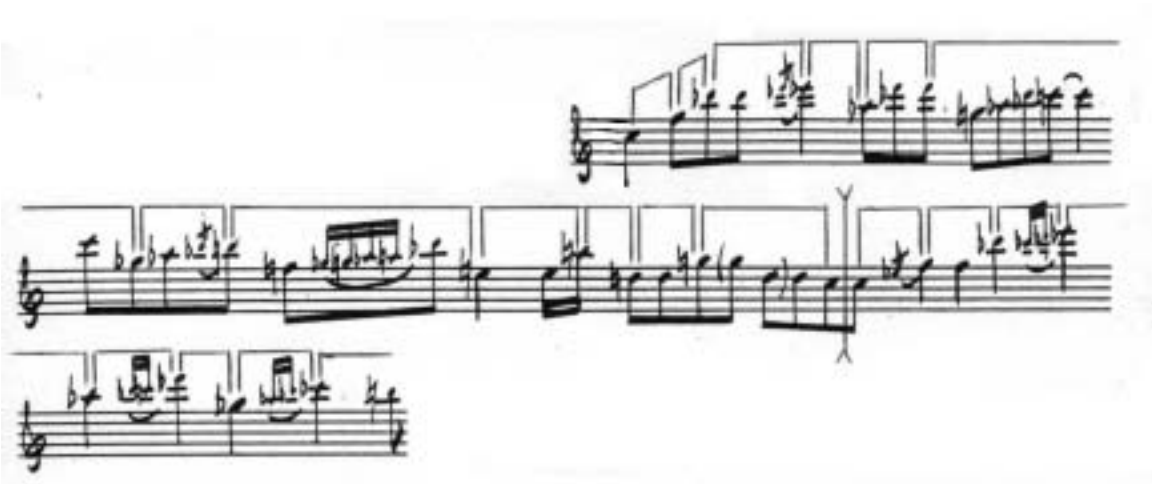
CHAPTER 4: INTERVAL CYCLES IN COLTRANE'S MELODIC VOCABULARY BASED ON PATTERNS FROM SLONIMSKY'S *THESAURUS*

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

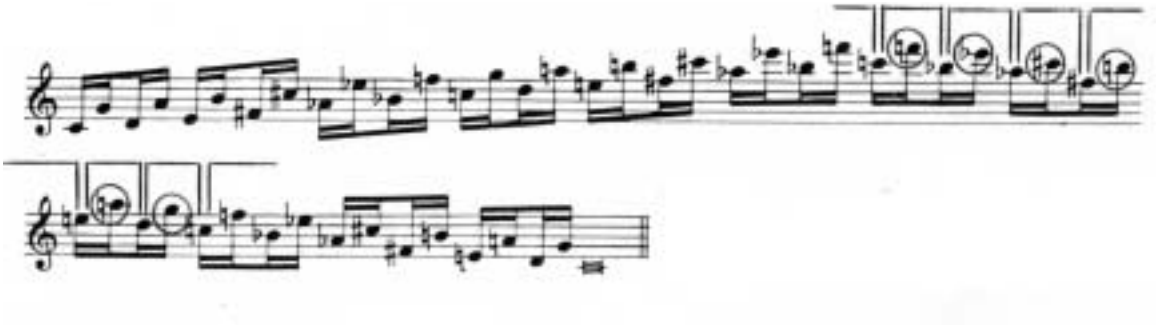


Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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*



Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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).

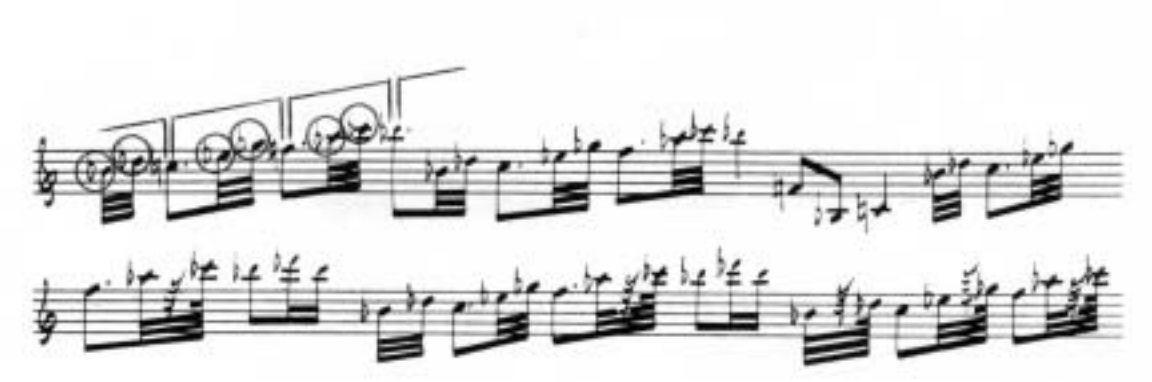
Example 25: John Coltrane, *Brasilia*, transcribed by Andrew White

Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

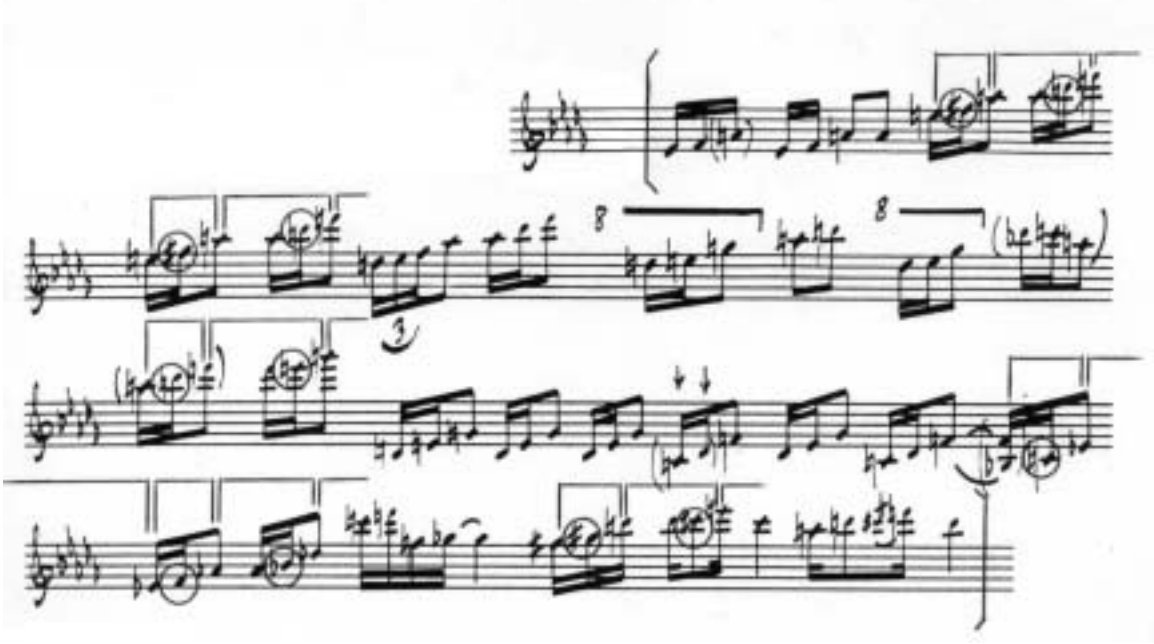
The *Thesaurus* provides a model for this construction as pattern #892, a diatessaron progression with an infra-interpolation (with added tones below and between the principal interval). This pattern is included as *Example 27*. The symmetrical construction, as it appears in *Example 26*, is a melodically 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.*

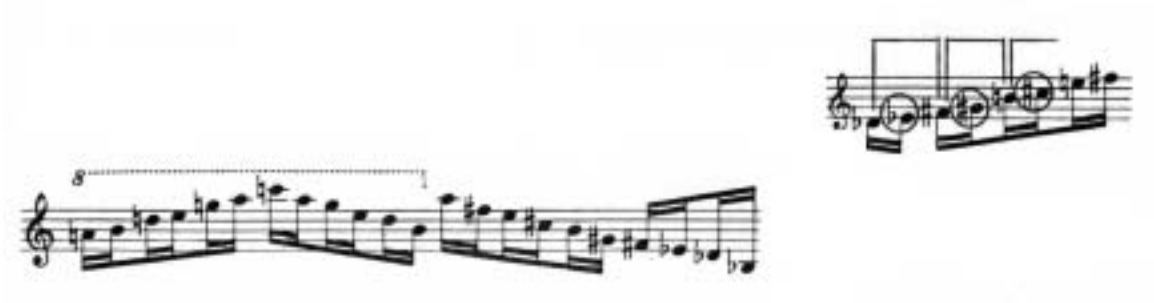
Example 28: John Coltrane, Saturn, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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.

