

Three views of Wayne Shorter's "El Toro," from

Patricia Julien, "Harmonic Plateaus in Two Works by Wayne Shorter," *Jazz Perspectives* 5/3 (2011): 163–83;

Keith Waters, *Postbop Jazz in the 1960s: The Compositions of Wayne Shorter, Herbie Hancock and Chick Corea* (Oxford: Oxford University Press, 2019), and Henry Martin, "Prolongation and Its Limits: The Compositions of Wayne Shorter," *Music Theory Spectrum* 40/1 (2018): 84–105.

# Harmonic Plateaus in Two Works by Wayne Shorter

Patricia Julien

This essay examines harmonic regions that serve as plateaus in a composition. The word “plateau” has been selected for its metaphorical strength in communicating a place of rest and consequence. Each plateau is well established and (moving beyond such terms as “modal center,” “harmonic region,” and “expanded tonicization”) influences the structure of the composition. A plateau may be established either through a conventional, functional progression or through another means of prominence (such as duration or architectural position as a starting or ending sonority). In the former instance, such plateaus are referred to in this article as “tonal plateaus,” in the latter, “prominence plateaus,” while both types belong to the overall category of harmonic plateaus. Wayne Shorter has been hailed for his interesting and, at times, seemingly unfathomable chord progressions that excite the imaginations of improvisers and audience members alike. One compositional method practiced by Shorter is that of employing plateaus (frequently tonal plateaus) to organize harmonic relations; two early pieces by Shorter are discussed here to illuminate this method. The works demonstrate Shorter’s agility in employing harmonic plateaus in both a tonal composition (“Powder Keg”) and a nontonal piece (“El Toro”).<sup>1</sup> Not every work in Shorter’s oeuvre of

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<sup>1</sup>An earlier version of this paper was read at the spring 2004 Music Theory Society of New York State (MTSNYS) and New England Conference of Music Theorists (NECMT) regional meetings and at the fall 2004 national Society for Music Theory (SMT) meeting. I am grateful to all those who offered thoughtful comments and asked insightful questions about this material. The essay draws upon research by authors such as Henry Martin (“Jazz Harmony: A Syntactic Background,” *Annual Review of Jazz Studies* 4 (1988): 9–30) and Steven Strunk (*The New Grove Dictionary of Jazz*, 1994, s.v. “harmony”) who have investigated general concerns about jazz harmony, and the analytical ideas herein have been influenced in part by theorists such as Strunk (“The Harmony of Early Bop: A Layered Approach,” *Journal of Jazz Studies* VI (1979): 4–53), Steve Larson (“The Art of Charlie Parker’s Rhetoric,” *Annual Review of Jazz Studies* 8 (1996): 141–166, and “Schenkerian Analysis of Modern Jazz: Questions About Method,” *Music Theory Spectrum* 20, no. 2 (1998): 209–241), and Milton Lee Stewart (“Structural Development in the Jazz Improvisational Technique of Clifford Brown,” *Jazzforschung/Jazz Research* 6, no. 7 (1974/1975): 141–273) who have applied layered and Schenkerian analytical methods to analyze tonal jazz compositions and improvisations. Non-functional relations, the impact of chromatic harmony on tonal relations, and the expansion of tonality to include orientations other than that of a single tonic–dominant axis have been of great interest to theorists studying nineteenth-century compositional practice. These issues have been examined by authors such as Daniel Harrison (*Harmonic Function in Chromatic Music: A Renewed Dualist Theory and an Account of its Precedents* (Chicago: The University of Chicago Press, 1994)), Harald Krebs (“Alternatives to Monotonicity in Early Nineteenth-Century Music,” *Journal of Music Theory* 25, no. 1 (1981): 1–16), Gregory Proctor (“Technical Bases of Nineteenth-Century Chromatic Tonality: A Study in Chromaticism” (Ph.D. diss., Princeton University, 1978)), Ramon Satyendra (“Chromatic Tonality and Semitonal Relationships in Liszt’s Late Style” (Ph.D. diss., The University of Chicago, 1992)), and Deborah Stein (“The Expansion of the Subdominant in the Late Nineteenth

more than 200 compositions (including the fifty-three copyright deposits, housed in the Library of Congress, of pieces by Shorter from 1959 to 1963—his early period) was here scrutinized for use of harmonic plateaus, but the appearance of this organizing principle in both a tonal and nontonal early work invites further exploration.

The three-part essay begins with a brief description of the methodology employed in the analyses; it includes a definition of harmonic plateaus in general and illustrates their use in three works by composers other than Shorter (namely, Miles Davis, Freddie Hubbard, and Herbie Hancock). The second and third parts comprise the discussion of “Powder Keg” and “El Toro,” respectively. Primary sources for Shorter’s compositions are the copyright deposit manuscript and the original recorded version on which Shorter himself performs and for which a transcription is supplied. When discrepancies are found between the two media, the alternative instances are weighed carefully. Overall, the recorded version is given preference not only because Shorter was involved in the recording sessions used to transcribe the compositions analyzed in this paper, but also because the recording, not the copyright deposit, has been the primary medium of transmission representing the pieces.<sup>2</sup>

## Methodology

The analyses of “Powder Keg” and “El Toro” take the form of layered representations of the compositions, and the analytic methodology is modeled after that which Steven Strunk introduces and develops in his seminal article: “The Harmony of Early Bop: A Layered Approach.”<sup>3</sup> The method here (slightly modifying Strunk’s approach) is reductive, applying operations from foreground to background to distill the essential harmonic relations that provide the structure and form of the composition. This modification to Strunk’s method has been made to facilitate the applied use of this analytical process, from the known compositional details to the underlying background (which, as in nontonal compositions, may not be understood until full analysis has taken place). The graphic analytical layers help to illustrate the subordinate status of a chord with respect to a more basic chord to which the subordinate chord is related. After determining the nature of the structurally hierarchic relation, an operation is applied to *undo* the relation. Such undoing “reduces out” (or, in other words, removes through the process of reduction) the subordinate chord.

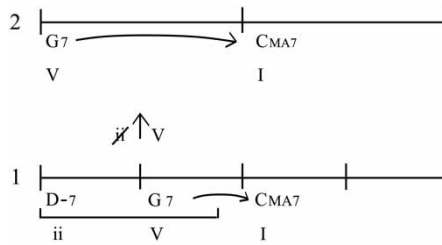
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Century,” *Journal of Music Theory* 27, no. 2 (1983): 153–180, and *Hugo Wolf’s Lieder and Extensions of Tonality*, *Studies in Musicology* 72 (Ann Arbor, Michigan: UMI Research Press, 1985)), and their work informs the essay at hand.

<sup>2</sup>Strunk points out: “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. . . . (Performers also distrust written representations of jazz and popular songs because they have seen many that have mistakes or need some kind of adjustment.)” Steven Strunk, “Notes on Harmony in Wayne Shorter’s Compositions, 1964–67,” *Journal of Music Theory* 49, no. 2 (Fall 2005): 328 n. 3.

<sup>3</sup>Strunk, “The Harmony of Early Bop: A Layered Approach,” *Journal of Jazz Studies* VI (1979): 4–53.

In the layered illustrations, the relative structural significance of chords is depicted on the vertical axis and the temporal association between chords is depicted on the horizontal axis. Reduction utilizes arrows, as does Strunk’s system of symbols, to signal the operations in effect between levels. Here, however, the arrows point upward as the graph is read from foreground to background, and the use of a slash scored through the chord that is being reduced out has been instituted. Chords of less structural significance are removed earlier in the process (that is, closer to the foreground) than those chords of greater structural significance. The term “resultant” is used, as in Strunk’s methodology, to refer to a subordinate chord that appears at a more foreground level as the result of an operation upon a structurally superior “object” chord. The resultant chord is removed in the undoing of an operation. The operations acknowledge resultant chords that have been generated as harmonic prefixes to the object chord, as linear prefixes, and through II-V elaboration and other types of substitution.



**Example 1** ii-V elaboration.

As shown in Example 1, the ii-V elaboration is represented by a symbol that treats the pairing of a supertonic and dominant chord as a unit: the ii chord is shown on the left side of the arrow, and the V chord is placed on the right. In this example, the supertonic chord of the ii-V pair is reduced out between levels 1 and 2. The V chord persists to a deeper structural level because it is deemed more essential to, and of greater structural importance in, the progression. Notice, too, that the structurally superior chord moves to the left to occupy the time span governed by both the subordinate and superior chords at the more foreground level. In hierarchic terms, chords are reduced out as they are determined, in the context of the succession of chords at that level, to be of less structural importance than fellow chords that therefore persist to deeper levels. In a ii-V-I progression, for example, the supertonic chord, at a relatively early level, is generally understood to be less structurally significant than the dominant or tonic chords and is reduced out. At the next level, the dominant chord, deemed less structurally important than the tonic chord, is reduced out. When reading from background to foreground, the tonic is understood as the basis for the harmonic relationships and is treated to a dominant prefix which then, moving closer to the foreground, is preceded by supertonic elaboration.

Substitution, considered a type of operation, also involves a pair of chord symbols. As with other operations, an arrow between levels identifies an operation being “undone.” The chord symbol to the left of the arrow identifies a basic chord while the chord symbol to the right identifies the substitute chord present at a more foreground (or shallower middleground) level. In the process of reduction, the substitute chord (to the right of the arrow) is illustrated with a slash scored through its symbol; the basic chord (to the left of the arrow) is restored at the deeper structural levels. Various other types of operations are addressed during the following analytical discussions.<sup>4</sup>

Analytical attention is directed to the written composition to address Shorter’s treatment of tonality and his structural use of the harmonic relations that also act as the foundation for subsequent improvisations. The composed melody is studied, and is considered with particular regard for its participation in shaping and defining the structure of the composition. It is understood that the composed melody is replaced by newly created melodies during improvisations and for that reason, chord relations, serving as the basis for both the theme and the subsequent improvisations, are given priority here.

### **Harmonic Plateaus**

As mentioned earlier, tonal and prominence plateaus belong to the overall category of harmonic plateaus. Harmonic plateaus express well established sonorities and serve as reference points in a composition; in both tonal and prominence plateaus, the sonorities exhibit a degree of structural importance. A plateau is not a key area with attendant and expected functional chord and pitch associations (although such associations may provide one means of establishing a plateau) and it is not obligated to take its place in the composition as a key area related in a functionally meaningful way to other key areas of a piece. While a tonal plateau is established through conventional, functional harmonic progressions, the prominence plateau can arrive abruptly, without preparation or a modulatory process. In terms of the number of chords participating or the number of measures over which it exerts influence, a tonal plateau might be considered an expanded tonicization (sometimes called a secondary key area, secondary tonal level, or transient modulation) but extends beyond such tonicization in its degree of structural importance and independence. It is not a set class because the pitches are heard and understood as root, third, fifth, seventh, and so on.

