



MTO 31.2 Examples: Hannaford, Eric Dolphy's and Yusef Lateef's Synthetic Formations

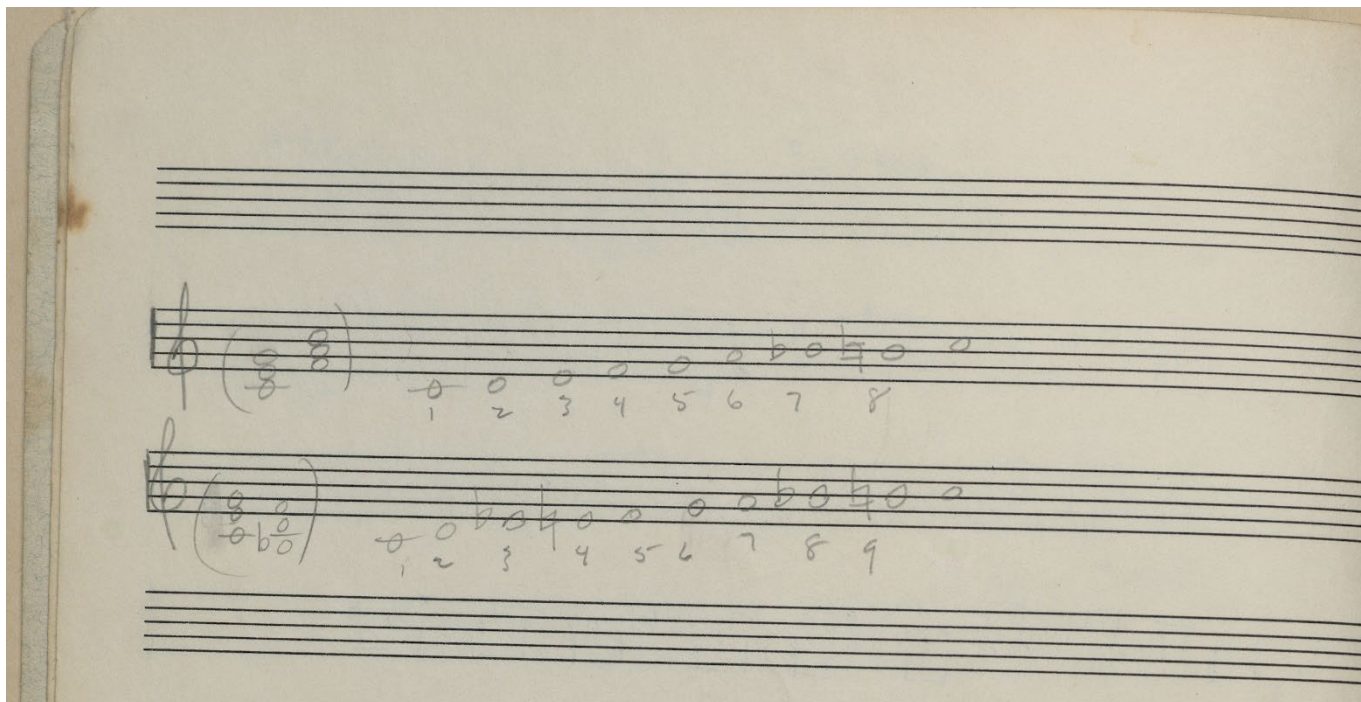
(Note: audio, video, and other interactive examples are only available online)

<https://www.mtosmt.org/issues/mto.25.31.2/mto.25.31.2.hannaford.html>

Example 1. Dolphy's synthetic scale and scale degrees



Example 2. Dolphy's first two major synthetic scales. All rights reserved. Used by permission.



Example 3. Dolfy's additional synthetic scales. All rights reserved. Used by permission.

