NOTES ON HARMONY IN WAYNE SHORTER'S COMPOSITIONS, 1964–67

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The tenor saxophonist Wayne Shorter is widely recognized as a consummate improviser, but his historical significance rests equally on his contributions as a composer. The compositions he wrote while playing with Art Blakey's Jazz Messengers began to build his reputation,[1] but it came to full flower during and after his subsequent tenure with the Miles Davis Quintet. This article examines harmony in a selection of the music that Shorter composed after leaving Art Blakey's Jazz Messengers in early 1964 and before founding Weather Report with the keyboardist Joe Zawinul and the bassist Miroslav Vitous in 1970. In late 1964 he joined Miles Davis's quintet, for which he composed some of the compositions in question, although most were composed for Blue Note recordings he made as leader with various sidemen between 1964 and 1967. His compositions became known for their harmonic explorations outside the idiom of bebop, for their motivically organized melodic lines, and for their frequent avoidance of standard forms.

The main aim of this study is to describe Shorter's harmonic practice in these works, but I also make some observations on melody and form

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Table 1. Referenced Compositions by Wayne Shorter, 1964–67

Year	Composition	Recording
1964	"Armageddon" "Black Nile" "Night Dreamer" "Virgo"	Wayne Shorter, *Night Dreamer* (Blue Note BCT 84173)
	"Deluge" "Juju" "Mahjong" "Yes and No" ("Yes or No")	Wayne Shorter, *Juju* (Liberty BST/4BN 84182)
	"Fee-Fi-Fo-Fum" "Speak No Evil" "Wild Flower" "Witch Hunt"	Wayne Shorter, *Speak No Evil* (Blue Note BLP 4104/BST)
1965	"E.S.P." "Iris"	Miles Davis, *E.S.P.* (Columbia 46863, CS9150/CL2350)
	"El Gaucho" "Footprints"	Wayne Shorter, *Adam's Apple* (Blue Note BST 4BN 84232)
1966	"Orbits"	Miles Davis, *Miles Smiles* (Columbia 48849, CS9401/ CL2350)
1967	"Miyako"	Wayne Shorter, *Schizophrenia* (Blue Note BST 84297)
	"Prince of Darkness"	Miles Davis, *Sorcerer* (Columbia 52974, CL2732)
	"Fall" "Nefertiti"* "Pinocchio"*	Miles Davis, *Nefertiti* (Columbia 46113, CS9594)

*No direct reference to "Nefertiti" or "Pinocchio" is made in this article, although they were studied and contribute to generalizations.

as they relate to the individual compositions discussed. Of course, the first task that must be accomplished in any study of harmony in a body of work is to determine what those harmonies are. This is a particular challenge in this case, since the harmonies of Shorter's compositions are even more variable than in most jazz and popular tunes. On recordings, chords change at times in small but significant ways from one chorus to the next. Published sheet-music editions for the compositions often have a remarkable degree of disagreement with each other and with recordings. Sources for this study included the earliest recorded performance of a given piece, the two collections of Shorter compositions published by Jamey Aebersold

and Hal Leonard (Schiff 1985; Shorter 1990), the transcriptions in the fifth edition of *The Real Book*, and the copyright deposit manuscripts at the Library of Congress.[2] When these disagreed, as they did frequently, I took all sources into consideration, generally giving greatest weight to my hearing of the recording.[3] The compositions considered for this study, listed by year of composition, are shown in Table 1, which also lists the reference recordings.

I proceed by first considering foreground harmonic characteristics of these works, and then move to middleground and background characteristics, including the projection of tonality in general. This exposition forms the background to detailed case studies of Shorter's compositions "Night Dreamer" (1964) and "Orbits" (1966).

Harmonic Characteristics of the Foreground

Like many composers, Shorter has often expressed his desire to play with the harmonic expectations of his listeners.[4] One of the techniques he uses to accomplish this goal is the use of nonfunctional chords; Patricia Julien has written that a nonfunctional chord does not interact with its fellow chords in a key-defining manner and that "the motion it expresses is generally linear and does not rely on root relations of a fifth or the traditional resolutions of active degrees" (2001, 53). Bebop harmony of the 1940s and 1950s is built on relatively simple elaborations of functional progressions mostly within a tonic-dominant framework.[5] Even so, the differences between bebop harmony and Shorter's harmony are to some extent only a matter of degree, with Shorter greatly developing aspects of harmony that, although sometimes present, are very rare in bebop.

I now explore several of the ways in which Shorter manipulates the functions of chords, starting with individual chords and moving on to short progressions.

Unusual Uses of Chord Structures

It is well known that the intervallic structure of a chord (its type or quality) determines to a great extent its functional implications. One of Shorter's basic techniques for the violation of harmonic expectancy is to use the "wrong" structure over the right root, particularly in circle-of-fifths bass situations. See, for example, m. 4 of the introduction to "Black Nile" (Table 2a). Here, even before a key is established, **Fm7** (implying a dominant to follow) progresses to the nondominant **B♭maj7**. This bass line in this context is much more likely, of course, to support **Fm7 B♭7** or **F7 B♭maj7**. Shorter has a tendency, in fact, to make much greater use of minor- and major-seventh chords, in terms of both sheer frequency and relative duration, in comparison to bebop practice. This increase may be

Table 2

a. “Black Nile,” Introduction

1	2	3	4	
Cm7	G♭maj7	E♭m7	Fm7	B♭maj7 |

b. “Wild Flower”

19	20	21	22	51	52	53	54
Cm7	F7	B♭maj7+5	E♭maj7	Cm7	F7	B♭maj7+5	B♭m7/E♭

c. “Iris”

6	7	8	9	10	11	12	13	14	15	16
D♭7	A♭maj7+5		Cm7		D♭7	Cm7	D♭7	B♭♭maj7/D♭	D♭7	

d. “Prince of Darkness”

7	8	9	10	11	12
Gm7		G♭maj7+5		B♭maj7+5	C♭maj7

due to the support these chords provide for modal and pentatonic melodic improvisation, especially when they are held for long durations (as in “Witch Hunt” and “Footprints”) or in vamps.[6]

These relatively basic techniques involve using common chords in uncommon ways. An even blunter technique is to simply use uncommon chords. One of Shorter’s signature chord types, for example, is the major seventh with augmented fifth. In a bebop context, one might find this chord contained within the upper extensions of a chord—such as a minor-major seventh with a ninth or a dominant seventh with a ninth, augmented eleventh, and thirteenth—but its use as a chord in its own right emerges only as part of the evolutionary process in which Shorter played a crucial part during the 1960s (Waters 2004). For examples of this chord’s use, see mm. 21 and 53 of “Wild Flower” (Table 2b), mm. 7–8 of “Iris” (Table 2c), and m. 11 of “Prince of Darkness” (Table 2d). It is also implied strongly at m. 9 of “Prince of Darkness,” where the **G♭maj7** seen in most sources is given the melody note D♮. We encounter this chord type again in connection with the discussion of “Orbits” below.

Stepwise Root Motion and the Vamp

Repetition of a pair of successive chords with the bass moving by step, which degrades the “progressive” nature of functional syntax, is a feature of many of these compositions, especially as an introduction or at the beginning of a chorus. Some pairs have just a single repetition, while others repeat more often or indefinitely and so may properly be called “vamps.” Many of these chord pairs resemble and function harmonically

similarly to the *montunos* of Afro-Cuban bands of the 1940s but contain unique new combinations of chords.[7]

In most cases, one of the chords is clearly a nonfunctional neighbor to the other.[8] "Deluge" (Table 3a), in E♭ minor, has **E♭m7 F♭maj7 E♭m7**, a characteristic phrygian-mode progression, as a vamp introduction that continues through its first seven measures. "El Gaucho" (Example 1), mm. 5–8, has two statements of this progression on its F-minor tonic. The same progression appears four times on a C-minor tonic in the first eight measures of "Speak No Evil" (Table 3b), which also presents two statements (mm. 11–14) of **A7-5 B♭m7**, a nonfunctional, nondiatonic progression. The **A7-5** is a surface elaboration acting as an accented neighbor chord to the **B♭m7** chord, which itself is a neighbor chord moving from and returning to tonic **Cm7**. However, leading into the bridge, the **B♭m7** acts as a passing chord, initiating a stepwise octave descent in the bass, part of a wedge-shaped progression leading back to the opening C-minor tonic (Example 2).[9] The penultimate chord of the bass passing motion is **D♭maj7**, the neighbor chord used in the vamplike first eight measures. "Iris" (Table 2c), when interpreted in F minor, ends on a minor dominant chord (**Cm7**) prolonged by two applications of an upper neighbor substitute dominant as a suffix: **Cm7 D♭7 Cm7 D♭7**. The last of these

Table 3

a. "Deluge"

1	2	3	4	5	6
E♭m7	F♭maj7	E♭m7	F♭maj7	E♭m7	F♭maj7
I					

7	8	9	10		11
11	12	13	14		15
E♭m7	B♭♭7	A♭7	G♭m7	C♭7	E♭m7
			[II	V]	
I	→	IV	♭VI		I

b. "Speak No Evil"

