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Functional and Non-Functional Harmonic Devices in the Music of Wayne Shorter From the 1960’s: Analysis and Application

by

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Functional and Non-Functional Harmonic Devices in the Music of Wayne Shorter From the 1960’s: Analysis and Application

During the 1960’s, composers within the jazz genre began to expand their harmonic palette, diverging aesthetically from the compositional tendencies of music from the Great American Songbook and the Bebop repertoire. Of the people making these developments, Wayne Shorter was among the pioneers and is one of the most widely influential composers in jazz from the mid 20th century. My project has identified a selection of techniques that he used to explore new harmonic territory and applied them within an original body of work.

Background

The preliminary step of this project was to broadly identify the kinds of techniques being explored by Shorter during this era in order to narrow my focus to the kinds of devices I was interested in studying. I identified that Wayne Shorter:

1. often increased the frequency of modulation between keys (in relation to prior periods),
2. often manipulated the amount of time spent in one key either by minimizing the amount of time spent in one key, extending the amount of time spent in one key, or combining these effects and exploring their juxtaposition,
3. often avoided conventional ways of navigating within and between key centers—especially the use of ii V progressions,

4. and often explored non-conventional tonics/points of gravity or resolution within and outside of diatonic keys.

This step steered my research toward the identification of techniques that Wayne Shorter used to avoid conventional cadences and tonicization.

Within this essay, I’m defining functional cadencing as harmonic motion that draws upon the relationships found between the chords of the harmonized major scale and/or the harmonized melodic minor scale. By contrast, harmonic motion that I’m categorizing as non-functional does not draw upon these relationships. Lastly, I use the term “conventional cadencing” in relation to Western harmonic practice, which usually employs quartal root motion and sequences of chords that are diatonic to the harmonized major scale. Initially, I imagined that my study would primarily center the identification and unpacking of non-functional devices. However, after I uncovered the reharmonization principles that were obscuring my identification of functional relationships, I was forced to further revise my expectations for the set of harmonic devices that I would explore. I found that though there are many ways that Shorter’s creative ear pushed jazz harmony beyond functional diatonic progressions, there are just as many examples of how his use of functional harmonic relationships broadened common practice. Further, while the ways of using harmony non-functionally are infinite, the ways of using functional harmony are somewhat more limited. Given this, my work identifies all of the functional devices that I have become aware of in my research process and, as this set of devices explains many of the harmonic relationships that I originally set out to study, two selected categories of non-functional devices rather than a comprehensive list. In sum, rather than only study non-functional harmonic devices
as originally proposed, this project’s aim became the general expansion of my own harmonic palette and the development of attention to the effects of using various tools through applied experience.

**Introduction to Functional Harmonic Devices**

Wayne Shorter’s use of functional harmonic relationships can be categorized as either a pointed exploration of conventional cadencing resolving to non-conventional places or non-conventional cadencing resolving to conventional places. I have found two techniques that explain the functionally non-conventional resolutions of dominant chords found within Shorter’s music and one technique that explains his use of functionally non-conventional cadences. Conventional cadences resolve functionally to non-conventional tonics either by exploiting the malleability of dominant chords or by substituting the expected tonic for a 7th chord from the same major key separated in root by a diatonic third. By contrast, Shorter’s use of functionally non-conventional cadencing exploits the interchangeability of chords within the same harmonized melodic minor scale to reharmonize dominant chords.

**Dominant Chord Malleability**

Shorter explored less conventional resolutions of the dominant seventh chord by using dominant seventh chords whose roots are a minor third apart interchangeably. This idea connects the V dominant (V7), the bII dominant (bII7, tritone substitute), bVII dominant (bVII7, the backdoor dominant), and the III dominant (III7, V dominant of vi). While these changes are
often superimposed over each other as an improvisational technique, Shorter employs this principle as a compositional device to deceptively resolve dominant chords. Another way of thinking about this concept is that each dominant chord can resolve to tonics in 4 different intervallic directions: a fourth up/a fifth down (V7), a half step down (bII7), a whole step up (bVII7), or a major 3rd down (III7). These relationships are justified by a few different sources such as Ernő Lendvai, student of Bela Bartok’s, who divides the circle of fifths into sets of dominant, subdominant, and tonic relationships and connects each key’s set to three other key’s sets that are all minor thirds away from each other (Crow, 722-723). Additionally, the interchangeability of the chords found when the melodic minor scale is harmonized connects the dominant chords built off the 2nd, 4th, and 7th scale degrees of the scale (Levine, 72). This explanation does not explain the V/vi I progression, but it could be understood as a reverse deceptive cadence because of shared chord tones between vi and I. Some theorists such as Dmitri Tymoczko argue that use of chord-scale relationships in this way can be linked to impressionist composers, though it is unclear where these ideas originated (Tymoczko, 152). Regardless of whether or not Shorter was informed by these specific theories in making his choices, they both firmly establish a functional relationship between these chords.

