REEVALUATING TWELVE-TONE MUSIC: ANALYTICAL ISSUES IN THE SECOND MOVEMENT OF ANTON WEBERN’S QUARTET FOR VIOLIN, CLARINET, TENOR-SAXOPHONE AND PIANO, OP. 22

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Twelve-tone music illustrates many characteristics relative with those of conventional tonal form, though works are based on a different composition method. The fundamental question of twelve-tone music arises in debate on terminology between tonal and atonal as well as methodology of musical analysis. Certain theorists try to approach twelve-tone music by traditional harmonic views rather than by pitch-class set theory. Conventional harmonic aspects arise from the fact that both tonal and twelve-tone music share similar narrative strategies. This point is explored in examining Anton Webern’s Quartet for Violin, Clarinet, Tenor-Saxophone and Piano, Op. 22, which displays connection to tonal music.

The present study seeks to examine certain features of the composer’s working in pitch materials; i.e., the dispositions of pitch classes and the characteristics of the matching dyads, and thereby to disclose the connection between twelve-tone methods and conventional harmony.
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The growing fascination with twelve-tone music after World War II called scholars’
attention to new approaches to musical analysis. According to George Perle, chord structure
in atonal music cannot be analyzed by conventional concepts. Thus, he had the following
statement:

The abandonment of the concept of root generator of the individual chord is a radical
development that renders futile any attempt at a systematic formulation or chord
structure and progression in atonal music along the line of traditional harmonic theory.¹

Consequently, Allen Forte presented the concept of the pitch-class set; since the 1960s,
pitch-class set theory has dominated the analyses of twelve-tone or atonal music. Set theory,
indeed, contributed the different approaches to appreciate twelve-tone music, and presented
other terminologies to analyze music. However, after three decades, more recent theorists
have tended to question musical distinctions between atonal and twelve-tone compositions,
and tried to challenge the practicality of set theory.

Anton Webern wrote that the break-up of tonality occurred around 1908. He
distinguished the tonal from atonal based on the presence or absence of the relationship to the
tonic; but he also denied that the shift from one to the other really involved any radical
change in how composers handled pitch materials in their music.² In addition, according to
Arnold Schoenberg, twelve-tone music is not a “system” but a “method,” and should be
considered as a tool of composition, but not as a theory. Furthermore, Schoenberg called this

² Anton Webern, The Path to the New Music, trans. Leo Black (Bryn Mawr, Pennsylvania: Theodore
procedure a method of composing with twelve tones, which are related only one with another.\(^3\)

Webern, a pupil of Schoenberg’s, also treated twelve-tone composition as a solution to the problem of writing music that is an extension of tonal chromaticism; his works are full of sensitivities to traditional aspects of music. For instance, tertian formations (minor chords with major seventh and major ninth, known as pc-set \{0, 1, 3, 4\}) and circle-of-fifth motions with the serial “method” can be found in Op. 25, no. 1 “Wie bin ich froh.” Similarly, Symphony Op. 21 and Variations for Orchestra show an abundance of conventional tertian sonorities.\(^4\)

Following the discussion above, composers themselves did not treat their works as atonal music. Instead of radical revolution, twelve-tone music may be seen as the extended musical development of tonal chromaticism. If it is true, the fundamental analytical technique between conventional Western music and twelve-tone music is a methodological problem. Is it necessary to analyze twelve-tone music, not atonal music, in a different system from tonal music? Though the answer might be extremely controversial, Kathryn Bailey prefers to treat twelve-tone music in a conventional way.\(^5\) From this point of view, we might find another approach to understand twelve-tone music; this conjecture asks how we can comprehend connections with earlier music and how we can analyze using the conventional aspects of tonal harmony?

The present study is a detailed analytical investigation of the second movement of Webern’s Quartet, Op. 22. Instead of emphasizing formulations of pitch-class set theory,

which does not supply a framework for determining the musical structures, the study seeks to examine certain features of the composer’s working in pitch materials; i.e., the dispositions of pitch classes and the characteristics of the matching dyads, and thereby to disclose the connection between twelve-tone methods and conventional harmony.

Generally speaking, this study relies extensively on diverse resources; accordingly, on the one hand, I start with twelve-tone analysis, source studies; i.e., composer’s lectures and sketchbooks, critical theory, as well as biography; on the other, I also adopt a perspective that is not apparently accepted by theorists of pitch-class set theory. The purpose of this study is to demonstrate the following conclusion: tonality and atonality are not regarded as opposite principles, but as complementary contexts in which pitch structure may be understood.

The structure of this study is as follows: chapter I reviews the compositional background of Anton Webern’s *Op. 22 Quartet*, as presented in his biography and archive. Chapter II begins the examination of the music, starting with the analysis of twelve-tone rows and the interval relationships within them. This chapter explores the possible tonal reference and the axis system in Webern’s twelve-tone music. Chapter III is the summary and conclusion of this study.
CHAPTER I

BACKGROUND

Webern began to compose the *Quartet for Violin, Clarinet, Tenor-Saxophone and Piano* (*Quartett für Geige, Klarinette, Tenor-Saxophon und Klavier*) in the late summer of 1928. Because of his involvement with some other musical projects and conducting engagements that delayed process on this composition, the *Quartet, Op. 22* was not completed until summer 1930. The first concert devoted entirely to Webern’s own compositions was presented in Vienna on 13 April 1931. The *Op. 22 Quartet* was premièred at that concert. The printed score was published by Universal Edition in 1932.

During the years of writing the *Quartet, Op. 22*, Webern also devoted himself to a study of Schoenberg’s *Woodwind Quintet, Op. 26*; moreover, Webern conducted a performance of the Quintet in its première at Schoenberg’s request. As Graham Phipps has observed, “this experience provided Webern an intimate acquaintance with the musical language in Schoenberg’s quintet.”

This is particularly interesting because these two works represent similarities in handling twelve-tone technique. The *Quintet* is Schoenberg’s first multi-movement instrumental twelve-tone work; nevertheless, there are many ways in which the *Woodwind Quintet* is traditional. According to Langdon Corson, “. . . Schoenberg is suggesting an analogy in his

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music between the transposition levels chosen for a set, and harmonic modulation in tonal music.”

Such tonal analogues are also clear in Webern’s Quartet. Furthermore, use of these musical forms in the Woodwind Quintet—sonata, scherzo and trio, ternary song and rondo—illustrates that “forms need not depend on functional tonality to maintain their clarity, but rather are eminently adaptable to the thematically, rather than harmonically-based textures of twelve-tone composition.” The musical form and twelve-tone rows within the choice of transpositions utilized by Webern in the second movement of the Quartet reflect similar properties found in Schoenberg’s Quartet, Op. 26.

According to Webern’s Sketchbook II, his original plan for this work, dated 14 September 1928, was a three-movement Concerto for Violin, Clarinet, Horn, Piano, and String Orchestra. This first conception is documented in the Sketchbook with a schematic outline and additional musical associations. Under the date of 23 January 1929, the outline of the third movement, Rondo, was described with several annotations that are directly related to its musical structure as shown below, Figure 1. The fact is that this composition was inspired by Webern’s walking tour in the Austrian Alps, and those locations in his description are important to him. Hans Moldenhauer mentioned in his book that “Annabichl and Schwabegg are the cemeteries where his parents were buried; the Dachstein, a majestic alpine peak, lured him time and again; and the Anninger, a prominent hill in the Vienna Wood close to Mödling, was a frequent destination for outings.”

It is evident from Webern’s Sketchbook that he changed his mind repeatedly; first, the original instrumentation of a concerto was reduced to a quartet for violin, clarinet, tenor-Saxophone and piano; eventually he decided to complete this composition with only two

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10 Ibid., 423.
movements instead of three. Webern assigned the Rondo—ABA C ABA—also a ternary form evolving from the original “concerto” concept as the second movement after all. \(^{11}\)

Table 1. Webern’s description.

<table>
<thead>
<tr>
<th>Main themes</th>
<th>Secondary themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Coolness of early spring (Anninger, first flora, primroses, anemones, pasque-flowers)</td>
</tr>
<tr>
<td></td>
<td>I Cosy warm sphere of the highest meadows</td>
</tr>
<tr>
<td>II</td>
<td>Dachstein, snow and ice, crystal clear air</td>
</tr>
<tr>
<td>III</td>
<td>II Soldanella, blossoms of the highest region</td>
</tr>
<tr>
<td></td>
<td>III The children on ice and snow</td>
</tr>
<tr>
<td></td>
<td>I Repetition of the first secondary theme (sphere of the Alpine roses)</td>
</tr>
<tr>
<td></td>
<td>II Second secondary theme, light, sky</td>
</tr>
<tr>
<td>IV</td>
<td>Coda Outlook into the highest region</td>
</tr>
</tbody>
</table>

CHAPTER II

ANALYSIS

The second movement of the *Op.22 Quartet* is in classical rondo form, including seven-formal sections: ABA C ABA. This is a conventional model inherited from eighteenth-century practice, and, therefore, supposedly lending itself to easily identifiable formal divisions. However, the divisions can hardly be recognized in the score or by the ear; namely, one may have difficulty in defining refrains and episodes, traditionally the structural characteristic and outline of the classical rondo. Because one of the basic characteristics of twelve-tone music is that pitches are not repeated until all twelve have been given, the only way for twelve-tone composers to indicate the returns of the refrain is to utilize the same series-form for each of them. On that basis, it seems to be impossible that one could recognize it as a rondo without identifying the row-usages in the score.

