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# Teaching jazz harmony through an understanding of bebop

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A minor dissertation submitted in partial fulfillment of the requirements for the award of the degree of Master of Music

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## DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotations in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signature: Signed by candidate Date: 27.5.2009

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## ABSTRACT

This thesis aims at bridging two approaches to harmony: the one that views harmony purely on a horizontal plane, the other that views harmony on a vertical plane. The first approach is associated with classical harmony studies, the latter with jazz harmony studies.

In classical harmony studies, a student is taught voice leading rules established during the Baroque era and codified during periods that followed. This leads a student of classical music harmony to be preoccupied with voice leading on the horizontal level in order to link chords in a harmonic progression, either by harmonizing a melody or a figured bass. The linking of chords must be achieved without violating the strict voice leading rules prescribed in this style. This approach helps a student acquire a sense for linear movement of voices: voices should progress in small intervals, preferably to neighbouring tones. They should stand as logical musical lines in their own right. Notes that have special functions in a chord, such as the leading tone or the seventh, have to be prepared and resolved in a prescribed manner, etc. Mastering these rules provides a musician with a way of thinking that could be applied to any musical style. The harmony applied in this context is relatively simple since it treats triads and seventh chords and their inversions, but rarely progresses beyond that. Tensions are therefore rarely mentioned in the course of classical music studies. Concepts developed in the 20$^{th}$ century that include chromaticism and a high level of dissonance are not addressed since very few classical scholars are able to explain the harmony of composers such as Bartok or Prokofiev.

In jazz harmony studies, chords are treated as separate entities that *occur on* and *originate from* the vertical plane. As it happens, chords *do* occur on the vertical plane, but do *not* originate there. In jazz, chords are enriched by the extensive use of tensions; the manner in which they are applied makes a harmonic progression sound like 'jazz harmony'. Chords are therefore elaborate, dense sounding structures, heard and viewed by jazz musicians as independent acoustical phenomena. In jazz harmony textbooks, it is very common to find sections showing various possibilities of so-called 'voicings'. These represent different possibilities of harmonizing a *particular*

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*chord*. The problem arising from this approach is that the notes that make up a chord are *not* viewed as 'voices'. A particular note in a chord does not require being 'led' to a note in the following chord. A chord needs to 'sound good' when played on its own, but the way in which it relates to the chords surrounding it in the harmonic progression is overlooked.

The approach used to explain functional harmony in this thesis, combines the two views on harmony, horizontal and vertical. In this respect, it is an attempt to bridge the two worlds, classical and jazz. Pedagogy in these disciplines has been advancing as two parallel lines that would seemingly never meet. Prejudices on both sides, fuelled by ignorance, have led musicians to view classical music as 'serious' and jazz as being a form of 'light' music. That has an obvious negative affect on any attempt to bring about some coherent educational programme that will address the *common aspects* shared by these two musical worlds. This thesis will address concepts in classical harmony and show how these can be used for the understanding of jazz harmony. The style in jazz known as 'bebop' will be the focus of this study since it can be looked upon as the 'Baroque era' of jazz.

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# CHAPTER ONE

# PURPOSE, METHODOLOGY AND RESEARCH DESIGN

## Background

When teaching improvisation, an obvious question arises: how is an art form that is based on spontaneity and creativity put in well defined terms and consequently taught in a methodical manner? The answer to that question is made up of two parts. The first part is that there are aspects of this discipline that resist definition. The second part is that in a particular style of music, specific elements such as melody, harmony and rhythm can be identified and categorized. Examples pertaining to the first part:

- Elusive elements in rhythmic concepts found in jazz, such as the 'swing feel'.

> …swing has resisted concise definition or description. Most attempts at such refer to it as primarily a rhythmic phenomenon, resulting from the conflict between a fixed pulse and the wide variety of actual durations and accents that a jazz performer plays against that pulse. (Robinson, 1988:1176).

- Aspects concerning the imagination and creative instinct of the individual who is improvising.
- General musicality (basic sense of rhythm, 'musical ear' etc.).
- An individual's musical taste and sense of aesthetics.

The second part relates to the goal in teaching jazz improvisation, namely to identify the definable elements and to arrange them in a logical sequence. That would enable a musician aspiring to improvise, to acquire the basic tools necessary for accomplishing the task of playing in any given musical situation.

From its early stages at the turn of the 20th century and up to the 1970s, jazz was an art form passed down from one generation to the next via means of imitation (Baker, 2000; De Veaux, 2000; Pelote, 2000). To illustrate this point we can observe the almost

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complete absence of any instruction books or articles written by the key artists in jazz. Many jazz musicians in the early days and up until the 1970s were self-taught. Charlie Parker, for example, had very little formal training.

> Like most jazz musicians of his time, he [Charlie Parker] developed his craft largely through practical experience (Patrick, 1988:955).

Jazz clubs, which existed in most major cities in the United States, played an important role in the development of the music. New York, for example, where many musicians migrated to, became a centre for up-and-coming musicians:

> New York may not be able to claim fame as the birthplace of jazz, but it definitely has been and continues to be the place where the best musicians come to prove themselves (Pelote, 2000:89).