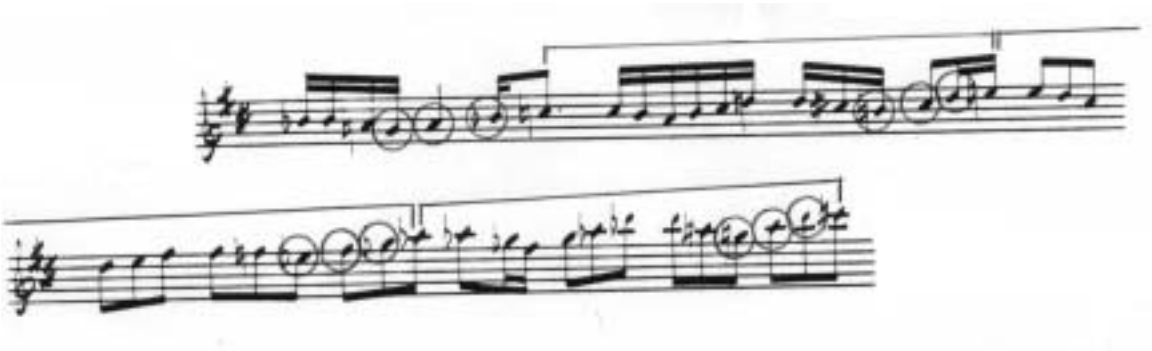
Example 29: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns, pattern #827*



Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

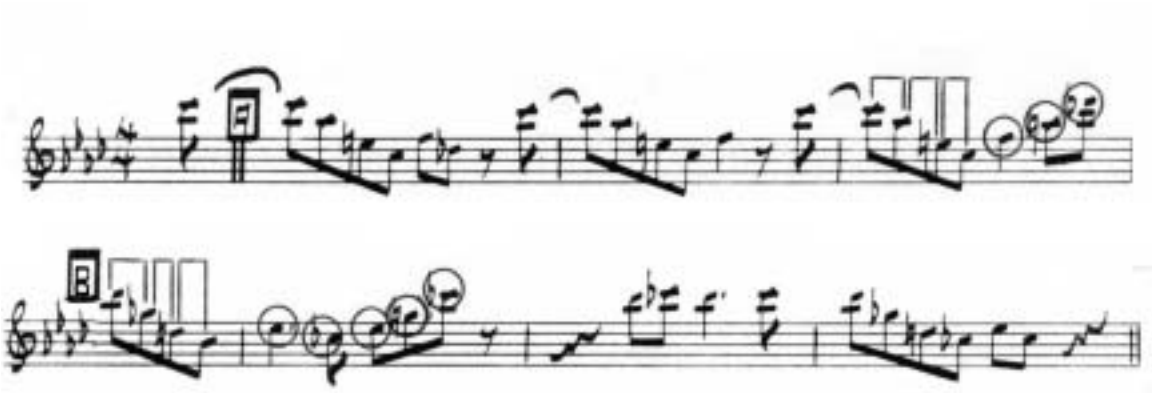
Another use of the ditone progression patterns included in the *Thesaurus of Scales and Melodic Patterns* by John Coltrane has been suggested by John Schott (discussed in Chapter 1). Schott outlines the symmetrical construction of the melody in the Coltrane composition "One Down, One Up" and suggests 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

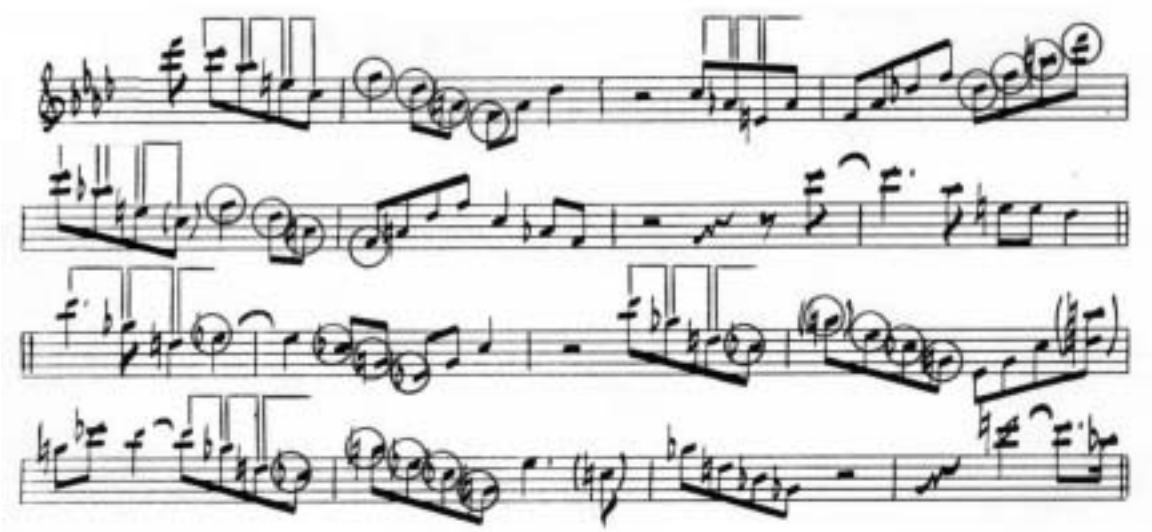


Reprinted by permission of Andrew White, Andrew’s Musical Enterprises, Inc.

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.

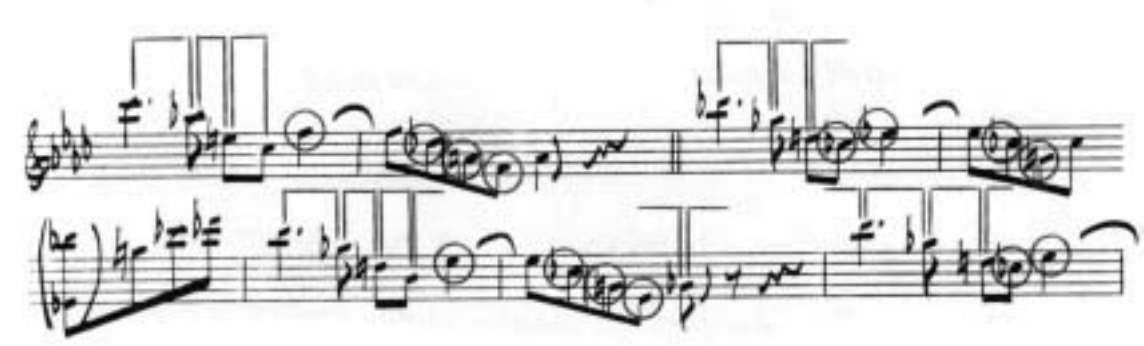
Example 33: John Coltrane, *One Down, One Up*, improvisation, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

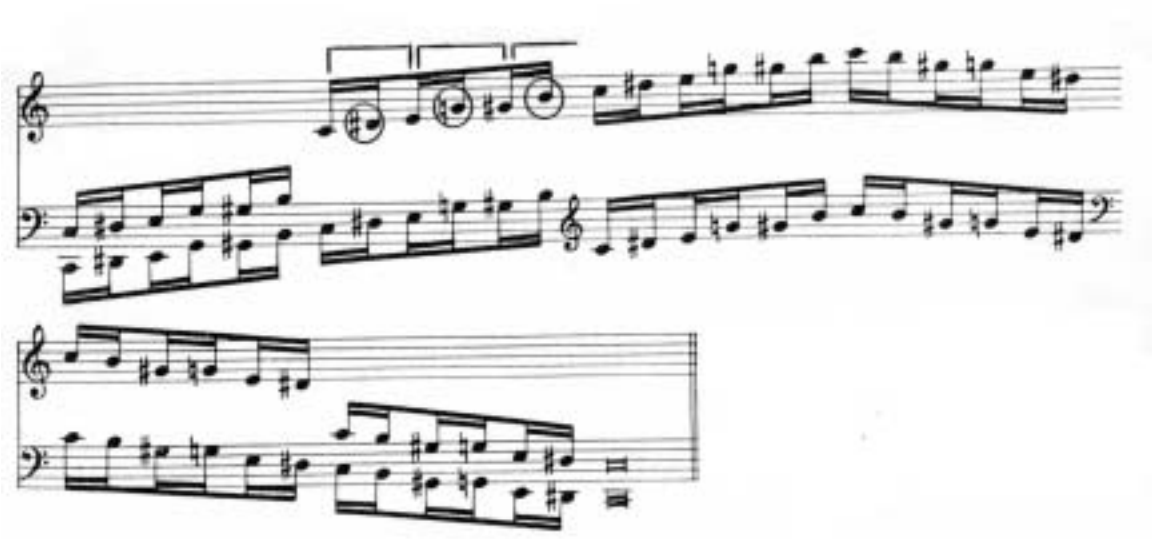
Schott also lists four other patterns from the *Thesaurus* as possible influences on composition "One Down, One Up". Pattern #190 from the *Thesaurus* contains the same pitches and principal interval progression, but a different ultrapolation. The other patterns listed by Schott from the *Thesaurus* (#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



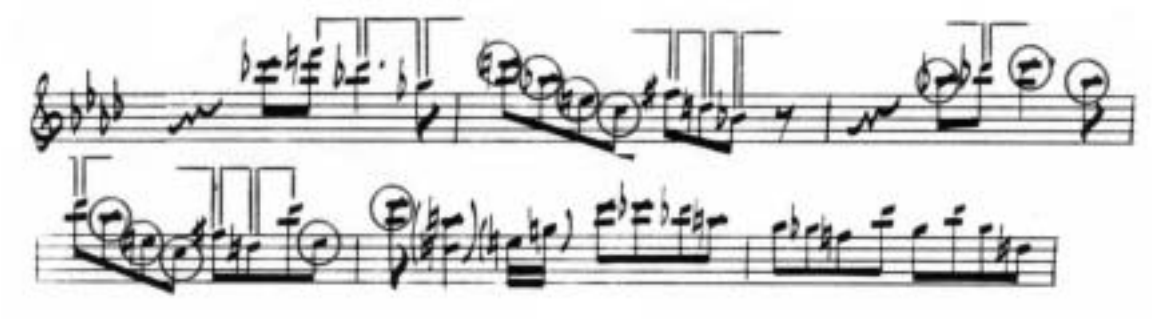
Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

