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The Harmonic Anticipation of Charlie Parker

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This research investigates the use of harmonic anticipation (HA) in the improvised solos of saxophonist Charlie Parker. HA is the technique of arriving at the succeeding chord ahead of time, and although frequently used by jazz soloists, it has received scarce attention in the literature as a standalone concept. The research investigates how Parker uses HA, including the length of anticipation, the location in the musical form, and the types of melodic and rhythmic structures engaged. I also consider whether HA is an essential component of transcription analysis and how musicians might approach learning to anticipate harmony when improvising. The research methods include transcription analysis of improvised solos and a practice-led approach to learning to improvise with HA. The transcription analyses reveal Parker's preferred methods for anticipating harmony: at a modulation point, during a ii -V-I chord progression, before the I chord in a blues form, and with varying lengths of 25–100% of the underlying harmonic rhythm. I argue that existing methods of transcription analysis can be improved by the inclusion of a sophisticated understanding of HA and develop a series of pedagogical exercises for my own practice and for use by a wider audience.

Keywords: harmonic anticipation, transcription analysis, improvisation, jazz pedagogy

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his research has been undertaken in order to further demystify the art of improvisation. The focus is a specific device known as harmonic anticipation (HA)—sometimes referred to as harmonic forward motion—to determine how it is used in practice by saxophonist Charlie Parker (1920–1955) in his improvised solos. HA is the technique of arriving at the next chord change before it occurs in the musical form. Soloists effect anticipation by playing chord tones, triads, seventh and extended chords, and entire scales in the moments before that harmony is notated in the composition.

The primary research aim is to demonstrate the presence of HA in improvised jazz and to provide generalizations about how it is used by Parker, including the location in the musical form, on what types of chord progressions, how early the anticipation begins, and the line content and method of approach to the target chord (the anticipated chord). This aim is summarized in the primary research question: how is harmonic anticipation used by Parker in his improvised solos? To provide greater relevance to musicians and researchers, secondary and tertiary research questions are posed: Could harmonic anticipation be an essential tool for developing a more accurate method for transcription analysis? In what ways can the ability to anticipate harmony be developed using pedagogical exercises?

STRUCTURE

This research is presented in two substantive sections. "Transcription Analyses" (p. 26). addresses the primary and secondary research questions using excerpts of recorded solos that have been transcribed and analyzed. These transcriptions provide examples of how HA is used in terms of the length of anticipation, its location in the form, how it is resolved, and the melodic structures engaged. The tertiary research question is engaged with in "Pedagogical Exercises" (p. 27) using exercises designed to assist musicians to integrate HA into their own playing. It is here that my role shifts from researcher to participant as a reflective practitioner, as the exercises have been trialed in my personal saxophone practice.

RESEARCH DESIGN

This research relies on a combination of methods, including analysis of music theory, transcription analysis, and practice-led research. The transcription element combines both quantitative analyses of recorded music and qualitative interpretations of the artist's intentions. This mixed methods approach therefore provides a nuanced way of both understanding phenomena and questioning existing assumptions (Creswell, 2009; McKernan, 2013).

Transcription Analysis

Transcription analysis resides within the established musicology subdiscipline of phonomusicology and draws on music theory, analysis, and composition (Cottrell,

2010, pp. 15–16). Cottrell (2010) reveals how, as an improvised music usually without notated scores, "jazz studies are ... heavily dependent upon the analysis of recorded sound" (p. 17), and by extension, the history of jazz is contained in recordings. The design of this research—where large quantities of transcription excerpts have been analyzed—bears a resemblance to hermeneutics. In *Real World Research*, Robson (2002) argues that when "the text is returned to time and time again" (p. 197), existing interpretations are reconsidered and then reevaluated in light of any new findings. The transcription analyses address the primary research question and—through comparative analysis—the secondary research question.

Pedagogical Exercises

The tertiary research question is addressed through practice-led research—where the product of the study is not a creative artifact (practice-based) but rather the advancement of knowledge about or within a practice, and crucially it must contain "operational significance for that practice" (Candy, 2006, p. 3). This project is thus positioned as a contribution to jazz pedagogy to be disseminated to a wider academic and professional audience. Practice-led research is also referred to as "research into art" or "research on the arts" (Borgdorff, 2007, pp. 4–5).¹ Although the expectation is that "the object of research remains untouched under the inquiring gaze of the researcher" (p. 5), since artists are carrying out this research, it is inevitable that their experiences and preexisting beliefs inform the process.

The pedagogical exercises (presented as annotated sheet music) have been modeled on practices found in prominent jazz method books, on the evidence gathered from master practitioners, and on my own reflections as a student and professional musician.² The validity of the practitioner's role within research was documented by Donald Schön (1984) when he theorized that the way in which practitioners approached problem-solving was a critical component of their practice, and their experiences generated valid contributions to research and knowledge.

Literature Review

This research builds on my own prior work on HA (Ford, 2018). My research demonstrated two key findings: first, that master practitioners use HA as an essential element of their practice, rather than a concept that emerges in post-factum analyses of their music. Second, there is a gap in the literature (especially the pedagogical literature) on the subject of HA. The review also illustrated the main functions of HA—assisting musicians in their mental representation of upcoming chord changes and acting as a tension-release device to effect forward motion. For example, I cited an interview with saxophonist Joe Lovano, who related the experience of playing with Bill Evans in 1980. After noticing Evans's tendency to play "a beat or two ahead of me on every chord … he would anticipate every bar" (Mishkit, 2005, p. 78), Lovano altered his own approach—"when I'm playing on a chord, I'm already thinking about the next chord" (p. 77).

