CYCLIC PATTERNS IN JOHN COLTRANE'S MELODIC VOCABULARY AS INFLUENCED BY NICOLAS SLONIMSKY'S THESAURUS OF SCALES AND MELODIC PATTERNS: AN ANALYSIS OF SELECTED IMPROVISATIONS

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This study documents and analyzes cyclic patterns used as melodic vocabulary in John Coltrane's improvisations from compositions of 1965 to 1967. The analysis is categorized in two distinct sections. The first section analyzes melodic vocabulary that is derived from the cycle of descending major thirds progressions found in the compositions of 1959 to 1960. The second section analyzes melodic vocabulary that is derived from Nicolas Slonimsky's *Thesaurus of Scales and Melodic Patterns* using the theoretical terminology incorporated in the treatise. Musical examples consist of patterns from the *Thesaurus* and excerpts from selected improvisations of John Coltrane as transcribed by Andrew White.

Important scholarly contributions relevant to the subject by Carl Woideck, Lewis Porter, David Demsey, and Walt Weiskopf are included. Every effort has been made to cite interviews with musicians and commentaries by writers contemporary to that period of time with special emphasis on the important influence of Thelonious Monk, Miles Davis, and Ornette Coleman.

Chapter headings include: Literature Review and Methodology; Thelonious Monk, Miles Davis, and Ornette Coleman: Converging Influences; Analysis: Coltrane's Major Thirds Harmonic Cycles Used as Melodic Vocabulary; Interval Cycles in Coltrane's Melodic Vocabulary Based on Patterns from Slonimsky's *Thesaurus*; Summary and Conclusion.

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INTRODUCTION

Jazz improvisation by the great masters reveals an extremely high level of artistry. Most of these musicians continually perfected their craft, drawing on new material for inspiration and experimenting with harmonic, melodic, and rhythmic elements that led to innovation. Due to his many unique contributions to the jazz style, John Coltrane must be regarded as one of the greatest innovators of the twentieth-century. The introduction of harmonic and melodic interval cycles into jazz repertoire is just one of the many innovations initiated by Coltrane that has had a lasting impact on the style of jazz music. This study will document melodic vocabulary in John Coltrane's improvisations from 1965 to 1967. The melodic vocabulary of this period will be divided and analyzed in two categorical sections. The first section will analyze melodic vocabulary that is derived from the cycle of descending major thirds progressions found in John Coltrane's compositions of 1959 to 1960, which scholars have traced to the *Thesaurus of Scales and Melodic Patterns* by Nicolas Slonimsky[1]. The second section will analyze melodic vocabulary that is derived from the *Thesaurus* using the theoretical terminology incorporated in the treatise. Using the terminology included in the treatise to analyze John Coltrane's cyclic patterns also serves the purpose of understanding the *Thesaurus* from a pedagogical standpoint and creating the opportunity for this vocabulary to be extensively assimilated into the language of jazz. Fortunately, many references to the development of this vocabulary survive in documented interviews with John Coltrane and those musicians most closely associated with him. Observations by jazz critics and writers contemporary to that time period and the present will also be included.

[1] David Demsey, "Chromatic Third Relations in the Music of John Coltrane," *Annual Review of Jazz Studies* 5 (1991): 154-5.

Melodic vocabulary of the second section will be referred to as interval cycles. In his book entitled *Twentieth-Century Music,* Elliott Antokoletz defines such patterns that are constructed by the progression of a single recurrent interval as "interval cycles."[2] Interval cycles and their function in the music of composers of the late nineteenth and twentieth centuries can be found in the scholarly writings of Antokoletz, George Perle, Gary S. Karpinski, Richard Cohn, and Edward Lundergan.[3]

This study is intentionally limited to those portions of Coltrane's improvisations that are organized using cyclic construction. It is not meant to be an analysis of the entire improvisation nor is it meant to document the interaction between musicians of the ensemble during the improvisation.

[2] Elliott Antokoletz, *Twentieth-Century Music* (Englewood Cliffs, New Jersey: Prentice Hall, 1992), 19.

[3] Elliott Antokoletz, *A Study of Tonality and Progression in Twentieth-Century Music* (Berkeley: University of California Press 1984); Elliott Antokoletz, "Interval Cycles in Stravinsky's Early Ballets" *Journal of the American Musicological Society* 39 (Fall 1986): 578-614; George Perle, "Berg's Master Array of the Interval Cycles," *The Musical Quarterly* 63, no 1 (January 1977): 1-30; George Perle, *The Listening Composer* Berkeley: University of California Press, 1990); Gary S. Karpinski, "Structural Functions of the Interval Cycles in Early 20th-Century Music," *International Journal of Musicology* 4 (1995):183-206; Richard Cohn, "Maximally Smooth Cycles, Hexatonic Systems, and the Analysis of Late-Romantic Triadic Progressions" *Music Analysis* 15:1 (1996): 9-40; Edward Lundergan, "Musical Metaphor: Cyclic-Interval Structures in Britten's 'War Requiem'" *Choral Journal* 38 no 7 (February 1998): 9-15, 17-20.

CHAPTER 1: LITERATURE REVIEW AND METHODOLOGY

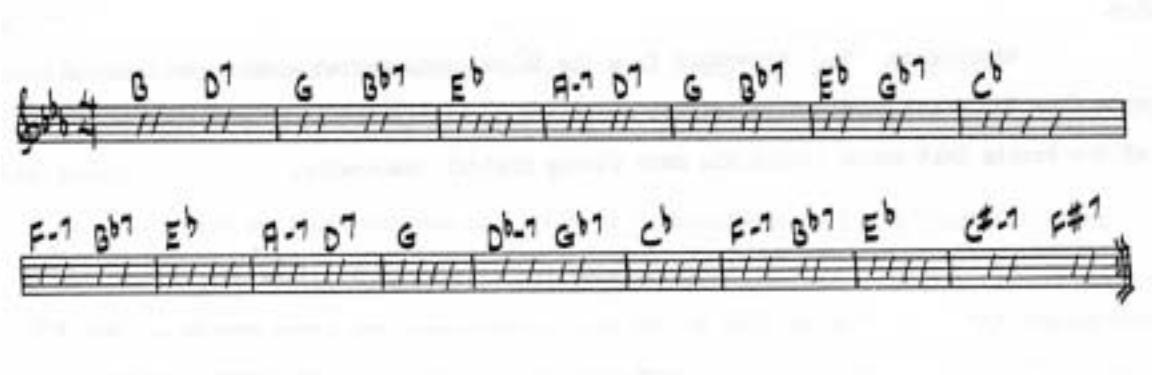
Literature Review. In the article *Chromatic Third Relations in the Music of John Coltrane,* David Demsey discusses the late nineteenth-century practice of root movement by major or minor thirds in chord progressions that freed composers of the typical root movement by fourths or fifths. He defines a chromatic third relation as a progression that moves by major or minor thirds, which would divide the octave into equal parts.[7] Demsey demonstrates that John Coltrane frequently employed chromatic third relations in his original compositions and arrangements as elaboration of ii – V – I harmony. For instance, in the progression d minor – G7 – C major, Coltrane would substitute a series of V7 – I cadences descending by major thirds between the d minor and G7 chord. The resulting progression, d minor – Eb7 - Ab major – B7 –E major – G7 – C major, would be what Demsey describes as a "tonic prolongation."[8] Jazz musicians typically refer to this chord progression as "Coltrane Changes". Demsey aptly illustrates the differences between compositions that contain chord substitutions used as tonic prolongations, such as "Countdown", from the composition "Giant Steps" in which the function of the progression is to form a complete major thirds

[7] Ibid., 147-50. Demsey's use of the label "Chromatic Third Relations" (sometimes referred to in music theory as a "Chromatic Mediant Relationship") is applied differently in this context.

[8] Ibid., 161. The term "tonic prolongation" is used in a different context than others have used it (i.e., Schenker).

cycle.[9] The chord structure of this piece, cited as *Example 1*, is composed entirely of three key centers (B major, G major, and Eb major) a major third apart arranged so that the entire composition is a complete cycle. The cyclic construction of "Giant Steps" is so complete that it is difficult to determine which of the three key centers is the principal key of the work.[10] In this progression the major thirds cycles no longer function as substitutions that prolong the tonic, but rather chordal sequences that continuously perpetuate themselves. Indeed, as Demsey points out, Coltrane referred to them as "sequences."[11] As this study will illustrate, he ceased to incorporate them into the harmonic structure of his compositions, but they remained a part of his improvisational melodic vocabulary until the very end of his life.

Example 1: John Coltrane, chord progression of *Giant Steps*, transcribed by Andrew White



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[9] Ibid., 169. Major thirds cycles have been used by composers previous to this application, but in a different way than John Coltrane used them (i.e., Liszt).

[10] Ibid., 169.

[11] Ibid.

In his definitive biography *John Coltrane: His Life and Music*, Lewis Porter provides an early example of the melodic application of major thirds cycles by way of David Demsey:

> Many musicians believe that Coltrane's free playing was derived from playing "Giant Steps" patterns over the modal pieces. An early example was "Fifth House." But in that case he actually had a specific chord sequence in his mind while the band played a pedal point. Can one really find the "Giant Steps" technique in his playing over strictly modal pieces like "Impressions"? David Demsey believes so and provided me the following analysis of Coltrane's live 1961 recording of the piece, the title track of his *Impulse* album.[12]

Demsey has found numerous places in Coltrane's solo on "Impressions" where there is implication of chromatic thirds related harmony.[13] Many of these are minor third relations. However, there is one particular example illustrated by Porter from Demsey's examples that clearly indicate movement by major thirds. It is a phrase of approximately three measures that implies the same brief dominant - tonic cadences descending tonally by major thirds that can be found in "Giant Steps". The melodic pattern implies the harmonic progression: A7 - D major -F7 - Bb major - Db7 - Gb major.[14] Porter refers to other occurrences of third related patterns in his own analysis of Coltrane's solo on "Venus" (1967) and in the research of German scholar Gerhard Putschogl, who finds "fleeting

[12] Lewis Porter, *John Coltrane: His Life and Music* (Ann Arbor: University of Michigan Press, 1998), 223.

[13] Ibid., 223-4. Minor third cycles are commonly identified in music theory as the octatonic scale.

[14] Ibid., 225

traces of thirds patterns as late as the recording of 'Brasilia' in May 1965…"[15] Walt Weiskopf has discovered an implied major thirds cycle in Coltrane's unaccompanied solo break on the composition "Summertime", recorded in October of 1960. The implied harmonic progression, as outlined by Weiskopf is E minor – G7 – C major – Eb7 – Ab major – B7 – E minor. The cycle as it occurs in this example includes a minor key (E) along with the major key centers of C and Ab.[16] Keeping in mind that the above examples are beyond the recording date that produced "Giant Steps" and "Countdown" in the early spring of 1959, another example cited by Porter is interesting for the fact that it was recorded over a month before this pivotal date. In the February 1959 recording of "Limehouse Blues", Porter illustrates (upon the recommendation of Carl Woideck) an example of an implied major thirds cycle over four measures of a single dominant chord. The melodic pattern in this example implies the harmonic progression of key centers a major third apart (C minor - Db7 - Gb major - A7 - D major - F7).[17]

There is much speculation in scholarly writing as to the origin of "Giant Steps" and the major thirds cycle that forms the basis of its harmonic progression. Lewis Porter speculates as to possible sources. These include pieces already established in the jazz repertoire, such as Dizzy Gillespie's "Con

[15] Ibid., 226.

[16] Walt Weiskopf and Ramon Ricker, *Coltrane, A Players Guide To His Harmony* (New Albany, Indiana: Jamey Aebersold, 1991), 23.

[17] Porter, 151.

Alma" and Richard Rodgers' "Have You Met Miss Jones?"[18] This latter example actually has a partial major thirds cycle on the bridge that is very similar to the last eight measures of "Giant Steps" (with the exception that these major thirds progressions *ascend*, as seen in *Example 1,* whereas the progressions *descend* in "Have You Met Miss Jones?"). David Demsey also makes the connection between the bridge of "Have You Met Miss Jones?" and the harmonic progressions employed by Coltrane. Additionally, he offers a letter from a former theory teacher of John Coltrane, Dennis Sandole, who claims that he worked with Coltrane on third relationships.[19] The most striking possibility offered by Demsey is the connection between Nicolas Slonimsky and John Coltrane.

> The Slonimsky Thesaurus contains material which is virtually identical to portions of "Countdown" and "Giant Steps," and Slonimksy may be the most direct link between John Coltrane and structural principles of the late nineteenth century…It is truly remarkable that a musicologist born nearly a century ago in Russia might have had such an effect on this jazz saxophonist.[20]

Slonimsky uses Latin and Greek terminology to name the principal intervals used to construct the cyclic patterns contained in the *Thesaurus.* He claims that this terminology will avoid confusion with tonality.[21] Slonimsky has coined the term *sesqui* to mean the addition of one half of a tone. Therefore, *sesquitone* would be one half of a tone added to a tone, equal to a minor third. A *quadritone* would

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[18] Ibid., 145-6.

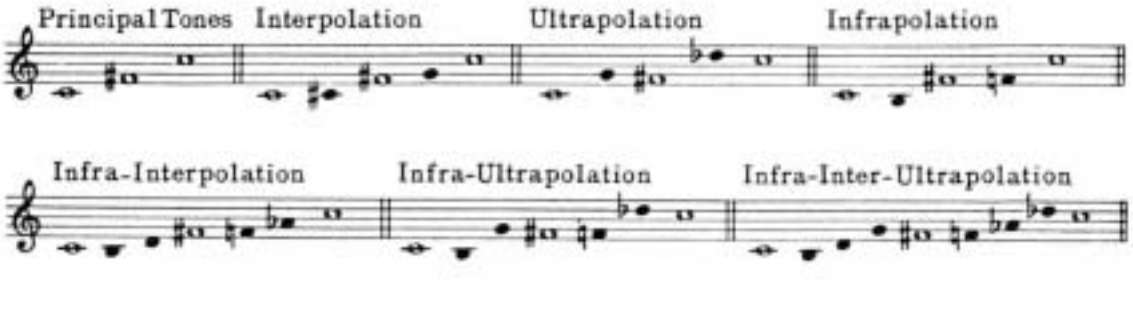
[19] Demsey, 153-4.

[20] Ibid., 154-5.

[21] Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns* (New York: Schirmer Books, 1947), i.

be four whole steps, or a minor sixth. Therefore, a *sesquiquadritone* would be that interval with the addition of one half step, or a major sixth. Following this same logic, a *quinquetone* would be five whole steps, or a minor seventh. Adding one half step to the *quinquetone* would produce the *sesquiquinquetone,* or major seventh. The *ditone* is two whole steps or a major third. Slonimsky calls perfect fourth a *diatessaron* and the perfect fifth a *diapente.* In order to construct patterns and scales, Slonimsky adds tones to the progression of principal intervals. The added tone(s) are labeled according to where they are placed in relation to the principal intervals. "Interpolation" is the process by which a tone(s) is placed between the notes of the principal interval. The process of "Infrapolation" places a tone(s) below the principal interval and the process of "Ultrapolation" places a tone(s) above the principal interval. Interpolation, Infrapolation, and Ultrapolation may be freely combined to describe any combination of the above processes. Slonimsky includes a diagram in the introduction to the *Thesaurus*, listed as *Example 2*, that illustrates these processes.

Example 2: Nicolas Slonimsky*, Thesaurus of Scales and Melodic Patterns,* table from the Introduction



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The first example that Demsey lists as an influence on the compostion of John Coltrane's "Giant Steps" is pattern #286 in the *Thesaurus of Scales and Melodic Patterns* cited as *Example 3*.[22] It is a cyclic interval pattern that employs the major third as the principal interval and includes a note located below and one located in between each of the repetitions of that interval. Slonimsky labels this particular pattern as a ditone progression with an infra-interpolation. For the purposes of illustration, the principal intervals have been illustrated using horizontal brackets, while the notes that have been added to form the infra-interpolation have been circled in *Example 3*. As it happens, this is exactly the sequence of pitches (transposed up a perfect fifth) that Coltrane uses in the second half of the melody to "Giant Steps".[23]

[22] Ibid., 157.

[23] Demsey, 157.

Example 3: Nicolas Slonimsky*, Thesaurus of Scales and Melodic Patterns, #286*

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The second example from the Thesaurus that David Demsey links to "Giant Steps" (with the help of Robert Wason) is a twelve-tone construction (semitone progression) listed as pattern #646. Slonimsky uses this pattern in the Introduction as an example of applying dominant – tonic harmony to a twelve-tone pattern to impart a sense of tonality. Suprisingly, the harmonies Slonimsky chose for his example are dominant - tonic cadences forming a major thirds cycle, exactly like the type used by Coltrane in "Giant Steps".[24]

Demsey also acknowledges the theory that Coltrane's thirds cycles carry a religious significance, correlating the three equal key areas to the holy trinity. He does not doubt that this relationship exists, but considers the connections to the Thesaurus more significant.[25] Porter places more significance of the religious origin of the major thirds cycles.

> As for the particular form that Coltrane's piece takes--the use of major thirds dividing the octave into three parts, the use of three tonal centers--I wouldn't underestimate Coltrane's interest in

[24] Ibid. The *Thesaurus* was published in 1947, but included concepts used by composers dating to the previous century.

[25] Ibid., 145.

> religion and mysticism. He had a kind of ecumenical, open-minded interest in all traditions. During the late 1950's he would draw the circle of fifths and then connect the twelve key centers with lines…Sometimes he'd place an equilateral triangle within the circle, creating a "magic triangle," and Marcello Piras has shown that, the points of the triangle connect key centers a major third apart. Surely Coltrane was interested in mystical as well as aural implications of third relations.[26]

John Coltrane never discussed the religious significance and symbolism of his major thirds cycles that Lewis Porter outlines in his biography and David Demsey mentions in the discourse of his theoretical analysis. The closest Coltrane came to the topic was when he called music a "reflection of the universe."[27] Jazz pianist and commentator Dr. Billy Taylor agrees that John Coltrane was a very spiritual individual but did not view that as the principal motivation behind his experiments with thirds cycles. He thought Coltrane pursued the cycle technique purely as a musical endeavor.[28]

In addition to the expert analysis and insight in his article, David Demsey also includes extremely helpful information in his appendices. Demsey includes three appendices entitled "Selected Popular Songs Containing Chromatic Third Relations", "Other Books by Nicolas Slonimsky" and "Coltrane Compositions Containing Chromatic Third Relations."

There is one other original composition that has intrigued scholars because of its cyclical properties. It is a piece recorded in 1965 by John Coltrane

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[26] Porter, 150.

[27] Carl Woideck, *The John Coltrane Companion: Five Decades of Commentary* (New York: Schirmer Books, 1998), 114.

[28] Dr. Billy Taylor, interview by author, Greenville, North Carolina, April 25, 2003.

entitled "One Down, One Up." Walt Weiskopf analyzes this composition in his book *Intervalic Improvisation*. As Weiskopf explains, the piece consists of an "A" section played entirely over a Bb7(#5) chord and a "B" section that modulates down a step to an Ab7(#5) chord. The melody consists of two augmented triads one half step apart that Coltrane draws heavily upon for material in his solo. As Weiskopf points out, the derivation of these two triads combined is an inverted augmented scale.[29] This is a scale that is formed by consecutively alternating the intervals of a half step and a minor third. The augmented scale is a construction that consecutively alternates the intervals of a minor third and a half step. In his article "We are Revealing a Hand That Will Later Reveal Us: Notes on Form and Harmony in Coltrane's Work," John Schott also makes note of the cyclical nature of the triads in "One Down, One Up" by identifying them with identical patterns found in the *Thesaurus:* "Like *Giant Steps*, the inspiration for this piece may have been Slonimsky's *Thesaurus*." [30] Schott identifies five patterns from the *Thesaurus* that share a similar construction with the melody of Coltrane's "One Down, One Up." Jazz historian Carl Woideck provides a possible explanation for the derivation of these types of cyclical patterns in Coltrane's vocabulary when he writes that: "Even after Coltrane largely abandoned functional harmony in his work, he satisfied his need of organization

[29] Walt Weiskopf, *Intervalic Improvisation* (New Albany, Indiana: Jamey Aebersold Jazz Inc., 1995), 16.

[30] John Schott, "We Are Revealing a Hand That Will Later Reveal Us: Notes on Form and Harmony in Coltrane's Work" *Arcana: Musicians on Music,* ed. John Zorn (New York, NY: Hips Road and Granary Books, 2000), 349.

by deriving many of his improvisational ideas from intervallic patterns and synthetic scales."[31] Even in his day, Coltrane was generally acknowledged to be doing something out of the ordinary. Coltrane's contemporary, alto saxophonist Julian “Cannonball” Adderley, told Barbara Gardner in 1962, "...He is a definite departure. I don't mean that he was a radical departure from the tenor played by, say, Coleman Hawkins, because there were some radical departures before him. But there was a generally accepted, established style of play that was a mixture of Charlie Parker, Dexter Gordon, Lester Young, and some of Coleman Hawkins' style. And John decided, all of a sudden, that wasn't good enough for him."[32] John Coltrane himself confirmed this when he told Nat Hentoff, "...I'm still primarily looking into certain sounds, certain scales. Not that I'm sure what I'm looking for, except that it'll be something that hasn't been played before."[33]

Nicolas Slonimsky's *Thesaurus of Scales and Melodic Patterns* is an exhaustive work. In addition to the approximately seven hundred cyclic patterns constructed on the intervals that divide one octave equally, there are almost as many cyclic patterns for intervals that divide multiple octaves into equal parts. For instance, the quadritone (minor sixth) progression divides two octaves into three equal parts; the sequiquadritone (major sixth) progression divides three octaves into four equal parts; the quinquetone (minor seventh) progression divides five octaves into six equal parts; the diatessaron (perfect fourth)

[31] Ibid., 173.

[32] Ibid., 20.

[33] Ibid., 53.

progression divides five octaves into twelve equal parts; the septitone (major ninth) progression divides seven octaves into six equal parts; the diapente (perfect fifth) progression divides seven octaves into twelve equal parts and the sesquiquinquetone (major seventh) progression divides eleven octaves into twelve parts. There are also heptatonic scales and arpeggios, pentatonic scales, twelve-tone patterns, polytonal and polyrhythmic scales, bitonal arpeggios, palindromic canons and pandiatonic progressions. Slonimsky includes sections that show previously listed patterns in permutation and multinote configurations. At the end a synopsis of chords is added. In an article written for the journal *Keyboard Classics and Piano Stylist*, Slonimsky discusses the circumstances around the writing and publication of the *Thesaurus*:

> Back in 1948, it was almost impossible to find a publisher for the *Thesaurus*; my regular publisher was not at all receptive. I finally met an old German who was interested, and we found an engraver…the engraver charged me only $250, which is ridiculous for working all summer long. When we finally published it, everybody told me that I was wasting my time. I did get a letter from Arnold Schoenberg commending me for including all those 12 - tone scales, but my publisher regarded his letter as negative and refused to use it…It was published in the summertime. Before long, I received a note from my publisher: "We made it for August: one copy sold." Years later, something happened. I went into the Schirmer music store in New York, and there were a lot of copies of the *Thesaurus*, and I asked, "What are you doing with those?" "Selling them," was the reply. "Who is buying them?" "Jazz musicians." It turned out that John Coltrane was practicing out of the *Thesaurus*, and all the jazz musicians wanted their own copies. Now it is a best seller![34]

[34] Slonimsky, 37.

John Coltrane's total preoccupation with the *Thesaurus* can be gauged by an interview that David Demsey held in 1989 with Coltrane's pianist, McCoy Tyner. Tyner told Demsey that "Coltrane would leave for a road trip with the Quartet carrying nothing but his horn case and the Slonimsky book."[35] Coltrane was also keenly interested in the works of other classical composers. Lewis Porter provides some evidence, by way of an interview with saxophonist Jimmy Heath, that Coltrane was interested in composers such as Stravinsky and Shostakovich.[36] In his biography of John Coltrane entitled *Chasin' the Trane,* J.C. Thomas includes a quote by saxophonist Nick Nicholas: "I remember John and I playing Bartok. I had some albums, especially the *Concerto for Orchestra,* and we played along with the music, sometimes playing the exact lines and other times improvising over them. He was especially interested in the violin parts of the first and third movements."[37] Porter adds further information from pianist James Forman that while he was on the road with him, Coltrane would ask to borrow his copies of the Hanon and Czerny piano exercise books to practice out of, to the surprise of his fellow musicians.[38]

Porter eloquently describes the effect that John Coltrane's insatiable

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[35] Demsey, 176.

[36] Porter, 63.

[37] J.C. Thomas, *Chasin' The Trane: The Music and Mystique of John Coltrane* (New York: Da Capo Press, 1975), 105.

[38] Porter, 81.

appetite for these kinds of sources had on his musical style:

> What's unusual about Coltrane is that he seems to have built his style out of many of these resources, instead of leaving them at home strictly for practice and technique development. It would be as if pianists who studied Hanon's sequential exercises in their youth went on to invent or write music based on Hanon. That generally doesn't happen. Yet in Coltrane's case it did--quite literally.[39]

John Coltrane appeared to find nothing unusual about his inclusion of various influences from many different sources into his music. Coltrane rarely referred to the music he played as “Jazz”. In fact, it appears that he had an overall distaste for labels of any kind as they were applied to different styles of music. In an interview with Frank Kofsky in the summer of 1966 (which was published in 1970), Coltrane responded to a question about a phrase describing the "new" style in jazz. He answered: "Phrases, I don't know. They don't mean much to me, because usually I don't make the phrases, so I don't react too much. It makes no difference to me one way or the other what it's called."[40] At another point, Kofsky asked if there was a relationship of jazz to human conditions and events. Coltrane responded (in one of the few instances where he actually used the term "jazz"): "In my opinion I would say yes, because jazz--if you want to call it that; we'll talk about that later--is an expression of music…"[41] At still another spot in the same interview Coltrane was asked why he thought Third Stream

[39] Ibid., 216.

[40] Woideck, *The John Coltrane Companion: Five Decades of Commentary*, 133.

[41] Ibid., 136

Music didn't catch on with musicians. He replied: "I think it was an attempt to create something, I think, more with labels, you see than true evolution."

After studying Coltrane's responses, it seems that he considered differing styles of music to be all-inclusive. In this sense, there would be absolutely nothing unusual about employing a melodic phrase or pattern from a book, such as the *Thesaurus*, no matter what style of music it was derived from. Perhaps Coltrane himself summed up this attitude of diligence, openness, and unabashed experimentation best when in an interview for *Down Beat* magazine in September of 1960 he said:

> I've been devoting quite a bit of my time to harmonic studies on my own, in libraries and places like that. I've found you've got to look back at the old things and see them in a new light. I'm not finished with these studies because I haven't assimilated everything into my playing. I want to progress, but I don't want to go so far out that I can't see what others are doing. I want to broaden my outlook in order to come out with a fuller means of expression. I want to be more flexible where rhythm is concerned. I feel I have to study rhythm some more. I haven't experimented too much with time; most of my experimenting has been in a harmonic form. I put time and rhythms to one side in the past. But I've got to keep experimenting. I feel that I'm just beginning. I have part of what I'm looking for in my grasp but not all. I'm very happy devoting all my time to music, and I'm glad to be one of the many who are striving for fuller development as musicians. Considering the great heritage in music that we have, the work of giants of the past, the present, and the promise of those who are to come, I feel that we have every reason to face the future optimistically.[42]

Saxophonist Andrew White has published over six hundred transcriptions of recorded improvised solos by John Coltrane, including all of the examples

[42] Ibid., 102-3.

used in this study. This monumental achievement has no doubt given him a unique perspective from which to document Coltrane's developing musical style. White divides the body of John Coltrane's work into four periods of creative activity.[43] The first period begins in 1955 when Coltrane first recorded with the Miles Davis group, and continues through mid- 1957. The second period begins in mid-1957, the period in which Coltrane began working with Thelonius Monk, and continues through the end of 1959. White marks the third period as beginning in 1960 and continuing to the end of 1964. Coincidentally, the fourth and final period designated by Andrew White coincides exactly with the examples cited in this study, from the beginning of 1965 until his death in the summer of 1967. White makes an observation that is apparent in the musical examples of this document when he states, "Around the beginning of 1965, the music started to take on more abstract tones. Elements of impressionism such as implied dissonance came more into prominence, but the repertoire basically remained the same."[44] Indeed, the cyclic patterns diagramed in this study starting with the February recording sessions of 1965 are abstract in their construction and application. With the single exception of the pattern used in the melody and improvisation of the composition "One Down, One Up", these cyclic patterns seem to have been applied broadly throughout most of the compositions Coltrane recorded from 1965 until the end of his life. The use of these cyclic patterns as melodic vocabulary is dispersed so evenly in the improvisations of

[43] Andrew Nathaniel White III, *Trane 'n Me (A semi-autobiography): A Treatise on The Music of John Coltrane* (Washington, DC: Andrew's Musical Enterprises, Inc, 1981), 42.

[44] Ibid., 51.

this time period that it is impossible to determine a context for their inclusion in any one composition other than the example of "One Down, One Up" just mentioned. Even the cyclic patterns of implied key centers a major third apart, originally derived from the chord progressions of compositions such as “Countdown”, “26-2”, and “Giant Steps,” take on a context of their own in the form of melodic vocabulary. They eventually appear as a regular part of Coltrane's improvisations all the way up to his final recordings. The cyclic patterns derived from principal interval progressions can be found sporadically in Coltrane improvisations earlier than 1965, but this date marks the beginning of their widespread application.

In discussing the direction that John Coltrane's musical style would take in the fourth period, Andrew White makes the following observation: "Coltrane never encountered a radical departure especially in the later periods because the rules and influence of the be-bop period he went through were too strong to allow a radical departure".[45] Coltrane's musical style was rooted in deriving melodies from the set structure of a predetermined chord progression. This is what Andrew White is referring to when he states that Coltrane's background and influences wouldn't allow a radical departure. With the dissolution of chord structure in his late period compositions, the need for a unifying or organizational element in his improvisations would be a critical component for John Coltrane. Organizing at least parts of his improvisations around a principal interval progression would satisfy that need. Coltrane likely looked upon Nicolas

[45] Ibid., 52.