Furthermore, the *Op. 22 Quartet* proves that the form need not depend on functional tonality to maintain its clarity, but, rather, is adaptable to the thematically based textures of twelve-tone composition. Thus, the following Table 2 may be helpful to the listener with a score in the aural perception of the rondo form. Also, the indication of the themes and exact series-forms provides a point of departure for further analysis.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Main themes</th>
<th>Secondary themes</th>
<th>Row-usages</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm. 1-19</td>
<td>I</td>
<td></td>
<td>P-0, I-0, R-0, RI-0</td>
</tr>
</tbody>
</table>

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12 This table continues over to the next page 5.
By examining the row charts in Anton Webern’s *Sketchbook* for a start, one can observe some interesting features of his twelve-tone row. Moreover, the interrelationship of the rows suggests a number of tonal analogues. First, twelve notes may be grouped into six dyads in sequence, which creates the pairing of intervals horizontally (as shown in Figure 1). These
intervals are two minor thirds, and one example of minor second, major second, major third and perfect fourth respectively.

Figure 1. Pairing of the horizontal intervals.

In addition to the pairing of melodic intervals in each row itself, we now examine the series-form in terms of the interrelationship between its prime form and transpositions or transformations. Webern generates the matching dyads vertically by the juxtaposition of Prime form and Inversion form of the same transposition, designated as P-0 and I-0 as shown in Figure 2.

Figure 2. Matching dyads.

At this level, the interval of the matching dyads becomes even more intriguing. The most explicit feature of this juxtaposition is its dyads of common tones; this is reflected in the layout of the ordinal numbers (5 and 6) and (9 and 10). Also, the perfect fifth interval is prevalent in these matching dyads; especially the perfect fifth as inversion of the perfect fourth interval in the ordinal numbers (11 and 12) is predominant throughout the music because the matching dyads share the axis note in content. This feature allows the composer
to generate symmetrical imitative textures which can function as a close connection between musical phrases (musical excerpt mm. 1-11).\textsuperscript{13}

We might see how Webern employs the particular interval characteristics of the dyads in his music. When Prime form and Inversion form of the same transposition are combined, there are four types of treatments of the matching dyads, which are exploited compositionally in various ways throughout the piece:\textsuperscript{14}

a) common tones in the same register,  
b) common tones in the different registers,  
c) intervals (m3/M6 or P5/P4 or m2/M7) in the same vertical position, and  
d) intervals inverted.

Furthermore, the tritone is always one of the most important intervals for Webern’s compositions. In search of Webern’s twelve-tone repertoire, one can find considerable employment of the tritone as well as symmetry; i.e., \textit{Symphony Op. 21}, the second movement. Webern himself has emphasized it in one of his lectures:

\begin{quote}
Considerations of symmetry, regularity are now to the fore, as against the emphasis formerly laid on the principal intervals—dominant, subdominant, mediant, etc. For this reason the middle of the octave—the diminished fifth- is now most important.\textsuperscript{15}
\end{quote}

This interval frames the tone rows for \textit{Op. 22} as their beginning and ending pitches. Namely, all the P, R, I and RI series-forms of the same transposition begin and end on the same two notes, C or F#/Gb, which are a tritone apart. This tritone characteristic plays a significant role in the \textit{Quartet. Op. 22}. Untransposed row forms with the tritone frame, C and Gb are exclusively employed for all four refrains of the rondo form in the second movement, and the

\textsuperscript{13} see Ex. 1 on page 9.  
\textsuperscript{14} When referring to one of four types of matching dyads in the later chapters, it will be annotated in footnote.  
\textsuperscript{15} Anton Webern, \textit{The Path to the New Music}, trans. Leo Black (Bryn Mawr, Pennsylvania: Theodore Presser Co., 1963), 54. The lecture was dated 26\textsuperscript{th} February, 1932.
music starts with the tritone, C and Gb. Therefore, this specific tritone relationship characterizes the formal divisions and signifies their tonal implication as well.

Webern’s twelve-tone row frequently becomes the musical phrase in his music; namely, each phrase comprises a complete series-form. Consequently, we might divide Theme I into three subsections that resemble the musical phrase from classical repertoire as follows, 1) mm. 1-7, one main melody (P-0) played by clarinet and tenor-saxophone with one accompaniment by piano (RI-0); 2) mm. 7-14, one main melody (I-0) played by violin with two accompanimental lines, R-0 in clarinet and saxophone; RI-0 in piano; and 3) mm. 11-19, two main melodic lines, P-0 in clarinet and saxophone; R-0 in violin with one main accompanimental line (P-0, RI-0 and I-0) in piano.

In addition to musical phrases, one can again recognize that Webern adheres to tradition of formal construction with the ternary implication in Theme I. For instance, the melodic line P-0 first occurs in clarinet and saxophone at the first phrase (mm. 1-7), yet again at the third phrase (mm. 12-19), this P-0 recurs as the main melody also in clarinet and saxophone with one additional contrapuntal line R-0 in violin. As a result, in terms of the musical structure, Theme I suggests the ABA ternary form.

In Theme I, the untransposed row-forms (T=0) are exclusively used. Those untransposed forms begin and end on the same notes, F# and C, which are an important element in the three main themes hereafter. In the first phrase (mm. 1-7), the piano plays RI-0 whereas P-0
is shared by saxophone and clarinet as shown in Ex. 1. The musical phrase starts with the diminished fifth interval on pitches C and G♭ at m. 1 and ends with the augmented fourth interval on pitches C and F# at m. 7. This short passage introduces the following whole theme I and forecasts the outline of this movement that Webern has made in the Sketchbook.

Kathryn Bailey refers to this as “tonic” position, the tritone F# and C.¹⁶

Ex. 1. mm. 1-7.

Contrarily, in the following section, the first subsection of the section B-I (mm. 19-33) is built on the tritone transposition of rows (T=6). The shift from tonic position to the tritone areas resembles the relationship between tonic and dominant in classical repertoire. Thus, we might say that Webern sets up the tonal center and reference to formal divisions in this passage, mm. 1-7.

In contrast to the tritone that connects the thematic sections, the perfect fourth interval connects musical phrases within. For instance, clarinet plays the last two notes G and C at m. 7, while in the next musical phrase (mm. 7-14), the piano immediately begins on C and G, symmetrically imitated by tenor-saxophone on C and F. This feature of matching two perfect fourth intervals with a common tone is exploited throughout the movement.

The texture in the second phrase (mm. 7-14) is more contrapuntal; individual line is more independent. Instead of one instrumental melody and one piano accompaniment, here

the violin begins the main melodic line while the two woodwind instruments and piano play the two accompanimental lines mostly in a lower register as shown in Ex. 2. There is some symmetrical imitation with slight discrimination between two accompanimental lines. For example, matching dyads type c)\textsuperscript{17} appears in the following passage. The piano plays a grace note on C with quarter note on G at m. 7, imitated by saxophone playing a grace note on C with a quarter note on F at m. 8. Also, at m. 10, the piano plays a grace note on G\# with a quarter note on E, imitated by saxophone playing a quarter note on E, and repeating E as a grace note with a quarter note on G\# at m. 11.

Ex. 2. mm. 7-14.

Furthermore, since the composer utilizes the juxtaposition of R-0 and RI-0 rows as accompaniment in this passage, mm. 7-14, some types of treatments of the matching dyads are found as discussed before. First, the last two ordinal numbers in the R-0 and RI-0 share the axis-note, C-natural, with symmetric interval perfect fourths apart; thus, the recurrence of the axis-note and symmetric intervals creates echoes between melodic and accompanimental lines. This procedure is the example of type d), intervals inverted.

\textsuperscript{17} Throughout this discussion, refer to four types of treatments of matching dyads on page 7
Moreover, the ordinal numbers 3 and 4 in the R-0 and RI-0 rows show the characteristics of tertian harmony; they both consist of the interval minor third/major sixth. When pairs of the matching dyads, ordinal numbers (3 and 4), come together at m. 11, the tenor-saxophone plays minor third in RI-0 whereas major sixth is employed in R-0 by piano. This procedure demonstrates another case of type d). Similar instances also can be found in ordinals 7 and 8 of combination RI-0 and R-0 at mm. 9-10, where RI-0 uses a minor second while R-0 utilizes a major seventh.

