THE ELEMENTS OF JAZZ HARMONY

AND ANALYSIS

THESIS

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This study develops a method for analyzing jazz piano music, primarily focusing on the era 1935-1950. The method is based on axiomatic concepts of jazz harmony, such as the circle of fifths and root position harmonies. 7-10 motion between root and chordal seventh seems to be the driving force in jazz motion. The concept of tritone substitution leads to the idea of a harmonic level, i.e., a harmony's distance from the tonic.

With this method in hand, various works of music are analyzed, illustrating that all harmonic motion can be labelled into one of three categories. The ultimate goal of this analytic method is to illustrate the fundamental harmonic line which serves as the harmonic framework from which the jazz composer builds.
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CHAPTER I

INTRODUCTION

Jazz is a topic that has been written about extensively. Included in these writings are numerous histories, chronologies, discographies, and similar factual accounts, but there have to date been relatively few attempts at actual musical analysis. Sources giving the names of the people who have played with, and have influenced, or been influenced by, jazz greats such as Art Tatum or Oscar Peterson are very easy to find. Finding where jazz artists were born, where they studied, and with whom they recorded is also simple. If, however, one desires to know what makes an arrangement sound unique to a particular author, why particular harmonies were used, or what makes an arrangement work as a whole, there will be some difficulty in locating sources.

Notable exceptions include recent works by Jeff Pressing\(^1\) and Dan Haerle.\(^2\) The former, however, only deals with contemporary (post 1950) jazz and applies twentieth century

\(^1\)Jeff Pressing, "Pitch Class Set Structures in Contemporary Jazz," \textit{JazzForschung : Jazz Research}, Vol. 14 (Graz, 1982), 133-172.

\(^2\)Dan Haerle, \textit{The Jazz Language} (Lebanon, Indiana, 1980).
analytical techniques, whereas the latter limits analysis to deciding on the key of the current phrase.

Jazz musicians will commonly take a familiar piece of music, and via some mysterious transformational process, turn it into a work of jazz. In fact, several musicians may independently take the same piece and come up with significantly different versions, all of which, however, turn out to be viable jazz arrangements.

What exactly is this mysterious jazz transformation? What defines a jazz harmony, and what are the laws of harmonic motion that govern a piece of jazz music? Is there just some inexplicable flow that can only be felt by those in the know? These and similar questions are to be discussed in this work.

John Mehegan, who was one of the major pioneers in the scholarly study of jazz, attempts to answer some of these questions as he states:

Jazz harmony is diatonic or major scale harmony found in the mainstream of classical music from 1600 to 1900. In other words, jazz harmony is classical harmony following the identical rules and conventions found in a Bach fugue, a Mozart sonata, a Brahms rhapsody.3

While it must be observed that certainly these "classical" conventions do play a fundamental role in all of music, surely this definition cannot be taken literally, for it apparently implies that through inspection of a harmonic

reduction of a Mozart piano sonata, it might be mistaken for Art Tatum's treatment of "Willow Weep For Me"! Other authors including Stanton⁴ have as much as said that the progression II-V-I is the final word on jazz analysis. They claim that every progression will boil down to this in one form or another, though it may perhaps be disguised as something else. Once again, it should be noted that indeed this progression is in great abundance in jazz as well as in just about any other form of music, but hopefully this will not be passed off as the final word. It should be clear that there must be other factors that come into play in analyzing a piece of music. Stating, for example, that a piece of music consists simply of the progression II-V-I in three keys still leaves open the question of how these three keys interrelate. Why did the composer choose these three keys, and how does one flow logically into the next? What is the overall harmonic scheme of this piece? Perhaps a II-V-I in a fourth key?

Herein lies the main body of this work. It will begin with a discussion of the basic elements that make up a jazz harmony, continue with some necessary definitions in understanding the proposed approach to analysis, then proceed to analyze in detail several jazz works.

⁴Kenneth Stanton, Introduction to Jazz Theory, (Boston, 1976).
The pieces chosen for analysis are limited to arrangements written by jazz pianists between 1935 and 1950, the era labelled "Swing and Early Progressive" by John Mehegan. Focus is on the pianists George Shearing, Art Tatum, and Teddy Wilson. These works are for the most part jazz arrangements of "pop-standards," highly tonal, and in the major mode (as are most jazz works). This analytical method will then be used to analyze a few later works, not from this era, and to draw conclusions as to its applicability to other musics. The work concludes by observing how this technique affects the performer, especially in regard to the improvised line.
CHAPTER II

JAZZ HARMONIC VOCABULARY

The essential difference between jazz and other genres of music, at least as far as this work is concerned, is its harmonic vocabulary. As is the case with most tonal musics, a harmony in jazz is one that is based on chords built using intervals of thirds. Unlike other tonal musics, however, jazz does not employ the three-note triad as its basic harmonic unit, but replaces it instead with the four-note seventh chord. In fact, the appearance of a triad in a jazz work is seen as somewhat of a rare occurrence, and this chord may even stick out. The one harmony that does occasionally appear as a triad without being overly unusual is the tonic. Even this chord, however, is much more commonly expressed as some kind of extended harmony (i.e., at least a seventh chord).

The following figure is the introduction to Art Tatum's "I'm in the Mood for Love." By spelling each of the harmonies in thirds, it can be seen that each chord contains at least a seventh, and in fact most of the chords contain additional members. The chord at the end of measure two contains not only a seventh, but also a flat ninth, and a
thirteenth. Interestingly, this highly extended chord resolves to the tonic, which here does appear as a triad.

This principle does of course have exceptions, but as a general rule, THE SEVENTH CHORD REPLACES THE TRIAD AS THE BASIC HARMONIC UNIT IN JAZZ. This is exactly the principle that gives jazz its "rich" harmonic quality, and makes it so easily distinguishable from other genres of music.¹

![Fig. 1--Example of seventh chords](image)

With this in mind, it should become evident that the jazz composer has only five basic chord types or chord families² with which to work. This is because there are only five basic families of seventh chords that can be constructed. These are the major seventh, the minor seventh, the major-minor seventh (dominant seventh), the diminished seventh, and the half-diminished seventh families. Other families are certainly possible using intervals other than major and minor thirds in constructing the chords (e.g.,

¹Of course there do exist many other distinguishing characteristics, most notably rhythmic interpretation, but they are not considered in this work.

quartal harmony), but these are virtually non-existent in the works from the time period under consideration. The term "family" is used here simply to imply that there exist several closely related chord types in each family, for which one is the quintessential model that serves as the representative member.

Fig. 2--The major seventh family of chords

The above figure shows that the major seventh chord is representative of chords including the major triad, the major added-sixth chord, and the major added-sixth-ninth chord. All this simply means is that each of these chords can substitute for one another, without having any effect on the harmonic structure of the piece. These substitutions will of course affect the harmonic color and voice leading, which must be taken into consideration, but they will not alter the basic harmony.

Using the seventh chord as the fundamental harmonic unit, jazz musicians extend this chord further to give it an even richer character. These extensions have virtually no effect on the functionality of the chord, but only serve to embellish it as well as to enhance the voice leading.
The first, and perhaps most important point to be considered with these embellished, or extended harmonies, is that they are generally to be found in root position. The reason for this is actually quite simple, once the number of notes that are being dealt with is considered. As more and more embellishing notes are added to a chord, the more closely that it begins to resemble a scale, rather than a chord. Once this occurs, the chord can be built in thirds in several different ways by letting various notes function as the root, and respelling the remainder of the chord as necessary. Because of this ambiguity, some distinction needs to be made between two such chords, and this is generally done through agreement that the note in the bass of the chord will function as the root. (See Figure 3.)

Fig. 3--Which note is the root?

The above figure contains two chords taken from George Shearing's "Taking a Chance on Love." The first chord is a major-minor seventh chord that has been extended. This

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This turns out to be the scale that the jazz improvisor will draw upon when improvising over this harmony.
chord is a suspended harmony that has an added ninth and an added thirteenth, making it a six note chord. Only one note of the C major scale is not present. Because this chord can be re-voiced in any number of configurations, the only way that it can be distinguished from another chord that also closely resembles this scale is by knowing which note is the root (i.e., which note in the bass). The second chord contains five of these same notes, though it is voiced differently. Even the note that this chord lacks, the D-natural, is consistent with this chord, and could easily be included in this voicing. Therefore if these chords are inverted, much of their functionality can become blurred. This then becomes another principle of jazz. JAZZ HARMONIES ARE GENERALLY FOUND IN ROOT POSITION. There do of course exist numerous exceptions to this principle, most of which are unextended seventh chords. Even in these cases, however, the bass note will tend to dominate the harmony.

Essentially, only three possible extensions can be added to the basic seventh chord construct, and these are the ninth, the eleventh, and the thirteenth, along with chromatic alterations of these tones. When added to the four already present in the basic seventh chord, these notes include every note from any diatonic scale. This chapter attempts to point out just how closely jazz harmonies and scales relate to one another. Chordal associations are most
commonly made with traditional seven note scales, but by using some of the chromatic alterations of the extensions in combination, scales with eight or more notes are possible. Some case by case examples follow.