Handwritten musical notation showing eight synthetic scales on a single page of music paper. Each scale is written on a five-line staff with a treble clef and a key signature. The scales are numbered 1 through 11. The notes are represented by circles with accidentals (sharps, flats, naturals) and are numbered below the staff. The scales are:

- Scale 1: C major (1-10)
- Scale 2: C minor (1-12)
- Scale 3: C major with a raised 7th (1-13)
- Scale 4: C major with a raised 6th (1-12)
- Scale 5: C major with a raised 4th (1-9)
- Scale 6: C minor with a raised 7th (1-9)
- Scale 7: C minor with a raised 6th (1-11)
- Scale 8: C major with a raised 3rd (1-11)

Each scale is enclosed in a large parentheses on the right side of the staff. The page is numbered "1" in the bottom right corner.

Example 4. Lateef's abstracted combined major scale formations. © 2025 Fana Music. All rights reserved. Used by permission.

| | | A TRI TONE APART GIVES YOU 12 DIFF. TONES | | | | | |
|------------------|-------|---|---|---|----|---|---|
| TWO MAJOR SCALES | - 2ND | " | " | " | 12 | " | " |
| | Δ 3RD | " | " | " | 11 | " | " |
| | - 3rd | " | " | " | 10 | " | " |
| | Δ 2nd | " | " | " | 9 | " | " |
| | P 4 | " | " | " | 8 | " | " |

Play Body & Soul

" EQUINOX = MIDOR BLUES

" AFTER THE RAIN = TONE POEM

FROM LOVE SUPREMA " ACKNOWLEDGEMENT

" RESOLUTION

FROM JEAN HORTON THEY SAY ITS WONDERFUL

FROM INTER-
STELLAR SPACE MARS
LEO
VENUS

Example 7. Dolphy's combinations of seventh chords and resulting melodic patterns. All rights reserved. Used by permission.

Handwritten musical notation on a spiral notebook page, showing seven staves of music. The notation includes various notes, accidentals, and stems, illustrating Dolphy's combinations of seventh chords and resulting melodic patterns.

The first three staves are numbered 4, 5, and 6, each with a circled chord diagram above it. The next four staves are labeled 2A (UP), (Down), 2B (UP), and (Down). The seventh staff has a question mark above it.

Printed text at the bottom right of the page: Litho'd in U.S.A.

Example 8. Lateef's arpeggios and harmonic interpretations

Example 8 displays a sequence of arpeggios and their harmonic interpretations. The notation is as follows:

- Row 1:
 - Chord: $A\flat m/C$. Notes: $C, E\flat, G, B\flat$.
 - Chord: $Dmaj7^{(\#5)}/C\sharp$. Notes: $C\sharp, E, G, B, A$.
 - Chord: $A\flat m6/E\flat$. Notes: $E\flat, G, B\flat, C, A\flat$.
 - Chord: $Gm(maj7)/F\sharp$. Notes: $F\sharp, A, C, E, G$.
 - Chord: $F^{(\#5)}/A\flat$. Notes: $A\flat, C, E, G, F$.
- Row 2:
 - Chord: $B\flat6^{(add9)}$. Notes: $B\flat, D, F, A, G$.
 - Chord: $C\sharp7^{(\#5)}/B$. Notes: $B, D, F, A, C\sharp$.
 - Chord: $D^{(add4)}$. Notes: D, F, A, C, E .
 - Chord: $F\sharp m(maj7)/E\sharp$. Notes: $E\sharp, G, B, D, F\sharp$.
 - Chord: $A\flat maj7/G$. Notes: $G, B, D, F, A\flat$.
- Row 3:
 - Chord: $F\sharp/A$. Notes: $A, C, E, G, F\sharp$.

Example 9. Lateef's five-note cells

Example 9 shows a five-note cell in a single staff. The notes are: $B\flat, D, F, A, C\sharp$.

Example 10. Analysis of Lateef's five-note cells

Example 10 illustrates the analysis of Lateef's five-note cells. The notation shows a sequence of notes with dashed boxes highlighting specific cells:

- Cell 1: $B\flat, D, F$ (labeled "10").
- Cell 2: D, F, A (labeled "1").
- Cell 3: $F, A, C\sharp$ (labeled "10+1").

The notes are: $B\flat, D, F, A, C\sharp$.

