

CHAPTER 5

Rhythm Changes

The discussion of chord-scale transformations in the previous chapter concludes the theoretical portion of this dissertation; this final chapter will synthesize that theoretical framework in a series of three longer analyses. All three of the tunes here—Thelonious Monk’s “Rhythm-a-ning,” George Coleman’s “Lo-Joe”, and Sonny Stitt’s “The Eternal Triangle”—are instances of a harmonic archetype known as “Rhythm changes,” so named for their origin in George Gershwin’s “I Got Rhythm.”¹ Because tunes that use Rhythm changes all share a common harmonic framework, they are an ideal means to investigate jazz harmony. A complex set of standard substitutions and harmonic patterns have emerged over the many years jazz musicians have been playing Rhythm changes; the three analyses in this chapter will allow us to compare these musicians’ manipulation of this basic harmonic framework.

5.1 Rhythm Changes in General

It is hard to overestimate the importance of Rhythm changes on jazz practice; along with the blues, it is one of the most common harmonic types in the bebop era and beyond.² David Baker lists more than 150 Rhythm tunes in *How to Learn Tunes*; some of the most well-known of these are reproduced in Table 5.1.³ Before moving on to the analyses in the following sections, it will be useful to examine the form itself, along with some of its more common harmonic substitutions.

1. “I Got Rhythm” was written in 1930 and first appeared in the musical *Girl Crazy*. Because the phrase “Rhythm changes” has developed a life beyond its initial meaning, it is rendered throughout this chapter without quotes but with a capital “R.” The phrase is normally used as a noun, while adjectival uses drop the “changes” (as in “Oleo is a Rhythm tune”).

2. Thomas Owens, *Bebop: The Music and its Players* (New York: Oxford University Press, 1995), 13.

3. David Baker, *How to Learn Tunes* (New Albany, IN: Jamey Aebersold Jazz, 1997), 42–44. New tunes that are based on the chord changes to other tunes are known as “contrafacts.” Part of the reason for the proliferation of contrafacts in general (and the genre of Rhythm tunes in particular) is that jazz musicians could avoid paying royalties to the Gershwins. On contrafacts more generally, see Owens, *Bebop*, 8 and 12–15.

Title	Composer
Anthropology	Charlie Parker/Dizzy Gillespie
Cotton Tail	Duke Ellington
52nd Street Theme	Thelonious Monk
The Flintstones	Hoyt Curtain
Jumpin' at the Woodside	Count Basie
Moose the Mooche	Charlie Parker
Oleo	Sonny Rollins
The Serpent's Tooth	Miles Davis
Tiptoe	Thad Jones
Wail	Bud Powell

Table 5.1. A selection of Rhythm tunes and their composers.

5.1.1 SUBSTITUTION SETS

“I Got Rhythm” is, like many jazz standards, a 32-bar AABA form; the basic progression is shown in Figure 5.1.⁴ As Andy Jaffe notes, its changes are “not the least bit astonishing”; the tune is a fairly basic set of turnarounds and dominant cycles.⁵ Indeed, this feature is one of the reasons for its popularity: the harmonic framework is something of a blank slate, and allows room for alteration in a way that more specific sets of changes (like Parker’s “Blues for Alice,” for example) do not. Another thing that is immediately apparent is the quick harmonic rhythm in the A sections, which allows soloists the opportunity to show off as they navigate the rapidly moving changes.⁶

Fundamental to the genre of Rhythm tunes is their “mix-and-match” nature; each part of the form has many different sets of changes, from which the performers may choose freely.⁷ Mark Levine explains this issue succinctly:

When a musician calls a Rhythm tune like “Oleo,” there’s no discussion of which version of the changes to play. As with the blues, jazz musicians freely mix many versions of Rhythm changes on the spot, as they improvise. Playing Rhythm changes is a little like

4. The vast majority of Rhythm tunes are in the key of B♭. Those in Table 5.1 that are not are Hoyt Curtain’s theme to the cartoon *The Flintstones* and Bud Powell’s “Wail” (both in E♭), along with Thad Jones’s “Tiptoe” (A♭) and Thelonious Monk’s “52nd Street Theme” (C).

5. Andy Jaffe, *Jazz Harmony* (Tübingen: Advance Music, 1996), 149.

6. Adding to this virtuosity is the fact that many recordings of rhythm changes are quite fast. Of the standard bebop recordings of tunes in Table 5.1, Parker’s recording of “Moose the Mooche” is 212 bpm, Powell’s “Wail” is 270 bpm, while the Parker/Gillespie “Anthropology” burns along at roughly 305 bpm.

7. The “mix-and-match” metaphor comes from Jaffe, *Jazz Harmony*, 149.

A	B \flat G $^{-7}$ C $^{-7}$ F 7 B \flat G $^{-7}$ C $^{-7}$ F 7
	B \flat B \flat^7 E \flat E \flat^{-} B \flat G $^{-7}$ C $^{-7}$ F 7
A'	B \flat G $^{-7}$ C $^{-7}$ F 7 B \flat G $^{-7}$ C $^{-7}$ F 7
	B \flat B \flat^7 E \flat E \flat^{-} B \flat F 7 B \flat
B	D 7 G 7
	C 7 F 7
A'	B \flat G $^{-7}$ C $^{-7}$ F 7 B \flat G $^{-7}$ C $^{-7}$ F 7
	B \flat B \flat^7 E \flat E \flat^{-} B \flat F 7 B \flat

Figure 5.1. The basic changes to George Gershwin's "I Got Rhythm" (taken from Levine, *The Jazz Theory Book*, 238).

knowing several tunes and playing them all at once; that's why "Rhythm" tunes are harder to play at first than a tune with only a single set of changes.⁸

Given this background, the analytical discussion below will proceed in segments: the A sections can each be broken into four-bar halves, while the bridge is typically treated as a single eight-bar unit.

The first four bars of the Rhythm A section serve to establish the tonic B \flat ; Figure 5.2 gives a number of possible harmonizations of this section.⁹ Letter *a* gives the original Rhythm changes, while *b* shows what is by far the most common substitution, replacing B \flat with Dm7 in the third bar; this changes the I–vi–ii–V turnaround in the last two bars into a iii–vi–ii–V instead. If the B \flat harmony is voiced with a major seventh and major ninth (B \flat –D–F–A–C, a very common voicing), then we can understand the substitution of Dm7 as a simple omission of the root. Letter *c* goes

8. Mark Levine, *The Jazz Theory Book* (Petaluma, CA: Sher Music, 1995), 241.

9. These six harmonizations do not begin to constitute a complete set of substitutions for these four bars. Jamey Aebersold gives 43 harmonizations of the Rhythm A section in "*I Got Rhythm*" *Changes in All Keys*, Jamey Aebersold Play-A-Long Series, vol. 47 (New Albany, IN: Jamey Aebersold Jazz, 1991), 26.

- a) $B\flat \quad G^{-7} \mid C^{-7} \quad F^7 \mid B\flat \quad G^{-7} \mid C^{-7} \quad F^7 \parallel$
- b) $B\flat \quad G^{-7} \mid C^{-7} \quad F^7 \mid D^{-7} \quad G^{-7} \mid C^{-7} \quad F^7 \parallel$
- c) $B\flat \quad G^7 \mid C^{-7} \quad F^7 \mid D^7 \quad G^7 \mid C^{-7} \quad F^7 \parallel$
- d) $B\flat \quad B^{\circ 7} \mid C^{-7} \quad C^{\# \circ 7} \mid D^{-7} \quad D\flat^7 \mid C^{-7} \quad F^7 \parallel$
- e) $F^{\# 7} \quad B^7 \mid E^7 \quad A^7 \mid D^7 \quad G^7 \mid C^7 \quad F^7 \parallel$
- f) $B\flat \quad A\flat^7 \mid G\flat^7 \quad F^7 \mid B\flat^7 \quad A\flat^7 \mid G\flat^7 \quad F^7 \parallel$

Figure 5.2. Several harmonizations of Rhythm changes, mm. 1–4.

further, transforming many of the minor seventh chords into dominant sevenths that serve to lead more strongly into the following harmonies.

Figure 5.3 shows the relevant portion of ii–V space for these first three harmonizations, along with a few annotations. The standard harmonization of figure 5.2a can be seen by following the blue arrows. The substitution of Dm7 in letter *b* is represented in the space by the red arrows: in this reading, first follow the blue arrows until arriving at F7, then follow the red arrows until Gm7 where the blue arrows continue to the tonic B \flat . The minor-to-dominant substitutions of letter *c* are not shown in the space, but are easy enough to imagine: both Gm7 and Dm7 are transformed by the $3RD^{-1}$ operation, and each is replaced by the chord immediately to its north in ii–V space (a substitution which results in the evaded cadence transformation, $G^7 \xrightarrow{EC} C^7$, across the bar lines at the end of mm. 1 and 3).

The harmonization in Figure 5.2d is still more complex. The tritone substitution of D \flat 7 for G7 in m. 3 is by now familiar, but the G7 in m. 2 has been replaced with a passing diminished seventh chord. As we first saw in the analysis of “Have You Met Miss Jones?” in Section 3.2.3, fully-diminished sevenths in jazz can often be understood as V7 \flat 9 chords missing their roots. The

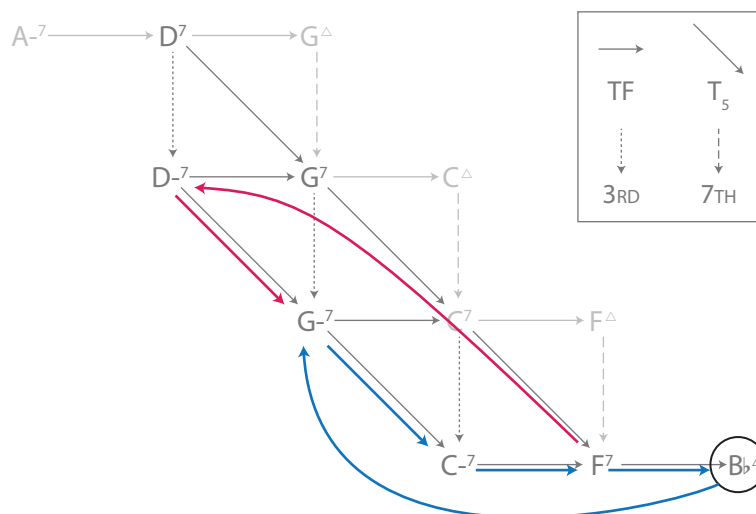


Figure 5.3. The first four bars of Rhythm changes in ii-V space.



Figure 5.4. “The Serpent’s Tooth” (Miles Davis), mm. 1–4.

B°7 here, then, is a logical substitution for G7b9, and the C#°7 in the following bar can be understood as the same substitution of an implied A7b9 chord (the dominant of the following D minor), resulting in a chromatically ascending bass line in the first two bars. Miles Davis’s composition “The Serpent’s Tooth” (the opening of which is shown in Figure 5.4) uses a variation of this progression. Davis also includes a minor-third substitution in m. 4, substituting Ebm7–Ab7 for the diatonic Cm7–F7.

The last two harmonizations in Figure 5.2 are somewhat different in nature; while any of the substitutions of letters *a–d* can be swapped in and out at will (the first two bars *a* followed by the last two bars of *d*, for example), those in letters *e–f* usually appear intact. Letter *e* harmonizes the first four bars with a cycle of dominant seventh chords (a favorite technique of Thelonious Monk, and one we will see in the analysis of “Rhythm-a-ning” below). In contrast to the relatively compact arrangement of letters *a–c* in ii–V space, this cycle traverses nearly the entire space before

- a) $B\flat \quad B\flat^7 \mid E\flat \quad E\flat^- \mid B\flat \quad G^{-7} \mid C^{-7} \quad F^7 \parallel$
- b) $F^{-7} \quad B\flat^7 \mid E\flat \quad A\flat^7 \mid B\flat \quad G^{-7} \mid C^{-7} \quad F^7 \parallel$
- c) $B\flat \quad B\flat^7 \mid E\flat \quad E^{\circ 7} \mid D^{-7} \quad G^7 \mid C^{-7} \quad F^7 \parallel$
- d) $B\flat \quad B\flat^7/D \mid E\flat^{-7} \quad A\flat^7 \mid B\flat \quad D\flat^7 \mid C^7 \quad B^7 \parallel$

Figure 5.5. Several harmonizations of Rhythm changes, mm. 5–8.

arriving at the tonic $B\flat$.¹⁰ Letter *f* is the harmonization from Jimmy Heath’s composition “C.T.A.,” and features a repeated lament-bass pattern from $B\flat$ down to F^7 .