The Major Seventh Family

The major seventh chord is most commonly extended in only one way--by adding the major ninth. This chord most often implies the major scale of the same root, and the only notes that are not present are scale degrees two, four, and six. Scale degree two is the ninth, which when added helps confirm the correspondence between this chord and scale. Scale degree four is the eleventh of the chord, which is rarely included with a major harmony, as it produces a dissonant interval with the third of the chord. This interval is the minor ninth, which is highly dissonant, and generally avoided. The only exception to this is when the eleventh acts as a suspended harmony, in which the fourth degree replaces the third. Note that it is not really an eleventh in this case, but rather a suspended fourth. In general, the natural eleventh is not voiced together with the major third in the same harmony.

The thirteenth may be added to this harmony, but it is much more common when the seventh is not present. This then becomes the major added-sixth chord, and not a thirteenth at
all. The sixth is also often used in conjunction with the ninth to create the major added-sixth-ninth chord.

![Fig. 4--The major seventh family extensions](image)

It should be evident that no chromatically altered extensions can be added to this harmony, at least not without destroying its relationship with the major scale of the same root. The raised eleventh, however, can be added, although this extension becomes much more common after 1950. By adding this note, the clash with the third degree of the chord is now avoided, as the interval now becomes a major ninth, which is acceptable. The chordal correspondence with the major scale of the same root, however, is destroyed. (See Figure 5.)

![Fig. 5--The sharp eleventh](image)
A major seventh chord with added ninth and sharp eleventh now contains six of the seven notes of the lydian scale of the same root. Note that this scale is equivalent to the major scale built on the fifth of the chord. This chord with the raised eleventh is usually spelled together with the major ninth, and must be voiced with the eleventh above the fifth degree to avoid the interval of the minor ninth.

The Minor Seventh Family

The minor seventh family is quite similar to the major sevenths with regard to its extensions, because once again the major ninth is the one most commonly used. The natural eleventh is also common, and often voiced together with the major ninth. Notice now that there is no longer a problem with the eleventh creating a minor ninth with the third, because the third is now a half step lower.

The minor seventh extended with the ninth and eleventh in this way adds up to six notes of a scale, with the thirteenth being the only missing note. This note, though rarely added, will characterize which of the two commonly used scale possibilities for this harmony is being used. If the thirteenth is flatted, then the resulting scale is an aeolian scale built on the root of the harmony. This is the natural minor scale. If the thirteenth is unaltered, the resulting scale is dorian, or the second mode of the major scale.
The thirteenth is not usually added, as it will clash with other notes of the harmony. The flat thirteenth creates a minor ninth with the fifth scale degree, while the natural thirteenth creates a major seventh with the seventh degree. A major seventh is not normally an unacceptable interval, but in this instance it obscures the harmony, since the thirteenth is the most likely note of resolution for the seventh degree (to be fully discussed later). Hence the improvisor will often have a choice of scales here, between the dorian and the aeolian, possibly to be decided by other musical elements.

Fig. 6--The minor seventh extensions

Other less common possibilities compatible with the dorian mode are the minor added-sixth, and minor added sixth-ninth, which are more common in pieces in the minor mode. These chords can also imply an ascending melodic minor scale, which also supports the minor-major seventh chord. This chord is very uncommon in this era. Any other extensions, such as the flat nine, sharp nine, or sharp eleven are quite rare, as they either clash, destroy any
scalar correspondence, or make no modal sense (as is the case with the sharp nine).

The Major-Minor Seventh Family

This family truly stands by itself with regard to extensions, because nearly every possible extension or combination of extensions works well and is used to a great extent. Some of them do turn out to be quite dissonant, but these dissonances only add to the chords' natural function (which is to resolve into a less dissonant chord).

All of the possible ninth degrees are used extensively, although the natural ninth is by far the most common of these. This note will imply a mixolydian mode, which also supports the natural thirteenth. The two are often voiced together. The flat ninth is also quite common, and is usually associated with the fifth mode of the harmonic minor scale. This scale also supports the flat thirteenth, and when these extensions are used together, the chord often functions as the dominant to a minor tonic. Other scale possibilities exist which also support the sharp ninth, which is discussed below.

The sharp ninth is the least commonly used ninth extension of this era, as it is quite dissonant, though its usage increases dramatically after 1950. This extension implies one of several so-called "altered scales," which support
both the flat and sharp ninths. The first of these altered scales is the super-locrian mode, which is another name for the seventh mode of a melodic minor scale (ascending version). A tertian harmony built on the root of this scale will contain the sharp and flat ninths, as well as the sharp and flat fifths. Note that these fifths are harmonically equivalent to a sharp eleventh, and a flat thirteenth. The other altered scale possibility using both the sharp and flat ninths is the octatonic scale (also known as the diminished scale). This is simply an eight-note symmetrical scale composed of alternating half and whole steps (in this case beginning with a half step). In addition to the altered ninths, this scale also contains a raised eleventh, a natural fifth, and a natural thirteenth. Here again, the eleventh should be voiced above the fifth.

Fig. 7--Major-minor sevenths
The natural eleventh is very rare since once again a major third is present. A natural eleventh does not function as an eleventh in a major sonority, but rather as a suspended fourth waiting to resolve to the third. Therefore, it should not normally be present along with the major third, since it indeed is the third.

The raised eleventh is also rarely voiced with the major-minor seventh chord. As has been pointed out, it is supported by both altered scales, as well as the overtone scale (lydian flat-7), but its presence is much more likely to indicate a misspelled flat fifth (see below). This will then imply a whole-tone scale, which supports the sharp fifth as well.

A word of caution should be inserted here in regard to correct interpretation of a raised eleventh. As previously mentioned, this note is enharmonically equivalent to the flat fifth degree, which is a somewhat common chordal alteration (the fifth degree is not an extension, hence the term "alteration"). Because of this, correct interpretation of this note can often be difficult, especially when only one of them is present. Obviously, when the chord contains a natural fifth as well as a raised eleventh, interpretation becomes trivial. Aside from this, however, the interpretation can only come from inspection of the chord's voicing and subsequent voice leading. A flat fifth is usually
voiced beneath the seventh degree, while the sharp eleventh is voiced above, and is generally accompanied by the natural ninth. The flat fifth will tend to descend to the fourth degree, whereas the raised eleventh will generally ascend to the fifth. Similar difficulties arise with respect to a raised fifth degree and a flat thirteenth. Again, chord voicing and proper voice leading must be inspected for correct interpretation. Flat alterations tend to descend, whereas raised alterations will generally ascend.

The natural and flat thirteenths are both commonly included in the voicings of this chord family, and they may be used either by themselves, or together with the ninth. Corresponding scalar implications are as discussed with regard to the chordal ninth.

While there are indeed an endless number of other combinations of alterations and extensions possible with the major-minor seventh, these are the ones in most common use.

The Half-Diminished Seventh Family

This chord has few, if any, common extensions, and no alterations. It is usually left as a seventh chord, probably because it already possesses a rich harmonic quality, on a level with other extended harmonies.

For this reason, no extensions are necessary, though some can be used. Three scales correspond well with this
harmony—the locrian mode, the locrian #2 mode (which is the sixth mode of an ascending melodic minor scale), and the second mode of the harmonic minor scale. The flat ninth is a rare extension, though a natural ninth is possible when a locrian #2 modality is desired. All three scales support the natural eleventh. This note and the natural thirteenth are both possible, but rare.

Fig. 8--Half-diminished sevenths

The Diminished Seventh Family

This is the one chord family that is the least extended in all of jazz literature. Being an equidistant chord (one in which every chord member is an equal distance between its adjacent chord members), it completely destroys all sense of a tonic. Because each note is three semitones away from its neighbors, there are really only two places where another note could be added to this chord—either the note one semitone above one of the chord tones, or the note two semitones above one of the chord tones. Any other possibility is only a transposition of one of these basic extensions. As it turns out, only one of these extensions will work, because
as may have been guessed, the note one semitone above one of
the chord tones creates a minor ninth interval. The two
scales most often used with this harmony are the octatonic
scale (this time beginning with a whole step), and a har-
monic minor scale, whose root is a half step above one of
the chord tones.

Notice that these are the same scales that were used
with the major-minor seventh family. This is an important
point. As will be discussed later, the diminished seventh
chord most often functions as a major-minor seventh with a
flat ninth, but with no root (which could be any of four
possible notes).

This chapter, of course, has presented only the most
essential and commonly used chordal extensions and altera-
tions that define a jazz harmony. Many other extensions and
scale possibilities can and are used.
CHAPTER III

HARMONIC MOTION

Chapter II has established the chordal vocabulary used in jazz harmony. This chapter will now focus on the means by which one chord progresses to the next.

Harmonic Rhythm

A complete understanding of harmonic rhythm in jazz is fundamental to the concepts underlying this study, as well as to the analyses that follow. On the surface, the definition of this term appears trivial. Harmonic rhythm is the rhythm by which the harmony changes in a given work. Aside from being slightly recursive, this definition implies that there exists a clear-cut distinction between where one harmony ends and the next begins. This turns out to be far from the truth.