**Reharmonization of Tonics Using Shared Chord Tones**

The second functional way that Wayne Shorter resolves conventional cadences to unconventional places is by the substitution of tonics for chords built off their diatonic 3rd scale degree or diatonic 6th scale degree. Because 7th chords share 3 notes with other 7th chords that are a diatonic third way from each other within the same harmonized major scale, the strong
voice leading that binds a dominant and tonic is mostly maintained when a dominant chord is resolved to a diatonic chord built off the 3rd or 6th scale degree of the tonic (Levine, 343). This is related to the deceptive cadence, where V resolves to vi, and the iii VI ii V turn-around, where V resolves back to iii. In both cases the voice leading is smooth because of the shared notes between vi and I, and I and iii respectively. Using this principle, each chord of the harmonized major scale therefore has two substitution option: for I, the options are vi (3rd down) and iii (3rd up), for ii the options are vii and IV, for iii the options are I and V, for IV the options are ii and vi, for V the options are iii and vii, for vi the options are IV and I, and for vii the options are V and ii. However, all of these substitutions have different effects. Some options are more stable while some imply more motion, some are stronger than others, and because of both, some are more common than others.

Reharmonization of Cadences Using the Harmonized Melodic Minor Scale

Shorter used unconventional cadences that resolve to conventional places often by reharmonizing the dominant 7 chord of a V7 I relationship. Just as the tonic can be functionally reharmonized using the relationships found within the major scale, dominant chords can be functionally reharmonized using the relationships found within the harmonized melodic minor scale. Similarly to how a dominant chord a tritone away from the V7 of the approaching tonic can replace the V7 because of their shared chord-scale relationship as modes of melodic minor, the other non-dominant chords from the same parent scale can replace dominant chords in cadences as well. This substitution property identifies that mM7, Maj7#5, and m7b5 chords can be used to replace dominant chords and that mM7, maj7#5, Dom7#11, Dom7b9, and Dom7alt
chords can be used to replace minor cadence predominant chords. While these possibilities are vast on their own, the real power of this melodic minor substitution is its connection to the interchangeability of dominant chords. Combining these two substitution principles allows mM7, Maj7#5, and m7b5 chords to theoretically replace a dominant chord functioning in any way; likely some of these options work better than others, but defining that is up to taste.

This introduction of the modes of melodic minor and the use of its harmonized chords is an especially salient characteristic of this era in jazz composition. Creative use of mM7 and m7b5 chords through these relationships as well as the introduction of Maj7#5 chords mark a departure from the harmonic aesthetic of jazz prior to the 1960’s, where the mM7 and m7b5 chords were used exclusively as a tonic and minor predominant chord respectively. Through exploring all three of these sounds as tonic, predominant, and dominant functioning chords, Wayne Shorter and other composers of the time helped to shift the harmonic conventions of jazz away from ii V progressions. Though he is not solely responsible for initiating the use of the harmonized melodic minor scale in this way, Shorter’s use of these chords interchangeably displays the endless possibilities to reharmonize satisfying cadential resolutions.

Introduction to Non-Functional Harmonic Devices

The devices I described above allow composers to access strong cadential resolutions while avoiding ii V or V I progressions. Using these tools, Wayne Shorter resolved cadences to chord qualities outside of functional expectations and explored non-quartal root movement. The avoidance of quartal root movement is a particularly important component of the aesthetic developed by Shorter and other composers during the 1960’s. I have focused my study of
non-functional relationships that Shorter explores to two devices that avoid quartal root movement: Pedal Point and Chordal Planing. Unlike the above reharmonization principles, these non-functional relationships explore modulation or key-mixture without a functional dominant to bridge keys.