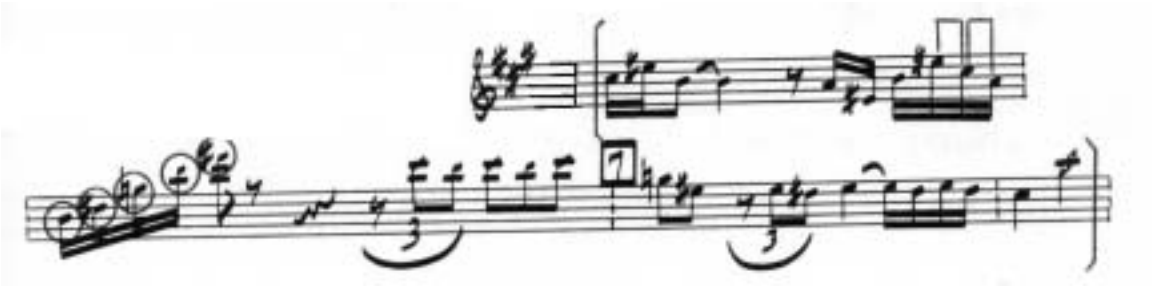
There is another whole-tone pattern in the configuration of two augmented triads that appears in an earlier position in Coltrane's improvisation on "One Down, One Up". This pattern appears as *Example 39*. It also happens that this occurrence is over the "B" section of the composition. Interestingly 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

Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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.

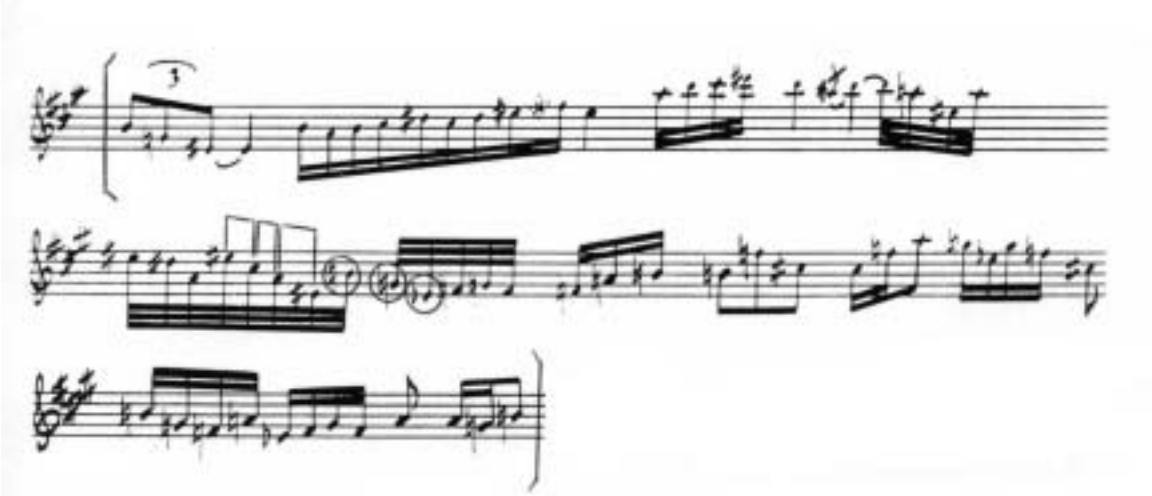
Example 40: John Coltrane*, Nature Boy (2/17/65)*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew’s Musical Enterprises, Inc.

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+.

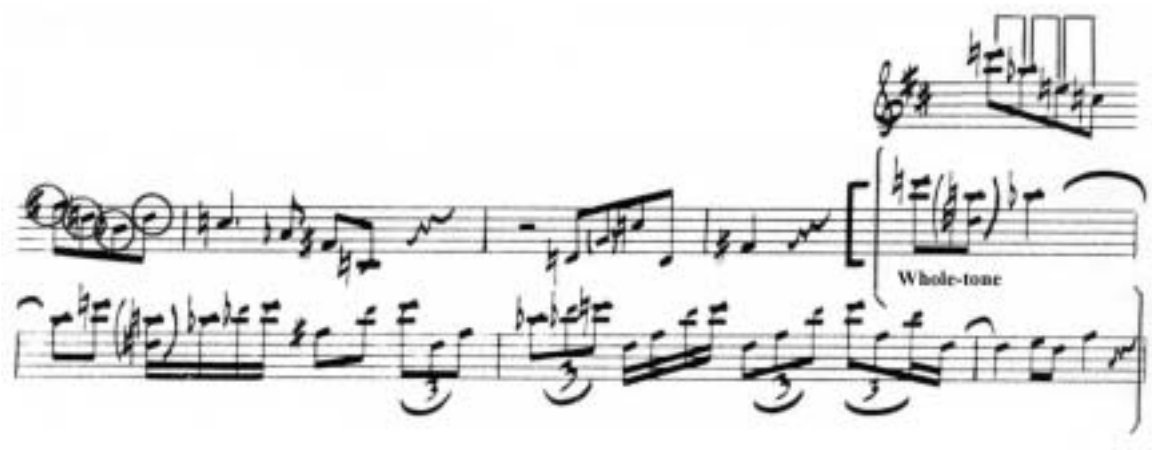
Example 41: John Coltrane, *Nature Boy (2/18/65)*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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*).

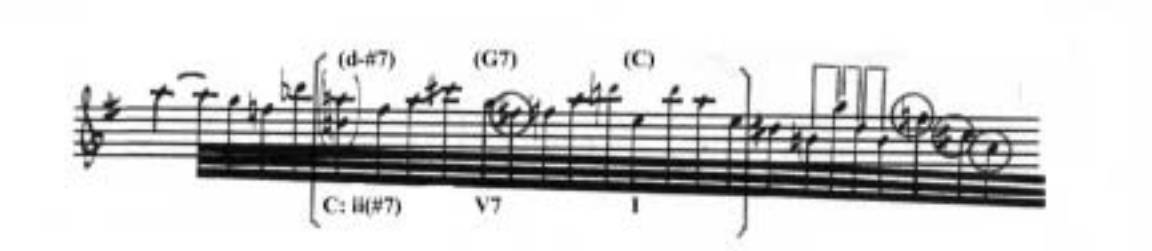
Example 42: John Coltrane, *Untitled 90314*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