One of the major purposes of this work is to demonstrate how harmonic rhythm may be seen at many different (i.e., hierarchical) levels. For instance, there may exist a passage of four or more measures where the harmony changes on every beat. The harmonic rhythm can then be said to be one chord per beat (at least at the lowest level). At a
higher level, however, the entire passage may be categorized into one "large" chord that is seen to resolve into the next large chord. Analogous to this is a long passage of dominant preparation seen in traditional music. Even though the passage consists of many different harmonies, they can all be labelled together at some higher level as subdominant. At this higher level, the harmonic rhythm is significantly slower.

The Circle of Fifths

All harmonic motion in jazz relates to the circle of fifths in one way or another, and this progression undoubtedly is the most fundamental one in all tonal music. Its impact on jazz is profound.

![Circle of Fifths](image)

**Fig. 9--The circle of fifths**

This progression provides the main link between jazz theory and traditional theory, as they both rely heavily on
root progression by fifth. The familiar II-V-I, which is so abundant in jazz literature, is the perfect example of this. The root of the II chord descends a perfect fifth to become the root of the V chord, which in turn descends a perfect fifth to become the root of the I chord. This root progression can be extended backwards, to produce the progression III-VI-II-V-I, which is a common cadential pattern.

What is it that makes these progressions so strong, and why do they work so convincingly? Actually, there are several reasons for this, the first of which is suggested by the overtone series.

![Fig. 10--The overtone series](image)

This series represents the total range of pure tones that are present whenever an instrument, such as the piano, plays a note (which turns out to be the fundamental). The reason for the appearance of overtones is that when a piano string vibrates as a whole, producing the fundamental, it also vibrates simultaneously in sections of one-half, one-third, one-fourth, etc., of its entire length. These
vibrations produce the overtones, which are all much less in amplitude than the fundamental, making them less perceptible to the ear. By examining the overtone series, not only can it be seen that the first eight partials precisely spell out a major-minor seventh chord built on the fundamental, but more importantly, the first overtone that is not an octave displacement of the fundamental is a perfect fifth (plus an octave) above the fundamental. For this reason, traditional theorists have labelled the root progression of a perfect fifth downward as the first conjugation of harmonic motion.¹ This simply means that this progression provides the strongest and most convincing resolution in music. An aural explanation for this is that by hearing such a progression, a sense of relaxation is also heard as the third overtone (the fifth degree) resolves back to the fundamental (the tonic). Relaxation simply means that the note or chord in question has moved in a direction nearer its final destination.

A second and arguably more important reason that progressions such as II-V-I work so well is the voice leading. The V chord (which is now known to be a V7 chord), being very dissonant, is also quite unstable. It contains the intervals of a tritone and a minor seventh.

The tritone, which will be examined more thoroughly later, can actually resolve in either of two ways, but what is important is that it indeed needs to resolve. The normal resolution has the third of the chord ascending by half step to become the root of the new chord, while the seventh descends to the new third. This coupled with the bass motion by fifth completes the basic progression, leaving a definite feeling of resolution.

![Fig. 11--Voice leading with a major-minor seventh](image)

This notion of root progression by fifth, taken together with a resolving tritone, seems to explain satisfactorily the means by which a major-minor seventh progresses to an implied tonic located a fifth below, but it does not really explain the circle of fifths progressions. For example, why does the II chord go to the V chord, since it does not contain a tritone? Also, what about III going to VI since neither contain a tritone?

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This ignores the exception of the blues, where the tonic harmony is the major-minor seventh, and this tritone does NOT resolve.
Clearly then, the tritone is not the most essential element in these progressions, though it undoubtedly strengthens them. What is it that these chords have in common that makes them move this way? They all contain a minor seventh interval with the bass. As the root descends a fifth, the seventh descends a step (either a whole or a half step), becoming the third of the next chord. Figure 12 presents this skeletal outline for a series of chords in the circle of fifths.

Fig. 12--7-10 motion

This 7-10 pattern intervalically seems to be the basis for all harmonic motion in jazz. The other notes added to complete the sonority only serve to embellish the chord, as well as perhaps to strengthen the progression, as was the case with the tritone. This also does much to explain why a major seventh family member does not have a great tendency to progress, since it contains neither minor seventh nor tritone.
Tritone Substitution

The principle of tritone substitution is one that has its roots in traditional harmony. This principle is essentially the same as that of the dominant augmented-sixth chord, which really boils down to a reinterpretation of the chord's voice leading. Traditional theory states that any major-minor seventh chord can be interpreted in either of two ways, depending on the enharmonic spelling of the chord. It can either be a dominant seventh, in which the seventh resolves downward, the third upward, and the root descends by fifth, or as an augmented-sixth chord in which the seventh (spelled now as an augmented-sixth) ascends a half step, the third descends, and the root descends a half step.

This progression is normally analyzed as bVI - V, but in the case where the phrase terminates with this progression, it can be reinterpreted as (bVI - V)/IV, or simply bII - I. The jazz musician views the tritone substitute in this manner. Instead of reinterpreting the spelling of the
major-minor seventh, however, he reinterprets the resolution of the tritone between the chords third and seventh degrees. For example, Figure 14 illustrates a major-minor seventh built on G. The tritone occurs between the third, the B-natural, and the seventh, the F.

The normal resolution of this tritone is inward (diminished fifth resolving to third), progressing to a C chord. Note, however, that there exists another major-minor seventh chord with this same tritone, though it resolves differently. This chord is built on D-flat (a tritone away from G), and spells its tritone as F and C-flat. Its normal resolution is to a G-flat chord, as the same tritone now resolves outward (augmented fourth resolving to sixth). If, however, this tritone were to resolve as it had previously (i.e., inward), the D-flat chord would now progress smoothly to a C chord.

Fig. 14--Tritone substitutes

Such a resolution is essentially equivalent to treating the D-flat chord as a dominant augmented-sixth chord in the
key of C without worrying about proper chord spelling. This points out that there are actually two major-minor seventh chords that can resolve to C--G and D-flat. In general, every chord root has two major-minor sevenths that can function as its dominant— one a fifth above, and the other a half step above the root. Similarly, from the opposite perspective, this is tantamount to saying that every major-minor seventh has two expected resolutions— down by fifth, or down by half step. The jazz musician sees this as the following: ANY MAJOR-MINOR SEVENTH WILL SUBSTITUTE FOR ANOTHER, IF THEIR ROOTS ARE LOCATED A TRITONE APART.

Undoubtedly, this is where the term "tritone substitute" came from, as the two chords substituting for one another are located a tritone apart. The above figure illustrates that a G major-minor seventh chord can substitute for (i.e., replace) a D-flat major-minor seventh chord, as they both have expected resolutions to either a C chord, or a G-flat chord. It should be noted that this substitution will affect scale choice and extensions, but the essential harmonic function remains unaltered.

This principle of tritone substitution does have some natural extensions that are not found in traditional music, but abound in jazz. For the jazz musician, this principle can be applied to chords from any family, under the right circumstances. This can be explained simply by "playing
around" with some common chord progressions. As previously stated, the progression II-V-I is perhaps the most common one in all of jazz. From the above paragraph, it should now be clear that the progression II-bII-I will be equally convincing. What should also be evident is the fact that the bII as a dominant also has its own "II" chord, namely bVI. This creates the progression bVI-bII-I. Comparing these last two progressions, it is seen that the bVI has now replaced the II chord, hence it functions as a substitute. These chords (the II and the bVI) will most likely be minor sevenths, though they may also be major-minor or half-diminished, depending upon the particular situation.

The term substitute does not imply that these chords sound similar, or that their substitution will go unnoticed, but rather that either chord will function equally well harmonically in the given progression.

Fig. 15--Tritone substitution expanded

Tritone substitution can be applied to the major seventh family as well. Such substitution is evidenced through
the comparison of two usable chord progressions. First it should be observed that the progression bVI-bII-bV is quite common, being nothing more than II-V-I in the key of flat five. Similarly, the progression bVI-bII-I has been demonstrated to be a II-V-I for which the II-V has been substituted. By comparing these last two progressions, it is noted that the only difference lies in the final chord. Clearly either the I or the bV will work successfully.

Hence it can be seen that the principle of tritone substitution can be applied to chords from any family. The only family that was not mentioned was the diminished family, and Figure 16 demonstrates why this is the most trivial of all cases.

Fig. 16--Substitution using diminished sevenths

Replacing a diminished seventh chord with its tritone counterpart has only the effect of inverting the original chord.

As has been mentioned, these chords can substitute for one another, which does not necessarily mean that they always do substitute for one another in every instance. The
key phrase is that these chords can substitute for one
another "given the right circumstances."

For example, if a piece were in C major, the final
chord would not sound terribly convincing if it were a
G-flat major seventh (the tonic's tritone substitute). The
G-flat chord would certainly sound as though it had been
approached smoothly in the harmonic sense, as it would most
likely have been preceded by a G or D-flat major-minor sev-
enth, but it would not be perceived to function as a tonic.
Both melodically and harmonically the piece needs to end on
a C, and the melody would certainly need to end on a note
from the C major scale, which is not well supported by a
G-flat chord. Although this is an extreme example, its
point should still be well taken. The tritone principle
only considers harmonic motion, and makes no reference to
the melody. It will allow chords to substitute for one
another correctly harmonically, but if the chord makes no
sense with the melody, then the substitution is not a valid
one. This explains why the tritone substitution is much
more common with major-minor seventh chords. As these
chords can be altered and extended in many ways, it is dif-
ficult to find melodic notes that do not fit the harmony in
one way or another.
The Circle of Semitones

Given an understanding of the circle of fifths, along with the concept of tritone substitution, one may derive the circle of semitones. (See Figure 17.)