1	2	3	4	5	6	7
Cm7	D♭maj7	Cm7	D♭maj7	Cm7	D♭maj7	Cm7

8	9		10		11		12	13	14
D♭maj7	E♭m7	Em7 Cm7	Dm7	B♭m7	A7-5		B♭m7	A7-5	B♭m7

c. "Armageddon"

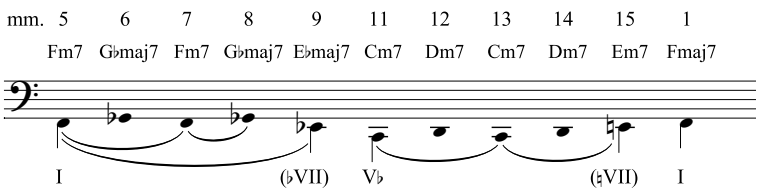
Introduction Chorus									
Introduction				Chorus					
9	10	11	12	1	2	3	4	5	
B♭m7 G♭7		B♭m7 G♭7		B♭m7 G♭7		B♭m7 G♭7		E♭7	
/ / / /		/ / / /		/ / / /		/ / / /			

D♭7 chords is elaborated by a neighbor chord, **B♭♭maj7/D♭**, in which the upper voices are the neighbor tones. "El Gaucho" (Example 1) also has a minor dominant as its last structural chord, moving back to an F-major tonic at the beginning of the chorus as follows: **Cm7 Dm7 Cm7 Dm7 Em7 Fmaj7**. The repetition of the **Cm7 Dm7** pair resembles the neighbor relationships occurring earlier in "El Gaucho" (mm. 5–8) between **Fm7** and **G♭maj7**. (The repeated pairs **E♭m7** and **F♭maj7** in "Deluge," **Cm7** and **D♭maj7** in "Speak No Evil," and **Cm7** and **D♭7** at the end of "Iris" also have a similar pattern.)

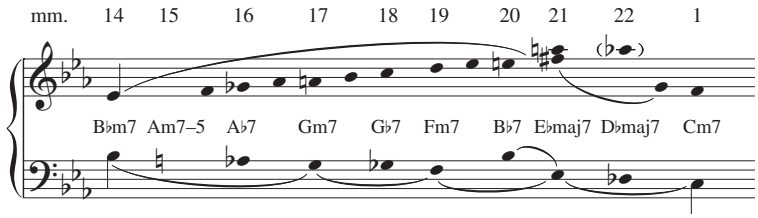
Vamps of this type may also involve root motion by third, in place of the normative step. In "Armageddon" (Table 3c), in B♭ minor, mm. 9–12 of the introduction and mm. 1–4 of the chorus present four vamplike repetitions of the tonic prolongation **B♭m7 G♭7 B♭m7**. The **G♭7** is an example of an embellishing chord having many stepwise voice-leading connections with the tonic. "E.S.P." (Example 3) features a middleground neighbor chord, **E♭maj7**, moving to and from the tonic **Fmaj7**.

Semitonal Transformations

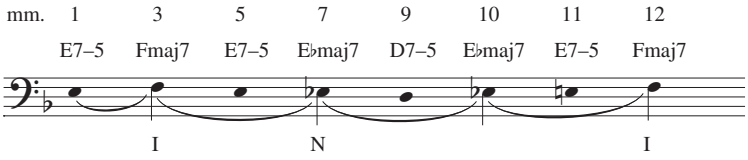
Some surface pairs and groups of chords, including some discussed above, can be explained as semitonal transformations. At the end of "Juju," the final chord, **Bm7** (m. 12), can be understood as transformed semitonally into **B7+5** at each repetition of the chorus. In "Yes and No,"[10]



Example 1. "El Gaucho"



Example 2. "Speak No Evil"



Example 3. "E.S.P."

Table 4

"E.S.P."					
	13	14	15		16
1st ending:	Dm7	G7	Gm7		G♭maj7
2nd ending:	D♭7	Gm7	D♭m7	G♭7	Fmaj7

the opening tonic chord appears as **D7sus4**, an appoggiatura chord sliding semitonally into **Dmaj7**, which serves as its resolution. In "E.S.P.," at the end of the first sixteen measures (Table 4), semitonal transformation links three chords: **G7 Gm7 G♭maj7**. At the end of the second sixteen, the successions **D♭7 Gm7 D♭m7** and **G♭7 Fmaj7** are semitonally related. In two cases, a neighbor chord is derived by semitonal transformation from the chord that it embellishes. "Iris," mm. 13–16, has **D♭7 B♭♭maj7(9)/D♭ D♭7**, in which the neighboring motion is F–F♭–F and A♭–B♭♭–A♭.[11] Also "Witch Hunt," mm. 21–23, has **A♭m7 B♭♭maj7(add6)/A♭ A♭m7**, in which the neighboring motion is A♭–B♭♭–A♭ and E♭–F♭–E♭. Most of Shorter's foreground nonfunctional progressions are governed by smooth voice leading, whether or not all voices move by semitone.

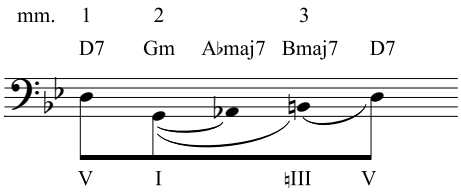
Prefix and Suffix Incomplete Neighbors

An important surface feature that sets Shorter's harmonic style apart from that of most contemporaneous jazz composition is frequent elaboration by chromatic prefix and suffix incomplete neighbor chords.[12] In many cases, a basic progression of two chords is elaborated by nonfunctional chromatic upper or lower incomplete neighbor chords. These occur either as a suffix to the first chord or as a prefix to the second chord, or both. The interface between the elaborating chords and their adjacent chords is frequently strikingly nonfunctional and disruptive of tonality. Such elaborations are not part of the bebop style.[13]

Measures 5–8 of "Fee-Fi-Fo-Fum" present the following progression:

	E♭7	**D7**	**Gm7**	**A♭maj7**	**C7**	**F7**	**B♭7**
B♭:	→	V/VI	VI	N	V/V	V	I

(→ represents an applied substitute dominant)



Example 4. "Fee-Fi-Fo-Fum"

Here the **A♭maj7** is a phrygian-mode suffix incomplete neighbor that interfaces nonfunctionally with the following chord, in this case **C7**.

Measures 5–11 of "El Gaucho" (Example 1) present a motion from minor tonic down to minor dominant with a middleground incomplete lower neighbor suffix following the tonic: **Fm7 E♭maj7 Cm7**. This progression is further elaborated in the foreground by a repeated phrygian-mode upper neighbor suffix to the tonic chord placed before the **E♭maj7**: **Fm7 G♭maj7 Fm7 G♭maj7 E♭maj7 Cm7**. The last three chords not only constitute a nonfunctional progression but also approach the dominant by equal interval transposition (three half-steps) downward. This kind of progression, part of a division of the octave into equal parts, does not occur (as far as I have been able to discover) as chords in direct succession in bebop compositions, and thus represents an innovation.[14]

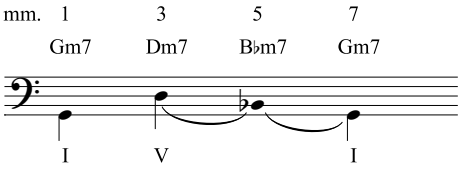
A similar result obtains in "Fee-Fi-Fo-Fum," mm. 2–4 (Example 4), where in B♭, within a local prolongation of the submediant, the basic ascending motion I–♮III–V is elaborated by the attachment to the tonic chord of a phrygian-mode incomplete upper neighbor suffix. In the resulting progression, **Gm7 A♭maj7 Bmaj7 D7**, the dominant is approached by equal interval transposition (three half-steps) upward, again involving major-seventh chord types.

Shorter frequently elaborates a chord by approaching it through both upper and lower neighbor prefix chords. In mm. 2–4 of the introduction to "Black Nile" (Table 2a), the progression **G♭maj7 E♭m7 Fm7** expands the phrygian prefix neighbor (**G♭maj7**) to a phrygian double neighbor approach to **Fm7**. Again, there are equal interval transposition levels (three half-steps ascending) between the roots of the chords that precede **Fm7**: **Cm7**, **E♭m7**, and **G♭maj7**. In "Wild Flower," which is in D minor, the dominant is approached by the diatonic VI in mm. 1–4, followed by an unexpectedly chromatic lower neighbor: **B♭maj7 A♭m7 A7**. In "E.S.P.," the return from the first ending (m. 16) to the repeated opening (mm. 1–4) presents a similar pattern approaching the F tonic: **G♭maj7 E7-5 Fmaj7**.

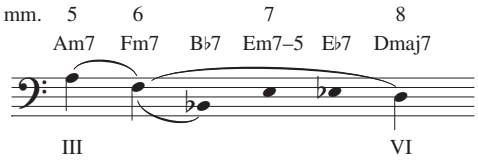
Some successions of nonfunctional chords on the surface of Shorter's compositions take the form of embellishing chords. The root of an embellishing chord leaps to and/or from the root of the structural chord that it embellishes, creating a surface chromatic progression that is usually nonfunctional, involving a chromatic third relationship between the two chords. Most such patterns are closed, moving from and back to the chord that is embellished, thereby resembling an extended neighbor tone. The chorus of "Armageddon" (Table 3c) begins with such a progression: **B♭m7 G♭7 B♭m7**. Although the roots leap, the pitch-class content of the chords can be seen as semitonally related.[15] "Witch Hunt" is a C-minor blues in which the chorus's usual I–IV–I opening progression is replaced by **Cm7 E♭7 Cm7**. Here the embellishing chord **E♭7** is also semitonally related to the tonic.