**Pedal Point**

Pedal point is defined in classical music as the sequencing of chords who share the same bass note. However, it is important to identify the difference between its use as a modulation or pivot device from its use as a compositional tool. In songs from the Great American Songbook and the BeBop repertoire, changing the quality of a diatonic chord is used frequently to modulate to new keys. For example, chord quality is often changed in this way from major to minor in the case of the IV, V, or I chords as part of a ii V cadence that leads the ear to a new key. Though Shorter does not always resolve the cadences that he initiates with the change of a chord from major to minor, he sometimes uses this tool to bridge different cadences. Though this is an example of a chord quality changing over a consistent root, which is the definition of pedal point, it is not representative of the way that Shorter most often explores pedal point as a compositional tool.

A more common way that Wayne Shorter sequences chords of the same root with different chord qualities is by exploring direct modulations between tonic chord qualities. In his songs “Virgo” and “Yes and No,” Shorter explores shifting the quality of a tonic without tonicization. These direct modulations over the same root change the color or mood of the song dramatically. While these are both examples of tonic chord quality shifts which are a
non-functional harmonic device, “Yes and No” is exemplary of Shorter’s pedal point compositional tool while “Virgo” is not. The key difference between the two is harmonic rhythm. In “Yes and No,” 4 bars of D7sus are followed by 4 bars of Dmaj7, meaning that the root D is held for 8 bars total during the A Sections. This builds tension that is released by faster harmonic motion in the last 6 bars of the A Section. This extended use of one root for most of a section or even a whole section is a device that Shorter uses as a feature of several songs. It is this way of using parallel chord movement that I am defining as pedal point and am most interested in studying as a harmonic and compositional tool.

Shorter uses this device in similar ways throughout songs such as “Lost” and “Penelope.” Upon initial inspection, it would appear that these songs explore the same parallel major/minor tonic relationships. However, there is variation between the songs in terms of the extensions that indicate different relationships between the chords of each song’s pedal point section. “Lost” features pedal points in both the A Section, where Shorter alternates repeatedly between Gmaj7 and GmM7, and the B Section where he sequences C7sus, Cmaj7#11, Cm7, and Cmaj7#5 before partially repeating the sequence to C7sus followed by Cmaj7#11. While this second sequence appears sporadic in its changes of chord quality, it can be better understood by looking into the voice leading that connects the harmonic motion. The first four changes in the B Section could be re-written as slash chords Bb/C, D/C, Eb/C, E/C to reveal chromatic relationships between the harmony. Similarly, the difference between a Gmaj7 and GmM7 is just the 3rd. Chromatic motion is frequently used to justify harmonic relationships such as in passing ii V progressions or neighbor ii V progressions that are related to dominant functionality, and smooth voice leading guidelines that privilege major and minor second relationships over larger intervals.
While these chord progressions aren’t functional, they borrow from the long established logic of connecting chords through small interval voice leading.

While it would seem uninteresting to go back and forth between two different pedal points, the A Section and B Section are distinctly different in how they use the device. The A Section is more stable in its motion because of its use of tonic functioning chord qualities. By contrast, the pedal point progression during the B Section of “Lost” uses these ascending triads as there to generate momentum into the last A. These two sections therefore identify two kinds of pedal point, static and directional, though defining them is contextually dependent.

A third kind of pedal point is used by Shorter in “Iris,” where Db7#11 moves to Dbm7b6 before returning to Db7#11. The first chord is used as the tritone substitute of Cm7, two chords with a very strong functional relationship. Unlike the transition between major and minor tonics in previous examples, and the kind of pedal point that builds into a resolution identified within the B Section of “Lost,” the change between Db7#11 and Dbm7b6 is directionally ambiguous. While Db7#11 has a strong pull towards Cm7, this pull is redirected by Dbm7b6, turning Db7#11 into a stable sound upon return by dissociating the ear from the chord’s functional relationship to the key. Though this kind of pedal point is not frequently used, its effect is worth examining as a compositional tool. By using the subversion of an expected cadence, this example uniquely punctuates the song with a moment of rest. It highlights the way that harmonic context on both sides of the pedal point, as well as the placement of the device within the form of the song both define how it is experienced.