Slonimsky's *Thesaurus of Scales and Melodic Patterns* as a trove of material relevant to a structural principle upon which he could develop and organize a melodic vocabulary for inclusion into improvisation. On the surface this material from Coltrane's late period may appear random and haphazard. However, a detailed analysis of the melodic vocabulary relating to interval cycles reveals a structure of the highest order and detail. This sense of order and detail is a continuation of the high musical achievement attained by John Coltrane in his earlier periods.

The music of Coltrane's late period has not gained the popularity among his followers as the music of his previous periods. Writer Francis Davis recounts hearing a concert by John Coltrane in the fall of 1966, in which people began walking out fifteen minutes into the performance. Davis recounts that the people leaving were not uninformed listeners, but hardened "Coltrane addicts."[46] Davis goes on to remark that this attitude of indifference or even outright hostility towards the music of Coltrane's late period is still present: "On any visit to Tower or J & R, you're likely to find upwards of a dozen unauthorized Coltrane concert recordings, but none from later than 1965, the cut-off point even for many of those who pay him lip-service as the ultimate musical seeker."[47] However, analytical study of the post-1965 improvisations by John Coltrane bears out the fact that the high musical standards never ebbed. His careful attention to form and structure persisted even down to the very finest detail. It runs contrary to

[46] Woideck, *The John Coltrane Companion: Five Decades of Commentary*, 76.

[47] Ibid., 77.

logic that this would not be the case. On this particular subject, Andrew White states that Coltrane's "...solos show the work of an organized craftsman who hand-picked each phrase for optimal effect in the shape of each solo. Evidence of vast resources of predisposition in the sequence of events stated in each solo. Evidence of a hand-picked thematic language. Not a language that was haphazard, frivilous (sic) or spontaneous."[48]

An excellent example of what Andrew White refers to as “hand-picked thematic language” as applied in the improvisations of John Coltrane is the implied major thirds cycles. What started for Coltrane as an experiment in harmonic chord structure became a permanent part of his melodic vocabulary. The strong implication of V7 – I cadences in key centers a major third apart can be identified in Coltrane improvisations using a Roman numeral analysis in the compositions of 1965 to 1967. Tracing the derivation of this particular vocabulary leads to a better insight into the musical thought and developmental process as undertaken by an artist of the caliber of John Coltrane. It also provides the student of jazz improvisation examples of this particular cyclic vocabulary for study and assimilation.

Methodology. Part of this document will be devoted to the influence of Thelonious Monk, Miles Davis, and Ornette Coleman on the development and direction of John Coltrane’s musical style with special emphasis placed on the evolution of major thirds cycles as melodic vocabulary. Excerpts from numerous magazine interviews with Coltrane compiled by Carl Woideck in his book *The*

[48] White, 38.

Coltrane Companion: Five Decades of Commentary will be frequently utilized. Other articles useful to this topic come from writers and critics contemporary to that time period and the present. Woideck includes these commentaries in his book as well. Lewis Porter's definitive biography *John Coltrane: His Life and Music* includes first-hand information relevant to Coltrane's musical influences and relevant historical information, as does Mark C. Gridley's *Jazz Styles: History and Analysis*.

Melodic vocabulary analyzed in this study will include the patterns derived from John Coltrane's descending major thirds cycles used in the harmonic progressions of compositions such as "Countdown" and "Giant Steps". These musical examples are selected passages from Coltrane's improvisations over compositions from 1965 to 1967 that contain a harmonically static accompaniment. The analysis provided in the examples outlines the chord progressions implied by the melodic line. Tonal designations typically used in jazz chord progressions have been provided, wherever possible, above the staves in each of the musical examples. A corresponding Roman numeral analysis is provided beneath the staves of each example. In this analysis, a dominant seventh chord will be designated as "V7". The extensions of this particular chord could include the 9^{th}, 11^{th}, or 13^{th}. Alterations of the dominant seventh chord occur by raising the 9^{th}, 11^{th}, or 5^{th} one half-step (which would appear as #9, #11, and #5, respectively) or lowering the 9^{th}, 13^{th}, or 5^{th} one half-step (which would appear as b9, b13 and b5, respectively). Pitches that are not diatonic to the implied chord progressions, such as dominant seventh chord

alterations and passing tones, have been circled in the examples. Relevant musical analysis by David Demsey, Carl Woideck, John Schott, Lewis Porter, and Walt Weiskopf is included.

There are other patterns based on interval cycles in John Coltrane's melodic vocabulary of 1965 to 1967 similar to the example in the melody of "One Down, One Up" that would be difficult to classify without the terminology and context provided by Nicolas Slonimsky's *Thesaurus of Scales and Melodic Patterns.* These cyclic interval patterns were unlike typical jazz vocabulary used by other artists in improvisation up to that time. There is a significant resemblance of Coltrane's patterns to the patterns contained in the *Thesaurus*. For this reason, Slonimsky's patterns are the perfect models for analysis of John Coltrane's melodic interval cycles. Jazz historian Carl Woideck acknowledges this connection while citing a possible link between a melodic pattern belonging to Charlie Parker and the *Thesaurus*. He goes on to mention the "…work of saxophonist John Coltrane in the 1960's, when he was deriving patterns for sequencing from Nicolas Slonimsky's *Thesaurus of Scales and Melodic Patterns* (of course, Coltrane often superimposed his patterns over more harmonically static accompaniment)."[49] To facilitate the analysis of these particular patterns, the system used to diagram *Example 1* will be employed. In some instances, vertical brackets will be used to isolate individual cycles and their extrapolations in the excerpts. After a pattern from Coltrane's melodic vocabulary has been

[49] Woideck, *Charlie Parker: His Music and Life* (Ann Arbor: The University of Michigan Press, 1996), 188.

cited, the appropriate counterpart to that pattern in the *Thesaurus* will be presented with an identical example number but a different alphabetical designation.

CHAPTER 2: THELONIOUS MONK, MILES DAVIS AND ORNETTE COLEMAN: CONVERGING INFLUENCES

In the mid 1950s, when John Coltrane began his rise to prominence, Miles Davis, Thelonious Monk, and later Ornette Coleman, had an important influence on the direction Coltrane's musical style would take. Coltrane credits each of them in his interviews to such an extent this study would not be complete without at least a brief documentation of each of these musicians' roles in the development of his style. Additionally, and perhaps equally important to this particular study, these musicians have been cited by jazz historians and scholars as critical influences on the direction that Coltrane would choose to employ his developing cyclic progressions and patterns.

Miles Davis initially brought John Coltrane to the attention of the world by including him in the quintet that began recording for the Columbia record label in October of 1955. This marked his first stint with the Miles Davis group that would end in the spring of 1957, at which time he would join Thelonious Monk for one recording on the Riverside label and an important series of engagements at the Five Spot Café in New York. Writer Nat Hentoff comments on the significance of this event when he offered the following:

> Even more valuable to Coltrane, however, was his stay with Thelonious Monk - in between stints with Miles Davis in the late 1950's. That collaboration at the Five Spot Café in New York's East Village was a key historic event - of the musical order of Louis Armstrong playing second cornet to King Oliver at the Royal Garden Café in Chicago in the 1920's. I was there nearly

> every night all the weeks Monk and Trane played the Five Spot, and it was there I finally understood how nonpareil a musician, how dauntless an explorer Coltrane was. The excitement was so heady that soon musicians were standing two and three deep at the bar of the Five Spot nearly every night.[50]

John Coltrane also participated in informal sessions with Monk at his apartment that took place on a regular basis before their engagement at the Five Spot. As he describes it for interviewer August Blume,[51] they would sometimes spend all day on just one tune. This habit obviously led to a great amount of detailed work, as Coltrane tells Blume that he gained an appreciation from Monk of the finer points in music.[52] In the article he wrote for *Down Beat* in 1960, Coltrane would say:

> Working with Monk brought me close to a musical architect of the highest order. I felt I learned from him in every way - through the senses, theoretically, technically. I would talk to Monk about musical problems, and he would sit at the piano and show me the answers just by playing them. I could watch him play and find out the things I wanted to know. Also, I could see a lot of things that I didn't know about at all… I think Monk is one of the true greats of all time. He's a real musical thinker - there's not many like him. I feel myself fortunate to have had the opportunity to work with him.[53]

Coltrane would also tell Nat Hentoff that Monk "got me into the habit of playing long solos on his pieces, playing the same piece for a long time to find new conceptions for solos. It got so I would go as far as possible on one phrase until

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[50] Woideck, *The John Coltrane Companion*, 50.

[51] Ibid., 91.

[52] Ibid., 95.

[53] Ibid., 100-1.

I ran out of ideas. The harmonies got to be an obsession for me. Sometimes I was making music through the wrong end of a magnifying glass."[54]

There can be no doubt that John Coltrane was a different musician after the time spent with Thelonious Monk. Lewis Porter concludes, "Monk's compositions challenged Coltrane's knowledge of harmonic progression…" and notes an eyewitness account of Coltrane undergoing a transformation from opening night at the Five Spot.[55] Respected jazz critic Martin Williams wrote in 1967:

> The post-Monk Coltrane, then, was a prodigious saxophonist and a prodigious harmonicist. He was also a prodigious jazzman in that he had extended the range of his instrument, the textures of the sound he was able to evoke from it, and the human quality of his saxophone voice. Coltrane could superimpose a world of passing chords, substitute chords, and harmonic extensions upon a harmonic structure that was already complex. And at times he seemed prepared to gush out every possible note, find his way step by step through every complex chord, careen through every scale, and go beyond even that profession by groping for impossible notes and sounds on a tenor saxophone that seemed ready to shatter under the strain. From one point of view, Coltrane had pushed jazz harmonies as far as they could go. From another, such complex, sophisticated knowledge builds its own trap, and Coltrane, still a vertical thinker, was like a hamster trapped in a three-dimensional harmonic maze of his own making.[56]

As circumstances would have it, Coltrane would rejoin Miles Davis in 1958. This was an important move for John Coltrane due to the innovations of

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[54] Ibid., 51.

[55] Porter, 110.

[56] Woideck, *The John Coltrane Companion*, 43-4.

musical style that Miles Davis and his groups historically contributed to jazz. According to jazz historian Mark Gridley, Davis initiated many style changes in jazz with innovations that had a remarkable and widespread effect on the jazz landscape. He did this not only with his own contributions to musical style, but also by employing and collaborating with musicians, arrangers, and composers who represented the vanguard of almost every major style change during more than five decades of jazz history.[57]

In 1958, Davis was again on the verge of another innovation with the "modal" structure of composition that can first be heard in the piece "Milestones," on the *Milestones* recording of 1958.[58] This relatively sparse compositional technique ("Milestones" consisted of only two modes) was in stark contrast to John Coltrane's practice of dense chord construction (such as the major thirds cycles included in the compositions "Giant Steps" and "Countdown"). Bringing John Coltrane back to his group right at this time was pivotal. The convergence of these forces, dense chord substitution and the modal compositional structure, brought about a change in style equal to all others in the history of jazz. In his article “John Coltrane: A Life Supreme,” Peter Watrous recognized this when he wrote:

> Coltrane rejoined Miles at the end of the year; the group now featured Bill Evans on piano, Cannonball Adderley on alto, and a book which used modes as a way to simplify harmonic movement. It was completely antithetical to what Coltrane was

[57] Mark C. Gridley, *Jazz Styles: History and Analysis*, 7th ed. (Englewood Cliffs, NJ: Prentice Hall, 2000), 235-40.

[58] Ibid., 234.

> working on at the time--the superimposition of chords, dense harmonic webs--yet he fit in perfectly, using the harmonic spaces to experiment with all the chord substitutions he was thinking about. Miles places Coltrane's development: "I said, 'Trane, you can play these chords against the tonic of another chord,' and he was the only one who could do it. Lucky Thompson, maybe. Plus when I did *Milestones*, with Bill Evans, I wrote out these little things for Trane, these little things within a mode, to see what he could do with them. It was always a challenge for him. The chords I showed him were just like dominant chords against dominant chords, a minor, diminished and half step...he could play that in one chord and the trick is, not the trick, but to play them so you can hear the sound of the chord you're playing against. It's always a challenge if you're up in the air, because you're tired of the suspended diminished chord after everything...[59]

The Miles Davis group's next recording using the modal technique, the 1959 recording *Kind of Blue*, so popularized this style that it virtually changed the sound of jazz. Jazz musicians everywhere began employing the modal style.[60] One month before John Coltrane recorded *Kind of Blue* with the Miles Davis group, he recorded the album *Giant Steps* containing his two most popular thirds cycle pieces "Countdown" and "Giant Steps." In these compositions, Coltrane had the rhythm section play his major thirds cycles right along with him in the accompaniment. He soon came to realize that the modal accompaniment provided the perfect structure for him to develop his cycles melodically. He reflected on this in his 1960 article for *Down Beat.*

> After leaving Monk, I went back to another great musical artist, Miles. On returning, this time to stay until I formed my own group a few months ago, I found Miles in the midst of another stage of his musical development. There was one time in his

[59] Woideck, *The John Coltrane Companion*, 61.

[60] Gridley, 236-40.

> past that he devoted to multi-chorded structures. He was interested in chords for their own sake. But now it seemed that he was moving in the opposite direction to the use of fewer and fewer chord changes in songs. He used tunes with free-flowing lines and chordal direction. This approach allowed the soloist the choice of playing chordally (vertically) or melodically (horizontally). In fact, due to the direct and free-flowing lines in this music, I found it easy to apply the harmonic ideas that I had. I could stack up chords - say, on a C7, I sometimes superimposed an Eb7, up to an F#7, down to an F. That way I could play three chords on one. But on the other hand, if I wanted to, I could play melodically, Miles' music gave me plenty of freedom. It's a beautiful approach.[61]

In April of 1960, John Coltrane would leave the Miles Davis Group to form his own band. He would eventually realize that Miles' move away from compositions with dense chordal structures was the best approach for his band as well. In an interview with jazz dilettante Benoit Quersin, he was asked about this new modal application.

> Yeah, well, I've gone into that now. I've followed Miles' lead in that I think. He was doing that, that kind of work, when I was with him. And, at that time, I was working on the chords, but he was in the modal thing then. So, since I've had my own group, it has become necessary to use the modal concept because, it does free the rhythm section in it. They don't have to keep their strict chordal structure. And the soloist can play any structure he wants to. But the rhythm section is basically unhindered or uncluttered. So, most of the things we're doing now are in modes for parts, in sections, then there are sections when there are no harmonies at all, underlying, that is.[62]

Lewis Porter documents the change in Coltrane's approach that would eventually force him to realize that Miles' move away from compositions with dense chordal

[61] Woideck, *The John Coltrane Companion*, 101.

[62] Ibid., 121.

structures was best for his band as well.[63] Porter includes information from Coltrane's former drummer, Pete LaRoca, and an interview with Michel de Ruyter in 1961 that substantiates this claim.

> Pete LaRoca, who played drums with Coltrane in 1960, remembers discussing the repertory with Coltrane outside Small's in Harlem: "We were sitting in his car, and I was saying to him I thought the band got a better groove on the things that were modal...We got a heavy groove on 'Equinox', things were relaxed, whereas we were kind of hustling and chasing ourselves on that stuff from *Giant Steps*, where it had all those chords." Coltrane began to see that it was possible for him to have his cake and eat it too - he could play through his harmonic ideas on the saxophone, creating some of those "prettier" lines he strove for, while the rhythm section supported him with more open, modal backgrounds. He said in 1961: "Now I prefer the rhythm to be free. I had to get it beat into my skull [laughs], but I accept this principle now. At first I wasn't sure, because I was delving into sequences, and I felt that I should have the rhythm play the sequences right along with me, and we all go down this winding road. But after several tries and failures...at this, it seemed better to have them free to go - as free as possible. And then you superimpose whatever sequences you want over them."[64]

John Coltrane again referred specifically to the problem of the rhythm section duplicating the major thirds cycles in the accompaniment to "Giant Steps" in the following interview in 1962, but also mentions the influence of saxophonist Ornette Coleman, one of the leader's of the Free Jazz movement.

> At the time I left Miles I was trying to add a lot of sequences to my solo work, putting chords to the things I was playing, and using things I could play a little more music on. It was before I formed my own group that I had the rhythm section playing these sequences forward, and I made "Giant Steps" with some other guys and carried the idea on into my band. But it was hard to make some things swing with the rhythm section playing these chords, and Miles advised me to abandon the idea of the rhythm

[63] Porter, 165-6.
[64] Porter, 166.

> section playing these sequences, and to do it only myself. But around this time I heard Ornette who had abandoned chords completely and that helped me to think clearly about what I wanted to do.[65]

Around the same time that Miles Davis recorded *Kind of Blue* and John Coltrane recorded *Giant Steps,* saxophonist Ornette Coleman recorded the album *Free Jazz* (1960). This album truly was "free" in the sense that the improvisations were not based on a set chord progression.[66] That John Coltrane would have been interested at this time in this approach to improvisation is not surprising. If the modal approach taken by Davis was liberating to him, then the absence of a chord structure would be even more so. In the interview with Benoit Quersin, Coltrane acknowledges his debt to Coleman:

> Yeah, well, I feel indebted to him, myself. Because, actually, when he came along, I was so far in this thing [it's logical to assume he meant the thirds cycles], I didn't know where I was going to go next. And, I didn't know if I would have thought about just abandoning the chord system or not. I probably wouldn't have thought of that at all. And he came along *doing* it, and I heard it, I said, "Well, that - that must be the answer." And I'm of the opinion that it is now. That's the way I feel now. The way we do, we play, we do - right, since I have a piano, I still have to consider it, and that accounts for the modes that we play, but after all, you can't - we only -we only got a few, and after a while, that's going to get a little monotonous to do it on every song, so it might - there probably will be some things in the future that we're going to play, just as Ornette does, with no accompaniment from the piano at all. Except on maybe the melody, but as far as the solo, no accompaniment.[67]

[65] Woideck, *The John Coltrane Companion*, 107.
[66] Gridley, 285.

[67] Woideck, *The John Coltrane Companion*, 123.

The inclusion of a piano in the group would imply particular chords; therefore Coleman did not use one. Notice in the interview that Coltrane indicates that even the modal accompaniment may not go far enough to satisfy his improvisational approach. Coltrane was impressed enough with Coleman's "free" structure of composition that he even recorded several Coleman compositions in the summer of 1960 with three members of Ornette Coleman's group; Don Cherry on trumpet, Charlie Haden on bass and Ed Blackwell on drums on an album entitled *The Avant-Garde*.[68] Coltrane also thought enough of Ornette Coleman's techniques to study them from Coleman himself. In his survey “John Coltrane: A Life Supreme,” Peter Watrous includes several commentaries from musicians who knew Coltrane. One of them was Ornette Coleman, who had this to say:

> In the early 60's he was studying with me. He was interested in non - chordal playing, and I had cut my teeth on that stuff. He later sent me a letter which included thirty dollars for each lesson, and thanked me. [That influence] showed up very clearly because all of a sudden a guy who had been playing very 'legitimately' started playing strictly from his own spiritual and emotional state without worrying about his past. Had he lived, Trane would probably have legitimized that concept. I thought he had a beautiful tone. I thought it was very humane.[69]

The convergence of these three important influential musicians, Thelonious Monk, Miles Davis, and Ornette Coleman affected the direction of Coltrane's developing cycles, especially the major thirds sequences found in compositions such as "Giant Steps" and “Countdown”. The intensive harmonic

[68] Gridley, 265.

[69] Woideck, *The John Coltrane Companion*, 70.

study with Monk no doubt provided fluency and development in the application of the cycles. Miles Davis and Ornette Coleman provided ideas on the structural accompaniment that essentially made the major thirds cycle, such as the one that constitutes the chord progressions of "Giant Steps", part of the melodic vocabulary in Coltrane's improvisations. As a result of these suggestions, John Coltrane was now free to play these "sequences" as melodic ideas over a harmonically static accompaniment. This was a very different application of these cycles from their initial conception as chord structure. Coltrane hinted at this in the interviews when he mentioned that "Giant Steps" was an experiment. In 1961, when Benoit Quersin suggested the idea that "Giant Steps" was the "first step", Coltrane responded:

> Well, that album represented a few things that I'd been thinking of for about five or six months before it was made. The things that I was - the harmonic structures that I was working on there, I hadn't fully developed them and I didn't understand them. Actually, "Giant Steps" was, in quite a few respects, I don't know, an experiment. And the things - some things I could have used in there - in "Giant Steps" that I made a whole song out of, I could have probably taken - taken them and applied to something else, and they might have taken up a few bars and that have been it. But at that time, I was obsessed with the thing and it was all I had in my mind, because it was my first step into playing some extended chord structures, as I was trying to do, and that was those songs that were on there. Some of them had these particular structures in them. That was the first one - record that I made with them in there. And since then, I've done it, but it hasn't been so obvious because I've learned to use it as a part of something and not as a whole.[70]

[70] Woideck, *The John Coltrane Companion*, 120.

In this last sentence of his statement, Coltrane may have been referring to compositions like "But Not for Me" (the arrangement of the George Gershwin tune that Coltrane recorded in 1960), which used the major thirds cycle over a portion of the form.[71] However, as Coltrane indicated in the interview with Michel de Ruyter, he was already tiring of the rhythm section playing the thirds cycles along with him. It is quite possible that Coltrane was referring to passages of implied thirds cycles such as the one discovered by David Demsey on the modal composition "Impressions" (outlined in Chapter 1). The exact date of the 1961 Quersin interview is unknown. However, the Michel de Ruyter interview was November 11th, 1961 approximately a week after the recording of "Impressions".

In addition to the examples of implied major thirds cycles cited in Chapter 1, which include the compositions "Impressions", “Summertime” and “Limehouse Blues”, the next chapter will include eighteen examples of major thirds cycles from Coltrane’s improvisations which were performed over static harmony. The strong implication of the dominant - tonic harmony used in "Countdown" and "Giant Steps" is apparent in most of these examples and it is most likely the end result of the "experiment" that John Coltrane called "Giant Steps". The recording dates of these excerpts cover an approximate two-year period of time from February 18th, 1965 to February 22nd, 1967.

[71] Demsey, 164.

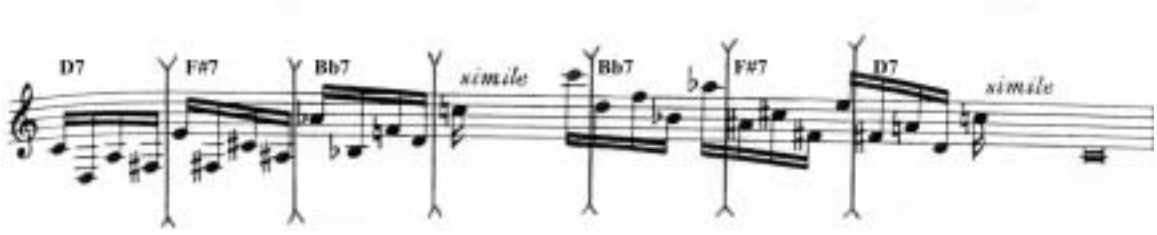
CHAPTER 3: ANALYSIS: COLTRANE'S MAJOR THIRDS HARMONIC CYCLES USED AS MELODIC VOCABULARY

The *Thesaurus of Scales and Melodic Patterns* contains over two hundred patterns based on the ditone progression (major third). Given the connection made by David Demsey of the ditone progression pattern #286 to John Coltrane's composition "Giant Steps", it is logical to assume that Coltrane used other ditone progression patterns out of the *Thesaurus* in his pursuit of cyclical material. Demsey claims, "Coltrane likely developed his awareness of three - key cycles on the saxophone through practicing this material in all keys."[72] Slonimsky labels one particular group of patterns included in the ditone progression portion of the *Thesaurus* as "Miscellaneous Patterns". These include sixteen patterns constructed using dominant seventh chords progressing by the interval of a major third and are further classified by root position, first inversion, second inversion, and third inversion. One of these patterns is included in *Example 4*. It consists of root position dominant seventh chords a major third apart ascending from D7 and descending from Bb7. The last chord outlined in the pattern is a D7 chord. Notice that the last note of the previous chord (F#7) is an “e”. This note is the lowered seventh of the F#7 chord and the ninth of the following D7 chord. The appearance of the ninth somewhere in the previous dominant chord occurs in all sixteen of the ditone progression dominant

[72] Ibid., 156.

7th patterns in the *Thesaurus* because of the relationship of the major third interval between the chords. Therefore, in all melodic patterns of this nature this b7th/9th relationship can act as a connection or "pivot" between the dominant seventh chords. Thus, in an analysis of Coltrane's major thirds cyclic patterns you would expect to see the frequent occurrence of the ninth appearing as one of the first tones in the implied dominant seventh chords.

Example 4: Nicolas Slonimsky*, Thesaurus of Scales and Melodic Patterns, pattern #372*



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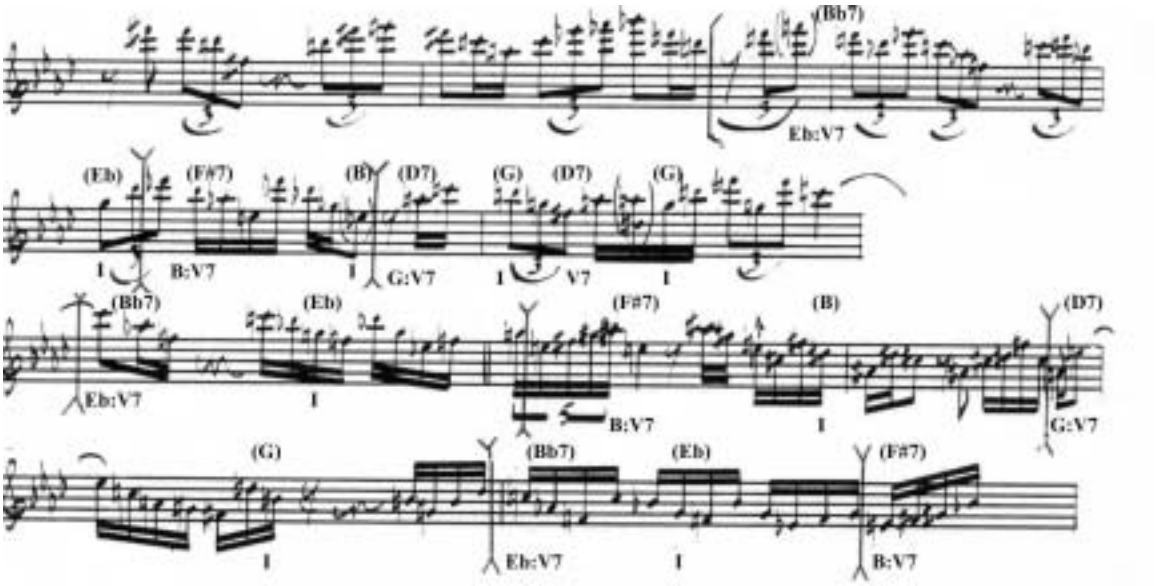
An excellent illustration of a melodically implied major thirds cycle is *Example 5*. Notice the frequent occurrence of the 9th in each of the dominant chords. This particular example is from John Coltrane's improvisation on the composition "Brasilia", which contains a harmonically static accompaniment identified by Andrew White as Eb minor (concert pitch). *Example 5* includes two complete cycles starting on an implied V7 – I cadence in Eb major. All of the dominant chords in these cycles eventually imply tonic with the appearance of the third of the tonic chords. Thus, the implied harmonic progression written as one complete cycle is Eb: V7 – I / B: V7 – I / G: V7 – I / Eb: V7 – I (tenor saxophone transposition). The cycles in this example descend by major thirds, exactly like

the cycle in the first half of the composition “Giant Steps”. David Demsey has identified other Coltrane compositions with descending major thirds cycles similar to the progression implied in *Example 5*. These include “Countdown” and “Fifth House” from 1959; “26-2”, “Satellite”, and “Exotica” from 1960.[73] The significant difference here is that the cycle implied by Coltrane on “Brasilia” is not played by the rhythm section in the accompaniment, while the Coltrane compositions from 1959 and 1960 include the thirds cycles as accompanying chord progressions.

Example 5 : John Coltrane, *Brasilia*, transcribed by Andrew White



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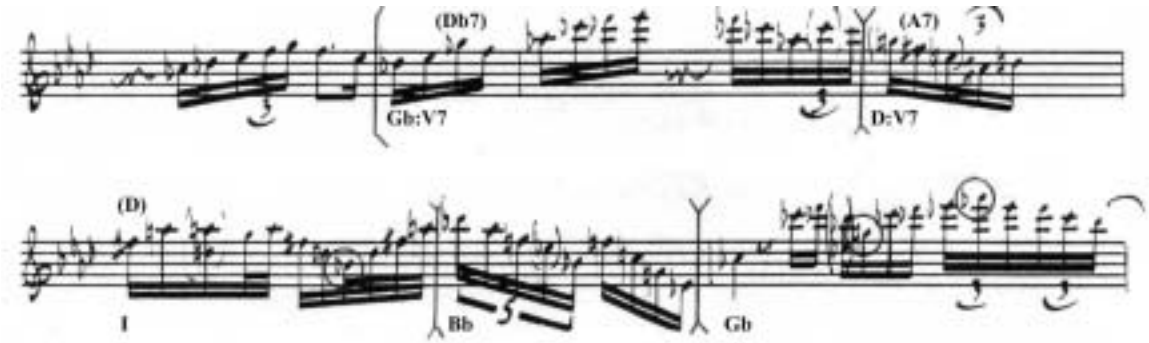
The following four excerpts that constitute *Examples 6, 7, 8,* and *9,* are all taken from John Coltrane's improvised solo on "Brasilia", the same solo from which *Example 5* was taken. A quick scan of all these excerpts reveals that Coltrane has systematically covered all twelve keys in this improvised solo by playing four

[73] Ibid., 179-80.

different major thirds cycles. *Example 6* does not imply the same clear V7 - I harmony that was observed in *Example 5*. In fact, one complete cycle is barely completed before the final Gb major harmony becomes ambiguous with the appearance of a g^2 and an f-flat^3 (circled in the example). Another interesting feature of *Example 6* is the introduction of the tonic pitch before the next key has been firmly established. This occurs when Coltrane plays b-flat^2 (circled in the example) while he is still clearly implying D major. Notice that this results in a Bb augmented triad (with a^2 added as a #7) that outlines the three key centers of this particular major thirds cycle (Bb, D, and Gb).