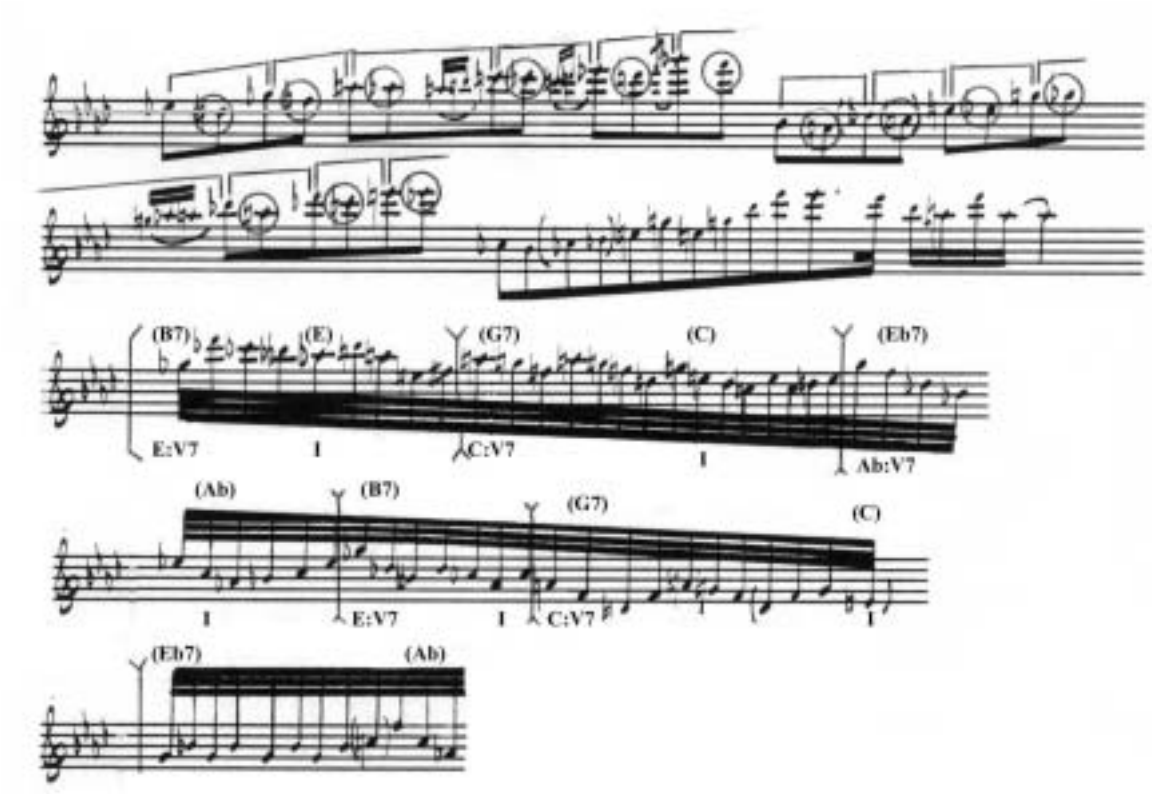


Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

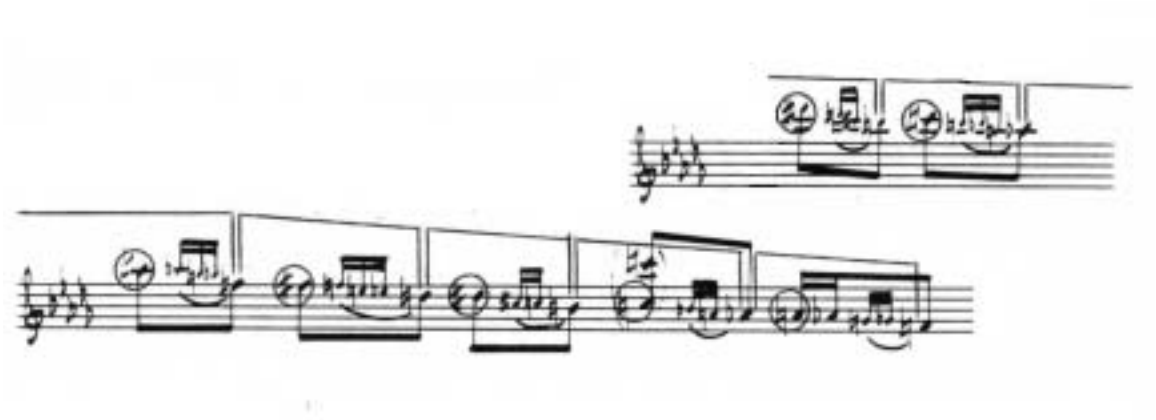
Thesaurus pattern #447 corresponds to the two minor thirds cycles that appear in *Example 44* and is listed as *Example 45*. Slonimsky labels this pattern as a sesquitone progression with an infrapolation of one note.

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

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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.

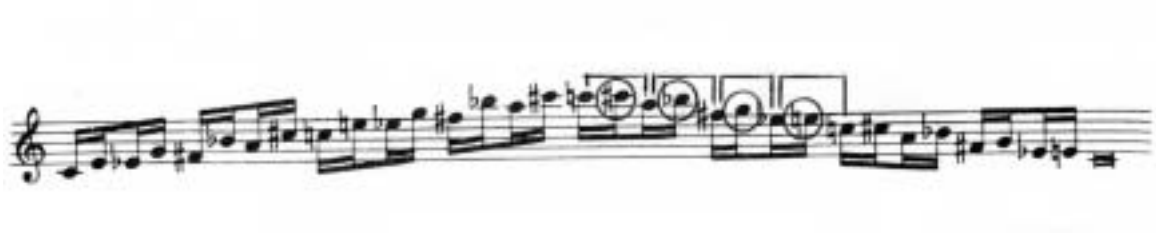
Example 46: John Coltrane, *Saturn*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

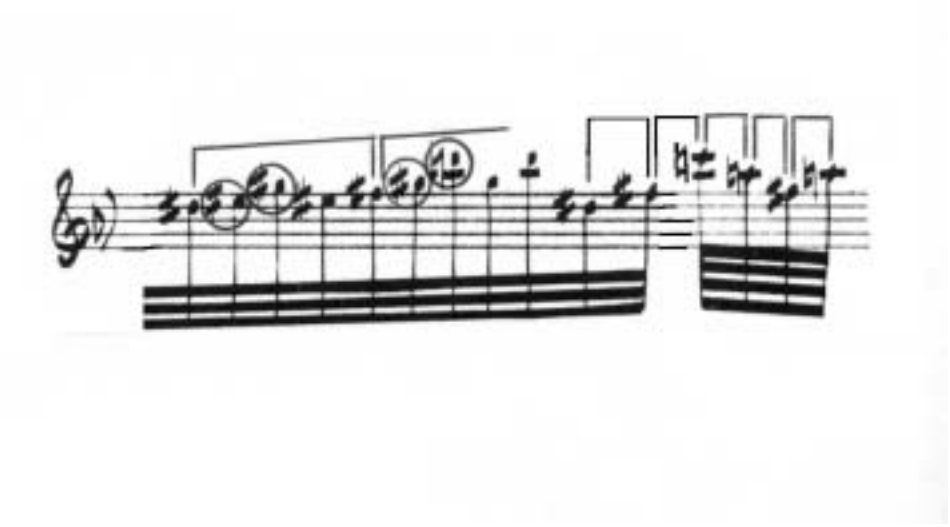


Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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*

.

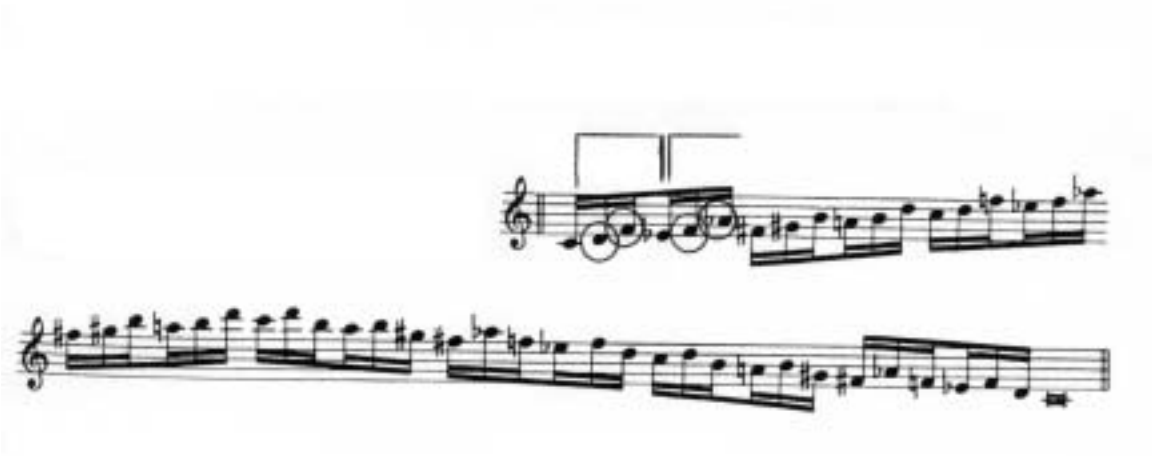
Example 48: John Coltrane*, I Want to Talk About You*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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".

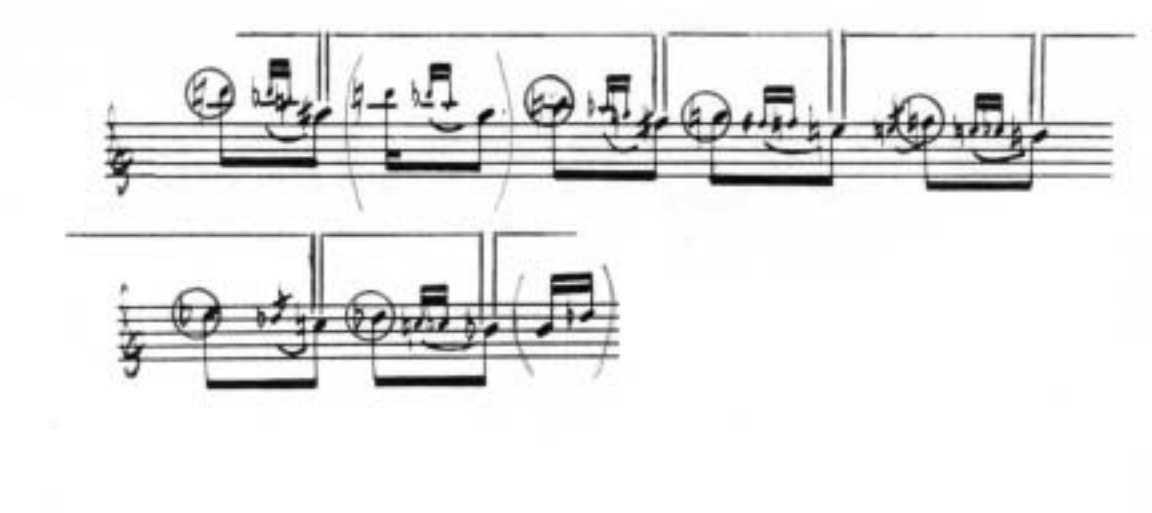
Example 49: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #497



Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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.