This is further demonstrated by “Infant Eyes,” which displays the effect of placing a pedal point at the beginning of a B Section. While “Yes and No” and “Lost” begin with pedal points that are broken up by measures of fast harmonic motion, and “Iris” explores ending a song
with a pedal point phrase, “Infant Eyes” uses the device at the beginning of the B Section to generate tension and momentum at the apex of the song. Another difference between this example and the pedal points in previously analyzed songs is that its chords belong to the same key in a way. Instead of modulating briefly to new keys by changing chord quality, the pedal point in “Infant Eyes” alternates between two chords with different roots but the same bass note. Between measures 10 and 12, Shorter transitions back and forth between the tonic, Ebmaj7, and an inversion of the borrowed bIImaj7, Emaj7/Eb. While not a dominant chord, Emaj7 has a strong relationship to Ebmaj7 because of chromatic voice leading, similar to the pedal point in “Lost’s” B Section. This bIImaj7 is a common substitution for the dominant or tritone substitution, whose only difference is the 7th (as a side note, this kind of major seventh substitution will be further explored in the next section on Chordal Planing). While these chords belong to different keys, the experience of transitioning to Emaj7 is not one of leaving Eb major because of this relationship and because of the shared bass note Eb. Therefore, this movement has the opposite effect of the pedal point in “Iris,” keeping the song grounded in Eb until the release of the pedal point in bar 13 to Emaj7 which is used to modulate into a new key. “Infant Eyes” therefore identifies a fourth kind of pedal point that alternates between a tonic chord and a dominant functioning chord; it is static in the way that it resolves to itself and dynamic in the second chord’s potential to resolve a new direction.

Chordal Planing

The next set of devices is related to Wayne Shorter’s non-functional use of chords of the same quality in sequence, called “chordal planing.” While this could refer to any chord type
moving in this way, many chord types used in sequence have functional relationships because of their connection to dominant chord functionality, harmonized melodic minor chord functionality, or are just not that commonly used by Shorter. Because of this, I will only be describing different ways that Shorter uses major seventh chords or minor seventh chords moving in sequence. Minor seventh chords are most often used non-functionally in sequence as either a substitution of a ii chord for a dominant chord or as pivot chords between keys that share the same minor seventh chord. Major seventh chords are also used in place of dominants as neighbor chords that replace a cadence either to resolve to the expected tonic pair of the dominant they replace or not. This set of devices has fewer options than the pedal point technique but is rich in potential application.

**Major Chord Planing**

Shorter uses major seventh chords as neighbor chords that replace a cadence in “Speak No Evil,” “El Gaucho,” and “E.S.P.” All of the sequenced Maj7 seventh chords in these songs are positioned a major 2nd away from each other and resolve either up a half step or down, implying different borrowed relationships depending on the direction. During “Speak No Evil” and “El Gaucho,” Shorter uses Maj7 chords in sequence within the I bVII relationship in order to resolve the bVII down to the vi. Resolving the bVIImaj7 down in this way could be explained as a key mixture via borrowing from the IVmaj7 and iiim7 relationship found within the major scale or as the altering of a tritone substitute’s chord quality. In the case of “E.S.P.,” Shorter resolves the bVIImaj7 up to its tritone substitute, the borrowed VII dominant. The bVIImaj7 chord in all of these contexts is used to create motion between two landing tonics or landing points.
Another reason that Shorter changes the tritone substitute’s chord quality from dominant to major seventh in is to pivot between keys. In the opening phrase of “Iris,” two bars of Fm7 are followed by one bar of Emaj7#11 and one bar of Gbmaj7#11. The Emaj7#11 functions as a reharmonized tritone substitute of the V in the key of Ab and as a reharmonization of the backdoor dominant in relation to the key of Gb. This modulation to Gb is further evidenced by the melody notes over Emaj7#11, Ab-Gb-F-Eb, which all come from Gb major, and the Bb7 that occurs in the bar following Gbmaj7#11, which is experienced as the III7 within Gb. This usage of the bVIImaj7 as a reharmonization of the backdoor dominant is a second use of non-functional substitution and chordal planing. It also illustrates how planing major chords can be used as a modulation device.