Example 6: John Coltrane*, Brasilia*, transcribed by Andrew White



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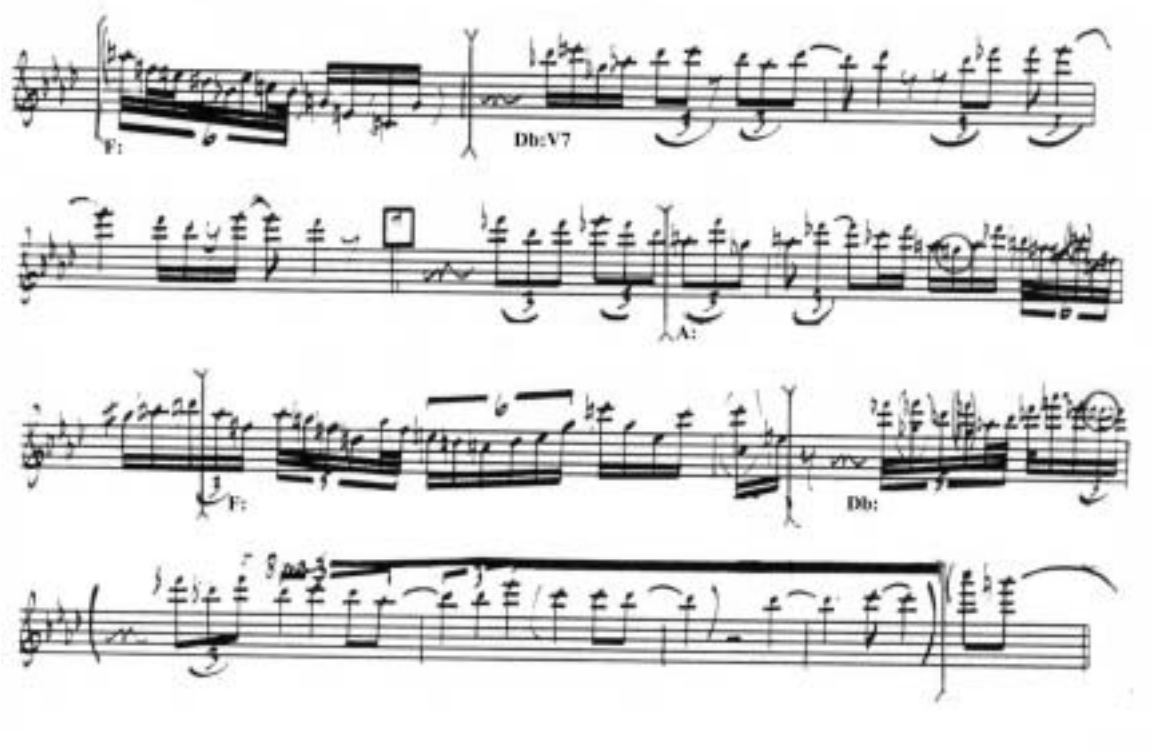
Example 7 follows the pattern set by *Example 6* in that the implied harmony is not V7 - I in each of the keys of the cycle. The cyclic relationship is noticeably apparent since the material Coltrane played in the initial key of F major to start the cycle resembles the material played in the return of F major. Pitches that appear to be outside the implied key structure have been circled. These include

a g^2 in the A major portion of the cycle (a "c" natural is also indicated by Andrew White with parenthesis) and a d^3 used as a passing tone in the last Db major portion of the cycle.

Example 7: John Coltrane*, Brasilia*, transcribed by Andrew White



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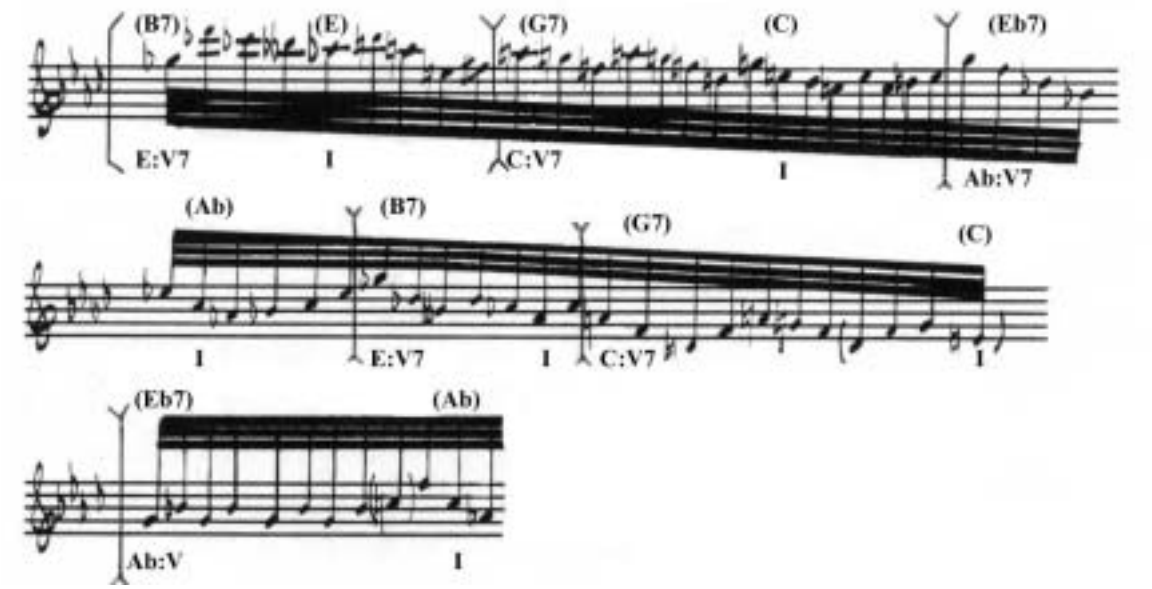
Example 8 is an excellent illustration of the 9th appearing near the beginning of each of the dominant chords that introduces the implied tonal centers. It appears as the first or second note in each of the implied key centers of E major, C major, and Ab major in which the ninth of each dominant seventh chord is either the first or the second note, except in the last Ab major section where it appears just before the implied resolution to tonic.

Example 8: John Coltrane, Brasilia, transcribed by Andrew White



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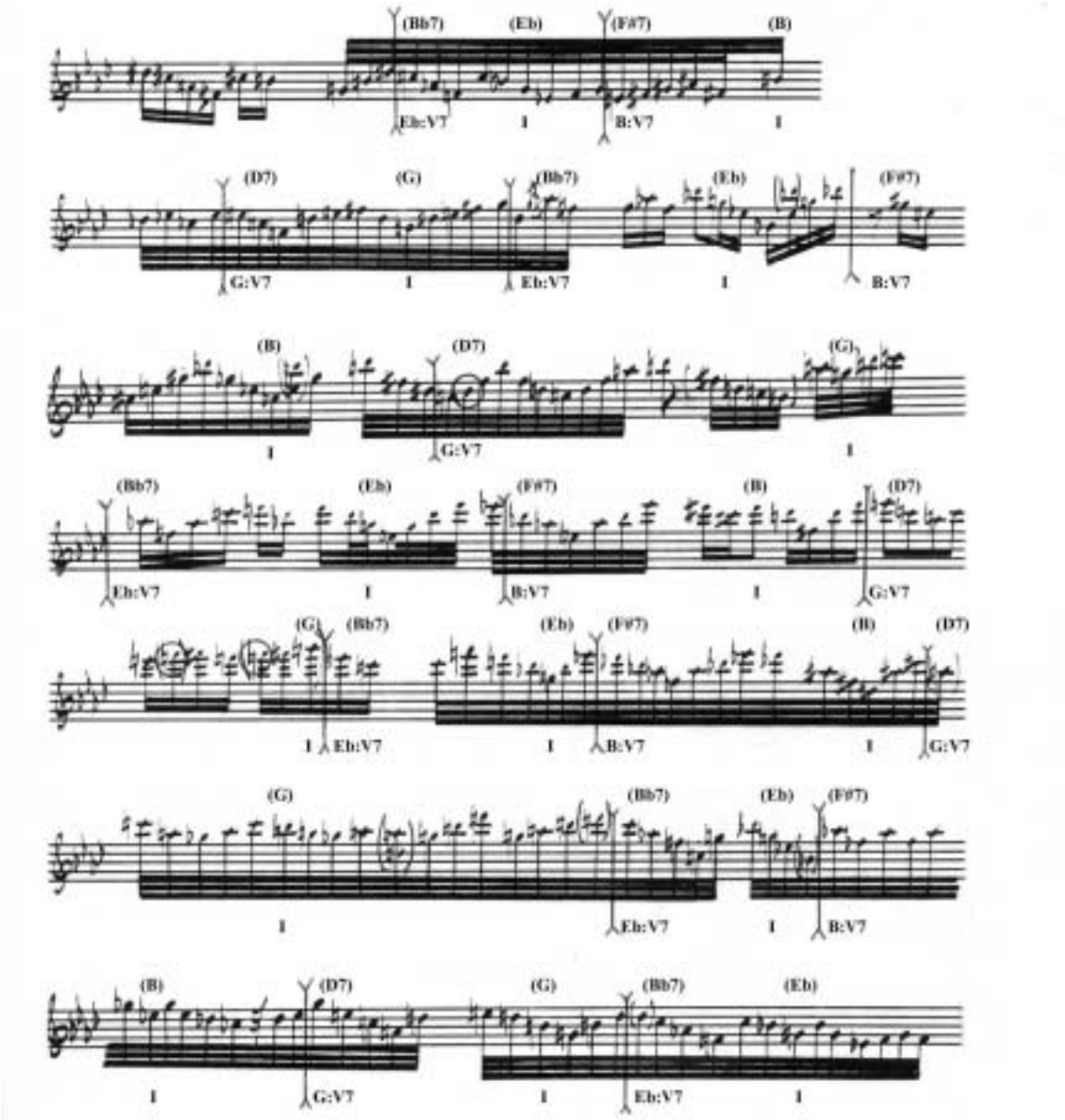
Example 9 is a masterful passage by Coltrane that covers five complete cycles over implied key centers of Eb major, B major, and G major. Here we see a clear V7 - I implication in each key that was also evident in *Example 5*, which covered the same three keys. The only aberrations that can be found are altered ninths in the dominants that occur in two of the G major sections (which have been circled in the excerpt).

Example 9: John Coltrane*, Brasilia, transcribed by Andrew White*



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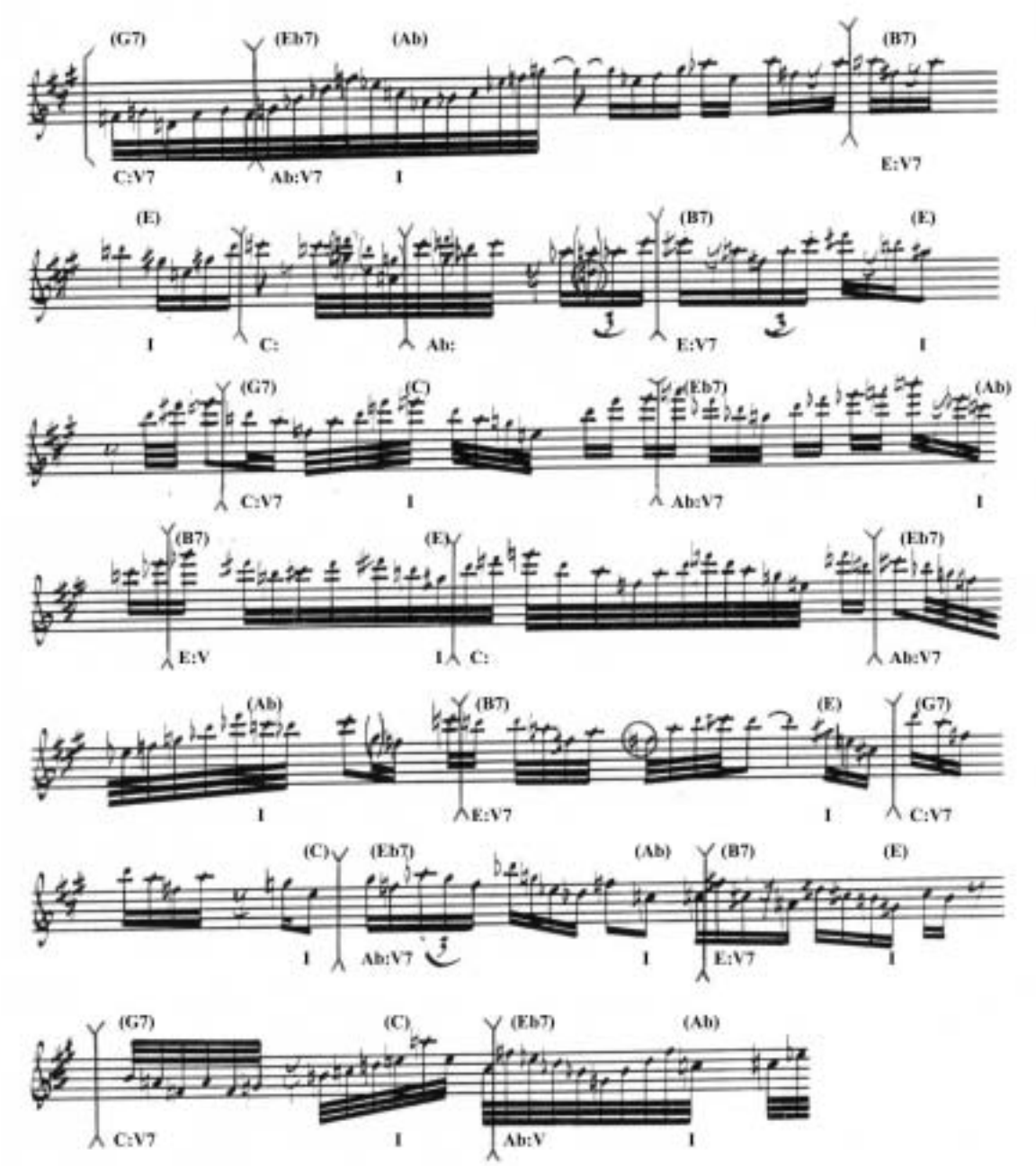
As mentioned earlier, Coltrane covers all twelve keys in this improvisation by starting each of the cycles in the above examples on four different notes one half step apart. Simply listing the tonal centers starting with *Example 6* can

reveal this logic. In that example the key centers are Gb major – D major – Bb major; in *Example 7* Coltrane plays the cycle down one half-step to F major – Db major – A major; the sequence is an additional half-step lower in *Example 8* to E major - C major- Ab major; and finally, in *Example 9* it is Eb major – B major – G major. It is important to note that *Examples 6* and *7* occur adjacent to one another in the beginning of the improvisation, while *Examples 8* and *9* occur adjacent to one another at the end. The symmetrical construction is also revealed in another way in that all of the cycles (including *Example 5*) are *descending* major thirds cycles.

Example 10 is from Coltrane's improvised solo on the composition "Nature Boy" by Eden Ahbez, recorded at Rudy Van Gelder's studio on February 18th, 1965. It is another excellent example of an extended implied major thirds cycle. The pattern encompasses over five complete cycles implying the key centers of C major, Ab major, and E major. As can be seen in this example, with the exception of two of the patterns in C major, there are very few departures from the implied dominant seventh – tonic harmony. In fact, the example contains many instances of the now familiar 9th occurring on the implied dominant chords. The only unfamiliar note is the implied altered b5 (circled) in the penultimate E major pattern. This can be interpreted as an anticipation of the following C major pattern.

Example 10: John Coltrane, Nature Boy, transcribed by Andrew White



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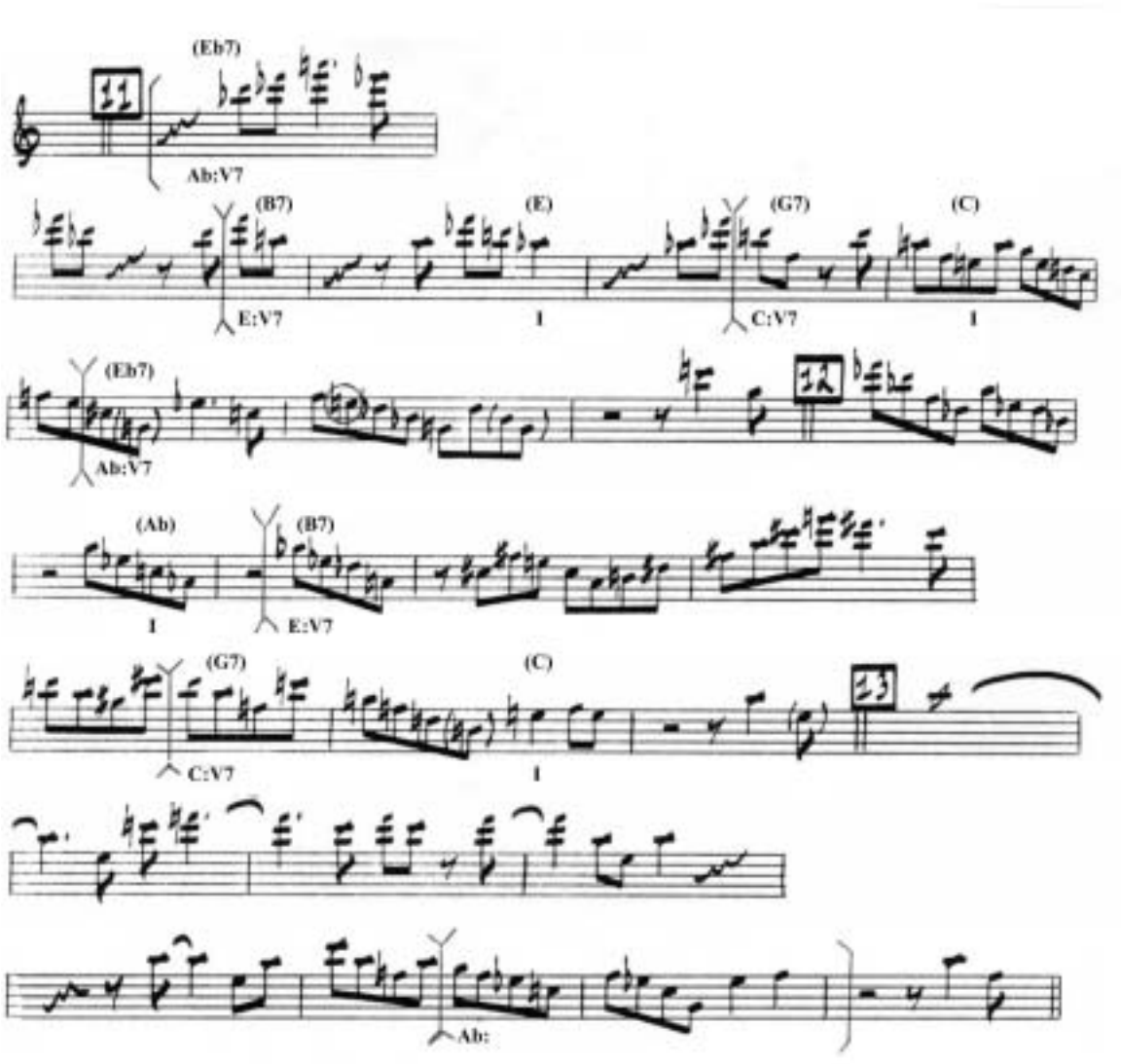
After the recording session in May of 1965 that produced "Brasilia", John Coltrane's next three recording sessions provide the most frequent and clearest examples of implied major thirds cycles. These occurred on May 25th, June 10th, and June 16th of 1965. They all took place at Van Gelder's studio in Englewood Cliffs, New Jersey with the same personnel from John Coltrane's Quartet; McCoy Tyner on piano, Jimmy Garrison on bass, and Elvin Jones on drums. The only exception to this is that Roy Haynes replaced Elvin Jones on the May 26th session. The compositions include "After the Crescent" and "One Down, One Up" recorded on May 26th; "Untitled Original 90314", "Transition", and "Peace and After" (which is the second of the five movement work entitled "Suite") recorded on June 10th; and "Untitled Original 90320" recorded on June 16th. The untitled works from the recordings on June 10th and 16th carry a numerical designation assigned by the record company (Impulse).

Examples 11 and *12* are examples of implied descending major thirds cycles with the typical appearance of the 9th on the implied dominant chord, which in turn implies the resolution to tonic. The only non-diatonic pitch implied in *Example 11* is the occurrence of a b9 on the dominant of the second Ab major pattern. *Example 12* contains a #5 on the implied dominant seventh chord in the first Ab major pattern. This tone is also the root of the B7 chord of the following E major pattern. The harmonic structure (as indicated by Andrew White) is a thirty-two bar chorus in a modal AABA form. *Example 11* contains two complete major thirds cycles (encompassing twenty-four measures) beginning with an implied Ab major pattern. This pattern starts on a "B" section and ends on an "A" section.

Example 12 is exactly sixteen measures long and is played entirely over "A" section harmony.

Example 11: John Coltrane, After the Crescent*, transcribed by Andrew White*



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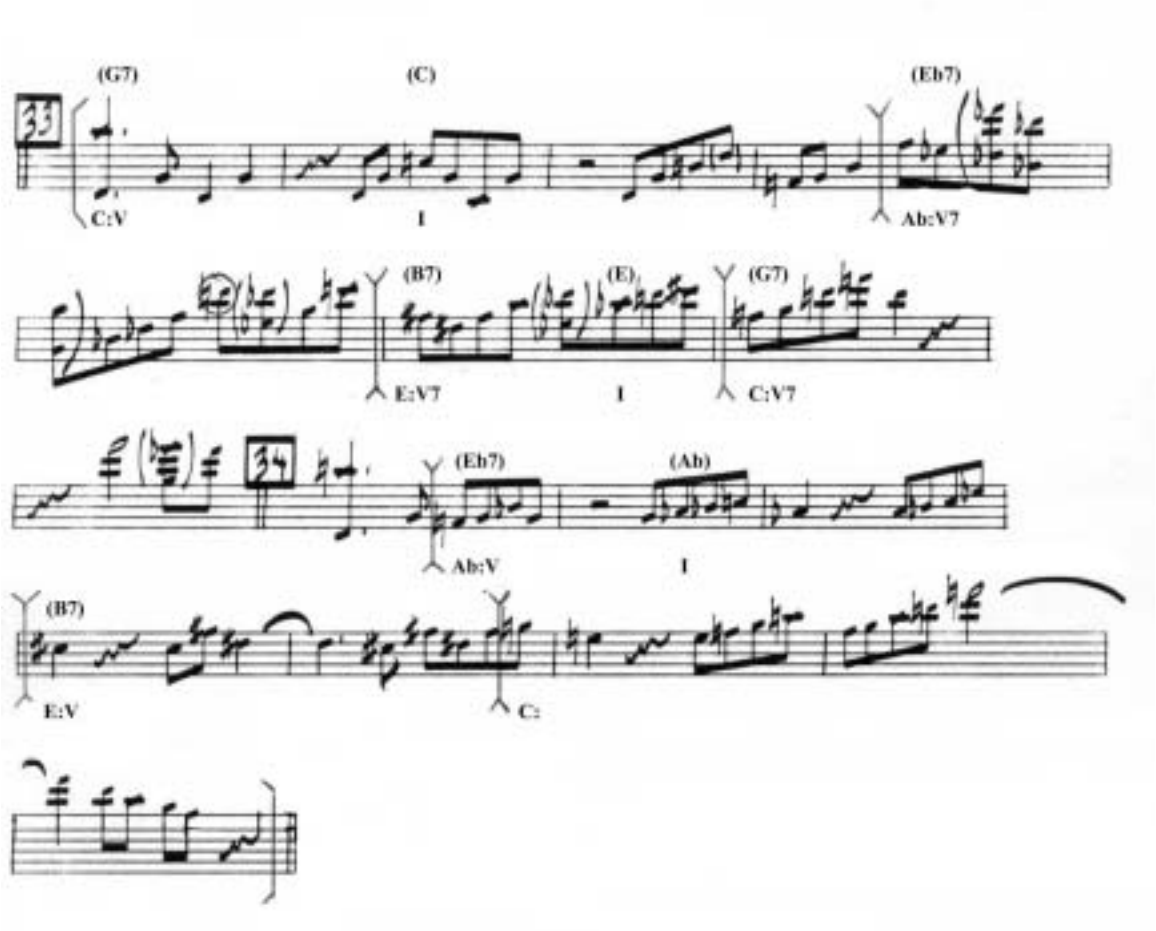
Example 12: John Coltrane*, After the Crescent,* transcribed by Andrew White



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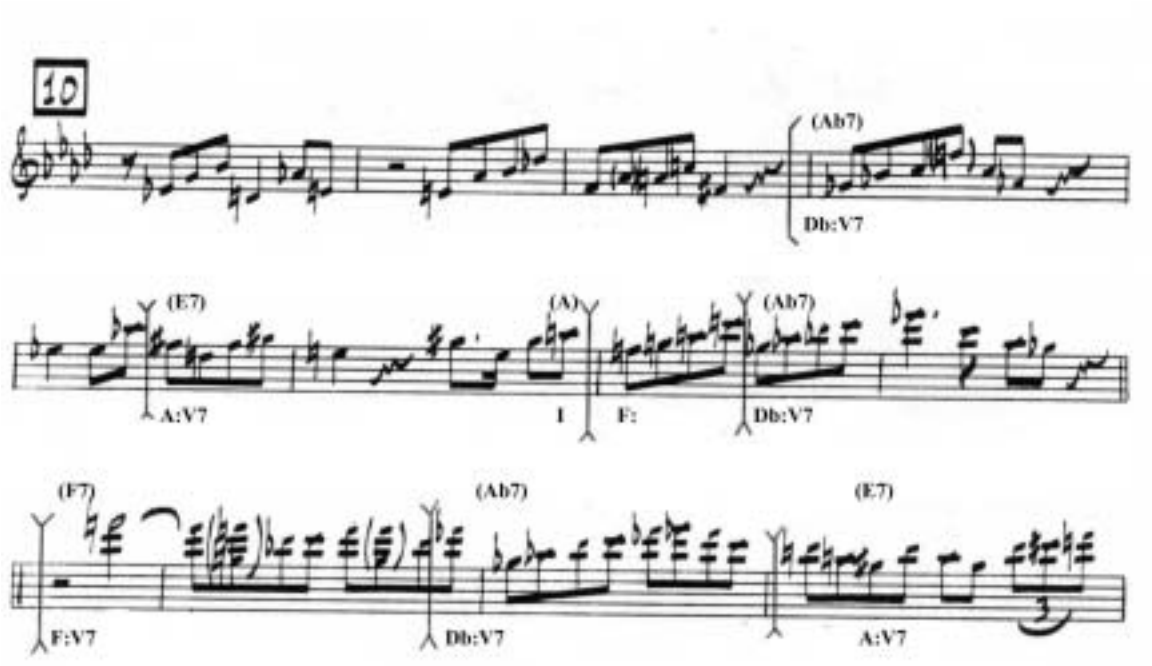
There are two recordings of the composition "One Down, One Up" that have currently been made available. *Example 13* and *14* are from the same recording session on May 25th that produced "After the Crescent". The other recording of "One Down, One Up" was from Coltrane's appearance at the Newport Jazz Festival on the evening of July 2nd, 1965. This composition has a melody that consists of two augmented triads (C+ and Db+) one half step apart over a Bb7#5 chord (concert pitch) for sixteen measures that constitutes two

eight bar "A" sections. Two more augmented triads (Bb+ and B+) that make up an eight measure melody in the "B" section over an Ab7#5 chord (concert pitch). This is followed by the return of another eight measure "A" section. *Example 13* occurs entirely over an "A" section of the composition. This is significant because one of the augmented triads (Db+) in the melody of the "A" section has the same notes as the tonic pitches of the key centers of the cycle implied in *Example 13*. Given that Coltrane used these augmented triads as material for improvisation in this piece, he has simply expanded the concept to include not only the pitches of the Db+ triad, but implied key centers using the three pitches of that triad as tonic. He has repeated this process in *Example 14* with a cycle implying the key centers of Gb major, D major, and Bb major over a "B" section in the form that would correspond to the notes of a Bb+ triad from the melody.