There are three conditions necessary for a sonority or region to be considered a harmonic plateau: its potential to be understood as a well established self-reliant tonal region; its meaningful influence over the structure of the composition; and its freedom from the requirement of relating functionally to other harmonic plateaus or a home tonic. Harmonic plateaus may prove particularly apt in describing relationships

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<sup>4</sup>For additional details about this analytical methodology, see Patricia Julien, “‘Sakeena’s Vision’: The Trifocal Organization of Harmonic Relations in One of Wayne Shorter’s Early Compositions,” *Theory and Practice* 34 (2009): 107–140.

between regions that are a third or a step apart.<sup>5</sup> In some cases, an entire composition may be constructed from harmonic plateaus (this type of structural architecture is not uncommon in modal compositions).<sup>6</sup> In other cases (as with a non-functional vamp), plateaus may serve as one component of a composition.

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<sup>5</sup>Of course, such relationships are not sufficient to make regions harmonic plateaus. For instance, in mm. 142–170 of the second movement of Beethoven’s Symphony No. 9 in D minor, Op. 125, tonal regions (established through sequential statements of the chord succession iii, I, vi, IV, ii) move by descending whole step: C major, B-flat major, A-flat major, G-flat major, E major. While it might be tempting to extend the use of the term plateau to this situation, this portion is not particularly important to the formal structure of the movement, one of the features of harmonic plateaus under discussion in the present essay.

<sup>6</sup>For an interesting introduction to the characteristics of improvisation, accompaniment, and composition in modal jazz, see Keith Waters, “What is Modal Jazz?” *Jazz Educators Journal* 33, no. 1 (2000): 53–55.

<sup>7</sup>Miles Davis, “So What,” *Kind of Blue*, recorded 1959, reissued Columbia compact disc CK 40579, 1986.

<sup>8</sup>In a discussion of “Killer Joe” by Benny Golson, Strunk remarks on the significance of parallel structures when he explains that although another set of operations might be used to obtain (and to analyze) a two-chord relationship with stepwise motion between the roots, “. . . the parallel structure of the object and resultant chords suggests analysis as a . . . neighbor chord” (“The Harmony of Early Bop,” 9).

**“El Toro”**

“El Toro” exhibits four structural keys, with no sonority or tonal region exhibiting fundamental influence over the composition as a whole. Utilizing an asymmetrical AB form, the piece begins in D minor, the A section concludes in D-flat major, and the B section is governed by A major, F major, and D-flat major. The harmonic (tonal) plateaus in “El Toro” do not reveal themselves to be part of a larger tonal scheme, but instead are self-sufficient and irreducible. Within the tonal plateaus are functional harmonic relations used to establish the various keys, while the nonfunctional relations between the plateaus result in a nontonal composition (i.e., a composition that is not fundamentally governed by a single home key).<sup>24</sup>

“El Toro” was recorded on May 27, 1961 by Shorter with Art Blakey and The Jazz Messengers. Although composed in the common format of sixteen measures repeated to generate a thirty-two measure work, Shorter chose an uncommon, asymmetrical subdivision of the sixteen measures. The first section consists of seven measures (wherein a four-measure phrase is followed by a three-measure phrase) and the second section consists of nine measures (wherein a two-measure phrase is followed by another two-measure phrase and then a five-measure phrase). The demarcation of the asymmetrical sections is made more striking by Shorter’s change from a Latin feel during the first section to swing for the second. (The feel during solos is entirely swing.)

As seen in Example 9, the trumpet and saxophone melodic lines generally express the harmonic plateau in place at any point in the composition.<sup>25</sup> The opening four-measure phrase is set apart by the concluding descending half step heard in

<sup>23</sup>Such third organization may bespeak Shorter’s affiliation with John Coltrane, who, in 1959, wrote and performed “Giant Steps,” which is based on tonal centers that symmetrically divide the octave into three parts; the tonal centers are a major third apart.

<sup>24</sup>Shorter’s liberty in composing a nontonal work is notable. Keith Waters reminds readers that “[t]hrough the late 1950s, functional harmonic relationships have provided the foundation for harmonic progression in jazz composition. Tonality is typically articulated by functional cadential paradigms such as V–I or ii–V–I” (“Modes, Scales, Functional Harmony, and Nonfunctional Harmony in the Compositions of Herbie Hancock,” *Journal of Music Theory* 49, no. 2 (2005): 334). Strunk also confirms that “[b]ebop harmony of the 1940s and 1950s is built on relatively simple elaborations of functional progressions mostly within a tonic-dominant framework” (“Notes on Harmony,” 303).

<sup>25</sup>The transcription reveals four departures from the copyright deposit lead sheet: the trumpet and saxophone rearticulate their melodic pitches at the downbeat of m. 3 (as shown on the transcription), rather than sustaining those notes from the preceding measure (as found on the copyright deposit lead sheet); the copyright deposit lead sheet supplies the melodic line of the trumpet part only, except for the first note of the first and second endings, while the transcription adds the melodic line of the saxophone part throughout. The chord in m. 3 is consistently performed as E<sup>7</sup>b5 (as shown on the transcription), rather than E<sup>7</sup> (as found on the copyright deposit lead sheet); and, the chord in m. 14 is played as E<sup>7</sup> (as shown on the transcription), rather than Gb7 (as found on the copyright deposit lead sheet). In addition, the double barline included in the transcription to indicate the start of the B section does not appear in the copyright deposit lead sheet.

Example 9 shows a melodic line for trumpet and saxophone. The key signature has one flat (Bb). The time signature is 4/4. The melody consists of 15 measures. Chords are indicated above the staff: D-9 (m. 1), F7 (m. 2), E-7b5 (m. 3), A7 (m. 4), Eb-7 (m. 5), Ab7 (m. 6), DbMa7 (m. 7), B-7 (m. 8), E7 (m. 9), AMa7#11 (m. 10), G-7 (m. 11), C7 (m. 12), FMa7#11 (m. 13), Eb-7 (m. 14), Ab7 (m. 15). The first ending (measures 14-15) has chords F-7 and Bb7. The second ending (measures 16-17) has chords F-7 and Bb7.

**Example 9** “El Toro,” transcribed by author from: Art Blakey and the Jazz Messengers, *The Freedom Rider*, Blue Note BST 84156 (tracks 1–5), and Japanese Blue Note album *Pisces* (tracks 6–8), 1961; reissued Blue Note CDP 7243 8 21287 2 4; Capitol Records, Inc., Hollywood, 1998.

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both the trumpet and saxophone melodic lines. This phrase-ending, descending half step in both parts also is heard to close the last phrase of the piece, supported by a half cadence due to the back-relating nature of the ii–V pair (as will be shown in the harmonic analyses that follow). All other phrases in the composition, including the phrase that ends the A section, employ ascending stepwise motion in both the trumpet and saxophone parts as the concluding melodic gesture.

Example 10 illustrates the final three measures played during the final out chorus to conclude the recorded performance. A *ritardando* is initiated beginning in m. 14, permitting fills by the piano. Although the copyright deposit lead sheet includes a fermata

Example 10 shows the final three measures of the theme. The key signature has one flat (Bb). The time signature is 4/4. The melody consists of measures 14, 15, and 16. Chords are indicated above the staff: E7 (m. 14), AMa9 (m. 15), F-7 (m. 16), and Bb7 (m. 16).

**Example 10** “El Toro,” Recorded performance, final statement of theme, mm. 14–16.



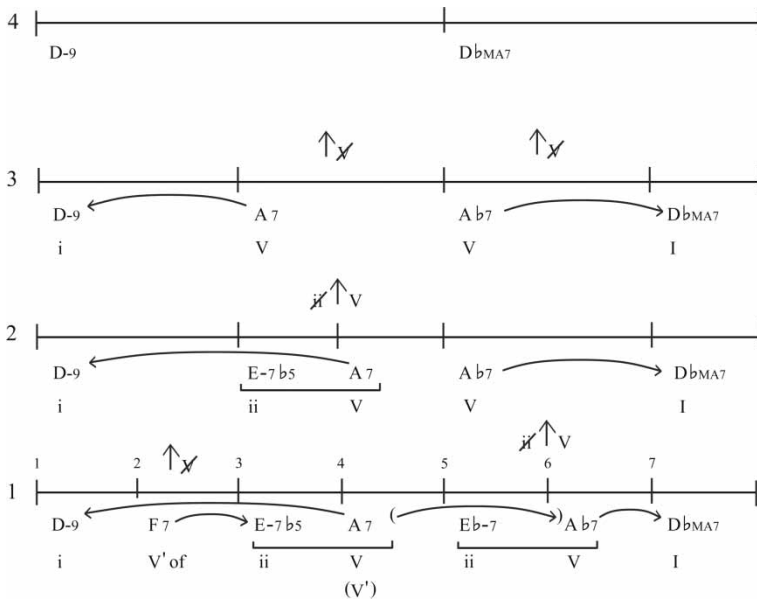
over the F-7 chord of the second ending, suggesting that this sonority will serve as the final chord of the composition, the performance includes motion to Bb<sup>7</sup> following F-7. By closing with a half-cadence, Shorter leaves a colorful non-stable sonority lingering in the listener's ear. It resembles the melodic choices made by bebop players to conclude on the 9th or 7th during a final tonic chord. This practice was embraced and made commonplace by post-bop composers like Shorter, who indicated in writing the use of nontonic concluding melodic pitches. In this composition, Shorter expands the nontonic melodic idea into the harmonic domain through the use of nontonic final harmony (as found in other compositions by Shorter such as "Sincerely Diana"). Shorter partly signals that this half cadence does not compel the piece to continue by altering the melody. As was previously mentioned, the earlier half cadences support melodic motion by descending half-step in both the trumpet and saxophone parts while the authentic cadences feature ascending stepwise motion. During the final two measures to end the performance, motion in the trumpet is by ascending major second, and motion in the saxophone is by ascending minor sixth (after each final pitch is first played an octave lower).<sup>26</sup> To achieve this, Shorter exchanges the pitches previously played in m. 16 by the trumpet and saxophone. The ascending motion previously associated with the conclusive authentic cadences supports the desinent role of this unusual final cadence.