Another way that Shorter explores major seventh chords used in sequence is by moving them in minor thirds. This is related to John Coltrane’s modulation between keys whose tonics are the interval of a minor third apart in songs such as “Giant Steps.” While Shorter explores the same kind of modulation in many songs, most obviously “El Toro,” he also bypasses tonicization of the keys by directly shifting between the tonics. The first way that Shorter uses major seventh chords that are a minor third away is by replacing a cadence to the tonic with a bIIIImaj7 chord. In “El Gaucho,” Gbmaj7 is used as a pivot chord between the key of Db major and Eb major. Gbmaj7 functions as the IVmaj7 of Db and the bIIIImaj7 of Eb. The same kind of movement occurs in “Penelope,” though Shorter tonicizes the bII instead of the bVII using this minor third relationship. This minor third relationship is also explored in reverse between the 2nd and 3rd bars of “Fee-Fi-Fo-Fum.” However, while Bmaj7, the second chord of the sequence, is briefly experienced as a tonic, the Abmaj7 that precedes it is not experienced as a tonicizing chord. Rather, this change is experienced as simply a harsh modulation that juxtaposes keys. If the
Bmaj7 resolved downwards to the tonic of Bb, it may be possible to understand this as the use of both the reharmonized backdoor dominant and reharmonized tritone substitute in sequence. However, as the following chord is D7, which continues the minor third root movement, these changes are better analyzed as chord changes that simply feature this unusual intervallic root motion.

**Minor Chord Planing**

The relationship between sequenced minor seventh chords in the music of Wayne Shorter can be categorized by root motion to identify whether the motion is functional or non-functional. Minor chords only naturally occur in the harmonized major scale either perfect 4ths/5ths apart in root, between iii, vi, and ii, or major 2nds apart, between ii and iii. This means that minor 2nd, minor 3rd, major 3rd, and tritone relationships between sequenced minor seventh chords indicate key mixture. However, the context within the song and key needs to be considered as there are examples in Shorter’s music of functional minor seventh chord relationships being borrowed to mix keys or modulate between keys. Further, many seemingly non-functional relationships rely upon cadential motion.

This is true of the smallest interval, minor 2nds. There is a large precedent for minor 2nd motion between minor seventh chords because of their strong relationship to dominant chords. This relationship is exploited to create motion between chords, most often between ii and iii chords within the harmonized major scale such as in “Miyako,” or to create motion from above or below as chromatic neighbor chords such as in “Speak No Evil.” In both cases, the dominant is omitted using the previously mentioned technique that music theorist Keith Waters calls ii for
V substitution (Waters, 42). This is a common technique that uses chromatic motion to connect chords while avoiding the use of a dominant, an aesthetic choice already noted to be often favored within certain compositions.

This same ii for V substitution or chromatic voice leading justifications can also be used to explain the relationship between minor seventh chords a major third away from each other and minor seventh chords a tritone away from each other. “Speak No Evil” features major third planing of minor seventh chords during the 9th and 10th bars, where the progression follows the changes Em7 Cm7 Dm7 Bbm7. Looking at these chords in relation to the key of the song, Ab major, reveals that Shorter is transitioning between chords that are not diatonic and chords that are, transposing the major third relationship between the non-diatonic chord Em7 and its landing point Cm7 down a major 2nd. One explanation for this progression is that the chords’ relationship is being obscured by the omission of the dominants F7 and Eb7 that would usually connect Em7 and Cm7 or Dm7 and Bbm7 respectively via tritone substitution. Another explanation is that the chords are related by chromatic motion between the chord tones. Chromatic voice leading could similarly explain the opening changes of “Pinocchio,” Ebm7 to Am7, which are a tritone away from each other.

Sequenced minor seventh chords separated by the second smallest interval, the major 2nd, are used ambiguously and unconventionally during the end of Shorter’s song “El Gaucho.” Shorter modulates to E minor by transitioning from Cm7 to Dm7 to Em7 during the last 6 bars of the song. While Cm7 and Dm7 are both diatonic to Bb major, and Dm7 and Em7 are both diatonic to C major, Cm7 and Em7 share no functional relationship. Shorter connects these chords through exploiting their shared relationship to Dm7, using the chord as both a iii and ii chord between Cm7 and Em7. Using minor chords that are shared between keys is a common
way that Shorter modulates, but this is a unique example of the techniques’ intersection with chordal planing.

