

Ex. 23

This discussion proposes to demonstrate the underlying falsity of tonal implications in the music. Nowhere do we encounter traditional resolutions, modulations, any network of keys relating to a tonic and so on. An important part of our thesis is the assertion that analysis of this music must be self-referential and not dependent upon traditional theory; hence, what is actually heard in the music supersedes prior concepts.
Chapter V

CONCLUSION

The foregoing analysis of this quartet has been structured according to the principles laid down in the opening statements of this essay. I have tried to avoid references to traditional theory, except where appropriate to illustrate points of difference. Even so, the piece fits into a historical context. It is in sonata-allegro form even without traditional key relationships. This quartet is based on the exposition, development and recapitulation of themes. Composers practices in utilizing sonata-allegro form have changed in the twentieth century. Many composers have gone away from the time-honored practice of unification of the sections of a piece by key relationships to other means of unification of the structure. From Bartok, Schoenberg and Stravinsky to composers late in the twentieth century, use of sonata form runs the gamut from traditional tonality to thematic development alone, pitch centricity, durations of sections and various analogues for tonal structure. To quote the eminent author Charles Rosen, "With non-tonal sonata forms, of course, tonal polarization and resolution disappeared completely; what remains is the thematic structure along with contrasting textures."

Aesthetically, this music is not programmatic nor does it imitate nature. It is essentially subjective, communicating psychological states, moods and feelings. Hopefully, it will stimulate these responses for the listener as well as appreciation of its formal concerns.

APPENDIX

STRING QUARTET No. 1
String Quartet No. 1

Molto espressivo

Marilyn Hudson
1995
Minaccioso

Leggiero

gradual crescendo
Moto perpetuo a battuta \( \frac{\text{d} = 80}{4} \)
Minaccioso  \( \frac{d=58}{} \)
Legatissimo con molto espressione
BIBLIOGRAPHY

Hoover, Jeffrey. “Phenomenology and New Music.” Composer USA. Volume 5, No. 2 (Spring 1994), 4, 13.