The last four bars of the Rhythm A section contain a shift to the subdominant in the first two bars, followed by a turnaround in the last two; Figure 5.5 gives several common harmonizations of this passage. Once again, letter *a* reproduces the original changes: a seventh is added to the tonic $B\flat$, tipping it towards an $E\flat$ chord that resolves plagally (via minor iv) back to tonic before a vi–ii–V turnaround. This plagal motion in the second bar is often substituted with a backdoor progression, $A\flat^7$ – $B\flat$, as seen in *b* (which also precedes the $B\flat^7$ in the first bar with its own ii^7) and *d* (which elides the $E\flat$ and $E\flat m$ harmonies). Letter *c* makes the substitution of Dm^7 for $B\flat$ in the third bar and includes $E^{\circ 7}$ as a substitution for $E\flat^7$.¹¹

The Rhythm bridge is usually recognizable because of the drastic slowing of the harmonic rhythm; again, Figure 5.6 gives several common harmonizations, and Figure 5.7 shows them in ii–V space. The standard bridge (letter *a*) is a simple cycle of dominants, beginning on the III chord; we will call this the “4-cycle bridge.” The most common substitutions here are tritone substitutions of every other chord, as shown in *b* and *c*. The other common option is to insert a ii^7 chord before each of the dominants, as shown in *d*, decomposing each T_5 transformation into

10. I have not included another copy of the complete ii–V space here, but one can be found in Figure 2.10 (p. 50).

11. This $E^{\circ 7}$ is functionally ambiguous; it could also stand in for an $A7\flat^9$ as the dominant (or $C7\flat^9$ as part a backdoor progression) to the following Dm^7 . It is spelled as $E^{\circ 7}$ to produce a smooth bass line from $E\flat$ in the first half of the bar.

- a) D^7 | G^7 | C^7 | F^7 ||
- b) D^7 | $D\flat^7$ | C^7 | B^7 ||
- c) $A\flat^7$ | G^7 | $G\flat^7$ | F^7 ||
- d) A^{-7} | D^7 | D^{-7} | G^7 | G^{-7} | C^7 | C^{-7} | F^7 ||

Figure 5.6. Several harmonizations of the Rhythm bridge, mm. 17–24.

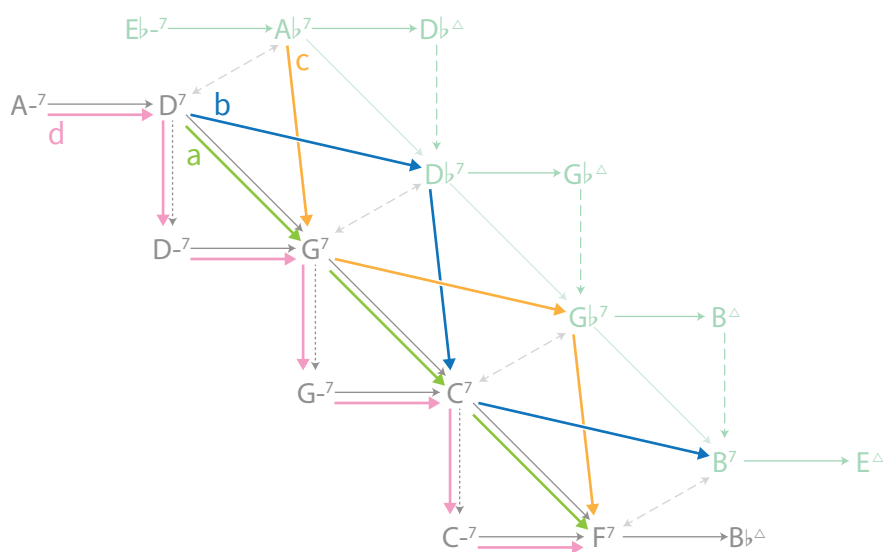


Figure 5.7. The four Rhythm bridge harmonizations of Figure 5.6 in ii-V space.

TF • 3RD. (This procedure could of course be combined with the tritone-substituted versions in *b* and *c* as well.) Other less conventional harmonizations are also possible; “The Eternal Triangle” and “Lo-Joe” both use specialized bridges which we will see in later sections.

It should be apparent from this discussion that Rhythm tunes can vary widely in their harmonic particulars. The mix-and-match nature of their construction means that the chords used by an ensemble can change even over the course of a single performance: a rhythm section might prefer one harmonization of the bridge during a saxophone solo and opt for another during a piano solo, for example. The harmonizations given in Figures 5.2, 5.5, and 5.6 have only begun to scratch the surface; because most of the tune consists of turnarounds, any of the countless possible turnarounds could be used instead.¹² It is easy to imagine a Rhythm tune that makes use of the descending minor-third turnaround of Henderson’s “Isotope” in the A sections or fast-moving Coltrane changes over the bridge.

5.1.2 HARMONIC SUBSTITUTION VS. CHORD-SCALE ELABORATION

Before moving on to the three analyses proper, it will be helpful to return to an issue first mentioned in the last chapter in connection with Rahsaan Roland Kirk’s solo on “Blues for Alice.” In many cases, it is not clear whether a particular improvised passage should be heard as a harmonic substitution or as an outgoing chord-scale choice over a more basic harmony. In the case of non-Rhythm tunes, we can usually rely on the head to provide the authoritative changes for the tune, and it is likely likely that we choose to hear that particular set of changes throughout the performance. Rhythm changes, though, bring this problem to the fore, since we cannot depend on a single set of canonical changes.

By way of a short illustration, consider again the melodic passage that opens Miles Davis’s “Serpent’s Tooth” (first shown with Davis’s original progression in Figure 5.4). If this were an

12. Given the modular nature of Rhythm tunes, the genre seems particularly ripe for a schema theory approach, following in the footsteps of Robert Gjerdingen, *Music in the Galant Style* (New York: Oxford University Press, 2007). The two- and four-bar units here (turnarounds, dominant cycles) are not unlike the stock phrases used in the galant style, and jazz pedagogical materials like the previously-cited Aebersold and Jaffe texts could easily serve as analogs to the 18th-century Italian *partimenti* often used by schema theorists.

a) ⟨B♭, ♭, Dia.⟩ ⟨G7, ♯, Dia.⟩ ⟨Cm7, 2♭, Dia.⟩ ⟨A7, 2♯, Dia.⟩ ⟨Dm7, ♯, Dia.⟩

b) ⟨B♭, ♭, Dia.⟩ ⟨B°7, ♯, Lyd. dim.⟩ ⟨Cm7, 2♭, Dia.⟩ ⟨C♯°7, 2♯, Lyd. dim.⟩ ⟨Dm7, ♯, Dia.⟩

c) ⟨B♭, ♭, Dia.⟩ ⟨Gm7, 2♭, Blues⟩ ⟨Cm7, 2♭, Dia.⟩ ⟨F7, 6♯, WH dim.⟩ ⟨B♭, ♭, Dia.⟩

Figure 5.8. Three possible hearings of the opening of “The Serpent’s Tooth.”

improvised passage, it seems likely that the first choice of harmonies would *not* be those used by Davis, given the clear outlines of both G7 and A7 chords in the second halves of mm. 1–2. It is also possible to hear this passage as a series of outgoing scale choices over a standard diatonic progression, hearing the C♯–E–G fragment as part of a diminished scale over F7. Three possible hearings of these first two bars are shown in Figure 5.8, which gives locations in chord-scale space for each harmony. They are shown here in ingoing-to-outgoing order: *a* uses only diatonic scales, *b* uses the same collections but hears the Lydian diminished scales over the diminished seventh chords, while *c* emphasizes more widely shifting diatonic collections and scale choices.

While this prismatic approach to analysis may have seemed excessive for the relatively insignificant passages in the last chapter where it was used, it will take a central role in our study of Rhythm changes. Because the harmonic structure of the tunes is so fluid, it is impossible to claim with any certainty that a particular set of changes constitutes some Platonic TUNE, in the same way that we might be able to for “Autumn Leaves” or “All the Things You Are.” To fix a set of definitive changes for a particular passage is to misrepresent the fundamental nature of Rhythm tunes in jazz practice; the changes are often ill-defined even among the players themselves (as the above quotation from Levine attests). Engaging with a single Rhythm tune, then, constitutes an

engagement with an entire genre of tunes, with all their attendant history.¹³ Transformational theory, with its ability to refract a passage into many possible interpretations, offers us a way into this rich network of harmonic possibilities inherent to the genre.

5.2 Thelonious Monk, “Rhythm-a-ning”

5.2.1 HEAD

Thelonious Monk’s “Rhythm-a-ning” is a basic Rhythm tune, and as such will be an illustrative first example. The head of the tune is shown in Figure 5.9 as it appears in the *Thelonious Monk Fake Book*.¹⁴ The source recording for this lead sheet is from Monk’s album *Criss-Cross* (1963); we will analyze a different performance below, but the differences in the head are insignificant. What is noteworthy about this lead sheet is that there are no changes given in the A sections; there is only an indication that the solos are to be played over Rhythm changes.¹⁵ This speaks not only to the ubiquity of the form, but also to its fluidity, since a single definitive version is not given.

Nevertheless, there are a few aspects of the head that might have an impact on a soloist’s harmonic choices. The first is the arpeggiation of an E \flat major triad in the second bar of the A sections. None of the common sets of changes in Figure 5.2 use E \flat in the second bar, but this plagal motion is essential to the tune.¹⁶ The other important feature of the tune is the whole-tone

13. A lack of understanding about the recorded history of jazz is often seen as something of a social mistake, especially in the case of Rhythm changes. Mark Levine tells a story of playing a Rhythm tune with Sonny Stitt, when Stitt began to play the cycle progression of Figure 5.2e over the A sections. Levine recounts: “after a couple of choruses, glares from Sonny, and a growing sense of feeling smaller and smaller, I finally ‘strolled,’ or stopped playing. After the set, I asked him what were the changes he was playing, and he growled ‘just listen, man.’” This story is accompanied by a footnote that (based on the word of saxophonist Don Byas) attributes the cycle progression to pianist Art Tatum. Levine, *The Jazz Theory Book*, 242.

Phil Ford notes that this kind of secret knowledge is fundamental to understanding jazz as a part of an emerging hip culture in the 1940s–50s, which coincides with the time that Rhythm tunes began to proliferate. As he puts it, “‘knowing the score’ is what practically defines the hipster: *hip*, in its original meaning, means to be aware” (“Somewhere/Nowhere: Hipness as an Aesthetic,” *The Musical Quarterly* 86, no. 1 [April 2002]: 54). We might instead read “knowing the changes,” since to really know Rhythm changes involves knowing about the wide variety of harmonic possibilities that defines the genre.

14. Don Sickler, ed., *Thelonious Monk Fake Book*, Steve Cardenas, transcriber (Milwaukee: Hal Leonard, 2002).

15. The second volume of the old *Real Book* does give changes during the A sections, but they are somewhat inaccurate; in any case, it also includes the indication to “solo over Rhythm changes.”

16. The harmonization Cm7–C \sharp 7 fits the melody, but does not appear in Monk’s recordings, where the bassist consistently arrives on E \flat on the downbeat of the second bar.

Figure 5.9 shows the musical score for Thelonious Monk's "Rhythm-a-ning," head. The score is written in 4/4 time and B-flat major. It consists of six staves of music. The first staff is marked with a box containing A_1/A_2 . The second staff is marked with a box containing B and D7. The third staff is marked with a box containing A_3 . The fourth staff is marked with a box containing solos. The fifth staff is marked with a box containing B and D7. The sixth staff is marked with a box containing solos. Below the staves, there are labels for "Bass walks" and "rhythm changes".

Figure 5.9. Thelonious Monk, "Rhythm-a-ning," head.

ascent at the end of the bridge. Monk is well-known for his propensity towards the whole-tone scale, and we will see this manifest below in his solo on the tune.

Instead of the *Criss-Cross* recording, we will instead focus our analytical attention on a live recording made in 1958, on the album *Thelonious in Action*.¹⁷ This recording is attractive for a number of reasons. First, tenor saxophonist Johnny Griffin takes eleven full choruses on the tune, allowing the opportunity to analyze a somewhat longer selection of music than we did in the

17. Robert Hodson provides a similar analysis of the *Criss-Cross* recording (though not from a transformational perspective) in *Interaction, Improvisation, and Interplay in Jazz* (New York: Routledge, 2007), 66–74. His analysis focuses more strongly on the interactive elements of the performance than the harmonic ones.

previous chapter. Second, after Griffin's second chorus, Monk does not play at all, leaving only the bass and drums to accompany the tenor saxophone.¹⁸ This, combined with the ambiguity of Rhythm changes, provides something of a blank harmonic slate, leaving Griffin's improvised lines to do the bulk of the harmonic work.