In addition, another combination is created when the recurrence of the common tones in ordinal numbers (5 and 6) and (9 and 10) in both series-forms at mm. 8-11, where Webern employs all four common tones in the same registral level, classified in the first category. Similar examples can be found throughout the movement.

Ex. 3. mm. 11-19.

In the third phrase (mm. 11-19), P-0 recurs as the main melody played by clarinet and saxophone again, yet here one additional contrapuntal line R-0 is added in the violin part. Also, the accompanimental line played by piano is composed in three different rows, P-0, RI-0 and I-0. At this level, the texture of this passage seems more complicated. Indeed, there are several similar treatments related to the previous phrases as shown in Ex. 3.
Compared with the main melody P-0 in the first phrase (mm. 1-7), here P-0 almost keeps the same contour in the aspects of register and note value except that ordinal numbers (5, 8, and 9) of P-0 change registers as well as note values. In speaking of the accompaniment RI-0 used in the previous phrases, this row is deployed in varied ways. The RI-0 of the third phrase occurs in a much smaller space, and deploys shorter note values.

Since three separate rows, P-0, RI-0 and I-0, are used in the accompanimental line, and one extra row R-0 is added into the melodic line, partial juxtapositions of (R-0 and RI-0) and (P-0 and I-0) both occur in sequence from m. 15 to m.19. In this combination, one can again recognize some of the special treatments of the matching dyads as mentioned before. Instead of the juxtaposition between two accompanimental lines employed in the second phrase, here two juxtapositions happen between melodic and accompanimental lines. On the one hand, the common tones in ordinal numbers (5 and 6) and (9 and 10) of R-0 and RI-0 appear in the same register, designed as type a); on the other hand, the common tones of P-0 and I-0 appear in different registers, designated as type b) at mm. 15-19. Secondly, the intervals (P5/P4) in the ordinal numbers (11 and 12) of R-0 and RI-0 appear in the same vertical position (perfect fourth) as type c); however, the intervals (m2/M7) and (m3/M6) in the ordinal numbers (7 and 8) and (3 and 4) appear in the inverted positions as type d). Similar treatment can be found between P-0 and I-0 at mm. 17-19.

In addition, the perfect fourth interval of I-0 played by the piano at m. 19 is another important feature in this passage. We have already mentioned this feature in the end of the first phrase; here the perfect fourth interval again functions as the transition from the last musical phrase of main theme I (A-I) to the following phrase in the next section, secondary theme I (B-I).

18 Refer to four types of treatments of matching dyads on page 7
Using only four principal untransposed series-forms (T=0), which begin and end on the same two notes, the pitches C and F# become an important element in the Theme I (mm. 1-19). In this nineteen-bar passage, Webern sets up the principle of the formal divisions as well as the major characteristic of the composition. For instance, in utilizing certain notes and intervals repeatedly, the composer emphasizes the specific tritone, C and F#. The emphasis on the juxtaposition of the terminal pitches, C and F# in the first theme sets up reference to formal divisions. As will be discussed later, C and F# appears as “tonic position” in all other return refrains, A-II, A-III and coda sections in this composition.

In addition to the significant tritone, C-F#, the perfect fourth interval is another important feature in Theme I. For a second time the composer emphasizes the specific interval by deploying certain notes, such as C and F, or G and C. In Theme I, the perfect fourth interval appears as the connection between one phrase and the other, i.e., at m. 7, the second phrase follows the first phrase by repeating the same notes, G and C (clarinet and piano). Another similar example can be found at mm. 7-8 in the second phrase, where RII-0, C and G (piano) imitates R-0, C and F (saxophone) by utilizing the perfect fourth interval symmetrically. Moreover, in its the recurrence, the perfect fourth interval always shares the central pitch, C. This emphasis on C seems another possibility for the tonal center.

Speaking of the formal structure, individual twelve-tone rows divide the music into three subsections, and the row-usage suggests the implication of the classical ternary form, “a”-“b”-“a”. On the one hand, the return of “a” (mm. 11-19) corresponds to the original “a” (mm. 1-7) in several features, such as the similar treatment of the main melody in the P-0 row, and the same timbre in the use of P-0 and RI-0 rows. On the other hand, the third musical phrase “a” (mm. 11-19), on the whole, is a summary of the previous phrases, “a” (mm. 1-7) and “b” (mm. 7-14). Namely, one can recognize that the third phrase shares similar features with the two previous phrases respectively. For instance, the special treatment of the matching dyads
found in the second phrase “b” appears again in the third phrase “a” while different combinations between R-0 and RI-0, and between P-0 and I-0 are deployed. In addition, free imitations in the beginning of the phrase are found both in “b” (the piano is imitated by saxophone at mm. 7-8) and the return “a” (the piano is imitated by saxophone at mm. 11-12).

Use of the perfect fourth intervals as connection between phrases is constantly reinforced in all three phrases. At the end of the third phrase, this specific interval appears not only as a conclusion of the Theme I, but also as an opening of the following section. The specific tritone, C-Gb unfolds the Theme I at m.1, and it appears again at the end of the third phrase, and concludes the first main theme at m.19.

B-I: Secondary Theme I (mm. 19-64)

According to Webern ‘s musical conception and outline of this rondo movement, the first episode (B-I), Secondary theme I is defined by the use of the row forms. This Secondary theme I consists of two subsections, 1) mm. 19-33, where the tritone transposition of the row-forms (T=6) is exclusively employed; 2) mm. 33-64, where the rest of five different transposed row-forms are utilized before the return of A section.

In this first subsection (mm. 19-33), Webern employs only the tritone- transposed rows, i.e., those row-forms that begin and end on the notes, C and F#. Thus, those row forms correspond closely to the previous A section in the relationship of the specific tritone pitch class. In addition, the composer always combines prime forms and inversion forms, designated as P-6 and I-6, or R-6 and RI-6 against each other in this passage. Thus, some
types of treatment of the matching dyads found in A section also appear here, but in slightly different ways.

Ex. 4. Canon in contrary motion, mm. 19-29.

The texture of mm. 19-29 is entirely canonic. Instead of the literal imitation, imitation in contrary motion is found by interval positions, approximately identical rhythmic patterns and gestures. On that basis, three relatively short two-voice canons, divided by the row usage are deployed in this passage (mm. 19-29) as shown in Ex. 4. The first canon is found between I-6 and P-6, which begins on the single pitch c₂, and ends on an octave (f#₂-f#₁); the second canon is found between R-6 and RI-6, which begins on an octave (f#₂-f#₁), and ends on the single pitch c₃; the third canon is found between P-6 and I-6, which begins on the single pitch c₃, and ends on an octave (f#₁-f#).

Because of the characteristics of the specific tritone tone row, the composer makes each canon overlap by one note in both voices. Again, those repeated notes, C and F#, play a significant role in the music; moreover, the first ordinal note, C always appears in the same
register whereas the last ordinal note, F# always appears in the vertical position of an octave apart between two voices. The emphasis on the pitch class C discussed in the Theme I continues to be one of the principal elements in this section.

Compared with the main theme I, this first secondary theme presents different features in the grouping of row notes. Whereas the Theme I employs more two-note groupings with various vertical positions, the first secondary theme deploys more tonal relationships between each grouping of row notes. Thus, it is relatively easier to recognize the familiar sound by the ear; namely, one can hear an abundance of conventional tertian sonorities in this passage.

There are three types of treatments of the matching dyads exploited compositionally in the following three canon passages:

1) symmetric axial note and its corresponding intervals the minor thirds/ perfect fourth,
2) the perfect fourth related pair of the vertical minor third / minor second, and
3) the unison and the common tones.

Ex. 5. Grouping of the row notes in the first canon, mm. 19-23.

First of all, one may take I-6 and P-6 of the first canon as one of the illustrations of the grouping of row notes as follows (see Ex. 5): First, the single pitch C appears by itself in the both rows, and the symmetric axial note C with its minor third (appear as grace notes tritone-related); i.e., C-Eb and C-A; second, the perfect fourth related pair of the vertical minor third;
i.e., G#-B and C#-E; third, unison in the major thirteenth; i.e., d\textsuperscript{1} - b\textsuperscript{2}. These three types of matching dyads appear similarly in the second half of the canon as marked in Ex. 5.

Ex. 6. Grouping of row notes in the second canon, mm. 22-27.

The second canon between R-6 and RI-6 shows tertian sonorities in a way that is similar to the first canon (see Ex. 6). The same note F# by itself in the both rows, and the symmetric axial note F# with its perfect fourth; i.e., F#-B and F#-C# can be classified as another case of the first category discussed before. The appearance of the major second, f\textsuperscript{1} - g\textsuperscript{1} in the same register in both voices of the canon demonstrates another case of the third category.