A detailed analysis of Parker's technique is provided in Thomas Owens's 1974 doctoral dissertation. Owens revealed that Parker relied on a vocabulary of around 100 motives, and these motives were organized and adapted in various ways depending on the key, tempo, and harmonic sequence of the tune. The concept of HA is mentioned by Owens (1974) on one occasion when analyzing a Parker solo-"[the] melody ... is made up of common Parker phrases, but they arrive three or four beats 'too soon'" (p. 167). Owens labels this practice of arriving too soon as "rhythmic experiments" (p. 167), or using an "anticipatory phrase" (p. 167). Since he was concerned primarily with identifying and collating phrases, his analyses emphasize melodic structure and how Parker would "arrange his stock of motives in a different order, or ... modify a motive by augmenting or diminishing it, by displacing it metrically, or by adding or subtracting notes" (p. 35). General analysis of Parker's use of "anticipatory phrases" is lacking from Owens's research; however, the mention of arriving "three or four beats" (p. 167) early is significant. There is no codified method for analyzing the length of HA, apart from indicating the number of beats. In this research I have adopted the measure of percentage of harmonic rhythm—a more useful tool for comparative analysis across compositions and for understanding the (improvised) melody in relation to the harmonic structure.

Other attempts to construct a model for understanding Parker's musical language have taken a different approach. Richard Hermann (2004), with reference to music theorist Heinrich Schenker, developed the "tonally adjusted species model" (p. 223) for his analysis of Parker's solo on "Ornithology." In reconciling Parker's choice of playing an E^b7 arpeggio across beats three and four of a measure of B^b7 (where the following measure contains an E^b7 chord, in concert pitch), Hermann describes this as a "flaw ... [where] preparations and resolutions are lacking" (p. 245).³ Hermann's model is commendable for highlighting Parker's mastery of guide tone resolutions, but his analysis only adds weight to the HA hypothesis. Given his remarkable voice-leading technique, it is unlikely that Parker missed a chord change by over half a bar. I argue that HA provides a more accurate explanation for situations of this nature.

TRANSCRIPTION ANALYSES

The transcription analyses are prefaced by a discussion of the transcription method and confounding factors, after which key findings are summarized, and the accompanying analyses are presented in excerpts of two–four bars' length. All the excerpts identified during the research phase are in the Appendix (Transcription Excerpts, p. 42).⁴

Methods of Transcription Analysis

In his summary of transcription analysis methodology, Potter (1992) explains that analysis against the underlying harmony is standard practice for analyzing jazz improvisations. The transcriptions in this research have been analyzed using this method of relating the pitch of each note to the underlying chord; however, the method has been implemented in a nonconventional way, by inferring the anticipated chord as the underlying harmony. This study therefore demonstrates how existing transcription analysis methods become more useful and insightful when the lens of HA is applied, by offering a method for explaining why a given improvised melody does not appear to relate to the underlying harmony.

As this research is solely focused on HA, only clear examples of HA were selected for analysis.⁵ An alternative analysis could be the superimposition of polychords. Haerle (1982) explains: "the term polychord literally means many (poly) chords. In actual practice, a polychord is usually a combination of only two chords which creates a more complex sound" (p. 30). The polychord analysis is insufficient for HA, since it does not differentiate between a randomly superimposed chord, a chord that has another function (such as a tritone substitution, or a borrowed–parallel chord), and an anticipated chord.

Sample Size

This research relies on analysis of 78 transcription excerpts from Parker, including 94 instances of HA. Suitable excerpts were identified first by studying published transcriptions (Parker, Slone, & Aebersold, 1978), and then each excerpt was retranscribed from the audio recording in order to establish accuracy (publications can contain errors in the music notation). For this reason, each excerpt is referenced by track name and time code. The sample size is consistent with prior research efforts that were able to demonstrate significant findings. For example, the research of Owens contained analyses of 250 Parker solos (1974, p. viii).

Confounding Factors

Much of the theoretical and analytical framework used in this research did not exist when Parker recorded his music, and so there are potential issues in post-factum analysis. The risk of misidentifying HA is mitigated somewhat by the knowledge that master practitioners deliberately anticipate harmony.⁶ A difficult issue to control for is the subjective nature of transcription analysis, as Potter (1992) correctly identified. There are multiple interpretations available for an improvised solo, and while some might correctly express the intentions of the soloist, others might better explain how the music is received by the listener. In addition, as the researcher there is an inevitable bias toward finding examples that confirm my line of inquiry.

To mitigate against this bias, I have excluded examples where the use of HA is too ambiguous and favored clear examples. In the case of modulation points, HA is easier to demonstrate since the soloist is changing key center; however, in diatonic turnarounds (such as a ii-V-I) the contrast in pitches between chords is less obvious. A clearer picture emerges when rhythm and phrasing are included in

the analysis; for example, a phrase that starts on the final upbeat of a bar is likely to belong to the harmony of the following bar, as is a phrase that terminates just before a chord change with a sustained pitch that is held across to the new chord.