5.2.2 JOHNNY GRIFFIN'S HARMONIC STRATEGIES

When approached with the fast-moving harmonies in the Rhythm A sections, Johnny Griffin's preferred strategy seems to be to ignore them: he frequently uses harmonic generalizations in the A sections. Often these generalizations are diatonic, using the $2\flat$ collection; Figure 5.10 gives a representative example from chorus 8A₂. While we could perhaps imply a diatonic set of chord changes like those in Figure 5.2a–b, the rising arpeggios harmonizing the top line F₅–F₆ seem to take precedence over any particular harmonization. Similar rising diatonic patterns can be found in mm. 1–4 (chorus 1A₁) and mm. 169–72 (6A₂).

Other times, Griffin plays passages that are nearly diatonic, but altered somewhat to fit an underlying harmony. Figure 5.11 gives an example from chorus 9A₁ (chorus 11A₁ is similar). In this passage, the line is mostly diatonic, with the exception of the B \sharp and A \flat in m. 259, implying a G7 \flat 9 harmony. This passage, unlike the diatonic ascent in Figure 5.10, fits better with a diatonic chord progression, as shown in the upper transformation network. While it is certainly possible to hear a $2\flat$ diatonic swath throughout these four bars (represented in the lower network), hearing



Figure 5.10. Diatonic harmonic generalization in Johnny Griffin's solo on "Rhythm-a-ning" (mm. 233–36, 4:01).

18. Again, this is a common occurrence for Monk. During particularly good solos, he would rise from the piano and dance around the stage (an aspect of his performance on display throughout Charlotte Zwerin's documentary of Monk, *Thelonious Monk: Straight No Chaser* [Warner Bros., 1988], VHS). In the live recording here, he can occasionally be heard shouting words of encouragement to Griffin.

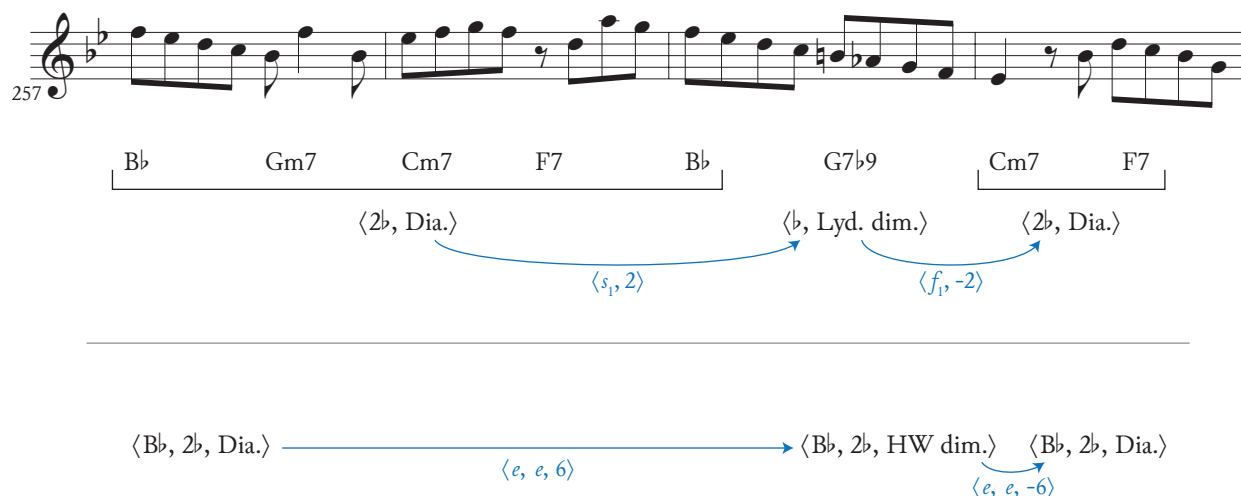


Figure 5.11. Altered diatonic generalization in Griffin's solo (mm. 257–60, 4:22), with two possible transformation networks.

the half-note harmonic rhythm brings out the contrast between G minor in the first bar and the altered G dominant seventh in the third.

The most common harmonic generalization Griffin uses is the B \flat blues scale, which often appears in the last A section of a chorus. The clearest example of this is also the first, at the end of his third chorus; this passage is reproduced in Figure 5.12, and similar clear statements of the blues scale can be found in 4A₃, 8A₃, 10A₃, and 11A₃. Because Griffin generalizes the A sections so frequently, the two-bar harmonic rhythm of the bridge often sounds like an acceleration of harmonic activity rather than its usual role as a relaxation of the half-note harmonic rhythm of the A sections. This blues generalization in the last A section of a chorus, then, helps to increase the contrast to the dominant cycle of the bridge.

The blues scale also provides an explanation for Griffin's seemingly unusual implication of D \flat m at the end of the first chorus, shown in Figure 5.12. It is not immediately apparent how to understand the passage in mm. 25–28 (see Figure 5.14): Griffin could be superimposing D \flat m over a B \flat diatonic progression, implying B \flat m7 \flat 5, or using a B \flat half-whole diminished scale generalization. Given his inclination for the blues scale in the last A section of the tune, though, my own hearing leans towards this D \flat m triad as a subset of the B \flat blues scale. Griffin also



Figure 5.12. Griffin's blues generalization in a final A section (mm. 89–96, 1:55).

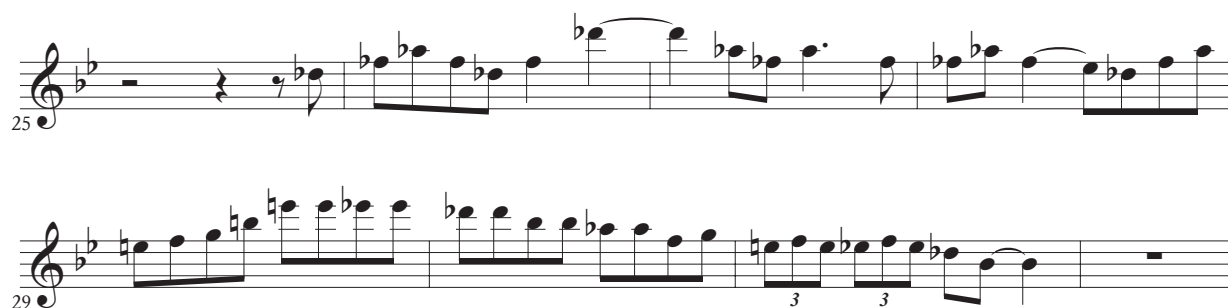


Figure 5.13. A D^b m triad as a B^b blues subset in Griffin's solo (mm. 25–32, 0:58).

emphasizes the pitches D^b and A^b at the end of his second and tenth choruses; the former implies D^b major, while the latter leans more clearly toward B^b .

Griffin does not always generalize the A sections; he sometimes plays the half-note harmonic rhythm of the tune itself. The clearest example of this occurs in chorus 7A₂, which is reproduced in Figure 5.15. While it seems clear that Griffin hears the half-note harmonic changes here, the melodic patterns he plays are harmonically ambiguous, owing to their limited range. While the progression shown in *a* is most likely—it combines the passing diminished seventh in the second



Figure 5.14. Four possible harmonic contexts for a D^b m triad: a pure triad; the upper tones of a B^b m7 b 5; a diminished scale subset; and a blues scale subset.

Tenor Sax

Bass

Bb Ab7? Bb Cm7 F7

bar with the applied dominant of C in the third—we might hear the harmonization at *b* instead, with A7 in the place of C#°7 and a tritone substitution for G7b9. Still other, less conventional, hearings are possible; letter *c* shows a hearing that moves to Eb, by first moving to Eb7 in the second bar (a nod towards the head's tilt towards the subdominant in the same formal location), and then via an applied dominant to a modified ii–V–I in Eb.

163

line during these four bars, which is shown in Figure 5.16.¹⁹ Abdul-Malik does not seem to use the half-note harmonic rhythm here, and instead plays a generalization in the first two bars, walking up the B \flat major scale (or Lydian, depending on whether the E \flat or E \natural is heard as the chromatic pitch). The strong tonic–dominant motion from A \flat to E \flat in the third bar seems to imply some A \flat harmony, perhaps as a backdoor substitution to the downbeat B \flat in the fourth bar. He does gesture towards the home-key ii–V in the last bar: we might hear the B \flat –G on beats 2–3 as a weak arpeggiation of Cm7, and the final C as a representative of F7 (which resolves to B \flat in the next bar). While this bass line certainly provides insight into Abdul-Malik’s conception of the harmony of these four bars, it does not necessarily tell us anything more about *Griffin*’s harmonic understanding; it is entirely possible (and common, as here) that all band members do not share exactly the same harmonic framework, especially in a Rhythm tune.²⁰

As we have noted before, our job as listeners and analysts is not necessarily to decide on a set of definitive changes. This ambiguity is a critical part of understanding exactly what jazz harmony *is*, and carries with it important epistemological questions—questions, incidentally, which relate to my own suspicion of the Schenkerian analysis of jazz first sketched in Section 1.2. If we take Abdul-Malik’s bass line as *the* harmony, are we then to understand some of Griffin’s note choices as incorrect? Or vice versa, if Griffin’s solo line represents the true version of the harmony, why does Abdul-Malik choose to ignore it? In “Rhythm-a-ning,” do the changes for the head (determined by whom?) hold through all of the solos, or is the harmonic framework considered anew in every chorus? In order to make a Schenkerian voice-leading sketch of the passage in Figure 5.15, we would be forced contend with these issues, since determining what pitches are consonant (or more structural) is dependent on being able to identify the underlying harmony unambiguously.²¹ My

19. A detailed account of exactly how walking bass lines project harmony is beyond the scope of this project; for a good overview, see Todd Coolman, *The Bottom Line: The Ultimate Bass Line Book* (New Albany, IN: Jamey Aebersold Jazz, 1990).

20. There is much more to be said about the role of interaction in negotiating harmony in Rhythm tunes; we will return to this idea in more detail in the analysis of “The Eternal Triangle” in Section 5.4.

21. This difficulty is perhaps one of the reason that Steve Larson’s book on the subject (*Analyzing Jazz: A Schenkerian Approach* [Hillsdale, NY: Pendragon Press, 2009]) focuses primarily on solo piano recordings of “’Round Midnight,” a piece in which the harmonies are well-defined—unlike Rhythm changes—and there are no other band members to muddy the waters. (Larson does include a live recording from Bill Evans and a partial transcription of a Bud Powell recording, each of which uses a piano trio, plus an “ensemble” recording from Evans’s *Conversations with*

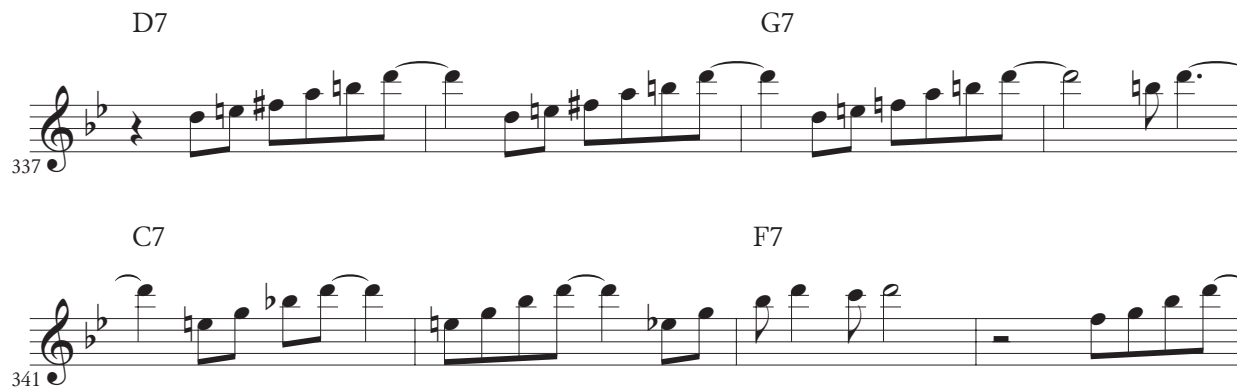


Figure 5.17. A 4-cycle bridge from Griffin's last chorus (mm. 337-44, 5:30).

own contention is that the realities of jazz performance necessitate a more fluid theoretical conception of harmony; the prismatic transformational approach allows us to make these kinds of distinctions by presenting multiple transformation networks (representing multiple harmonic hearings) of a single passage.

Compared to his strategies for the A sections, Griffin's bridges are much less varied. In most choruses, he uses the standard 4-cycle bridge; Figure 5.17 gives an example from his final chorus. In this passage, Griffin repeats the rising arpeggio, altering it in each two-bar phrase to fit with the descending-fifths harmonic pattern.²² He often provides additional harmonic interest by changing the scale to lead more strongly to the following harmony (not unlike the technique Joe Henderson used in the first four bars of his solo on "Isotope," examined in Section 4.3.3). Figure 5.18 gives a passage from Griffin's second chorus; here, both the D7 and G7 gain a $\flat 9$ in their last two beats, while the F7 gets a $\sharp 5$ (or $\flat 13$) in its final bar, which acts as a common-tone connection with the B \flat blues scale that follows in chorus 2A₃. The other common alteration Griffin makes is the tritone substitution, as shown in Figure 5.19.