Furthermore, the perfect fourth related pair of the vertical minor seconds; i.e., E-D# and A-G# is another example of the second category in three types of treatments of the matching dyads.\textsuperscript{19} Similarly, one may again recognize all three types of treatments in the second half of this canon as shown in the example 6.

Ex. 7. Grouping of row notes in the third canon, mm. 26-29.

\textsuperscript{19} Refer to three types of treatments of matching dyads on page 16.
Since the composer employs the same combination of row forms in the first and the third canons, here the third canon between P-6 and I-6 presents three types of treatments in the same way as found in the first canon (see Ex. 7). However, those specific dyads appear in different rhythms, timbres as well as registers; thus, it is difficult to identify the return of the first canon by ear alone; one may recognize the return of the row forms visually in the musical score.

As shown in the previous discussion, one may recognize that the pair of perfect fourths is privileged in this passage. Compared with the use of the specific perfect fourth intervals in Theme I, here the composer deploys these fourths in a wider context. Whereas the main theme I utilizes the perfect fourth as the connection between one phrase to the other—musically, the first secondary theme treats the perfect fourth in a sense of tonal relation—constructively.

After the presentation of the contrapuntal passage, the texture shifts from the two-voice canon in contrary motion to the single melodic line at mm. 30-32. Here one row-form, RI-6 acts like a bridge that connects the previous tonic position, C-F#, to the minor-third-related Eb section. First of all, at m. 30, the piano symmetrically imitates the same content that the clarinet plays at m. 29. Again, here the symmetrical perfect fourth with its axial note F# functions as the connection between two musical phrases. Secondly, the repetition and isolation of the single pitch Eb is utilized at m. 32 (piano) in order to herald the upcoming Eb passages. Nevertheless, instead of the use of overlap in two adjacent row forms, here the last note of RI-6, C stands as the axial note between the minor third interval, C-Eb. Moreover, the pitch C is separated by eighth and quarter rests, and it appears as a grace note adhering to the following row form, I-9. All these carefully planned dispositions make a smooth musical connection between C-F# (T=0/6) and Eb-A (T=9) passages.
At this point it is important to refer to the conception of tonality. Webern wrote that the break-up of tonality occurred around 1908. He distinguished the tonal from atonal based on the presence or absence of the relationship to the tonic; but he also denied that the shift from one to the other really involved any radical change in how composers handled pitch materials in their music. In one of the lectures included in *The Path to the New Music*, Webern stated:

> We’ve arrived at a period of polyphonic presentation, and our technique of composition has come to have very much in common with the methods of presentation used by the Netherlanders in the 16th century – but, naturally, with all the other things that have resulted from the conquest of the tonal field. . . . it’s impossible to fix a dividing line between old and new. Please understand; the reference to a tonic is meant to show how much all these change still took place within the bounds of harmonic progression. . . . But though things had gone so far, we still find the very important factor that governed music for centuries – this exploitation of relationship to a key.\(^\text{21}\)

From this point of view, one may realize that there is certainly not a single tonality in this composition; however, one still can find tonal relationships that resemble the tonalities in classical repertoire. For instance, there are two tonal reference points, C and F# in the beginning of this movement. Additionally, the composer employs symmetrical imitation to place an emphasis on both reference points; that is, the first and second pitches of the tone row form the symmetrical minor third intervals around the axial pitch, F#; similarly, the eleventh and twelfth pitches of the tone row form the symmetrical perfect fourth intervals around the axial pitch, C. This kind of emphasis of tonal reference points may be found in both main themes and secondary themes.\(^\text{22}\)

In speaking of the tonal shifts from Theme I to the first secondary theme, first of all, the composer employs untransposed row-forms (T=0), which begin and end on C and F# in the theme I. Following this, the tritone transposed row-forms (T=6), which also begin and end on C and F# are utilized in the beginning of the first secondary theme, followed by the minor third transposed row-forms (T=9), which begin and end on Eb and A. Secondly, the next

\(^{20}\) Anton Webern, *The Path to the New Music*, 22.

\(^{21}\) Ibid., 50.

\(^{22}\) The detail chart of the tonalities corresponding measures is given in Appendix B.
passage involves the row-forms \(T=2\), which begin and end on Ab and D as well as the row-forms \(T=11\), which begin and end on F and B. At this level, one may clearly see that the tonalities shift from C-F# to F-B, and there is no single key in both tonal areas as shown in Figure. 5. Furthermore, there is always the minor third related pair of the each tonal area; i.e., C-Eb of the first tonal area and F-Ab of the second tonal area.

Table 3. Tonalities in the *Op. 22 Quartet*, mov. II.

<table>
<thead>
<tr>
<th>Tonality</th>
<th>Terminal notes</th>
<th>Transposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1\textsuperscript{st} tonal area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“tonic”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F#– C</td>
<td>T=0 / 6</td>
<td></td>
</tr>
<tr>
<td>A – Eb</td>
<td>T=3 / 9</td>
<td></td>
</tr>
<tr>
<td>2\textsuperscript{nd} tonal area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“subdominant”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B – F</td>
<td>T=5 / 11</td>
<td></td>
</tr>
<tr>
<td>D – Ab</td>
<td>T=8 / 2</td>
<td></td>
</tr>
<tr>
<td>3\textsuperscript{rd} tonal area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“dominant”\textsuperscript{23}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C#– G</td>
<td>T=7 / 1</td>
<td></td>
</tr>
<tr>
<td>E – Bb</td>
<td>T=10 / 4</td>
<td></td>
</tr>
</tbody>
</table>

At this point, one may recall Ernő Lendvai’s “axis system” in his analysis of Béla Bartók’s music. He assigns harmonic function to all twelve pitch-classes; three categories utilized are tonic, subdominant and dominant. Each category includes four notes divided into principal and secondary groups, the tritone related.\textsuperscript{24} One may observe a similar axis system in Webern’s music.

In the second subsection of the first secondary theme (mm. 33-64), five different transposed row-forms are utilized before the return of the A section. We may divide this second subsection into three segments as follows: 1) mm. 33-41, where the music essentially departs from the first tonal area; 2) mm. 40-51, where the music shifts from the first tonal

\textsuperscript{23} The 3\textsuperscript{rd} tonal area will appear in the later passage.

area (C-F# and Eb-A) to the second tonal area (Ab-D and F-B); and 3) mm. 51-64, where the music shifts back to the first tonal area.

Ex. 8. mm. 33-41.

Following the previous canonic section, the texture in the first segment (mm. 33-41) of the second subsection is still contrapuntal; the individual line is independent. Yet the melody is broken into four-, three-, or two-note fragments; additionally, the two-voice canon in contrary motion doest not exist any longer (see Ex. 8). Prime form and Inversion form of the same transposition are combined again, designated as P-9 and I-9 in this passage; nevertheless, there is no specific treatment of the matching dyads or particular interval characteristic found here. That is, those dyads occurring in the juxtaposition of P-9 and I-9 rows do not match with each other. According to those features discussed above, one may conclude that this passage (mm. 33-41) appears as the preparation for the following modulation.

In the second segment (mm. 40-51), several row forms are employed in order to achieve the subsequent modulation as shown in Ex. 9. First of all, Webern utilizes the identical content of the twelve-tone rows as the linking bridge. For instance, mapping occurs between I-9 and R-2, where both rows share the last two notes played by the saxophone at m.40. In addition, at m. 41 the piano repeats the last two notes of the previous row, P-9, as the first two notes of the consequent row, R-9, with the same rhythmic pattern and in the same

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25 Refer to three types of treatments of matching dyads on page 16.
register. Similarly, those notes appearing in the violin part at mm. 42-43 repeat the identical content of the violin passage at mm. 39-40. In these cases they share not only the pitch classes and gestures, but also the tone color.

Ex. 9. mm. 40-51.

Secondly, the canonic texture is reduced to fragmentary imitation. In place of the exact imitation found in the previous canonic section (mm. 19-29), here one still can find some imitative features; however, they always appear as three-, four-, or five-note imitative patterns disguised with some intervening notes. For example, at mm. 42-44, where the clarinet plays the four-note fragment, ordinals 9, 8, 7 and 6 from R-2 the piano imitates, playing ordinals 5, 4, 3 and 2 from R-9. At mm. 45-47, where the piano plays the five-note fragment, ordinals 4, 3, 2 and 1 from R-2 plus ordinal 3 from I-11 the violin imitates, playing ordinals 4, 5, 8, 9 and 11 from P-9 and clarinet plays ordinals 6, 7, 10 and 12 from P-9 plus ordinal 10 form RI-4). At mm. 48-49, piano presents the imitation between its right hand,
ordinals 9, 8, 7 and 6 from RI-4 and left hand, ordinals 5, 4, 3 and 2 from RI-4. At mm. 49-50, violin plays the three-note fragment, ordinals 1, 2 and 3 from P-4, imitated by the clarinet playing ordinals 4, 5, 6 and 7 from P-4. In the last fragmentary imitation between violin and clarinet (mm. 49-50), the composer makes a slight adjustment, where ordinal 5, G# from P-4 has to be neglected and appears as a grace note in order to keep the same interval contour.