Another procedure involving third-related chord roots is the division of a bass leap of a fifth by a chromatic chord. The models for this procedure are the usual progressions I–III♯–V in major and I–III–V in minor. In the standard tonal literature, as in bebop, these are normally middleground events, and they are at times in Shorter's work, as well. However, it is their appearance in direct succession that characterizes Shorter's music. In the chorus of "Armageddon," mm. 3–5 (Table 3c), a progression from tonic (**B♭m7**) to subdominant (**E♭7**) is divided in the foreground by a chromatic chord: **B♭m7 G♭7 E♭7**. In "Prince of Darkness," mm. 1–7 (Example 5), the bass roots arpeggiate the G-minor tonic triad with parallel structures on each root: **Gm7 Dm7 B♭m7 Gm7**. The leap from dominant to tonic is divided by a chromatic mediant. Another case close to the foreground occurs in mm. 2–4 of "Fee-Fi-Fo-Fum": **Gm7 A♭maj7 Bmaj7 D7**, discussed above, where, in the G-minor context, the **Bmaj7** is an unexpected chromatic mediant dividing the leap from tonic to dominant.

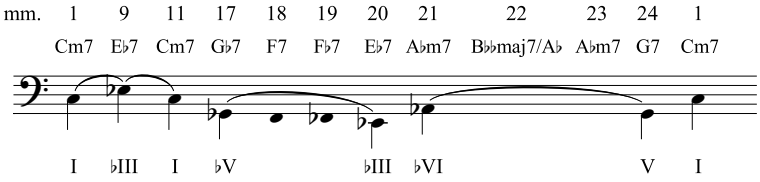
Another pattern of root motion, related to the division of a bass leap, occurs often enough to merit separate treatment. The downward bass interval (which may be larger than a fifth) between the roots of two structural chords is traversed as follows: a downward skip to a dividing chord is followed by four or five stepwise descending roots, leading to, and



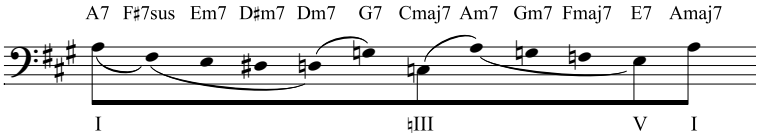
Example 5. "Prince of Darkness"



Example 6. “Virgo”



Example 7. “Witch Hunt”



Example 8. “Miyako”

ending on, the second structural chord. The examples to follow sometimes omit an elaborative chord or chords (indicated by a hyphen), but the pattern is basically a foreground event. In mm. 5–8 of “Virgo,” interpreted in F (Example 6), the following succession links III (**Am7**) and VI (**Dmaj7**): **Am7 Fm7—Em7-5 E♭7 Dmaj7**. Here, a downward skip of a third is followed by descent in half-steps. “Witch Hunt” (Example 7), in C minor,[16] exhibits a middleground tonic arpeggiation: I (m. 11)–♭III (m. 20)–V (m. 24). The arpeggiation takes this path from I to ♭III: **Cm7 G♭7 F7 F♭7 E♭7**. Again, the final approach is by half-steps, but in this case the initial downward skip is a tritone. In “Miyako,” mm. 1–7 (Example 8), the final approach includes one whole-step: **A7 F♯7sus Em7 E♭m7 Dm7**. Because the stepwise line is interrupted at the **Dm7**, the pattern can be seen as complete at that point. However, the passage is part of a middleground I–III–V arpeggiation, **A7** (m. 1) **Cmaj7** (m. 9) **E7** (m. 12), and extending the pattern to five stepwise roots connects I to III: **A7 F♯7sus Em7 E♭m7 Dm7** (**G7**) **Cmaj7**.

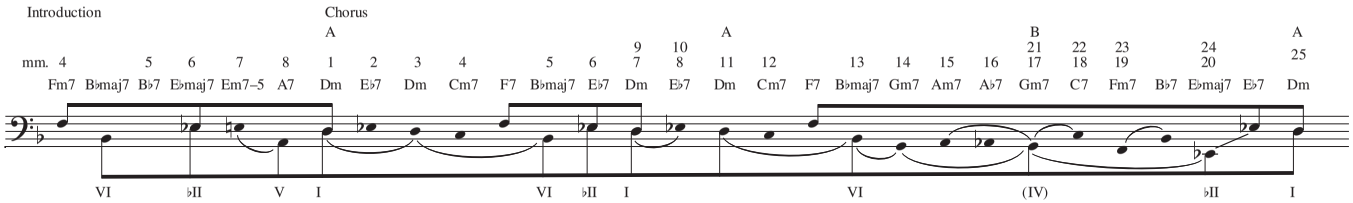
Harmonic Characteristics of the Middleground and Background

Discussion of the middleground and background of these pieces necessarily involves consideration of how tonality is established or attenuated.[17] Three of the compositions have diatonic backgrounds, although their melodic structure has little to do with a standard *Urlinie*. At the other extreme, we find several compositions with nontonic endings, which we may understand in terms of tonal pairing, directional tonality, and the double-tonic complex, categories originally developed for the study of nineteenth-century music. The remainder of the compositions feature variously exotic background structures involving structural third relations, subdominant orientation, or equal division of the octave. These structures form a striking contrast with the usual bebop background structure, which expresses a tonic–dominant axis.

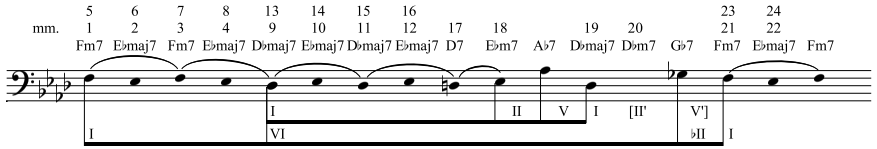
Diatonic Backgrounds

Although their surfaces abound with the chromatic progressions discussed above, three of the compositions studied have diatonic background structures. Two, "Black Nile" and "Mahjong," are from 1964; the third, "Miyako," is from 1967.

The opening of the introduction of "Black Nile," with its unordered equal interval approach to **Fm7** (**Cm7 G♭maj7 E♭m7 Fm7**—discussed above), is quite ambiguous as to key and chordal functions. Upon reaching **Fm7**, mm. 4–8 of the introduction (Example 9) move through a circle-of-fifths progression, including the phrygian ♭II to an authentic cadence in D minor. This cadence includes the only V chord in the composition; the substitute dominant, ♭II, serves in cadences thereafter. The bass line graph shows an upper and lower voice, both of which drive toward the D-minor tonic. The upper voice reiterates F–E♭–D with varying chord structures (thus integrating the introduction with the chorus), while the lower presents the progression VI–♭II–I four times, the last time within the final A section (not detailed in the graph). The tonal structure of the chorus of "Black Nile" shows an unusual emphasis on ♭II, as well as on the chords built on its fifth and third, VI and IV. ♭II occurs as a major-seventh chord in the introduction and in the bridge (mm. 20 and 24), but otherwise it always contains the leading tone, giving it a certain degree of dominant function, thereby countering the subdominant function of the other structural chords. The first three iterations of VI–♭II–I are varied in interesting ways. The ♭II is a major-seventh chord in the introduction, enabling its D to move to C♯ in the cadential V chord lying between ♭II and I. In the first A section of the chorus, ♭II is the substitute dominant, and there is no V.[18] The third iteration of the progression covers the second A section and the bridge (B). Here, the move from VI to



Example 9. “Black Nile”



Example 10. “Mahjong”

♭II is greatly elaborated. IV divides the interval between these chords, and in mm. 15–17 it is prolonged by an applied subdominant-substitute dominant group (**Am7**–**A♭7**). The bridge consists of the move from IV to ♭II, which is accomplished by a circle-of-fifths progression of II–V pairings (**Gm7**–**C7**–**Fm7**–**B♭7**–**E♭maj7**). The progression in the final A section is the same as that of the first.

"Mahjong" (Example 10) also has the progression I–VI–♭II–I in F minor, but it covers the whole tune, thus occurring only once. **E♭maj7** acts first as a lower neighbor chord prolonging I and then as a passing chord connecting to VI. The latter chord is first prolonged by **E♭maj7** as an upper neighbor chord and then given a II–V–I cadence (mm. 18–19). The **D7** (m. 17) is an accented neighbor chord. After VI is prolonged, ♭II, the substitute dominant, is developed into a II–V group before progressing to the final tonic. The substitute II–V (**D♭m7 G♭7**) is indicated in the graph as "[II′ V′]." "Mahjong," like numerous other Shorter tunes, is an ingenious variation of the twelve-bar blues (AAB) form. Measures 1–24 are an augmentation of the form, with VI replacing IV in the second A section, and the progression of mm. 17–20 serving as the harmonically active first half of B. Measures 21–24 are the return to tonic of the second half of B. Measures 25–28 repeat the vamplike progression of mm. 21–24 as an added extension of the tonic. Shorter said of "Mahjong" that there was "nothing very technical musically in it" (Schiff 1985, 52).