Example 11. Lateef's overlapping major and minor triads

Musical notation for Example 11. The staff shows a sequence of notes: Bb, D#, F#, G, A, B, C, D, E, F#. Brackets indicate the following triads: B (B, D#, F#), D#m (D#, F#, A), Bm (B, D, F#), G (G, B, D), Bm (B, D, F#), and Gm (G, Bb, D).

Example 12. The complete hexatonic set of overlapping triads

Musical notation for Example 12. The staff shows a sequence of notes: Bb, D#, F#, G, A, B, C, D, E, F#. Brackets indicate the following triads: D#m (D#, F#, A), B (B, D#, F#), Bm (B, D, F#), G (G, B, D), and Gm (G, Bb, D).

Example 13. Lateef's overlapping triads and interpolated pitches. © 2025 Fana Music. All rights reserved. Used by permission.

Example 16. Analysis of Lateef's melodic patterns based on Dolphy's scale

| Phrase | 1 | | | | 2 | | | | 3 | | | | 4 | | | |
|------------------------------|---------------|----|----|----|---------------|----|-----|----|------------------------|----|----|-----|------------------------|----|-----|----|
| Pitch | C4 | B4 | F4 | E5 | F#4 | F5 | D#4 | D5 | F#4 | F5 | B4 | A#5 | C#5 | C6 | A#4 | A5 |
| Scale Degree in Dolphy Scale | 1 | 7 | | | 4 | 9 | 3 | 8 | 4 | 9 | 7 | | | 12 | 6 | 11 |
| Lateef Interpolations | | | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | ✓ | | | |
| Additional Interpolations | | | | | | | | | | | | | | | | |
| Intervals | <11, -6, 11> | | | | <11, -14, 11> | | | | <11, -6, 11> | | | | <11, -14, 11> | | | |
| Interval Classes | <1, 6, 1> | | | | <1, 2, 1> | | | | <1, 6, 1> | | | | <1, 2, 1> | | | |
| Relationship | | | | | | | | | T6 of Phrase 1 (exact) | | | | T7 of Phrase 2 (exact) | | | |
| PC set | (11, 0, 4, 5) | | | | (2, 3, 5, 6) | | | | (5, 6, 10, 11) | | | | (9, 10, 0, 1) | | | |
| Set Class | (0156) | | | | (0134) | | | | (0156) | | | | (0134) | | | |

| 5 | | | | 6 | | | | 7 | | | | 8 | | | | 9 | | | | 10 |
|------------------------------|----|----|-----|------------------------|-----|----|-----|--------------------------------|----|----|----|----------------------------------|-----|----|-----|---|----|----|----|----|
| Eb4 | D5 | E4 | D#5 | D4 | C#5 | G4 | F#5 | Bb4 | A5 | C5 | B5 | A4 | G#5 | D4 | C#5 | F4 | E5 | C5 | B5 | C6 |
| 3 | 8 | | | | | | | 6 | 11 | | | | | | | | | | | 12 |
| | | ✓ | ✓ | | ✓ | | | | | | | | | | ✓ | ✓ | ✓ | | | |
| | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | |
| <11, -10, 11> | | | | <11, -6, 11> | | | | <11, -9, 11> | | | | <11, -18, 11> | | | | <11, -4, 11> | | | | |
| <1, 2, 1> | | | | <1, 6, 1> | | | | <1, 3, 1> | | | | <1, 6, 1> | | | | <1, 4, 1> | | | | |
| Set class subset of Phrase 7 | | | | T2 of Phrase 1 (exact) | | | | Set class superset of Phrase 5 | | | | T9 of Phrase 1 (second dyad 8vb) | | | | Rotates each pitch's order position from Phrase 1 by 2 places | | | | |
| (2, 3, 4) | | | | (1, 2, 6, 7) | | | | (9, 10, 11, 0) | | | | (8, 9, 1, 2) | | | | (11, 0, 4, 5) | | | | |
| (012) | | | | (0156) | | | | (0123) | | | | (0156) | | | | (0156) | | | | |

Example 17. Ascending pitches using discontinuous scale degree fragments

Musical notation for Example 17: A bass clef staff with a melodic line consisting of eight notes: G#4, A4, B4, C5, D5, E5, F#5, G#5. A slur labeled '7' covers the first seven notes. Below the staff, the scale degree fragments are indicated as 5, 6, 7, 1, 2, 3, 4, 5.