In addition to the characteristic of mapping and imitation patterns, the perfect fourth interval plays an important role here. This specific interval always appears in one of two ways, symmetrical perfect fourths with an axial note, or a single perfect fourth sounded in the same register in both voices of the canon. As an instance of the first type, the saxophone plays the last two notes D and A at m. 40, symmetrically imitated by the piano playing E and A at m.41. The second type can be found at mm. 50-51, where saxophone plays the last two notes E and B, echoed by the piano playing B and E in the same register. Moreover, since the perfect fourth appears at the end of all prime and inverted rows, it provides a smooth connection when followed by retrograde or retrograde-inverted rows.

Ex. 10. Tonal feature, mm. 40-51.

At this level, modulation is realized through a significant tonal feature. That is, a series of tone rows presents a conventional harmonic progression. Here one may take the last ordinal of the twelve-tone row as a referential note for the following reasons. First, the last pitch is always included in the perfect fourth interval, one of the most important features in this passage. Furthermore, those perfect fourths, as mentioned above, always appear in the end of phrases. Accordingly, it may be reasonable to examine the tonal feature through the last ordinal from tone rows. That is to say, the tonal motion from A to B to E resembles
modulation by fifth and whole step, a primary characteristic of tonal music (see Ex. 10). The referential notes A and B may be considered as the first and second tonal area\textsuperscript{26} respectively.

Ex. 11. mm. 51-64.

The third segment (mm. 51-64) functions as a retransition between the first secondary theme (B-I) and the second theme (A-II). In the beginning the third segment, I-9 and P-9 are utilized like the first segment of this section (see Ex. 11). Compared with the combination I-9 and P-9 in the first segment (mm. 33-41), here the melodic line is also broken into two- or three-note fragments. In this passage, some of the specific treatments of the matching dyads\textsuperscript{27} can be recognized, whereas that property in the same octave register cannot be found in the first segment. For instance, the appearance of the common tones, Db and F in ordinals (5 and 6) appears at mm. 53-54 (violin and saxophone), designated as the third category. The perfect fourth related pair of the vertical minor seconds, C-B and G-F\# in ordinals (7 and 8) appears at mm. 55-56 (clarinet and piano), designated as the second category. Finally, the symmetric

\textsuperscript{26}Refer to the discussion about tonalities on pages 19-20.

\textsuperscript{27}Refer to the three types of treatments of matching dyads on page 16.
axial note, A and its correspondent intervals the perfect fourths, D-A and A-E in ordinals (11 and 12) at mm.56-57 (piano and saxophone) is an example of the first category. These recurring features and similar treatments found in previous sections and this passage seem to suggest the return of the first tonal area. Indeed, this short passage ends on the referential pitch A at m. 56-57 (piano and saxophone), identified in this discussion as belonging to the first tonality as a secondary pitch.

The texture in the following passage (mm. 57-64) is also contrapuntal. The treatment is similar to that in the second segment (mm. 40-51); imitation with slight difference occurs in two or three voices. The composer utilized four different tone rows, R-3, P-2, RI-9 and I-3 throughout this passage. There are many similarities among those row forms. R-3, RI-9 and I-3 share the same terminal notes, Eb and A. In addition, P-2 and RI-9 tone rows share similar content within; namely, the same pitch appears in the same position in each row forms as Figure 6 shown. A similar example also can be found between I-3 and RI-9.

Figure 3. Permutation between P-2 and RI-9.