Additional analysis of the melody brings attention to the foreground use of melodic anticipation in the A section (by quarter note or eighth note in mm. 1–6, while the chord-tone pitch material of m. 7 is anticipated by two measures, beginning as non-chord tones in m. 5), followed by an emphasis on passing and neighboring motion for the B section. Anticipation is heard again at m. 14.

Example 11 is a layered analytical graph of the harmonic relations of mm. 1–7.<sup>27</sup> The first phrase (mm. 1–4) establishes the tonal region of D minor: as shown in the graph, the E-7b5 to A<sup>7</sup> cadence of mm. 3–4 functions as back-relating ii–V confirmation of the D– tonic that begins the composition. The second phrase, which begins with melodic material transposed down one half-step in the trumpet and exact repetition in the saxophone, ends with a conclusive authentic cadence that "answers" the half cadence support of the first phrase ending. Although remote

<sup>26</sup>As noted in "Powder Keg," Shorter makes use of repetition and transposition to convey contrasting, rather than parallel, attributes. In another interesting transformation of phrase function, an ascending octave appears in each voice to begin "El Toro" and, with the anacrusis into m. 5, to start the second phrase; the ascending octave then figures prominently in both voices in the final measure to end the piece.

<sup>27</sup>In this paper (as in Strunk's usage), a prime symbol follows the roman numeral V to indicate a substitute dominant. Although a chord may be referred to as a *substitute* dominant, information about the source chord for this particular substitution is not provided on the analytical graphs. This information has been omitted for two reasons: 1) the tritone substitute dominant (for example, E<sup>7</sup> substituting for Bb<sup>7</sup>, the dominant of Eb) typically preserves the essential third and seventh of the original dominant and simply relocates those pitches as seventh and third, respectively, in the substitute chord; and 2) more importantly, Shorter's early compositions were written after the height of the bebop era. What in bebop practice was understood to act as a substitute became so familiar that, following the bebop era, it is understood to act independently of the original source chord, though the well-developed relationships remain in effect. Although the historical origin is acknowledged in its name, the very common tritone substitute dominant is now recognized as a basic chord (not one that acts as a substitute for another).

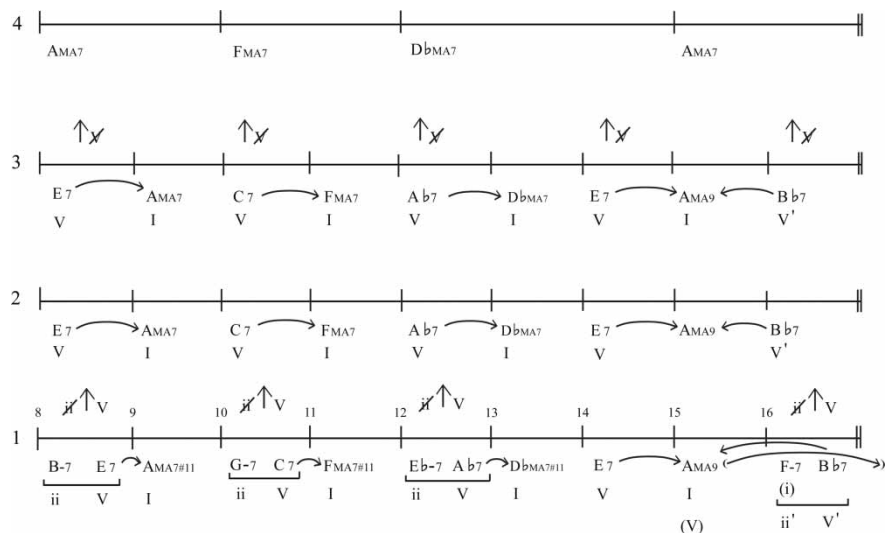


**Example 11** “El Toro,” Layered analytical graph, mm. 1–7.

from the opening key of D minor, the new key of Db major is achieved smoothly by means of A<sup>7</sup> in m. 4, which is heard not only as V of D-9 but, in retrospect upon the arrival of Ab<sup>7</sup> in m. 6, as a tritone substitute secondary dominant of Ab<sup>7</sup> which prepares the arrival of Db<sup>Ma7</sup>. The secondary function of A<sup>7</sup> is illustrated at level 1 in the graph with an upward-curving horizontal arrow placed in parentheses; the corresponding roman numeral also is placed in parentheses. After foreground and early middleground subordinate chords are removed from level 1 and level 2, the dominant chords that help to establish each tonal region of the A section are reduced out between levels 3 and 4. Each of the various, established tonal regions is given the roman numeral I (or, i) at levels 1–3 to reflect its weight and its role in the composition. At level 4 (the background), no roman numeral labels are applied because the chords are equal and independent, with no single “tonic” functioning as the one to which the others relate.

Example 12 is a layered analytical graph of the harmonic relations of mm. 8–16. Measure 8 is the start of the B section and, at the foreground, consists of ii–V preparation of the following tonicized A<sup>Ma7</sup>. After tonicizing A<sup>Ma7</sup>, the B section then proceeds to tonicize F<sup>Ma7</sup> and Db<sup>Ma7</sup>, emphasizing regions that equally divide the octave. This second appearance of Db<sup>Ma7</sup> (tonicized also in the A section) is followed in order by a second appearance of A<sup>Ma7</sup> (m. 15), with a ninth added, and a second appearance of F (m. 16) now transformed from F<sup>Ma7</sup> to F-7 and transformed in function as well, from a so-called tonic chord to the supertonic of a ii–V pair.

The final phrase of the B section includes several interesting elements. Although it begins (in m. 12) with the harmonic rhythm and ii–V support that similarly starts



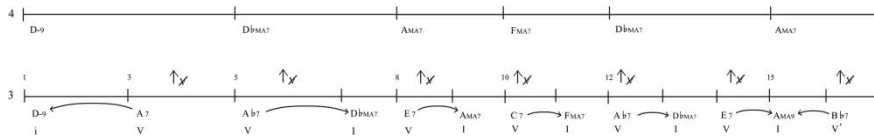
**Example 12** “El Toro,” Layered analytical graph, mm. 8–16.

the preceding B-section phrases, it soon features differences. The melody in mm. 13–15, analogous to that in m. 9 and m. 11, not only spans three measures rather than one, but also appears mid-phrase rather than at the conclusion of the phrase. The expansion enables this phrase uniquely to begin in one tonal region ( $D\flat$  major) and conclude in another (A major). The harmonic pattern, too, is modified:  $E^7$  alone occupies m. 14, rather than the ii–V preparation provided to establish the other tonal regions in this section. Indeed, a solitary dominant chord appears only one other time in the piece—in m. 2. The rhythmic augmentation of the melody, the reintroduction of anticipation, the omission of a pre-dominant, and the slowed harmonic rhythm to one chord per measure signal the approaching end of the form and recall the first half of the piece.<sup>28</sup>

As part of the final phrase, both  $D\flat^{Ma7}$  and  $A^{Ma7}$  express the stable tonic function that was earlier established. F-7 in m. 16, transformed in quality and appearing without direct preparation, does not securely retain such an association. The change in chord quality is a contributing factor because this minor seventh chord is paired with a dominant seventh chord to create a ii–V unit. Like the opening phrase, the

<sup>28</sup>When  $E^7$  is reduced out between levels 3 and 4,  $A^{Ma7}$  remains at m. 15 rather than moving to the left;  $E^7$  is heard to precede rather than occupy a portion of the time span governed by the structurally superior chord,  $A^{Ma7}$ . The melody contributes to this hearing. According to the sequential pattern established in mm. 8–9 and mm. 10–11, the pitch class 7 in the lead melodic line during m. 13 should move, before the second half of that measure, to pc 8. Instead, the melody is augmented and pc 8 is delayed until the pickup into m. 14. The sense of resolution, though, attaches pc 8 to the chord expected for support during in m. 13, and measure 14, with its sustained pc 8, is experienced as belonging more to the  $D\flat^{Ma7}$  plateau than the  $A^{Ma7}$  plateau. The augmentation of melody implies an augmentation of harmonic rhythm; resolution which earlier took place within one measure now is understood to span two measures. Thus  $A^{Ma7}$  is not heard to govern m. 14 at the deeper levels. It is interesting to recall that in the A section,  $D\flat^{Ma7}$  also governs a time span of three measures.

final phrase ends with a back-relating dominant; here,  $Bb^7$  functions as the tritone substitute dominant of the preceding  $A^{Ma9}$ .<sup>29</sup> Also at level 1, an upward-curving horizontal arrow is placed in parentheses to illustrate the dominant relation to D-9 mildly suggested by the harmonic root movement from A (m. 15) to D (m. 1).<sup>30</sup> Example 12 shows that, between levels 1 and 2, the subordinate supertonic chord of each ii-V pair is reduced out.



**Example 13** “El Toro,” Layered analytical graph, mm. 1–16, levels 3–4.

As seen in Example 13, level 3 represents the background structure where each “tonic” chord is established as a secure tonal plateau, in part through the involvement of its dominant (whether forward or back relating); those dominant chords are reduced out between levels 3 and 4. The ultimate background (level 4) displays the four harmonic plateaus.<sup>31</sup> No single “tonic” represents an influential key governing the entire piece, and no hierarchy of relations permits further distillation of would-be subordinate harmonies beyond level 4. Although several attempts were made to further distill the structure of the composition (including reducing out plateaus due to shorter duration, reducing out plateaus according to their role in the sequential treatment that shapes the B section, reducing out plateaus that serve as neither the opening nor closing tonic—a concern that reflects traditional discourse about the priority given to the tonic in the opening or, especially, closing position but is not meaningful in the context of this work) but no reasons are musically convincing enough to reduce out any of the plateaus that remain at level 4. Only D minor exists outside the equal division of the octave, and the transposition level of the remaining tonal plateaus reflects the third

<sup>29</sup>At the same time, the placement of this ii-V pair in the final measure of the form mimics a turnaround progression ordinarily positioned at this location to prepare the return to the start of the form. Although not functioning as forward-relating preparation of D-9, the listener experiences the usual sense of momentum affiliated with a turnaround progression. Additionally, Steven Strunk, in private conversations with the author, has remarked on the potential for the  $Bb^7$  D-7 relation to reflect an early instance of Shorter’s use of  $bVI^7$  as a substitute dominant chord. Strunk has discerned such treatment by Shorter in pieces such as “Armageddon” and “Deluge.”