Example 13: John Coltrane*, One Down, One Up,* transcribed by Andrew White



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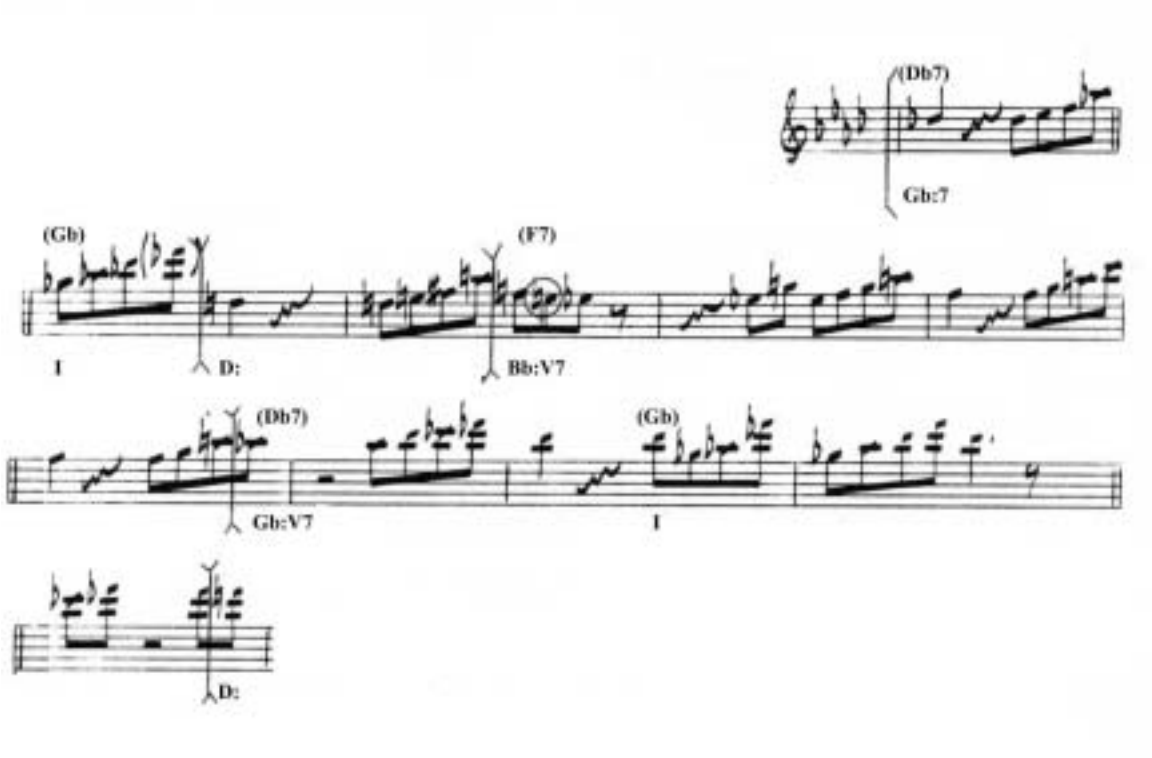
Example 14: John Coltrane*, One Down, One Up,* transcribed by Andrew White



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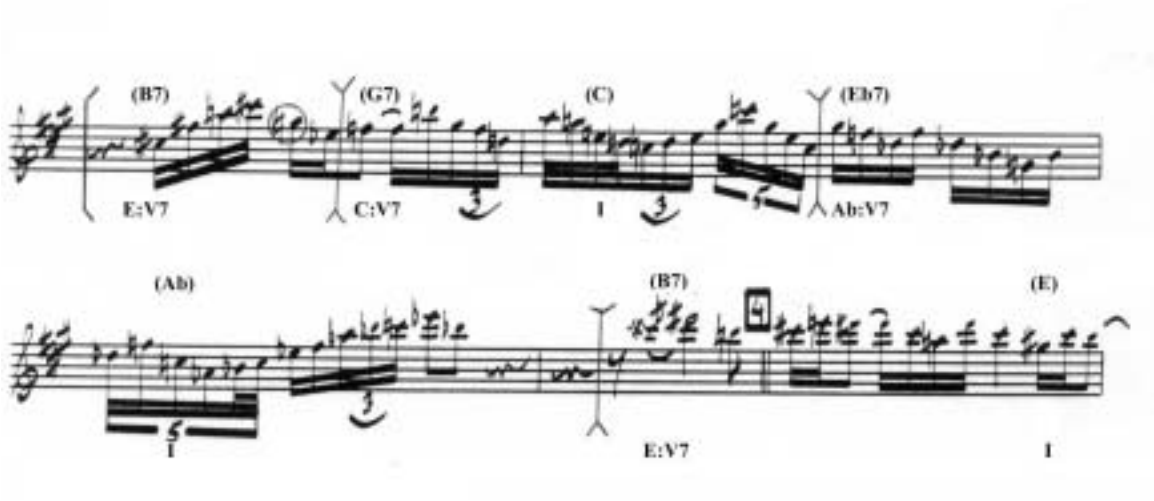
Example 15 is a complete cycle implying the key centers of E major, C major, and Ab major. It is unremarkable when compared with the other examples except for the feature that it shares with "After the Crescent" (*Example 12*). In *Example 15*, the occurrence of g^2 as a #5 in the B7 chord (circled in the example) is also the root of the following implied G7 chord in the key of C major. This occurred in *Example 12* between the implied key centers of Ab major and E major.

Example 15: John Coltrane, *Peace and After (from Suite)*, transcribed by Andrew White



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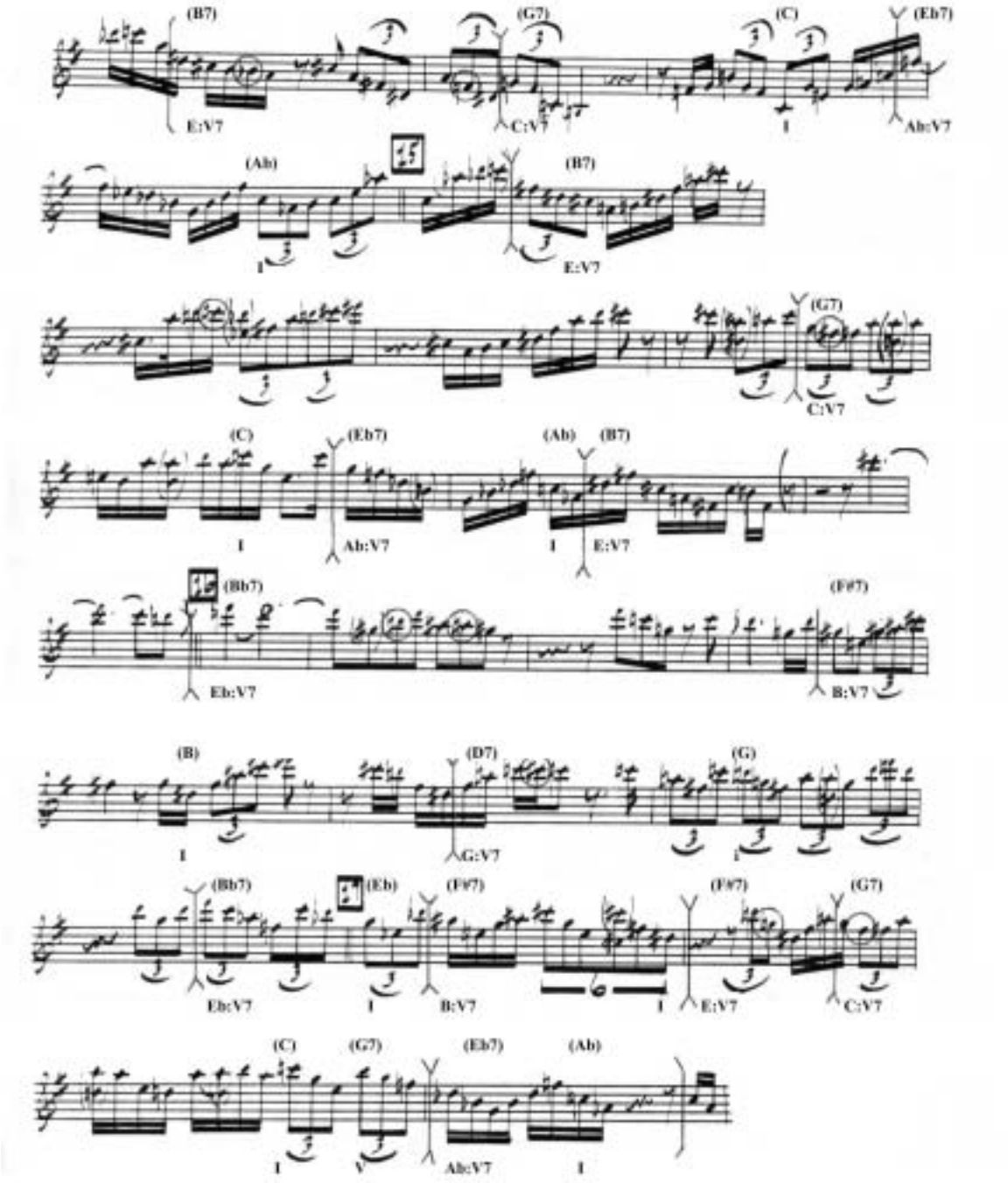
Example 16 is the first illustration of Coltrane moving directly from one implied major thirds cycle to an entirely different one. He begins with two complete cycles implying the descending key centers of E major, C major, and Ab major. Coltrane then implies a complete cycle over Eb major, B major, and G major only to return to the implied key centers of the previous cycle. *Example 16* is taken from the improvisation on the composition "Transition".

Example 16: John Coltrane*, Transition,* transcribed by Andrew White



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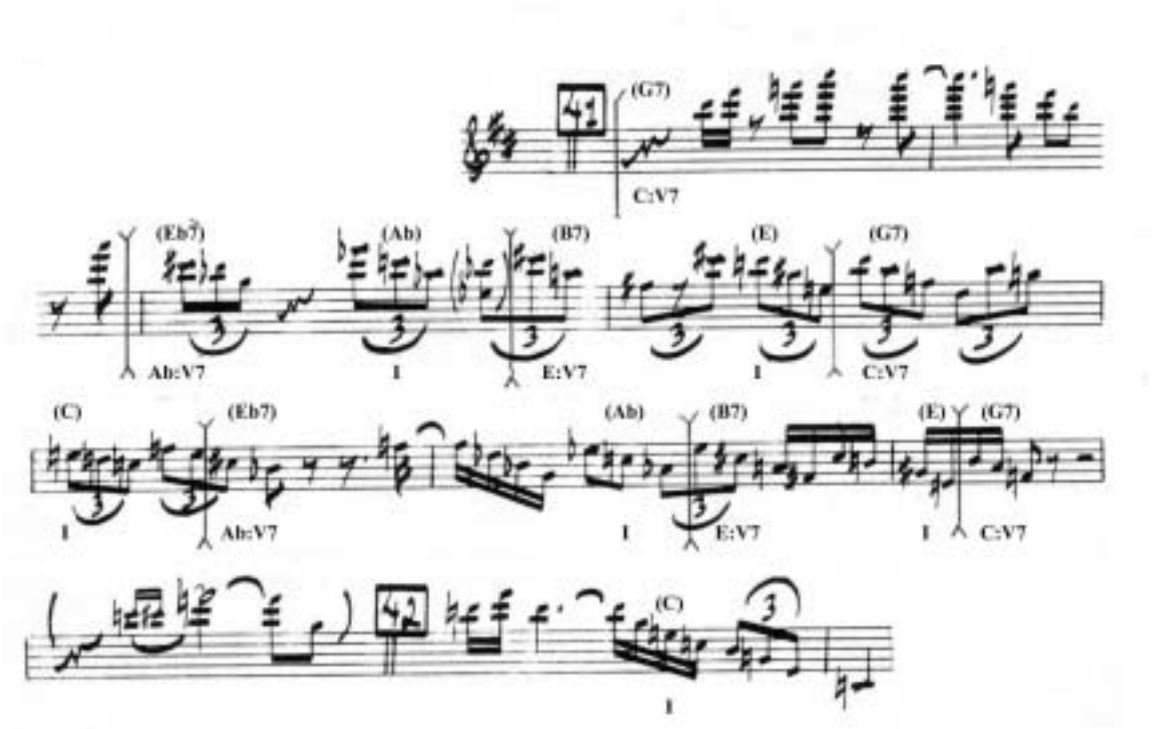
Two final examples from the recording session on June 10th, 1965 appear as *Examples 17* and *18*. They are taken from Coltrane's improvisation on the composition "Untitled 90314". *Example 17* contains two complete cycles with clearly implied V7 - I cadences in the keys of C major, Ab major, and E major. *Example 18* contains three complete cycles implying the key centers of G major, Eb major, and B major.

Example 17: John Coltrane*, Untitled 90314*, transcribed by Andrew White



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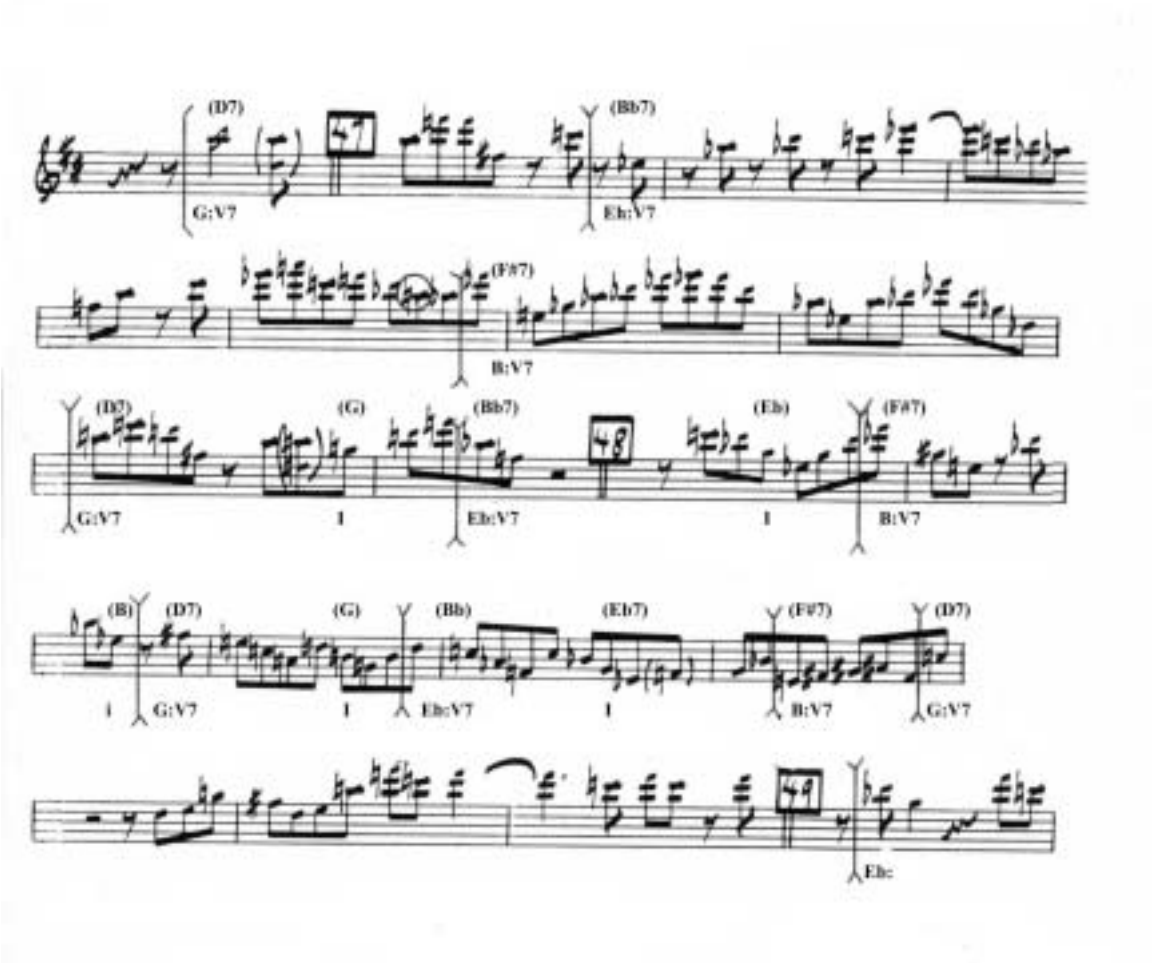
Example 18: John Coltrane, *Untitled 90314*, transcribed by Andrew White



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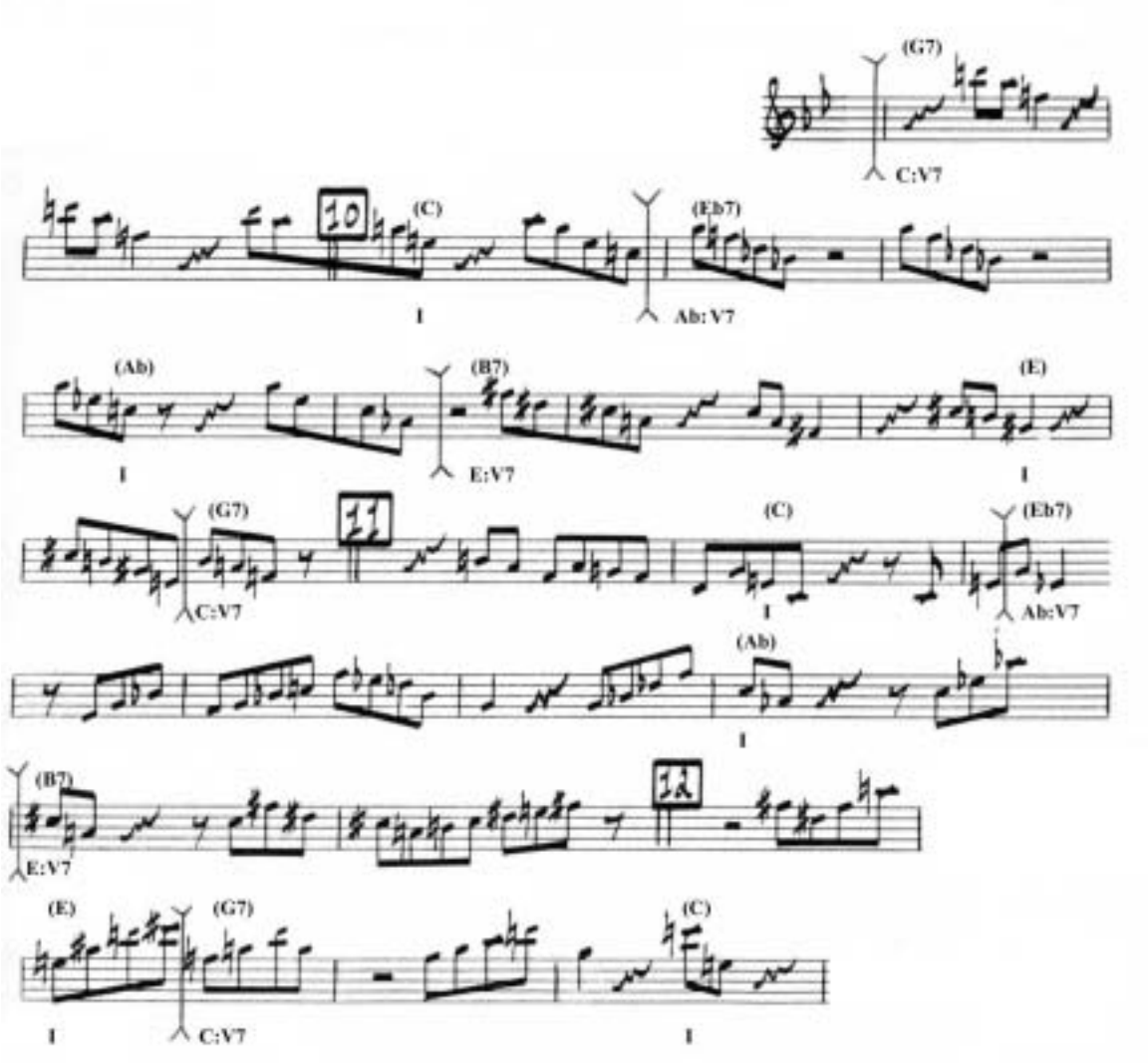
Examples 19 and *20* are from the composition "Untitled 90320" recorded on June 16th, 1965. *Example 19* implies two complete cycles over C major, Ab major, and E major with the typical appearance of the 9th on the impied dominant seventh chords. *Example 20* is a similar passage one half step down over B major, G major, and Eb major encompassing over two complete cycles.

Example 19: John Coltrane*, Untitled 90320*, transcribed by Andrew White



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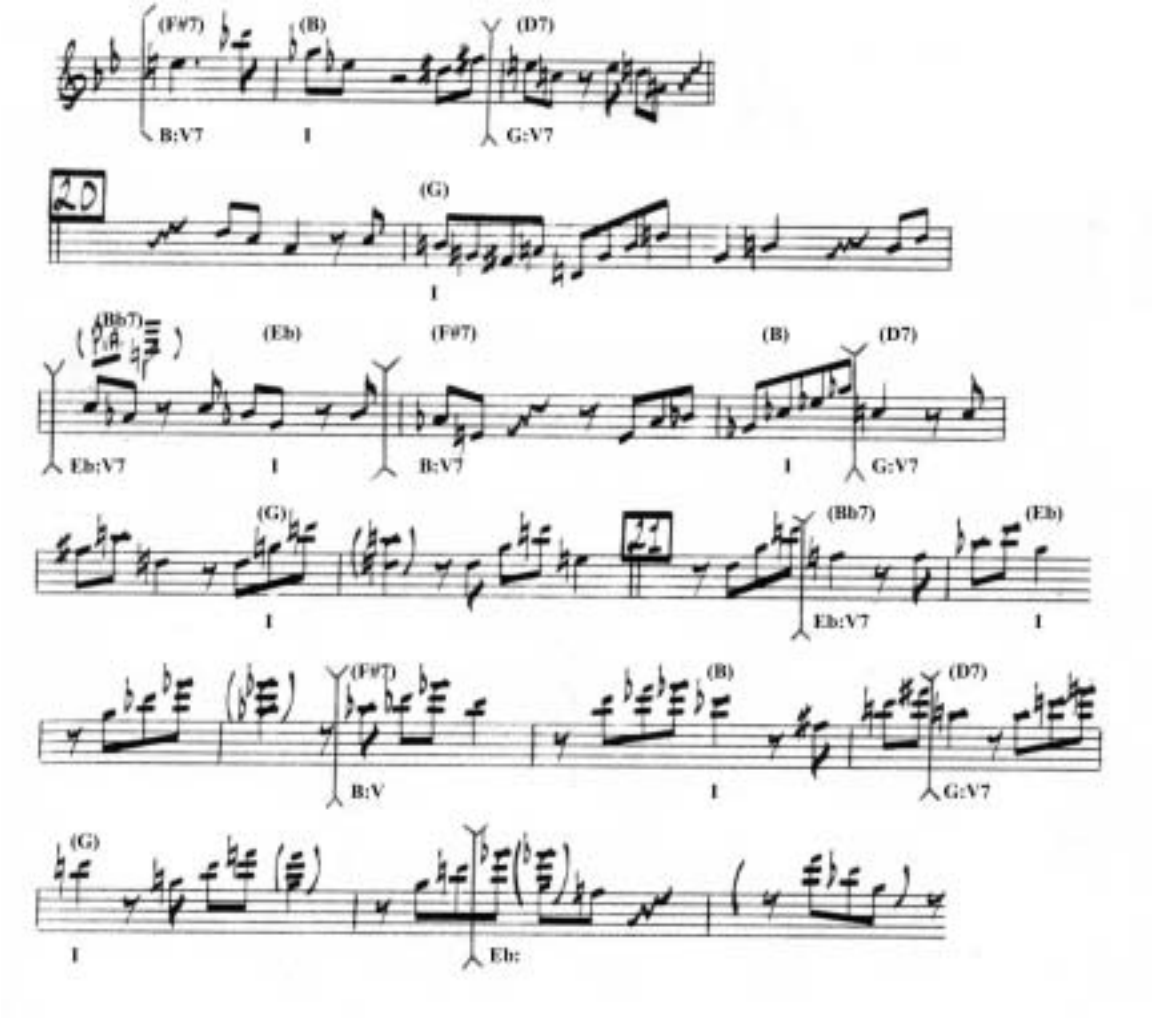
Example 20: John Coltrane, *Untitled 90320*, transcribed by Andrew White



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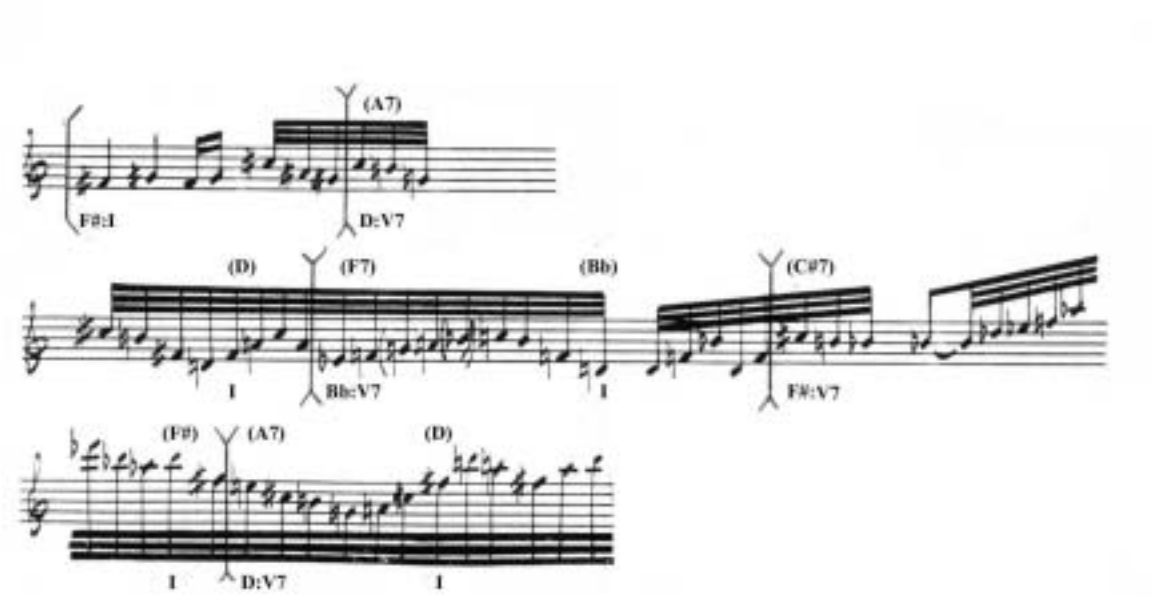
On February 22, 1967 John Coltrane recorded six duets with drummer Rashied Ali, which would ultimately be released on the Impulse recordings *Interstellar Space* and *Jupiter Variation*. Two examples of major third relations from one of these compositions, entitled "Mars", have been included here to highlight the differences in the major thirds cycles from 1965. On these duet recordings, the examples of third relations are much more numerous, but less

well defined. *Example 21* has been extracted from a portion of Coltrane's improvisation in which three different major thirds cycles can be discerned. *Example 21* is the clearest and longest of these cycles. As can be seen in the example below, it contains one complete implied cycle over the key centers of F# major, D major, and Bb major (plus one extra pattern in D major). A close examination reveals that it is still possible to discern a dominant seventh - tonic relationship in all but the first pattern in F# major. However, it is much more compact than the five cycle excerpts from 1965. *Example 22* is very similar in construction. It appears somewhat later in the improvisation and covers a little over one complete cycle implying the key centers of C major, Ab major, and E major. Again, a dominant seventh - tonic relationship can be discerned in all but the first C major pattern.

Example 21: John Coltrane, Mars, Transcribed by Andrew White



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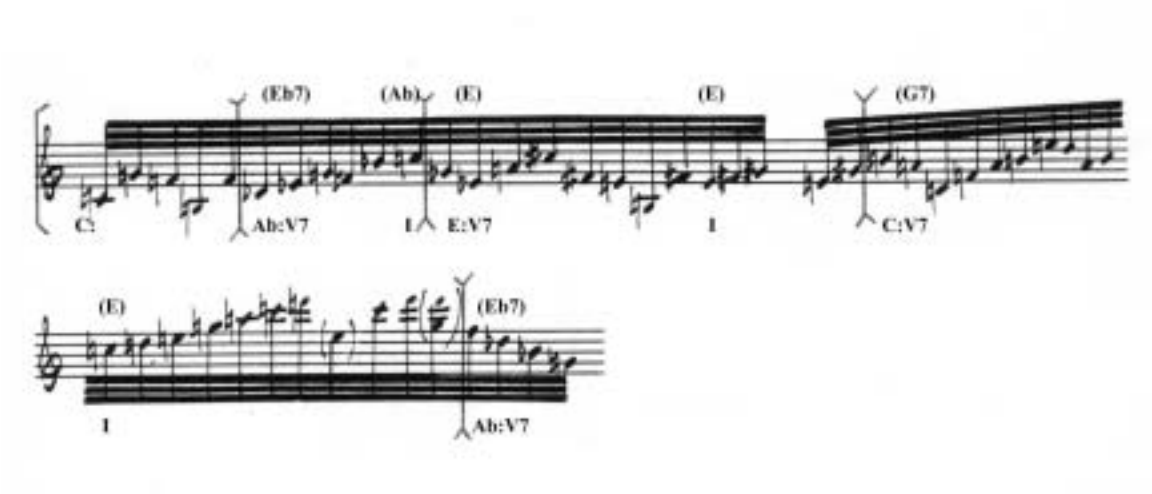
Example 22: John Coltrane, *Mars*, Transcribed by Andrew White



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It is apparent in reading John Coltrane's interviews that he desired more freedom than the typical repeated chorus structure of standard jazz repertoire. In his interview with Valerie Wilmer in 1962, Coltrane indicated that this would be his approach.

> Recently I've been doing songs with the rhythm section having more freedom and not being bound to chordal structures, but still giving the soloist just as much freedom. Sometimes we start with one chord and drop it later, and improvise on the bass line or the piano, and this I find much easier to do on original material. I haven't done it on a 'standard' yet, but maybe I will soon. But unless I find a simple one, there are no more breakthroughs on those standards for me.[74]

John Coltrane's pianist, McCoy Tyner, confirmed this idea in an interview for *Down Beat* in 1963.

> A rhythm section is supposed to support and inspire a soloist, and it is a very sensitive thing...Sometimes when John is soloing I lay out completely. Something very important is

[74] Woideck*, The John Coltrane Companion*, 107-8.