Key Findings

The transcription analyses reveal three main ways in which HA is consistently used by Parker; by anticipating 1) the I chord of a blues form, 2) modulation points, and 3) ii-V-I chord progressions (major and minor). He primarily anticipates the I and V chord, approaching target points in three ways, with 1) a descending scale, which targets the root; 2) an ascending arpeggio, which targets the root; or 3) an above-below enclosure, which targets any chord tone. The length of the HA varies widely from 25–200% of the harmonic rhythm; however, the most common length is between 50 and 100%.⁷

My previous research on HA (2018) included examples from three other saxophonists—Sonny Rollins, John Coltrane, and Joe Lovano—and the findings were generally consistent with this research on Parker, with some notable differences. Coltrane anticipates any of the chords in a ii-V-I progression (and sometimes all three in one sequence); however, he favors using a descending scale to target the root (Ford, 2018, pp. 21–22). Like Parker and Coltrane, Rollins also uses the descending scale approach, but with a preference for anticipating the V chord in a ii-V-I progression (Ford, 2018, p. 22). My research also demonstrated Lovano's clear preference for employing HA at modulation points and on the V chord in a minor ii-V-i progression (p. 22). The length of HA for Lovano and Rollins was generally between 50 and 100%, whereas Coltrane frequently anticipated chords by 100% of the harmonic rhythm, and on occasion Coltrane would extend this to 200–300% (Ford, 2018, p. 22).

Anticipation of the I Chord in a Blues Form

Parker displays a tendency to anticipate the I chord while playing in a blues form. On a basic three-chord blues, the change to a I chord occurs at three points—in bars one, seven, and 11 (sometimes in bar three also). Parker targets all three of these points; however, bar one is most frequently anticipated.



Figure 1. CP08 and CP08a, Charlie Parker, "K. C. Blues," 0:56, 1:01.

CP08 (Figure 1) reveals Parker anticipating the I chord at the end of the blues form.⁸ The length of the HA is 75% of the harmonic rhythm, and the I chord is indicated by the choice of the root note played over two-and-a-half quarter notes. When analyzed against the current chord (E7), A appears to be a dissonant note choice, since

it is the 11th played against a dominant chord, and yet the dissonance prepares the listener for the return to the tonic chord (A7). In CP08a (Figure 1), Parker anticipates the A7 by emphasizing C#, which belongs to the A7 and not the current chord—D7.

CP08 and CP08a highlight how a traditional analysis against the underlying harmony could be inaccurate. Using traditional analysis, the conclusion could be drawn that Parker prefers emphasizing the 11th and major 7th on dominant chords, whereas analysis using HA reveals the notes A in bar one and C# in bar three function as the root and 3rd, respectively. Furthermore, Parker can be observed playing the major 7th G# in the second bar over an A7 chord, but the function of the G# is as a chromatic lower neighbor tone, as it lasts one-sixteenth during the embellishment of the root A.

In this excerpt the HA framework allows for a differentiation between two major 7ths played over dominant chords by their function—one as a chromatic lower neighbor tone (G# in bar two)—the other (the C# in CP08a) as the 3rd in anticipation of an A7 chord. The anticipation framework also explains Parker's use of the 11th (relative to E7) in CP08. An 11th (or suspended 4th) on a dominant chord generally has the function of resolving down to the 3rd; however, Parker achieves resolution by remaining on the 11th (apart from the embellishment) across the bar line until it becomes the root of A7.



Figure 2. CP03 and CP03a, Charlie Parker, "Chi Chi," 1:37, 1:40.

When improvising over "Chi Chi" (Figure 2), Parker anticipates the I chord at two different places in the form: in bar 10 for CP03 and the end of the form (bar 11) for CP03a. In CP03 the HA lasts for 100% of the harmonic rhythm, and the 5th of F7 is targeted by a descending scale that includes the passing tone D^b. CP03a is a triplet rhythm that commences on an upbeat and targets the 5th with an ascending F13 (or D7) arpeggio.



Figure 3. CP41a, Charlie Parker, "Billie's Bounce," 1:15.

CP41a (Figure 3) provides a lucid example of Parker anticipating the I chord at the end of the blues form, lasting for 100% of the harmonic rhythm. He outlines an ascending D arpeggio that targets the root of D7. The HA is reinforced by Parker's decision to start the phrase halfway through the final bar of the form and to arrive at the target note D one eighth note earlier than the D7.⁹ By starting on an upbeat, Parker further increases the phrase's forward motion. The examples in this section demonstrate that combining HA with the start of a new phrase is a typical approach for Parker.

Anticipation of Modulation Points

Anticipating a modulation point in a tune—a point where the key center changes—is an effective way to introduce the sound of the new key and generate forward motion through the tension-release effect.¹⁰



Figure 4. CP12, Charlie Parker, "Ornithology," 1:05.

In Figure 4 Parker anticipates C7 by two-and-a-half beats, using his distinctive phrasing of an upbeat eighth note followed by ascending triplet eighth notes. The HA covers 62.5% of the harmonic rhythm, and the analysis begins on the upbeat on this occasion due to Parker's heavy accent of that note. Figure 4 is the same passage that was discussed in the literature review (Hermann, 2004).¹¹ It is worth highlighting the complicated nature of Hermann's (2004) analysis, as he tries to rationalize Parker's note choice using the tonally adjusted species model. In solving the "contrapuntal problems within the passage," specifically "the [C] is a dissonance that is not prepared and does not resolve properly" and "the [B^b] is not resolved," Hermann concludes that "a double passing-tone situation from a chordal root to a chordal fifth is, perhaps, the best interpretation" (p. 235).¹²

Given how convincingly Hermann (2004) demonstrates Parker's total command of guidetone resolution, and that the phrase in Figure 4 follows a period of rest (with additional time to prepare for the playing of the phrase), HA offers the simpler and more plausible explanation. For a comprehensive analysis, we can look at what Parker played earlier in his "Ornithology" solo, over the same chord changes as Figure 4.



Figure 5. CP78, Charlie Parker, "Ornithology," 0:48.