Myself, a multi-track recording in which Evans acts as all three members of the ensemble.) Garrett Michaelsen critiques Larson on this same point, and also suggests that Larson overemphasizes the importance of harmony in general ("Analyzing Musical Interaction in Jazz Improvisations of the 1960s" [PhD diss., Indiana University, 2013], 9-10).

22. The main interest in this particular passage is metric: Griffin superimposes a three-beat pattern over the quadruple meter starting in m. 341.

Figure 5.18 shows a 4-cycle bridge with chord-scale elaborations. The first staff (mm. 49-52) features D7 and G7 chords. The second staff (mm. 53-56) features C7 and F7 chords. Blue arrows indicate voice leading with Roman numerals:

- From D7 to G7: $R\langle e, 2 \rangle$
- From G7 to C7: $R\langle f_1, -2 \rangle$
- From C7 to F7: $R\langle e, 3 \rangle$
- From F7 to D7: $R\langle f_1, -2 \rangle$

Figure 5.18. A 4-cycle bridge, with chord-scale elaborations that lead more strongly toward the following harmony (mm. 49–56, 1:19).

Figure 5.19 shows the bridge from Griffin's eighth chorus, with tritone substitutions shown in green. The first staff (mm. 241-248) features D7, G7, and $D\flat 7$ chords. The second staff (mm. 245-248) features C7 and $B 7$ chords.

Figure 5.19. The bridge from Griffin's eighth chorus, with tritone substitutions shown in green (mm. 241–48, 4:08).

5.2.3 MONK'S SOLO HARMONY

While Griffin's tenor saxophone solo displays a number of interesting harmonic formations, Thelonious Monk's own solo on "Rhythm-a-ning" exhibits a few more, and is worth a brief visit here. Monk only plays three choruses on the tune, and his first is characteristically sparse. Throughout all three A sections of this first chorus (chorus 12 in the transcription), he plays only pitches from the B \flat pentatonic collection—the same collection he uses to comp behind Griffin's first three choruses.²³ The recurring rhythmic motive is altered slightly so that it fits the harmonies of the standard 4-cycle bridge in mm. 369–76, before returning to the B \flat pentatonic collection for the final eight bars of the chorus.

Beginning in chorus 13, Monk consistently plays an 8-chord dominant cycle in the A sections (the harmonization first seen in Figure 5.2e). Because this harmonization is so distinct from the ordinary Rhythm A section, Monk simply arpeggiates each chord to avoid blurring the overall progression. Playing a winding bebop line through the dominant cycle might risk the coherence of the substitution, especially if the bass player did not pick up on this harmonization and played a B \flat diatonic bass line.²⁴ Figure 5.20 shows reproduces chorus 13A₁, showing the dominant cycle in the first four bars, followed by a B \flat blues harmonic generalization in the next four.

These dominant-cycle A sections are always paired with bridges that use the whole-tone scales. The head of "Rhythm-a-ning" uses the whole-tone scale in the bridge (clearly over the F7, and implied over C7 as well), and its use in Monk's solo helps to provide coherence to the performance as a whole. The bridge from chorus 14 is shown in Figure 5.21; though the whole-tone collection shifts between adjacent dominant seventh chords, the passage is harmonically consistent. This uniformity is easy to see in the chord-scale analysis: every change of harmony is represented by the transformation $R\langle T_5, f_1, 0 \rangle$.

23. "Comping" is what jazz musicians call the act of accompanying (or **complementing**) a soloist; see Mark Levine, *The Jazz Piano Book* (Petaluma, CA: Sher Music, 1989), 223–34.

24. *Thelonious in Action* is a live recording made at the end of an eight-week run at the Five Spot Café in New York (Robin D. G. Kelley, *Thelonious Monk: The Life and Times of an American Original* [New York: Free Press, 2009], 242–43). Ahmed Abdul-Malik was used to playing with Monk by the time of the recording, and catches the dominant-cycle A section almost immediately; Monk's strong left-hand entrance on F \sharp at m. 385 removes any doubt as to the progression that will follow.

Figure 5.20 shows two systems of musical notation. The top system, starting at measure 385, features a piano accompaniment with a treble staff containing eighth-note runs and a bass staff with chords marked F#7, B7, E7, A7, D7, G7, C7, and F7. The bottom system, starting at measure 389, shows a blues generalization with a treble staff containing eighth-note runs and a bass staff with a single note marked Bb. The word "(blues)" is written in the bass staff of the first measure of the bottom system.

Figure 5.20. Monk's dominant-cycle A section and blues generalization from chorus 13A₁ (mm. 385–92, 6:12).

Figure 5.21 shows two systems of musical notation. The top system, starting at measure 433, features a piano accompaniment with a treble staff containing chords marked D7#5 and G7#5. The bottom system, starting at measure 437, shows a piano accompaniment with a treble staff containing chords marked C7#5 and F7#5. Blue arrows indicate whole-tone scale relationships between the chords, labeled with $R\langle T_5, f_1, 0 \rangle$. The top system also includes a dashed line labeled "(anticipation)" pointing to the G7#5 chord.

Figure 5.21. Monk's bridge from chorus 14, using the whole-tone scale (mm. 433–40, 6:53).

This brief analysis of “Rhythm-a-ning” has illustrated that no single set of changes can adequately describe this tune. While in a more standard tune like “Autumn Leaves,” individual chords might change slightly (adding an extension or using a tritone substitution), the basic progression remains intact; rarely do we encounter a situation like that of Monk’s 8-cycle A section, where an entire set is replaced with another. This mix-and-match approach to harmony is an essential element of Rhythm tunes. Though the dozens of Rhythm contrafacts are all based on a single chord progression, the wide range of harmonic approaches means that no two Rhythm tunes sound exactly alike.

5.3 George Coleman, “Lo-Joe”

To this point in this study, the analyses have focused on harmony as reflected in a lead sheet, or how particular performances confirm (or contradict) these given lead-sheet harmonies. This approach naturally requires a lead sheet to exist in the first place, which is not always the case. Even in cases where there one does exist, there are several reasons a jazz musician might want to create a lead sheet anew: it may be inaccurate (often the case with fake books); it may not reflect a particular recording the musician wants to emulate (John Coltrane’s recording of “Body and Soul,” for example, does not use the standard changes); or the musician may simply want to practice ear training.

In these cases, the transformational approach to harmony can be used “in reverse,” so to speak; rather than analyzing how a soloist elaborates on a given set of changes, we can take the raw material of a recording and deduce a likely set of changes. This section will do just that, using George Coleman’s composition “Lo-Joe,” recorded on the album *Amsterdam After Dark* (1979).²⁵ “Lo-Joe” was recorded somewhat later than the other tunes analyzed here, and as such is somewhat

25. I am grateful to Prof. Tom Walsh for bringing this tune to my attention.

more harmonically adventurous. It is recognizably a Rhythm tune, though with a highly altered bridge, and in the key of D \flat rather than the usual B \flat .²⁶

Before beginning with the analysis, a few disclaimers are in order. While a transcription of the head (complete with piano and bass parts) can be found in Appendix B on p. 234, I want to emphasize the fact that a full transcription is in general *not* necessary to create a lead sheet, and is provided here only as an expedient to writing about the process. A skilled jazz musician would likely transcribe only the melody, and determine the harmonies simply by ear, without necessarily writing anything down. Next, there is the question of whether or not Coleman and his bandmates ever played from a lead sheet at all; might we be manufacturing a somehow “false” lead sheet rather than “reconstructing” one? This question is not important for our purposes here, since lead sheets are such a common way of conveying jazz tunes. Even if Coleman did not give his bandmates a lead sheet, he must have had *some* means of communicating the harmonic progression of the tune, and a lead sheet is the canonical way to notate this kind of progression in jazz.

The opening of melody of “Lo-Joe,” shown in Figure 5.22, appears to be straightforward, outlining mostly major triads and major seventh chords. The resulting succession of harmonies, though, does not seem to reflect any of the usual Rhythm openings, or indeed any ordinary jazz progression at all. When combined with the ensemble, though, it becomes clear that the melody consists primarily of upper extensions to harmonies.²⁷ Figure 5.23 gives the same passage from the second A section along with the piano and bass parts.²⁸ On the downbeats of the first and third bars, bassist Sam Jones plays a D \flat , and pianist Hilton Ruiz plays an identical voicing. Combined with the knowledge of standard Rhythm A sections, we can be relatively confident that the

26. That “Lo-Joe” is a Rhythm tune would be relatively clear to most jazz listeners: it has a 32-bar AABA form, half-note harmonic rhythm, moves to the subdominant in the sixth bar of the A sections, and so on. Admittedly, this fact may not be readily apparent to listeners who are not as familiar with the genre of Rhythm tunes.

27. This focus on melodic upper extensions becomes more common after the bebop era; Robert Hodson discusses this (in connection with how players create individual melodic profiles) in *Interaction, Improvisation, and Interplay*, 42–46.

28. The second A section is given here only because there is more activity in the piano, providing more harmonic information. Because there are three nearly identical A sections in Rhythm tunes, they can generally be exchanged freely. In this analysis, only one A section is usually given, but the reader is encouraged to compare the corresponding locations in the other two A sections.



Figure 5.22. George Coleman, “Lo-Joe,” melody, mm. 1–4.

D \flat maj7 B \flat 7alt E \flat m7 A \flat 7alt D \flat maj7

Figure 5.23. The first four bars of the A section of “Lo-Joe,” with ensemble (mm. 9–12).

harmony here is the tonic D \flat maj7; Coleman’s opening figure in ascending fourths is then understood as outlining the 13th, 9th, and 5th of this chord.²⁹

The third-bar tonic is preceded, as usual, by a ii–V progression, but the melody over the A \flat 7 contains the pitches E \flat , A \flat , and B \flat . These pitches can be understood as the #5 (or \flat 13), \flat 9, and #9, of the chord, which are all representative extensions of the altered chord (hereafter, 7alt).³⁰

Depending on our analytical priorities, we might analyze this harmony as A \flat 7alt (in which case the extended tones are first-class chord members) or as a diatonic A \flat 7 in which the melody notes were

29. One of the hallmarks of later (post-1960) jazz is the increase of the use of perfect fourths, especially in piano voicings; see Dmitri Tymoczko, *A Geometry of Music: Harmony and Counterpoint in the Extended Common Practice* (New York: Oxford University Press, 2011), 357–60 for an overview of this practice.

30. Recall that the “altered chord” has a specific meaning in jazz, as a dominant that includes both #9 and \flat 9 (along with other possible extensions). To avoid confusion, and because they are prevalent throughout “Lo-Joe,” in this analysis the altered chord will be called “7alt.”

part of an outgoing scale choice: $\langle A\flat 7, 4\sharp, \text{Lyd. dim.} \rangle$.³¹ In either case, understanding the $A\flat 7$ helps to understand the harmony in the previous bar, which is a $B\flat 7$, again with $\sharp 5$ in Ruiz's voicing and $\flat 9$ in the melody (and, in section A_3 , with $\sharp 9$ in the voicing). The first two bars of the A section, then, contain a standard $I-VI-ii-V$ progression, with both dominant sevenths played as 7alt chords.

The next two bars are perhaps the most difficult in the entire piece; Figure 5.24 provides these two bars from all three A sections of the head. While the rhythm section pitches are mostly consistent, the harmony is not so clear. The starting and ending points are stable, and correspond with ordinary Rhythm changes, with $D\flat \text{maj} 7$ in bar 3 of the A section moving to $D\flat 7$ in bar 5. Beat three following the $D\flat \text{maj} 7$ seems to be $Bm 7$ (arpeggiated in the melody), but at this point Ruiz seems to double the harmonic rhythm, playing four chords in the last bar of this passage. Jones's bass line is also very consistent here, but it is unclear whether this acceleration of the harmonic rhythm is real or only a surface elaboration.³²

Figure 5.25 gives several interpretations of this passage. All three of the interpretations begin with $D\flat \text{maj} 7$ and end with $D\flat 7$, with $Bm 7$ on beat 3 of the first bar. Letter *a* conforms most strongly with the melody, but the progression is unusual: there is a chromatic slipping effect from $Bm 7$ to $B\flat m 7$ that prefigures the chromatic motion to the tonic via a tritone-substituted dominant, $D7-D\flat \text{maj} 7$. Letter *b* is a hearing with doubled harmonic rhythm that follows the bass line. The progression here makes more harmonic sense, featuring mostly $ii-V$ progressions, though the melodic support for some of the chords—the $A 7$ and both $E 7$ s—is weak at best. Letter *c* focuses on the piano line, returning to two chords per bar. In this hearing the top notes of the voicings in the second bar are heard in both cases as $\sharp 9$ moving to $\flat 9$: a logical hearing, but one that is not strongly supported by the melody or bass line. None of these hearings seem to fit the music perfectly, but each does fit some aspect of it. As we have seen before, it is of little analytical

31. The unusual signature designation here is an artifact of Russell's categorizations: normally dominant chords have the parent Lydian tonic a whole-step below their roots (the parent Lydian tonic of $G 7$ is F), but for 7alt chords the Lydian tonic is a half-step above (the parent of $G 7\text{alt}$ is $A\flat$).