Finally, minor seventh chords sequenced in minor thirds is the only relationship that can’t be justified through ii for V substitution, chromatic voice leading, or major scale relationships. This kind of motion can be observed in the intro to “Black Nile.” The changes during bars 3 and 4 follow the progression Ebm7 Fm7 Dm7. In the key of Bb, this can be analyzed as iv v iii which gives clues as to the function of Fm7 as an embellishment of the half step resolution between Ebm7 and Dm7. The Fm7 is used to create motion similarly to the passing chords in the previous examples. However, unlike a passing chord, this motion is disjunct rather than smooth. It can also be compared to the tonicizing effect that planing major seventh chords in minor thirds has, where the second chord in the sequence is the landing point or tonic of the progression.

**Reflection Upon Compositional Process**

Originally I wanted to write five songs that each explored one of the devices that I identified in my research and analysis. After engaging in this process though, I found it to be frustrating and uninspiring. It yielded songs that I didn’t even want to be writing. This was unexpected because I am so captivated by the harmonic choices found in Wayne Shorter’s music. Upon reflection, I realized that while my work had taught me a lot about harmony, it didn’t teach me anything about how to compose. All of the greatest lessons that I learned through this process came after I uncovered the misconception that it would.
This realization led to a cascade of other discoveries about how I understood the process of writing music. For example, I realized that I was searching for formulas for writing good music by analyzing good music. This isn’t entirely misguided, but it assumes that the creative process of composition is formulaic. It also flattens the definition of “good music” to music that is similar to the music that it was inspired by. In my experience so far, the composing process has been different for each song I’ve written, and the best ones I’ve finished have elements that are unique to my own creative voice. I assumed that I could think my way into writing good music, but have since realized that intuition and emotion play much larger roles in the creation of meaningful art.

I also determined that while the research and analysis portions of my project led to a productive unpacking of various harmonic devices, they failed to give any weight to considering why Shorter may have used them. I can now identify that I wasn’t connecting to the chords that Shorter chose, but to how he communicated the stories he wanted to tell using harmony; how he uses harmony to create beautiful shapes with the forms of his songs. I can’t know why Wayne Shorter used the chords that he did, but questioning why a composer would choose one chord over another led me to attempt answering it for myself in the process of composing.

I found several answers through writing music and discussing the process of writing music with my mentors. The first is that chords contribute to the emotional tone of a piece of music and contextualize or color the melody. Because of this, a composer may choose one chord over another in order to communicate a certain mood or feeling. My professor George Colligan uses the metaphor of setting to identify another way of understanding harmony’s role in a song, also noting that certain kinds of chords and cadences work better together than others to create a consistent experience of setting. I refer to this concept loosely as “harmonic world building.” Just
as a period piece about WWII wouldn’t show an iPhone on screen because it would detract from the audience’s ability to suspend their disbelief in entering the world established by the filmmakers, so too should a composer be wary to include a ii V in a song that primarily avoids this kind of motion. Different kinds of cadences and chord changes can imply different eras or genres, so being sensitive to how you mix the aesthetics or kinds of songs that you are implicating by your harmonic choices is another reason why a composer may choose one chord over another.

Through the practice of composing, I also learned how deeply connected harmonic choices are to the communication of form and phrasing. Chords are important for how a piece of music flows; the experience of where a song feels at rest and where it is in motion is inseparable from choices in harmonic movement. For example, one chord can signal that the song is entering a new section while another aids the ear in hearing that a section will repeat. Further, some chords create harsh transitions while others smoothly link phrases or sections. Developing a sensitivity to how harmony communicates these experiences through the process of composition has perhaps been an even more important exercise than the developing new harmonic tools.

Given that I initially had so much trouble with composing because of how I was starting the process, I decided to try using these answers as writing prompts. For example, I began writing with a specific image or feeling in mind. This gave me a goal that was far more compelling and expressive than the technical exercise of using a specific kind of chord movement. I found that this strategy also connected my ear to my internal experience. This isn’t very revolutionary, but it is one of the tools that reoriented the goal of my writing to self-expression. It helped me get from using chords for no reason other than to use them, to using chords to try and tell a story about something.
I began starting my writing process with the exercise of associating different chords, cadences, and devices with various emotional experiences. For example, I decided to write a song about a friend’s spider that passed on sooner than expected. “Angel” begins on a Cmaj7#5 chord, which I experience as a bittersweet sound. In regards to world building, I wanted to set the stage for a story of beauty and loss that celebrates the life and passing of a small creature. My song “All Hours” is about the appreciation for a friend’s apartment that has hosted many wonderful late nights. The lease on this apartment will be up soon though and so the end of these gatherings nears. I used the pedal point between minor and major tonics at the beginning of this song to try and capture the mixed feelings of loving this space and not wanting things to change. “Approach” captures the way that many life changes like this are upcoming with harmonic motion that has a consistent momentum. The chords in the opening phase alternate between strong landing points and chords that are more ambiguous in direction to create a balance of security and nervous excitement.