In Figure 5 Parker plays a melodic phrase similar to CP12 (Figure 4); however, in this instance he begins the phrase on the first upbeat of the C7 measure. The C7 is no longer anticipated, yet the following measure of B7 is (arguably) anticipated by one eighth note. When considering Figures 4 and 5 together, we can observe Parker's ability to control and manipulate the harmony, depending on the presence or absence of HA.



Figure 6. CP30, Charlie Parker, "An Oscar for Treadwell," 0:59.

In CP30 (Figure 6) Parker is improvising over the tune "An Oscar For Treadwell," which is based on the "rhythm changes" chord progression. In the tune's B section, the key center shifts from A major to F# major, and Parker anticipates this modulation by one-and-a-half beats or 37.5% of the harmonic rhythm.



Figure 7. CP43, Charlie Parker, "Ah-Leu-Cha," 1:05.

CP43 (Figure 7) is an excerpt from "Ah-Leu-Cha," which has a form very similar to rhythm changes. Like the previous excerpt (Figure 6), the phrase begins during the one-and-a-half beats prior to the B section.

Anticipation during a ii-V-I

Findings related to the ii-V-I progression are presented here in three categories, and these relate to Parker's most frequently used methods of approaching the target point or target chord. The categories are 1) approach by a descending scale, 2) approach by an ascending arpeggio, and 3) approach by an above-below enclosure.¹³

Descending Scale Approach—ii-V-I Anticipation



Figure 8. CP14 and CP14a, Charlie Parker, "Moose the Mooche," 1:17, 1:18.

CP14 and CP14a (Figure 8) demonstrate Parker anticipating the V and I chords, respectively, by using a descending scale that targets the root of the anticipated chord. Here the analysis becomes more subjective, since CP14 could be analyzed as relating to the underlying chord. That analysis would reveal Parker has played the root, $^{b}7$ th, 13th, and 5th. There is a stronger case for these notes to be analyzed (using HA) against G7 as the 5th, 11th, 3rd, and 9th, as this forms a

major or Mixolydian scale cell that targets the root of G7 at the moment it occurs in the form. This type of approach can be classed as formulaic, since it is utilized often by Parker.



Figure 9. CP46, Charlie Parker, "Segment," 1:38.

CP46 (Figure 9) is a less formulaic implementation of the descending scale approach, since the contour includes ascending and descending intervals. The HA targets i in a minor ii-V-i (G-) and lasts for 75% of the harmonic rhythm.

Ascending Arpeggio Approach—ii-V-I Anticipation



Figure 10. CP19, Charlie Parker, "She Rote," 0:44.

The HA in CP19 (Figure 10) occurs during a minor ii-V-i and is characterized by an ascending A-11 arpeggio and descending scalic approach to the 9th of the i chord. The length of anticipation is 50% of the harmonic rhythm, and—in a manner like CP30 (Figure 6) and CP43 (Figure 7)—it is employed at the beginning of the improvised phrase that leads into the next section in the form.



Figure 11. CP27, Charlie Parker, "An Oscar for Treadwell," 0:48.

In CP27 (Figure 11) Parker anticipates the I in a ii-V-I by playing an ascending arpeggio that targets the 9th of D. The anticipation covers 25% of the harmonic rhythm.



Figure 12. CP28, Charlie Parker, "An Oscar for Treadwell," 1:22.

CP28 (Figure 12) is included for comparison with the previous excerpt (Figure 11). Both figures contain the same rhythmic and melodic material; however, in the former the material is displaced by two beats, and this has the effect of removing the HA. These examples (like Figures 4 and 5) demonstrate that Parker can shift between using or not using HA by varying where he starts a phrase.



Figure 13. CP16, CP16a, CP16b, and CP16c, Charlie Parker, "Confirmation," 1:18, 1:18.5, 1:19, and 1:20.

CP16–CP16c (Figure 13) forms a powerful illustration of the HA method, since Parker arrives at each chord two beats early (except A7). CP16a is another example of an ascending arpeggio that anticipates the V chord in a ii-V-I; however, unlike the previous excerpts (such as Figure 11), the arpeggio also contains an enclosure of the target point (in this instance a below–above enclosure).¹⁴ The examples within this excerpt show how HA is employed systematically within a phrase to maintain forward motion through an extended chord progression.



Figure 14. CP38, Charlie Parker, "Red Cross," 0:55.

In CP38 (Figure 14) Parker has anticipated the V chord, D7, using an ascending arpeggio that encloses the root. The anticipation covers 50% of the harmonic rhythm.



Figure 15. CP11, Charlie Parker, "Anthropology," 0:47.

As in the previous excerpt, CP11 (Figure 15) also anticipates D7 with an ascending arpeggio that encloses the root D, lasting for 50% of the harmonic rhythm. CP11 and CP38 (Figure 14) use the b 9th (E b) to achieve chromatic voice-leading.

Above-Below Enclosure Approach—ii-V-I Anticipation



Figure 16. CP52, Charlie Parker, "Back Home Blues," 1:14.

This content downloaded from 124.170.17.155 on Tue, 13 Apr 2021 07:30:16 UTC All use subject to https://about.jstor.org/terms CP52 (Figure 16) demonstrates HA that incorporates an above-below enclosure of the target note. The anticipation of A7 is indicated by the placement of C# (the 3rd of A7) on a strong beat, which is non-diatonic to the underlying harmony (D7), and the target note A is enclosed by B and G#.¹⁵ The anticipation covers 50% of the harmonic rhythm and occurs part-way through a phrase.



Figure 17. CP60, Charlie Parker, "Diverse," 0:55.