<sup>30</sup>Contributing to the experience that the piece is not heard in D minor, with the tonicized regions A-D $b$ -F depicting an augmented dominant, is the use of a major-major seventh chord, not a dominant family harmony, built on A.

<sup>31</sup>The first two plateaus, constituting the A section, offer tonic pitches that animate the descending half step of the melodic lines ending the first phrase of the piece (indeed, matching the pitch classes of the lead trumpet line at the end of phrase one) and the last phrase of the B section, supported in both cases by a half cadence. The melodic phrase-ending descending half step communicates something incomplete, and the harmonic half step between tonal plateau tonics communicates the end of the A section but not yet the conclusion of the theme.

relations often utilized by Shorter.<sup>32</sup> “El Toro” demonstrates tonal ambiguity through an unusual series of harmonic relations, through an opening tonic that is not treated to preparation, and through four structural keys with no sonority or harmonic plateau exhibiting fundamental influence over the composition as a whole.

## Conclusion

This essay adds two compositions by Wayne Shorter to the body of studied works that illuminate nonconventional treatment of tonality. In both instances, Shorter employs harmonic plateaus to influence the structure of the composition. In the tonal work (“Powder Keg”), the plateaus are active at the foreground and early middleground levels. In the nontonal piece (“El Toro”), the harmonic plateaus persist to comprise the background itself. Harmonic plateaus offer a way to discuss pieces in which two or more structural tonics may be heard and understood as equally weighted and influential. In this period of composition (1959–1963), Shorter combines features of modal jazz (utilizing nonfunctional progressions and devoting several consecutive measures to a single chord) and the bebop language (notably in the use of ii–V pairs and in the generally brisk harmonic rhythm overall) while developing such aspects as unexpected chord qualities, nontonal compositions, and unusual phrase lengths and forms to add his own harmonic contributions.

## Abstract

This essay discusses two pieces by jazz saxophonist and composer Wayne Shorter and examines harmonic regions that serve as plateaus in a composition. The word “plateau” has been selected for its metaphorical strength in communicating a place of rest and consequence. Each plateau influences the structure of the composition and is well established, either through a conventional, functional progression or through another means of prominence. In the former instance, such plateaus are referred to as “tonal plateaus,” in the latter, “prominence plateaus,” while both types belong to the overall category of harmonic plateaus. One compositional method practiced by Shorter is that of employing plateaus to organize harmonic relations. In “Powder Keg,” successive harmonic plateaus with roots a descending third apart initially appear equally autonomous and influential. Upon the arrival of the final chord of the head, the preceding plateaus are recognized as a series of tonicizations of the chord members of this Eb-9 sonority, effecting a linear presentation of the vertical tonic chord. The plateaus are then understood hierarchically as they relate to the home key of the piece. The structure of “El Toro” comprises an equality of four

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<sup>32</sup>I would like to thank Steve Larson for reminding me that the third relations in “El Toro” might reflect not only Coltrane’s influence (e.g., as found in “Giant Steps”) but also the major third relations found in the bridge to “Have You Met Miss Jones” by Rodgers and Hart.

keys with no sonority or tonal region exhibiting fundamental influence over the composition as a whole. The harmonic (tonal) plateaus in “El Toro” do not reveal themselves to be part of a larger tonal scheme, but instead are self-sufficient and irreducible. Thus within the tonal plateaus are functional harmonic relations used to establish the various keys, while the nonfunctional relations between the plateaus result in a nontonal composition.

## CHAPTER 2 Wayne Shorter

Wayne Shorter was one of the most prolific jazz composers of the 1960s, and his compositional career continued another half century. Between 1959 and 1964 he recorded as a leader, with Art Blakey and the Jazz Messengers, Lee Morgan and Thad Jones, and Wynton Kelly, and copyrighted fifty-three compositions (now contained at the Library of

Congress).<sup>1</sup>) In many ways, Shorter's sixteen compositions recorded by Miles Davis's Second Classic Quintet from 1965 to 1968 helped engender the quintet's open sound on their studio recordings. In addition, he wrote most of the compositions for a series of eleven significant *BlueNote* albums made under his own name from 1964 to 1970.

Regarding Shorter's compositional predecessors:

Finally, while it is difficult to itemize specific compositional influences on Shorter, it is possible to speak of shared compositional priorities with other jazz composers. Certainly a motivic focus and nonstandard harmonic progressions also apply generally to the compositions of Thelonious Monk. The use of blues-based or minor pentatonic melodic motives recalls the compositions of Charles Mingus and John Coltrane. In addition, Booker Little's compositions, written between 1958 and 1961, show a similar interest in forms outside AABA and ABAC frameworks, unusual section lengths, and a harmonic language that makes use of hard bop progressions alongside more unusual and ambiguous progressions.<sup>2</sup>

Shorter's compositions are intriguing, elusive, and often harmonically ambiguous. The earlier works often rely on strong, memorable melodic motives supported by harmonic progressions that, while rooted in the hard bop tradition, nevertheless frequently move in unconventional ways that defy cliché. For example, "Sakeena's Vision" (Art Blakey and the Jazz Messengers, *The Big Beat*; see Discography for more information) resolves to its final G minor harmony through Fm7 to E7; "Sincerely Diana" (Blakey, *A Night in Tunisia*) moves to its final B $\flat$  minor harmony via a ii-V progression, D $\flat$  m7 to G $\flat$  7, a half-step above the usual cadential progression to B $\flat$ . Many of Shorter's early works make use of ii-V (or ii-V') progressions that resolve unusually. Often, Shorter uses pedal point harmonies or slower harmonic rhythm to distinguish sections of AABA compositions: "One by One" (Blakey, *Ugetsu*), "This Is For Albert" (Blakey, *Caravan*), and "Yes and No" (Shorter, *JuJu*) rely on pedal point (and slower moving) harmonies during the A sections, while the B sections provide a release with more active harmonic and melodic motion.

There are ways in which Shorter's compositions after 1964 differ from the 1959–1963 compositions. Some ("Masqualero," from Miles Davis, *Sorcerer*) rely on the slower harmonic rhythm typically associated with modal jazz.

Others (“Witch Hunt,” Shorter, *Speak No Evil*) contrast sections of slower harmonic rhythm with sections that offer a more consistent and regular harmonic rhythm. Most, however, rely on a more regular harmonic rhythm similar to other postbop compositions discussed in this book. Like the earlier works, the works recorded after 1964 still rely on clear evident melodic motives, either using one primary motive (“Infant Eyes,” from Shorter, *Speak No Evil*; “Footprints,” Shorter, *Adam’s Apple*; “Fall,” Miles Davis, *Nefertiti*; “Dolores,” Davis, *Miles Smiles*) or two (“Deluge,” “House of Jade,” “Mahjong,” all three from Shorter, *JuJu*; “Limbo” and “Prince of Darkness,” both from Davis, *Sorcerer*; “Pinocchio,” Davis, *Nefertiti*). These later works continue Shorter’s trend of writing single-section compositions, either with 16-bar or with less regular formal sections. Nearly all Shorter’s compositions written for the Miles Davis Quintet are single-section compositions: “Pinocchio” is 18 bars, “Dolores” is 22 bars, “Vonetta” (Davis, *Nefertiti*) is 15 bars and includes a 5/4 measure. Some conventional song forms (AABA, ABA, AA’BA) use sections that do not always adhere to 8-bar groupings.<sup>3</sup> Stylistically, they range between standard walking bass 4/4 feels at different tempos, ballads, jazz waltzes, funky jazz tunes, and more freely conceived compositions (such as those heard on *The All-Seeing Eye*).

The chapter begins with a consideration of features of some of Shorter’s earlier works, in particular the use of axis progressions in “Children of the Night” (Blakey, *Mosaic*) and “El Toro” (Blakey, *The Freedom Rider*), as well as elasticized phrases in “Virgo” (from *Night Dreamer*, Shorter’s first Blue Note recording). A discussion of “Penelope” (Shorter, *Etcetera*) and “El Gaucho” (Shorter, *Adam’s Apple*) follows: harmonically, formally, and stylistically those two compositions diverge, but they nevertheless both begin with the same melodic phrase, offering a window into Shorter’s reharmonizations of similar melodic material. Shorter recorded “Pinocchio,” an 18-bar single-section composition, with the Davis Quintet (*Nefertiti*). The final composition discussed in the chapter is “Face of the Deep” (*The All-Seeing Eye*), written for four horns and rhythm section, which uses an extended harmonic language largely based on upper structure triads above bass pitches.

## SOME PRELIMINARIES: EARLIER WORKS

“Children of the Night.” Ultimately it is difficult to summarize or condense Shorter’s rich and varied compositional output.<sup>4</sup> Certainly even Shorter’s early works reflect a deep fascination with principles that were to shape many of his 1960s compositions. His “Children of the Night,” recorded with Blakey (*Mosaic*, 1961), involves both pedal point progressions as well as a m3 axis progression. It begins by alternating F#m7/B (or Bsus11) with GM7(#11)/B in mm. 1–8. The use of the latter harmony creates an Aeolian progression (since GM7(#11)/B inflects the pitches of B Aeolian), a progression that also appears in a number of Hancock compositions. (See chapter 3.) Following, mm. 9–13 move along a m3 axis with intervening ii-V progressions (EbM7/Dm7 G7/CM7/Bm7 E7/AM7). The melody is sequential, transposed down by m3 in accord with the harmony. The composition’s closing progression (DM7 C#m7 F#7 BM7) recalls the m3 axis progression. Here the melody is not sequential, but relies on a common tone (F#, decorated with G) to link the m3-related harmonies. Shorter often relies on both melodic techniques—sequential melody or common-tone melodic connections—for axis progressions.



In other cases, chromatic voice-leading (a half-step melodic shift that coincides with a change of harmony) supports such harmonic progressions. “El Toro.” Shorter’s most thorough exploration of axis progressions appears in “El Toro” (Art Blakey and the Jazz Messengers, *Freedom Rider*), which systematically takes up the M3 axis principles of Coltrane’s “Giant Steps.” The relationship to Coltrane’s “Giant Steps” is unmistakable.<sup>5</sup> Like “Giant Steps,” it is a 16-bar composition, and—characteristic of many Shorter compositions—it is a single-section composition (without repeated internal sections or a bridge).<sup>6</sup> In “El Toro,” however, the M3 processes operate alongside others, particularly those at mm. 1–4 that establish D minor, and set up a large scale tonal motion from D minor (expressed with a functional harmonic progression) to D  $\flat$  major (maintained through downward motion along a M3 axis).