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P-2      Ab  F  E  G  Gb  Bb  B  C  Db  Eb  A  D
RI-9    A  D  Ab  Bb  B  C  Db  F  E  G  Gb  Eb
```

The high point of mapping technique is explored at m. 61, where the single pitch A becomes simultaneously ordinal 11 from P-2, ordinal 1 from R-3, ordinal 12 from RI-9, and ordinal 1 from I-3. Meanwhile, F# played by the violin sounds together with the intersectional note, A played by the piano. Emphasis on the single note, F#, accentuated by the climax of the intersection implies the forthcoming tonic position in the main theme II.
After the point of the intersection, imitation starts from the lowest voice and appears in all four voices, piano, saxophone, clarinet and violin successively. Finally, F# appears as the last note in the imitation as well as the first note of the following main theme II.

A-II: Theme II (mm. 64-88)

The return of the A section (Theme II) does not have much in common with the original A section (Theme I). Unlike the various combinations of the row-usage in Theme I, Webern only utilizes the prime forms against retrograde forms through Theme II. Also, in place of the melodic and accompanimental lines employed in Theme I, the duet is shared by all four instruments in Theme II. In perceiving the contrast between Theme I and Theme II, one can notice the planned associations already shown by the titles in the composer’s Sketchbook.

Namely, the idea of Theme I was annotated as “Kühle des ersten Frühlings” (“the coolness of early spring”); moreover, Webern tries to depict various blooming flowers in early spring, so the structural organization of Theme I shows more vivid texture in both melodic and rhythmic patterns as well as the choice of row combinations. In contrast, “Dachstein, Schnee und Eis, krystallklare Luft” (“Dachstein, snow and ice, crystal clear air”) appears as the title of Theme II; in accordance with this title, its musical character is laid out in a more austere manner. Its musical conception and ideas seem to clarify the abstract character of the twelve-tone music and help us realize Webern’s programmatic procedure in music.

28 According to Hans Moldenhauer’s *Anton von Webern: A Chronicle of His Life and Work*, the Dachstein, a alpine peak, was one of Webern’s favorite mountains for outings.
A ternary suggestion also appears in Theme II; we might distinguish three subsections based on the row usage as follows, 1) mm. 64-68, the combination between P-0 and R-0; 2) mm. 68-77, the combination between I-0 and RI-0; and 3) mm. 77-88, the combination between P-0 and R-0 (with I-0 appended). When the same row usage occurs again at the third section, it seems to announce the return of the first section. One may therefore classify Theme II as ABA ternary form in terms of classical format.

In speaking of the row usage in Theme II, since Webern only utilizes the untransposed rows (T=0), and always combines prime forms and retrograde forms against each other in this duet, it might be interesting for us to examine the similar and dissimilar dyads in the pairs of interval treatments. For instance, when P-0 and R-0 are combined in mm. 63-68, each pair of dyads is played in the same register and same vertical position except for the pair of the ordinal numbers (7 and 8). The ordinal number (7 and 8) of combination P-0 and R-0 show intervals in the different vertical positions; that is, R-0 utilizes a major seventh in piano while P-0 employs a minor ninth (compound minor second) in clarinet. As a result, the eleven pitch-classes which are repeated all recur in the same octave position as Figure 7 shown. This fact seems to emphasize Bb as the only pitch that alternates its registral placement. The b♭ appears only once in this Theme (m. 67, clarinet).

Figure 4. Disposition of repeated pitch classes, mm. 64-68.
This limitation of pitch mobility has important consequences for our reception of Webern’s music. Musical similarity is easier to perceive since those dispositions involve the recognition of identities and likeness, which are set up within the context of the work itself. Furthermore, one of the purposes of the same vertical position is to create audible relationships for the listeners; that is to say, when the same pitch class recurs, it is easier to comprehend two notes in the same octave than the same pitch classes sounding in the different octaves. As Schoenberg has written, “The relaxation which a satisfied listener experiences when he can follow an idea, its development, and the reasons for such development is closely related, psychologically speaking, to a feeling of beauty. Thus, artistic value demands comprehensibility, not only for intellectual, but also for emotional satisfaction.”

Without a doubt, Webern’s idea faithfully echoes Schoenberg’s commentary on twelve-tone composition; namely, “Composition with twelve tones has no other aim than comprehensibility.”

In comparison with the original A section, the first phrase (mm. 63-68) of Theme II has a melodic line that is broken down into smaller motives as shown in Ex. 12. Although the return of P-0 differs from its appearance at the beginning of the piece, one may still recognize some elements which the composer accentuates in both main themes. Firstly, the perfect fourth interval provides somewhat musical or harmonic unity tying the two main themes together even after a long interruption. That is, the recurrence of ordinals 10, 11 and 12 of P-0 form, C#, G and C, emphasizes their specific intervals in fixed vertical position. Moreover, at m. 68, the simultaneous sound of the last two notes, G and C, played by piano and clarinet echoes with the ending of the first phrase in Theme I (m. 7, clarinet).

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30 Ibid.
Secondly, the symmetrical imitation recalls a similar texture in the original theme. For instance, three different row-forms, I-3, P-0 and R-0 are combined at m. 64, where this combination creates symmetrical imitation between the right hand and left hand in the piano part (see Ex. 13). A similar situation can be found at mm. 7-8 in the Theme I, where symmetrical imitation occurs between R-0 and RI-0 (see Ex. 2 above). One may recognize that the perfect fourth interval followed by the tritone is one of the principal characteristics in both cases of this symmetrical imitation, yet these intervals are employed in the slightly different manners. That is to say, the perfect fourth interval at m. 64 appears vertically as harmonic interval whereas that at mm. 7-8 appears horizontally as melodic interval, and both cases are followed by a note that is a tritone away. Additionally, the symmetrical imitation utilizes C as a pivot note at mm. 7-8, but there is no pivot note in that of m. 64 as shown in Ex. 13.

Ex. 13. Excerpts of the symmetrical imitation, mm. 7-8 and m. 64.

The first phrase (mm. 63-68) is a symmetrical unit within. Webern deploys P-0 against R-0 in this passage; each pitch-class is repeated mostly in the same vertical position as well
as in the fixed octave, and note values appear in the similar rhythmic patterns. Thus, the phrase itself forms a retrograde imitation symmetrically. Furthermore, at m. 66, the composer employs the central note, g#, the ordinal number 6 of both series-forms, as the axis of this symmetrical imitation (see Ex. 12). This kind of symmetrical texture plays an important part in the following phrases in Theme II.

In the second phrase (mm. 68-77), the texture becomes less concentrated. Compared with the beginning of the second phrase in the Theme I, I-0 tone row employed in the both phrases has very similar contour. For instance, the first three ordinals from I-0 appear with the same register, rhythmic gesture as well as timbre. The violin does not play the melody until the second phrase in the both main themes; moreover, here the violin presents the same pitches in the way of pizzicatos as occurred previously in Theme I (mm. 1-14).

As with the first phrase, the second phrase presents a symmetrical unit within. On the one hand, all the pitches appear in the same register and with similar rhythmic gesture except for the first three ordinals 1, 2 and 3 from both tone rows. On the other hand, those three pitches, F#, A and Bb from I-0 and RI-0 appear an octave away in the specific rhythmic pattern (see Ex. 14), that is, as isolated notes falling on the upbeats, also one of the main characteristics in Theme I.

Ex. 14. mm. 68-77.
The third phrase (mm. 77-88) contrasts with the previous two phrases. In addition to the combination of P-0 and R-0 rows, I-0 row is affixed at the end of this phrase as shown in Ex. 15. Instead of the perfect fourth dominating in the previous passages, the major seventh interval is privileged in this passage. Several dyadic relations are built upon the constant major seventh intervals emphasized by the longer note-values. For instance, saxophone plays G#-A in half-note values at mm. 81-82, followed by the piano Bb-B♮ in half notes and the clarinet E-F in quarter notes at mm. 83-84. Moreover, a grace note with a quarter note, the filling-in rhythmic gesture, also appears in the major seventh. As will be explained, the emphasis of the major seventh becomes one of the significant features in the following C section (the second secondary theme).

Ex. 15. mm. 77-88.

The ending of this A-II section (Theme II) is blurred. All the untransposed rows (T=0) employed in the main theme are finished at m. 88; nevertheless, the material and treatment used in I-0 tone row (mm. 86-88) is much more similar and closely related to that used in the forthcoming second secondary theme (see Ex. 16).
The second secondary theme can be divided into three subsections, 1) mm. 88-94, where the transition occurs between A-II and C sections; 2) mm. 93-112, where the static major sevenths occur between clarinet and saxophone repeatedly, and the violin’s harmonic is utilized; 3) mm. 112-129, where the composer employs a unique triplet rhythmic pattern.

In the first subsection (mm. 88-94), material derives from I-0 tone row in the previous section. Indeed, there are many similarities among I-0, R-5, and R-11 tone rows. For example, I-0, R-5 and R-11 tone rows share the similar content within; that is, the same pitch appears in the same vertical position as shown in Figure 8. In addition, R-5 and R-11 share the same tritone related terminal notes, F and B. As a result, the composer employs the repetition of those specific segments, and that forms a symmetrical passage at mm. 86-90, where both pitch content and timbre are repeated.

Figure 5. Permutation of I-0, R-5 and R-11.

There are three major groupings of the identical segments utilized in this passage; first, a pair of the major sevenths played by violin and clarinet; second, the isolated major seventh played by clarinet alone falling on the upbeats; and third, the five-note grouping played by piano (see Ex. 16). Among those three collections, the collections associated with the piano
are not exactly identical. The repetition of the five-note segment replaces grace note F by F# at m. 90.

Ex. 16. Repetition of the identical segments, mm. 85-94.

In this transition passage (mm. 88-94), the music modulates from the first tonality (Gb-C) to the second tonality (F-B).\(^{31}\) Compared with the first secondary theme, where T=11(F) is employed as the second tonal area, here the composer utilizes its tritone related row, T=5 (B) as the second tonal area in the second secondary theme. This kind of the tritone related interchange between the two secondary themes I and II will be found throughout this section.

At m. 87, the collection of a pair of the major sevenths heralds two significant features in the entire C section. First of all, pairs of the major seventh always appear in the group of four successive semi-tones, Bb-A-G#-G. This kind of grouping of major sevenths will continue as the main characteristic in the following passages in the second secondary theme. Furthermore, violin’s harmonic note G is another particular feature employed in this section. This harmonic pitch will be separated from a pair of the major seventh interval, and becomes static and isolated in the following passages.