Example 18. C as 12[^]/1[^] in an ascending fragment, right hand, m. 2

Musical notation for Example 18: A treble clef staff with a melodic line consisting of seven notes: C5, D5, E5, F#5, G#5, A5, B5. Above the staff, the scale degree fragments are indicated as 9, 10, 11, 12[^]/1[^], 2, 3, 4. A slur labeled '7' is positioned below the staff, spanning the entire melodic line.

Example 19. 1[^]/12[^] in a descending fragment, left hand, m. 4

Example 20. Scale-degree analysis of Lateef's *Ten Short Contemporary Piano Pieces*, no. 4

| Phrase | 1 | | | | | | | | | | | 2 | | | | | | | | | | | |
|------------------------------|------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|----------|-----|-----|-----|-----|-----|----|----|----|----|----|-----|
| Right Hand Pitches | C4 | C#4 | D#4 | F#4 | G#4 | A#4 | B4 | D5 | F4 | G4 | A4 | C5 | C#5 | D#5 | F#5 | G#5 | A#5 | B5 | D6 | F6 | G6 | A6 | B6 |
| Right Hand Scale Degrees | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12/1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | (7) |
| Left Hand Scale Degrees | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 7 | 8 | 9 | 10 | 10 |
| Left Hand Pitches | G#2 | A#2 | B2 | C3 | C#3 | D#3 | F#3 | G#3 | C#3 | D#3 | F#3 | G#3 | A#3 | B3 | D4 | D3 | F3 | G3 | A3 | B3 | D4 | F4 | G4 |
| Opening and closing dyads | G#-C | | | | | | | G#-D | | | | C#-F | | | | G-B | | | | | | | |
| Dyads' Harmonic Implications | G#(add#11) | | | | | | | | | | | C#7(#11) | | | | | | | | | | | |

| 3 | | | | | | | | 4 | | | | | | | | | | | 5 | | | | | | | | | | | |
|-----|-----|-----|-----|----|-----|-----|------------|-----|-----|------|----|----|-----|-----|-----|-----|-----|------|------|-----|----------------------|----|-------|-----|------|-----|------|-----|-----|-----|
| A5 | G5 | F5 | D5 | B4 | A#4 | G#4 | F#4 | D#6 | C#6 | C6 | A5 | G5 | F5 | D5 | B4 | A#4 | G#4 | F#4 | D#4 | C#4 | C4 | A3 | G4 | A4 | C5 | C#5 | D#5 | F#5 | G#5 | A#5 |
| 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1/12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1/12 | 11 | 10 | 11 | 12/1 | 2 | 3 | 4 | 5 | 6 |
| 8 | 7 | 6 | 5 | 10 | 9 | 8 | 7 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1/12 | 11 | 10 | 9 | 8 | 2 | 3 | 4 | 11 | 12/1 | 2 | 3 | 4 |
| D4 | B3 | Bb3 | Ab3 | G3 | F3 | D3 | B2 | A4 | G4 | F4 | D4 | B3 | Bb3 | Ab3 | F#4 | D#4 | C#4 | C4 | A3 | G3 | F3 | D3 | D#3 | F#3 | G#3 | A3 | C4 | C#4 | D#4 | |
| D-A | Bm7 | | | | | | D Phrygian | | | | | | | | | | | D-A | D#-G | | D# major/minor triad | | F#-A# | | | | | | | |