Despite the relationship to “Giant Steps,” there are nevertheless aspects of its design that challenge an evident 8 + 8 design and create formal wrinkles that provide some ambiguity. The result creates a sense of metric elasticity, a hallmark of many Shorter compositions, including both those with 4- and 8-bar groupings, as well as those with less-regular phrase groupings.

A lead sheet for “El Toro” appears as Example 2.1.7 The opening 4-bar phrase in D minor is answered by a harmonic shift to D  $\flat$  major in mm. 5–7. The second half of the composition tonicizes a series of M3-related major seventh chords (shown by asterisks in the example), moving from A (m. 9), to F (m. 11), and to D (m. 13). Measure 15 returns to A. Like mm. 8–15 of “Giant Steps,” the mm. 8–15 harmonic  $\flat$  sequences of “El Toro” appear every two bars. Also like mm. 8–15 of “Giant Steps,” the tonicized M3-related chords occur on strong measures (i.e., the odd-numbered measures), and the intervening ii-V progressions on weak measures (i.e., the even-numbered measures). Unlike mm. 8–15 of “Giant Steps,” the harmonic contour of the 2-bar sequences descends rather than ascends.<sup>8</sup>

**Example 2.1. Lead Sheet to “El Toro”**

(trumpet, tenor saxophone)

The musical score is written in 4/4 time and consists of four staves of music. The first staff (measures 1-4) features chords Dm9, F7, Em7(b5), and A7. The second staff (measures 5-8) features chords Ebm7, Ab7, DbM7, Bm7, and E7. The third staff (measures 9-12) features chords AM7\*, Gm7, C7, FM7\*, Ebm7, and Ab7. The fourth staff (measures 13-15) features chords DbM7\*, E7, and AM7\*, followed by a first ending (Fm7 Bb7) and a second ending (Fm7 Bb7).

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Along with the M3 axis harmonic progression, there is a 2-bar melodic sequence also transposed downward by M3, beginning at m. 8 and continuing until m. 13 (the melodic sequence is varied in m. 12), with # 4-5 melodic motion above the M7 harmonies (D # - E, m. 9, B-C, m. 11, G-G #, m. 13). Further, while m. 13 advances the melodic # 4-5 motion (against the bass) heard in mm. 9 and 11, it does so more leisurely, as the G # holds across mm. 14–15, becoming the common tone with the AM7 harmony at m. 15.

By foreclosing the melodic sequence at mm. 14–15, Shorter abandons the patent 8 + 8 measure design heard in “Giant Steps” in those same measures. Further, this points to a wrinkle that projects a decided degree of formal ambiguity. The melodic cadence to G # anticipates the sixth bar of the 8-bar subsection, appearing just before m. 14. Its placement works against song-form traditions, which typically locate the melodic cadence at the point of tonic arrival, usually two bars before the end of the composition (or in the final bar of the composition if the return to tonic appears there, as with 32-bar compositions based on rhythm changes).

Thus the harmonic cadence to AM7 in bar 15 resonates with tonal jazz practice (occurring two bars before the end of the composition), but the melodic cadence is not coordinated with it, and appears one bar earlier than where the melodic cadence normally occurs in song forms. As a result, the melodic arrival (to G #, anticipating m. 14) is out of phase with the harmonic arrival (to AM7, m. 15).<sup>9</sup> (Shorter used a similar effect in his later 16-bar composition “Nefertiti,” whose melodic cadence occurs in the same location, anticipating m. 14 by an eighth note.) Further, the shift to walking bass occurs in m. 8, skewing the sense of 8 + 8 measure regularity. The underlined harmonies in Example 2.2 are intended to show how those features crosscut the 8 + 8 design, beginning with the shift to walking bass (m. 8) and ending with the melodic cadence arriving one bar early (anticipating m. 14).

**Example 2.2.** Harmonic Progression to “El Toro” (Walking bass begins m. 8, melodic cadence anticipates m. 14)

Dm7	F7	Em7(♭5)	A7	E♭m7	A♭7	D♭M7	<u>Bm7 E7</u>
m. 1	2	3	4	5	6	7	8*
<u>AM7</u>	<u>Gm7 C7</u>	<u>FM7</u>	<u>E♭m7 A♭7</u>	<u>D♭M</u>	E7	AM7	Fm7 B♭7
<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	14**	15	16

\* = Begins walking bass

\*\* = Melodic cadence (anticipated by eighth note; appears one bar earlier than harmonic cadence)

This provides much of the intrigue and ambiguity of the composition, particularly in its second half. Gone is the systematic etude-like 8 + 8 regularity of “Giant Steps.” Hearing the composition this way highlights the manner in which Shorter weaves formal asymmetry into the regular 16-bar form during the head statements.

Wayne Shorter (b. 1933) has been a major presence in the jazz world since the late 1950s, rising to prominence as a composer and saxophonist, first in the Art Blakey band, which he joined in 1959, and then in the Miles Davis "second quintet," which he joined in 1964. During this period, Shorter contributed significant repertory to both groups with pieces that were challenging and influential while also making his first recordings as a leader. Moreover, he expanded the resources of jazz composition by regularly incorporating the techniques of modal jazz into a harmonic palette that weaved functional and nonfunctional progressions against a formal backdrop whose overall tonality might be unclear or lacking entirely. Adding further interest was his occasional use of irregular forms, which obfuscated the four-, eight-, sixteen-, and thirty-two-measure hypermetrical structures typical of jazz tunes before 1960.

In this article, I examine four of Shorter's compositions from the 1960s by applying analytical techniques based on voice leading, prolongation, and structural levels, which have proven fruitful in previous study of the jazz repertory.<sup>1</sup> Furthermore, in focusing on voice leading and prolongation, my article builds on prior publications<sup>2</sup> that make use of these methods to explore both the tonal jazz repertory and John Coltrane's middle-period compositions. Broze and Shanahan, in a corpus study of jazz harmony over a period of decades, found that during the 1950s, and in particular 1956, there was a significant transformation of tonal norms.<sup>3</sup> The four compositions of Shorter that I discuss illustrate elements of this transformation, in which analysis by voice leading and prolongation becomes progressively less convincing as various tonal norms are less in evidence.

The "jazz repertory" can be thought of as comprising two main divisions: small-scale works written or selected for improvisation, and larger-scale works, such as Duke Ellington's *Black, Brown, and Beige*. While this dichotomy is deserving of fuller explication and study, my immediate concern is with four of Shorter's smaller-scale works, which are all "tunes" or "heads" composed for improvisation.<sup>4</sup> A difficult problem in discussing a work from this more informal side of the jazz repertory is deciding what "is" the work in question. These works often exist in multiple forms, arrangements, and performances because jazz musicians and performers in popular formats readily change and adapt the works to specific circumstances. Parts may be revised on the fly, and, although original manuscripts (when available) are surely pertinent, they may vary significantly from actual performances.<sup>5</sup> (We shall encounter such a case below in the discussion of Shorter's "Iris.") Rather than considering this issue at length, as its scrutiny deserves full consideration and would sidetrack us from the main theme of this essay, I adopt Strunk's view that the most authoritative version of a piece is its recording.<sup>6</sup> In a given recording, the tune or head being improvised on, however, is often referred to casually as the "piece," particularly when the following desiderata are present: the recording is an early one (if not the first) of the piece in question, it is well known, and the composer participates in and ideally directs the recording. The Shorter pieces studied in this article satisfy these criteria (although Shorter was music director only on "Face of the Deep"), so I rely principally on transcriptions of the premiere recordings.

Prolongational techniques, which underlie Schenkerian analysis, are sometimes thought to be tangential to the practical concerns of jazz musicians, but they are, in fact, tools that jazz musicians use frequently. For example, the basic harmonic structure of the blues amounts to a higher-level outline that can be seen to motivate a more complex chordal surface, as in, for

example, Charlie Parker's "Blues for Alice" or the superimposed harmonies of a Coltrane improvisation. George Russell implies a similar level distinction in his comparison of Coleman Hawkins to Lester Young, with the former catching all the chords and the latter functioning as an "express steamer" that stops at only the more significant harmonic landmarks.<sup>7</sup> Thus, musicians implicitly use prolongational concepts when they compose or reharmonize tunes and either simplify the changes or superimpose new harmonies via improvisation.

Analysis through voice leading and prolongation provides a comprehensive way to examine pieces in the repertory, enabling more convenient comparisons among performers, revealing stylistic evolution, and clarifying issues in tonality and form. It may also help uncover fascinating internal subtleties of the compositions themselves. In particular, such analysis enables us to observe the clear tonalities of virtually all pre-1950s jazz evolve into a practice that by the 1960s no longer presumes the presence of a key.<sup>8</sup>

Because this article builds on previous work, let me begin with a brief summary. [Martin \(2011\)](#) analyzes classic jazz and popular standards, that is, tunes mostly written before 1950. These pieces are all clearly tonal, but in dealing with them via voice leading and prolongation, modifications to Schenkerian theory were suggested that seem to accord more closely with their stylistic vocabulary. A summary of primary lines in this repertory appears in [Example 1](#). The controversial point here is an expansion of the three Schenkerian *Ursätze* to accommodate the tunes' stylistic tendencies.<sup>9</sup> [Martin \(2012–13\)](#) explores the compositions of John Coltrane's middle period in the late 1950s and early 1960s, in which harmonic progressions are not always functional and often feature thirds progressions. Some of the results of that study correlate well with the Shorter tunes examined here, and, hence, I reserve reference to this work until the latter part of this article.<sup>10</sup>

- A. Diatonic, scalar descents to  $\hat{1}$  from triadic tones (Schenkerian) – widely found
- B. Diatonic, scalar descents to  $\hat{1}$  from non-triadic diatonic tones
- C. Diatonic, scalar ascents to  $\hat{1}$
- D. Diatonic neighbor or double-neighbor motions to  $\hat{1}$
- E. Arpeggiated or partially arpeggiated descents to  $\hat{1}$  (gapped structural lines)
  - 1. from triadic tones and blue thirds
  - 2. from non-triadic tones other than blue thirds
- F. Arpeggiated or partially arpeggiated ascents to  $\hat{1}$  (gapped structural lines)
- G. Chromatic neighbor or double-neighbor motions to  $\hat{1}$
- H. Expanded neighbor motions as change-of-direction prototypes