This is a skeleton of the circle of fifths showing only the essential voice leading, which consists of root, third, and seventh. The two upper voices appear as though they are simply descending chromatically, rather than skipping around by fifth. In fact, replacing the roots with the parenthesized notes, the circle of semitones is created. This concept is simply another representation for the circle of fifths with tritone substitutes inserted, creating a bass line that descends by half step. Note that now the 7-10 motion has been replaced by 7-7 motion.

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4Some would disagree with the term "circle" with the motion of semitones, though it does seem appropriate for comparison with the circle of fifths.
Progression versus Retrogression

What exactly is meant by the phrase "harmonic progression"? Toward what are harmonies progressing? The obvious answer would be that a harmony is progressing when it is moving harmonically "closer" to the tonic. While this may often be the case, this is not true in general. This would imply that any tonic harmony cannot progress, and all motion must cease.

![Diagram of circle of fifths with progression and retrogression](image)

Fig. 18--Progression and retrogression

According to this study, harmony is said to be progressing when it conforms to the sense of tension-relaxation described earlier. This essentially boils down to having a bass descending by either fifth or half step, with sevenths descending, and tritones resolving to third or sixth. This, therefore, means that progression implies motion in the positive direction around either the circle of fifths or of semitones.
As can be seen in the above figure, harmonies are progressing when the bass motion is one that is moving around the circle of fifths\textsuperscript{5} in a counter-clockwise direction. The corresponding definition of retrogression then becomes trivial. If the bass motion is one that moves around the circle of fifths in a clockwise direction, then the harmony is moving in a direction of increased harmonic tension, which is labelled "retrogression." The term is meant to imply harmonic motion directly opposite to movement along the circle of fifths.

This concept of retrogression is the primary solution to Richard Browne's harmonic problem. In his own words:

> Bearing in mind that the one basic harmonic urge seems to be the movement of the root down a fifth (a tendency more prominent in jazz than in classical harmony, from which it is derived), it is seen that the basic harmonic problem is to get above the tonic functionally and create suspense by delaying the resolution.\textsuperscript{6}

Retrogression, therefore, can function in either of two ways. Primarily, it is a device for extending a longer term progression, in which case it is only evidenced at a low level of analysis. As a progression nears its cadence point, a retrogression may be inserted to "get above" the present harmony, and delay the final resolution of the progression. In this case it is really functioning as an

\textsuperscript{5}From this point on, the term "circle of fifths" includes the circle of semitones as well.

interruption. A retrogression can also be used, however, to begin a new progression, in order to provide immediate harmonic tension. This tension can then resolve as the phrase progresses.

One other commonly used method of getting above the tonic is by progressing through it. This implies treating the tonic as a V/IV chord, and simply progressing straight to IV, continuing the motion around the circle of fifths. Numerous examples of both of these methods will be encountered in the chapters to follow.

Conjugations of Motion

From the previous section, it can be deduced that jazz harmonies normally progress down by either fifth or half step. These progressions are therefore labelled as the first conjugation of jazz harmonic motion. This conjugation represents by far the majority of harmonic motion in jazz, though a second conjugation is now defined. This second conjugation is evidenced to a much lesser extent, and is defined as bass motion down by whole step. An explanation for this motion comes from seeing that this is movement around the circle of fifths where one stop was simply jumped over. Though much less convincing than the first, this conjugation does occur with some regularity. This conjugation will most often appear at the lowest (i.e., fastest) level
of harmonic rhythm. It occurs commonly in progressions such as III-VI-V-I, where the expected II-V-I has been replaced simply by V-I. (See Figure 19.)

![Fig. 19--The second conjugation](image)

In the above example from Teddy Wilson's "Blue Moon," the F in the bass moves directly to the E-flat, and the expected dominant note (E or B-flat) is skipped over, though it is implied on beat four. Interestingly, this conjugation occurs on the final cadence of the piece. These two conjugations of harmonic motion are summed up with the statement that A JAZZ HARMONY PROGRESSES DOWN BY FIFTH, HALF STEP, OR WHOLE STEP. Any other bass movement will be labelled as either retrogression, or static motion.

**Harmonic Levels**

With the notions of progression and retrogression in hand, the concept of a harmonic level surfaces. This is essentially a combination of the two conjugations. A harmonic level simply refers to a chords harmonic "distance" from a tonic (temporary or otherwise), which is designated
as level 1 (the lowest level). Taking the key of C major as an example, the nearest harmonies that will progress to the tonic are Dm7 and G7 (the II and V harmonies). These chords are designated as being on level 2. Their tritone counterparts, namely A-flat m7 and D-flat 7 are also included in this level. Level 2 chords are those that can most easily resolve to the tonic. Similarly, level 3 consists of Em7 Am7 (III VI), along with their tritone substitutes of B-flat m7 E-flat m7. Finally, level 4 is a harmony's maximum distance from the tonic. This consists of F-sharp m7 B7 as well as Cm7 F7. There can be no level further from the tonic than 4, for such a level would be identical to level 2.

![Harmonic level table (C major)](image)

In fact, when the tritone principle of substitution is used, a level 4 harmony is found to be similar to level 1. Note level 4's Cm7, which has the same root as the tonic. Normally, the quality of a harmony makes little difference
with regard to its harmonic distance from the tonic, as this is primarily a function of the bass. Thus, even though the above figure shows each level as consisting of IIm7 – V7 harmonies, which is indeed very common, this need not be the case. For example, instead of Em7 A7, further possibilities include E7 A7, Em7 Am7, E♭7 A7, or even E7 AM7. Because of this, further harmonic level tables will refer to chords simply as X7 and Y7, implying generic seventh chords. This will of course include any possible chordal extensions.

The lone exception to all of this is the tonic harmony, whose harmonic quality cannot be changed. This harmony must coincide with both the modality and tonality of the piece. Any chord substituted for this one will not give a satisfactory feeling of resolution, and the piece cannot finish. Even though there are numerous jazz tunes with a minor tonic, and the blues is one exception where the tonic chord is a major-minor seventh, this will more than likely be a chord belonging to the major seventh family, since once again most jazz tunes are in the major mode.

Because the bass note is the determining factor for a chord's harmonic level, the ideas of progression and retrogression can be simplified to the idea of a harmony moving up or down one or more levels. Note that proper progression only allows for movement through one harmonic level at a

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7Of course the harmonic quality dictates how smoothly or strongly that one chord resolves to the next, but really does not effect its harmonic level.
time, which must be movement in a descending direction. For example, moving from level 2 to level 4 is a true progression, in spite of the fact that the harmony has moved as far from the tonic as possible. This is the idea of progressing through a tonic, and this motion is still consistent with conjugations one and two. Moving from levels 1 to 3 however, is a retrogression (the moving backwards of two levels), since a progression cannot pass through two levels. Hence any motion other than the descent of one level is either a retrogression, or non-motion.

It might be argued that the inclusion of two chords in the same level (i.e., D7 and G7) is incorrect, as a D7 is truly further from C major than G7. This was done solely to account for second conjugation motion. In longer term progressions (see next section), it may often be necessary to distinguish between the two halves of a harmonic level, and this is done through the addition of a '+' to the higher (i.e., further away) half. Thus a long term II-V-I can be labelled with levels 2+ → 2 → 1. Where no such distinction is necessary, a 2 will simply refer to both the II and V chords simultaneously as one level.

Hierarchical Progressions

The main focal point of this chapter is to show how jazz harmonies naturally progress from one level to the next
to make a piece of music flow together as a whole. Locally, this simply means the manner in which each chord resolves directly into the next by means of a bass that descends by fifth, half step, or whole step. Quite commonly, however, chords may delay their resolutions until much later in the phrase. (See Figure 21.)

Through short term analysis of this figure, a level 2 harmony is retrogressing towards level 3, moving back to level 2, and finally resolving to level 1. On a larger scale, however, the first six chords can be analyzed as being on level 2, with the third and fourth chords representing level 2 of level 2 (2/2). The first two chords, then, are really delaying their resolution until the final chord.

This is the idea behind a hierarchical progression—observing that several local harmonies can be grouped together into one larger harmony. Figure 22 provides an analysis. The circled numbers indicate the main line of motion, while others represent subordinate (i.e., lower level) motion.
Fig. 22--Analysis of a long term progression
CHAPTER IV

FURTHER HARMONIC ELEMENTS

While the previous chapter outlined the essential elements necessary for understanding the analyses of the works from this era, this chapter provides some of the more advanced harmonic idioms that are evidenced.

Missing (Implied) Bass Notes

As has been pointed out, a jazz harmony is one that is dominated by the note in the bass, which is by and large the root of the chord. This, however, does not necessarily mean that the bass note is always present. Consider the following.

![Example of missing bass notes](image)

Fig. 23--Example of missing bass notes

The above figure is taken from the bridge of George Shearing's "Over the Rainbow." The immediate sign that the
second measure is without bass notes is seen through comparison of its lowest notes with those of its neighbors.