In CP60 (Figure 17) Parker has anticipated C- by arriving on E^{\flat} (the $^{\flat}$ 3rd of C-) one beat early. E^{\flat} is not diatonic to the underlying harmony—G7. The target note is approached mid-phrase by an above-below enclosure.



Figure 18. CP76, Charlie Parker, "Warming up a Riff," 1:33.

CP76 (Figure 18) contains a mid-phrase HA of G by four beats (100% of the harmonic rhythm) with an underlying harmony of F7. The HA is indicated by Parker's placement of G, A, B, and E on strong beats and the above-below enclosure of G on beat one. Halfway through the anticipation is an above-below enclosure of B, the 3rd of G.

Summary

The analyses indicate clear instances of HA and reveal some of the ways it is used by Parker. When anticipating the I chord in a blues form, the tension-release effect is employed to generate forward motion toward the start of the form. The length typically spans 25–100% of the harmonic rhythm; however, sometimes the length is extended to 200%. The anticipation generally occurs at the commencement of a phrase, on an upbeat, and often with triplet eighth notes included.

Parker demonstrates HA at modulation points, with the effect of increasing forward motion through tension-release and preparing the listener for the new key center. The length is generally 25–50%, making modulation point HA the shortest method that was identified in this research (presumably a longer anticipation would create too much dissonance and deliver an unmusical result—indicative of a limit to the effectiveness of the technique). Modulation point HA is characterized by the commencement—on an upbeat—of a new phrase.

In the ii-V-I chord progression, HA typically spans 25–100% of the harmonic rhythm, and in some cases that length increases to 200%. The longer anticipation is facilitated by the diatonicism of the chord progression. Parker demonstrates

formulaic use of HA via a descending scale that targets the root. Parker's other formulaic methods of approaching the target point include the ascending arpeggio and above-below enclosure. HA in a ii-V-I characteristically occurs part-way or at the end of an improvised phrase.

PEDAGOGICAL EXERCISES

In addition to exploring the nature of Parker's HA, this research seeks a pedagogical outcome: in what ways can the ability to anticipate harmony be developed using pedagogical exercises? This section presents a selection of pedagogical exercises that have been developed and tested through practice-led research.¹⁶ The exercises are extrapolated from the patterns of use identified in the transcription excerpts. They are intended for an intermediate or advanced musician who possesses knowledge of and practical ability in chord-scale relationships, functional harmony, standard jazz chord progressions, and improvisation.

Personal Reflections

The starting point for designing exercises was the knowledge gathered from my 15 years of experience as a practitioner and my preliminary understanding of HA. I recalled Joe Lovano's advice that "the only way I know to practice this concept is first, be aware of it and second, try to incorporate it into your phrasing" (Mishkit, 2005, p. 78). Lovano acknowledges the simplicity of his advice but reveals significant time and effort are required to achieve mastery. He explains how keeping beat one as the focal point for phrasing and pulse is instrumental in maintaining a reference to the tune's harmonic rhythm (Mishkit, 2005, p. 78).

Combining a reflexive viewpoint with transcription research allowed me to continually examine whether the HA practice was transferring to my mental representations and improvised soloing, and in this regard the pedagogical exercises have been successful. The greater sense of harmonic security—and by extension harmonic freedom—has allowed mental resources that were previously employed in monitoring the undulation of chords to be available for other tasks, like listening to other instruments in the ensemble or exploring a wider range of expressive devices.

In the jazz literature there is widespread acceptance of the need for musicians to develop their own ways of learning a new concept.¹⁷ Galper (2003) instructs his students to "develop their own individual methodology according [to] the way their mind works" (p. 191); he also remarks that following a teacher's method or pedagogical text is useful in learning a new concept. Eventually the student must adapt the material they are presented with into an effective and meaningful framework. The implication from Galper is the pedagogical exercises presented in this research might initiate the student's process of learning, and at a later stage they will benefit from personalizing the material.

In the following section pedagogical exercises are shown alongside an explanation of how they relate to the findings from the transcription excerpts and jazz language more broadly. The overarching design concept is to have the student shifting to the next chord change one and two beats early, while maintaining a mental representation of where the actual chord change exists within the tune.

Descending Scale Approach



Figure 19. Targeting the root with a descending scale.

Figure 19 is the starting point for the harmonic anticipation exercises. The exercise is structured on a Imaj7-vi7-ii7-V7 (Dmaj7-B-7-E7-A7) chord progression—commonly found in jazz repertoire—sometimes with the variation of iii7 instead of Imaj7 and VI7 instead of vi7.¹⁸ The HA in Figure 19 covers 50% of the harmonic rhythm and comprises a descending diatonic scale that begins on the 5th of the anticipated chord and targets the root. The descending scale approach that targets the root was identified in the transcription excerpts as a device used by Parker (see Figure 8, CP14 and CP14a).



Figure 20. Targeting the root with a descending scale and the variation: leap down to the next chord tone.

Figure 20 is a derivative of the previous exercise (Figure 19). The HA component from the latter is preserved; however, the former includes a melodic variation—a descending leap to the next chord tone. This exercise is included as an advancement on the parent exercise. As the student becomes familiar with the basic HA exercise, they can include melodic variations on the end of the line as preparation for improvising in performance.¹⁹

Figures 19 and 20 are starting points for developing HA. Extended practice would involve approaching the root, 3rd, and 5th of the anticipated chord by ascending and descending scales. Although the transcription analyses identified Parker's preference for the descending scale, there were many instances of scales that ascend, and the student is encouraged to build a robust technique by practicing all (logical) iterations.

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Figure 21. Targeting the root with an above-below enclosure.