EXAMPLE 1. Background forms in the standard jazz repertory ([Martin 2011](#), 16–17)

Prolongation by arrival, or PBA, is a technique first proposed in [Martin \(1980\)](#) that has proven useful in analyzing jazz tunes.<sup>11</sup> The four- and eight-measure formal segments that are among the most salient features of tunes intended for improvisation generate the conditions for PBA. The basic idea is that we hear the harmonies set up at the end of four- and eight-measure segments as prolonged *backward* through the segment. This is because we learn to expect the arrival of those harmonies on the basis of the metrical regularity of the four- and eight-measure units and, often, by the predictable flow of the chord progression. The initial chord of a given four- or eight-measure unit, which receives hypermetrical emphasis from its placement in the form, may also be prolonged at a higher level, depending on the circumstances of the progression. Harmonic arrivals (cadences or tonicizations, for example) at mm. 3 or 4 of a four-measure unit, mm. 7 or 8 of an eight-measure group, and mm. 15 or 16 of a sixteen-measure group often prove significant. Because the pieces I discuss below were created for improvisation, they are usually repeated cyclically in the course of the performance. The periodic return of the regular four- and eight-measure units reinforces the effect of PBA and the harmonies are thus prolonged at various structural levels. Although PBA is generally created by harmonic flow and formal regularity, immediate voice-leading and tonal circumstances may influence how it is applied to a specific work. Prolongation by arrival helps to expand the possibilities of what are considered to be prolonging progressions.

[Example 2](#) shows how prolongation by arrival can be created by the harmonic and formal regularity of an eight-measure period. Staff **d** has the chord changes of the popular standard "Autumn Leaves."<sup>12</sup> At staff **c**, the  $II^7-V^7-I$  progressions of the bottom staff reduce to  $V^7-I$  progressions. At level **b**, we see the tonicized G-major and E-minor chords, and at staff **a**, we see the overall key of E minor, a chord that is prolonged by the chord changes, but heard only when tonicized at m. 7 of the eight-measure period. We hear E minor as the key of the piece because of its position relative to the tonicized G major as completing the eight-measure period: G major is first heard as I, but then is understood as III at the period's completion when E minor emerges as i. The G-major III is a standard substitute for i, and hence, at level **a**, we retrospectively hear an E-minor tonic prolonged throughout the eight-measure span. The tonicization of E minor at m. 7 takes precedence at the eight-measure level over the tonicization of G major at m. 3. As the harmonies repeat during improvisations, the E-minor tonic of this section is confirmed.<sup>13</sup>

In [Example 2](#), I have aligned the prolonged chords with hypermetrical downbeats and will largely continue to do so, although in specific analyses that depict voice leading, it may be preferable to align prolonged chords at the points of arrival (such as the E-minor tonic over m. 7, as it appears at levels **d** and **c**). That is, the placement of the prolonged chords on deeper structural levels is flexible, depending on voice leading and the import of the argument. Here, for example, showing E minor over m. 1 at level **a** supports the idea of the entire section giving rise

to E minor.

EXAMPLE 2. Prolongation by arrival in “Autumn Leaves”

[Example 3](#), another instance of how PBA can be applied, shows the eight-measure unit that begins the refrain of the jazz standard “Sweet Georgia Brown,”<sup>14</sup> which begins chromatically with a  $V^7/ii$  chord (D7), then proceeds through the circle of fifths to the tonic F major at the end of the span, again in m. 7 of the eight-measure unit. The pattern of cycling dominant sevenths, which is quite common in American popular music, suggests that intermediate levels of prolongation may not be relevant, so level **a** shows the entire eight-measure span as prolonging F major.<sup>15</sup> Again, I place the prolonged F major over m. 1 of level **a** to show its effect through the eight-measure span; however, an analyst may prefer to emphasize the arrival point at m. 7.

EXAMPLE 3. Prolongation by arrival in “Sweet Georgia Brown”

[Example 4](#), an excerpt from Shorter’s “El Toro,” shows how PBA can be expanded to include chord patterns that are not based on the circle of fifths but are, arguably, still prolongational. The piece is a sixteen-measure composition that divides into two eight-measure units. In the example, level **d** begins at m. 7, in which D $\flat$  major has just been tonicized. Measure 8 has a Bm7–E7 progression that is a pickup to A major at the downbeat of the hyperbar at m. 9. This Bm7–E7–A progression continues a series of  $ii^7-V^7-I$  progressions with tonics linked by major third: A major, F major, D $\flat$  major, and A major again at m. 15.<sup>16</sup> Within the second eight-measure span

(mm. 9–16), the arrival of A major at m. 15 would seem to be a point of emphasis, analogous with the tonicizations seen at m. 7 of "Autumn Leaves" and "Sweet Georgia Brown." Hence, the pattern of major-third progressions at level **b**, isolated from the first eight measures, can be seen as prolonging A major at level **c** through the entire eight-measure unit of mm. 9–16. And yet, as I will argue when the work as a whole is analyzed below, other factors suggest it may be preferable to hear this section in D $\flat$  major rather than in A major.

Example 4 consists of four staves (a, b, c, d) representing different levels of harmonic analysis for measures 7 through 16. Each staff shows a sequence of chords with a slash through them, indicating they are not to be played. Staff a: D $\flat$ maj7 (measures 7-8), A maj7 (measures 9-14), A maj7 (measures 15-16). Staff b: D $\flat$ maj7 (measures 7-8), A maj7 (measures 9-10), F maj7 (measures 11-12), D $\flat$ maj7 (measures 13-14), A maj7 (measures 15-16). Staff c: D $\flat$ maj7 (measures 7-8), E7 (measure 9), A maj7 (measure 10), C7 (measure 11), F maj7 (measure 12), A $\flat$ 7 (measure 13), D $\flat$ maj7 (measures 14-15), E7 (measure 16), A maj7 (measure 16). Staff d: D $\flat$ maj7 (measures 7-8), B m7 (measure 9), E7 (measure 10), A maj7 (measure 11), G m7 (measure 12), C7 (measure 13), F maj7 (measure 14), E $\flat$  m7 (measure 15), A $\flat$ 7 (measure 16), D $\flat$ maj7 (measures 17-18), E7 (measure 19), A maj7 (measures 20-21), (F m7 B $\flat$ 7) (measures 22-23).

EXAMPLE 4. Prolongation by arrival in "El Toro"

Application of PBA becomes less convincing as works depart from the regularities observed in these three examples. While the analysis of the first tune examined, "El Toro," does use PBA, the remaining discussions of the Shorter pieces in this article rely on it less conspicuously. The inference of a series of structural levels via PBA depends on the clarity of the four- and eight-measure hypermetrical units in which the chord progressions follow predictable or at least comprehensible patterns. As noted, the tonal and melodic factors that vary from piece to piece will affect how PBA may be understood and applied. Still, the basic idea of PBA may be grasped from analysis of the harmonic voice leading implied by the chord progressions alone, as summarized in [Example 5](#).

Example 5 shows three examples of composing-out harmonies in PBA. Example a: Autumn Leaves (Em: III, i). Example b: Sweet Georgia Brown (F: V7/ii, V7/V, V7, I). Example c: El Toro (A: I7, —, —, I7).

EXAMPLE 5. Composing-out harmonies in PBA



In [Example 5\(a\)](#), the first eight measures of "Autumn Leaves" show the initially tonicized G as a prefix to the tonic E minor; E minor, as a result, would be advanced to the next level. The chord changes, based on the diatonic circle of fifths, not only culminate in E minor, but the hypermetrical placement of this tonic in relation to G major also strengthens the inference. In [Example 5\(b\)](#), the first eight measures of "Sweet Georgia Brown," the converging cycle of dominant sevenths prolongs F major, the tonic that would be advanced to the next level. Here the circle-of-fifths progression is chromatic. [Example 5\(c\)](#), "El Toro," shows a cycle of third-related harmonies as prolonging AM7, which would be advanced to the next level. Although the FM7 and D $\flat$ M7 chords do not exhibit traditional tonal function in relation to A major, the sequential pattern of tonicized downbeats that can be connected by smooth voice leading within the eight-measure span (mm. 9–15) allows the inference of prolongation.

If the progressions and time spans are sufficiently unpredictable or if the chords themselves are non-standard, then the harmonies will not exhibit prolongational interrelationships amenable to analysis via PBA. If other prolongational strategies, with or without PBA, also seem ineffective, then salience might be the only basis for any potential positing of structural levels.<sup>17</sup> This is evident in the last analysis, "Face of the Deep," but the slippery slope leading to this situation will be observable as the analyses proceed.<sup>18</sup>

## EL TORO

[Example 6](#) shows an analysis of the first of the four tunes that we'll consider, "El Toro."<sup>19</sup> This work was likely influenced by Coltrane's "Giant Steps," since much of it is based on tonicizations related by major third.<sup>20</sup> The tune and its chord changes appear at level **g**. What is unclear about the tune tonally is that it begins in D minor but ends ambiguously. The tune's clear rhythm, harmonic patterns, and four-measure phrase structure make it a good candidate for analysis by PBA.

The image displays a musical score for the piece "El Toro" by Wayne Shorter. It consists of seven staves, labeled 'a' through 'g'.  
 - Staff 'a' shows the key signature: one flat (D minor).  
 - Staves 'b' through 'f' show the harmonic progression with various chords and melodic lines. Some chords are circled, indicating specific harmonic relationships.  
 - Staff 'g' shows the chord progression: Dm9, F7, Em7(b9), A7, Ebm7, Ab7, Dbm7, Bm7, E7, AM7, Gm7, C7, FM7, Ebm7, Ab7, Dbm7, E7, AM9, Fm7, Bb7.  
 - The score includes a bass line and a treble line for each staff, with various musical notations such as notes, rests, and accidentals.

EXAMPLE 6. "El Toro" (*The Freedom Rider*, Blue Note BLP4156, 1961)

Although the first four measures of "El Toro" are in D minor, its second four measures tonicize D $\flat$  major. At the second half of the tune (beginning at m. 9), the relationship to "Giant Steps" becomes clear, with tonicizations every two measures related by major thirds; that is, A major at m. 9, F major at m. 11, D $\flat$  major at m. 13, and A major at m. 15. The melodic sequence is abandoned in m. 12 at the II–V of D $\flat$  major, but the harmonic sequence continues to A major at m. 15 to complete the cycle (as observed previously in [Exx. 4](#) and [5\[c\]](#)).<sup>21</sup> The A major at either end of the cycle in the tune's second half could be seen as a weak dominant of D minor, thus motivating the D minor at the tune's beginning upon repeat. Although the AM7 chords are not dominant-seventh chord types, one of Strunk's insights into Shorter's harmony in general is that standard root motion for chord progressions may be maintained but with the chordal type associated with the progressions altered ([Strunk 2005](#), 305).