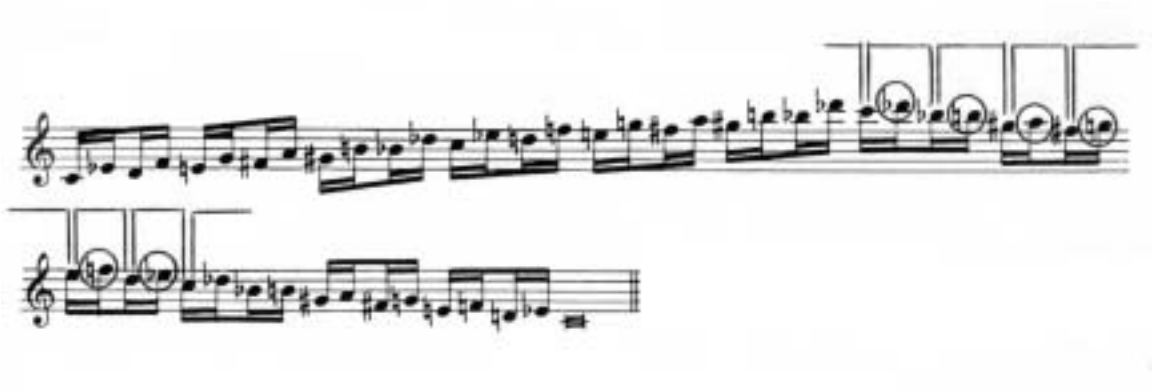
Example 50: John Coltrane, *Jupiter*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

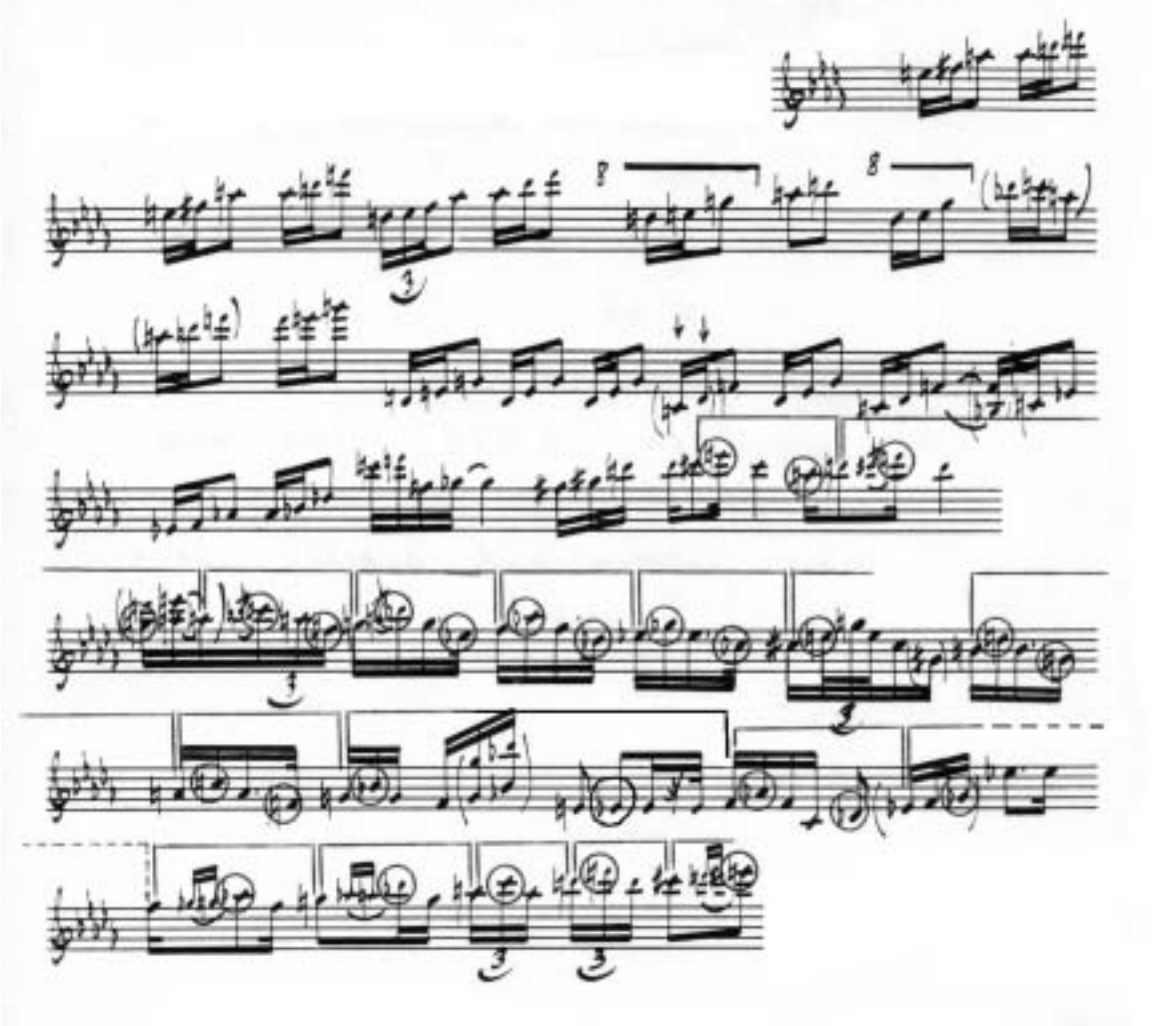


Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

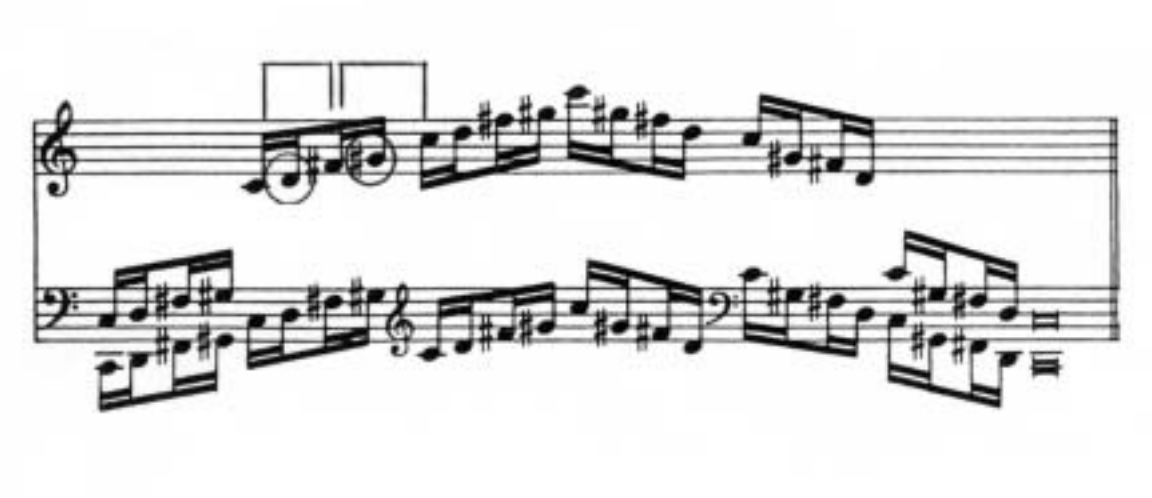
The second whole-tone cyclic interval pattern from *Example 52* can be found in the *Thesaurus* as pattern #570. This was the same pattern found in *Example 50* ("Jupiter"), only in the descending form. In *Example 52*, it is in the ascending form. This pattern in the ascending form is diagramed as *Example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

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

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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.

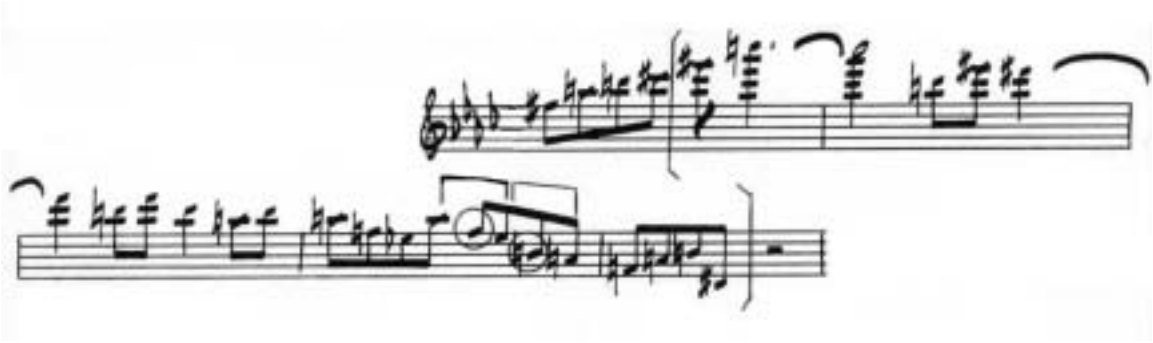
Example 55: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #2



Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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.

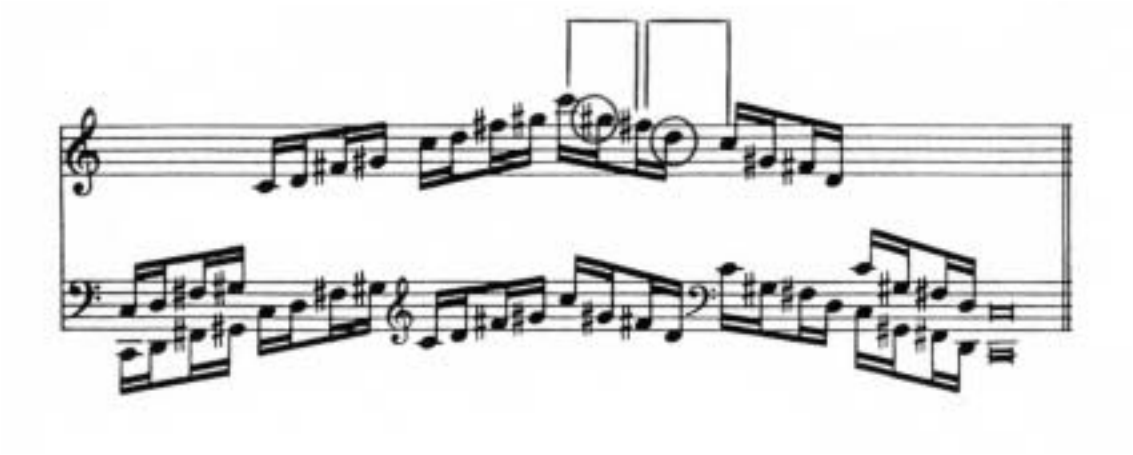
Example 56: John Coltrane, *One Down, One Up*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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*.