Figure 21 incorporates the enclosure approach in the HA of each chord. The enclosure approach was selected for this exercise since it is an essential component of jazz language, and the transcription analysis identified Parker's above-below method of enclosing the target note. Ligon (1996) writes that when executing an enclosure "the common practice (from Mozart to Charlie Parker) is to use the diatonic ... upper neighbor tone ... and the chromatic lower neighbor tone" (p. 11). As with Figure 19, the above-below enclosure approach can be extended to target the 3rd and 5th of each chord.



Figure 22. Targeting the 7th with an ascending arpeggio.

The exercise in Figure 22 takes the student through ascending arpeggios that begin on the root and target the 7th. The line concludes on the final upbeat of each bar, increasing the forward motion through the emphasis of a beat with rhythmic tension (and the anticipated harmony). Figure 22 is very similar to the transcription excerpt CP41a (Figure 3, p. 31)—where Parker plays an ascending major triad that finishes on the root, instead of the 7th found in this exercise. The combination of HA with anticipated rhythm (emphasizing the final upbeat prior to a resolution point) was observed frequently in the transcription excerpts (CP12, CP34, and CP50a [Appendix, pp. 42–54]).



Figure 23. Targeting the root with an ascending arpeggio and enclosure.

Figure 23 is modeled on a formulaic melodic device—an ascending arpeggio that commences on the 3rd and targets the root with a below–above enclosure. It is formulaic within Parker's improvising language, and—due to his influence—jazz language more broadly (examples in the transcription analysis include Figure 13 [p. 35], Figure 14 [p. 35], and Figure 15 [p. 35]). Figure 23 anticipates each chord by a duration of 50% of the harmonic rhythm.



Figure 24. Targeting the 5th with a descending bebop scale.

The exercise in Figure 24 is an example of modulation point anticipation. Over a duration of 50% of the harmonic rhythm, the 5th of each chord is targeted using a descending bebop scale. The Cmaj7-C7-F7-Gmaj7 (IVmaj7-iv7-bVII7-Imaj7) progression contains a modulation from G major to G minor (or B^b major) and back to G major.²⁰ By focusing on a four-bar sequence, the student gains familiarity with the sound of introducing the new key center before it occurs.

The exercises in Figures 19–24 are a primer for students and educators that can inform the development of a personalized approach to learning HA. Successful outcomes should include greater command of the harmonic structure of a tune and of tension-release, the ability to control and manipulate harmony when improvising, and fluency in transitioning to new key centers ahead of time.

CONCLUSIONS

This study set out to answer the primary research question: how is harmonic anticipation used by Parker in his improvised solos? Additionally, secondary and tertiary research questions were posed: Could harmonic anticipation be an essential tool for developing a more accurate method for transcription analysis? In what ways can the ability to anticipate harmony be developed using pedagogical exercises?

The primary research outcome presents a general understanding of how HA is utilized by Parker. The anticipation length (relative to the harmonic rhythm) is usually 50–100% on diatonic chord progressions and 25–50% at modulation points. Anticipation is likely to occur before the I chord in a blues, at modulation points, and during standard chord progressions. The anticipation of the I chord in a blues and of modulation points is generally characterized by the commencement of a phrase on an upbeat, with a rhythmic subdivision of eighth notes or triplet eighth notes. The combination of rhythmic and harmonic tension-release contributes to a sense of forward motion. HA on a ii-V-I progression generally occurs during or at the end of a phrase and is characterized by the implementation of formulaic patterns, including descending scales, ascending arpeggios, and above-below enclosures.

The secondary research outcome argues for a more accurate method of transcription analysis. The detailed analyses of the transcription excerpts exhibit the indispensability of HA in revealing an accurate picture of what was played—and why. Some excerpts reveal HA as the only plausible analysis; for example, when the soloist has clearly outlined an upcoming chord that modulates away from the underlying harmony, and when they have combined this anticipation with the commencement of a phrase. The analysis of other excerpts is more subjective and could be analyzed against the underlying harmony or the anticipated chord; however, this research asserts that an analysis of HA can provide a stronger explanation of the contour and target point of certain phrases and reveals deeper insight into the improviser's intentions. For this reason, the HA framework should be included in the standard methods of transcription analysis used by researchers and musicians.

The tertiary research outcome is the development of pedagogical exercises, which aid in learning to anticipate harmony as an improviser. The patterns of use identified in the transcription analysis—together with existing educational resources and a practice-led approach—informed the development of these tools. In my own practice I observed a shift in my perception of when the changes in harmony occur; this shift has led to greater harmonic and melodic freedom in the second half of a chord's duration. The resulting pedagogical method is intended for use in jazz education.

Using the HA framework, we can now reconsider the research of Owens (1974) and Hermann (2004). Owen's study on Parker remains unparalleled in scope and depth, and yet HA is almost entirely excluded from the transcription analyses. Similarly, Hermann's omission of anticipated harmony leaves him unable to reconcile certain Parker phrases within his (otherwise excellent) guidetone analysis. Combined with existing methods of music analysis, HA yields a deeper understanding of Parker's improvisation technique.

Further Research Questions

Since this research has focused on Parker, there are limits to the generalizations that can be drawn. Further research is needed to determine whether HA is used in different ways (or not at all) by other prominent saxophonists, by players of other types of instruments, by musicians in different styles of jazz and other styles of music, and across a range of eras. It may be that bebop-era and contemporary musicians have disparate approaches to HA; however, the research on Rollins, Coltrane, and Lovano (Ford, 2018) suggests Parker's use of HA is normative practice in jazz.