32. During the solos, there are consistently only two chords in this bar, but then again, "Lo-Joe" could be a tune in which there are separate sets of head and solo changes.

The image displays a musical score for the song "Lo-Joe," specifically focusing on the third and fourth bars of three A sections, labeled A₁, A₂, and A₃. The melody is written on a single staff at the top, while each A section is accompanied by piano and bass parts, each consisting of two staves. The key signature is D-flat major (three flats). The melody is marked with "D \flat maj7" and "D \flat 7". The piano part is in bass clef, and the bass part is in bass clef. The score shows the third and fourth bars of each section. The melody is a chromatic line: D \flat 4 - C \flat 4 - B \flat 3 - A \flat 3 - G \flat 3 - F \flat 3 - E \flat 3 - D \flat 3. The piano part consists of chords: D \flat 4 - C \flat 4 - B \flat 3 - A \flat 3 - G \flat 3 - F \flat 3 - E \flat 3 - D \flat 3. The bass part consists of a single note: D \flat 3.

Figure 5.24. The third and fourth bars of all three A sections of “Lo-Joe.” The melody is shown on the top staff, and each grouping of three staves below contains piano and bass parts. Each group ends when Jones’s bass reaches the tonic D \flat .

a) D \flat maj7 Bm7 B \flat m7 D7 D \flat 7

b) D \flat maj7 A7 Bm7 E7 B \flat m7 E7 E \flat 7 A \flat 7 D \flat 7

c) D \flat maj7 Bm7 A7alt A \flat 7alt D \flat 7

Figure 5.25. Possible interpretations of the preceding passage.

A₁ Fm7 E7 E \flat m7 D7

D \flat 7 G \flat maj7 C \flat 7

A₂, A₃ Fm7 B \flat 7 E \flat m7 A \flat 7 D \flat maj7

Figure 5.26. A section endings in “Lo-Joe.”

use to decide on a single “true” analysis, though it does have consequences for our imaginary lead sheet author (who must put a set of changes with this melody). This may be a passage in which a lead sheet is not sufficient; no single fixed interpretation can adequately capture the essence of this harmonic motion. Only in their interaction (and in the recording itself) does a full picture of the harmony emerge.

The second half of the A section is much simpler, though the first ends differently than the other two. (This is typical of Rhythm tunes, and would probably be notated on a lead sheet as first and second endings, as in “Rhythm-a-ning” in Figure 5.9.) The fifth bar of the A section contains a D \flat 7 chord, which moves to the subdominant G \flat maj7 in the following measure. The second half of m. 6 moves to some kind of C \flat chord, though Ruiz’s piano voicings in the head are unhelpful in determining its quality (in the solos it is usually played as a dominant seventh). The first A section

then moves to a tritone-substituted turnaround, while the other two double the harmonic rhythm to arrive on tonic in the eighth bar (see Figure 5.26).

The bridge of “Lo-Joe” is its most distinctive feature, and is given with chord changes in Figure 5.27. This bridge is clearly inspired by the last half of the bridge of “Eternal Triangle” (discussed in the next section), and its sequential nature is helpful to our imagined lead-sheet author: once a single bar is determined, it can simply be transposed to all of the others. Here, each bar contains a single ii–V progression, made explicit in the bass and with basic, three- and four-note voicings in the piano.³³

This bridge is phenomenologically rich: the ii–V progressions themselves are clear, but the connections between them admit of multiple possibilities (as a listener, or for an improvising musician). Figure 5.28 gives several possible transformation networks for the first half of bridge of “Lo-Joe”. The analysis at *a* is a “horizontal” one: do a ii–V, move up a tritone and do another, move down a half-step and do it again, and so on. Letter *b* emphasizes the descending fifth motion: play a ii–V and its tritone transposition, then move down a fifth and repeat. This hearing respects the descending fifths present in the standard Rhythm bridge, and also reflects the organization of ii–V space, shown (in letter *c*). Letter *d* highlights the tritone relationships between bars, and also encourages hearing the 3RD transformation connection between F7–Fm7 and B7–Bm7 chords. Hearing the bridge this way allows hearing as if the music is bouncing back and forth between two normal Rhythm bridges, one in D♭, the other in G. Network *e* emphasizes the half-step relationships, and encourages a connection between the first and last pairs of chords and the central two.

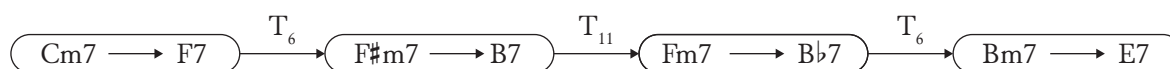
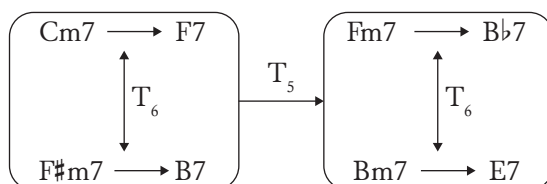
It may seem as though transformations themselves have not played an important role in reconstructing a lead sheet for “Lo-Joe.” This reconstruction, though, has taken place against the background of the musical spaces developed in the earlier chapters of this study (all of which have transformations as their logical basis). These musical spaces provide a mostly-unseen structuring principle to the analytical work in this section. Because the spaces were developed to demonstrate

33. This progression is given (in the key of B♭) in Aebersold, *“I Got Rhythm” Changes in All Keys*, 27.



Figure 5.27. “Lo-Joe,” bridge (mm. 17–24).

a) a “horizontal” reading

b) emphasizing T_5 

c) cf. ii-V space

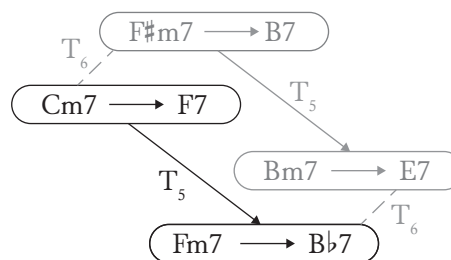
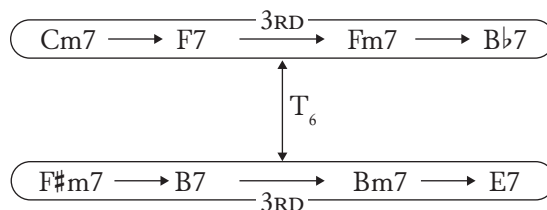
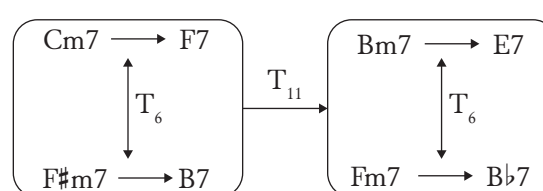
d) emphasizing T_6 e) emphasizing T_{11} 

Figure 5.28. Several possible transformation networks of the bridge (first four bars). Unlabeled arrows indicate the TF transformation.

functional jazz harmony, to recognize that “Lo-Joe” uses functional harmony is to recognize that it likely reflects an orderly representation in (say) ii–V space. This, combined with the knowledge of Rhythm changes in general, means that we could easily reject the triadic analysis in Figure 5.22 as a nonsensical jazz progression. This notion of syntax is one that is often implicit in the construction of the spaces, but comes to the fore when used for the kinds of harmonic determination done here.³⁴

5.4 Sonny Stitt, “The Eternal Triangle”

5.4.1 HARMONIC PECULIARITIES

The final Rhythm tune of this chapter was the inspiration for the bridge of “Lo-Joe”: Sonny Stitt’s “The Eternal Triangle.” The canonical recording appears on Dizzy Gillespie’s album *Sonny Side Up* (1957), featuring Stitt along with Sonny Rollins, both on tenor saxophone. The album is widely regarded as one of the best “jam session” albums in jazz, and “Eternal Triangle” is often singled out as the standout performance of the record.³⁵ This two-tenor format will allow us the opportunity to explore more deeply the role of interaction between players in shaping harmony.

First, though, a brief analysis of the tune itself is in order. The head of “Eternal Triangle” is shown in Figure 5.29; the A sections are standard Rhythm changes, featuring fast-moving bebop melodic lines. The B section, though, is unique to this tune, and features ii–V progressions descending by half-step. We might imagine this bridge as being derived from the standard Rhythm bridge, as shown in Figure 5.30. In the first step, the typical III–VI–II–V is compressed into the second half of the bridge. To preserve the correct length, Stitt extends the fifths cycle backward by two chords to E7, maintaining the original harmonic rhythm of one chord every two bars,

34. It is also a concept that is absent from other prevalent theories of jazz harmony: it is easy to imagine an analysis in which the arpeggiated triads and seventh chords of the melody of “Lo-Joe” form coherent voice-leading strands to and from structural tonic chord members, for example.

35. See, for example, Stephen Cook’s review on *AllMusic*, where he notes that on “‘The Eternal Triangle,’ in particular, Stitt and Rollins impress in their roles as tenor titans . . . an embarrassment of solo riches comes tumbling out of both these men’s horns” (Stephen Cook, Review of Dizzy Gillespie, *Sonny Side Up*, *AllMusic.com*, accessed July 13, 2015, <http://www.allmusic.com/album/sonny-side-up-mw0000188698>).

Figure 5.29 shows the musical score for Sonny Stitt's "The Eternal Triangle," head. The score is in B-flat major, 4/4 time, and consists of 16 measures. It is divided into four systems, each with a key signature change box (A₁/A₂, B, A₃, B) and a sequence of chords. The melody is written in treble clef. The first system (measures 1-4) has chords: B \flat , Gm7, Cm7, F7. The second system (measures 5-8) has chords: Dm7, G7, Cm7, F7. The third system (measures 9-12) has chords: Fm7, B \flat 7, E \flat 7, Dm7, G7. The fourth system (measures 13-16) has chords: Cm7, F7, B \flat , Cm7, F7, B \flat . The score includes a triplet in measure 1 and a first/second ending in measure 8.

Figure 5.29. Sonny Stitt, "The Eternal Triangle," head.

increasing the harmonic work done by the bridge (and consequently, the area of ii–V space it traverses). In the next step of the derivation, each dominant seventh is replaced by a ii–V progression; finally, every other ii–V progression is replaced with its tritone substitute, resulting in the chromatic descent of the bridge itself.

Because the A sections of "Eternal Triangle" use typical harmonies, both Rollins's and Stitt's solos display many of the same solo approaches we saw in Griffin's solo on "Rhythm-a-ning" above. Both players use harmonic generalizations of various types: diatonic (choruses 2A₃, 5A₃, 8A₂, and

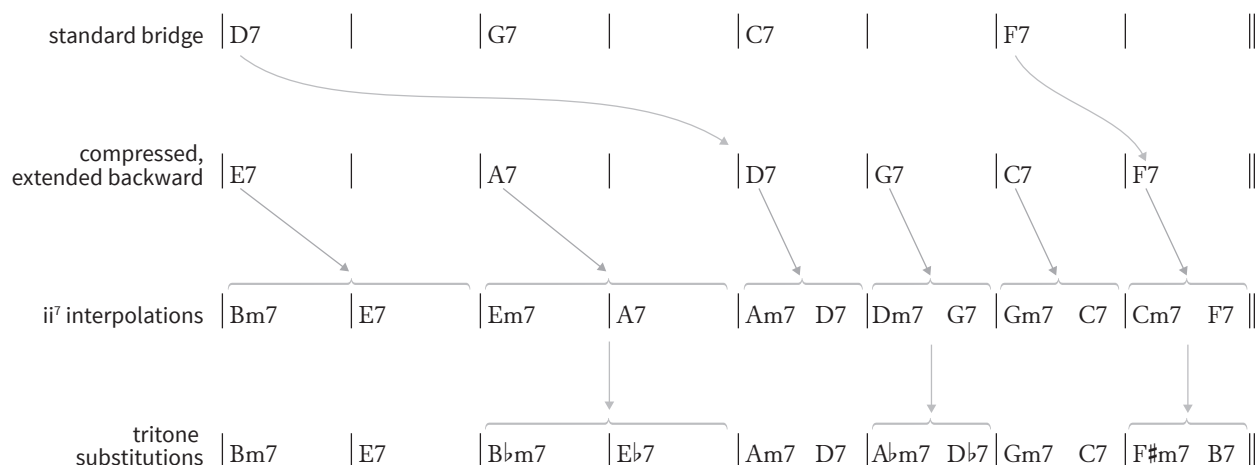


Figure 5.30. Derivation of the bridge of “Eternal Triangle” from a standard Rhythm bridge.