Measures one and three both contain E-flats below middle C, whereas measure two does not even go as low as middle C. It might be argued that the E-flat from measure one carries through the second measure, but this is hardly an adequate solution. The upper voices do not even come close to supporting an E-flat harmony, especially one that is acting as a tonic. Secondly, it is very difficult to spell the chords in measure two successfully in thirds, suggesting that perhaps something is missing. Two satisfactory solutions are illustrated below.

![Fig. 24--The lost bass notes](image)

The first of these solutions was attained by observing that the lowest given note could function as the third of a major-minor seventh chord, which leads to standard first conjugation motion. This progression begins at level 2,
cycles all the way through level 4, and ends up back in level 2. This then resolves smoothly to level 1 in the next measure. By interpreting the entire second measure as a longer term level 2 harmony, however, the second solution becomes apparent. By simply providing compatible bass notes on levels 2+ and 2, first conjugation motion is achieved. In spite of the fact that some of the upper voices do not fully support these bass notes (i.e., they cannot all be successfully spelled in thirds), the measure works well because the bass motion is so convincing. Certainly other bass notes are possible, but the overall effect of the measure will remain as a level 2 harmony.

Plagal Motion

Some harmonic motion exists in jazz that appears progressive (or occasionally retrogressive), but is in fact not. Such motion is termed plagal, as it is analogous to the plagal (amen) cadence that is seen in traditional music. This motion has no real harmonic function, since its only purpose is to provide a feeling of movement, without really changing the harmony. A prime example is seen in the first four measures of the blues, where the progression is I7-IV7-I7-I7. The IV7 is an optional chord that gives a little added movement to these first four measures, without really going anywhere (this will be discussed further in the next chapter).
Another good example was seen back in Figure 19. In the final measure, the harmony is I-VII7-I. This progress-ion is clearly plagal, as the final cadence occurred in the preceding measure. This chord is interestingly the tritone substitute for IV7, which is the most commonly used plagal chord. Other progressions, however, can be used in a like manner. These include I-II-I, and I-II-III-II-I. These harmonies are all essentially large I chords, while the pla-gal motion simply provides added movement.

Polychords

Polychords did not become commonplace until post 1950, but they are clearly evidenced before this time. Their use is primarily as a device for the jazz analyst in simplifying the labelling of certain chords. A perfect example comes from the first chord in Shearing's "Over the Rainbow."

This chord is analyzed as E-flat 7 over A (E-flat 7/A), which means that this is an E-flat 7 chord with an A in the
bass. By far, the vast majority of such chords from this pre-1950 era can be reinterpreted as standard tertian chords, though often with many extensions or alterations. For example, the above chord can be reinterpreted as a misspelled A7 with flat fifth and ninth. Perhaps the polychord is easier to visualize. Another common example is Dm7/G, which can be reinterpreted as a G7 suspended chord.

Further Substitutions

The tritone substitute is clearly the most extensively used substitution from this era, though others exist. The most common of these is a IV chord substituting for a II7. Standard progressions such as IV-V-I, or III-VI-IV-V-I are typical examples. VII°7 also commonly substitutes for V7 flat ninth. With either of the above substitutions, it should be observed that the chord being replaced is only one note different from its replacement. This note is the bass of the first chord. These substitutions can then be considered as special cases of chords with missing bass notes.

Filled in Progressions

The bass motion of a passage may often be disguised due to the fact that the main progression is "filled in" with passing chords. The following figure from Teddy Wilson's "Blue Moon" illustrates this idea.
This passage is from the end of the bridge, leading back into the main A section, and it demonstrates how the overall progression can be disguised. The main progression is from the B-flat 7 on the first beat of the first measure, to the E-flat M7 beginning the next section. At the lowest level of analysis, this measure may be viewed as a combination of first and second conjugation motions beginning on level 2, and cycling all the way around and back again. This analysis, however, is incorrect, as such motion away from the tonic cannot be confirmed aurally. It should be correctly labelled as strictly a level 2 harmony, with the intervening chords only filling in the progression.
CHAPTER V

ANALYSIS OF SELECTED EXAMPLES

Before looking at any actual works by pianists of this era, some analysis of two common chord progressions will be done. These two progressions are the "changes" to "I Got Rhythm," and the standard twelve-bar blues. These two progressions are undoubtedly among the most widely played in all of jazz. Numerous songs and "head-arrangements" have been written using these chords for their harmonic framework, and this continues today. Since these progressions are both quite simple, they are easily analyzed, yet much light is shed on this analytic method by doing so. Being so widely used, it is essential that any approach to analysis be able to make sense of these two progressions, as they have truly been fundamental to the development of jazz.

"I Got Rhythm"

When George Gershwin composed this song in 1930, he could have never imagined the effect that this chord progression (known as "rhythm changes") would have on the development of jazz and popular music. Countless songs have been written using these changes (with numerous variations)
as their basis, and as such, they are fundamental to any jazz musician's repertoire.

![Fig. 27--Rhythm changes](image)

Through inspection of these changes, it is observed that this piece is in the common thirty-two bar AABA form (song form), as are many of the jazz tunes of this era (including those that are analyzed in this chapter). The B section is commonly referred to as the bridge. Note that there are really only two areas of harmonic interest in this piece—the first two measures, which repeat over and over, and the eight measures of the bridge. This piece is in the key of B-flat major, and the B-flat harmonic level table is provided below to aid in the analysis.

![Fig. 28--Harmonic level table (B-flat major)](image)
The first chord of the piece is the tonic harmony, which is defined as being at harmonic level 1. This moves to the Gm7, which is level 3, defining a retrogression (i.e., the piece has moved harmonically away from the tonic). This then begins a progression that moves directly towards the B-flat (level 1) harmony at the beginning of measure three. As every chord is either on level 1, or moving directly towards it, the entire passage may be analyzed as composing out an extended level 1 harmony. These two measures repeat until the bridge is reached. In fact, the entire first thirty-two measures are nothing more than an extended level 1. Figure 29 illustrates the analysis.

Fig. 29--Analysis of first two measures

These first four chords, it should be noted, need not all be diatonic to the parent scale of B-flat major. The progressions B-flat M7 G7 C7 F7, and B-flat M7 D-flat m7 Cm7 B7 would both be analyzed identically, as their harmonic motion through levels is equivalent. Naturally the first chord needs to remain unchanged (same root and family),
since this is the tonic. Equally important is the final chord, which should be a major-minor seventh (i.e., contain a tritone) to provide a convincing resolution, but these are the only necessary stipulations. This freedom gives rise to some of the many chordal variations that have been written for these changes.

The bridge is, interestingly, quite similar to these first two measures, yet on a larger scale. It begins with an immediate retrogression from the tonic to provide for some harmonic tension that resolves as the bridge progresses. The first chord, the D7, is at harmonic level 3+. Similar to the first two measures of the piece, this harmony then resolves straight through the harmonic levels until a level 1 harmony is reached at the beginning of the next A section. Unlike the A section, however, the harmonic rhythm here is two measures per harmony, as opposed to two beats per harmony. Because of the great extent of this progression, it is not possible to reduce it to simply a large level 1 as before.

By including the parenthesized chords of the bridge, it is interesting to note that a somewhat different analysis can be achieved. Since this brings the harmony all the way back to level 4, the bridge can be read as a progression through the tonic, continuing from the end of the second A section. It can even be argued that one can hear the B-flat
chord resolving down to the A minor chord. For two basic reasons, however, this is at best a very weak progression. First, the two chords are in separate phrases. There is no perceived motion between these phrases since the first of them ends in a terminal cadence. Second, the B-flat chord that ends the first of these phrases belongs to the major seventh family, hence it contains neither the interval of a tritone nor that of a minor seventh. Because of this, the ear does not hear this chord progressing. Figure 30 presents an entire analysis of this chord progression.

![Fig. 30--Analysis of "I Got Rhythm"]

The Blues

The blues is another well known progression that was used heavily by jazz musicians of this era. This progression provides the one example from this era in which the tonic harmony belongs to the major-minor seventh family. Because of this, it may be necessary to distinguish between a true tonic harmony, and one functioning on level 4+, as they will both belong to the same chord family. (See figure 31.)
The first four measures are all essentially level 1 harmonies. The parenthesized E-flat 7 in measure two can only be interpreted as plagal, since it does not resolve toward a level 3 harmony, but rather immediately returns to the tonic. The fact that the harmony is parenthesized, indicates that it is optional and may be omitted at the discretion of the performer.

The B-flat 7 in measure four, however, is rather unusual. It appears to be serving both as tonic to the piece, and as dominant to the E-flat 7 beginning the next two bars. This chord can then be interpreted as being on both levels 1 and 4 at the same time.

The two E-flat 7 chords from measures five and six take the piece into harmonic level 4. As the preceding chord was also on level 4 (i.e., 4+), the progression is a smooth one. In the next two measures, however, the analysis gets complicated.

In measure seven, there is an immediate return to the tonic, which seems to have come from nowhere (i.e., it is
not preceded by a level 2 harmony). An explanation for this comes through observing that this is where the piece harmonically "splits" in two. The tonic chord is actually a continuation of the level 1 harmony that was prominent in the first four measures. The level 4 harmony from measures five and six postpones its resolution until measure eight, where the level 3 harmony occurs (Dm7 G7). The tonic in measure seven is thus skipped over by this progression, and only serves to preserve the tonic feeling throughout the piece.