Ultimately, however, the A major that connects m. 9 to m. 15 is undercut by the priority given to D $\flat$  major in the tune.<sup>22</sup> This is clearest at level e of [Example 6](#), which shows the tune's harmonic outline. There, we see the opening D-minor move to its dominant V<sup>7</sup> at m. 4 before D $\flat$  major is tonicized in m. 7. Hence, the first half of the tune, mm. 1–8, proceeds from D minor to a tonicization of D $\flat$  major before the second half begins at m. 9. The harmony then proceeds from D $\flat$  at m. 7 via tonicized major thirds, that is, A major over m. 9, F major over m. 11, and the culmination of the cycle at D $\flat$  major over m. 13. Measure 13 may also be considered the

cadential end of the tune, with the four-measure unit in mm. 13–16 (which includes the harmonic cycle's completion to A major) acting as a turnaround to the tune's beginning. Not only does the tune come to rest on  $A\flat_4$  (mm. 13–15), but its approach is also emphasized through change of melodic sequence: in place of descending fourths in pairs of measures ( $A_5$ – $E_5$  in mm. 8–9 and  $F_5$ – $C_5$  in mm. 10–11), we hear  $B\flat_4$ – $A\flat_4$  (mm. 12–13; in place of  $D\flat_4$ – $A\flat_4$ ). Further emphasis is given to the  $A\flat_4$  through the change in syncopation ( $E_5$  and  $C_5$  are on the "and" of beat 2, whereas  $A\flat_4$  is on the "and" of beat 4).

Level **d** shows the opening D minor connecting to  $D\flat$  major over m. 7 and revoices the major-thirds section in the second half to clarify the prolongation of the high  $A\flat$ . At level **c**, we see the large-scale thrust of the tune as D minor to  $D\flat$  major and the final tonicization of A major (over m. 15) as connecting back to D minor at the top. Note that D minor appears only in the first four measures of the tune, whereas the rest of the tune supports  $D\flat$  major. Level **b** presents the tune as based on a progressive (or "directional") tonality that moves from D minor to  $D\flat$  major, with D minor as prefix. On repeated choruses, the tune alternates these tonalities at level **b**. At level **a**, PBA shows the tune proceeding from  $D\flat$  major, which then generates the progressive tonality of the **b** level.

At level **f**, we see all the chords of the piece, and, at this more foreground level, the turnaround in mm. 13–16 is interesting. After the tonic  $D\flat$ , the tonicization of A major is followed by an  $Fm7$ – $B\flat7$  progression in m. 16. This II–V progression is common in jazz, but here it is not the II–V of D minor, the tonality of the tune's opening. Rather, this  $B\flat7$  chord can be seen as a "cadential augmented-sixth chord" in D minor that proceeds directly to the tonic at the beginning of the tune. This progression is intriguing and worth pausing over to view in further detail.

The cadential augmented-sixth chord, a harmony theorized by Reese,<sup>23</sup> occurs at the end of "El Toro" and in other Shorter compositions as well. [Example 7\(a\)](#) shows a standard augmented-sixth chord as a predominant, designated as  $PD + 6$ . In [Example 7\(b\)](#), the dominant chord is omitted from the progression. Instead, the augmented sixth proceeds directly to the tonic, and this is the usage that Reese has called the cadential augmented-sixth chord. The augmented sixth here loses its usual dominant-preparation function by substituting for the dominant. Found also in Romantic and Impressionist music, this chord has also been called a common-tone augmented sixth, but Reese's analysis emphasizes the weakened functionality of the progression when it occurs at cadences. In [Example 7\(c\)](#), we see a substitute II–V–I progression commonly found in jazz. The  $E\flat9(\sharp 11)$  chord is a tritone substitute of the dominant seventh, or  $A7$ . The  $B\flat7$  can be read as a  $V^7$  of the  $E\flat7$  chord, that is,  $V^7/\text{sub}V$ . However, it can also be understood as a predominant augmented sixth that would normally resolve to  $A7$ . In [Example 7\(d\)](#), the dominant is omitted, so that the  $B\flat7$  becomes a cadential augmented sixth—the progression seen in m. 16 of "El Toro." (In [Ex. 7\(e\)](#), the same progression is shown in  $E\flat$  minor—a progression that we will later see in Shorter's "Pinocchio.") By substituting for the dominant, the cadential augmented-sixth chord weakens arrival at and establishment of the tonic.

a. Predominant +6    b. Cadential +6    c. B $\flat$ 7 Eb9(#11) Dm9    d. B $\flat$ 7 Dm9    e. B13(#11) Ebm $\bar{9}$

CM: PD+6 V    CM: Cad+6 I    Dm: PD+6 subV7 i or V7/subV    Dm: Cad+6 i    Ebm: Cad+6 i

EXAMPLE 7. Cadential augmented-sixth chords (a. and b. from [Reese 2013](#), 6)

Returning to the issue of prolongation in “El Toro,” I note that Julien in her discussion of the tune asserts that a monotonal understanding is not justified, but rather that the work’s four keys are D minor, A major, F major, and D $\flat$  major, an interpretation that can be seen at level **d** of [Example 6](#).<sup>24</sup> Waters, on the other hand, in his discussion of “El Toro” (2010, 142–46) arrives at two tonal centers: D minor and D $\flat$  major, an interpretation that appears at level **b** of [Example 6](#). Waters does not read D $\flat$  major in relation to the opening D minor, but rather conceives of them as “. . . those two primary keys. . .” (2010, 146).

The tonal viewpoints of Julien and Waters on levels **d** and **b** are certainly possible, yet I think level **a** is also defensible, i.e., that D $\flat$  major can be understood as generating the piece from a monotonal perspective. [Example 8](#) shows a hypothetical reconstruction of the tune. The first four measures are transposed a half step down to D $\flat$  minor, a change that clarifies the underlying D $\flat$  tonality that I am arguing for.<sup>25</sup> My reconstruction of “El Toro” in [Example 8](#) is aesthetically questionable, since the primary line seems stuck on A $\flat$ . Hence, Shorter’s composition, with the first four measures in D minor, is preferable to a consistent but humdrum D $\flat$  major. Nonetheless, the reconstruction does show how the piece can be generated from D $\flat$  major: the brief, rhythmic, and strophic nature of the work and a reading via PBA allow us to posit D $\flat$  major at the background from which the more foreground harmonies of the piece develop.

D $\flat$ m9 E7 E $\flat$ m7(b5) A $\flat$ 7 E $\flat$ m7 A $\flat$ 7 D $\flat$ M7 Bm7 E7

A M7 G m7 C7 F M7 E $\flat$  m7 A $\flat$ 7 D $\flat$  M7 E7 A M9 F m7 A $\flat$ 7

EXAMPLE 8. “El Toro” normalized

Whether level **a**, **b**, or **d** of [Example 6](#) best captures the tonal landscape of the piece depends on how strongly the force of PBA is understood to generate harmonic prolongation at the middleground. Given the expectations in this literature, I find it more reasonable to hear a single background tonality because this norm underlies a short, regular, rhythmic, four-measure-based form, and because the higher levels can be generated from level **a** so readily. Further, as the work cycles, the D-minor-to-D $\flat$ -major shift "settles in," allowing one more easily to hear the D minor as a prolongational prefix.

The tonal issue of "El Toro" is distinct from the phenomenon, frequently encountered in jazz and popular music, of beginning a song in one key, then moving to other keys as part of the arrangement. The initial key may be changed for one that better accommodates a vocalist, or to provide a "lift," more variety, or more excitement as the arrangement proceeds. In ragtime, we encounter a related procedure, as the Trio is usually in the key of the subdominant relative to the original key, which is typically abandoned. And, of course, ragtime adopted this form from the march and other popular multi-strain forms of the nineteenth century, such as the concert waltz. These forms were very popular with the public, showing that various strategies for achieving coherence can function in place of large-scale monotonicity. One can even think of such pieces as a series of tunes—a medley—whose keys have no large-scale relationship. The ear readily accepts each key in turn, and tonal comprehension takes place at the level of the individual tune or strain.

In such cases as rags, marches, or multi-key arrangements of songs, it is also reasonable to claim that there is no overall tonic. Alternatively, one could argue that the final key functions as such, i.e., that PBA is operative at the level of the form. Under this model, the earlier key would be considered a prefix to the final tonic rather than the final tonic a suffix to the earlier key. In ragtime, for example, it would mean that the early strains function like a large-scale dominant to the tonic of the Trio. I think such a view may be defensible, as I have frequently listened to marches or rags and found myself looking forward to the tonality settling into the final key, which does feel to me like a tonic arrival. But what I claim for PBA within a jazz tune depends more on prolongational relationships, meter, and small-scale form rather than precedence given to a key simply from its placement alone. The nested levels—perhaps culminating in a single key—that can be inferred from a brief, rhythmic, and strophic piece based on four- and eight-measure phrase groupings seem more convincing than a diffuse medley of different tunes or strains. Such regularity is surely present in "El Toro": it is rhythmic, with four four-measure phrases that are readily audible and, upon repetition, become predictable. Hence, its sixteen-measure strophic form allows us to internalize and develop expectations in which we can claim for it to be in four keys at level **d** and two keys at level **b**, but generated from a single key at level **a**. . . .

## Footnotes

1 Many studies have applied the techniques associated with the work of Heinrich Schenker to the jazz repertory. Publications based directly on Schenkerian principles include [Stewart \(1974/1975\)](#); [Larson \(1996, 1998, 2009\)](#); [Heyer \(2012\)](#); and [McFarland \(2012\)](#). Studies influenced by Schenker include [Strunk \(1979\)](#); [Martin \(1988, 1996, 2011, 2012–13\)](#); [Julien \(2003, 2009, 2011\)](#). The two immediate predecessors of this article are [Martin \(2011\)](#) and [2012–13](#), references to which will appear in the course of the article.