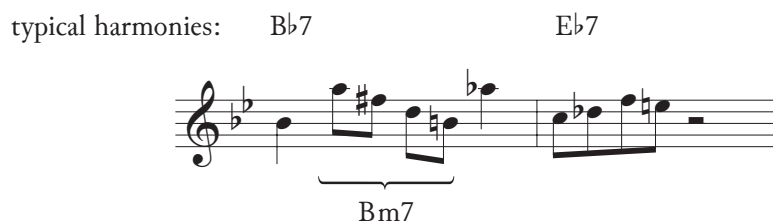


Figure 5.31. Side-slipping in Sonny Rollins's solo (mm. 45–46, 1:15).

11A₁, for example); blues (4A₁, 9A₂, 11A₃); and other scales (the half-whole diminished scale in 9A₁ and 12A₂). Stitt in particular emphasizes the half-note harmonic rhythm of the A sections, often playing bebop lines that change accidentals frequently to highlight the harmonic shifts (see choruses 6A₃ and 10A₂, for example). Many other common harmonic devices can also be found, including tritone substitutions (mm. 133) and CESH (mm. 33–35, 193, and 395–96).

One harmonic aspect of Rollins's solo does deserve special mention, as it has not yet appeared in the analytical examples. Figure 5.31 shows the fifth and sixth bars of an A section, where we would normally expect the harmonies B \flat 7–E \flat 7. Here, Rollins clearly arpeggiates a Bm7 instead; this is a feature which is often called “side-slipping” or “side-stepping.”³⁶ The overall harmony of

36. Jerry Coker defines side-slipping as “deliberately playing ‘out-of-the-key’ for the sake of creating tension” (*Elements of the Jazz Language for the Developing Improvisor* [Miami: Belwin, 1991], 83).

Figure 5.32. A non-sequential bridge from Sonny Rollins's solo (mm. 113–20, 2:12).

this bar is Bb7 (sometimes with its preceding ii⁷), but here Rollins plays a harmony a half-step away. The motion from Bb7 to Bm7 is distant in ii–V space, though is closely related to the SLIDE₇ transformation ($Bb7 \xrightarrow{7TH^{-1} \bullet SLIDE_7} Bm7$).³⁷ It is also a convincing way of playing “outside,” which is what jazz musicians call improvised lines that do not seem to connect with the underlying harmony.³⁸ Outside playing becomes an important feature of more modern jazz improvisations, but it also features prominently in this recording when Rollins and Stitt begin trading (a section to which we will return below).

Given that the bridge of “Eternal Triangle” is its most interesting feature, it will be worthwhile to examine the solo strategies of Rollins and Stitt separately before moving on to discuss how the two interact with each other. These strategies can be broken down into two basic types: sequential and non-sequential solo approaches. The non-sequential solo approach to this bridge is less common, and a single example should suffice. Figure 5.32 gives the bridge from Rollins's fourth chorus; because the harmonies are so fast-moving, he uses mostly diatonic scales. Though the melodic line is not sequential, Rollins's shifting diatonic palette works in conjunction

37. Dmitri Tymoczko notes that side-slipping usually demonstrates efficient voice-leading; he also emphasizes its role in creating polychordal or polytonal effects; see *A Geometry of Music*, 374–78.

38. I suspect that the “outside” terminology is related to Russell's “outgoing” scale choices, but I have not been able to corroborate this suspicion.

Figure 5.33 consists of two musical examples, a) and b), showing sequential bridges from Sonny Rollins's solo. Both examples are in B-flat major and feature a chromatically descending ii-V progression: Am7, D7, Abm7, Db7, Gm7, C7, F#m7, and B7. Example a) (measures 85-88) shows a quarter-note pattern in the right hand, with blue arrows indicating T_{11} transformations between the chords. Example b) (measures 149-52) shows a more complex pattern, starting on the ninth of the minor seventh chord and descending to the third of the dominant seventh, with blue arrows indicating T_{11} transformations.

Figure 5.33. Two sequential bridges from Rollins's solo (mm. 85–88, 1:48 and mm. 149–52, 2:42).

with the chromatically descending ii–V progressions; the chord-scale analysis highlights that the f_7 signature transformation is equivalent to T_{11} .³⁹

Because the bridge is made up of these chromatically descending ii–Vs, the most obvious approach for an improviser is to play sequentially, repeating a single pattern over each ii–V progression. This approach is seen most often in the second half of the bridge, where the harmonic rhythm doubles; Figure 5.33 gives two examples of this strategy from Sonny Rollins's solo. In *a*, from the third chorus, Rollins plays the same quarter-note pattern in all four bars, highlighting the T_{11} s of the progression itself.⁴⁰ Letter *b*, from the fifth chorus, is more complicated, but the basic idea is the same. Here, Rollins begins on the ninth of the minor seventh chord and descends to the third of the dominant seventh (diatonically, in the key of the dominant). The rhythm here is more varied, and linking material is inserted in the third bar, but the sequential pattern is still clear.

39. That $f_7 = T_{11}$ is one of the properties of signature transformations; see Julian Hook, "Signature Transformations," in *Music Theory and Mathematics: Chords, Collections, and Transformations*, ed. Jack Douthett, Martha M. Hyde, and Charles J. Smith (Rochester: University of Rochester Press, 2008), 142–44.

40. This repeating pattern is one of what are sometimes called "digital patterns." Though these patterns are more common at faster tempos (and in eighth notes), this is a standard 5–3–2–1 pattern, where the numbers indicate scale degrees of the minor seventh chord. Jerry Coker gives the passage at Figure 5.33a as an example of digital patterns in *Elements of the Jazz Language*, 11.

Figure 5.34. A sequential bridge with metric shift, from Sonny Stitt's solo (mm. 213–16, 3:34).

Stitt seems to prefer sequential bridges more than Rollins does, but Stitt often introduces a metric shift as well; Figure 5.34 gives a representative example from chorus 7 (similar passages can be found in choruses 9, 10, and 12). Here, Stitt plays a descending bebop scales on every dominant seventh chord. The first two of these are three-beat patterns, creating a metrical grouping dissonance ($G3/4$).⁴¹ When Stitt repeats the pattern on the C bebop scale, it should end on the downbeat of the third bar. As if realizing he has arrived too early—after all, the C7 chord does not *begin* until the third bar—Stitt extends the scale another two beats, resulting in a five-beat scale that descends an entire octave. With five beats remaining in the bridge after the end of this pattern, he repeats it using the B bebop scale; a final $A\sharp$ in the last beat acts as an enclosure to the tonic $B\flat$ that begins the next A section. While the harmonic rhythm of “Eternal Triangle” normally doubles in the last half of the bridge, Stitt's frequent metric shifts accelerate it even further, giving his solos even more momentum into the final A section of each chorus.

Though the strictly sequential patterns are mostly restricted to the last half of the bridge, the first half can also support sequential patterns; Figure 5.35 shows an example from the eighth chorus. Because the harmonic rhythm is slower at the beginning of the bridge, the sequences are usually somewhat looser. Here, Stitt plays a decorated $Bm7$ arpeggio, followed by the same pattern a bar later over $B\flat m7$. (While in the passage in Figure 5.34 Stitt ignored the ii^7 chords, here he seems to ignore the $E7$ instead.) The pattern breaks in the middle of the third bar, where Stitt moves toward a standard diatonic pattern for the final $E\flat 7$ chord.

41. On metrical dissonance in jazz, see especially Stefan Love, “Subliminal Dissonance or ‘Consonance’: Two Views of Jazz Meter,” *Music Theory Spectrum* 35, no. 1 (Spring 2013): 52–54 and throughout.

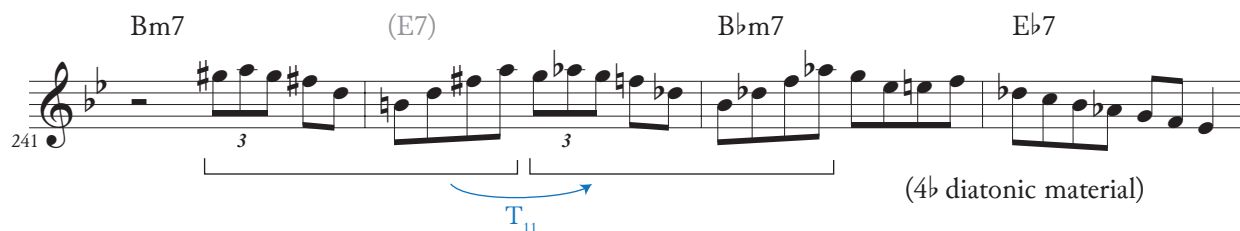


Figure 5.35. A loosely sequential bridge from Stitt's solo (mm. 241–44, 3:57).

5.4.2 INTERACTIONAL ELEMENTS

With a few exceptions (including “Lo-Joe” in the previous section), the analyses so far have been interested primarily in a soloist's improvised line, paying only passing attention to the fact that these improvisations occur within a framework of group improvisation. Sonny Rollins's solo on “Eternal Triangle,” for example, does not take place in isolation; he is supported by the rhythm section, and in later choruses he and Stitt “trade,” alternating 4- or 8-bar segments of improvised melodies. Understanding this interaction is crucial to understanding the performance as a whole. This section will focus on these moments of interaction in “Eternal Triangle,” acknowledging the role that interaction plays in harmony, and vice versa.

One of the first models of interaction in jazz is found in Robert Hodson's *Interaction, Improvisation, and Interplay in Jazz*. He uses a semiotic model borrowed from Jean-Jacques Nattiez, in which a work of music is both a product (a score/sound) and a set of processes: both the poietic process of composition and the esthetic process of a listener.⁴² Hodson adapts this model for jazz performance, since a jazz musician simultaneously creates the sound and listens to the other band members' sounds. The two separate components of poiesis and esthesis in Nattiez's model form something of a feedback loop for jazz musicians, since their musical utterances are often shaped by those of their fellow musicians (while at the same time, potentially influencing those musicians themselves).⁴³

42. Hodson, *Interaction, Improvisation, and Interplay*, 14–15.

43. *Ibid.*, 15–16.

Garrett Michaelsen, in his dissertation on interaction in jazz, critiques Hodson on this model. He argues that while Hodson's focus on the ensemble as a whole (via the esthetic process) is valuable, that Hodson does not go far enough. In his analyses, Hodson places himself in an improviser's perspective, and as Michaelsen notes, "it is . . . unclear how this vantage point enables musical analysis because it leaves no room for the outside observer's non-poietic perspective."⁴⁴ Instead, Michaelsen offers a listener-based approach, in which a particular auditory stream (a bass line, for example) might be heard as influencing another (like an improvised saxophone line).⁴⁵ As with harmony, there is often not a single "correct" analysis of a given interaction, and so Michaelsen's listener-based approach fits nicely with the prismatic approach to harmony taken here.

Michaelsen discusses harmony only in passing (usually in connection with a particular musical example), while Hodson dedicates an entire chapter to the role of interaction in harmony.⁴⁶ Many of the questions that concern Hodson are the same as those we have confronted during the course of this study:

How can one reconcile the disparity between different versions, both written down and performed, of the "same" harmonic progression? Does it even need to be reconciled? Some scholars criticize the effort to reconcile these variants as an attempt to force a Western ideology of coherence—and a modernist ontology of the piece—onto a music to which it doesn't really apply. But, if this kind of [harmonic] coherence is not a part of jazz, then why do jazz musicians talk about a soloist "making the changes," or an improvised line as either "making sense" or not? There must be *some* criteria for musical coherence.⁴⁷

Hodson answers these questions by borrowing a linguistic metaphor from Noam Chomsky: he argues that jazz musicians play the "deep structure" of a tune, which might be realized in any number of ways—and can be revealed by analyzing musical interaction. Rhythm tunes, he argues, can be generated from the deep structure of "I Got Rhythm": its A sections consist of

44. Michaelsen, "Analyzing Musical Interaction," 24–25.

45. *Ibid.*, 36–38 and throughout. Michaelsen's work draws on Albert Bregman's schema-based stream segregation, while acknowledging that auditory streams in jazz are more flexible than Bregman's own; see Albert S. Bregman, *Auditory Scene Analysis* (Cambridge, MA: MIT Press, 1990).