"Miyako" (Table 5) is the least settled of these three examples, as its last chord is V, which serves either as part of a turnaround or, at the end, as a half-cadence. The one authentic cadence, in the middle at m. 13, has an actively rising melody that precludes any sense of coming to rest. The structural progression, shown in boldface, I–♮III–V–I–II–V, is surrounded by II–V groups of various functions. ♮III is tonicized by a II–V pair in mm. 7–9 (square brackets enclose applied II–Vs). A series of three II–V pairs leads to IV at m. 21 (the **G7** at m. 16 is a substitute dominant, ♭II). The final structural II–V pairings are prolonged by a chromatic lower neighbor pair in mm. 23–28. The presence of the multiple II–V groups, especially in mm. 15–27, connects "Miyako" to earlier bebop tunes that similarly exploit them.

"Miyako" can also serve as a reminder that harmonic innovation is not the only feature that led to Shorter's reputation as a composer in this period. Motivic development in his melodies and through-composed forms characterize many of his compositions. Two pentatonic motives from "Miyako," (x), an opening gesture, and (y), a closing gesture (Example 11a), occupy three measures each, with three measures intervening. In their second appearance, they have been drawn together and compressed (Example 11b); they each now occupy only two measures in direct succession, and motive (x) has reduced intervals. A longer motive (Example 11c), occupying four measures, is enlarged to occupy six in

Table 5

"Miyako"								
1	2	3	4	5	6	7	8	
A7sus		F♯7sus		Em7	E♭m7	Dm7	G7	
						[II	V]	
I								→
9	10	11	12		13	14	15	16	
Cmaj7	Am7	Gm7	Fmaj7	E7	Amaj7	Am7	A♭m7	G7	
							[II	♭II]	→
♮III				**V**	**I**				
17	18	19	20	21	22	23	24	
F♯m7-5	B7	Em7♭5	A7	Dm7	Cm7	Bm7	E7	
[II	V] →	[II	V] →	IV				
						II	V	
25	26	27	28					
A♯m7	D♯7	Bm7	E7					
(II	V)							
chromatic neighbor		**II**	**V**					

later appearances (Example 11d, e). The initial pitches of the three transpositional levels of this motive, B, C♯, and E, form the inversion of motive (y). Note also the variety of harmonization: none of these motives is harmonized exactly the same way twice. Shorter's craftsmanship extends also to form. As a twenty-eight–measure jazz tune with no sectional divisions and no real cadence at the end, "Miyako" is unique, but representative of Shorter's ability to compose outside the standard forms of popular songs and bebop.[19]

Alternatives to Tonic–Dominant Polarity

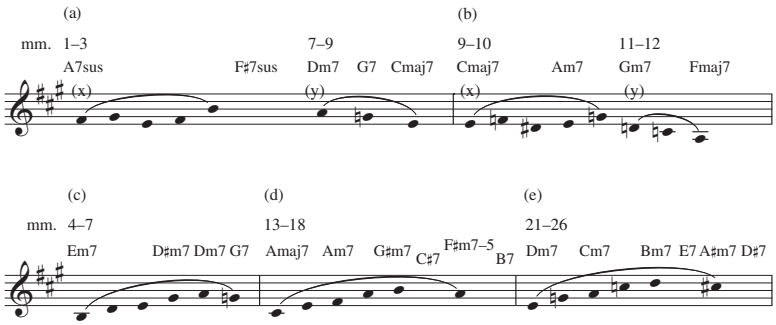
Shorter's use of embellishing chords in the middleground in the absence of any tonic–dominant framework is one of the most innovative features of his harmony. "Footprints" (1965) will serve as an example.

"Footprints"[20] uses successive upper and lower embellishing chords as the main prolongation of its tonic: **Cm7 E7 A7 Cm7**. A twelve-bar minor blues, "Footprints" has a bass motive that expresses the opening I–IV–I blues progression. The motive consists of an upward arpeggiation of these chords, as shown in Example 12, mm. 1–8. The move to subdominant in mm. 5–6 is accomplished in a unique way by the bass in the upper voices of its arpeggiation: G3 and C4 are replaced by F3 and B♭3, producing a stack of three fourths and leaving the downbeat C3 as a pedal throughout (fourths are an important motive in the melody, as well). Measures 9–10

are melodically and harmonically chromatic, accelerating the harmonic rhythm by a factor of eight.

Taken by itself, the string of four chords in mm. 9–10 is not unusual. However, its thick chromatic content and rapid harmonic rhythm come as a surprise after the static diatonicism of mm. 1–8. Working backward, the **A7** is preceded by its dominant, **E7**; the II–V group is realized as **F♯m7-5 F7**, using a substitute dominant in a pairing that normally tonicizes E minor, but by mixture here it moves to **E7**. The first chord of the four (**F♯m7-5**) can be heard as the transcribers of the *Real Book* heard it, representing V7 of V (**D7**), a chord that might well appear at that location in a blues. The logic of the movement of **A7** to **Cm7** may be that of semitonal transformation. Because each of the pitches of **A7** can move by semitone into a pitch of **Cm7**, "the ear relegates the harmonic activity indicated by the root-progression to the background" (Hindemith 1945, 124), and the motion by semitone, like that of $\hat{7}$–$\hat{8}$ and $\flat\hat{6}$–$\hat{5}$, connotes resolution.

In explaining harmonic developments of the nineteenth century, some analysts have suggested that in many late-nineteenth-century compositions the usual tonic–dominant harmonic axis may have been replaced by a tonic–subdominant axis (also called a plagal axis).[21] Some of Shorter's pieces may fit this interpretation. The chorus of "Armageddon" (Example 13), for example, has no structural dominant chord whatsoever. The bassline graph indicates an overall structural progression of I–IV–I–IV–I, with no structural V. The main emphasis is on the plagal harmonies IV and VI. The latter chord first serves as an embellishing chord (m. 2), and then as a divider of the movement from I to IV in m. 4. IV is prolonged by an upper neighbor ♭II substitute dominant, after which the progression returns through VI to I. An incomplete neighbor III leads



Example 11. "Miyako," melodic motives

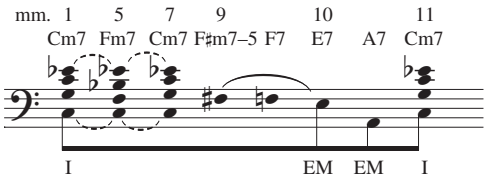
to IV,[22] after which VI repeats its two functions in approaching the final tonic, which is, like IV, prolonged by an upper neighbor ♭II substitute dominant. The progression from m. 11 into the next chorus to m. 5 is retrograde symmetrical, as is that of mm. 3–9. The plagal character of "Armageddon" recalls the basic blues form, which also emphasizes subdominant over dominant chords, especially in its prebop manifestations.

A similar structure underlies the chorus of "Deluge" (Table 3a), in E♭ minor, which also lacks a dominant chord except in its introduction. Although the introduction presents a functional harmonic progression based on V–I, the chorus does not. After a prolonged I, IV is given a substitute dominant neighbor chord in mm. 8–9 and 12–13 (indicated by an arrow). VI, as a dominant seventh structure, is developed into a II–V group in mm. 10 and 12, as in the bebop style, followed by a direct return to I. As in "Armageddon," a plagal axis seems to prevail.

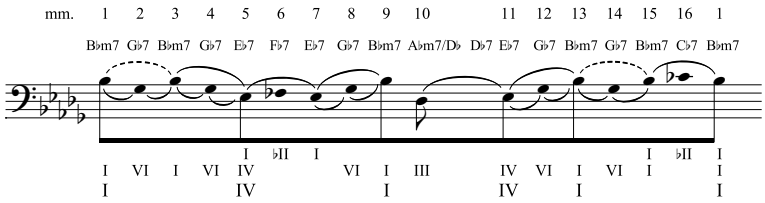
"Yes and No" (Table 6) also emphasizes the plagal in its middleground structure. The dominant is weakened by its minor quality in the context of D major.

Tonal Ambiguities

Some pieces with a strong sense of tonality nonetheless have nontonic endings: the final chord is not the tonic, but it does not compete with the tonic by setting up an alternate tonal center. For example, "Yes or No," clearly in a D tonality, ends with **Em7**. When this chord appears at the



Example 12. "Footprints"



Example 13. "Armageddon"

Table 6

"Yes and No"				
1	10	11	29	1
Dmaj7	Gmaj7	B♭maj7	Am7	Dmaj7
I	IV	♭VI	V	I

Table 7

"Fee-Fi-Fo-Fum"

A							
1	2	3	4	5	6	7	8
E♭7 D7	Gm7 A♭maj7	Bmaj7 D7	Dm7 G7	E♭7 D7	Gm7 A♭maj7	C7 F7	B♭7

B								
9	10	11	12	13	14	15		16
E♭7		B♭7		E♭7		B♭m7	E♭7	Am7 D7

A								
17	18	19	20	21	22	23	24	
E♭7 D7	Gm7 A♭maj7	Bmaj7 D7	Dm7 G7	E♭7 D7	D♭maj7 C7	C♭maj7		

end of the second A section of the AABA form, it initiates a circle-of-fifths progression that spans the bridge. At the end of the first and the final A sections, it leads back to the tonic chord. Thus, on the final chorus it functions in the manner of a half-cadence, as it no longer completes its motion to I.