Measures nine and ten provide the necessary level 2 harmonies, setting up the final cadence. This occurs with the tonic in measure eleven. Regardless of how the turnaround is realized in the final two measures, it is analyzed on level 1, at least in the long term. This analysis is the only one possible as every chord in the turnaround is aimed directly toward the tonic at the beginning of the piece. (See Figure 32 for the analysis.)

Fig. 32--Analysis of the blues
Shearing's "Over the Rainbow" (Appendix I)

Harold Arlen's "Over The Rainbow" is a classic example of a popular song that has lent itself nicely to jazz interpretation. Because of the large number of musicians that have given it a jazz treatment, it has become a jazz standard. One of these musicians is George Shearing, and his arrangement is analyzed here. This piece is in the same song form that was seen earlier in "I Got Rhythm," and is similarly composed of four sections, each being eight measures in length. The arrangement demonstrates how this type of analysis can bring new light to the way that a composer views a piece of music. This work is in the key of E-flat major, and the appropriate level table is printed below.

```
<table>
<thead>
<tr>
<th>A7</th>
<th>D7</th>
<th>G7</th>
<th>C7</th>
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<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Fig. 33--Harmonic level table (E-flat major)

From the very first chord, it becomes apparent that this harmonic treatment will be filled with tension. Unlike the original harmonization by Arlen, the piece does not begin with a level 1 harmony, but rather as far from it as
possible, on level 4+. Interestingly, his choice of chord is the polychord E-flat 7 / A, which seems to emphasize its harmonic distance from level 1, by using both chords of level 4+ (though of course the chord may be read as simply an extended A7). This resolves as expected to level 4 on beat three, with the D7 chord. In measure two, the harmonic rhythm doubles to one chord per beat, indicating a potential drop in the overall significance of the harmonic motion.

This measure could be analyzed as being levels 3+ 2+ 2, then back to 4+, finally resolving to level 4 in measure three, but by taking the harmonic rhythm into consideration, a better solution is found. Since all of measure two appears to be aiming at the first chord in measure three as its resolution, measure two can be labelled in terms of level 4 harmonies. This leads to measure two being analyzed as (4 3 2+ 2)/4, which is a typical cadential figure. Measure two may therefore be labelled on a larger scale as being level 4+ (i.e., aimed toward level 4).

![Fig. 34--"Over the Rainbow" measures 1-2](image-url)
Further inspection of the first chord of the piece leads to the observation that the bass note A-natural is much lower in pitch than surrounding notes. The next note of similar range is not until the A-flat in measure three. Apparently, therefore, the A-natural of the first measure does not resolve until measure three. Because of this, the first two measures can be labelled in their entirety as a large 4+. The analysis is given above.

Measure three remains solely on level 4, as the bass jumps a tritone in an example of static motion (i.e., motion to another chord at the same level). This resolves down to level 3 in measure four, which then drops to level 2+ in measure five.

![Fig. 35--"Over the Rainbow" measures 3-6](image)

Beginning in measure five, the harmonic rhythm again doubles to one chord per beat indicating motion that may be at a lesser level of significance. As level 2+ has been firmly established at the beginning of measure five, this suggests level 2 as a likely candidate for labelling the
entire motion. Using such a label, measure five becomes a retrogression to level 3/2 by beat three, which resolves to level 2+/2 at the end of beat four. Measure six can then be analyzed in total as level 2+ in the same manner that measure two was analyzed as level 4+, or in more detail as (3+ 3 2+ 2)/2. (See Figure 35)

Measure seven does not, however, begin immediately with level 2, but rather the feeling of 2+ is somewhat extended by the deceptive cadence on the first beat. Level 2 finally arrives with beat three, which leads directly to level 1 in measure eight. This measure serves as the final cadence for this A section. Measure eight concludes with a retrogression to level 2, which serves as a turnaround for the beginning of the next section. Interestingly, level 2 is used quite commonly as a standard turnaround leading back to level 1 at the beginning of a new section, but in this case, it is serving the dual role as 2/4+, which is the first chord of the A sections in this work. (See Figure 35.)

![Fig. 36 -- "Over the Rainbow" measures 7-8](image-url)
Measures nine through sixteen are a repeat of the first A section, except that measure sixteen remains on level 1 (i.e., there is no turnaround).

The bridge begins in measure seventeen on level 1 with three measures of level 1. Measure eighteen is unusual in that it contains a hint of level 2 in the upper voices on each downbeat, which provides for a minimal amount of harmonic motion, but it remains on level 1. Measure twenty is an example of harmonic motion with missing bass notes. This is evidenced by the high range of the lowest voice. The implied bass notes can be analyzed in at least two ways, which were seen back in Figure 23, and the overall level of this measure is 2.

![Musical notation](image)

Fig. 37—"Over the Rainbow" measures 17-20

The second half of the bridge is in contrast with the first, in that it provides much more tension. Measure twenty-one begins on level 1, progresses through to level 4+ in measure twenty-two, and then cycles back to level 2 in measures twenty-three and twenty-four in anticipation of the return of the A section.
The final A section is nearly identical to its original appearance, and aside from some voicing differences, the only real change occurs in measure thirty-one, where level 2 is reached immediately, rather than being delayed as it had been earlier. Undoubtedly this is due to the fact that Shearing is preparing to make his final cadence, and desires to confirm level 2 as soon as possible. This cadence is achieved in measure thirty-two, and the next four measures are simply an extension of this level. Measure thirty-five provides some subordinate motion in order to give a feeling of relaxation for the final chord in measure thirty-six.
Through this analysis, it can be observed how Shearing, with only minimal use of retrogression, can extend one progression to last an entire section of the work.

Wilson's "Blue Moon" (Appendix II)

Teddy Wilson is another great pianist of this era, and though his style of playing is quite different from that of Shearing, the harmonic concepts underlying his music are essentially the same. This arrangement of "Blue Moon" was just one of dozens that were done for this piece, as it too has become a jazz standard.

This arrangement begins much more conservatively than did Shearing's, as the piece begins on level 1. Some subordinate motion, which is level 3 preparing for level 2 in measure two, begins on beat three. This returns to level 1 in measure three. These first three measures are reminiscent of the rhythm changes, and may similarly all be labelled on level 1. In measure four, a retrogression begins to level 2, then to level 3+, which then resolves back down to level 1 by measure seven. This time, however, it is not possible to reduce all of the progressions to an extended level 1, primarily due to the fact that this motion constitutes more than half of the eight-bar section. Before the return of the A section in measure nine, there is the subordinate progression 3+ 3 2+ 2 functioning as a turnaround. (See Figure 40.)
The second A section is quite similar to the first until measure twelve. Wilson this time delays the entrance of the level 3 harmony until measure thirteen. This then cycles back to level 1 by measure fifteen. This level is extended until beat three of measure sixteen. The fourth beat of measure sixteen marks a retrogression to level 3+, which introduces the bridge.

The bridge begins in measure seventeen with a chord built on A-flat that appears to be on level 4, resolving immediately to level 1 in the next measure. Given that the bridge was prepared by level 3, this is rather confusing. On further examination, however, it becomes apparent that
this chord is actually a substitution for a level 2 harmony. The bass note F does not make an appearance until beat four. This then resolves by second conjugation to level 1 in measure eighteen. Level 1 continues for the first three beats of this measure. The diminished chord on beat four, however, poses a problem. As it is clearly missing a bass note, it seems likely that the E-flat in the bass on beat one carries through the rest of the measure. This idea is supported by the fact that this note is present in the melodic line. This would then appear to be level 4+ which resolves to level 4 with the A-flat chord of the next measure. This, however, is a misreading of the diminished chord, as is the association of level 4 with the chord in measure nineteen. The apparent A-flat chord is similar to the chord beginning measure seventeen, which is a substituted level 2 chord. The substitution is an obvious one in this measure, since the chord progresses directly towards the B-flat level 2 chord on beat three. It would therefore make sense for the chord at the end of measure eighteen to be level 3, to properly introduce level 2+. This gives an accurate solution, as a bass note C-natural will support this diminished harmony, and the melodic voice brings in the leading tone to the next harmony at the end of the measure. This resolves normally to level 1 by measure twenty. The second half of the measure progresses through the tonic to level 4, to begin the second half of the bridge.
The second half of the bridge begins on level 4, which
cycles through level 3+ and 3 by measure twenty-two.
Measure twenty-three is interesting, as the chords do defi-
nitely appear to be inversions of level 2 harmonies, though
their bass motion suggests movement from level 4 to level 3.
Perhaps the best solution is to label measure twenty-three
as a subordinate retrogression beginning on level 4, and
moving in second conjugation motion through levels 3 and 2
by the end of the bridge. On a larger scale, measures twen-
ty-three and twenty-four can be labelled as level 3 moving
to 2, preparing the beginning of the final A section.