Given my second observation about the relationship of harmony to the flow of a piece, I also explored beginning the writing process of some songs from a musical idea without attempting to capture any specific story, using my ear to follow the motion that it established. My song “Detour” started from a vamp between the chords Bb7 and Abm6. I then improvised a melody that implied a blues-like AAB melodic development. When I arrived at the B section in my writing process, I decided to compose a turn-around that generated motion back into the vamp. I wanted to use dominant chords because of the bluesy feel to the song, but didn’t want to go to the V7 expected in a traditional blues turn-around during this phrase because it felt harmonically inconsistent with the vamp and the style of writing that I’m exploring. I also was hearing that the first chord of the turn-around should clearly signal a new phrase or direction
without jarring the ear too dramatically. I settled on E7#11, which takes the ear outside a bit but has a strong pull to the stable IV dominant landing point of Eb7 that follows it. For the third chord, I considered how the IV7 usually resolves to the I7 in a traditional three chord blues. However, I felt that a landing point as strong as the tonic would break up the phrase established by the melody, rushing its resolution. When I went the opposite direction though and toyed with less stable chords similar to how the E7#11 functions at the beginning of the turn-around, I found that this too broke up the momentum of the phrase. I found my way to D7 (#9, b13) because of its continuity within the harmonic aesthetic, its stability due to shared chord tones with the tonic, and its weak root resolution that doesn’t stifle the motion of the phrase. The final chord, B7#11, was an easier choice because I wanted to avoid the V7 and continue the descending dominant harmony established by the first three chords.

Application of Devices and Conclusion

Though I abandoned my original plan to explore each device within a different composition, I still ended up using most of what I learned through my analysis process in my music. The scores below feature color coded annotations to highlight where I used each technique.

1. Orange highlights chords that are functionally related through dominant chord malleability.

2. Pink highlights chords whose relationship is obscured by the common-tone based substitution of one seventh chord for another that is diatonic to the same major key and separated in root by a diatonic third.
3. Green highlights chords whose relationship is obscured by the *interchangeability of chords within the harmonized melodic minor scale.*

4. Red highlights the usage of *Pedal Point.*

5. Blue highlights the usage of *Chordal Planing.*

Many of the songs employ most of these relationships. For example, “Angel” uses every device except number 2, “203A” uses every device except number 4, “All Hours” uses every device except number 1, “Approach” uses every device except number 4, and “Detour” only uses device number 1. Further, I found through analyzing my own music that certain passages employ two devices at once. For example, this could mean that both chords are substitutions that obscure a functional relationship (see m. 5 of “203A,” m. 24 of “All Hours”), that a non-dominant chord is functioning as a dominant chord through its relationship to the harmonized melodic minor scale but resolves deceptively via the malleability of dominant chords (see m. 23 of “203A”), or that substitution of one seventh chord for another that is diatonic to the same major key and separated in root by a diatonic third obscures the identification of chordal planing (see m. 3-7, 12-16 of “Approach”).

While I did use every device, numbers 3, 4, and 5 occur more frequently across the body of work and within each song. However, this may be accounted for by their centrality to aesthetically defining the period of Wayne Shorter’s compositions that I studied. While Shorter does indeed use the first two techniques that I identified, their usage precedes the 1960’s. I believe that because I encountered devices 3-5 more frequently in my listening to Shorter’s music, they became more integrated into my ear. This observation also gives insight into why I used any of the devices while composing at all; while I originally believed that the theoretical study of these devices would allow me to incorporate them into my own compositions, I now
believe that it was the immersive listening that trained me to hear new ways of using harmony. This became clear to me when I abandoned the rigidity of my initial intentions and allowed myself to follow what I heard. In using my ear to guide me, I ended up using all of the devices because I had been steeping in the music of Wayne Shorter, where they are abundant. Though I did not consider this when I began to write, composing is a practice of listening; therefore, I naturally gravitated towards the things I had heard so frequently over the last few months once I began understanding this.