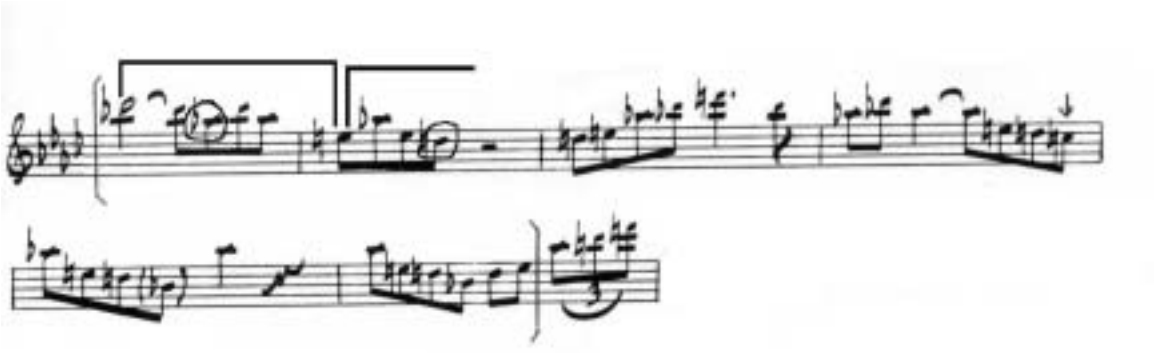
Example 57: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, #2



Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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.

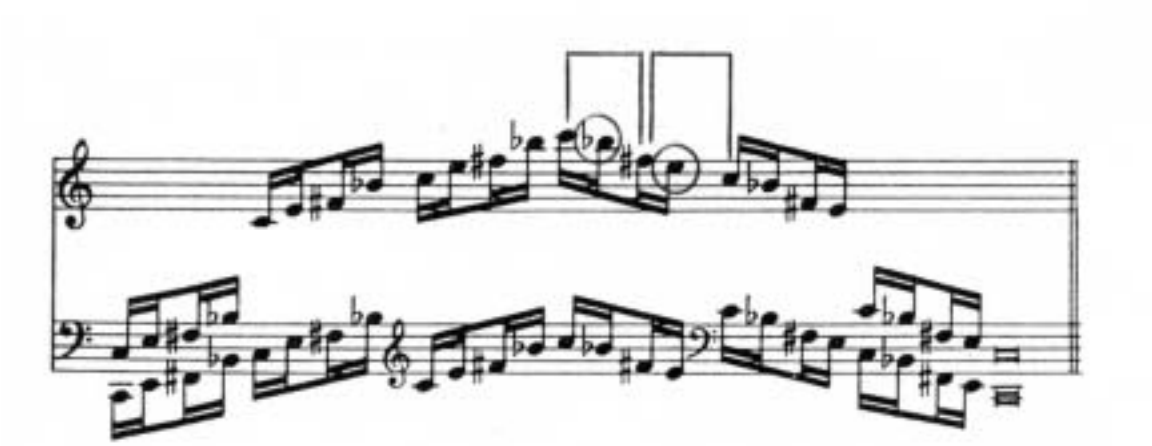
Example 58: John Coltrane, *One Down, One Up*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew’s Musical Enterprises, Inc.

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

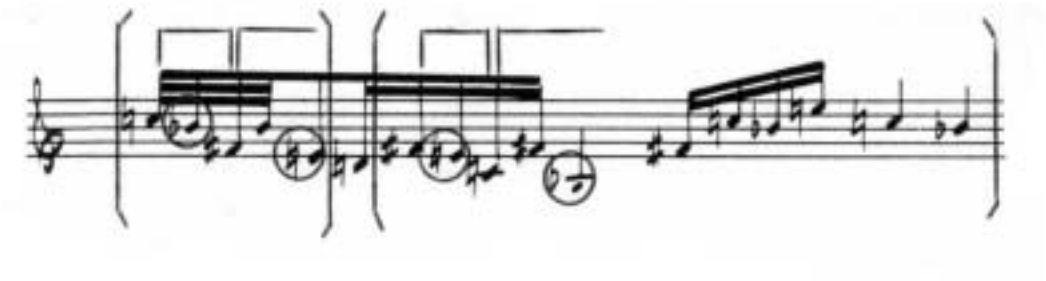


Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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.

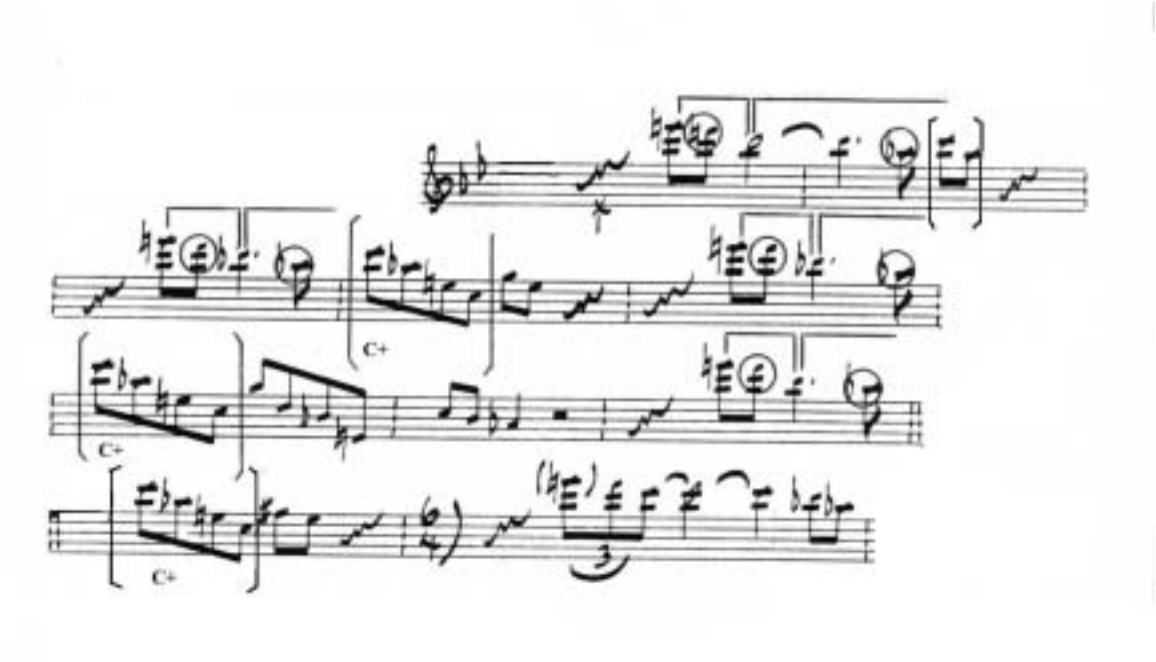
Example 60: John Coltrane, *Offering*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