The final section is rather similar to its previous appearances, though it has been extended. Measure twenty-five consists of level 1 retrogressing to 3 (missing the C in the bass), which moves to level 2 in measure twenty-six. This then resolves back to level 1 in twenty-seven. Regression begins in twenty-seven, and level 3 is fully supported in measure twenty-nine. This resolves to level 2 by the end of the measure thirty. The means by which this resolution takes place is worth noting. The four beats beginning with beat three of measure twenty-nine all spell F chords that have been inverted, though the C in the bass is very strong. These chords seem to define a harmony somewhere between levels 3 and 2+.

A cadence is expected in measure thirty-one, as it has been nicely prepared with 3 to 2 motion, but instead a retrogression occurs. The piece goes back to level 3+ in measure thirty-one, which resolves back down to level 2 by the end of measure thirty-two. One more subordinate retrogression occurs in measure thirty-three, and this finally resolves to level 1 in thirty-four. The piece ends with a plagal cadence.

This analysis leads to two immediate observations. First, it makes clear that this arrangement uses much less harmonic tension than did Shearing's, as evidenced by the sparse use of level 4 (only one!). Second, it becomes
apparent how the second conjugation cadence of measure thirty-four works. The true cadence is from the level 2 in measure thirty, and the intervening motion is strictly subordinate. This cadence is therefore first conjugation, though on a larger scale.

![Fig. 44--"Blue Moon" measures 25-34](image-url)

Tatum's "I'm in the Mood for Love" (Appendix III)

Art Tatum is considered by many to be one of, if not the greatest jazz piano player of all time. His technical fluency was rivaled by none, and this technique is evidenced through inspection of the difficulty of his works included here.

The first chord marking the introduction to this piece is subject to various interpretations. By spelling it in thirds, it is analyzed as a B-flat m7. It can also be considered a D-flat added-sixth chord, while the bass dictates that it is on level 3. Obviously it is not a level 1 tonic, for it would have to be in root position. Either of the other two interpretations place it on level 3, so this seems
the best solution. The ensuing bass line also confirms this, as it progresses through level 3 to level 2 setting up the first A section.

Fig. 45--"I'm in the Mood for Love" introduction

Measure one begins normally on level 1, and this retrogresses to level 2+ in measure two. Note that the E-flat in the bass carries over through the entire measure, and this moves to level 2 in measure three, and back to level 1 in measure four. Again, these first four measures can be labelled simply as level 1.

Fig. 46--"I'm in the Mood for Love" measures 1-8

On beat four of this measure there is subordinate first conjugation bass motion, which smooths out the retrogression
to level 3+ in measure five. This then resolves down to level 2+ in measure six, level 2 in measure seven, and the cadence on level 1 in measure eight. The second half of this measure retrogresses back to level 2 to prepare the second A section.

This A section is essentially the same as before, except that now there is a little more subordinate motion. This can be seen immediately in measure nine, where there is a retrogression to level 3 to smooth the transition into the 2+ of measure ten. Measures eleven and twelve are progressions back to the level 1. Beat three of this measure is interesting in that the A-flat in the bass is primarily acting as the fifth of the level 1 harmony, but this note then immediately descends to the G-flat on beat four, announcing level 4. Thus the A-flat was acting as a 2+/4+. From here, level 3 appears in measure thirteen, 2+ in fourteen, 2 at the end of fifteen, and finally 1 in measure sixteen, ending the second A section.

---

Fig. 47--"I'm in the Mood for Love" measures 9-16
The bridge begins in measure seventeen on level 2, quickly retrogresses to level 3 in eighteen, and then back to 2, resolving to 1 through measures nineteen and twenty. Once again, the A-flat at the end of measure twenty aids in the progression to level 4+, which begins the second half of the bridge in measure twenty-one. This then progresses in a standard manner back through level 2 at the end of measure twenty-four. The chord beginning measure twenty-four is reminiscent of the polychord that opened up the Shearing work, as both notes of level 2 are present in the bass. On beat one, the first chord contains both the D and G-sharp, and then on beat four drops down to a low A-flat. This measure clearly intends to set up properly the return of the A section.

Fig. 48--"I'm in the Mood for Love" measures 17-24

The final A section resembles its previous appearance, except that there is now even more subordinate motion. The first measure contains a retrogression to level 3, and there is some subordinate movement, this time moving to the third
of the next chord. Measure twenty-six is on level 2+, and the tritone skip in the bass confirms this. This then resolves to level 2 in the next measure. More subordinate motion begins on beat four, which resolves back to level 2 by beat two of measure twenty-eight (this level 2 is spelled as a I chord in second inversion). The F in the bass from beat three seems to carry over into the next measure, which is missing a bass note. Thus measure twenty-nine is completely on level 3. This then resolves down through levels 2+ and 2, and finally to a cadence on 1 in measure thirty-three. Measure thirty-four can no doubt be analyzed in numerous ways, but suffice it to say that at the largest level of analysis, it is a confirmation of level 1.

Fig. 49--"I'm in the Mood for Love" measures 25-35

"Don't Blame Me" (Appendices IV-VI)

In this final example, three different arrangements of the song "Don't Blame Me" are analyzed and compared. These arrangements are those of the three pianists so far discussed—Wilson, Tatum, and Shearing. Such analysis enables
a comparison to be made of the different ways in which a composer approaches the same melody.

Shearing's arrangement is the only one of the three to include an introduction. Typical of an introduction, it is essentially on level 2, preparing the first A section (which will normally begin on level 1). The second measure of this introduction, however, contains considerable subordinate motion. This motion begins on level 4, progresses through 3+ and 3, and finally ends up back on level 2 with the last beat of the introduction.

The first measure in which all three composers are in accord is at measure three, where level 2+ is reached. Each of the arrangements, however, arrives at this point in a somewhat different manner. Wilson's treatment of these first two measures is the most straightforward. His arrangement begins on level 1, progresses through to level 4 by beat three, and moves through levels 3+ and 3 in measure two. This appropriately sets up level 2+ for measure three. Tatum's arrangement begins similarly on level 1, but instead of progressing to level 4, it retrogresses to level 3+ on beat three. This chord on beat three is a true example of an inversion, with F as the root. This is perceived by noting that there is no chordal seventh above the A-flat bass. With A-flat as the root, this spells an A-flat minor added-sixth chord, which is rather uncommon, especially in a major
modality. With F as the root, however, the chord becomes an F half-diminished, which functions normally on level 3+.

This solution is particularly satisfying as the next measure is completely on level 3. This then resolves smoothly into level 2+ by measure three. Shearing, on the other hand, chooses not to begin on level 1, but instead far from it (in spite of the fact that his introduction set up level 1 so convincingly). The first measure of his A section could be analyzed as level 2 moving to level 1, but this is a misreading. Though the bass motion supports this interpretation, the upper voices do not. A level 2 (as opposed to 2+) harmony needs to contain a tritone in order to cadence successfully on level 1. Similarly, a level 1 harmony needs to conform to the modality of the piece. As neither of these constraints are met, an alternate analysis is preferable.

Clearly, the C chord on beat three is on level 4+. This leads to the idea that perhaps the G chord is 2/4+. This chord is literally as far from the tonic as possible. From this point until measure three, however, the motion is standard first conjugation. Measure two begins on level 4, which progresses through 3, leading smoothly to 2+ in measure three.

Measures three and four are handled similarly in the three arrangements, as they set up the first cadence. Wilson proceeds immediately from level 2+ to 2 in measure
three, and cadences on level 1 in measure four. Level 1 appears to dominate this measure, evidenced by the D-flat on beat four, though there is a hint at level 3 on the third beat. Tatum and Shearing also move from 2+ to 2 in the third measure, yet approach measure four somewhat differently. Tatum cadences appropriately on level 1 in the fourth measure, whereas Shearing immediately progresses from level 2, through level 4 and then back to level 3 in the fourth measure. (See Figure 50.)

One immediate distinction becomes obvious through the above illustration. Whereas the first four measures of both Tatum's and Wilson's arrangement are primarily tonic (phrase
beginning and ending on level 1), Shearing has yet to confirm this level.

In measures five through eight, the three arrangements are all essentially the same at the highest level of analysis, but their local implementations are somewhat different. Wilson begins measure five on level 2+ using a substitute harmony for the first two beats. This then retrogresses to level 3 in the sixth measure, which in turn progresses back to level 2 in measure seven. Measure eight cadences on level 1, then provides a turnaround using levels 3+ 2+ 2 to end the first A section. Tatum and Shearing use similar motion from levels 2 to 3 and back to 2 in measures five through seven, but their cadences in measure eight are somewhat varied. Tatum ends measure seven on level 2, but only hints at level 1 in measure eight. The chord on beat one of measure eight spells a D-flat M7 that is indeed in second inversion. This provides ample unresolved motion to carry through the measure and function as a turnaround leading to the second A section. Shearing also ends measure seven on level 2, but again avoids the tonic at the expected cadence point by immediately retrogressing to level 3 in measure eight. This serves as the starting point for the turnaround, which progresses back to level 2 by beat three. Instead of remaining on level 2, however, Shearing immediately moves back through level 4+ in order to begin once again the A section on level 4. (See Figure 51.)
The second A sections are all substantially the same as their first occurrence, with minor variations in some of the subordinate motion. Wilson and Tatum both begin this second section on level 1, with Shearing again opting for level 4. Interestingly, it is not until the end of this second A section that Shearing ever arrives at a level 1 harmony. Even this occurrence only lasts for one beat before turning into level 4+.