Though immersive listening accounts for how I was able to internalize these techniques so that I could use them effectively, it does not explain why I made the harmonic choices I did while composing. Similarly, the attached analysis of how I used the harmonic techniques in my music is also not reflective of what I was considering during my decision making process. As described in the previous section, I found that I gravitated towards some chords over others because they communicated something that I was trying to express or contributed to an experience that I was trying to curate. In analyzing Wayne Shorter’s music and studying the devices that I identified, I unconsciously developed a personal understanding of the effect that each device had upon me. Once I understood my intentions in making harmonic decisions, I found myself reaching for the tools that I had studied because my personal understanding of their effect aligned with these intentions. Regardless of whether or not Wayne Shorter and I experience these devices in the same way, we both used them because we believed that they served the experience of the song. I now realize that the value of my analysis process was not the deepening of my understanding of chord relationships but the development of a personal understanding of the effect that these devices have upon me.
Annotated Scores

Angel

Reynolds 23
Straight Eighths

\[ \text{\( \begin{array}{c}
\text{Dmaj7(\#11)} \\
\text{Bmaj7(\#11)} \\
\text{Cmaj7(\#11)}
\end{array} \)} \]

Bm7(b5)

\[ \text{\( \begin{array}{c}
\text{Amaj7(\#11)} \\
\text{D7(Sus4)} \\
\text{C7m7(Sus4)}
\end{array} \)} \]

\[ \text{\( \begin{array}{c}
\text{Dmaj7(\#11)} \\
\text{Bmaj7(\#11)} \\
\text{Cmaj7(\#11)}
\end{array} \)} \]

Bm7(b5)

\[ \text{\( \begin{array}{c}
\text{Amaj7(\#11)} \\
\text{Abm11} \\
\text{Emaj7(\#5)}
\end{array} \)} \]

\[ \text{\( \begin{array}{c}
\text{Gmaj7(\#11)} \\
\text{Emaj7(\#5)}
\end{array} \)} \]

IV \#5

\[ \text{\( \begin{array}{c}
\text{Dmaj7(\#5)} \\
\text{F#maj7(\#11)}
\end{array} \)} \]

B7(Sus4)

Elvin Latin Groove

\[ \text{\( \begin{array}{c}
\text{Amaj7(\#5)} \\
\text{D7(Sus4)} \\
\text{C7m7(Sus4)}
\end{array} \)} \]

Solos over AA BB A

D.C. al 2nd Ending
All Hours

Swing
\( \text{\textit{j} = 125} \)

\[ \text{Am}^9 \quad \text{Am}^9(b5) \quad \text{Am}^7 \quad \text{C}^7(\text{sus}4) \quad \text{Fmaj}^7(39)/\text{C} \]

\[ \text{Dm}^7(b5) \quad \text{Fmaj}^7(39)/\text{F} \quad \text{Bm}^7(b5) \quad \text{E}^7(\text{alt}) \]

\[ \text{Fmaj}^7 \quad \text{Fm}^7 \quad \text{Fmaj}^7 \quad \text{Fm}^7 \]

\[ \text{Fmaj}^7 \quad \text{Fm}^7 \quad \text{Fmaj}^7 \quad \text{Fm}^7 \]

\[ \text{Fmaj}^7 \quad \text{Fm}^7 \quad \text{Fmaj}^7 \quad \text{Fm}^7 \]

\[ \text{Piano Solo Under Melody} \]

\[ \text{Fmaj}^7 \quad \text{Fm}^7 \quad \text{Fmaj}^7 \quad \text{Fm}^7 \]

\[ \text{E}^7(\text{b9}) \quad \text{Fm}^7 \]

\[ \text{D}^7(\text{11}^\text{th} \text{sus}4) \quad \text{D}^7(\text{11}^\text{th} \text{sus}4) \]

\[ \text{D}^7(\text{11}^\text{th} \text{sus}4) \quad \text{A}^6(\text{maj}^7(\text{#11}) \quad \text{E}^7(\text{b9}) \]

Solos over AB AB C

Vamp out, end on Bb\text{maj}^7(\text{11})
Works Cited