In the second subsection (mm. 93-112), musical phrases are well defined by the tone rows. Five different row forms are utilized in this passage (see Ex. 17). On the one hand, one

\(^{31}\) Refer to the discussion about tonalities on pages 19-20.
may recognize similar treatments here to those in the previous passage; that is, the privileged major sevenths and the violin’s harmonic note. On the other hand, both cases transform into even more static features. For instance, here the major seventh appears in a longer and more stable rhythmic pattern; i.e., two even quarter notes, whereas it appears in a relatively shorter rhythmic pattern in the first subsection; i.e., a grace note attached on a quarter note with the harmonic note. Additionally, the group of four successive semi-tones in a pair of the major seventh shifts from Bb-A-G♯-G to A-Bb-B-C, a particular disposition of the well known “BACH” motive.

Ex. 17. mm. 93-112.

Webern employs the invariant property of twelve-tone music in the specific major seventh groupings. The “BACH” sonorities are derived from the same ordinals in I-8, R-1, RI-8 and P-11, respectively. The first two appear in the retrograde forms, while the last two appear in the prime forms. In this respect, the invariance realizes not only the same grouping of the pitch classes, but also the same register and timbre. Furthermore, a static and tranquil
atmosphere is achieved also through the register placement. That is to say, the register is restrained; there is no relatively high or low note in this passage.

At this point, one may recall the “BACH” motive in the beginning of Arnold Schoenberg’s opera “Moses und Aron,” where the composer employs the “BACH” motive in an identical disposition of two static major sevenths (see Ex. 18). The two compositions share the same sonority and similar timbres in handling with the specific major sevenths. For example, the major seventh is always played by clarinet and saxophone in Webern’s Op. 22 Quartet, while that is always played by English horn and Flute in Schoenberg’s opera. Both composers choose the wind instruments to present the specific tone color. As Schoenberg’s comment about his pupil Webern, “Webern immediately uses everything I do, plan or say, so that— I remember my words— ‘By now I haven’t the slightest idea who I am.’” Here it shows another instance that Webern’s music bears a great resemblance to Schoenberg’s music.


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32 Arnold Schoenberg, *Style and Idea*, 484.
However, one may not identify whether Webern’s material borrowed from Schoenberg or vice versa since Webern finished his final sketch for Op. 22 Quartet in September 1929, whereas Schoenberg started the opera in July 1930. Additionally, Schoenberg had close contact with Webern during the year of 1930, when he stayed in Lugano, in the southern part of Switzerland and concentrated on his composition, “Moses und Aron.”33 One thing is certain, this closely similarity between specific passages from Webern and Schoenberg cannot merely be coincidental.34

In speaking of the tonal shifts in this passage, one may recognize that the interchange of tritone related rows occurs again here. For instance, the second tonal area (Ab-D) is realized by employing T=2 (Ab) tone rows in the secondary theme I, whereas it is achieved by the use of T=8 (D) tone rows in the secondary theme II.

The third subsection (mm. 112-129) consists of two segments as follows: 1) mm. 112-120, the repetition of the first four tone rows, I-8, R-1, RI-8 and P-11 utilized in the second subsection (mm. 93-112); 2) mm. 120-129, the use of tritone-transposed rows and the return of the first tonality.

In the first segment, the unique triplet quarters are first introduced in this composition. The music gradually increases its intensity while the static major sevenths still occur repeatedly. In addition, here the “BACH” sonority appears in shorter note values and different timbres played by the violin and piano, whereas that played by the clarinet and saxophone in the previous passage.

In the second segment, the register is expanded to the movement’s highest point, c⁴ at m. 122 (violin). The specific major sevenths disappear entirely in this passage; instead, the

34 Previously, Schoenberg used the “BACH” motive in his Suite for Piano, Op. 25 and Variations for Orchestra, Op. 31, but in different ways.
The return of the tonic position or first tonality (C-F#) heralds the coming main theme. As a result, the tritone-transposed (T=6) passage may function as a retransitional bridge.

Ex. 19. mm. 112-129.
A-III: Theme III (mm. 129-146)

As in Theme I, one may also recognize a ternary implication in Theme III by the deployment of series-forms. Instead of the definite melodic and accompanimental lines found in Theme I, contrapuntal melodies are employed in Theme III. Nevertheless, these two sections still share some similarities in construction.

Theme I and Theme III both employ the same combination of the series-forms P-0 and RI-0 in the beginning phrase. Similar articulation and timbre are found between the beginnings of the both themes. In the beginning of Theme I and Theme III, where the piano plays R-0 whereas instrumental parts play RI-0, the first three notes of RI-0, C, F and B, are written at the same register and articulation (see Ex. 20). Moreover, the duration of both themes is nearly the same; there are nineteen measures in theme I while there eighteen measures in Theme III, and tempo is marked as \( \text{= ca } 108 \) at the beginnings of both themes.

Theme III consists of three subsections that resemble the musical phrase from classical repertoire as follows, 1) mm. 129-131, where the retransition passage connects the secondary theme II to Theme III; 2) mm. 131-140, where the combination of the individual I-0 tone row and pairs of matching dyads in RI-0 and R-0 rows occur; 3) mm. 139-147, where the combination of the individual P-0 tone row and pairs of matching dyads in R-0 and RI-0 occur.

Ex. 20. mm. 129-131.
Although the first musical phrase of Theme I and Theme III share the same combination of P-0 and RI-0 tone rows, note groupings are utilized in different ways in these two main themes. There are seven measures in the first phrase of Theme I; however, in Theme III the first phrase merely consists of three measures (see Ex. 20). The composer again tries to blur the division between the secondary theme II and Theme III sections. The use of tempo I and the employment of the untransposed rows announce the return of the main theme, yet the material and rhythmic gestures are closer to the previous C section. Moreover, the pause of the fermata at the end of the m. 131 seems to reinforce the connection of these three measures with the previous section.

Ex. 21. mm. 131-140.

After the fermata, the second phrase (mm. 131-140) starts to resemble the texture of the original A section. For instance, there is some symmetrical imitation with slight difference between RI-0 and R-0 tone rows; i.e., the clarinet plays a grace note on C with a quarter note on F at m. 132, imitated by violin playing the symmetrical feature, a grace note on C with a quarter note on G at m. 133. Similar examples can be found with the ordinals 10 and 9 of both tone rows as shown in Ex. 21.

In addition to the symmetrical imitation between RI-0 and R-0 rows, the juxtaposition of these two specific rows also generates some types of treatment of matching dyads\(^{35}\) as

\(^{35}\) Refer to four type of treatment of matching dyads on page 7.
mentioned before. For instance, on the one hand, the last two ordinals 12 and 11 in R-0 and RI-0 share the axis-note, C with two symmetric intervals a perfect fourth apart; which shows an example of matching dyads type c), intervals in the same vertical position (perfect fourth). On the other hand, when pairs of the matching dyads, ordinals 2 and 1 appear at mm. 139-140, the violin plays a major sixth in R-0 while a minor third is employed in RI-0 by clarinet; that is the instance of matching dyads type c), with interval inverted.

Furthermore, the common tones, B and C# in the ordinals 9 and 10 of the both tone rows appear in the same octave register, classified as type a), whereas the common tone, G# and E in the ordinals 5 and 6 appearing in the different registers demonstrates the case of type b). Some similar treatments of matching dyads can be found in the following phrase as well.

Ex. 22. mm. 139-147.

![Ex. 22. mm. 139-147.](image)

In the third phrase (mm. 139-147), P-0 replaces I-0 whereas the combination of R-0 and RI-0 still remains in this passage (see Ex. 22). Nevertheless, those dyads occurring in the juxtaposition of R-0 and RI-0 rows do not match with each other. Once again, the major seventh plays a significant role in this music. Instead of the grouping of vertical major seventh intervals, this specific interval appears here in linear fashion. First of all, the invariant

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36 Another significant feature of the major seventh was found in the Secondary Theme II (mm. 88-129).
property is utilized in the group of the major sevenths; the piano plays the static sonority of the specific major seventh, D-Eb- E♭- F with the identical rhythmic gesture from mm. 136-149. Secondly, clarinet always plays the major seventh or the inverted interval- minor second with the same rhythm of two eighth notes throughout this passage. Furthermore, after nine measures of silence, the saxophone only plays two notes, the major seventh Bb-B♭, in the end of this passage.

The idea of Theme III was annotated in Webern’s Sketchbook as “Die Kinder auf Eis und Schnee” (“The children on ice and snow”). The various choices of row combinations and note groupings portray the playful children; on the contrary, the static sonority and constant rhythm picture the austere scene of the icy winter.

B-II: Repetition of The Secondary Theme I (mm. 147-182)

According to Webern’s description in the outline of this movement, the third episode (B-II) is annotated as the repetition of the first secondary theme. As a result, one may recognize many similar treatments between the section B-I and B-II. This section consists of three subsections, 1) mm. 147-153, where the tritone transposed tone rows (T=6) are exclusively employed; 2) mm. 153-169, where a two-voice canon in contrary motion occurs; 3) mm. 169-182, where an extensive imitation texture with double canons occurs.

The first subsection (mm. 147-153) functions as a bridge connecting the previous A-III section (Theme III) and the B-II section. On the one hand, the shift of the different row combinations announces the coming new section, yet one still can find residual material in
this passage. For instance, at mm. 148-149, the piano continues the static sonority of the specific major sevenths derived from the previous passage. On the other hand, small fragments of imitation randomly appear as preparation for the following entirely canonic passages.

Ex. 23. mm. 147-153.

In comparison with the original first secondary theme of the B-I section (mm. 19-29), the first subsection of B-II section (mm. 147-153) shares only the tritone-transposed row forms. The composer deploys the same tone rows in the different manners. For instance, while the two-voice canonic texture is explicit in B-I section, here one may only perceive a few fragmentary imitations. Additionally, the matching dyads occurring in the previous first secondary theme disappear here.

The texture of the second subsection (mm. 153-169) is canonic. A two-voice canon in contrary motion is realized by interval dispositions and rhythmic gestures. Nine different tone rows are utilized in this passage, yet they all share the closely similar content within; that is, the same pitch appears in the same position. Moreover, the first pair of the combination of I-3 and P-9 rows share the same terminal notes, A and Eb; likewise, the last pair of the combination of R-10 and I-4 rows share the same terminal notes, Bb and E. Therefore, several dyadic relations occur in the juxtaposition of two specific tone rows as shown in Figure 9. Nevertheless, instead of inheriting maximum similarities from those dyads, the