46. The closest Michaelsen gets to an outright discussion of harmony comes in his discussion of interaction with "referents": he notes that "chord changes are inherently open-ended expressions of harmony that permit a wide variety of possible chord voicings," and that "different referents will motivate projections of varying specificity" ("Analyzing Musical Interaction," 90–91).

47. Hodson, *Interaction, Improvisation, and Interplay*, 53.

prolongations of B \flat , while the bridge begins off tonic and contains a motion back towards it. This appeal to linguistics does provide some way of understanding the myriad of Rhythm harmonizations, but it leaves something to be desired: it is not as though *any* set of chord changes can appear in the Rhythm A section, provided it starts and ends with B \flat . Again, the transformational approach to harmony developed here allows us a means to specify the ways in which this deep structure is modified, and an interactional analysis of “Eternal Triangle” seems a natural way of exploring these modifications.

As a first step in that direction, consider Figure 5.36, from the end of chorus II. In the final A section of the chorus, Stitt plays a very strong blues generalization. Though this is a common choice (especially in A₃ sections), this particular occurrence is marked by the strong emphasis on the blues in the rhythm section parts as well.⁴⁸ After the fast-moving harmonies of the bridge (the end of which is given in the transcription), the group’s convergence on eight bars of blues has a striking effect.

The instigating factor for this blues generalization might well have been Tommy Bryant’s decision to play a tonic pedal in m. 345. In a Rhythm tune like “Eternal Triangle,” the constant half-note harmonic rhythm can become tedious, and a pedal point is one of the most effective ways a bass player can counteract this tendency. This is the first time in the 5½ elapsed minutes of the recording Bryant uses the pedal, and Stitt and Bryant’s brother Ray on piano are very likely to have noticed.

Stitt responds to this tonic pedal by playing an emphatic blues lick with a prominent A \flat .⁴⁹ This pitch, $\flat\hat{7}$, is unlikely to occur over any of the common harmonies of the first bar of the Rhythm A section (except perhaps as a $\flat 9$ over G7), and its repetition as a long note in the second bar cements its status as a member of the B \flat blues scale. Pianist Ray Bryant, hearing the bass pedal

48. Charlie Persip’s drums are not included in the transcription, since they do not contribute to the harmony.

49. Throughout these interactional analyses, I follow Michaelsen’s own use of language, which relocates a listener’s perception into the player. Thus, “Stitt responds to this tonic pedal” should be understood as “I, the listener/analyst, hear Stitt’s musical utterance as a response to the tonic pedal of the bass.” This language, though potentially confusing, is in general clearer and easier to read. See Michaelsen, “Analyzing Musical Interaction,” 46–47.

Am7 D7 A \flat m7 D \flat 7 Gm7 C7 F \sharp m7 B7

Stitt
(tenor)

Ray Bryant
(piano)

Tommy
Bryant
(bass)

341

11A₃

345

12A₁

349

Figure 5.36. The end of chorus 11, including rhythm section (mm. 341–53, 5:19; bass sounds as written).

along with Stitt's blues lick, then launches into a series of blues voicings.⁵⁰ Combined with the tonic pedal, Bryant's diminished chords and neighboring $\frac{6}{4}$ chord of m. 348 give the section a strong blues feel that both reinforces and is reinforced by Stitt's solo line.

This group interaction is what Michaelsen would call strongly "convergent," in that all three of the members involved play music that supports the others.⁵¹ The convergence continues in the last four bars of the section, as Tommy Bryant moves away from the tonic pedal to outline the blues-inflected progression $B\flat-B\flat 7/D-E\flat-E^\circ 7-F7$. In m. 351, he arrives on a dominant pedal at the same moment that Stitt also concludes his line on F, all reinforced by Ray Bryant's strong left-hand F in the piano.⁵² This convergence on the dominant (combined with Charlie Persip's drum fill) provides a strong push into the following chorus, where the three fall back into their usual, less convergent, roles.

The most clearly interactional moments of "Eternal Triangle" come between the two saxophonists themselves after the trading begins in chorus 14. Stitt and Rollins "trade fours" for three choruses, then "trade eights" for three more to end the saxophone soloing. The fours supply many good examples of harmonic interaction; chorus 15A₂ (shown in Figure 5.37) gives a representative example. Here, Rollins plays a diatonic figure in the first two bars, then side-slips in the next two to play a figure that outlines B major rather than $B\flat$. Stitt's response is at once both convergent and divergent: he enters on the same pitch that Rollins did and plays a very similar figure in his first bar (marked with an x in Figure 5.37), but his starting pitch is $F\sharp$, dissonant with the B major triad Rollins is playing at the same time. The last A section of the same chorus (shown in Figure 5.38) illustrates a more convergent interaction. Here, Rollins begins with a motive outlining the pitches $G-G\flat-F-D$. Stitt seamlessly picks up this line on the downbeat of

50. At the same time, Bryant's piano voicings project some continuity with the end of the bridge, since he continues moving his right hand in parallel thirds.

51. In Michaelsen's terminology, the three auditory streams "project similar futures" ("Analyzing Musical Interaction," 60). The particulars of auditory streams and implications need not concern us too much here, since it is relatively clear that all three members project the blues.

52. Incidentally, the arrival on F in the piano is perhaps unusually contrapuntal: it seems as though Bryant's voicing in m. 350 is dictated by the lower-voice motion $G-G\flat-F$, while the upper voice $C\sharp$ demands resolution to D, fulfilled on the downbeat of the next chorus. These contrapuntal motions all combine with the bass $E\flat$ to produce a German seventh chord in the second half of m. 350—a fairly typical predominant in classical music, but extremely rare in jazz.

m. 477, continuing the motive for another four bars, at which point Rollins reclaims it for a bar before moving on to new material in the beginning of the next chorus.



Figure 5.37. A harmonic interaction between Rollins (red notes) and Stitt (blue notes) from chorus 15 (mm. 457-63, 6:52).

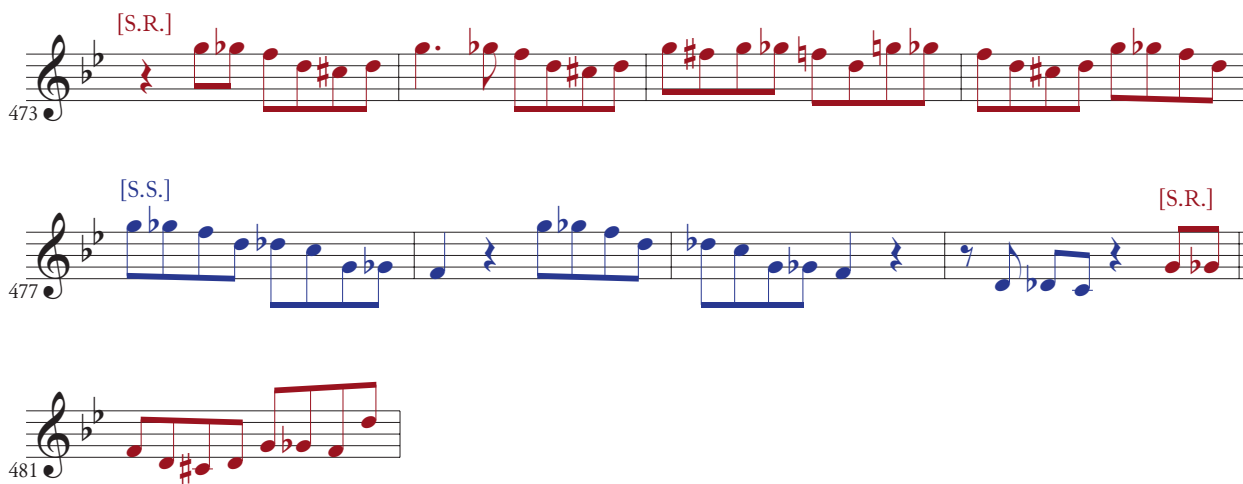


Figure 5.38. A convergent interaction from later in chorus 15 (mm. 473-81, 7:05).

5.4.3 EXTENDED ANALYSIS: TRADING EIGHTS, HARMONY, AND INTERACTION

For the final analysis in this dissertation, I want to take a more detailed look at the way harmony functions over a longer period of time, using the final three choruses of saxophone soloing on “Eternal Triangle.” These are the choruses where Stitt and Rollins trade eights; since each soloist gets an entire section of a chorus, he has more harmonic leeway than in the rapid four-bar segments of the preceding three choruses. Since these are the final three choruses of their solos, this portion is also where the “saxophone dueling” comes to a head. In it, the suggestions of outside playing initially suggested in Rollins’s very first chorus (recall Figure 5.31) reach a final realization, before winding down again in the final chorus.

The eight-bar trading begins at the beginning of chorus 17, after a non-musical interaction: someone (probably Stitt) can be heard on the recording asking “keep going?” Stitt’s first eight bars are a typical diatonic A section, with only incidental chromaticism. Rollins’s response in chorus 17A₂ is more outside, and is shown in Figure 5.39. The most blatant chromaticism here is in the second bar, where we would normally expect Cm7–F7 or Cm7–C#°7. As is usually the case with outside playing, it is not clear how we should interpret Rollins’s note choices here, though the chord-scale triples below the staff give a few suggestions. After this second bar he returns to more inside playing, though with a few more outgoing scale choices than usual: he plays both #5 and b9 over the F7 in m. 524.

521

B \flat Gm7 D7 \flat 9? G7 C7 F7

<A7, 2 \sharp , Dia.> <D7, \sharp , Dia.> <2 \flat , HW Dim.>

<F \sharp m7, 4 \sharp , Dia.> <B7, 4 \sharp , Lyd. dim.>

<C7 \flat 9, \flat , Lyd. dim> <F7 \flat 9, 2 \flat , Lyd. dim>

Figure 5.39. Rollins’s outside playing in the second A section of chorus 17 (mm. 521–24, 7:44).

Figure 5.40. Rollins's increased chromaticism in the final A section of chorus 17 (mm. 537–42, 7:56).

Stitt's ensuing bridge is again typical, using only the expected diatonic collections. That he chooses not to play outside on the bridge illustrates a basic principle of jazz harmony, in that progressions that are less common are generally played more inside. The bridge of "Eternal Triangle" is its most distinctive feature, so soloists typically play improvisations that highlight these harmonies, whereas the A sections of the tune are more typical and admit of greater elaboration. Playing far outside the changes on the bridge risks obscuring the harmonic progression that is an essential feature of this particular Rhythm tune (and perhaps, in an amateur performance, giving the impression that outside playing will be mistaken for not *knowing* the changes).⁵³

In the final A section of the chorus, Rollins increases the chromaticism even further, as shown in Figure 5.40. His first bar seems to imply a motion from E7 to A; while we might understand the E harmony as a tritone substitution for the tonic B \flat , the A chord in the second half of the first bar does not make sense as an ordinary substitution in any of the usual harmonizations of the A section. Given that the A7 harmony seems to continue into the second bar, we might instead hear this outside playing as a downward side-slipping, substituting an A diatonic collection for the tonic B \flat . Side-slipping is one of Rollins's preferred methods of playing outside: we observed it in his first chorus, and he repeats the technique in chorus 14A₃ (mm. 441–42). Rollins returns to more

53. A similar phenomenon occurs in the final turnaround of Joe Henderson's "Isotope," discussed in Section 4.3.3. Because the turnaround is so distinct, Henderson simply arpeggiates the harmonies in most of his improvised choruses to make them as clear as possible.

typical harmonies after these first two bars, though he still emphasizes dissonant tones: m. 540, for example, features strongly accented dissonances, with the local $\hat{4}$ (Levine's "avoid note") appearing on beats 1 and 3. All of this chromaticism combines to form an improvised line even more outside than Rollins's first eight bars of trading, as though his own sense of harmony is being slowly detached from that of both his own rhythm section and from the A section of the tune itself.

In the beginning of the next chorus, Stitt seems to take the outside-playing bait, launching into a dominant-cycle A section very much like Monk's solo on "Rhythm-a-ning." This harmonic move seems to take the rhythm section by surprise, and draws our attention to the interaction not only between the two soloists, but between them and the rhythm section as well (a transcription including the piano and bass parts is given in Figure 5.41). Faced with this unexpected dominant cycle, pianist Ray Bryant's solution is simply to stop playing, while bassist Tommy Bryant instead plays a B \flat pedal, as if to stress the tonic in the midst of Stitt's cycle. Since the 8-chord dominant cycle lasts only four bars, all three band members all return to a typical A-section harmonic structure in m. 549.