One nontonic ending may be only apparently so: that of "Fee-Fi-Fo-Fum" (Table 7), which invites interpretation both in B♭ major and G minor. The form is unusual for a jazz tune, consisting of three eight-measure sections, ABA. The first A section spends mm. 1–6 in G minor and then moves quickly to a cadence on B♭. The B section emulates a blues until mm. 15–16, when a series of bebop-style chromatic II–V pairings returns the music to G minor and the final A section. This section deviates from the first A section at m. 22, when the progression moves chromatically downward to cadence on **C♭maj7**. In the mid-1960s, jazz performers and composers began to use the major-seventh chord on ♭II as a substitute for the tonic, especially in final cadences.[23] Mark Levine calls this "moving a I chord up a half step" (1995, 292). Given that "Fee-Fi-Fo-Fum" ends on ♭II of B♭, and that mm. 8–14 behave like the beginning of a blues in B♭, these together tip the scale in favor of that interpretation. Thus, the ♭II, representing I, is perhaps not a nontonic ending, at least in the background, where the unresolved appoggiaturas making up the ♭II would be removed. Interpretation in G minor would give the final chord as ♮III♯, definitely a nontonic ending. In fact, on each repetition of

Table 8

"Virgo"

A

	1	2		3		4	5	6		7		8
	Fmaj7	B♭m7	E♭7	Dm7-5	B♭7	Amaj7	Am7	Fm7	B♭7	Em7-5	E♭7	Dmaj7
F:	I				→	III♯——	♮				→	VI♯——

B

9	10		11		12		13	14		15	16	
Dm7	Cm7	F7	E♭7	D7	Gm7	A♭7	D♭maj7	Dm7	G7	Gm7	D♭m7	G♭7
♮						→	♭VI			II		♭II →

A

17	18		19		20	21	22		23		24
Fmaj7	B♭m7	E♭7	Dm7-5	B♭7	Amaj7	Am7	Fm7	B♭7	Em7-5	E♭7	**Dm7**
I				→	III♯——	♮				→	VI
				Dm:	V?					♭II	I

Coda

24		25		26	27		28	(29)	
Dm7	D♭maj7+5	Cm7	F7	B♭maj7	E7+5	A7+5	Dm7	(Gm7	C7)
I						V	I	(for D. C.)	

the chorus, the function of the **Bmaj7** would presumably be an embellishing chord connecting the V of m. 21 to the V of m. 1. The interaction between G minor and B♭ here fits the category of "tonal pairing," the alternation between two keys a third apart, which nonetheless remain separate.[24]

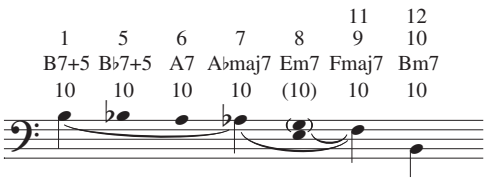
The idea of tonal pairing was developed as a means of understanding late-nineteenth-century music in which "a tension between two key centers, most often a third apart" (Kinderman 1996, 1)[25] replaces standard monotonality. A related practice is that of directional tonality, in which, after the establishment of one tonal center, a piece moves to another for its conclusion. The main difference between tonal pairing and directional tonality is that in the former the music vacillates between the two keys frequently, whereas in the latter one key is established and then moves to the other at the end. These concepts have some bearing on Shorter's music.

"Virgo" (Table 8), like "Fee-Fi-Fo-Fum," is an ABA form with equal eight-measure sections. It begins in and on F (m. 1) and ends in and on D minor (m. 28). The first phrase (mm. 1–4) moves from I to III♯ (**Fmaj7** to **Amaj7**). The III♯ becomes III♮ to begin the second phrase (mm. 5–8), which closes on VI♯ (**Am7** to **Dmaj7**), ending the first A section. At this point, the sense of F tonality has become rather tenuous, but it will be regained. VI♯ (**Dmaj7**) in m. 8 becomes VI♮ (**Dm7**) in m. 9, and then ♭VI in m. 13, leading to the cadence on F at m. 17, the end of the B section,

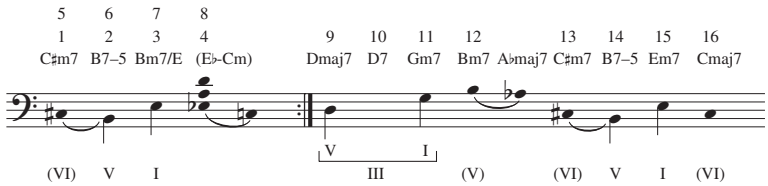
having extended the I–III–VI opening to include II–♭II–I, where the ♭II is a substitute dominant representing V, completing a circle-of-fifths approach to F. (The tonicizations of the structural chords in "Virgo," most of which involve ♭II, are indicated by the arrows in Table 8.) In the final A section, mm. 17–23 repeat mm. 1–7 and then cadence on **Dm7**, which is given a five-measure coda closing with V–I in D minor. Although the first cadence on D at m. 8 may briefly suggest D as an alternate tonic, that tonic is not stabilized until the coda.[26] Thus, "Virgo" serves as an example of directional tonality, beginning in F and ending in D minor.

Although numerous instances of equal interval transposition of chords have been mentioned above, none of the pieces examined exhibits middleground equal division of the octave in the manner of "Giant Steps."[27] However, "Juju" (Example 14) comes close, by presenting an elaborated move from "tonic" **B7+5** to "dominant" **Fmaj7**, followed by an immediate return to tonic as **Bm7**. The **B7+5** is treated as a whole-tone scale, but gains its tonic status from its position at the beginning of the piece and from the stability it develops through its long duration (twenty-four beats). **Fmaj7** serves as dominant because it takes the usual position of V both in the manner in which it is approached from the opening I and from its participation in the repeated "cadence" **Fmaj7 Bm7**. The root of **A♭maj7** at m. 7 divides the interval between roots B and F in half, resulting in three out of four of the roots needed to divide the octave into four equal parts. The directionality of the progression stems from the 10–10 linear intervallic pattern between bass and melody that connects I and V. Part of the sense of resolution of the cadence is due to its unique 7–10 interval pair.

The liner notes to the first recording of "Juju" quote Shorter: " 'Voodoo' is a Haitian version of 'juju,' the original African term for certain kinds of religious-magical ceremonies" (Hentoff 1964). The effect of the chordal pairing exemplified by **A♭** and **Em** in mm. 7–8, known as a hexatonic pole, has been shown by Richard Cohn to have been described by numerous informed writers from the past two centuries as "supernatural, magical, weird . . . *uncanny*" (Cohn 2004, 285). Thus does "Juju" express its magic. In addition, the cadential pairing of **F** and **Bm**, although it may



Example 14. "Juju"



Example 15. "Fall"

have no better name than Riemann's *Gegenleittonwechsel* (Klumpenhouwer 1994), also seems to my ear to express a similar effect.[28]

"Fall" (Example 15) presents ambiguity in its tonal organization and at the local level. The chord at mm. 4 and 8 is not easily expressed by a chord symbol. The copyright deposit indicates the pitches shown and parenthesizes the symbols: (**E♭7♭5 C-6**); the latter are written closely over the first beat of m. 4. (The **E♭7** is in fact a major-seventh chord.) On the recording, qualities of both roots can be heard at various times. Measures 4 and 8, along with mm. 12 and 16, constitute melodic and harmonic interruptions in the flow of a progression that cadences in E minor. This progression is organized as a small AABA form, with the A sections presenting the cadential pattern V–I in E minor, with VI as a neighbor prefix to V. Although the tonic chord is E minor, VI is taken from E major and V harmonizes G♯, both thereby suggesting a major context. The B section presents V–I in G (III), with variations in the chord structures: the V begins as **Dmaj7**, changing to **D7** with a B♮ melody; and the G chord is minor, rather than the major usually associated with III in minor, although it has the expected root for III in E minor. The **Bm7** at the beginning of the third interruption (m. 12) could be considered to complete the tonic arpeggiation, I–III–V, and the **A♭maj7** that follows it might be considered as ♯III arpeggiating back to I. However, the interruptions have their own organization. The first three (mm. 4, 8, and 12) each include two chords progressing by descent of a minor third in the bass. In each of these pairs of chords, the more structural chord is a major-seventh chord, matching the quality of the fourth interruption, **Cmaj7**, which is the final chord. These major-seventh chords appear in the order **E♭maj7 A♭maj7 Cmaj7**, a series interpretable as upper and lower third embellishments of a centric structure on C. The tonicizing strength of the chromatic third relations between ♭III and I and ♭VI and I is generally understood to be less than that of the more usual fifth relations between V and I and IV and I.[29] Therefore, this interpretation would hardly seem able to account for the strong sense of coming to rest that the **Cmaj7** produces as the final chord,[30] nor would its position as VI of E minor. When **Cmaj7** enters, it sounds to this listener as though the extended