> involved here, I think. The pianist tends to play chords that the soloist knows are coming up anyway. Normally, all the pianist does is try to give him a little extra push in the accompaniment and possibly suggest some new ideas. When the pianist isn't there, the soloist can concentrate purely on what he has in mind with fewer limitations or boundaries. Otherwise, what the pianist plays can attract his attention away from his original thought. So it is all a matter of giving the soloist more freedom to explore harmonically. [75]

By 1966, Coltrane had reached the point where he would tell Frank Kofsky that "...we don't follow what the piano does anymore, because we all move in our own directions."[76] One of these "directions" for John Coltrane is clearly the practice of using major thirds cycles as melodic vocabulary for improvisation. Ironically, these major thirds cycles are one of the remnants of Coltrane's methods for mastering multi-chord structures. What started for him as a means for mastering difficult chord progressions and chord substitutions in his own compositions and those of standard jazz repertoire became one of the solutions that provided direction for improvisation over compositions with modal or free structure. The experiment that began with the compositions "Countdown" and "Giant Steps" in 1959 that used major thirds cycles as chord structure can effectively be traced to melodic vocabulary in the improvisations of some of his last recordings in February of 1967.

[75] Ibid., 182.

[76] Ibid., 140.

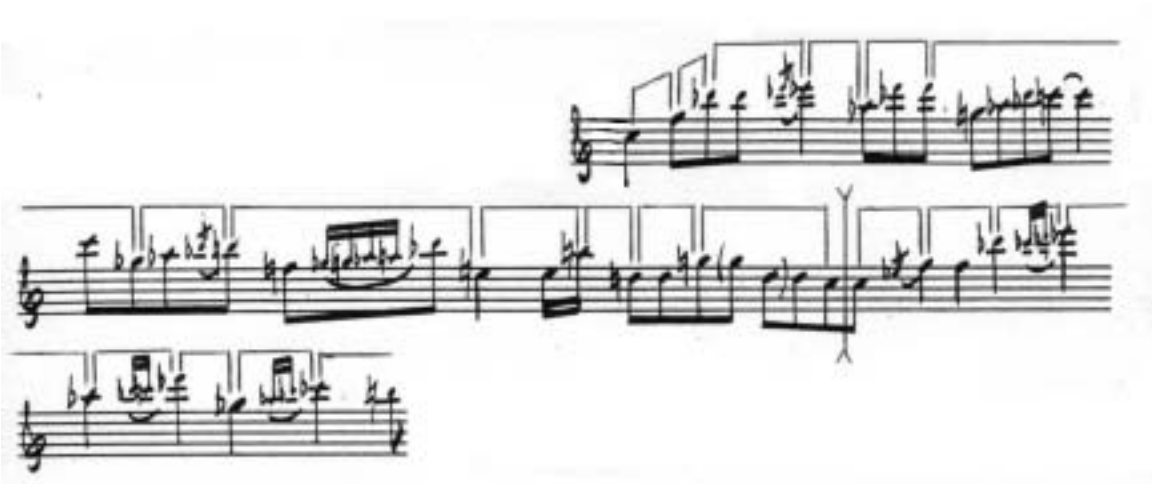
CHAPTER 4: INTERVAL CYCLES IN COLTRANE'S MELODIC VOCABULARY BASED ON PATTERNS FROM SLONIMSKY'S *THESAURUS*

The interval cycles used by John Coltrane were unlike typical jazz vocabulary used by other artists in improvisation up to that time. Coltrane's interval cycles are so similar to Slonimsky's cyclic patterns that the terminology in the *Thesaurus* is a convenient means with which to classify and analyze them. They will be categorized by the same classifications in which Slonimsky divides the *Thesaurus.* Four of the categories of Coltrane's cyclic patterns analyzed in this chapter are based on the progression of intervals that divide one octave into equal parts: the tritone progression (augmented fourth), the ditone progression (major third), the sesquitone progression (minor third), and the whole-tone progression (major second). There are also several patterns in this chapter that are based on the diatessaron progression (perfect fourth).

Example 23 is an excerpt from one of the duets recorded with Rashied Ali entitled "Mars" (1967) and contains a cycle beginning on c^2 and then proceeding by the interval of a perfect fourth (or its inversion, the perfect fifth) until c^2 is reached again. Once Coltrane finishes one complete cycle of fourths, he immediately starts on c^2 again and completes eight more pitches of another cycle of fourths. This example includes a good illustration of the horizontal brackets that will be used in this chapter to indicate the progression of the principal

interval. The vertical bracket like the one in *Example 23* that has been inserted at the end of the first cycle of fourths and before the beginning of the next one will be used throughout this chapter to separate individual interval cycles.

Example 23: John Coltrane, *Mars*, transcribed by Andrew White



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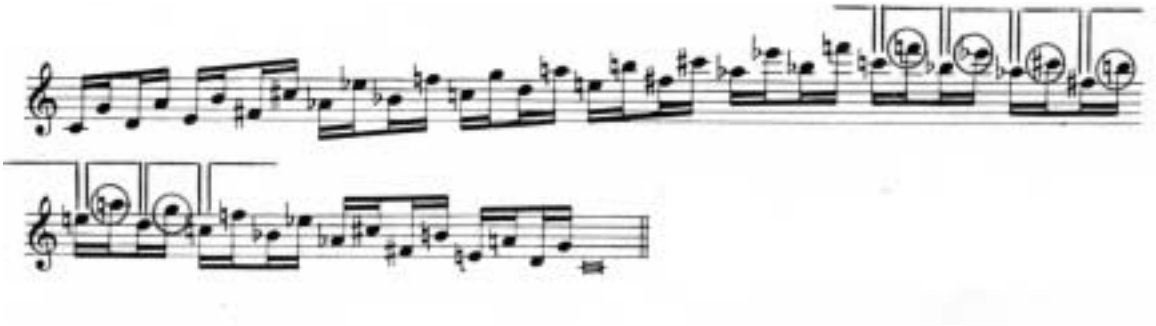
In the *Thesaurus*, Slonimsky arranges a cycle similar to *Example 23* as a whole-tone progression with an ultrapolation of one note a perfect fifth above the principal interval. This pattern is designated in the *Thesaurus* as pattern #574 and is diagramed in *Example 24*. The part of the Slonimsky pattern that most resembles the Coltrane pattern has been diagramed using horizontal brackets to connect the notes in the whole-tone progression while the ultrapolations are circled. Notice in Coltrane 's first cycle in *Example 23*, that the perfect fourths g^2 to c^3 and f^2 to b-flat^2 are used as passing tones in the primary progression of whole tones (as in pattern #574). When the cycle repeats itself, these passing

tones are not included, indicating that the cycle of fourths was probably the principal progression.

Example 24: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns, #574*



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An earlier example of a partial cycle of fourths can be found in "Brasilia" (1965). This passage, included as *Example 25*, contains seven different pitches progressing by perfect fourth (or its intervallic inversion, the perfect fifth).

Example 25: John Coltrane, *Brasilia*, transcribed by Andrew White

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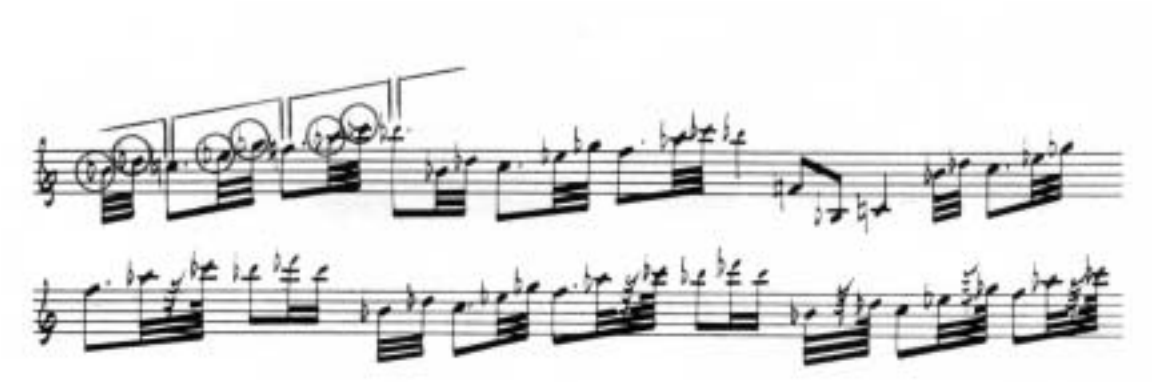
An example of John Coltrane using the perfect fourth as the principal interval in a pattern is illustrated as *Example 26*. This pattern is the first motive played by Coltrane on the composition "Jupiter", from the *Interstellar Space* recording that feature the duets with drummer Rashied Ali. This motive also

returns at the end and is developed over the course of the improvisation. If it cannot be called a melody, it could certainly be called the primary motive. As can be seen in the example, the diatessaron progression is emphasized rhythmically. Each note of this particular interval progression, c^2, f^2, and b-flat^2 are played as dotted eighth notes. The other notes are symmetrically placed in this principal progression as an interpolation (between the notes of the principal interval) and an ultrapolation (above the notes of the principal interval). These added notes are circled in *Example 26*.

Example 26: John Coltrane, *Jupiter*, transcribed by Andrew White



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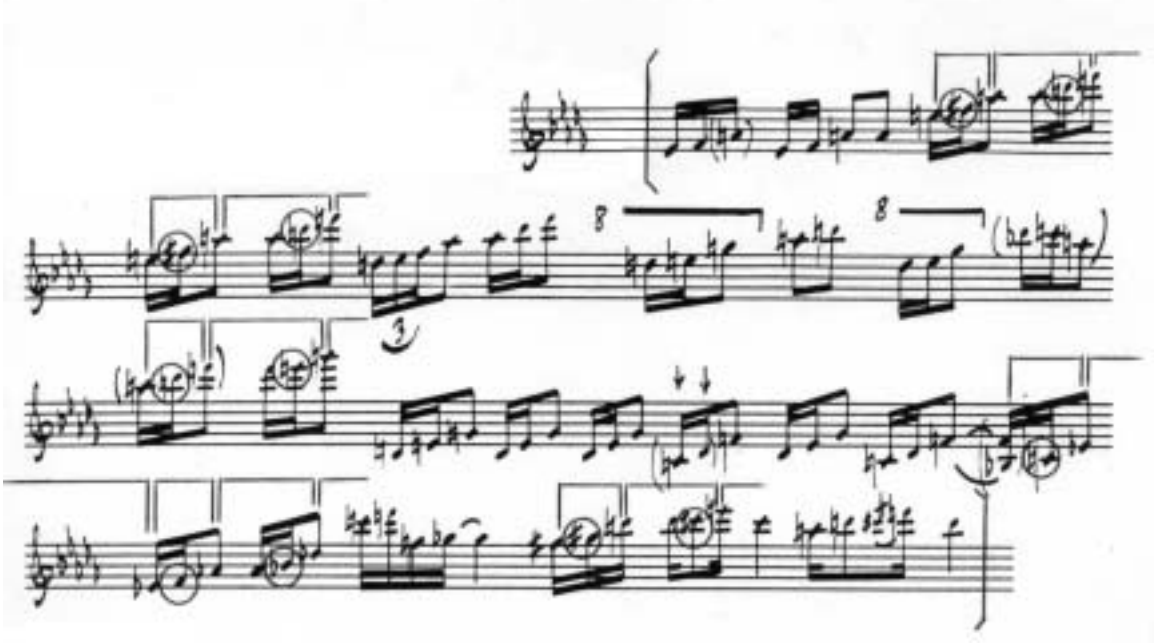
The *Thesaurus* provides a model for this construction as pattern #892, a diatessaron progression with an infra-interpolation (with added tones below and between the principal interval). This pattern is included as *Example 27*. The symmetrical construction, as it appears in *Example 26*, is a melodically stronger pattern by nature of the whole and half step approaches to the pitches of the principal interval. Slonimsky typically uses patterns in the *Thesaurus* that outline triads and *Example 27* is no exception. Beginning on the second note in

Example 27, minor triads are outlined progressing in fourths. By arranging the pattern the way he does, Coltrane is able to melodically and rhythmically emphasize the movement by the principal interval of the fourth as opposed to the progression of minor triads by that interval.

Example 27: Nicloas Slonimsky, *Thesaurus of Scales and Melodic Patterns, pattern #892*

Another instance of John Coltrane employing a cyclic pattern using the fourth as the principal interval can be found in the same duet recording *Interstellar Space* (1967) as *Example 26.* This pattern is from the composition “Saturn" and is diagramed as *Example 28*, starting on the pitches e^2, a^2, b-flat, and $f\#^2$. As can be seen in the example, none of these patterns comes close to forming a complete cycle of fourths. The pattern that begins on the "b-flat” actually progresses furthest into the cycle. At other points in the excerpt, notably on the pitches d^2 and c^1, only one interval is sounded. Clearly, Coltrane is using this pattern as a motive and an important feature in this motive is the interpolation that occurs one whole step above the bottom note of the principal interval. This note is circled in *Example 28.*

Example 28: John Coltrane, Saturn, transcribed by Andrew White



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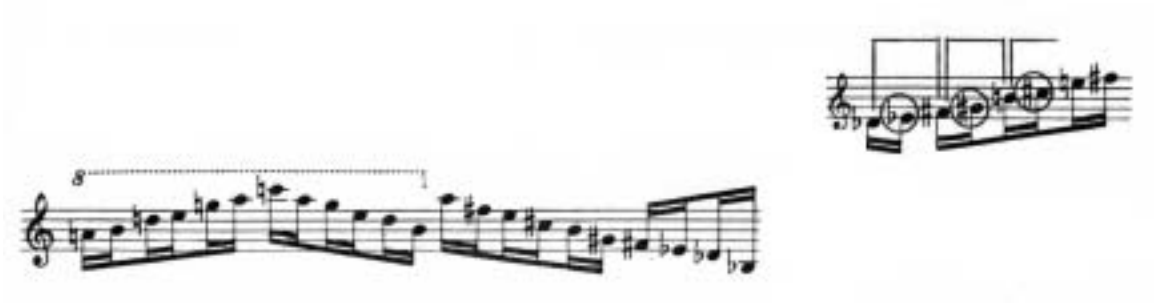
The model for the Coltrane pattern listed above appears in the *Thesaurus* as pattern #827. This pattern is cited as *Example 29*. Slonimsky labels it as a diatessaron progression with an interpolation of one note. Like the Coltrane pattern, the one note interpolation occurs as a whole step above the bottom note of the principal interval.

Example 29: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns, pattern #827*



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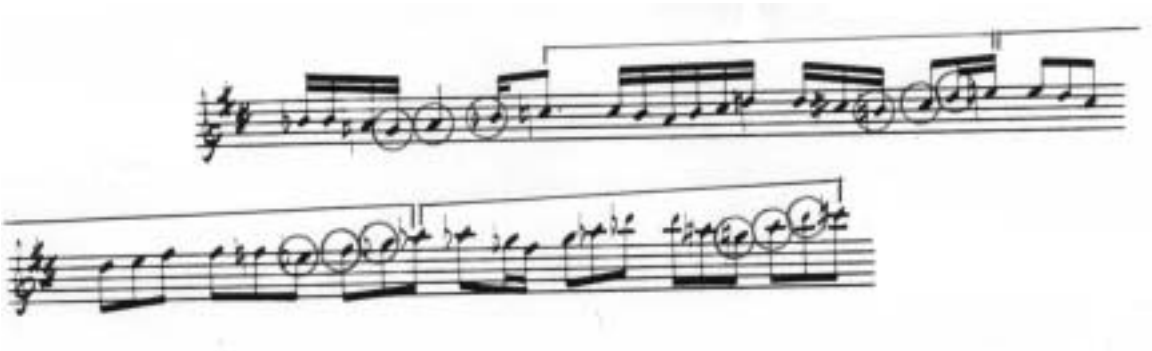
John Coltrane's improvised solo on "Venus", also from *Interstellar Space*, yields an example of a pattern constructed using the principal interval of the major third (ditone). This progression forms a one octave complete cycle ascending by major thirds using the notes c^2, e^2, and a-flat^2, as indicated by the horizontal brackets in *Example 30*. The *Thesaurus* pattern #270, cited as *Example 16b*, uses these same notes to construct this ditone progression. As can be seen by a comparison of the two patterns, the notes used as infrapolations in the construction of *Example 31* match the circled notes of the Coltrane pattern in *Example 30* exactly. Coltrane extrapolates freely, but only on the pitches included by Slonimsky as the infrapolations.

Example 30: John Coltrane*, Venus*, transcribed by Andrew White



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Example 31: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns,* #270, ditone Progression with Infrapolation of Three Notes

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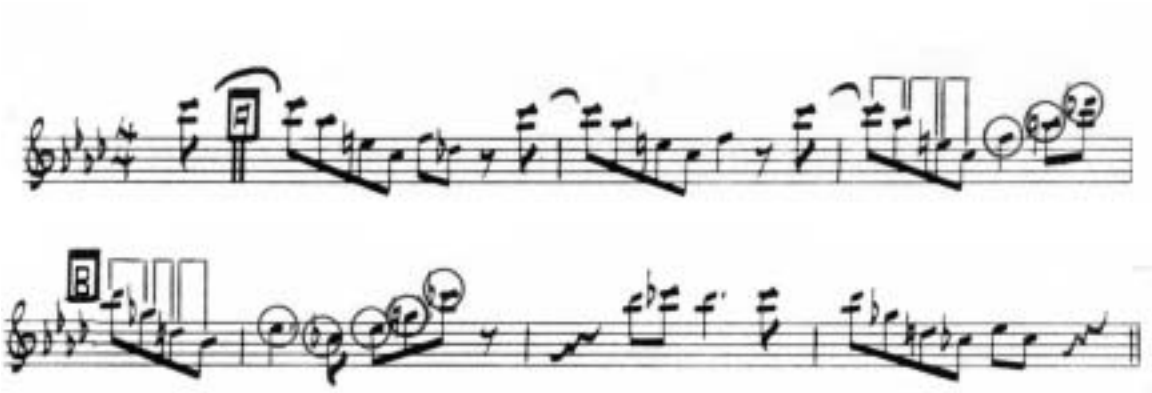
Another use of the ditone progression patterns included in the *Thesaurus of Scales and Melodic Patterns* by John Coltrane has been suggested by John Schott (discussed in Chapter 1). Schott outlines the symmetrical construction of the melody in the Coltrane composition "One Down, One Up" and suggests the possible connection to the *Thesaurus* pattern #186.[77] As Schott mentions, the notes of the melody in "One Down, One Up" consist of two hexachords. One of these corresponds to the "A" sections of the overall thirty-two measure "AABA" form of the composition, while the other corresponds to the single eight-measure "B" section. Schott identifies the notes included in these hexachords as constituting of two augmented triads one half step apart.[78] The pitches for the notes of the melody in the "B" section of the piece are transposed down one whole step from the notes of the melody in the "A" section of the piece. The melody of "One Down, One Up" is outlined as *Example 32* with the augmented triads by horizontal brackets and circled tones. The melody for the "A" section is

[77] Ibid., 349.

[78] Ibid., 350.

displayed in the first staff, while the melody for the “B” section is displayed in the second staff. The “A” section melody consists of the C+ and Db+ triads, while the “B” section melody is transposed down a whole step to Bb+ and Cb+ triads. All of the following examples of “One Down, One Up” were taken from John Coltrane’s studio recording of May 26, 1965. The other available recording of this composition is from Coltrane’s appearance at the Newport Jazz Festival on July 2, 1965.

Example 32: John Coltrane, *One Down, One Up*, melody (beginning), transcribed by Andrew White



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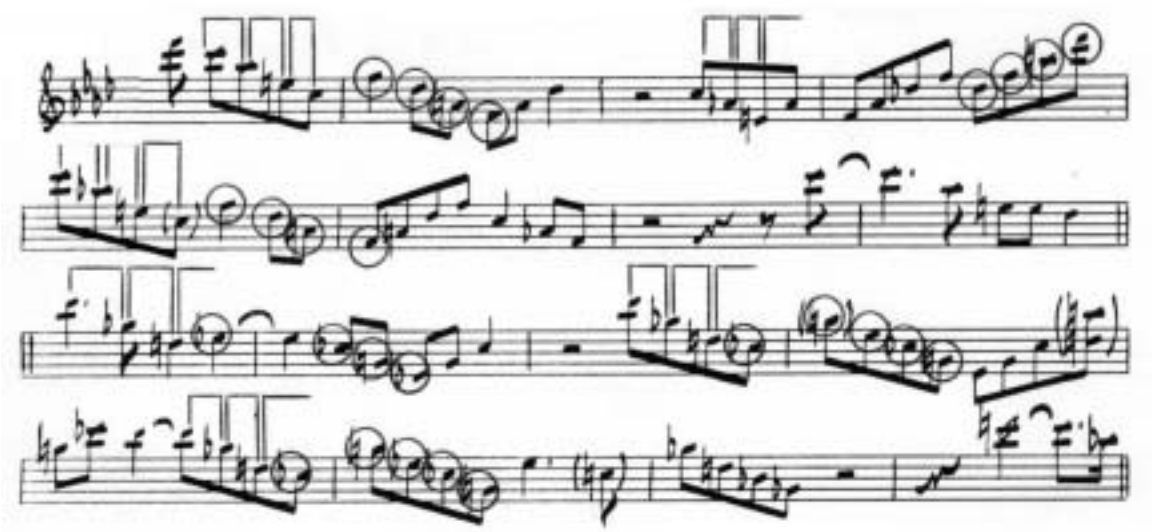
As Schott observes, the augmented triads from the melody are used as the basis for much of the ensuing improvisation.[79] An illustration of this can be seen as *Example 33*, from the beginning of the improvisation. In the example the first two staves are over the “A” section of the form, while the second two staves are over the “B” section of the form.

[79] Ibid.

Example 33: John Coltrane, *One Down, One Up*, improvisation, transcribed by Andrew White



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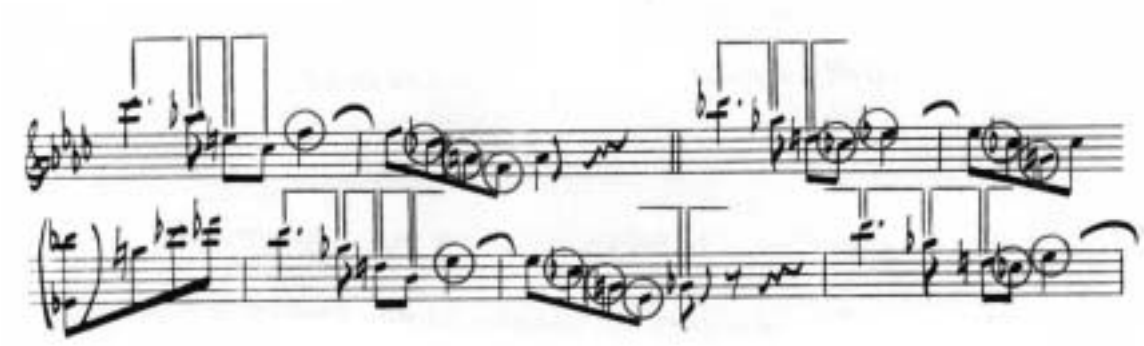
Returning to the melody of "One Down, One Up" after the improvisation, Coltrane again utilizes the augmented triads, but in a distinctly different way than he played them in the first statement of the melody (see *Example 32*). Whereas in the previous example the first augmented triad descended and the second triad ascended, Coltrane now plays both augmented triads descending. This configuration is illustrated in *Example 34*.

Example 34: John Coltrane, One Down, One Up, melody (return), transcribed by Andrew White



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Example 35 contains pattern #186 in the *Thesaurus* cited by Schott as a connection to Coltrane's composition "One Down, One Up". Slonimsky labels this cyclic pattern as a ditone progression with an ultrapolation of one note. When the system of brackets and circled tones is applied to pattern #186, the similarity to Coltrane's pattern is much more apparent. These are the same pitches that are contained in the first two augmented triads from the melody of "One Down, One Up".

Example 35: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns,* #186

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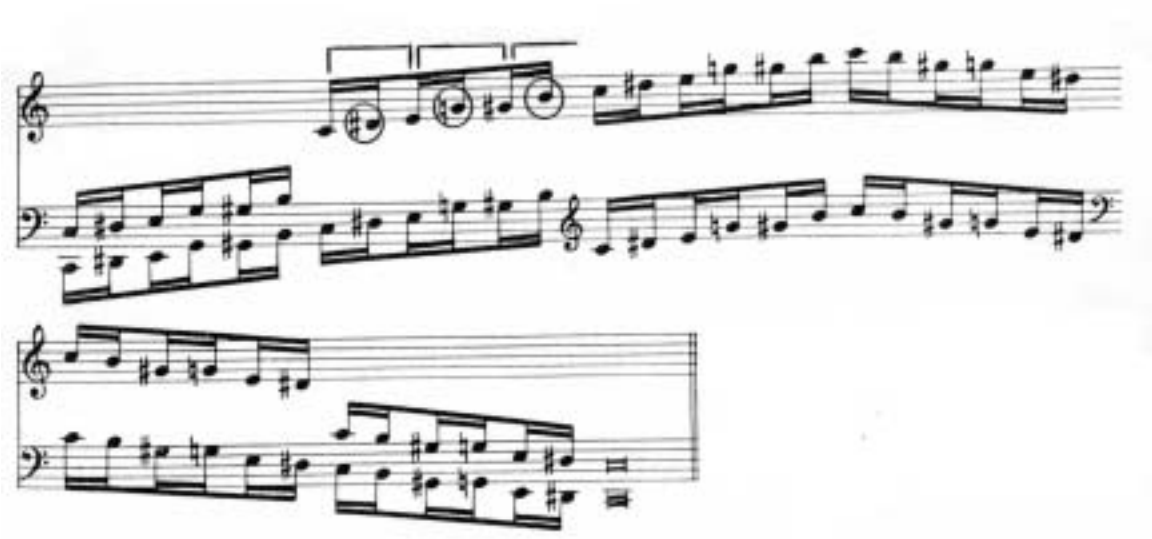
Schott also lists four other patterns from the *Thesaurus* as possible influences on composition "One Down, One Up". Pattern #190 from the *Thesaurus* contains the same pitches and principal interval progression, but a different ultrapolation. The other patterns listed by Schott from the *Thesaurus* (#188, #192, and #231), contain two augmented triads a half step apart, but instead of C+ and Db+ they contain the triads C+ and B+[80] .

In discussing the two augmented triads that are used in "One Down, One Up" (outlined in Chapter 1), Walt Weiskopf speculates that the melody is based on the inverted augmented scale.[81] Since this scale is symmetrical, the reverse arrangement of the intervals, minor third followed by a half step, would also produce the pitches of two augmented triads one half step apart on the first six scale steps. This scale, commonly referred to as the augmented scale, is included in the *Thesaurus* as pattern #182. It appears below as *Example 36*. The pattern has been diagramed to illustrate the notes of the two augmented triads, C+ and B+.

[80] Schott, 349.

[81] Weiskopf, *Intervalic Improvisation*, 16.

Example 36: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #182



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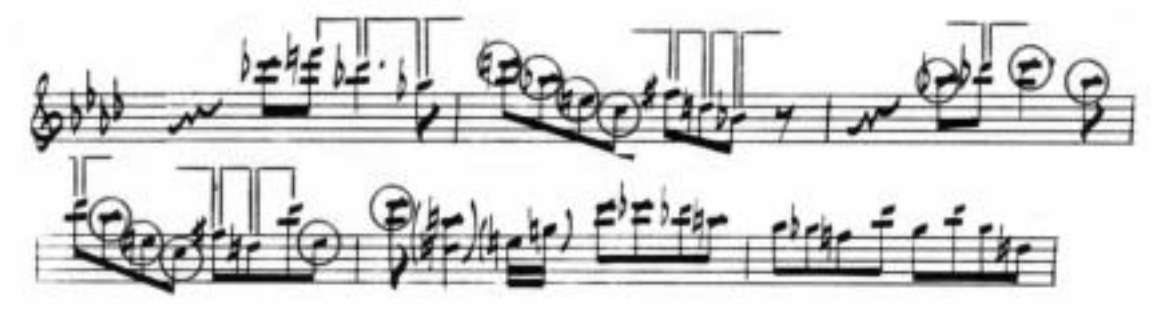
Even though Schott and Weiskopf have differing views on the origination of the melodic material for the composition “One Down, One Up”, both theoretical explanations utilize patterns with the ditone progression as the principal means of construction. Given the extensive treatment of this pattern in the composition “One Down, One Up”, it is quite possible that Coltrane composed this piece as a vehicle to explore this particular interval cycle, much the same way that “Giant Steps” was a vehicle for experimentation in the use of major thirds cycles. Unlike “Giant Steps,” this experiment does not seem to have been extended much past this particular composition.

In his discussion of triad pairs derived from the augmented scale, Walt Weiskopf suggests that a pattern consisting of Bb+ and C+ triads would be an appropriate melodic application over the C7(#5) harmony of the “A” section of the

"One Down, One Up". Weiskopf explains that this is due to the whole-tone derivation of that particular chord and pattern.[82] In fact, Coltrane utilizes this pattern in his improvisation over the "A" section of the form. This passage is listed as *Example 37*, complete with bracketing and circled tones to highlight the two different augmented triads.

Example 37: John Coltrane, *One Down, One Up*, transcribed by Andrew White



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As it so happens, this pattern occurs in the *Thesaurus* as #187, a ditone progression with an ultrapolation of one note. Pattern #187 is listed as *Example 38*. This sequence of notes also occurs in the *Thesaurus* as pattern #191, #232, and #235.

[82] Ibid.

Example 38: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns,* pattern #187

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There is another whole-tone pattern in the configuration of two augmented triads that appears in an earlier position in Coltrane's improvisation on "One Down, One Up". This pattern appears as *Example 39*. It also happens that this occurrence is over the "B" section of the composition. Interestingly enough, Coltrane utilizes the augmented triad pattern that implies the whole-tone scale a half step away from the one he played over "A" section harmony in *Example 37*. In this configuration, one of the augmented triads, Cb+, is the same as one of the triads implied in the melody of the "B" section, while the other one, A+, is a half step lower than the other augmented triad implied by the melody of the "B" section. This provides the listener an interesting, albeit dissonant, contrast.