The bridge of this piece is reminiscent of that of "I Got Rhythm," in that they both consist of one long progression. The main difference is that this piece begins slightly further from the tonic with level 4 (as opposed to 3). Each of the three arrangements begins on this level,
and progresses straight down to level 2 in measure twenty-three, setting up the final return of the A section.

Fig. 52--"Don't Blame Me" bridge

The final A sections are essentially the same as previous occurrences, though with some interesting variations. The most significant of these is Shearing's use of level 1. Whereas the first twenty-four measures contained only one beat of level 1, this final A section begins strongly on this level. The cadence halfway through this section similarly supports level 1, allowing reduction to this level. The expected final cadence in measure thirty-two, however, does not make its appearance, as the harmony passes through the tonic to level 4+. This begins a six measure tag that
cycles from levels 4+ through 4 3 2, finally cadencing on 1 in measure thirty-five.

Wilson's final A section is marked by missing bass note harmonies in measures thirty-one and thirty-two. This is particularly unusual as this is where the final cadence of the piece is expected. The progression in measure thirty-one is level 2+ moving to 2, but measure thirty-two begins with an inverted tonic chord (i.e., not at level 1). This is Wilson's method for extending the section. The second half of measure thirty-two and the first half of thirty-three are seemingly on level 4, but this turns out to be a plagal harmony that immediately returns to level 1 on beat three. Measures thirty-four and thirty-five make a two bar tag consisting of first conjugation motion that cadences on level 1 at the end.

Tatum's final section is similarly marked by an extension at the end. The extension begins in measure thirty-one, which is a full measure of level 2+. Measure thirty-two contains a cadenza-like arpeggio on level 2, and the final cadence arrives in measure thirty-three. While measures thirty-three through thirty-seven are all on level 1, the motion continues in the upper voices in a polychordal manner. The final tonic chord arrives firmly in measure thirty-six.
Fig. 53—"Don't Blame Me" final A section
CHAPTER VI

A LOOK AT LATER MUSIC.

In the previous chapter, analysis was done on works of music from the era 1935-1950. These analyses successfully illustrated how harmonies move through the various levels leading toward the final cadence on level 1. The key to this success is the fact that the music was highly tonal, dominated by bass motion of fifth and semitone, and relatively free of modulation. After this time-period, however, much of this is not necessarily true, and this method of analysis would have unpredictable results. A few examples clarify this point.

"Who Can I Turn To" (Appendix VII)

This piece arranged by Bill Evans in 1964 is an example of a work that can be successfully analyzed, as will be shown below. Bill Evans is a much more contemporary composer than those discussed in the last chapter, yet the only real harmonic difference between this piece and those analyzed earlier is its voicing and the quality of its chords. This is first evidenced in measure one, where the upper voices move with parallel fourth motion. In measure five,
there also exists an augmented tonic triad, along with an augmented minor triad with added ninth. These are harmonic elements that did not exist before 1950. Interestingly, the analysis illustrates the harmonic motion quite accurately, in spite of the date of composition.

![Fig. 54--"Who Can I Turn To"](image)

"Melancholy Mood" (Appendix VIII)

"Melancholy Mood" is a Horace Silver composition from 1975. While the piece is indeed tonal, the analysis this time is limited in its ability to uncover first and second conjugation motion. For example, the first measure begins on level 1, which immediately retrogresses to level 3, which in turn retrogresses to level 4. It is difficult to label
this as motion through the tonic as the intervening G chord is so much stronger than the level 1 harmony (which is only a bass note). Assuming level 4 has been established, motion through levels 3+ and 3 should follow. The C chord in measure two is indeed on level 3, but the bass motion A-flat to C is very unusual. Measures two and three successfully illustrate motion from levels 3 to 2, but measure four again causes problems. This is apparently another double retrogression that doesn't really lead anywhere.

Fig. 55--"Melancholy Mood"

Measure five makes sense as 3+ to 3 to 2, but again measure six does not support this motion successfully. Finally measure seven provides an adequate turnaround with
level 2+ moving to 2. The essential problem is the inability to tie together various levels, in order to indicate an overall harmonic structure that defines this section.

Interestingly, the bridge demonstrates very standard first and second conjugation motion, and the analysis illustrates this in measures eight through fourteen.

The coda, however, again brings back the problems of the first section. The bass movement implies motion from levels 1 to 3 to 4, then back to 1. Perhaps this could all be labelled as plagal, but this motion seems to be one of the essential characteristics of this piece, and such analysis is not appropriate.

"Seagulls" (Appendix IX)

This 1980 work by Dan Haerle is extremely easy to analyze in this manner, though it is doubtful whether the analysis will accurately portray the piece. There are only two sections to this piece. The first section consists entirely of a chromatically ascending bass-line. This would then be analyzed as steadily increasing harmonic tension. The second section consists of nothing more than a chromatically descending bass line, and this is apparently the resolution of the previously achieved tension. It is, however, very difficult to label these harmonies with appropriate level numbers. Even though this idea of increasing and decreasing
harmonic tension throughout the piece is perhaps of value, it certainly is an oversimplification of the structure.

These three examples are somewhat representative of post-1950 tonal jazz, and demonstrate some of the limitations in this analytic method. While this method seems very effective at illustrating certain harmonic structures that are in abundance in pre-1950 jazz, it is not capable of doing this with later music (presumably because these same structures are not prevalent). There are, however, more contemporary pieces for which this method will have no success at all. These include highly modal works by the likes of McCoy Tyner, and atonal pieces such as those of Cecil Taylor.
CHAPTER VII

CONCLUDING REMARKS

The primary goal of this study is to illustrate common harmonic patterns that dominate jazz piano music during the era 1935-1950. The one pattern that seems to lie at the heart of all of this music is bass motion that descends by fifth and semitone, coupled with seventh tone motion that descends by half and whole step. All of this motion is easily explained through the circle of fifths, along with its tritone counterpart, the circle of semitones.

With an awareness of the existence of such patterns, it becomes a simple task to calculate how far a given harmonic phrase is from the tonic (the ultimate goal of all harmonic phrases). This is the idea behind a harmonic level. Since it is known where a given harmony is moving (i.e., toward the tonic), as well as how the harmony is capable of moving, it becomes easy to determine just how far away it is from its final destination. The farther away a given harmony is from the tonic, the higher is its harmonic level, with level 1 representing the tonic. The existence of such patterns also make it relatively easy to predict certain notes and levels that will necessarily appear along this road to level 1.
An immediate advantage of such a system is that it enables a theorist to compare the harmonic structures of various composers with one another. This was seen through the analyses of "Don't Blame Me." It became apparent through these analyses that George Shearing was the master of harmonic tension and resolution. Every one of his phrases seemed to begin as far away from the tonic as possible, and arriving at level 1 was avoided at every opportunity. Wilson and Tatum, on the other hand, seemed to be using essentially the same structures, with Tatum using a few more of the higher levels. It also becomes apparent which harmonies are essential to a piece of music as each arrangement manages to end up on the same level at certain points in the piece.

The main advantage that such a system has over conventional analytic notations (such as Roman numeral) is that the relationships between phrases become immediately obvious. For example, by simply annotating as II-V-I in F, followed by II-V-I in E-flat, it is not known how the two phrases relate, if at all. By labelling as level 3 moving to level 2, however, the relationship is immediately at hand.

For the performer, and especially the improvisor, such knowledge will prove invaluable. Through the ability to see the overall harmonic structure of a piece in its barest
form, the musician will certainly be able to bring out cer-
tain essential notes marking transitions between various
levels. The improvisor will especially have the freedom to
"play over the changes," paying closer attention to the har-
monic levels of certain phrases, rather than worrying about
each chord as it goes by.
APPENDIX I

SHEARING'S "OVER THE RAINBOW"
APPENDIX II

WILSON'S "BLUE MOON"
BLUE MOON

Piano Interpretation by TEDDY WILSON

LORENZ HART
RICHARD RODGERS

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APPENDIX III

TATUM'S "I'M IN THE MOOD FOR LOVE"
I'M IN THE MOOD FOR LOVE
from the Walter Wanger production "Every Night at Eight"

Piano Solo Arr. by ART TATUM

Moderato

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APPENDIX IV

SHEARING'S "DON'T BLAME ME"
APPENDIX V

WILSON'S "DON'T BLAME ME"

99
DON'T BLAME ME

Piano Interpretation by
TEDDY WILSON

DOROTHY FIELDS
JIMMY McHUGH

[A] Slow tempo

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APPENDIX VI

TATUM'S "DON'T BLAME ME"
APPENDIX VII

EVANS' "WHO CAN I TURN TO"
WHO CAN I TURN TO (When Nobody Needs Me)

By LESLIE BRICUSSE and ANTHONY NEWLEY

Piano Arrangement by Bill Evans

Moderately ad lib., but with a feeling of 2

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APPENDIX VIII

SILVER'S "MELANCHOLY MOOD"
MELANCHOLY MOOD

By HORACE SILVER

Ad Lib Slow Tempo

To Coda D.C. at * Coda

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APPENDIX IX

HAERLE’S "SEAGULLS"
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