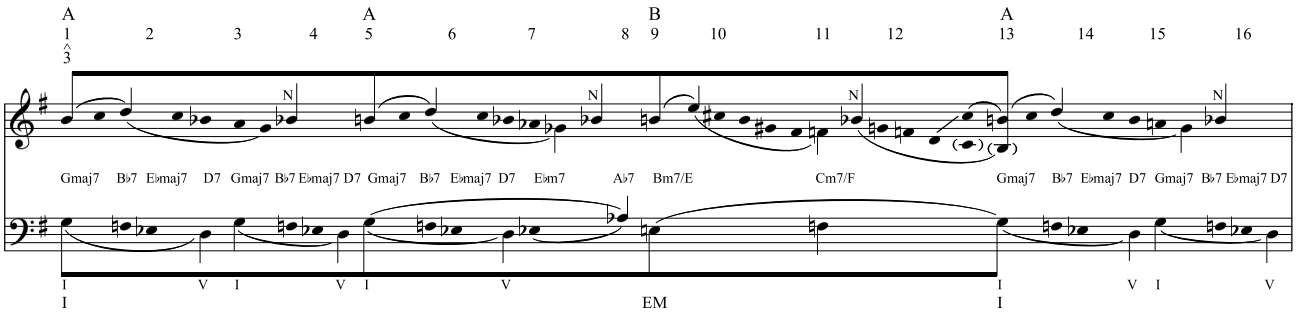
Em7 was always merely its upper structure. Thus, the final chord may bring together the previously separate harmonic worlds of the E-minor music and its interruptions. Is this a double tonic complex? Is E really the tonic of "Fall"? These questions are ultimately unanswerable.

Case Studies: "Night Dreamer" and "Orbits"

"Night Dreamer" (Example 16), from 1964, has an AA′BA form in which each section is four measures in length. Initially static melody and harmony are balanced by dynamic motivic development and a background level chromatic embellishing chord.

In the graph of "Night Dreamer," the upper voice indicates three strands, the top line D5–E5–D5, the middle line B4–B♭4–B4 repeated many times, and a lower line G4–G♭4–F♮4–G4. Because of its consonant support, I take B4 as the primary tone, but there is no descent as in a normal *Urlinie*.[31] In the central line, the B♭4 neighbor tone, because it ascends, might be spelled as A♯4, at least just before it returns to B4; however, the harmonic environment requires the flat spelling. The upper and lower voices each expand the melodic range by a whole-step and then return to their original position. The lower voice movement seems to stretch the figure that descends from D4 as it appears in mm. 2–3, mm. 6–7, and mm. 9–11. At mm. 2–3, the figure covers a perfect fifth, at mm. 6–7 an augmented fifth, and at mm. 9–11, by adding an extra note, a major seventh. In mm. 11–12, the figure, a transposition of mm. 9–11, would have covered another major seventh, but from D4 it transfers back to the upper register, helping to lead back to the return of the A section. Although the second statement of the descending figure is simply a varied repetition, the extended third and fourth statements, with their new melodic and harmonic rhythm, create a less obvious variation. This process both gives a sense of direction to the otherwise static melody and illustrates the motivic development for which Shorter's melodies are known.

The bass line contains numerous repetitions of the descending tetrachord from tonic to dominant, the same tetrachord that has served passacaglias and chaconnes since the Baroque period. The local dominant **D7** at m. 6 is given a chromatic suffix incomplete neighbor, **E♭m7**, which is developed into a II–V group: **E♭m7**–**A♭7**. The nonfunctional discontinuity in the progression between **A♭7** and the following **Bm7/E** (mm. 8–9) and the initiation of the longer pattern in the melody at m. 9 support the interpretation of the **Bm7/E** as an embellishing chord in relation to the tonic. The descending tetrachords, although repeatedly moving from I to V, seem static, not representing real harmonic motion, but representing a surface prolongation of the tonic. For that reason, the structural motion is indicated as I to the embellishing chord and back to I. Here the embellishing chord is a neighbor chord in the traditional sense, support-



Example 16. “Night Dreamer”

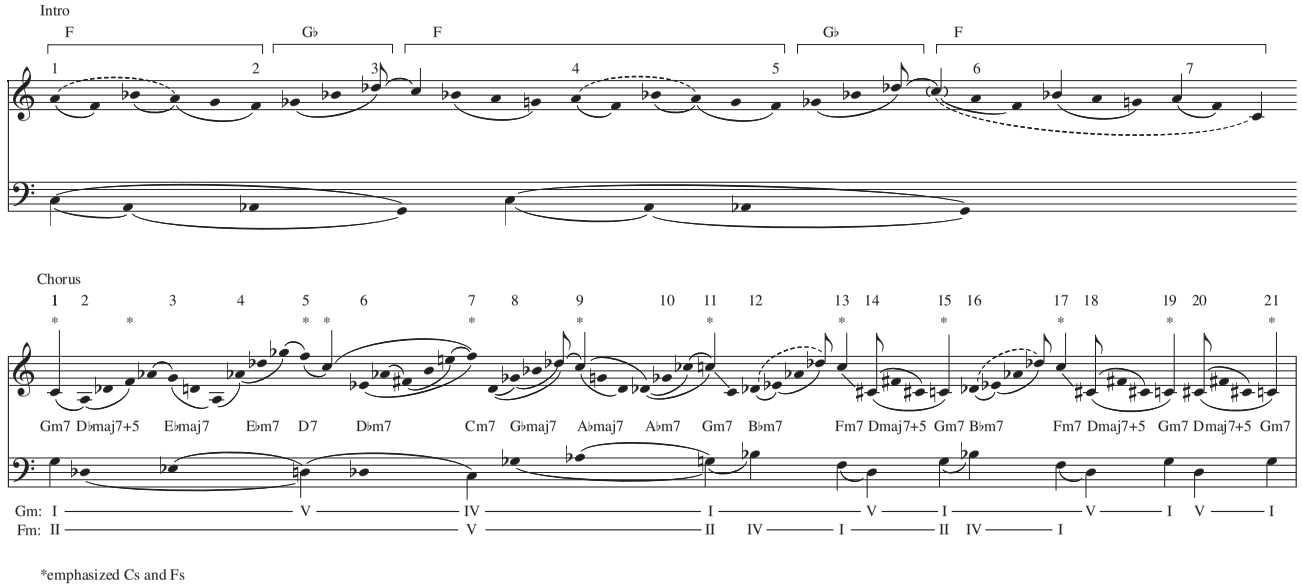
ing a long-range neighbor tone motion in the upper voice (D5–E5–D5). This kind of basic harmonic structure can be found frequently in Shorter's compositions of the 1960s and represents one way of avoiding the traditional tonic-dominant axis.

At m. 11, a passing chord of the same structure as the embellishing chord (**Cm7/F**) leads back to the tonic. The melody at m. 9 (B4–E5–C♯5–B4–G♯4–F♯4), a pentatonic subset, is transposed down a tritone at m. 11 (F♮4–B♭4–G4–F♮4–D4–C5) at the same time the chord at m. 9 is transposed upward one half-step at m. 11 to produce the passing chord. This simultaneous transposition of different textural elements by differing degrees in opposite directions is an interesting feat of compositional skill.[32] (Both melodic statements have a further half-step descent appended, and, as noted, the last two notes of the second statement are transferred up an octave.)

John Coltrane was still an important influence on Shorter at the time of the composition of "Night Dreamer." Coltrane's "Giant Steps" was well known for its harmonic movement through keys separated by interval class 4, thereby dividing the octave into three equal parts. The keys of "Giant Steps" are B (C♭), G, and E♭. It begins with a single **Bmaj7** followed by V–I in G. Similarly, four half-steps lower, "Night Dreamer" begins with a single **Gmaj7** followed by V–I in E♭, reproducing two of the keys of "Giant Steps." In mm. 7–10 of "Night Dreamer," the progression **E♭m7**–**A♭7** belongs to the key of D♭, while the **Bm7/E** (II/V) and its melody belong to the key of A. D♭ and A are also separated by interval class 4, perhaps constituting a more subtle reference to "Giant Steps."

"Orbits" (Example 17), from 1966, is a twenty-one–measure through-composed piece with an introduction. On the whole, "Orbits" presents G minor as its primary tonality, although there is also evidence for an interpretation in F (major in the introduction, minor in the chorus). The melody of the introduction (which has no chords, only melody and bass line)[33] alternates arpeggiations of **F major** and a phrygian neighbor chord, G♭ major, ending on F, arpeggiated A4–F4–C4, suggesting an F tonality. The alternations are marked in Example 17. The bass line for these measures, C3–A2–A♭2–G2, is basically neutral as to the question of F versus G, although it ends on G. It also exemplifies an unharmonized version of the previously discussed downward bass leap followed by descending half-steps. The melodic extremes of m. 1, B♭4–F4, and the final melodic interval, F4–C4, may be combined with the bass interval C3–G2 to make a stack of fourths. Two such stacks provide melodic materials in the chorus.