Further research is also needed to determine the overall effectiveness of the pedagogical exercises to improve their design and presentation. A cohort of jazz students at the undergraduate level or experienced professional musicians could provide a suitable context to broaden the teaching of HA theory and evaluate its ongoing effectiveness.

APPENDIX. TRANSCRIPTION EXCERPTS





CP03, & CP03a. Parker, C. (1957). Chi Chi (Verve 8005), 1:37, 1:40.



CP04. Parker, C. (1958). Au Privave (Verve 8010), 0:53.



CP05. Parker, C. (1958). Au Privave [Alternate Take] (Verve 8010), 0:33.







CP07. Parker, C. (1974). K.C. Blues (Verve 8840), 0:41.



CP08, & CP08a. Parker, C. (1974). K.C. Blues (Verve 8840), 0:56, 1:01.



CP09. Parker, C. (1962). Dewey Square (Blue Ribbon 8011), 1:27.



CP10, & CP10a. Parker, C. (1962). Dewey Square (Blue Ribbon 8011), 1:32, 1:33.



CP11. Parker, C. (1977). Anthropology (Columbia 34831), 0:47.







CP14, & CP14a. Parker, C. (1961). Moose The Mooche (PLP-407-S), 1:17, 1:18.



CP15. Parker, C. (1957). Confirmation (Verve 8005), 0:50.



CP16, CP16a, CP16b, & CP16c. Parker, C. (1957). Confirmation (Verve 8005), 1:18, 1:18.5, 1:19, 1:20.



CP17. Parker, C. (1957). Confirmation (Verve 8005), 1:37.



CP18. Parker, C. (1957). Confirmation (Verve 8005), 1:55.



CP19. Parker, C. (1958). She Rote (Verve 8010), 0:44.



CP20. Parker, C. (1958). She Rote (Verve 8010), 0:48.



CP21. Parker, C. (1958). She Rote (Verve 8010), 1:02.



CP22. Parker, C. (1958). She Rote (Verve 8010), 1:06.



CP23, & CP23a. Parker, C. (1958). She Rote [Alternate Take] (Verve 8010), 0:36, 0:37.



CP24. Parker, C. (1958). She Rote [Alternate Take] (Verve 8010), 0:55.



CP25, & CP25a. Parker, C. (1958). She Rote [Alternate Take] (Verve 8010), 1:05, 1:06.



CP26, & CP26a. Parker, C. (1957). An Oscar For Treadwell (Verve 8002), 0:44, 0:45.



CP27. Parker, C. (1957). An Oscar For Treadwell (Verve 8002), 0:48.



CP28. Parker, C. (1957). An Oscar For Treadwell (Verve 8002), 1:22 (No HA, comparison for CP27).



CP29. Parker, C. (1957). An Oscar For Treadwell (Verve 8002), 1:48 (No HA, comparison for CP27).



CP30. Parker, C. (1957). An Oscar For Treadwell (Verve 8002), 0:59.



CP31, & CP31a. Parker, C. (1957). An Oscar For Treadwell (Verve 8002), 1:26, 1:28.



CP32. Parker, C. (1976). Constellation (Savoy 2201), 0:25.



CP33. Parker, C. (1976). Constellation (Savoy 2201), 0:37.



CP34. Parker, C. (1976). Donna Lee (Savoy 2201), 0:56.



CP35. Parker, C. (1976). Donna Lee (Savoy 2201), 1:29.



CP36. Parker, C. (1976). Donna Lee (Savoy 2201), 1:36.



CP37. Parker, C. (1977). Cheryl (Savoy 1108), 0:39.



CP38. Parker, C. (1976). Red Cross (Savoy 2201), 0:55.



CP39. Parker, C. (1976). Perhaps (Savoy 2201), 1:02.



CP40. Parker, C. (1976). Buzzy (Savoy 2201), 0:19.



CP41, & CP41a. Parker, C. (1976). Billie's Bounce (Savoy 2201), 1:13, 1:15.



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CP42. Parker, C. (1976). Billie's Bounce (Savoy 2201), 1:27.



CP43. Parker, C. (1976). Ab-Leu-Cha (Savoy 2201), 1:05.



CP44. Parker, C. (1958). Segment (Verve 8009), 0:38.



CP45. Parker, C. (1958). Segment (Verve 8009), 1:19.



CP46. Parker, C. (1958). Segment (Verve 8009), 1:38.



CP47. Parker, C. (1957). Visa (Verve 8000), 1:03.



CP48. Parker, C. (1957). Passport (Verve 8000), 0:50.



CP49. Parker, C. (1976). Another Hairdo (Savoy 2201), 0:47.



CP50, & CP50a. Parker, C. (1976). Another Hairdo (Savoy 2201), 1:03, 1:04.



CP51. Parker, C. (1974). Back Home Blues (Verve 8840), 1:11.



CP52. Parker, C. (1974). Back Home Blues (Verve 8840), 1:14.



CP53. Parker, C. (1974). Back Home Blues (Verve 8840), 1:21.



CP54, CP54a, & CP54b. Parker, C. (1974). Back Home Blues (Verve 8840), 1:25, 1:27, 1:28.



CP55, & CP55a. Parker, C. (1974). Bloomdido (Verve 8840), 1:12, 1:12.5.



CP56. Parker, C. (1974). Bloomdido (Verve 8840), 1:16.



CP57. Parker, C. (1958). Diverse (Verve 8009), 0:36.



CP58. Parker, C. (1958). Diverse (Verve 8009), 0:42.



CP59. Parker, C. (1958). Diverse (Verve 8009), 0:48.



CP60. Parker, C. (1958). Diverse (Verve 8009), 0:55.