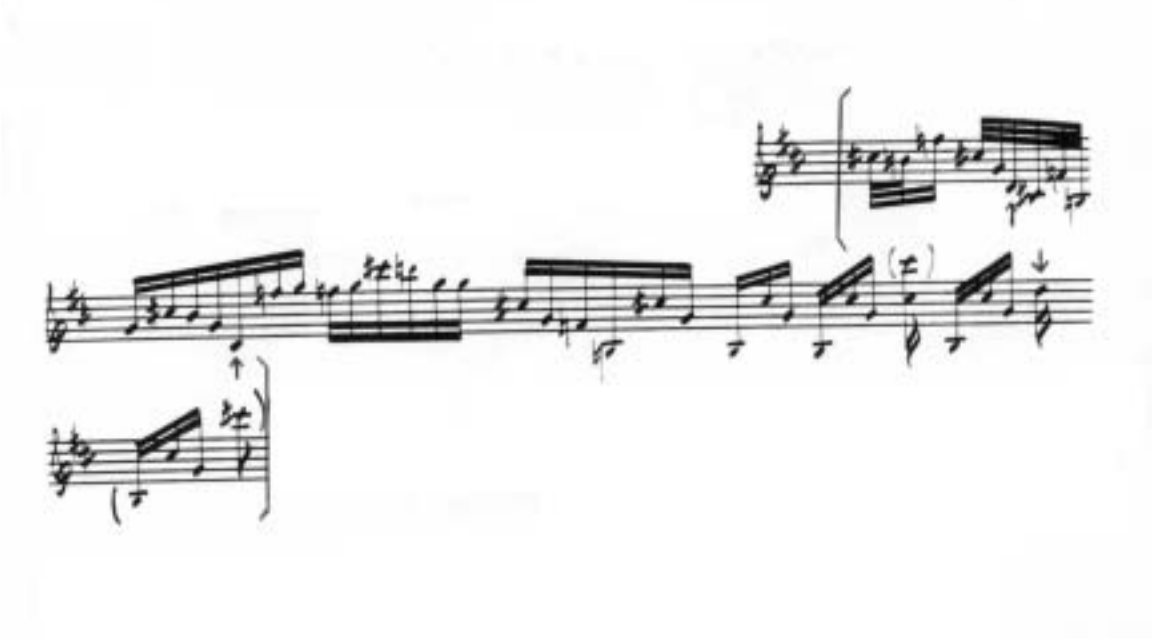


Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

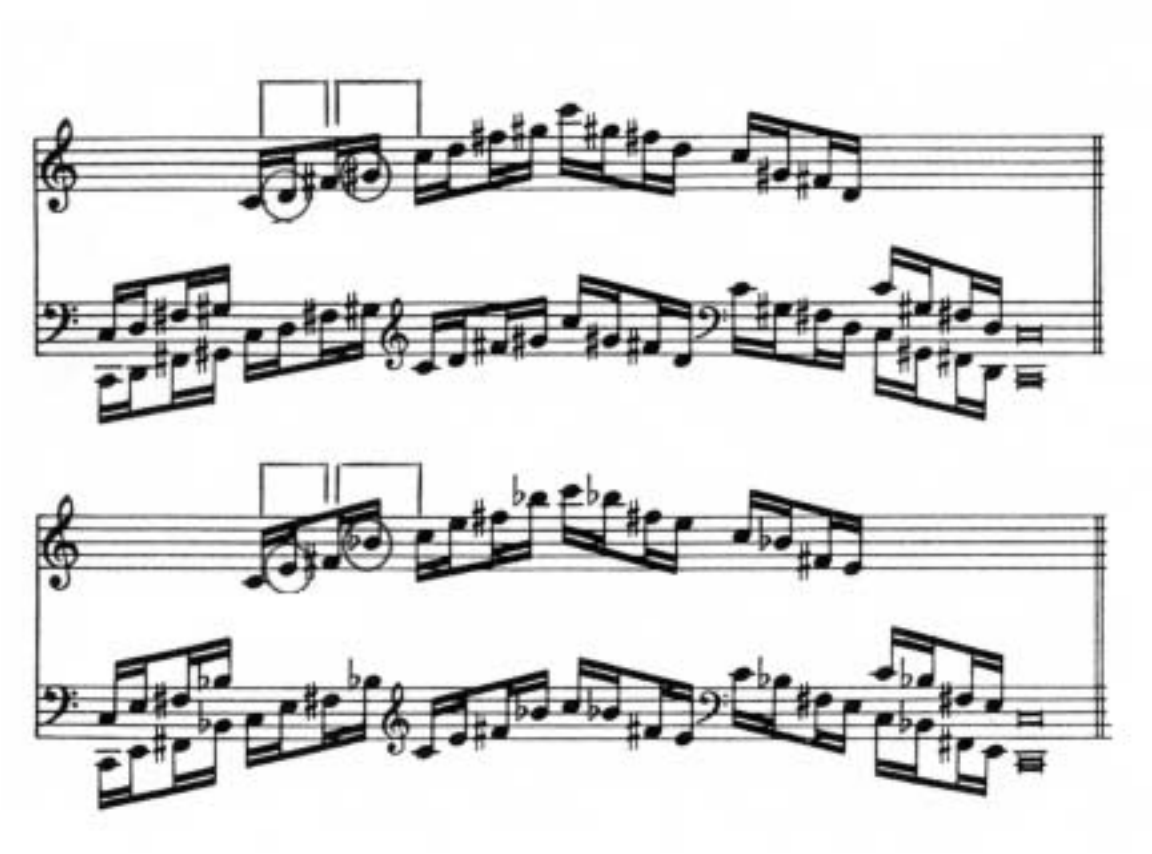
patterns form two pairs of tritones one whole step apart. The two tritone pairs formed as a result of the interpolations in pattern #2 are c/f# and d/g#. The two tritone pairs formed as a result of the interpolations in pattern #3 are c/f# and b-flat/e. The excerpt from “Venus”, *Example 62*, contains 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



Reprinted by permission of Andrew White, Andrew’s Musical Enterprises, Inc.

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



Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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.

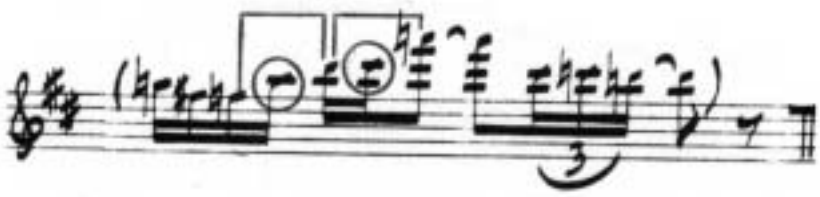
Example 64: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #28

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

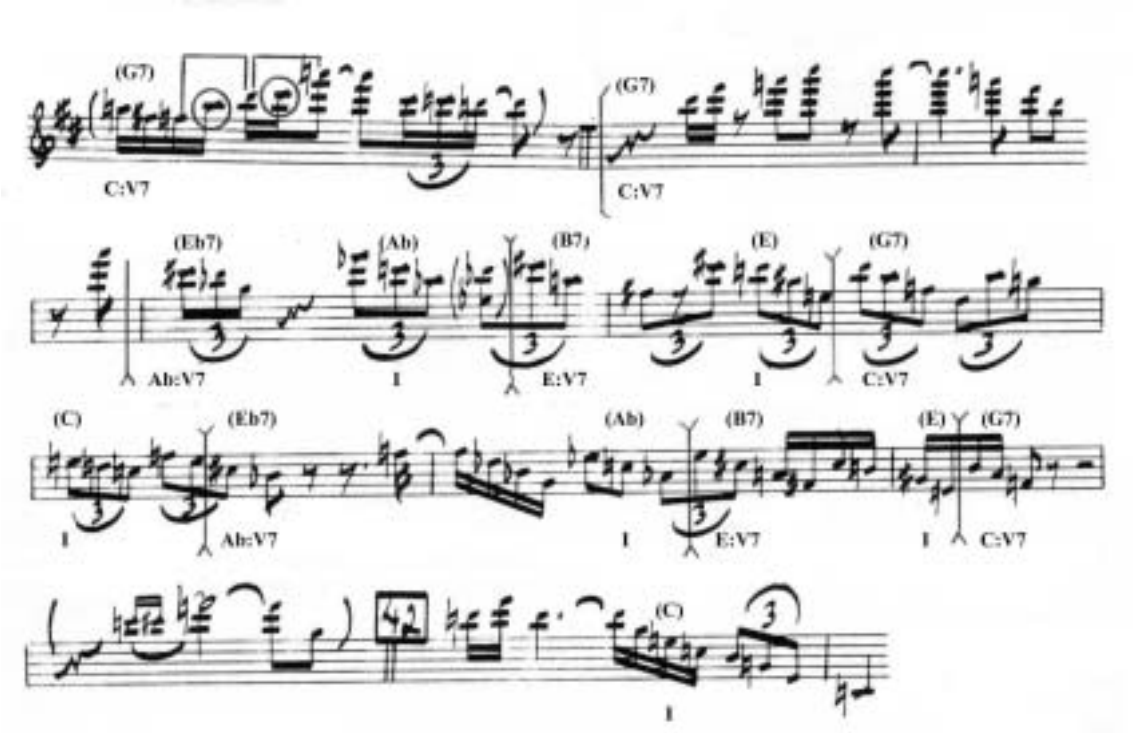
Example 65 contains the same construction as the *Thesaurus* pattern #30, listed as *Example 66*. Slonimsky labels this pattern as a tritone progression with a symmetric interpolation of one note. The principal interval progression is represented in *Example 66* by the pitches c^1, $f\#^1$, and c^2.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

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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.

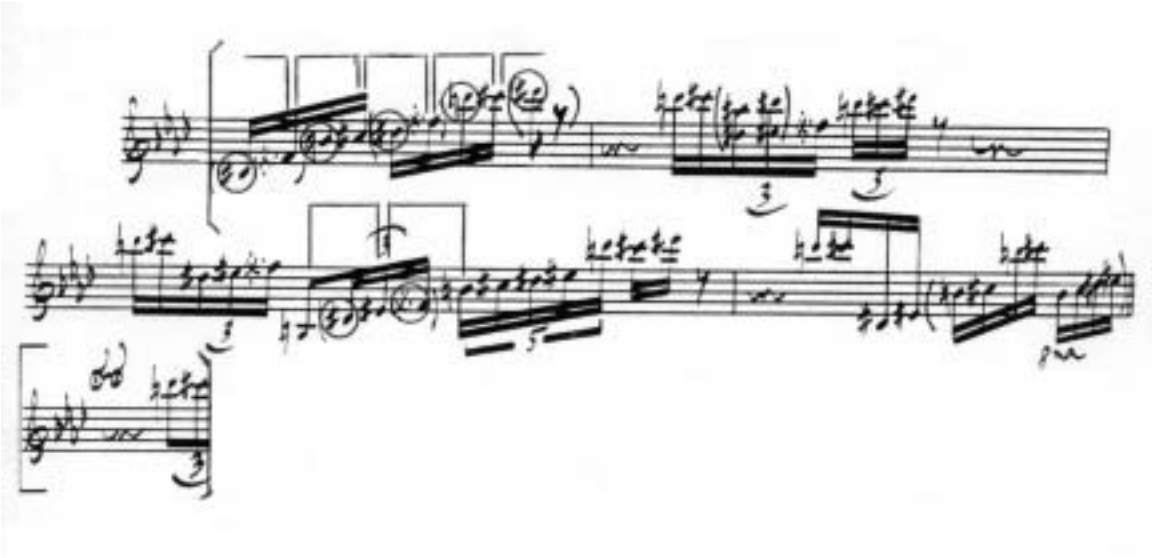
Example 67: John Coltrane, *Untitled Original 90314*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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*.