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2 Important studies of Wayne Shorter have appeared in the publications of Patricia Julien, Keith Waters, and Steve Strunk, and my work builds on their many insights. [Julien \(2003\)](#) analyzes the harmony of a selection of Shorter's early compositions by extending Strunk's method of viewing bebop harmony on the basis of structural levels and transformations. Julien's studies help account for Shorter's harmonic moves as found in his early work. Waters has previously examined the pieces I discuss here, as will become clear. I thank him for the copies he sent me of the Library of Congress manuscript deposits of Shorter's "Pinocchio" and "Face of the Deep," for pointing out the relevance of Reese's work on augmented-sixth chords (2013), for alerting me to the F7 chord at the beginning of m. 10 of "Pinocchio" (which does not appear in his transcription, [Waters \[2011, 229\]](#)), and for helpful comments on earlier drafts of this article. I also wish to thank the anonymous readers, whose excellent suggestions I have adopted throughout.

3 [Broze and Shanahan \(2013, 41\)](#).

4 Because of my focus on the improvisational jazz repertory, any techniques advanced in this article would have to be revised or expanded to apply to large-scale jazz compositions or to other relevant tonal or modal repertory.

5 The Miles Davis group, which first recorded two of the four works discussed in this article, famously altered compositions in the studio. Joe Zawinul's composition "In a Silent Way," for example, appears very differently on its premiere recording by Davis (*In a Silent Way*, Columbia CS9875, recorded 18 February 1969) as compared to Zawinul's subsequent recording (*Zawinul*, Atlantic SD1579, recorded 6 August 1970). Although each version may be considered a separate object of analysis—which "Silent Way" is the "piece"? Here, Zawinul's music direction in the follow-up recording would seem to make it the more authoritative. Moreover, in some instances the "piece" may be even more abstract, i.e., an entity potentially inferable from some combination of lead sheets and authoritative performances. In "Blue in Green," for example—a piece attributed to Miles Davis and/or to Bill Evans—the melody is too freely performed by Davis on the work's first recording to be clearly defined. This piece even calls into question the validity of the concept of authorship in jazz works, as discussed in [Fyffe \(2014\)](#).

6 [Strunk \(2005, 328n3\)](#).

7 "Now let's say you're Coleman Hawkins and you're going to take a trip down the river on a steamer called 'The Melody (parent scale) Inferred by each Chord.' This steamer is a local and will make stops at all the towns along the river... . Lester Young takes an express steamer that makes stops only at the larger ports along the river (the tonic stations)" ([Russell 1959](#), xviii).

8 Pre-1940s jazz occasionally experimented with tonal norms (e.g., Norvo's "Dance of the Octopus" or Hawkins' "Queer Notions" [[Schuller 1989, 516](#)]), and, by the later 1940s, modernists, such as Lennie Tristano, continued to push the envelope, but it was during the 1950s that widespread innovation in form and tonality began to challenge tonal assumptions. These experiments, in part, provided the motivation for many artists associated with Free Jazz. I also note that, because of the evolution of jazz practice, I feel that there is no single "jazz harmony." Rather, "jazz harmony" is a catchall term for a number of different practices that depend on the type of jazz being discussed. Consider, for example, the diverse harmonic practices of Louis Armstrong, Art Tatum, Wayne Shorter, and Ornette Coleman. We can further particularize jazz harmony by remembering to separate considerations of chord progression from chord type. While this may be obvious, I do note that the routine use of the term "jazz harmony" seems to presume a single practice.

9 Other theorists have suggested modifications to and expansions of the three Schenkerian *Ursätze* as well. See, for example, [Neumeier \(2009\)](#). Emendations to Schenker's theory, as presented in [Schenker](#)

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[1935](#) [1979], have appeared as soon as his original teaching began to spread in the mid-twentieth century. An early important work that expands Schenkerian theory is [Salzer \(1962\)](#), a corrected republication of the original edition in 1952.

10 [Martin \(2012–13\)](#).

11 See [Martin \(1980, 33–38\)](#). Other discussions of PBA can be found in [Martin \(1988, 12–25\)](#), [Martin \(1996, 9–10\)](#), and [Martin \(2012–13, 199–202\)](#).

12 "Autumn Leaves" (Kosma-Prévert-Mercer, 1946).

13 The second section of the tune also confirms E minor, as the section begins with a  $V^7-i$  progression to E minor followed by standard chord changes that can be directly read in the key of E minor.

14 "Sweet Georgia Brown" (Bernie-Pinkard-Casey, 1925).

15 The pattern of dominant sevenths cycling through the circle of fifths to reach an ultimate tonic has been called "funnel tonality" ([Johns 1993](#)). Johns lists several well-known songs with this plan, including "Ballin' the Jack" (Smith 1914) and "Up a Lazy River" (Arodin-Carmichael 1930). The harmonies, as it were, funnel down to converge on a tonic at the end of a predictable time span. Johns, however, does not pursue the possibility of the cycle as generating prolongation and structural levels.

16 At m. 16, the chords in parentheses at level d (Fm7–Bb7) create a turnaround to the beginning of the tune. Note that my reading of the piece as 8 + 8, which agrees with [Waters \(2010, 142\)](#), presents an alternative to Julien's view of the work as an irregular 7 + 9 (2011, 176). That is, she views m. 8 as beginning a hypermetrical unit, whereas putting the tonics of the II–V–I patterns on the hyperbar downbeats yields a reading of the piece as a more regular 8 + 8, which then segments to 4 + 4 + 4 + 4. How the positioning of a II–V–I pattern within the four- and eight-measure units of jazz standards affects our understanding of the progression is the subject of [Salley and Shanahan \(2016\)](#).

17 I should note that a work's inability to be described by prolongational procedures is not a demonstration of its deficiency. Although the use of negative language is sometimes necessary in describing what kinds of harmonic and formal conditions may be lacking, these locutions should not be construed as applying to the work aesthetically.

18 Similarities can be demonstrated between PBA and the Lerdahl-Jackendoff Time-Span Reduction as well as the Schenkerian concept of the Auxiliary Cadence. The latter, for example, involves a culmination of harmonic and melodic processes without initial establishment of the harmony in question. Nevertheless, the relative simplicity of PBA makes it directly applicable to the regular and strophic metrical structures found in popular standards and jazz tunes. For the Time-Span Reduction, see [Lerdahl-Jackendoff \(1983, 124–78\)](#). Regarding the auxiliary cadence, Schenker writes: "The transition from harmony to harmony is made smoother by the omission of the [initial] I, the first one of the bass arpeggiation. When this tone, which generates and underlies the development, is omitted, the following abbreviated forms arise" (1935, 1:88), with reference to vol. 2 (Supplement), figure 110. These figures consist of V–I forms preceded by another harmony, such as II, III, or IV. Schenker anticipates in his figure 110(e) the significance of the II–V–I progression in jazz. Note Burstein's summary description of the concept and how it also characterizes PBA: "Thus, the typical auxiliary cadence derives its tonal meaning within the larger context from its final chord alone; only the final chord plays a role on the deeper levels of voice leading. In this sense, the opening, later-level harmonies are 'auxiliary' to the final tonic" (2005, 162).

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19 "El Toro," *The Freedom Rider*, Blue Note BLP4156; recorded 27 May 1961; Lee Morgan, trumpet; Shorter, tenor saxophone; Bobby Timmons, piano; Jymie Merritt, bass; Art Blakey, drums and leader.

20 The analyses in this article adopt Steve Larson's "strict use" of analytical notation ([Larson 1996](#)). In "strict use," slurs in the prolongational levels show groupings and dependency and not direction, and only notes with stems can be advanced to a deeper structural level. While [Larson \(1996\)](#) is the primary source for "strict use," [Larson \(2012\)](#) provides a succinct introduction to its essential principles.

21 The E7 chord in m. 14 that tonicizes A major in m. 15 is played by the ensemble, but the Library of Congress deposit of the tune, which appears in [Julien \(2003, 195\)](#), shows G $\flat$ 7 rather than E7. As pointed out earlier, the recording takes precedence. Also, strictly speaking, the harmonic sequence is also abandoned in m. 14, as E7 (V<sup>7</sup>) is not preceded by Bm7 (ii<sup>7</sup>).

22 Waters notes the sequence of major thirds, the centrality of A major as helping to motivate the D minor of the tune's beginning, the harmonies related by major third (beginning at m. 7 and continuing through the hyperdownbeat of m. 9, which overrides a neat division of the tune into two halves), and the tonicization of D $\flat$  at m. 7 that helps prioritize it over A major (2010, 144–45). The tune's second half (beginning at the pickup harmonies in m. 8) can also be seen as characterized by a circle-of-fifths progression with occasional omissions, as pointed out by one of this article's anonymous readers: i.e., B, E, A, [D], G, C, F, [B $\flat$ ], E $\flat$ , A $\flat$ , D $\flat$ , [G $\flat$ , B], E, A. With an arrival at A at m. 15, one could invoke PBA to argue for an overall prolongation of A as dominant of D minor through the piece's second half, again motivating the D minor at the top and even suggesting an overall D-minor tonality. While this reading is intriguing, I find the prolongation of D $\flat$  in mm. 7–13 makes it a more convincing tonal center.

23 [Reese \(2013\)](#) is a study of this chord as it is found in the music of Debussy and Ravel.

24 Julien writes, "'El Toro' exhibits four structural keys, with no sonority or tonal region exhibiting fundamental influence over the composition as a whole. Utilizing an asymmetrical AB form, the piece begins in D minor, the A section concludes in D-flat major, and the B section is governed by A major, F major, and D-flat major. The harmonic (tonal) plateaus in 'El Toro' do not reveal themselves to be part of a larger tonal scheme but, instead, are self-sufficient and irreducible" (2011, 176). [Julien \(2003, 183\)](#) expresses a similar view. Elsewhere, Julien, citing Satyendra (1992), suggests that a sequence of tonicizations linked by major third cannot result in tonal prolongation, and hence the organization is "bifocal," as "... differing organizational principles govern different structural levels" (2009, 110–11). PBA, on the other hand, helps us to expand the kinds of relationships among chords that may result in harmonic prolongation, including third-related tonicizations. Also, as pointed out earlier (n. 13), I find a symmetrical 8 + 8 reading of the piece preferable to Julien's 7 + 9.

25 The copyright deposit for the tune in The Library of Congress, as reproduced in [Julien \(2003, 195\)](#), has no key signature. This is a reasonable choice on Shorter's part, given the chromatic nature of the harmony.