The melody of the chorus, like that of the introduction, is guided by an alternation between two harmonic structures. These are shown in Example 18a as two nearly discrete stacks of fourths, marked group A and group B, which together exhaust the aggregate but share one pitch

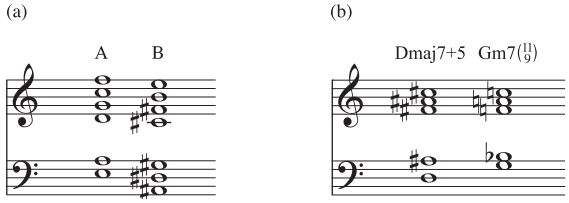


*emphasized Cs and Fs

Example 17. “Orbits”

class (E). The melody selects pitches from the stacks, placing those shown in the lower register into its natural range. Not every note of the chorus is involved in stacked fourths, but such stacks appear frequently. In m. 3, G4–D4–A3, taken from A, are followed immediately in m. 4 by A♭4–D♭5–G♭5, from B. Similarly in m. 5, F5–C4 (A) are followed in m. 6 by E♭4–A♭4 and F♯4–B4–E5 (B); in m. 9, C5–G4–D4 (A) are followed in m. 10 by D♭4–G♭4–C♭5 (B). The alternation can be seen to continue to the end by including, for the A groups, chord tones not actually played in the melody, but present in the accompaniment: mm. 11–12 (C5–G4–D4 [A]/E♭4–A♭4–D♭5 [B]), mm. 13–14 (C5–G4 [A]/C♯4–F♯4 [B]), and mm. 15–16 (C4–G3–D3 [A]/E♭4–A♭4–D♭5 [B]); mm. 17–18 repeat 13–14, as do mm. 19–20. The final melody note and chord (m. 21) belong to group A, which is associated throughout with the two tonic candidates, F and G. Thus, the A and B groups, like the F and G♭ triads in the introduction, represent tonic and nontonic functions, in which the usual interval class 5 relationship between dominant (or subdominant) and tonic is replaced by an interval class 1 neighboring relationship. The F and G♭ triads, although not built in fourths, in fact belong to groups A and B, respectively.

At the beginning of the chorus, the fourth descent of the introduction is repeated in the bass line's opening progression from **Gm7** to **D7**, I to V (mm. 1–5). **D7** is preceded by **D♭maj7+5** and **E♭maj7**–**E♭m7**—an example of embellishment by chromatic prefix and suffix incomplete neighbor chords. The first is the unusual chord structure major seventh with augmented fifth, while the second undergoes semitonal transformation before resolving. A chromatic passing chord, **D♭m7**, leads from **D7** to **Cm7**, which initiates the next structural progression, also a fourth descent in the bass, **Cm7** to **Gm7**, IV to I, a plagal cadence (mm. 7–11—shown as an ascending fifth in the graph). **Gm7** is also embellished by chromatic prefix and suffix incomplete neighbor chords with semitonal transformation: **G♭maj7** and **A♭maj7**–**A♭m7**. As indicated by my roman numerals, these two progressions suggest a G-minor tonality. In mm. 12–13, however, a straightforward plagal cadence on F minor (**B♭m7**–**Fm7**)



Example 18. "Orbits": (a) alternating harmonic structures and (b) G-minor cadence

appears as evidence that the F tonality of the introduction has not disappeared. The preceding **Gm7** (m. 11) can also be interpreted as II in F, joining in subdominant function with the **B♭m7**. This F cadence is followed by a (authentic?) cadence-like progression on G (**Dmaj7+5 Gm7**)[34] at mm. 14–15, followed immediately by a repeat of the F cadence in mm. 16–17. Two more statements of the G-minor cadence ensue, at mm. 18–19 and 20–21 (the last measure). The concurrent roman numeral interpretations in G minor and F minor are shown below the bass staff in Example 17. Despite the G-minor cadence having had the last word, there has been constant support to the F tonality throughout the chorus melody in the form of Fs and Cs emphasized by duration or registral contour. These emphasized pitches are marked with asterisks in Example 17. Also, the G-minor cadence itself is not unequivocal. Its strength and sense of cadence relate to the G♭-to-F nontonic to tonic functions in the introduction: Example 18b shows that the upper voices of this progression enharmonically replicate the **G♭** to **F** triads when the **Gm7**, which has C, the eleventh, in the melody, is also, as usual, given a ninth (A). Thus, the two tonics are present in the final cadence, as are the interval class 1 and interval class 5 relationships. I give greater weight to G because of its position in the bass. "Orbits" suggests tonal pairing because of the integration of and alternation between the two tonalities.

Conclusion

A summary of the principles brought out in these interpretations of Shorter's music may be valuable at this point. An important preliminary observation is that, in those cases where standard harmonic practice seems not to apply, the bass lines provide the main clues as to prolongational function, not the chord structures above them. As a result, in such cases, one must rely on rhythm, context, and formal location of the bass intervals, which include fifths, thirds, and seconds. For example, a bass descending fifth at the end of a piece from a weak beat to a long-held chord on a strong beat will probably best be interpreted as a "dominant"–"tonic" cadence even if the chord qualities do not agree with any standard patterns. Context has even suggested such an interpretation in the case of the tritone bass leap at the end of "Juju." In some contexts, such as an opening progression, a descending fifth might be interpreted as "tonic" to "subdominant." Stepwise bass lines involve neighbor chords, incomplete neighbor chords, or passing chords. Because the bass intervals can be nondiatonic, and because the chord qualities can include nondiatonic notes, nonfunctional progressions result between the elaborative chords and the surrounding chords. Bass motion of a third either divides a larger interval or creates an embellishing chord. Again, because of the possibility of a nondiatonic bass note for the elaborative chord and the variability

of the chord qualities, nonfunctional progressions often result. Shorter's style rests on the relative weighting of standard harmonic practice versus the nonfunctional practices: although there is always some of the former, the latter quite often predominates. Background structures emphasizing the subdominant over the dominant, involving directional tonality or tonal pairing, or dividing the octave equally do not depend on nonfunctional foregrounds; however, such foregrounds can be replicated at the background level and can contribute to tonal ambiguity.

Some of the harmonic characteristics described belong to the bebop style: the repeated pairs of I–♭II chords of "Deluge" and "Speak No Evil" differ from those of Thelonious Monk's "Well You Needn't" or Dizzy Gillespie's "A Night in Tunisia" only in that Shorter's ♭IIs are major-seventh chords originating in the phrygian mode, while the bebop ♭IIs are dominant sevenths arising from tritone substitution. Shorter uses II–V groups, but they are relatively infrequent and not a leading characteristic of his style as they are in bebop, in which they are ubiquitous. The other harmonic techniques and characteristics outlined above occur frequently in his music, represent innovations with respect to earlier jazz styles, and serve as the leading elements of his harmonic style.

Most of these innovations are present in Shorter's compositions of 1964, calling into question whether they are truly the result of a broader evolutionary process.[35] Although other jazz composers of the 1960s participated in the expansion of harmonic possibilities, Shorter is well known as a leader among them, and at least some of the categories examined above probably belong to him more than to others. A general study of jazz harmony in the 1960s or studies of other individual composers would help to put Shorter's contributions in perspective.

NOTES

A version of this article was presented at the 1998 meeting of the Society for Music Theory at Chapel Hill, North Carolina. I thank Steve Larson, Henry Martin, Keith Waters, and the anonymous readers for their suggestions.

1. The music of this early period is the subject of Julien 2003. The present article begins where Julien 2003 ended, with Shorter's departure from the Jazz Messengers.
2. I thank Bertrand Überall, who has been cataloging copyright deposits by jazz composers, for providing access to Shorter's manuscripts and for his general advice and help with this article.
3. Such discrepancies are not limited to Shorter compositions. Recordings of popular songs and other jazz compositions sometimes differ from printed sources. In my experience with performing musicians, the recording is always taken as the authoritative source. This is perhaps because it is disseminated most widely and known by a greater number of people than any other medium and therefore has the most power to fix the identity of the music. For these reasons, I have given greatest weight to the recording. (Performers also distrust written representations of jazz and popular songs because they have seen many that have mistakes or need some kind of adjustment.)
4. E.g., Shorter's response to Nat Hentoff's (1960) characterization of "the usual method of writing harmony" was "I don't like that approach because thereby, the listener can just about anticipate what's going to come next."
5. Strunk 1979 addresses this characterization most directly, but support can also be found in Larson 1987 and 1998 and in Martin 1988 and 1996. The harmonic style of this period will be referred to subsequently as "bebop."
6. The prevalence of major- and minor-seventh chords enables mappings of the chord successions on a *Tonnetz* to produce chains (defined in Cohn 1997) and clusters (defined in Strunk 2003a).
7. My reference to the *montuno* is with regard only to its harmonic content, not its function in a performance or its rhythms. *Montuno* has many meanings, one of which is described by Marshall Stearns in discussing the rise to prominence of the Latin tradition in the early 1940s: "The *montuno*, or *ad lib* passage, which can be inserted in any rhumba [actually in any Latin-oriented performance] if the soloists wish to take a chorus, is often based on just one, or sometimes two, chords" (1956, 177). Because this kind of *montuno* has one or two chords, improvisation on it does not necessarily fit a chorus length, but can go on indefinitely. In the latter respect, it is like a vamp. The authentic forms are diatonic, e.g., no. 21 of *101 Montunos* (Mauleón 1999), which repeats the progression **Cm G7 G7 Cm**. Many Latin-influenced compositions use two-chord repeated progressions. The first twelve measures of printed versions of Juan Tizol's "Caravan" show a simple **C7-9**, which is usually played by bebop groups as a repeated II–V group, **Gm7-5 C7**. Dizzy Gillespie's "A Night in Tunisia" is closer to Shorter's usage with its **E♭7 Dm** pair in a vamp introduction and the first six measures of the chorus.
8. A "neighbor chord," as used here, is a chord that harmonizes a neighbor note, here most often in the bass, but possibly in the soprano or an inner voice.
9. For discussion of other such wedge-shaped progressions, see Strunk 1996 and 1999. These are different from the omnibus and other progressions discussed in

Gauldin 2004, particularly in that they are not strictly chromatic, and they are always associated with linear intervallic patterns.