CP61, & CP61a. Parker, C. (1958). Diverse (Verve 8009), 1:10, 1:12.



CP62. Parker, C. (1958). Diverse (Verve 8009), 1:18.



CP63, & CP63a. Parker, C. (1976). Merry-Go-Round (Savoy 2201), 0:51, 0:52.





CP65. Parker, C. (1957). My Little Suede Shoes (Verve 8000), 1:06.



CP66. Parker, C. (1957). My Little Suede Shoes (Verve 8000), 1:56.



CP67. Parker, C. (1974). Blues [Fast] (Verve 8840), 0:21.



CP68. Parker, C. (1974). Blues [Fast] (Verve 8840), 0:34.



CP69, CP69a, & CP69b. Parker, C. (1974). Leap Frog (Verve 8840), 1:22, 1:22.5, 1:23.



CP70. Parker, C. (1976). Warming Up A Riff (Savoy 2201), 0:11.



CP71. Parker, C. (1976). Warming Up A Riff (Savoy 2201), 0:19 (see comparisons CP72, CP73).



CP72. Parker, C. (1976). Warming Up A Riff (Savoy 2201), 1:28 (No HA, comparison for CP71).



CP73. Parker, C. (1957). My Little Suede Shoes (Verve 8000), 1:22 (No HA, comparison for CP71).







CP75. Parker, C. (1976). Warming Up A Riff (Savoy 2201), 1:24.



CP76. Parker, C. (1976). Warming Up A Riff (Savoy 2201), 1:33.



CP77. Parker, C. (1976). Si Si (Verve 2512), 0:45.



Notes

1. Borgdorff (2007) notes that "practice-led" is the term preferred by the UK research body Arts and Humanities Research Council (AHRC) for "research on the arts" (p. 5).

2. Specifically, Bergonzi (1992), Coker et al. (1970), and Steinel (1995). The terms "master practitioner" and "mastery" are gender-neutral and refer to canonical figures in jazz history, such as Charlie Parker, Miles Davis, or Ella Fitzgerald, or lesser-known names that have reached comparable levels of proficiency.

3. This phrase from "Ornithology" is analyzed in Figure 4 using HA.

4. The Appendix contains the complete data set of transcription excerpts, with 94 instances of HA. They are included for the motivated reader. For ease of reading, only certain excerpts have been selected for inclusion as in-text figures.

5. A device related to HA—harmonic suspension—is beyond the scope of this article. Although both are forms of superimposition, HA differs in that it functions as part of the musician's mental framework for navigating into chord changes (see the Literature Review).

6. In Ford (2018) it was shown that HA is deliberately employed by Barry Harris and Joe Lovano.

7. "Harmonic rhythm" refers to the rate at which chords change in relation to the pulse or meter. In this analysis, if a tune has a harmonic rhythm of one chord every four beats, HA with a length of 200% is eight beats long.

8. In addition to their sequential numbering, figures contain a non-sequential alphanumeric code (e.g., CP08) that correlates with the identifiers in the Appendix. The bracketed section underneath the musical notation indicates the HA, and where an excerpt contains more than one instance of HA, the figure codes are sequential (e.g., CP08, CP08a).

9. The harmonic function of notes played on upbeats is weak. Since the phrase in CP41a (Figure 3) commences on an upbeat, the HA is not considered to have commenced until the next downbeat. This criterion for analyzing where HA commences has been used throughout this research, except in certain circumstances, such as when Parker places a heavy accent on an upbeat at the start of a phrase.

10. The term "modulation" is being used to indicate either the introduction of non-diatonic chords and tones or a change in key center.

11. Figure 4 demonstrates how difficult it can be to achieve a consensus on the content of a transcription. My transcription differs from Hermann's (2004, p. 244) and the Slone/Aebersold transcription (1978, p. 7).

12. Hermann's (2004) analysis is given in concert pitch, whereas this article is presented in the written key for E^{b} alto saxophone, so I have transposed the pitches here and placed them inside square brackets.

13. An enclosure is the use of surrounding tones played prior to a target point, which is often (but not always) a chord tone. The surrounding tones can be diatonic or chromatic to the harmony, and "above-below" indicates the target point is enclosed by a note above and then below, in that order.

14. In the context of HA, the target point is the note played at the moment when the next chord change occurs. This chord change is also referred to as the "target chord."

15. In jazz, the placement of notes on strong (downbeat, or onbeat) or weak (upbeat, or offbeat) beats is crucial for the function the note performs against the harmonic structure, as notes placed on downbeats are heard strongly and the listener will perceive that note as it relates to the chord. Knowledge of this relationship between downbeats and chord tones informs the analysis of HA by focusing on the chord, scale, or key center indicated by the downbeat notes.

16. In my own practice, I have developed a suite of exercises that deal with HA. For brevity, this article presents a selection of those exercises, as an overview of my approach.

17. Pedagogical texts provide varying levels of direction to the student. Some, such as Bergonzi (1992), list the full suite of variations of an exercise, whereas Coker (1970) gives an exercise in one key without variations, and the student is instructed to transpose the exercise into the remaining 11 keys. The student is also expected to alter the exercise to fit chords with different extensions and explore first and second inversions.

18. For example, the opening four bars of "My Shining Hour" (Arlen & Mercer, 1943) and "Too Young to Go Steady" (McHugh & Adamson, 1956) contain a Imaj7-iv7-ii7-V7 chord progression.

19. Melodic variations could include leading up or down to the first or second next chord tone or leaping up or down to an enclosure of a chord tone.

20. A tune with this progression is "Just Friends" (Lewis & Klenner, 1931), bars 2-5.

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