Example 39: John Coltrane, *One Down, One Up*, transcribed by Andrew White

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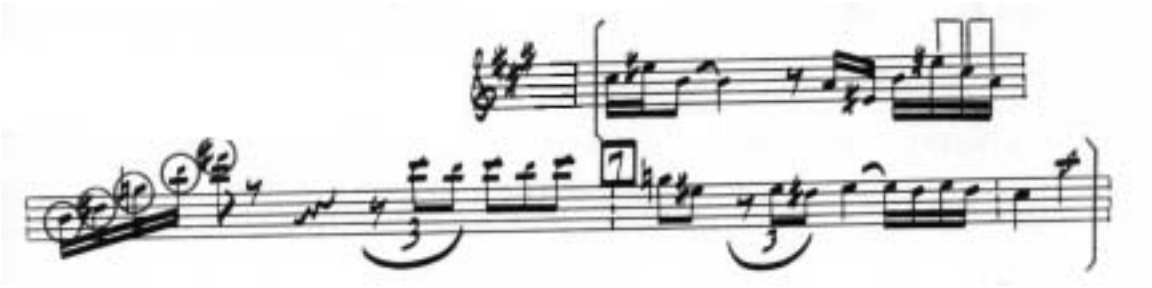
The recording of the composition “Nature Boy” actually occurred twice in February of 1965. Another recording of this composition the previous day, the 17th, at Van Gelder’s studio, preceded the recording on February 18th, cited in Chapter 3. *Example 40* contains an excerpt from this recording that illustrates Coltrane’s use of two augmented triads a whole step apart. The excerpt is constructed exclusively from the pitches of a whole-tone scale. As can be seen from the *Example 40*, the augmented triads A+ and B+, which Coltrane uses in the “One Down, One Up” triadic configuration, contain all the notes of the whole-tone scale used in this particular passage.

Example 40: John Coltrane*, Nature Boy (2/17/65)*, transcribed by Andrew White



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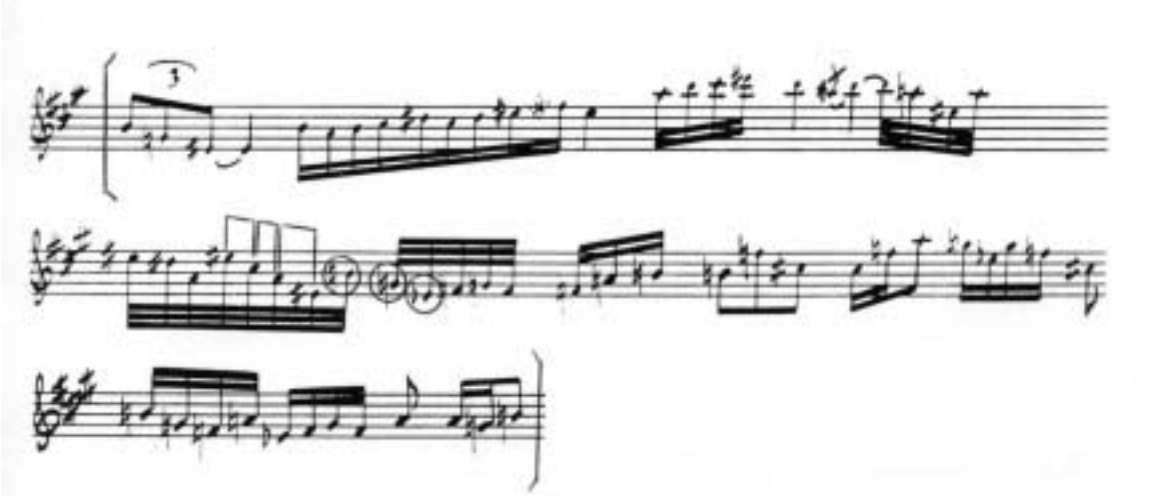
Example 41 is from the recording of “Nature Boy” the very next day on the 18th. This is an improvised passage that exclusively employs the same whole-tone series used in *Example 40*. However, this improvised passage is more extensive and the augmented triads used are E#+ and Eb+.

Example 41: John Coltrane, *Nature Boy (2/18/65)*, transcribed by Andrew White



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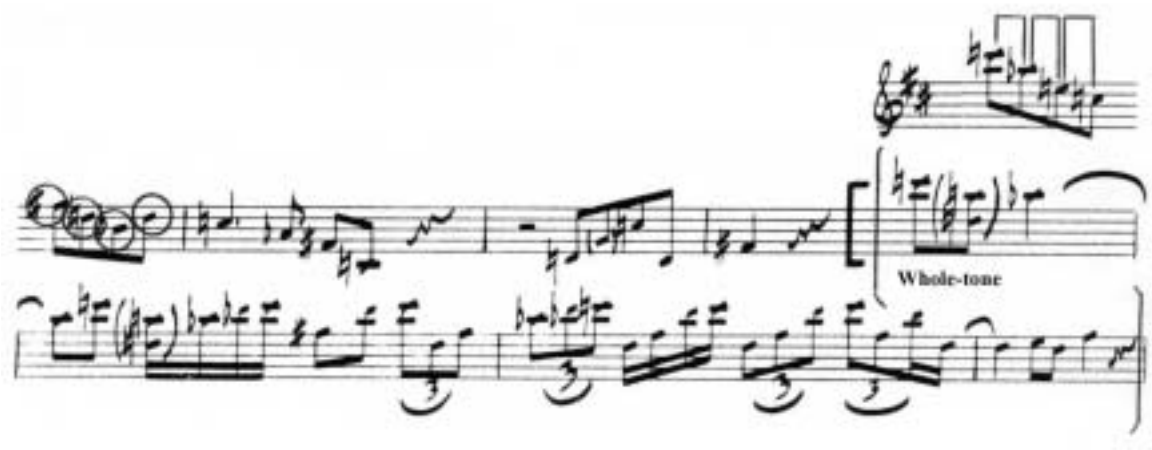
The passage cited as *Example 42* uses the triads, C+ and Bb+, to introduce material that certainly seems to be derived from the corresponding whole-tone sonority, with the single exception of the g^1 in parenthesis. After that, a definitive whole-tone pattern emerges (indicated by vertical brackets) that Coltrane develops for three and a half measures. This example was taken from the composition "Untitled 90314" recorded on June 10th, 1965. This was the same improvised solo that later included two implied major thirds cycles that were extracted and used as examples in Chapter 3 (*Examples 17* and *18*).

Example 42: John Coltrane, *Untitled 90314*, transcribed by Andrew White



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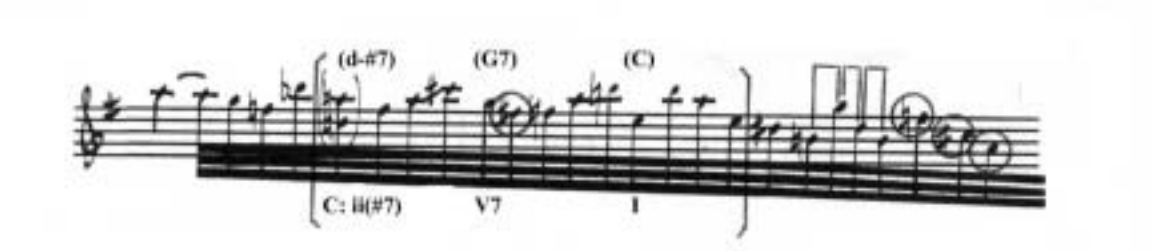
Coltrane did not always use this symmetrical pattern (consisting of two augmented triads a whole step apart) exclusively as part of a larger whole-tone passage. *Example 43* contains an implied ii – V7 – I chord progression in the key of C. Notice the #7 on the implied D minor chord and the #7 passing tone on the G7 chord, both of which are typical chromatic alterations in jazz vocabulary over ii – V7 – I chord progressions. Following the tonal implication in C major, Coltrane utilizes the two augmented triad pattern. This pattern outlines the whole-tone scale that typically would be played by jazz musicians over a G7 chord, especially with the appearance of the $c\#^3$ in the D minor chord. The appearance of this symmetrical whole-tone pattern with the implied ii – V7 – I progression that precedes it has a distinct tonal application not found in the previous examples. This excerpt comes from the composition "Song of Praise", recorded on May 17, 1965.

Example 43: John Coltrane, *Song of Praise*, transcribed by Andrew White



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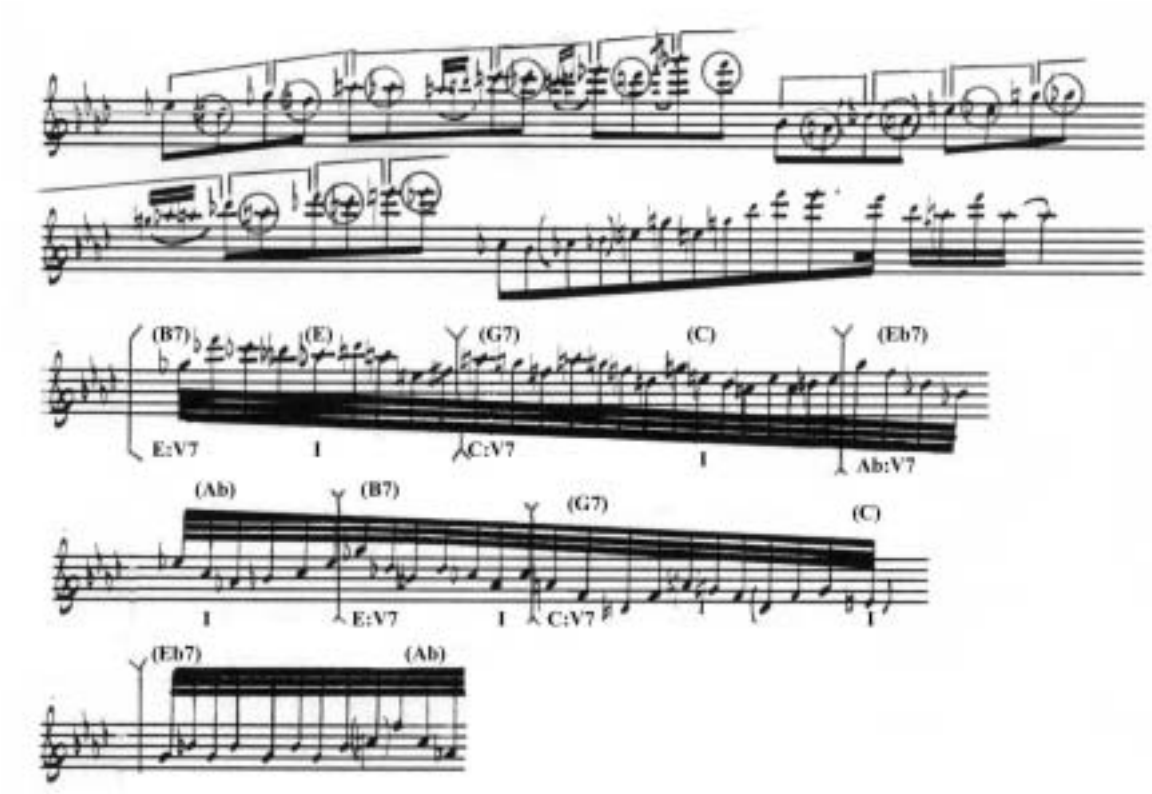
An example of a sesquitone, or minor third, progression used as melodic vocabulary in a Coltrane improvisation occurs just before the E major, C major, and Ab major implied major thirds cycle from the composition "Brasilia", cited in Chapter 3 as *Example 8*. This pattern is cited as *Example 44* and involves two different minor thirds cycles. The first involves the principal progression on the pitches e-flat^2, g-flat^2, a^2, and c^3 before the cycle progresses through two more minor third intervals that repeat the first two pitches from the cycle one octave higher. Coltrane then immediately transposes the pattern down a perfect fourth from the starting note of the previous cycle and progresses through the cycle on the pitches b-flat^1, d-flat^2, e^2, and g^2 before starting the minor third interval series again and breaking off the pattern one minor third interval short of two complete cycles. The tones added to these minor thirds interval cycles are one half step below the notes of the principal interval series. Slonimsky would label these added tones "infrapolations". It is easy to follow the framework of Coltrane's improvisation by tracing the interval cycles. This progression begins on a minor thirds cycle beginning on the pitch e-flat^2; is transposed to the minor thirds cycle

beginning on the pitch b-flat[1]; and ends with a major thirds cycle on the implied key centers of E major, C major, and Ab major. *Example 8* has been reproduced in the context of *Example 44* to illustrate this progression. Close examination reveals that most of the notes that fall between the second minor thirds cycle and the major thirds cycle repeat the principal interval pitches of this second minor thirds cycle (b-flat[1], d-flat[2], e[2], g[2]).

Example 44: John Coltrane, *Brasilia*, transcribed by Andrew White



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Thesaurus pattern #447 corresponds to the two minor thirds cycles that appear in *Example 44* and is listed as *Example 45*. Slonimsky labels this pattern as a sesquitone progression with an infrapolation of one note.

Example 45: Nicolas Slonimsky*, Thesaurus of Scales and Melodic Patterns*, pattern #447

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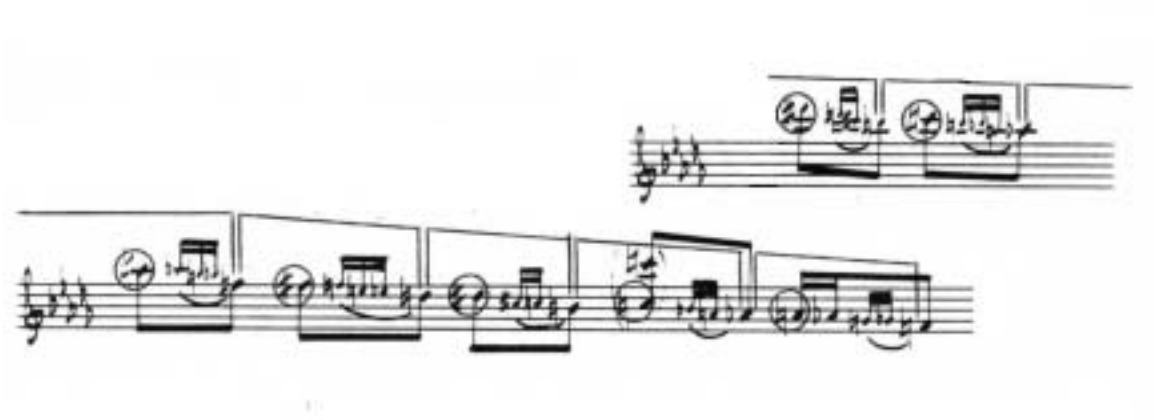
An illustration of a minor third cyclic interval pattern from “Saturn”, on the *Interstellar Space* recording of 1967, is diagramed in *Example 46*. Although there are sixteenth-note grace notes included, the principal ultrapolation in this example is agogically accented. They are each located a major third above of the principal interval pitches and are circled in *Example 46*. Following this cycle, Coltrane continues to use an ultrapolation of a major third but changes the principal interval cycle to the semitone. This has not been diagramed with brackets, as the “d” has been left out of the cycle of descending semitones. However, the extrapolation from the previous minor thirds cycle is clear. Coltrane has maintained the ultrapolation, but changed the cycle. As in *Example 44*, Coltrane’s improvisation at this point is being guided by interval progressions.

Example 46: John Coltrane, *Saturn*, transcribed by Andrew White



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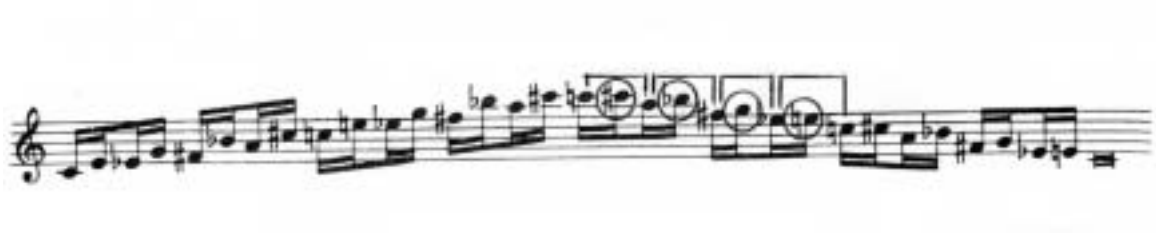
The corresponding *Thesaurus* pattern to *Example 46* appears as *Example 47*. The descending portion of this pattern has been diagramed to illustrate the similarities to Coltrane's example from "Saturn". Slonimksy labels this pattern as a sesquitone progression with an ultrapolation of one note.

Example 47: Nicolas Slonimsky*, Thesaurus of Scales and Melodic Patterns,* #394



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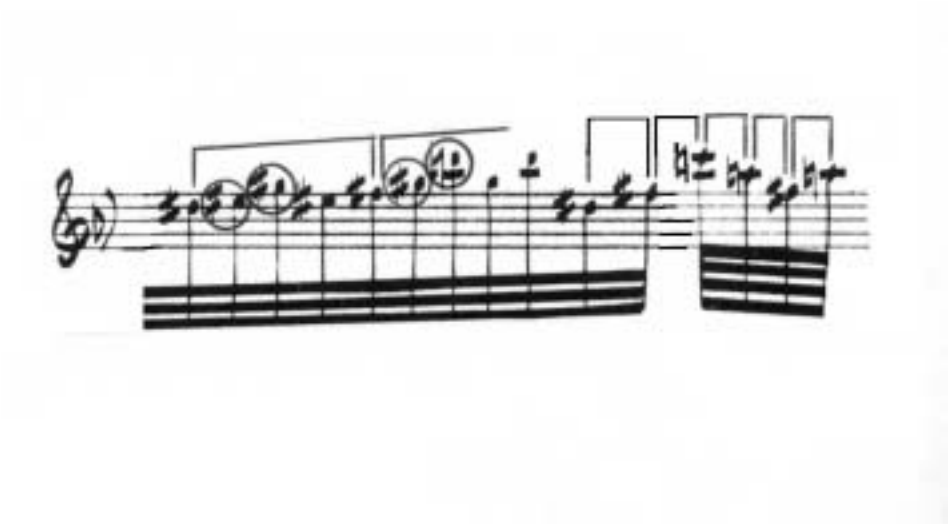
Although all of the examples included in this study have been derived from John Coltrane's vocabulary starting in 1965, he not doubt experimented with cyclic interval patterns earlier. One such example can be found from the recording Coltrane made on October 8, 1963 of the tune "I Want to Talk About You". This is a piece from standard jazz repertoire that Coltrane recorded live at the New York jazz club "Birdland". Although this is a composition based on a repeated chorus structure, Coltrane included an extended cadenza on his version. As this cadenza is unaccompanied and he is not obligated to follow a chord progression, it is to be expected that Coltrane would include patterns based on interval cycles at this point in the recording. Several are apparent, but the particular example most applicable to the present discussion is an abbreviated pattern based on a minor thirds cycle. In *Example 48*, Coltrane utilizes a symmetrical construction based on the principal pitches $d\#^2$ and $f\#^2$ (diagramed with horizontal brackets) with added tones placed a whole step and a perfect fourth above each of these principal tones (circled). At this point it is uncertain whether the intended principal pitches are part of an interval cycle. However, immediately after this pattern Coltrane plays a complete cycle of minor thirds that does include the $d\#^2$ and the $f\#^2$, leading to the impression that these were indeed the principal pitches of the pattern at the beginning of *Example 48*

.

Example 48: John Coltrane*, I Want to Talk About You*, transcribed by Andrew White



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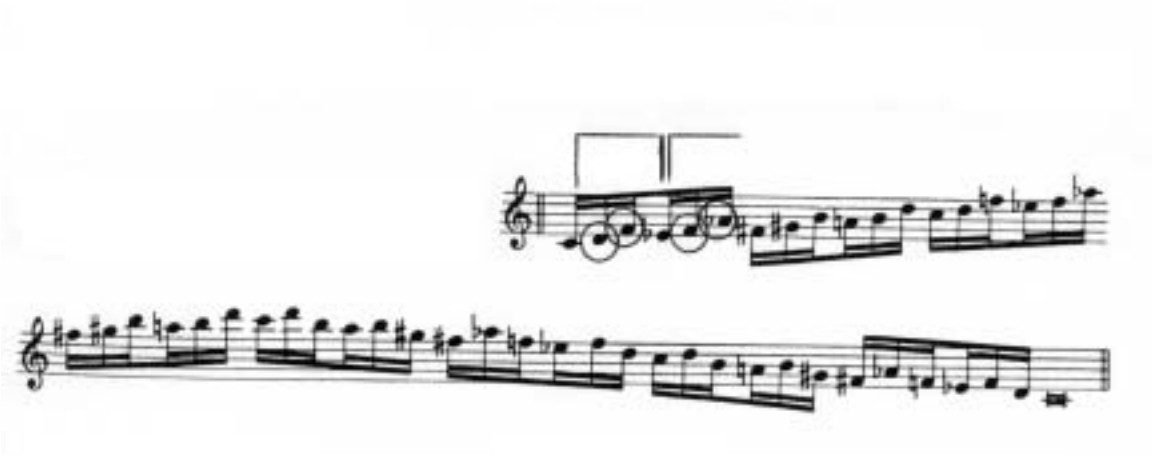
As further proof of this hypothesis, the *Thesaurus* includes a pattern that is identical to the one that Coltrane played in *Example 48*. This pattern, listed as *Example 49*, uses the minor thirds cycle (sesquitone progression) as the principal interval, with an inter-ultrapolation of a whole step and a perfect fourth above each of the pitches in the cycle. This pattern was the likely inspiration for the one played by Coltrane in the cadenza of "I Want to Talk About You".

Example 49: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #497



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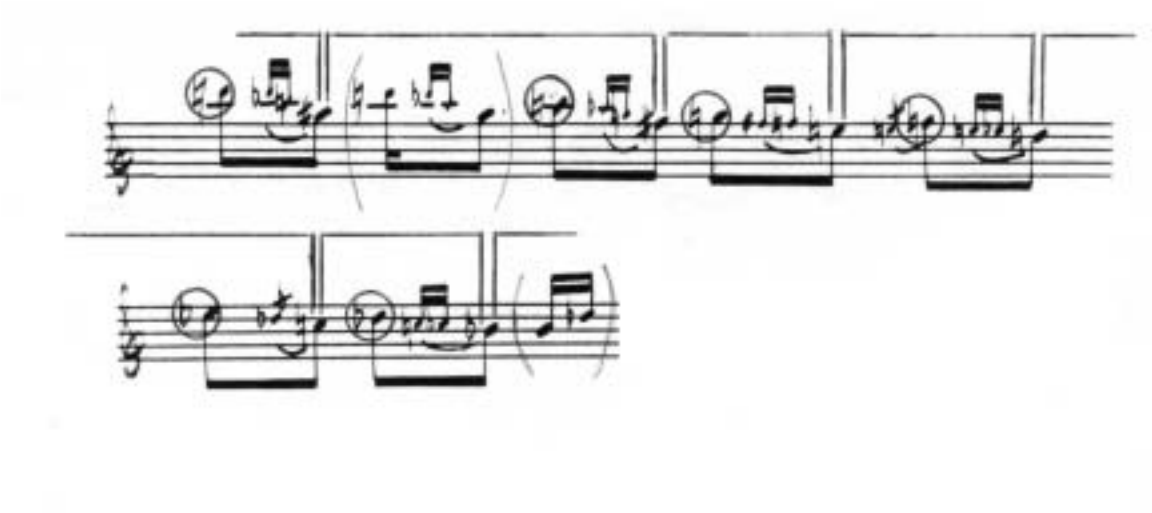
Example 50, from “Jupiter”, contains an illustration of a pattern from a Coltrane improvisation constructed around a progression of whole steps. This particular pattern uses an ultrapolation of one note a minor third above the principal interval progression. The sixteenth-note grace notes are used by Coltrane to embellish the pattern, similar to the way they were used in the pattern of *Example 46*. They do not alter the overall structure of the pattern.

Example 50: John Coltrane, *Jupiter*, transcribed by Andrew White



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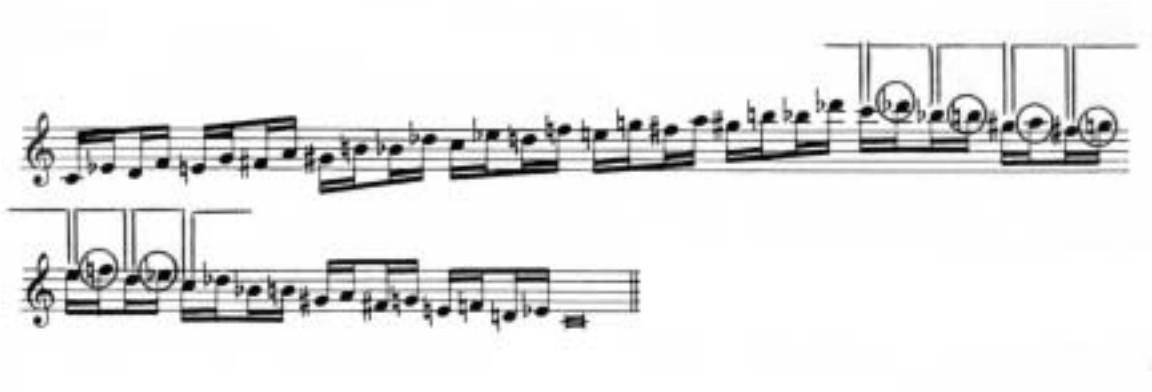
The model for Coltrane's pattern from "Jupiter" is provided as *Example 51*. It appears in the *Thesaurus* as pattern #570, a whole tone progression with an ultrapolation of one note (located a minor third above the principal interval pitches). The descending portion of the pattern has been included in this example to highlight the similarity to the Coltrane pattern as it appears in *Example 50.*

Example 51: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #570



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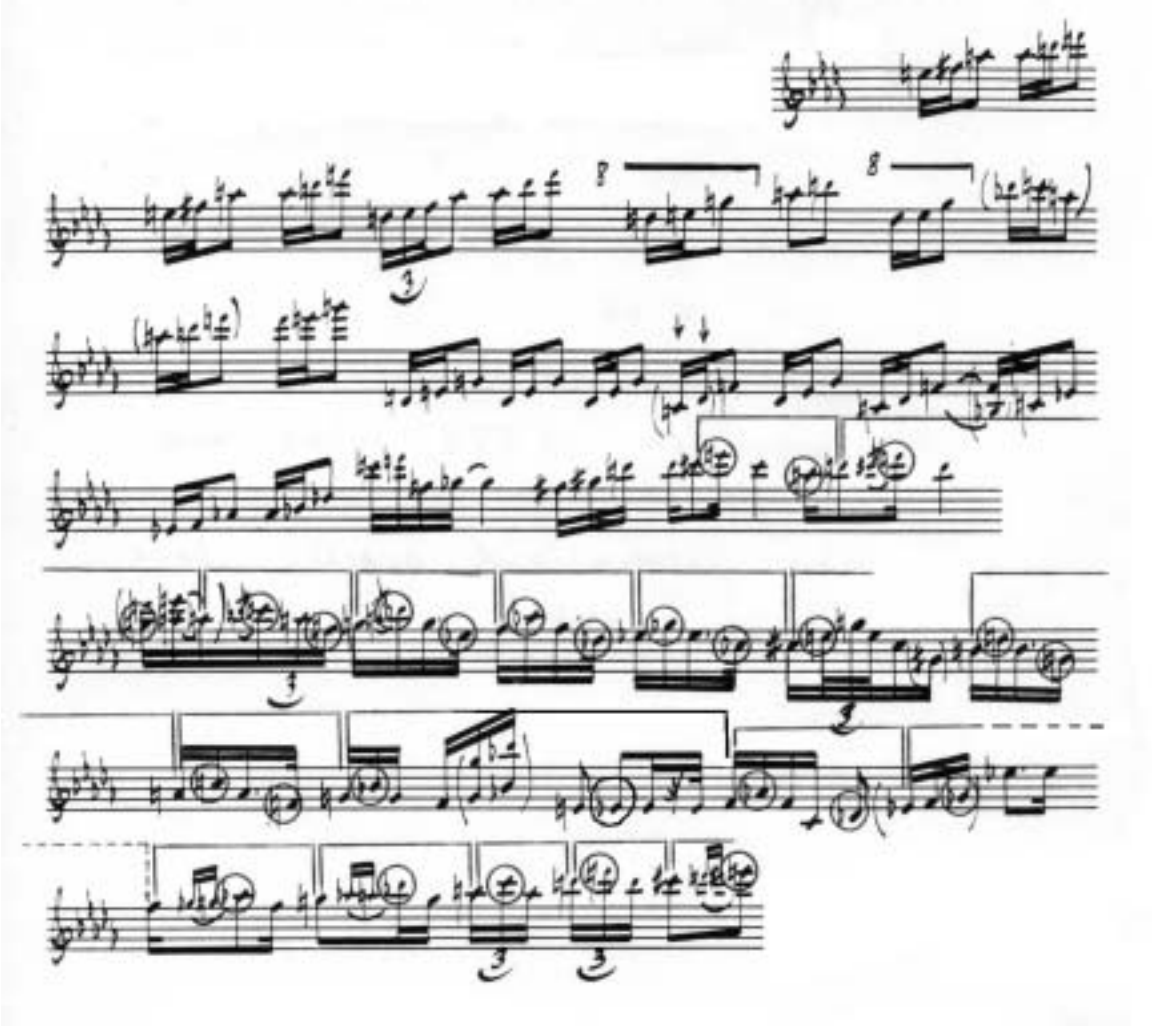
Example 52 is yet another excerpt from the duet recordings with Rashied Ali. This particular example is from the composition "Saturn" and includes another illustration of Coltrane using interval cycles as a means to organize and unify parts of his improvisation. *Example 52* actually begins in the portion of Coltrane's improvisation where *Example 28* (diatessaron progression with a one note interpolation) left off. The first note, $c\#^3$, of the principal whole tone progression outlined by the horizontal brackets in *Example 52* is actually the interpolation between the perfect fourth formed by the pitches b^2 to e^3. Working backwards in the example, this particular b^2 is the pitch that completes a perfect fourth from the previous $f\#^2$, with the pitch $g\#^2$ providing the interpolation. In this way, a series of perfect fourths (diatessaron progression) is formed consecutively from the pitches $f\#^2$, b^2, and e^3. The pitches $g\#^2$ and $c\#^3$ serve as one note interpolations one whole step above the bottom notes of each of these perfect fourths. This is the interval cycle as outlined in *Examples 28* and *29*. The whole

tone progression, as diagramed in *Example 52*, begins at this point with the c#^{3}. Following the added tones, the next pitch in the progression after the c#^{3} is b^{2}, which forms the first whole step of this principal interval series (shown in horizontal brackets in *Example 52*). This whole step frames an ultra-infrapolation using the pitches e^{3} and a^{2} (which are both circled in *Example 52*). The pattern descends one complete cycle to c#^{2}, one octave below the starting pitch, at which time it breaks off only to resume once again and continue descending to e-flat^{1}. Notice that the pattern also has a tonal configuration (descending major triads, beginning on the third of the chord). After the last note of this particular principal interval series (e-flat^{1}), Coltrane utilizes the ultrapolation (g-flat^{1}) but not the infrapolation to construct his next pattern. This anticipates the start of the next interval cycle that begins with f^{2} on the next staff of *Example 52*. The principal interval of this next pattern is again the whole step (ascending), with a one-note ultrapolation that occurs at the interval of a minor third. This is the same cyclic interval pattern that was diagramed in *Example 50.* Thus, the progression of cycles in *Example 52* can be listed as: diatessaron (if the cycle from *Example 28* is included), whole-tone, and whole-tone.