composer breaks the grouping of the matching dyads existing in both tone rows. That is to say, those dyads do not match each other in the music.

Figure 6. Permutation of I-3 and P-9.

Ex. 24. mm. 153-169.

In the passage, there are several similar treatments corresponding to the section in the original Secondary Theme I (mm. 40-51). In addition to the characteristic of mapping and imitation, both sections possess the same tonal outline, from A to E. For instance, the music starts with the single pitch A, played by the clarinet, plus the apparently conventional diminished triad played by the clarinet and piano sounded together at m. 153 [Ex. 24]. This referential note and complete triad gives an emphasis on A, considered as the first tonal area.
Furthermore, after a series of the major seventh/ minor second imitations from mm. 166-169, two tritone-related tone rows, R-10 and I-4 end the passage on the single pitch E, played by the piano at m. 169. This referential note E is regarded as the third tonal area. At this point, the motion from A to E resembles the harmonic progression from tonic to dominant in the classical repertoire.

Ex. 25. mm. 169-182.

The third subsection (mm. 169-182) begins with the repetition of the first four tone rows, P-9, I-3, R-8 and RI-4 employed in the previous passage (mm. 153-169).\(^{37}\) The texture is still canonic; imitation with slight difference appears in two or three voices. One may consider it as the most complex passage in this composition because of the intensive mapping and high

\(^{37}\) A similar treatment can be found in the Secondary Theme II, mm. 93-112 and mm. 112-129.
degree of invariance of single notes as shown in Ex. 25. In this respect, the invariance is achieved not only in regard to pitches, but also to registers and timbres. Instead of the repetition of the specific notes/motives found in the Secondary Theme II, here the content of invariance is extensive. That is, the element of the invariance in this passage appears as the single notes deployed in various contexts, yet repeated in the same register and the particular timbre whereas that in the Secondary Theme II appears as the definite “BACH” motive repeatedly. For example, $g^\natural_3$ derived from various tone rows consistently recurs at the violin part with diverse note groupings and rhythmic gestures throughout the B-II section. A similar example also can be found with the single pitch $d^3$ played by the piano. With this treatment, the composer creates another audible relationship in the B-II section based on the fixed register; however, musical similarity may not be easy to perceive because of the diverse use of the row combinations and different adjacent vertical positions.

After the presentation of the canon in contrary motion, the music reduces to the single row-form statement. RI-9 announces the return of the first tonal area and thinning out of the texture to a single line. Instead of the contrapuntal texture, the composer employs a single row form as a musical phrase and connecting bridge to the forthcoming coda section.

A-IV: Coda (mm. 182-192)

According to Webern’s *Sketchbook*, the final return of the A section functions as the coda. The untransposed row-forms (T=0) are employed except that R-0 tow is utilized a second time in place of the RI-0 row that was found in the first A section repeatedly (see Ex. 45).
26). The texture continues with a single row-form statement; furthermore, the single melodic line is broken into smaller segments by rests and fermatas. There are some emphases along with the sporadic melody in the last ten measures. First of all, this passage starts with the B split third chord (with the root omitted) at m. 182. The “tonic position (C-F#)” first appears on the upbeat at m. 184, where the conjunction of P-0, I-0 and R-0 tone rows occurs. Moreover, at m. 188, the single pitch $b^3$ played by the violin on the upbeat is emphasized in respect to duration and dynamic levels. Finally, two individual R-0 tone rows end the movement on the “tonic” $gb^2$ played by the saxophone at m. 192. Those emphases on the pitch B and F#/Gb seem to confuse the notion of “tonic position” although the music closes on the “tonic” Gb.

Ex. 26. mm. 182-192
CHAPTER III

SUMMARY AND CONCLUSION

Interval Relationship

In the second movement of Webern’s Quartet, Op. 22 specific intervals utilized repeatedly appear in crucial contexts that have close connections with the single row form, or row combinations. In addition, various vertical dispositions place different emphases in the music. For instance, the specific tritone interval, C-F#/G♭ is the main characteristic in Theme I, where the composer set up reference to the formal divisions as well as to the tonal implication for the following sections. On the one hand, this specific tritone, C-F#/G♭ is generated from the terminal pitches of a single tone row within. On the other hand, the six pairs of the matching dyads occur only when two specific tone rows are combined, designated as the combination of the prime form and inversion form in this movement.38

Among those pairs of matching dyads, the first pair, the axial pitch, F#/ G♭ with the symmetrical minor thirds and the last pair, the axial pitch, C with the symmetrical perfect fourths hold the most significant role in this movement. First of all, use of the perfect fourth intervals as connection between musical phrases is constantly reinforced through the music. Specifically, new phrases imitate the previous ones by sharing the axial pitch, C and the symmetrical perfect fourth interval. Secondly, the composer employs these symmetrical imitations to place an emphasis on tonal reference pitches, C and F#/ G♭. For instance, in

38 Detailed discussions of the matching dyads refer to page 6.
the beginning of the first secondary theme I (mm. 19-29), the matching dyads are explored through imitation in contrary motion. Each of three relatively short two-voice canons is overlapped by one note in both voices, either C or F#; furthermore, those repeated notes always appear in the same vertical position, the axial pitch with the symmetrical intervals. As a result, the emphasis of the tonal reference pitches, C and F# is realized by the specific vertical combinations.

Generally speaking, Webern’s treatments of the interval relationship rely considerably on manipulative dispositions, frequently emphasizing the importance of a specific interval by utilizing it to begin or end a phrase or section— musically. Furthermore, the specific interval is also treated in a sense of tonal relation— constructively.

Tonalities

By revealing the tonalities of this composition, one may notice that Webern’s twelve-tone music has the residual feature of tonal harmony, including tonic, subdominant and dominant functions. This is exactly what Ernő Lendvai proposed in his analysis of Béla Bartók’s music-the axis system.39

In the second movement of Webern’s Quartet, Op. 22, “tonic” position is clarified by the exclusive use of the specific tone rows, untransposed forms (T=0) beginning and ending on the same notes, F#/G♭ and C in each refrain of the rondo movement. Moreover, the connecting passages of transition or retransition frequently employ either the tritone transposed (T=6) row forms beginning and ending on F#/G♭ and C, or the minor third/major sixth transposed (T=3/9) row forms beginning and ending on A and E♭. At this point, all four referential pitches, F#-C and A- E♭ are presented completely in Lendvai’s “tonic axis.”

Similarly, one may recognize the “subdominant axis” and “dominant axis” appearing in each episode in this movement.

It is worth noting that two different kinds of musical languages are stimulated by the same properties of functional harmony in the nineteenth-century practice. As Bartók once declared, “Every art has the right to strike its roots in the art of a previous age; it not only has the right to but it must stem from it.”\(^{40}\) Webern also has stated, “the row in its original form and pitch level takes a position analogous to ‘the primary key’ of earlier music.”\(^{41}\) Both composers treat their music as the continual development of conventional music.

In sum, this cumulative sequence of analysis mirrors the development of chromaticism in tonal music; it might therefore reflect back on the debate between tonal and atonal perspectives. Nevertheless, the analysis evidence in this study may be another opinion helping to find the true tonality of twelve-tone music;\(^ {42}\) it also can offer a different evaluation of Webern’s twelve-tone music.


\(^{41}\) Anton Webern, *The Path to the New Music*, 42.

\(^{42}\) Schoenberg has stated, “to call any relation of tones atonal is just as farfetched as it would be to designate a relation of colors aspectral or acomplementary. There is no such antithesis. Besides, there has been no investigation at all of the question whether the way these new sounds go together is not actually the tonality of a twelve-tone series.” In Arnold Schoenberg, *Theory of Harmony*, 3rd ed., trans. Roy E. Carter (Berkeley: University of California Press, 1978), 432.
APPENDIX A

THE MATRIX OF TONE ROWS FOR WEBERN’S *OP. 22 QUARTET*
<table>
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APPENDIX B

THE CHART OF THE TONALITIES WITH CORRESPONDING TONE ROWS AND MEASURES
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<th>Measures</th>
<th>Main themes</th>
<th>Secondary themes</th>
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<td>R-2, R-9, P-9, I-11, P-4, RI-4 (mm. 40-51)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;, 1&lt;sup&gt;st&lt;/sup&gt;, 3&lt;sup&gt;rd&lt;/sup&gt;</td>
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<td>P-2, I-3, R-3, RI-9 (mm. 57-64)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;, 1&lt;sup&gt;st&lt;/sup&gt;</td>
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<tr>
<td>mm. 64-88</td>
<td>A-II</td>
<td></td>
<td>P-0, I-0, R-0, RI-0</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
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<tr>
<td>mm. 88-129</td>
<td></td>
<td>C</td>
<td>R-5 (mm. 88-90)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
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<td>R-11 (mm. 90-94)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;, 3&lt;sup&gt;rd&lt;/sup&gt;</td>
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<td>I-8, R-1, RI-8, P-11, R-11 (mm. 93-112) / (mm. 112-120)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;, 3&lt;sup&gt;rd&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt;</td>
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<td>RI-6, P-6 (mm. 120-126)</td>
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<td>P-11 (mm. 126-129)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
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<td>mm. 129-146</td>
<td>A-III</td>
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<td>P-0, I-0, R-0, RI-0</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
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<td>mm. 147-182</td>
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<td>B-II</td>
<td>P-6, I-6, R-6, RI-6 (mm. 147-153)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
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<td>I-3, P-9 (mm. 153-160) / (mm. 169-172)</td>
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<td>RI-4, R-8 (mm. 159-163) / (mm. 172-175)</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt;</td>
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<td>P-7, I-5, R-7, R-10, I-4 (mm. 163-169)</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt;</td>
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<td>R-10, RI-11 (mm. 175-178)</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt;</td>
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<td>P-2 (mm. 178-179)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
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<td>RI-9 (mm. 179-182)</td>
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<td>mm. 182-192</td>
<td>A-IV (Coda)</td>
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<td>P-0, R-0, I-0</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
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BIBLIOGRAPHY