10. For a graph and further discussion of "Yes and No," see Strunk 2003b.
11. In mm. 13–16 of "Iris," the *Real Book* gives **D♭7** (**♯11**) **D♭m** (**♭6**), although the minor sixth is not usually added to a minor triad. The copyright deposit gives the second chord as **Amaj9**. By holding the bass note on the recording, Ron Carter perhaps justifies the *Real Book*'s notation. One unusual chord structure given in the *Real Book* may also be the result of bassist Carter's choice of notes. In mm. 17 and 49 of "Wild Flower," in a D-minor context, the *Real Book* transcription gives **Gm7-9**, although the minor ninth extension on a minor seventh chord is not ordinarily used, at least in bebop or earlier jazz styles. In these measures, the Aebersold edition gives **F-**, the copyright deposit gives **Fm7**, but the bass plays G on the recording. As a result, the transcribers heard the **A♭** as a minor ninth above the G root.
12. Prefix and suffix embellishment figures are discussed in Larson 1996.
13. Certainly this procedure appears frequently in the Shorter compositions studied; a cursory investigation as to whether it happens in other 1960s jazz compositions shows that it does, although not nearly as often as in Shorter's music. As one example, in Chick Corea's "Steps" (1968), a progression from dominant (**D♯7**) to tonic (**G♯m**) is elaborated by **Amaj7** as an appoggiatura chord to **G♯m**, so the progression from **D♯7** to **Amaj7** results. Some of the 1960s compositions of Michael Gibbs also exhibit such progressions. It appears that the technique occurs with increasing frequency during the 1970s in the work of other composers (e.g., John McLaughlin), but the extent to which this development is directly attributable to Shorter is outside the scope of this study.
14. Middleground progressions involving equal divisions of the octave appear frequently in nineteenth-century European classical music and also can be found in American popular music. The bridge of Rodgers and Hart's "Have You Met Miss Jones" (1938) tonicizes B♭, G♭, and D, while Sy Oliver and Sid Garris's "Opus One" (early 1940s) tonicizes G in its A section, followed by B♭ and D♭ tonicizations in the bridge. Charlie Mariano's "When You Meet Her" (recorded 1960) includes the progression **Am7 F♯m7 E♭m7** in a nonimprovised section, and Charles Lloyd's "Forest Flower" (recorded 1966) includes the progression **G♭m7 Am7 Cm7 E♭m7**, but in both cases the chords change relatively slowly. The rapidity of change of chromatic chords in some of the Shorter examples requires a new level of competence on the part of improvisers.
15. The A♭ could be held in common if included as a ninth on **G♭7**.
16. Following most sources, the graph of "Witch Hunt" uses no key signature, thus requiring the flats in the roman numerals.
17. In the context of such short compositions having no traditional *Ursatz* structure, the terms "middleground" and "background" are necessarily used loosely.
18. "Black Nile" is a relative rarity in Shorter's oeuvre: an AABA form with eight-measure phrases.
19. Among the other compositions studied, the following are through-composed: "Juju," "Iris," "El Gaucho," "Orbits," "Prince of Darkness," "Fall," "Nefertiti," and "Pinocchio." "E.S.P." has an AA form. Others have forms derived from the blues or forms having bridges.
20. Harmonic variations in the sources mainly involve the content of mm. 9–10. This

content is as follows: in the Library of Congress copyright deposit, **F♯7-5**, **F13**, **E+9**, **A+7** (three quarters each); *Real Book*, **D7**, **D♭7** (six quarters each); Aebersold, **F♯ø**, **B7+9**, **E7+9**, **A7+9+5**(**E♭7+11**) (three quarters each); Leonard, no chords given. It is interesting that the transcribers of the *Real Book* heard this unexpected progression (mm. 9–10) as though it were a standard approach to the tonic through two dominants (V7 of V and the substitute dominant). This simplification is perhaps an example of how we are conditioned to hear what we understand and are used to hearing, regardless of the actual sounds (and also an example of how difficult it is to transcribe jazz). The mishearing is understandable, because **F♯m7-5** has much in common with **D7**, and **E7+9** is closely related to both **D♭7** and **G7**; however, the two other chords were evidently unnoticed. Of these, the last chord, **A7**, is crucial, as it has no functional relationship with the **Cm7**, the cadential goal.

21. See, e.g., Stein 1983.
22. The "III" is a II–V of VI over a dominant pedal, thus possibly referring indirectly to the VI expected at that point.
23. E.g., "Tones for Joan's Bones" (1966) by Chick Corea is in D but ends on **E♭maj7**. Shorter's "Wild Flower" also replaces I by ♭II in all its cadences except the last. Levine 1995, 292–94, quotes examples of the substitution in recordings from the 1980s and 1990s by Kenny Barron, McCoy Tyner, and Mulgrew Miller and recommends that ♭II be substituted only when scale degrees 1 or 5 are in the melody. The effect of the substitution is that of appoggiaturas applied to the lower voices of a tonic chord with root or fifth in the melody, but the appoggiaturas are left unresolved. In earlier stages of the practice, it is likely that the appoggiaturas did resolve, and it thus can be related to the general practice of "side-slipping," defined as a "term coined by Jerry Coker referring to half step up or down movement away from what is given melodically or harmonically" (Liebman 1991, 173). Side-slipping, however, usually involves departure from and return to the expected chord, which is not the case with the ♭II substitution. The latter practice is comparable to the use of unresolved tensions (extensions—ninths, elevenths, thirteenths, etc.) in upper voices. Lack of resolution of the upper voices does not change the function of the underlying chord, and although removal of the bass root is a much more radical step, the appoggiatura ♭II chord also represents its implied tonic resolution and carries its function.
24. I am grateful to Deborah Stein for clarifying the distinctions among tonal pairing, directional (or progressive) tonality, and Robert Bailey's double tonic complex in her seminar at the 2006 Mannes Institute for Advanced Studies in Music Theory on the topic of chromaticism. See also the discussion of directional tonality that follows.
25. A good bibliography on the subject can be found on pp. 259–72.
26. The **Dm7** at the start of the B section, although it holds promise, is not confirmed as a tonic, but only begins a sequential progression back to F.
27. Shorter's "El Toro" (1961) does exhibit such an equal division, A–F–D♭–A, as discussed in Julien 2003, 175–87.
28. It may be that Shorter conceived of "Juju" in E, because, in the copyright deposit, all chords but the first are given over an E pedal point. In that interpretation, it starts on V (**B7+5**) and descends chromatically to ♯III (**A♭maj7**), dividing the interval from V to I (**Em7**), the next chord. The ending on **Bm7** is thus a "half-

cadence." The E pedal point does not appear on any recording I have heard. Without it, I find the interpretation in B more compelling; but certainly, "Juju" does present a degree of tonal ambiguity.

29. See Kopp 1995 for a history of chromatic mediants and the changing views of their independent relations with the tonic in the nineteenth century.
30. On the recording, the bass extends the **Cmaj7**, and the last note played is C. The copyright deposit suggests that Shorter may have originally conceived of this as a half-cadence, as the written bass line sustains B at the **Cmaj7** chord.
31. It might be possible to hear a descent to $\hat{1}$ at m. 13, with a $\hat{2}$ implied on the **Cm7/F** chord. This would be an unusually early descent, as m. 13 is the beginning of the return of A. Descent to $\hat{1}$ would be expected at the end of the final A. The B♭ neighbor tone of m. 11 leads, as it has twice earlier, to B♮ ($\hat{3}$) at m. 13, thereby fulfilling our expectation. The progression of the final A section is open-ended, leading back to the repetition of the chorus. On the recording, after the final chorus, Shorter improvises a coda over the four-chord vamp from mm. 1–2; this coda fades out, supporting the idea of an open-ended lack of descent.
32. A similar reharmonization of a transposed four-note motive can be seen in "Juju," mm. 5–8.
33. The *Real Book* gives chords for the introduction, but the copyright deposit does not, and no chords are played on the recording. ("Orbits" is not included in the Aebersold and Leonard editions.)
34. Note also the major-seventh with augmented-fifth chord structure, without which the interpretations to follow could not be made.
35. Some of the characteristics begin to be present in the earlier pieces studied in Julien 2003, although those examples feature greater usage of II–V groups than the pieces from 1964–67.

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