Example 52: John Coltrane, *Saturn*, transcribed by Andrew White



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The first whole-tone cyclic interval pattern from *Example 52* can be found in the *Thesaurus* as pattern #606, cited as *Example 53.* The only difference is that Slonimsky reverses the order of the added tones, placing the infrapolation first and then the ultrapolation. Notice that the pattern still forms major triads ascending by whole-step beginning on the third of the chord.

Example 53: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #606

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The second whole-tone cyclic interval pattern from *Example 52* can be found in the *Thesaurus* as pattern #570. This was the same pattern found in *Example 50* ("Jupiter"), only in the descending form. In *Example 52*, it is in the ascending form. This pattern in the ascending form is diagramed as *Example 54.*

Example 54: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #570

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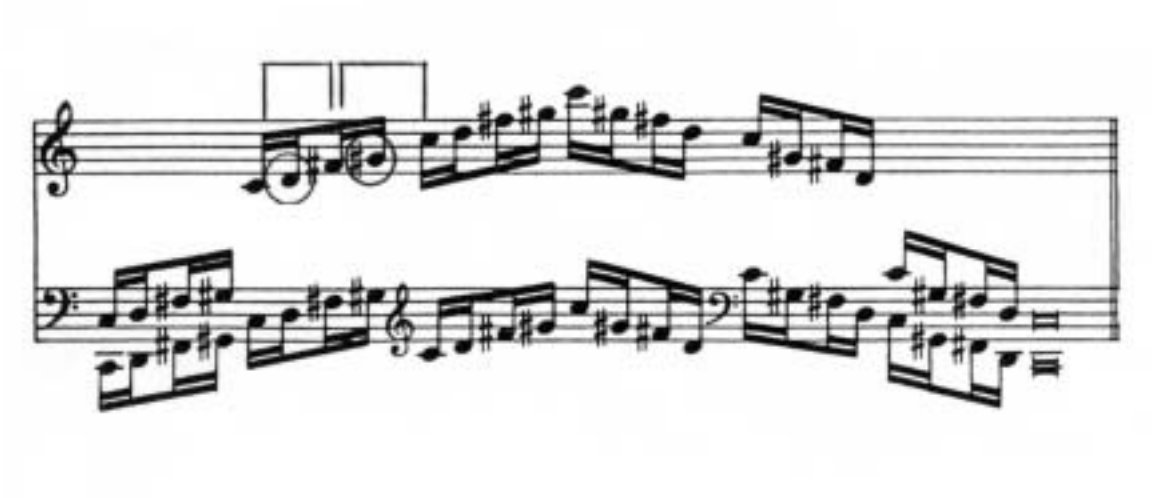
Excluding the diatessaron (perfect fourth) progression, all of the patterns from John Coltrane's melodic vocabulary covered in this document thus far have been based on progressions from the *Thesaurus of Scales and Melodic Patterns* that divide one octave into equal parts. These progressions have included the ditone (major third), sesquitone (minor third), and whole-tone. The last of Coltrane's patterns included for analysis in this study will be those based on the tritone progression. This is the intervallic progression that divides one octave into two equal parts. Slonimsky forms patterns from the tritone progression in the *Thesaurus* using the system of adding tones to the principal progression. *Example 55*, listed as #2 *Thesaurus*, is diagramed to illustrate this construction. The principal interval in this particular pattern is formed from the pitches c^1, $f\#^1$, and c^2 with the added tones in the form of interpolations placed one whole step above the principal interval pitches. One complete cycle is diagramed in *Example 55* using interpolations on the pitches d^1 and $g\#^1$. The result is a very short interval cycle spanning one octave and consisting of only four different pitches. Slonimsky labels this pattern a tritone progression with an interpolation of one note.

Example 55: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #2



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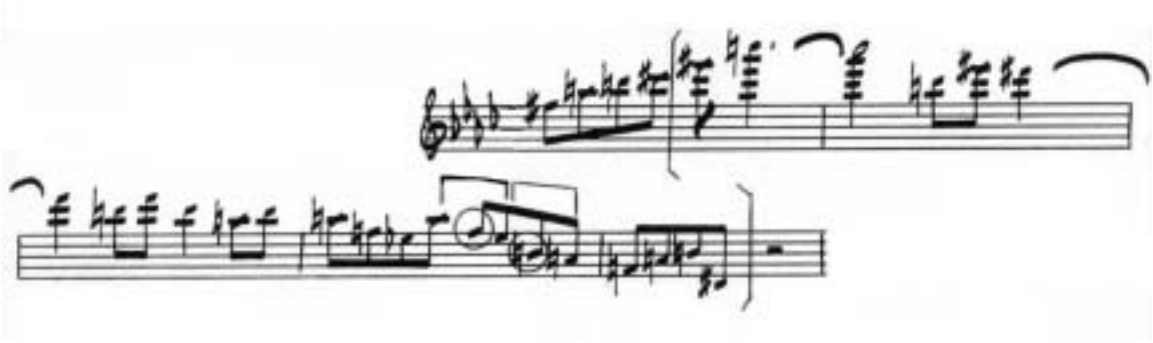
Due to the brevity of the patterns such as the one diagramed in *Example 55*, Coltrane often employs them as motivic material for part of a larger passage. *Example 56* is from the Coltrane's improvisation on the composition "One Down, One Up". The specific tritone interval cycle in this example is diagramed. Notice that all of the notes included inside the vertical brackets in the example are the same notes contained in the diagramed tritone interval cycle. Coltrane superimposes the notes from this interval cycle over the Ab7(#5) chord (concert pitch) of the "B" section of the form of "One Down, One Up". This is a somewhat dissonant application of this pattern, but because of its cyclical construction the resulting superimposition is a very effective one.

Example 56: John Coltrane, *One Down, One Up*, transcribed by Andrew White



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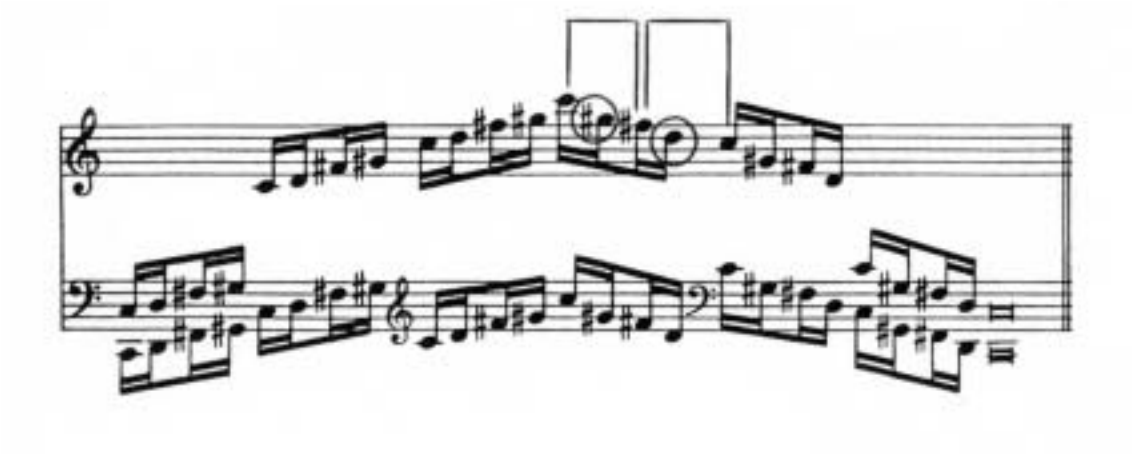
Example 57 diagrams the descending portion of pattern #2 that is of identical construction to the diagramed cycle of *Example 56.* The pitches of the principal interval as diagramed in this example are c^3, $f\#^2$, and c^2. The pitches of the interpolation are $g\#^2$ and d^2. This interval pattern is transposed up a minor third from the pattern diagramed in *Example 56*.

Example 57: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #2



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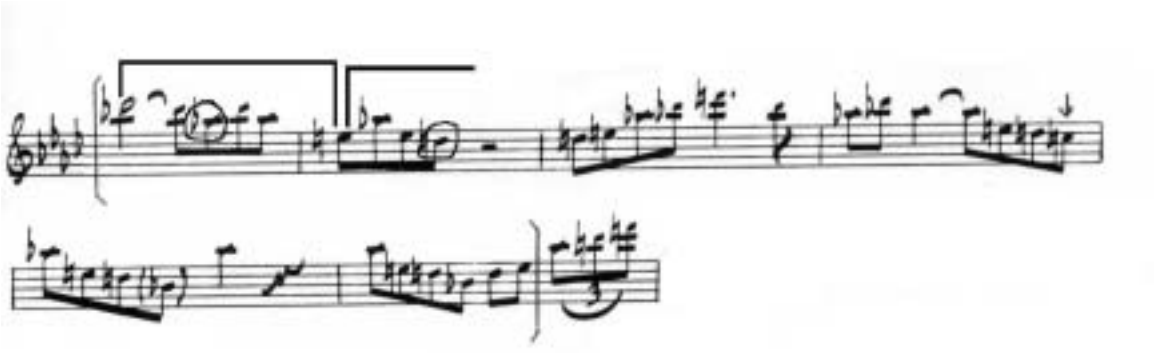
In tonal harmony, the tritone is the interval between the 3rd and the 7th of a dominant chord that must be resolved in the cadence to the tonic. In a later excerpt from the same improvisation on “One Down, One Up”, Coltrane constructs his cyclic interval pattern around the 3rd and 7th of the Bb7(#5) chord (concert pitch), which functions as the structural harmony in the “A” section of that composition. This excerpt is included as *Example 58.* The principal pitches of the diagramed pattern are b-flat^2 and e^2, which are the 7th and the 3rd, respectively, of the C7(#5) chord (tenor saxophone transposition) in the accompaniment. The a-flat^2 and d^2 serve as interpolations one whole step below the notes of the principal interval. All of the pitches of this excerpt belong exclusively to this cyclic interval pattern except for the c^2 at the end of the first staff of *Example 58*, which serves as the tonic of the chord in the accompaniment.

Example 58: John Coltrane, *One Down, One Up*, transcribed by Andrew White



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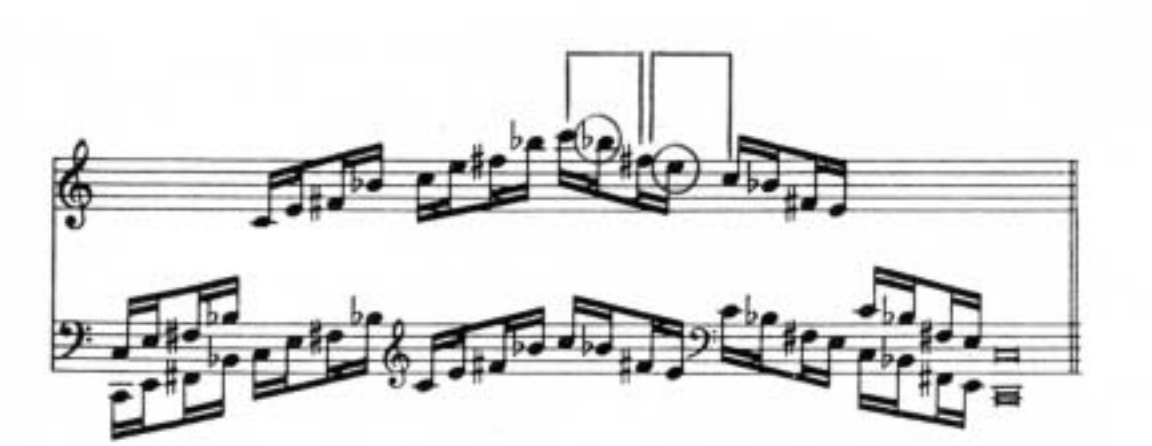
Example 59 diagrams the descending portion of pattern #3 that is of identical construction to the diagramed cycle of *Example 58.* This interval pattern is transposed up one whole step from the pattern diagramed in *Example 58*.

Example 59 : Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #3



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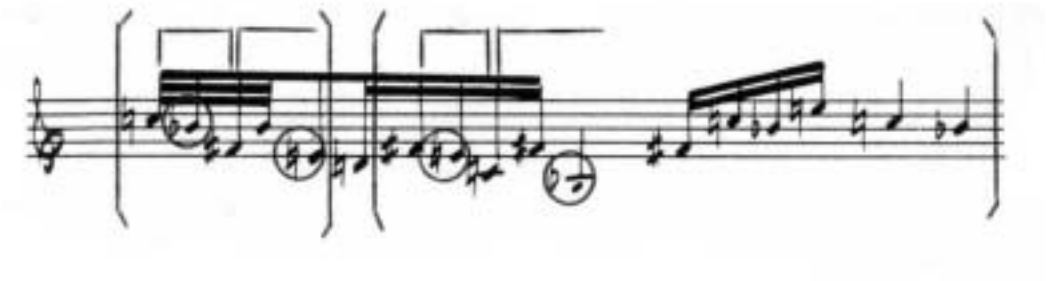
Example 60 is taken from the composition “Offering”, recorded on February 15, 1967 and issued on the Impulse label recording *Expression*. By this time, only the bassist Jimmy Garrison remained from Coltrane’s classic quartet. Alice Coltrane had replaced McCoy Tyner on piano and Rashied Ali had replaced Elvin Jones on drums. *Example 60* is constructed around the tritone interval on the pitches c^2, $f\#^1$, and c^1. The cyclic pattern inside the first set of vertical brackets begins on c^2 and includes a one-note interpolation one whole step below the notes of the principal interval. This cycle is interrupted by a note outside of the interval pattern (d^1), after which the pattern resumes on $f\#^1$. The excerpt ends

with Coltrane using the notes of both tritone pairs included in the previous cyclic pattern. *Example 60* is of identical construction and contains the exact same pitches as *Example 59*, which diagrams the descending portion of a tritone progression with an interpolation of one note.

Example 60: John Coltrane, *Offering*, transcribed by Andrew White



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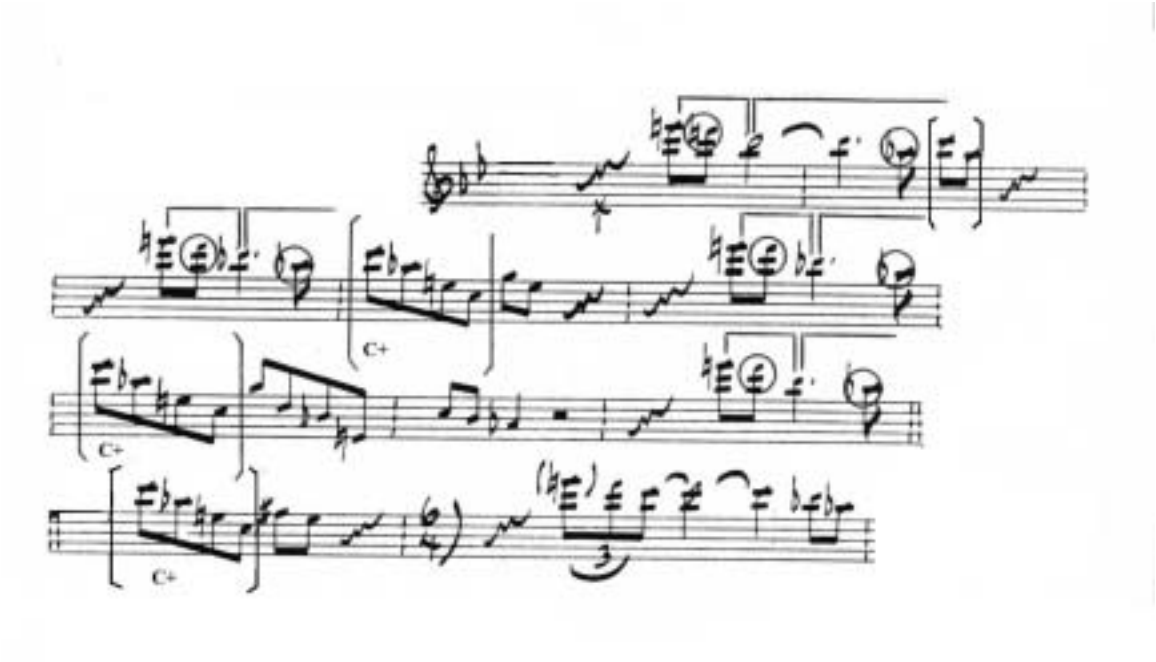
John Coltrane's improvisation on the composition "Untitled 90320" also contains a cyclic interval pattern constructed around the tritone that is identical in construction to the descending portion of pattern #3 in *Example 59*. This interval pattern is listed as *Example 61*. Coltrane repeats this pattern a total of four times, after which he introduces material related to the C+ triad (diagramed in vertical brackets). At the end of the excerpt, Coltrane utilizes the first five notes of a whole-tone progression that includes all of the pitches of the cyclic tritone pattern and the C+ triad. Thus, Coltrane has arranged similar material into three different interval cycles: tritone, ditone, and whole-tone.

Example 61: John Coltrane, *Untitled 90320*, transcribed by Andrew White



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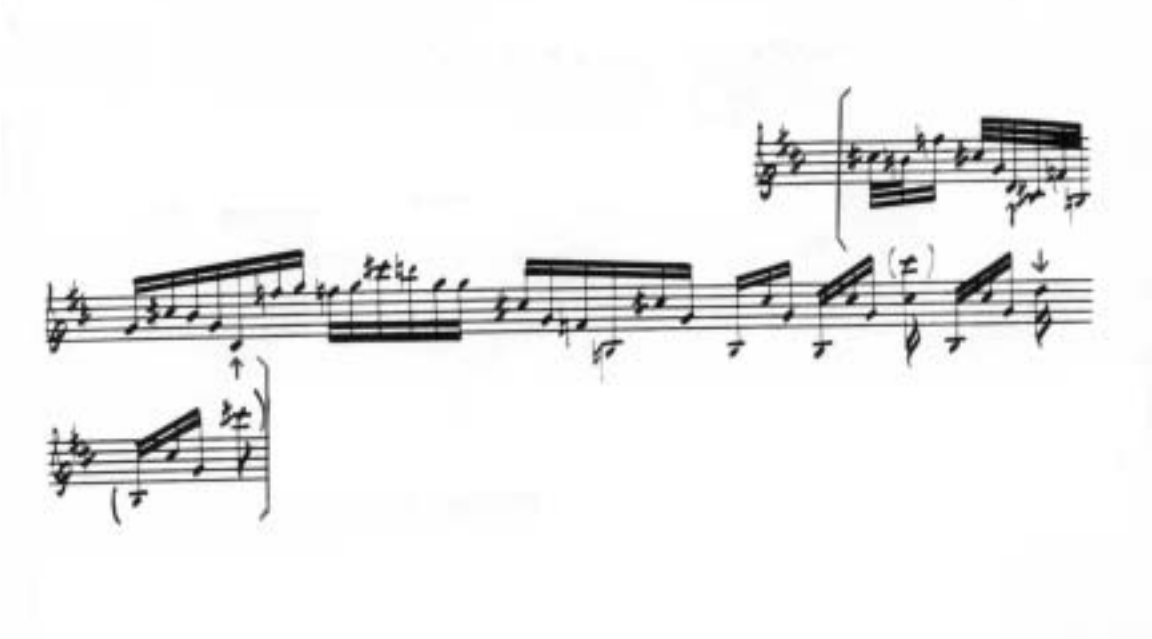
Example 62, from "Venus" of the *Interstellar Space* recording of 1967, contains an excerpt that capitalizes on a unique feature that results from the construction of the interval cycles of pattern #2 and pattern #3. For the purpose of explanation, *Example 63* diagrams the ascending versions of both of these patterns. Looking at *Example 63*, pattern #2, it is apparent that when a pitch is added one whole step above each of the pitches of this tritone interval, two tritone pairs are created that are located one whole step apart from one another. The ascending version of patterns #3, in *Example 63*, demonstrates that when an interpolation is added a major third above each of the principal pitches, two different tritone pairs will be formed, but because of the symmetry of the tritone interval they will still be located one whole step apart. In *Example 63* both

patterns form two pairs of tritones one whole step apart. The two tritone pairs formed as a result of the interpolations in pattern #2 are c/f# and d/g#. The two tritone pairs formed as a result of the interpolations in pattern #3 are c/f# and b-flat/e. The excerpt from “Venus”, *Example 62*, contains the pitches of two tritone pairs located one whole step apart. In this particular passage, the two tritone pairs are f/b and g/c#. The only exceptions to this are three “d’s”, which are designated with an arrow. The notes, as contained in this passage, no longer resemble a cyclic interval pattern. The extent of the extrapolation has masked the symmetry. However, an analysis of this type reveals the cyclical nature of the excerpt.

Example 62: John Coltrane, *Venus*, transcribed by Andrew White



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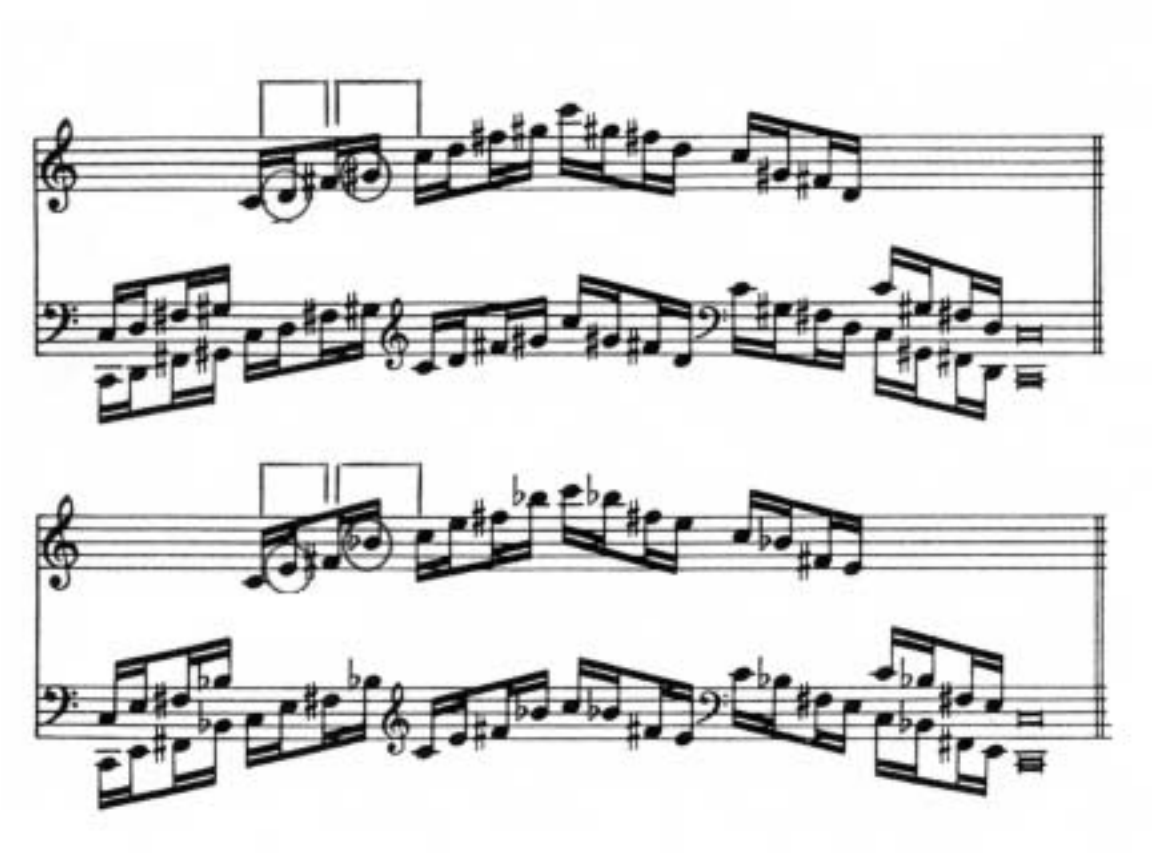
Example 63: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #2 and #3



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The patterns in the next portion of this analysis of interval cycles based on the tritone progression are classified by Nicolas Slonimsky in the *Thesaurus* as "Symmetric Interpolations". The tritone progression is the only interval cycle in the *Thesaurus* that includes this category. This is due to the fact that since the tritone interval divides an octave equally into two parts, an intervallic symmetry can be created ascending and descending the middle of the octave by

strategically inserting interpolations. An example of this kind of construction can be seen in *Example 64*. In this example, the principal interval progression (tritone) is represented by the pitches c^1, $f\#^1$, and c^2. If a pitch is interpolated one whole step above c^1 and another a major third above $f\#^1$, represented by the pitches d^1 and b-flat^1 respectively, a symmetry is created by the intervals proceeding from $f\#^1$ down to c^1 and from $f\#^1$ up to c^2. Ascending and descending from $f\#^1$, the intervallic sequence is a major third followed by a whole step. Slonimsky creates twenty-two patterns of this type in the *Thesaurus* by using interpolations of one, two, and three notes.

Example 64: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #28

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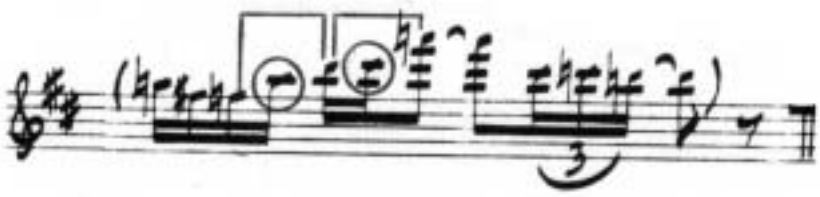
Example 65 is an illustration of this kind of symmetric interpolation occurring in a Coltrane improvisation on the composition “Untitled Original 90314”. The pitches of the principal interval progression are f^2, b^2, and f^3. The symmetric interpolation occurs on the pitches a^2 and $c\#^3$. The symmetry is created ascending and

descending from b^2 by the intervallic sequence of a whole step followed by a major third.

Example 65: John Coltrane, *Untitled Original 90314*, transcribed by Andrew White



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Example 65 contains the same construction as the *Thesaurus* pattern #30, listed as *Example 66*. Slonimsky labels this pattern as a tritone progression with a symmetric interpolation of one note. The principal interval progression is represented in *Example 66* by the pitches c^1, $f\#^1$, and c^2. The cyclic construction is identical to that of the Coltrane pattern in *Example 65*.

Example 66: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #30

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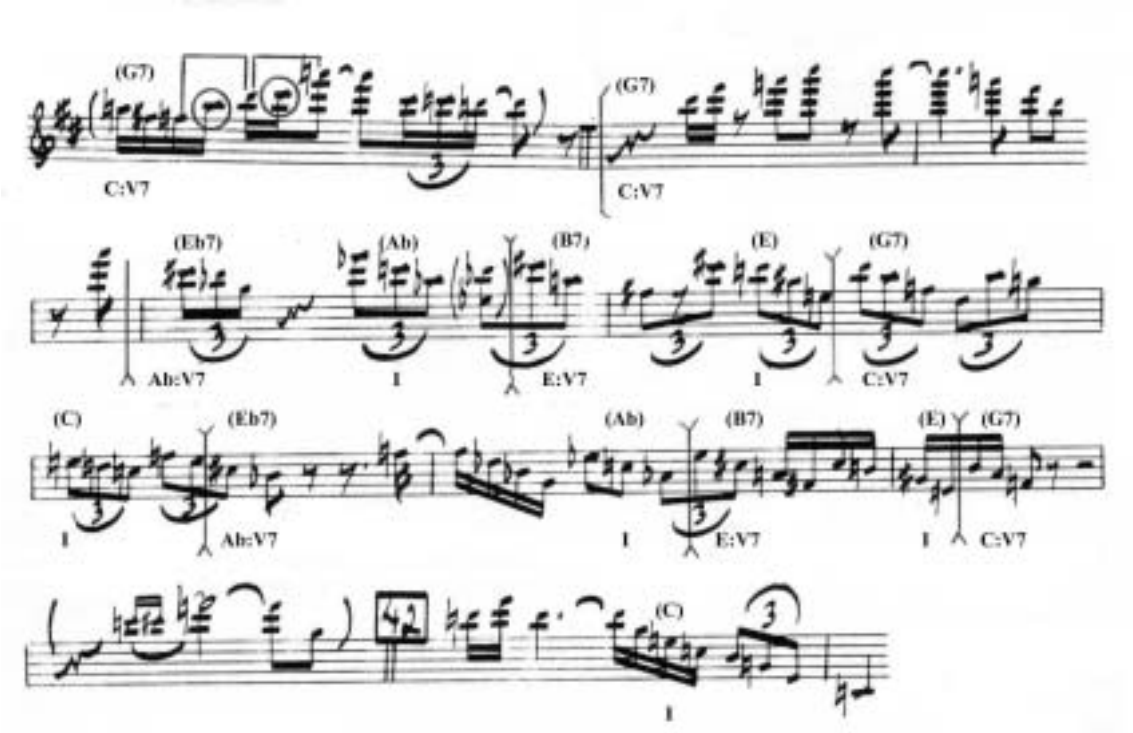
In Coltrane's improvisation on the composition "Untitled Original 90314" the material contained in *Example 65* is immediately followed by the material from *Example 17* in Chapter 3. The entire passage has been reprinted as *Example 67.* An interesting feature about the cyclic interval pattern at the beginning of *Example 67* (and discussed in *Example 65*) is that the principal interval pitches f^2 and b^2 represent the 7th and the 3rd, respectively, of a G7 chord. This chord is the dominant seventh of the first implied key center of C major in the major thirds cycle that appears in *Example 67*. In this context there can be no doubt that f^2, b^2, and f^3 are the principal pitches utilized by Coltrane in this cyclic interval pattern.