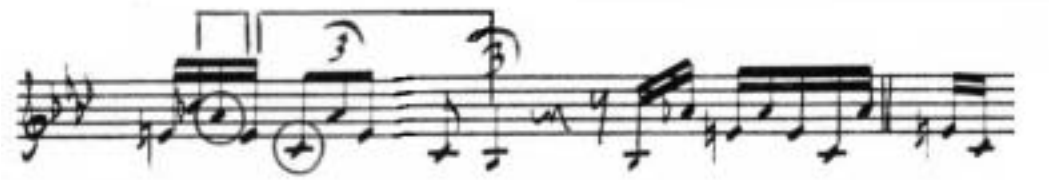
Example 68: John Coltrane, *One Down, One Up*, transcribed by Andrew White



Reprinted by permission of Andrew White, Andrew’s Musical Enterprises, Inc.

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

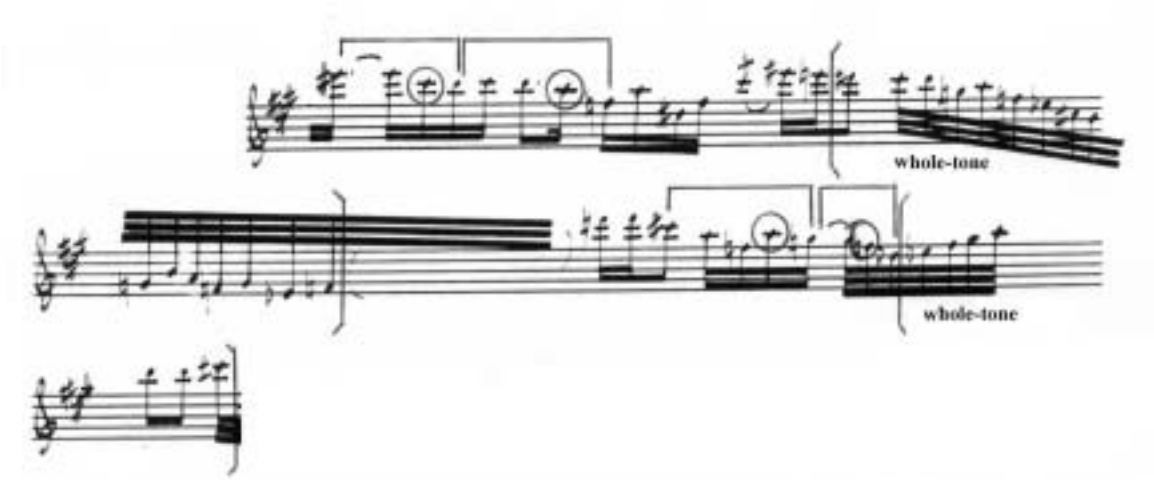
Example 70: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #28

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

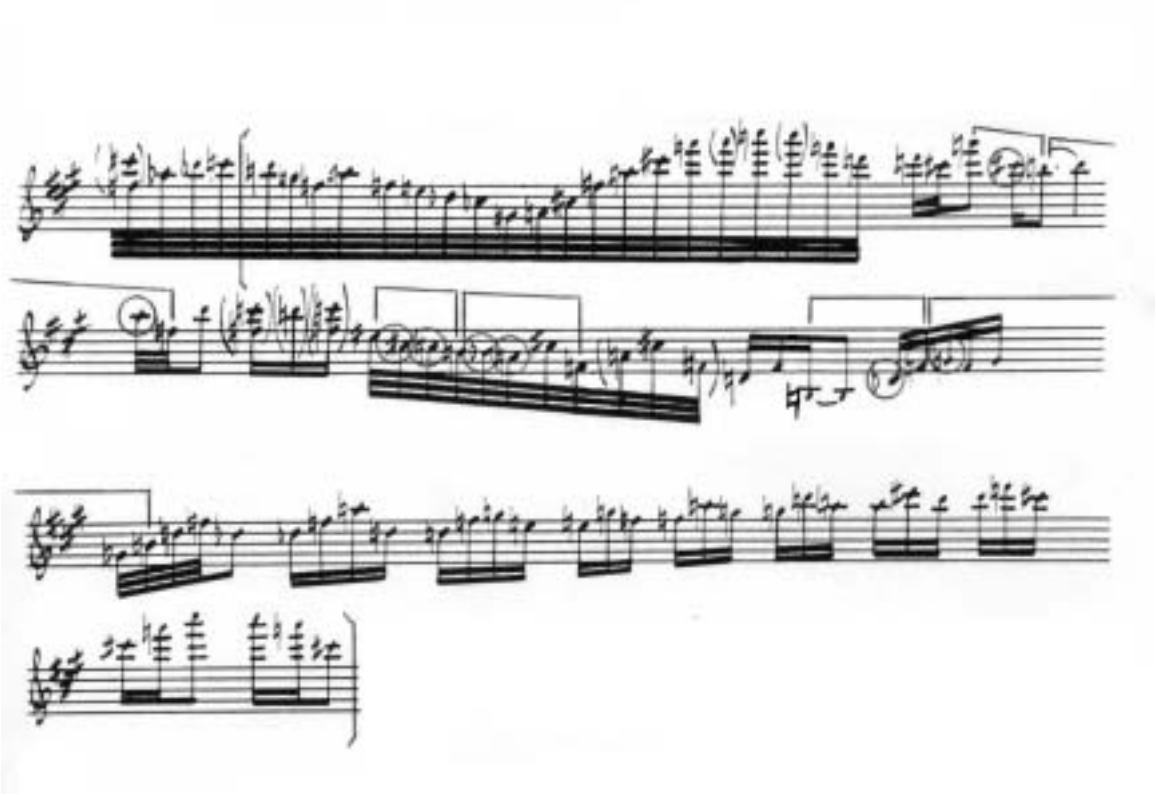
Example 72: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #30

Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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

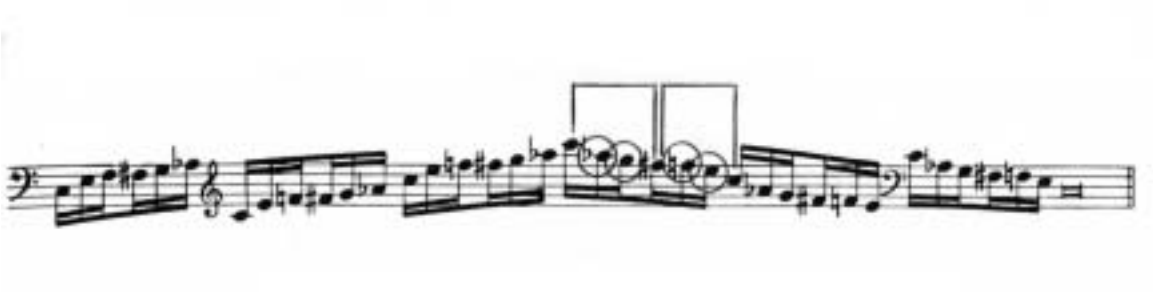
construction to the *Thesaurus* pattern #2, diagramed as *Example 55.* The excerpt ends with a diatonic pattern based on the tonal center of D minor (#7).

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

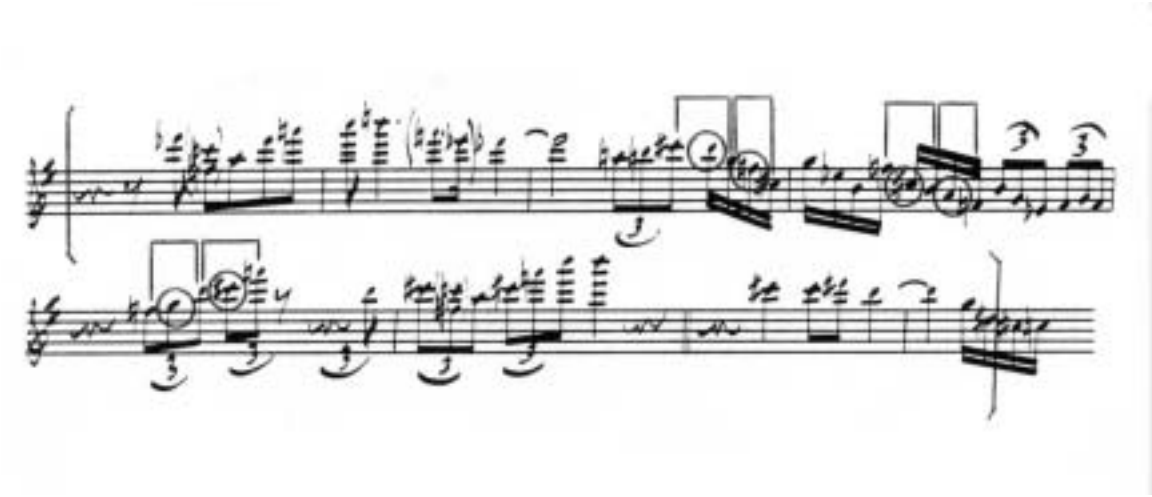
Example 74: Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns*, pattern #40



Reprinted by permission of Schirmer Trade Books, a division of Music Sales Corporation

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



Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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

Reprinted by permission of Andrew White, Andrew's Musical Enterprises, Inc.

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.