| 6 | | | | | | | 7 | | | | | | | 8 | | | | | | | | | | | | | | | | | |
|-----|-------|------|----|-----|------|-----|-------------|-----|------|----|----|----|-----|------|-----|-----|-----|-----|-----|------|---------------|------|----|-----|-----|------|-----|------|----|----|----|
| B3 | D4 | F4 | G4 | A4 | C5 | C#5 | D#5 | C#5 | C5 | A4 | G4 | F4 | D4 | B3 | A#3 | G#4 | F#4 | D#4 | C#4 | C4 | A4 | G4 | F4 | G#4 | F#4 | D#4 | C#4 | C4 | A4 | G4 | F4 |
| 7 | 8 | 9 | 10 | 11 | 12/1 | 2 | 3 | 2 | 1/12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1/12 | 11 | 10 | 9 | 10 | 11 | 12/1 | 2 | 3 | 4 | 5 | 6 |
| 10 | 11 | 12/1 | 2 | 8 | 9 | 10 | 11 | 10 | 9 | 8 | 7 | 6 | 11 | 10 | (4) | 12 | 11 | 10 | 9 | 3 | 2 | 1/12 | 11 | 10 | 9 | 10 | 11 | 12/1 | 2 | 3 | 4 |
| F#4 | G2 | A2 | C3 | C#3 | D3 | F3 | G3 | A3 | G3 | F3 | D3 | B2 | Bb2 | A2 | G2 | Gb2 | C4 | A3 | G3 | F3 | Eb3 | C#4 | C4 | F#4 | G2 | A2 | C3 | C#3 | D3 | F3 | G3 |
| G-B | G aug | | | | | | G# Phrygian | | | | | | | C-G# | | | | | | | F major/minor | | | | | | | A-F | | | |

Example 21. Reduction showing descending tenths in Lateef's *Ten Short Contemporary Piano Pieces*, no. 4

Example 22. Dolfy's bass part for "Gazzelloni." All rights reserved. Used by permission.

Bass

The image shows a handwritten musical score for a bass part. It consists of several staves of music. The first staff is labeled 'A' and contains measures 1 through 7. The second staff contains measures 8 through 13. The third staff contains measures 14 through 15. Below the main score, there are three staves of exercises. The first exercise is labeled 'A)' and is titled 'the first eight Bars on this scale'. The second exercise is labeled 'B)' and is titled 'Bars 9-11 this scale'. The third exercise is labeled 'A)' and 'B)' and shows two variations of a scale.

1 2 3 # # # #

4 # # 5 # # # # 6 7

8 # # 9 B 10

11 b # # # # A # # # # 13

the first eight Bars
A) on this scale 1-8 ; 12-13

B) Bars 9-11 this scale

A) # # # # B) b # # #

Example 23. "Gazzelloni" melody

Example 24. Melodic analysis of "Gazzelloni," mm. 1-8

| Melodic Pitch | C4 | Db5 | Eb4 | Ab4 | F#4 | B4 | E5 | A5 | D5 | G4 | A4 | G5 | Bb5 | No. of Matches | Match |
|---------------|----|-----|-----|-----|-----|----|----|----|----|----|----|----|-----|----------------|-------|
| C4 tonic | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | ✓ | | 8 | 61.5% |
| F#3 tonic | ✓ | ✓ | | ✓ | | ✓ | | | | | | | | 4 | 30.8% |
| B3 tonic | ✓ | ✓ | | | | | ✓ | | | ✓ | ✓ | | | 5 | 38.5% |
| E3 tonic | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | | | ✓ | | | 7 | 53.8% |
| Db3 tonic | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | 5 | 38.5% |

Example 26. Analysis of Davis's improvised bass part on "Out to Lunch," 3:11–3:28

| Bass Pitch | A2 | G3 | F3 | D3 | E3 | A3 | B3 | E _b 4 | E4 | F [#] 4 | F2 |
|---------------------------|------|----|------|------|----|------|----|------------------|------|------------------|------|
| Initial Time of Pitch(es) | 3:11 | | 3:17 | 3:18 | | 3:20 | | 3:22 | 3:23 | | 3:28 |
| Scale Degree | ^6 | ^5 | ^4 | ^3 | ^9 | ^6 | ^1 | n/a | ^9 | ^10 | ^4 |
| Octave Correlation | ↓ | ✓ | ✓ | ✓ | ↓ | ✓ | ↑ | X | ✓ | ✓ | ↓ |