Example 67: John Coltrane, *Untitled Original 90314*, transcribed by Andrew White



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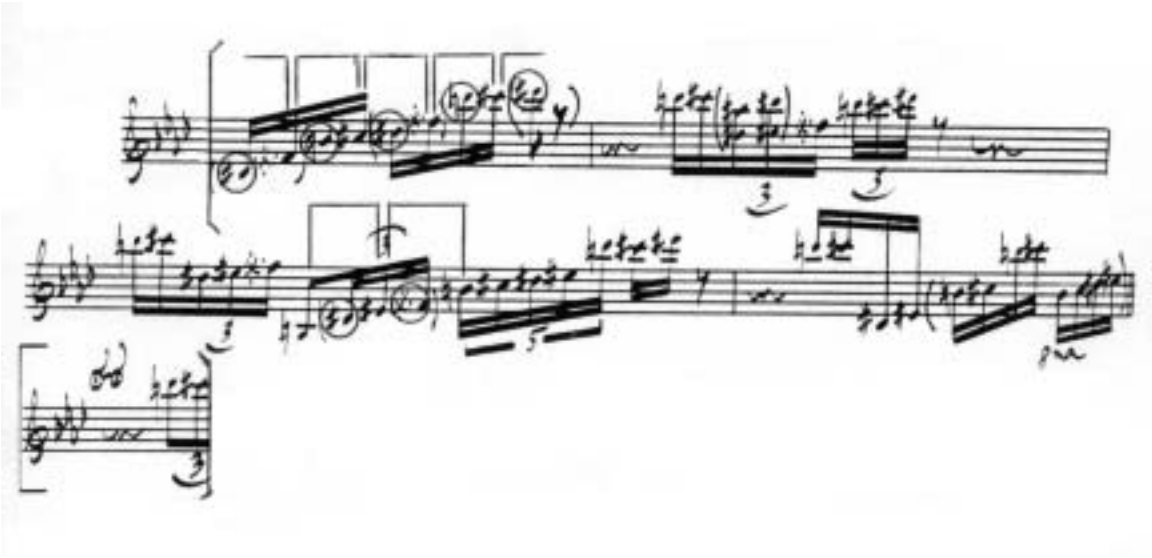
Examples 68 and *69* are from the live version of “One Down, One Up” that was recorded at the Newport Jazz Festival on July 7, 1965. *Example 68* includes two cyclic patterns based on the tritone with a symmetric interpolation identical in construction to the *Thesaurus* pattern #30 that was cited as *Example 66*. However, in *Example 68* the context in which both of these patterns occur is whole-tone. The first cyclic pattern diagramed in *Example 68* uses f-double sharp^{1}, c#^{2}, f-double sharp^{2}, and c#^{3} as the pitches of the principal tritone interval progression with a symmetric interpolation one whole step on either side of c#2 and c#3. The second cyclic pattern uses “b”, e#^{1}, and b^{1} as the pitches of the principal tritone interval progression with a symmetric interpolation of one whole step on either side of e#^{1}. All of the notes in both cycles belong to the whole-tone scale that begins on “b”, indicated by the vertical brackets in *Example 68*.

Example 68: John Coltrane, *One Down, One Up*, transcribed by Andrew White



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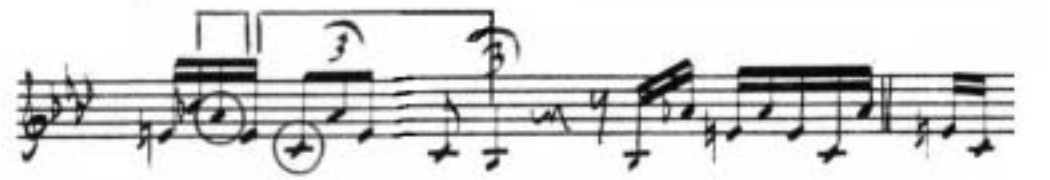
Example 69, from the same improvisation as the previous example, contains a tritone interval pattern with a symmetric interpolation followed by a pattern of notes extrapolated from this cycle. The principal pitches of the one octave cycle are b-flat^1, e^1, and "b-flat" diagramed in *Example 69*. The symmetric interpolation occurs as a major third on either side of the intermediate pitch (e^1) represented by the pitches a-flat^1 and c^1. This construction is identical to the descending portion of *Thesaurus* pattern #28, cited as *Example 70*, transposed down a major ninth.

Example 69: John Coltrane, *One Down, One Up*, transcribed by Andrew White



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Example 70: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #28

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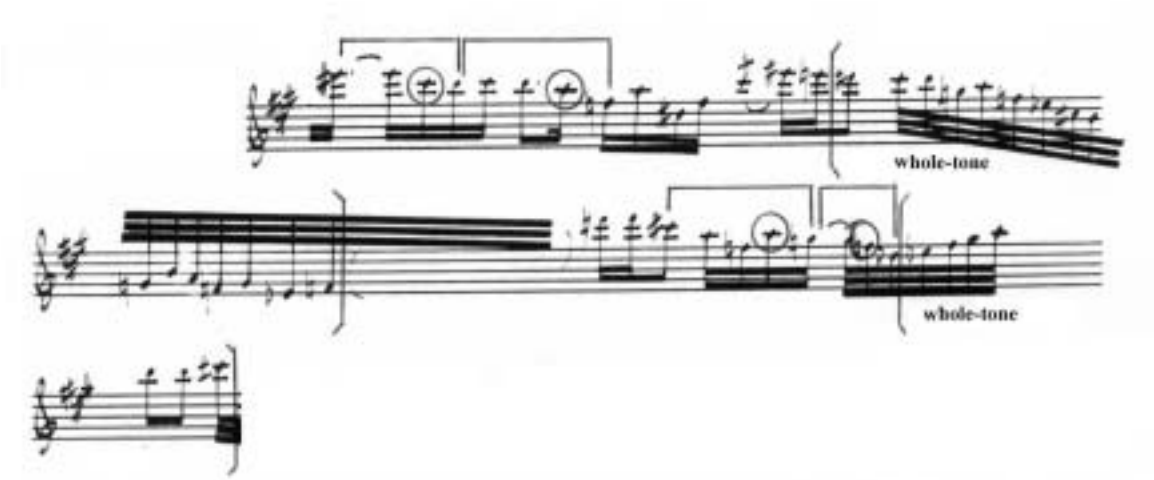
Two more Coltrane tritone interval patterns with a symmetric interpolation that are whole-tone related can be found in the version of the composition “Nature Boy”, which was recorded on February 18, 1965. These patterns both span the octave as one complete cycle and are diagramed in *Example 71.* The principal intervals of the first diagramed cycle are designated as the pitches e#^{3}, b^2, and f^2. The symmetric interpolation is represented by the pitches c#^{3} and a^2; each located one whole step from the intermediate pitch b^2. This interval cycle introduces the whole-tone scale pattern that immediately follows (designated by horizontal brackets). The second diagramed interval cycle uses c#^{3}, g^2, and f^2 as the pitches of the principal interval with an a^2 and an f^2 as the pitches of the interpolation located symmetrically on each side of the intermediate pitch g^2. This interval cycle also spans an octave to form one complete cycle and introduces a whole-tone scale pattern formed right after it. Both of these interval cycles are identical in construction (but located on different pitch levels) to the

descending portion of the *Thesaurus* pattern #30, labeled by Slonimsky as a tritone progression with a symmetric interpolation of one note. The descending portion of pattern #30 from the *Thesaurus* is diagramed and included as *Example 72*.

Example 71: John Coltrane, *Nature Boy*, transcribed by Andrew White



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Example 72: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #30

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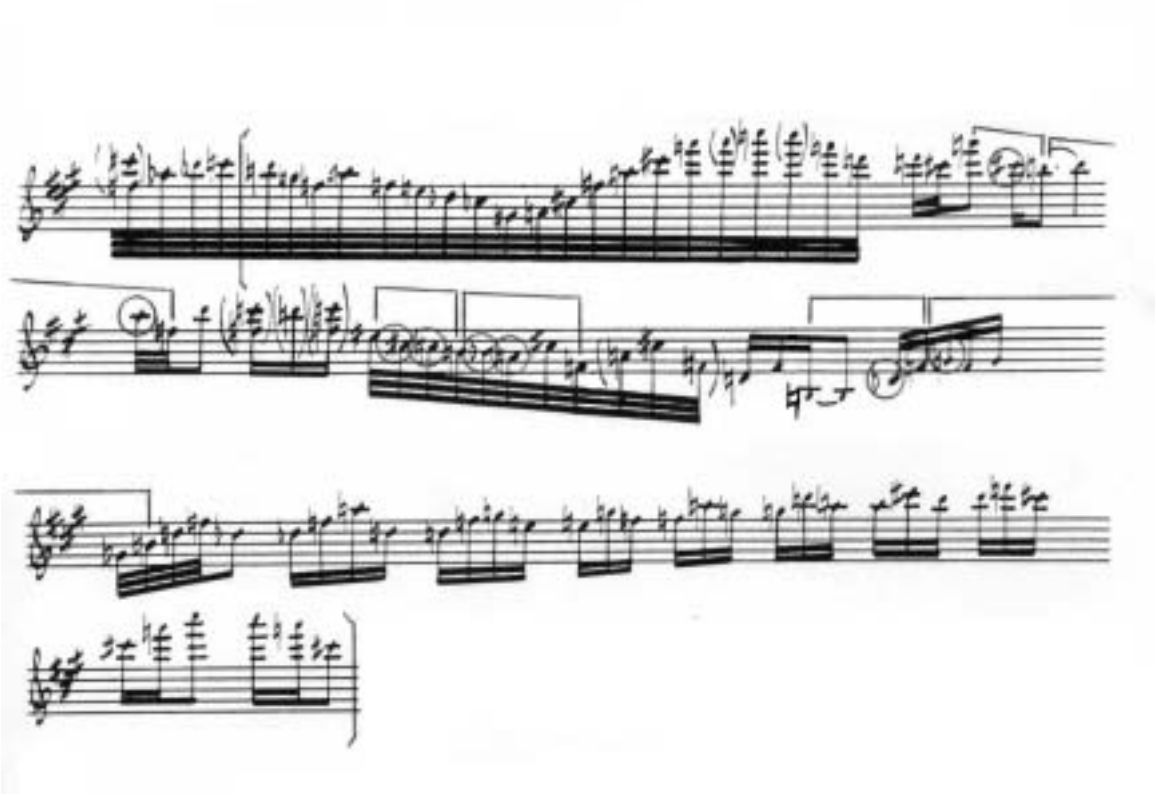
Example 73 is an excerpt that is taken from the same recording of “Nature Boy” as *Example 71*, although earlier in Coltrane’s improvisation. Instead of the whole-tone context found in *Example 71*, *Example 73* contains three interval cycles found in the context of D minor (#7), which is designated by the single set of vertical brackets. The pitches of the principal interval progressions as designated by the horizontal brackets in all three diagramed cyclic patterns of *Example 36c* are the same but located in different octaves. Additionally, all are complete cycles that span one octave. The first cyclic interval pattern that is diagramed in *Example 73* is a tritone progression with a one note symmetrical interpolation. The symmetric interpolation occurs as one whole step above and one whole step below the intermediate pitch b^2. This cyclic interval pattern is identical in construction to the *Thesaurus* pattern #30, diagramed in *Example 72.* The second diagramed cyclic interval pattern contains a symmetrical interpolation of two notes. These notes are circled in the diagram and consist of two half steps located on either side of the intermediate pitch b^1. This particular cyclic interval pattern is of identical construction (but different transposition) to the *Thesaurus* pattern #40 diagramed in *Example 74.* Slonimsky labels this pattern as a tritone progression with a symmetrical interpolation of two notes. The last cyclic interval pattern diagramed in *Example 73* starts on the principal interval pitch “b” and progresses through f^1 before ending on b^1 one octave above the starting pitch. Coltrane interpolates d-$flat^1$ and g^1 one whole step above the pitches “b” and f^1, respectively, creating a pattern identical in

construction to the *Thesaurus* pattern #2, diagramed as *Example 55.* The excerpt ends with a diatonic pattern based on the tonal center of D minor (#7).

Example 73: John Coltrane, *Nature Boy*, transcribed by Andrew White



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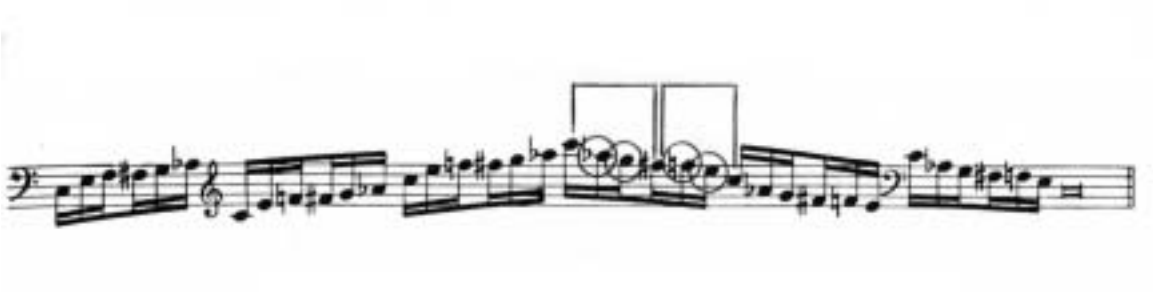
Example 74: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #40



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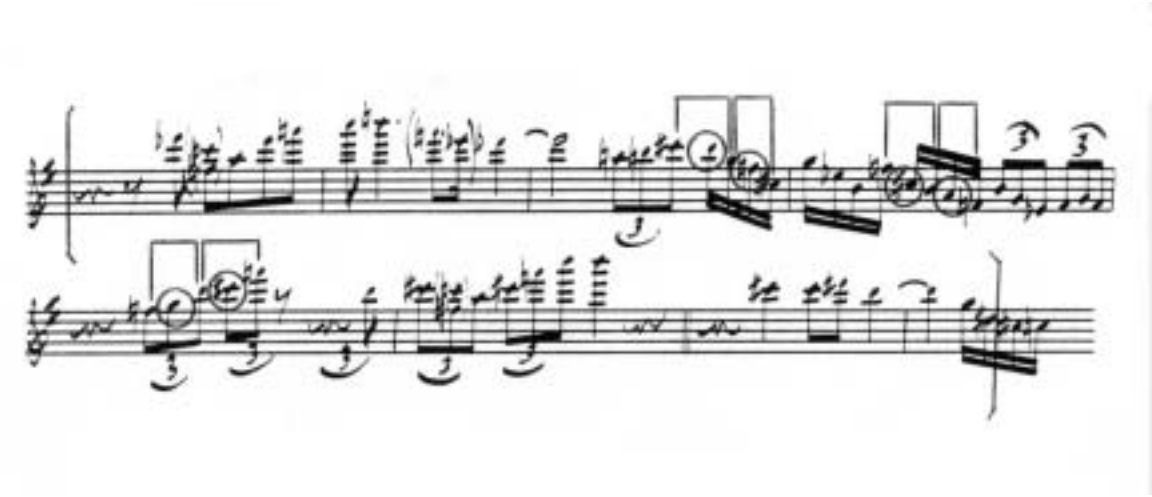
Coltrane's improvisation on "Transition" contains three more interval cycles based on the tritone as illustrated in *Example 75*. The entire passage is of whole-tone derivation. The first diagramed cyclic interval pattern is a complete octave and uses the pitches $c\#^3$, g^2, and $c\#^2$ as the principal tritone interval progression. Coltrane interpolates pitches a whole step beneath the notes of the principal interval $c\#^3$ and g^2. These are the circled tones b^2 and f^2, respectively. The resulting pattern resembles the *Thesaurus* pattern #3, diagramed as *Example 59*. The second diagramed cyclic interval pattern in *Example 75* is a symmetric interpolation based on the tritone interval progression represented by the pitches f^2, b^1, and f^1. The symmetric interpolation is formed by the added pitches $c\#^2$ and a^1, placed one whole step above and one whole step beneath, respectively, the intermediate pitch b^1. The resulting cyclic interval pattern covers a complete octave and resembles the *Thesaurus* pattern #30, diagramed in this study as *Example 72.* The last diagramed cyclic interval pattern in this excerpt uses the notes f^2, b^2, and f^3 as the pitches of the principal interval progression with an interpolation a whole step above f^2 and b^2 on the notes g^2 and $c\#^3$, respectively. The resulting cyclic interval pattern spans one octave and resembles the *Thesaurus* pattern #2, diagramed in this study as *Example 55.*

Example 75: John Coltrane, *Transition*, transcribed by Andrew White



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The final example of cyclic interval patterns based on the tritone interval progression is an excerpt from Coltrane's arrangement of the tune "Chim Chim Cheree", which David Wild claims, "In the group's hands any trace of its Mary Poppins origins were obliterated, as Coltrane angularizes the attractive theme over a repetitive Tyner chord pattern."[83] In this excerpt there are two tritone and one ditone cyclic interval patterns. All three cyclic patterns are diagramed in *Example 76*, separated by vertical brackets because of their relatively close proximity to one another. The first diagramed cyclic interval pattern is based on a tritone interval progression. The pitches of the principal interval cycle are b^1, f^2, and b^2. The circled pitches $c\#^2$ and b^2 indicate the interpolation each one whole step above the pitches of the principal interval progression b^1 and f^2, respectively.

[83] Woideck, *The John Coltrane Companion*, 199-200.

The resulting cycle resembles the *Thesaurus* pattern #2, with the relevant portion to this example diagramed in *Example 55*. The second cycle is the ditone pattern consisting of two augmented triads whose roots are one whole step apart. This was the interval cycle based on the *Thesaurus* pattern #187, diagramed in this study as *Example 18b*. Coltrane used this pattern as whole-tone vocabulary in the context of a larger whole-tone passage in *Examples 37*, *39*, *40*, *41*, and *42* of this study. The final cyclic pattern in *Example 76* is a tritone interval progression with a symmetric interpolation. The principal pitches of the tritone interval in this cycle are g^1, $c\#^2$, g^2, and $c\#^3$. The symmetric interpolation occurs when the pitches b^1 and e-flat^2 are inserted one whole step on either side of $c\#^2$. The resulting symmetry is identical to the *Thesaurus* pattern #30, as diagramed previously in *Example 55*. All three cyclic interval patterns diagramed in *Example 76* are part of the same whole-tone sonority.

Example 76: John Coltrane, *Chim Chim Cheree*, transcribed by Andrew White

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The cyclic interval patterns included in this chapter include seventeen distinct constructions based on the diatessaron, ditone, sesquitone, whole tone,

and tritone interval progressions. Sometimes the patterns have been repeated verbatim with a change in the context of the material immediately surrounding them. In other instances notes included in the original pattern are repeated and developed melodically, while still other times the pattern has been extrapolated on to the point that it is almost unrecognizable. In all cases the formation of melodies around principal interval progressions represents a significant contribution to jazz musical style that would not have existed otherwise.

CHAPTER 5: SUMMARY AND CONCLUSION

This document has traced the influences and development of John Coltrane's major thirds cycles, beginning with their use as chord structure in compositions of the late 1950's and early 1960's. Critical scholarly contributions on this subject have been made by David Demsey, Andrew White, Walt Weiskopf, Carl Woideck, Lewis Porter, and John Schott. Numerous examples of instances of melodically implied major thirds cycles in the form of descending V7 – I cadences over the static harmony of compositions from Coltrane's late period (1965 – 1967) provide evidence that he continued to utilize these cycles long after their appearance as chord structure in compositions from 1959 such as "Countdown" and "Giant Steps". These major thirds patterns can be varied in length and clarity of implied progressions. Coltrane did not hesitate to imply more than one major thirds cycle in a single improvisation. In fact, the improvisation on the composition "Brasilia" includes all four major thirds cycles covering all twelve major keys. Major thirds patterns from Coltrane's last year of recording (1967) do not always imply the clear V7 – I major thirds cyclic progressions from 1965. However, they are shorter in length and more numerous. These implied major thirds patterns provide structure for the parts of the improvisation in which they appear. This is evident especially in the examples taken from Coltrane's recorded duets with drummer Rashied Ali where the lack of harmonic structure is inherent. The structure of these late

compositions provided John Coltrane the opportunity to freely develop these major thirds cycles as melodic vocabulary.

Cyclic patterns based solely on the progression of a principal interval can be traced to the *Thesaurus of Scales and Melodic Patterns* by Nicolas Slonimsky. Most of the patterns utilized by Coltrane out of the *Thesaurus* are derived from intervallic progressions that divide one octave into equal parts. Given John Coltrane's penchant for the interval of the fourth, it is not surprising that several of these patterns are utilized as well. There are examples of Coltrane incorporating the cycle of fourths into his improvisations. The most practical and widely used patterns by Coltrane from the *Thesaurus of Scales and Melodic Patterns* are those of the ditone (major third), sesquitone (minor third), whole tone, and tritone. Coltrane uses the shortest of these patterns motivically. He extrapolates melodically from the pitches contained in the interval pattern, sometimes to such an extent that it is difficult to identify the original cycle. The extended cyclic interval patterns are used for structural purposes, their principal tones serving as an organizational framework during portions of the improvisation.

This study demonstrates with specific passages from John Coltrane's improvisations that the influence of Nicolas Slonimsky's *Thesaurus of Scales and Melodic Patterns* on the developing melodic vocabulary of John Coltrane was profound. This influence can be traced to the initial development of major thirds cycles used as chord structure through their application as melodic vocabulary. The numerous cyclic interval patterns from Coltrane's improvisations traced in

this document to the cyclic interval patterns in the *Thesaurus* provide evidence of the important influence that Slonimsky's treatise had on Coltrane's developing melodic vocabulary. John Coltrane's discovery of new vocabulary and new structures included in the *Thesaurus of Scales and Melodic Patterns* is a result of his constant need for change and growth. Carl Woideck called Coltrane "one of the relatively few musicians in jazz history who embraced the ideal of continuous artistic evolution."[84] He goes on to say:

> Coltrane's insatiable curiosity about music and its structures found expression in his work-in-progress approach to his music. Perhaps influenced by Miles Davis in this regard, Coltrane seemed to celebrate musical style as a process, not as an arrival point. If the ideal of steady change was one of the positive hallmarks of his style, it was also a potential liability. Coltrane could be obsessive in his need for change and in his perpetual disatisfaction with what he had found in his search. His audience needed familiar musical guideposts, which was sometimes at odds with Coltrane's appetite for change; Coltrane felt pulled in two directions.[85]

Andrew White states of Coltrane, "He could not grow within a standard structure so he changed the mold."[86] John Coltrane successfully changed the established direction of jazz style without abandoning the traditional tenets of that style. This qualifies Coltrane's unique contribution to jazz melodic vocabulary as innovation. Examination and analysis of these cyclic patterns using the Slonimsky terminology leads to a better understanding of the *Thesaurus* from a pedagogical

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[84] Ibid., xiii.

[85] Ibid., xiv.

[86] White, 26.

standpoint and thus allows this cyclic vocabulary to be more extensively assimilated into the language of jazz.

SELECTED BIBILIOGRAPHY

Books

Antokoletz, Elliott. *The Music of Bela Bartok: A Study of Tonality and Progression in Twentieth-Century Music.* Los Angeles: University of California Press, 1984.

Antokoletz, Elliott. *Twentieth-Century Music*. Austin: University of Texas, 1992.

Baker, David N. *The Jazz Style of John Coltrane: A Musical and Historical Perspective.* Lebanon, IN., 1980

Cole, Bill. *John Coltrane.* New York: Schirmer Books, 1976; reprint , New York: Da Capo, 1993.

Gridley, Mark C. *Jazz Styles: History and Analysis*. 7th ed. Englewood Cliffs, NJ: Prentice Hall, 2000.

Hester, Karlton Edward. *The Melodic and Polyrhythmic Development of John Coltranes's Spontaneous Composition in a Racist Society.* Lewiston, N.Y.: The Edwin Mellen Press, Ltd., 1997.

Jost, Ekkehard. *Free Jazz*. 1975. New York: Da Capo, 1994.

Nisenson, Eric. *Ascension: John Coltrane and His Quest.* New York: St. Martin's Press, 1993.

Perl, George. *The Listening Composer*. Berkeley: University of California Press, 1990.

Porter, Lewis. *John Coltrane: His Life and Music.* Ann Arbor: The University of Michigan Press, 1998

Schott, John, "We Are Revealing a Hand That Will Later Reveal Us: Notes on Form and Harmony in Coltrane's Work," *Arcana: Musicians on Music,* ed. John Zorn (New York, NT"Hips Road and Branary Books, 2000), 345-66.

Simpkins, Cuthbert Ormond, M.D. *Coltrane: A Biography.* 1975. Baltimore: Black Classic, 1989.

Slonimsky, Nicolas. *Thesaurus of Scales and Melodic Patterns.* New York: Schirmer Books, 1947.

Thomas, J.C. *Chasin' The Trane: The Music and Mystique of John Coltrane.* New York: Da Capo Press, 1975.

Weiskopf, Walt and Ramon Ricker. *Coltrane: A Player's Guide To His Harmony.* New Albany, Indiana: Jamey Aebersold Jazz Inc., 1991.

Weiskopf, Walt. *Intervalic Improvisation, The Modern Sound: A Step Beyond Linear Improvisation*. New Albany, Indiana: Jamey Aebersold Jazz Inc., 1995.

White, Andrew Nathaniel, III. *Trane 'n Me (A semi-autobiography): A Treatise on The Music of John Coltrane.* Washington, DC: Andrew's Musical Enterprises, Inc, 1981.

Woideck, Carl. *Charlie Parker: His Music and Life.* Ann Arbor: The University of Michigan Press, 1996.

Woideck, Carl. *The John Coltrane Companion: Five Decades of Commentary*. New York: Schirmer Books, 1998.

Articles

Antokoletz, Elliott. "Interval Cycles in Stravinsky's Early Ballets" *Journal of the American Musicological Society* 39 (Fall 1986) 578-614.

Cohn, Richard. "Introduction to Neo-Riemannian Theory: A Survey and a Historical Perspective" *Journal of Music Theory* 24.2 (1998) 167-79.

Cohn, Richard. "Weitzmann's Regions, My Cycles, and Douthett's Dancing Cubes" *Music Theory Spectrum* : ( ): 89-103.

Cohn, Richard. "Maximally Smooth Cycles, Hexatonic Systems, and the Analysis of Late-Romantic Triadic Progressions" *Music Analysis* 15.1 (1996): 9-40.

Demsey, David. "Chromatic Third Relations in the Music of John Coltrane" *Annual Review of Jazz Studies* 5 (1991): 145-80.

Hughes, Allen. "Cover to Cover: The Inimitable Slonimsky" *Chamber Music* 18.1 (February 2001): 26-7.

Karpinski, Gary S. "Structural Functions of the Interval Cycles in Early 20th-Century Music" *International Journal of Musicology* 4 (1995), 183-206

Kostelanetz, Richard. "Nicholas Slonimsky" *21st Century Music* 7:6 (June 2000): 9-10.

Kurzdorfer, James. "Outrageous Clusters: Dissonant Semitonal Cells in the Music of Thelonious Monk" *Annual Review of Jazz Studies* :8 (1996): 181-201.

Lundergan, Edward. "Musical Metaphor: Cyclic-Interval Structures in Britten's 'War Requiem'" *Choral Journal* 38:7 (February 1998): 9-15, 17-20.

McDonald, Michael Bruce. "Traning the Nineties, Or the Present Relevance of John Coltrane's Music of Theophany and Negation." *African American Review* 29.2 (1995): 275-82.

Perle, George. "Berg's Master Array of the Interval Cycles" *The Musical Quarterly* 63.1 January 1977: 1-30.

Ruhlmann, William. "Going to Extremes: John Coltrane on Record." *Goldmine* 23 June 1995: 18-38, 136-52.

Smith, Joseph. "Using Slonimsky's Thesaurus" *Keyboard Classics and Piano Stylist (formerly Keyboard Classics)* 15 (1995): 25 + n1.

Stone, Reppard. "The Peregrination of Slonimsky's Thesaurus of Scales and Melodic Patterns" *Jazz Research Papers (NAJE)* 9 (1989) 239-45.

Discographies

Fujioka, Yasuhiro with Lewis Porter and Yoh-Ichi Hamada. *John Coltrane: A Discography and Musical Biography.* Metuchen, NJ: Scarecrow, 1995.

Jepsen, Jorgen Grunnet. *A Discography of John Coltrane.* Copenhagen NV, Denmark: Karl Emil Knudsen Publisher, 1969.

Transcriptions

White, Andrew. *Transcriptions of John Coltrane solos*. Washington, DC: Andrew's Musical Enterprises, 2001.