Perhaps anticipating another outside response from Rollins, Ray Bryant does not immediately begin playing in the next A section, and Tommy Bryant opts this time for a dominant pedal. In the face of harmonic uncertainty, this approach from the rhythm section makes sense: a dominant pedal in the bass will work to build tension no matter what Rollins decides to play, and Ray Bryant's wait-and-see approach prevents any harmonic clashes. As it turns out, Rollins does play a non-diatonic line, and again it is not entirely clear what harmonic framework he has in mind. His line in the first four bars of chorus 18A₂ is a loose, descending, motivic repetition that recalls the "C.T.A." harmonization of Figure 5.2f (with its whole-step descent). While the motive and direction of the line are relatively clear, we might also hear this line, in conjunction with Ray Bryant's comping in the last two bars, as a series of outgoing scale choices on a more standard progression, as shown in Figure 5.42. Like Stitt, Rollins returns to a more diatonic approach in the last four bars of the section, setting up the way for Stitt's bridge.

18A₁ 8:03

Tenor Sax [S.S.]

Piano

Bass

545

549

18A₂ [S.R.]

3

553

Figure 5.41. Transcription of chorus 18, including rhythm section (mm. 545–76, 8:03).

557

18B

561

565

Figure 5.41 (continued). Complete transcription of chorus 18.

18A₃ [S.R.] ³

569

573

Figure 5.41 (continued). Complete transcription of chorus 18.

B \flat C7 F7 B \flat 7

$\langle \flat, \text{Whole-tone} \rangle$ $R\langle e, -2 \rangle$ $\langle \flat, \text{Lyd. dim.} \rangle$ $R\langle f_1, 1 \rangle$ $\langle 2\flat, \text{Lyd. } \flat 7 \rangle$

Rollins

R. Bryant

T_{10} T_{11} T_{11}

Figure 5.42. One possible interpretation of Rollins's descending line (mm. 553–56, 8:09).

expected: B \flat Cm7 F7 B \flat

actual: B \flat C \sharp m7 Cm7 F7 B \flat

577

side-slipping

Figure 5.43. Stitt's side-slipping at the beginning of chorus 19 (mm. 577–79, 8:29).

The bridge of chorus 18 proceeds normally in all three instruments: Stitt's scale choices are almost completely diatonic, Ray Bryant uses standard 3-note voicings, and Tommy Bryant plays a bass line emphasizing the T_{11} root motion. While the bridge of "Eternal Triangle" usually functions as the locus of harmonic activity in a chorus, the bridge here has an almost calming effect after the harmonic disruption in the first half of the chorus. The tension of all of the outside playing seems to disappear as all of the band members (and we as listeners) relax into the bridge, relatively confident that it will progress as expected.

This harmonic tranquility does not last long, though, as Ray Bryant instigates another dominant cycle at the beginning of chorus 18A₃. He enters emphatically on an F \sharp 7 chord, and includes the bass note (typically omitted by pianists) in his left hand, as if to demonstrate that he understood Stitt's cycle in 18A₁ and is willing to support it for this A section. His brother Tommy catches the cycle almost immediately: after playing a B \flat on the downbeat of m. 569, he makes his way to a B \natural by beat 3, and continues with the cycle all the way through the first four bars. This time, though, Rollins does not follow along, playing the B \flat Lydian scale for the first two bars. Ray Bryant's enthusiasm for the dominant cycle fades quickly, hearing that Rollins does not follow along; by the third bar the piano voicings are nearly inaudible, returning only in the final bar (where C7–F7 is a characteristic choice regardless of the particular harmonization used).

After a more common diatonic ending in the last four bars chorus 18, Stitt begins the next chorus with a side-slipping gesture, arpeggiating a C \sharp m7 chord before the expected Cm7 in the

The image shows a musical score for three instruments: Tenor, Piano, and Bass. The Tenor part is in treble clef with a key signature of two flats (Bb, Eb). It features a saxophone solo with markings [S.S.] and 19A2. The Piano part is in treble clef and shows a chord change to Bmaj7, highlighted in red. The Bass part is in bass clef and starts at measure 583. Below the score, a diagram illustrates a harmonic progression: $\langle 2\flat, \text{Dia.} \rangle \xrightarrow{R(s, 0)} \langle 5\sharp, \text{Dia.} \rangle \xrightarrow{R(f, 0)} \langle 2\flat, \text{Dia.} \rangle$.

Figure 5.44. Ensemble arrival on Bmaj7 at chorus 19A₂ (mm. 583–88, 8:33).

second bar of the chorus (see Figure 5.43). After this brief moment, though, Stitt plays more or less diatonically until the end of this A section.

At the beginning of chorus 19A₂, the side-slipping occurring sporadically throughout the saxophone solos reaches its culmination in a remarkable moment of ensemble convergence. Stitt ends his eight bars with a tonic triadic descent, ending on B \flat . At the same moment, both Ray and Tommy Bryant land on a Bmaj7 chord, turning Stitt's tonic B \flat into a chordal major seventh (see the transcription in Figure 5.44).⁵⁴ This side-slipped B major lasts only two bars, and by m. 587 the rhythm section moves back to B \flat . For his part, Rollins plays a repeating motive over all eight bars of this section consisting of the pitches E \flat , D, and B \flat . Over the Bmaj7, this lick emphasizes the major third and seventh of the chord, but when the rhythm section slips back to B \flat , Rollins is left emphasizing the dissonant $\hat{4}$. This approach is certainly not as outside as Stitt's dominant cycle of chorus 18A₁, but the dissonance still lends a sense of “outsiderness” to the section as a whole. In the final bar of his A section, Rollins resolves the E \flat to D, after which the bridge and final A section proceed almost completely diatonically.

54. Given the convergence of all three members of the ensemble on this Bmaj7 chord, it seems likely that this harmonic move was planned in advance. Though it is impossible to say for certain, the fact that it occurs on the last chorus of trading provides some support; it is easy to imagine a situation in which the band decides (before recording) that a move to B major in the second A section will mark the last chorus of saxophone solos.

Heard as a unit, the final three choruses form a progression from inside to outside playing and back again. Stitt's diatonic playing in chorus 17 is challenged by Rollins's suggestions of outside playing, weakly at first in 17A₂ but more strongly in 17A₃. Stitt takes the suggestion in the opening of chorus 18, playing a dominant cycle that takes the rhythm section by surprise. Rollins responds not with a dominant cycle, but with a motivic response that seems almost completely disconnected from typical Rhythm harmony. The rhythm section tries to anticipate a dominant cycle in the chorus's final A section, only to be disregarded by Rollins. Amid the harmonic confusion, Stitt begins chorus 19 with some mild side-slipping before returning to more inside playing. This side-slipping is answered strongly by the rhythm section, which begins the following A section a half-step off on Bmaj7. After a mildly dissonant eight bars from Rollins, the bridge and final A section return inside to conclude the saxophone trading and make space for Dizzy Gillespie's trumpet solo that follows. The harmony in these choruses is far more nuanced than the chord changes of the lead sheet might suggest; it is a dynamic, ever-changing attribute, revealed not only in the interaction among the musicians themselves, but also between the musicians and us as listeners.

5.5 Concluding Remarks

As the end of this study approaches, it may be useful to return to the fundamental question: what *is* jazz harmony, really? Or, as Hodson states the problem, “what exactly are you analyzing when you analyze jazz harmony?”⁵⁵ Does the harmony exist in the chord symbols on a lead sheet? In the voicings of a pianist or walking line of a bassist? Does harmony exist in a tune itself, independent of any particular performance of it? If a performer's harmony conflicts with the chord symbol, which one is “correct”?

These are fundamental questions, and questions that do not often arise in the study of notated music. The answer, I think, is that harmony in jazz is all of these things, and more. A single harmony can be captured by a chord symbol, but this chord symbol is only part of the story. A

55. Hodson, *Interaction, Improvisation, and Interplay*, 52.

transcription of a piano voicing for that symbol does not represent a final solution either, since in jazz a repeating harmonic framework forms the basis of a performance, and pianists do not usually play identical voicings for the same chord throughout. We may be tempted to turn towards the soloist as the arbiter of harmonic identity, but as we have seen, even a seemingly clear progression in a solo instrument can be obscured by the choices of a rhythm section.

It is my hope that the transformational approach developed throughout this dissertation is better equipped to deal with this chimerical nature of jazz harmony. Chapter 1 began by treating harmony in something of a “clean-room” fashion, grouping chord symbols into diatonic sets without worrying too much about what the chord symbols actually represented. Chapters 2 and 3 took steps towards clarifying this nature, representing chord symbols in their most basic form of root, third, and seventh. This abstraction allowed us to explore connections between harmonies that do not share a diatonic collection, using variations on a basic musical space of ii–V–I progressions. In Chapter 4, our conception of harmony expanded from three-note chords into many-note scales, as we drew on the work of George Russell to create a chord-scale space. This work permitted a change of focus from chord symbols and abstract tunes to jazz performance itself, investigating the way in which harmony can function for improvising performers. This final chapter has continued this work by looking through the lens of Rhythm changes, itself a harmonic archetype, variously instantiated in countless Rhythm contrafacts, each of which is elaborated in individual performances.

In this last chapter, the transformations themselves receded into the background somewhat, used only as a tool for discussing harmony in service of other analytical points. This is intentional, and as Julian Hook notes in his review of Lewin’s *GMIT*, “transformation theory is a large and varied toolbox; there are only some minimal instructions for using the tools, and no designs at all for what one can build with it.”⁵⁶ For all the focus on harmony, it is often the case that harmony is not the most interesting aspect of a particular passage. Just as we tell our students that a Roman numeral analysis does not mark the end of the analytical process, neither does a completed

56. Julian Hook, “David Lewin and the Complexity of the Beautiful,” *Intégral* 21 (2007): 166.

chord-scale labeling mean that we can check off a passage as “analyzed” and move on to the next chorus. This dissertation has developed a flexible set of tools for analyzing harmony—tools that can be used as necessary whenever a need to discuss harmony arises.

Given that harmony touches nearly every aspect of jazz performance and analysis, the foundational work here might be applied or extended in any number of ways. It is easy to imagine other transformations that might appear more commonly in other (especially later) jazz repertoires, where either the ordered-triple or chord-scale approaches might be fruitfully applied. Dmitri Tymoczko has argued that jazz is a “modernist synthesis,” and that jazz musicians “act as custodians of a tradition of advanced tonal thinking.”⁵⁷ Though I tend to disagree with this historical view of jazz, it may well be the case that the techniques developed here might lend insight into the musics Tymoczko identifies on either historical side of common-practice jazz: the tonality of the impressionists on one side and that of the minimalists on the other.

Even within the common-practice jazz era of this dissertation, there is room for expansion. The solo analyses done here only begin to scratch the surface, and a detailed investigation of chord-scale choices among different performers might well lead to some meaningful distinction between, for example, a Johnny Griffin solo and a Joe Henderson solo. Certainly every soloist has their own style, and the way in which they interpret harmony is often an essential component of that style. It is also easy to imagine that saxophonists in general have a different kind of harmonic language than do trumpeters, trombonists, pianists, or banjo players; chord-scale transformations could help to tease out these distinctions.

The analyses here have focused exclusively on small-group jazz, since there are fewer moving parts to manage, but harmony is of course present in (nearly) all jazz performance. One of my own interests lies in the implications of harmony for composers and arrangers of big-band music. When an arranger like Thad Jones or Jim McNeely sits down to arrange a jazz standard, they typically do so with a knowledge of harmony earned from experience as a player. The fact that large ensemble music is typically composed and written down means that the author maintains a tighter control

57. Tymoczko, *A Geometry of Music*, 389.

over the harmony than in an improvised setting; this allows the opportunity for a detailed shaping of harmony over the course of a tune. These standards are often reharmonized in interesting ways, and the transformational approach is ideally suited to discussing these arrangements in dialogue with their original sources.

One of the aims of this dissertation has been to take seriously the manner in which jazz musicians themselves discuss harmony. Since these musicians do not often speak technically about harmony, I have used pedagogical materials as a way of getting at this “insider’s view.” This focus has often been implicit: there has been no extended literature review of pedagogical texts, nor was there a need to use these texts to the exclusion of other, more academic, treatments of jazz harmony. When a choice arose, however, I usually opted to cite Jerry Coker, Mark Levine, or Jamey Aebersold rather than Henry Martin, Dmitri Tymoczko, or Steve Larson. This choice was made not to disparage the important work of other theorists working on jazz harmony, but rather as a means to acknowledge the real work on harmony in the jazz community (in addition to the theory community).

At the outset of this study, I suggested that a transformational approach to jazz harmony might constitute a set of analytical values different from the Eurological values of Schenkerian analysis (as often applied to jazz). The prismatic style of transformational analysis, borrowed from Steven Rings, has helped to enable this alternate value system. Nearly all of the analyses here have avoided taking a single synthetic view of a passage, opting instead for a perspective in which multiple, sometimes conflicting, analyses can be considered individually in turn. This multifaceted approach is intended to reflect the nature of jazz harmony itself, and its application can enable us to narrow the gap between bring jazz theory and jazz practice.