It is at these clubs that young musicians had the opportunity to listen to Charlie Parker, Bud Powell, Wynton Kelly, Miles Davis, John Coltrane, Bill Evans and others. The above-mentioned musicians had the opportunity to listen to their elders in a similar situation. It is through listening to the masters of the art in live performance and to recordings, that each generation of musicians learned from their predecessors by means of transcription.[1]

Apart from the transcription and assimilation process, there were virtually no comprehensive teaching methods in the early stages of the development of jazz. Carter reinforces this point by saying:

> The instruction of jazz has been as much a part of its history as has the various styles and artists associated with it. However, formal pedagogical approaches developed as the needs of these tools were demanded by large numbers of prospective practitioners. They demanded good private instruction, lessons in

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[1] Transcription is the practice of committing to paper the music produced during a spontaneous improvisation, the imitation and analysis of which allows a musician to tap into a great master's way of thinking on a particular set of chord changes. According to Tucker transcription is '[…] the act of fixing in notated form music that is entirely or partly improvised, or for which no written score exists' (Tucker, 1988:1213).

> improvisation, understanding of jazz history and direction in jazz writing. (Carter, 1986:50)

That need was growing constantly, and in the mid 1960s jazz studies were introduced into the curriculum of some universities in the United States. The key figures that helped introduce jazz studies into universities in America were: Jerry Coker and David Baker, Indiana University; Roger Schuler, Milkin University; John Garvey, University of Illinois; Bob Share and Lawrence Berk, Berklee College of Music (Carter, 1986:13). In 1964 Jerry Coker made one of the first attempts at writing a comprehensive teaching method that would enable inexperienced jazz musicians and students to understand concepts related to improvisation. In *Improvising Jazz* Coker addresses issues related to melody such as the motif:

> […] the smallest melodic entity from which much of the remainder of the music is written or played (Coker, 1964:12).

Coker goes on to describe variations on a theme and offers other ways of analyzing melody. He also pays attention to the role of the rhythm section, jazz harmony, scales used in jazz improvisation and rhythmic concepts. This particular book was written at a crossroads in the evolution of jazz. The 'Bebop' era was gradually coming to a close, following the death of Parker in 1955 (Hodeir, 1962; De Veaux, 1988; Baker, 2000). New and more abstract ideas were being explored by the artists of that day. To illustrate that idea we can examine the recordings of John Coltrane (Coltrane 1964, 1965, 1966). In these recordings one can hear how jazz was becoming a freer art form. Rigorous musical forms and chord changes based on the II V I progression were giving way to a simpler one or two-chord structures based on one tonal centre, accompanied by a more 'open' rhythmic feel in which the drummer abandons the rhythmic perpetual motives in favor of a less rigorously structured approach.

Viewed in that context, Jerry Coker's initiative in writing a jazz theory book is particularly commendable. However, it cannot serve as an instruction book for a beginner in jazz. A certain amount of experience in the idiom is required in order to fully

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appreciate the contents of Coker's book. Although various textbooks were written during the 1970s and 80s (Pressing, 1987; Valleman, 1978; McCurdy, 1978) it would only be in 1989 that another attempt at writing a comprehensive method would be made, this time by Mark Levine. In his book *The Jazz Piano Book* Levine gives examples from the jazz repertoire to explain different theoretical ideas. His method is aimed mainly at pianists, and the examples given are in piano score format. As in the case of Coker's book, basic jazz playing skills are required to fully appreciate Levine's effort. Other methods have been written since 1989, many of which are very useful and written by competent musicians. These books share a common thread in being aimed at musicians beyond the beginner level, dealing with specific topics: 1. Teaching methods aimed at a specific category of musicians (Larsen, 1986). 2. Specific aspects of melody (Bergonzi, 1992). 3. Jazz piano pedagogy (Herzig, 1997). 4. Reharmonization techniques (Felts, 2002).

**Personal motivation**

As I embarked on the task of teaching jazz in Ramat Hasharon, Israel in the mid 1980s, I had to refer to scattered information available to me at the time. In addition, I had to consolidate and arrange theoretical conclusions drawn from recordings of jazz masters such as Wynton Kelly, Bill Evans and Herbie Hancock, that I had transcribed and analyzed. Furthermore I referred to the teachings of musicians who defined their own musical concepts, such as artist, composer and educator, Dave Liebman. As mentioned before, reference books available at the time were not sufficiantly comprehensive in order to provide with a coherent teaching method for adult beginners. In the mid 1980s, there was a core of Israeli musicians, most of whom had studied at the Berklee College of Music in Boston, who had come back to live in Israel and were eager to put their acquired knowledge and expertise to use. At the same time there were young musicians eager to study jazz in a serious manner, and very few ways for them to do so. It was the combination of these ingredients that gave four musicians (Yehuda Eder, Ilan Mochiach, Gil Dor and Guri Agmon) the idea of forming a school for adult beginners studying jazz and contemporary styles of music. It is through the initiative and commitment of these

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musicians that the Rimon School was founded in 1986.[1] The task that lay ahead was humbling: to create a unified curriculum based upon the different learning and playing experiences of the individuals involved in the project. Basic questions arose, such as the number of years required for study towards a graduation certificate. Other issues related to the kind of subjects required for the curriculum and the content knowledge for each level. These are just two examples of the issues that needed to be resolved, but many more existed at the time, especially since the curriculum for each course had to be devised and agreed upon by all members of the academic board which consisted of the founding members and other teachers.

By the time I joined the faculty in 1988, this school for jazz and contemporary music had been in existence for two years. Many basic issues had already been addressed, but there was still much to be done. I was often confronted with a situations where I had to teach private jazz lessons to students who had never heard of Parker, Louis Armstrong, let alone Dave Liebman or Dave Holland. Their knowledge and understanding of chords was often non-existent and any notion of improvisation and sense of the swing feel was vague at best. Despite inadequate experience and time limitations, the students had to reach a minimum level of competence so that they could provide basic accompaniment and attempt improvisation in an ensemble class. It was that very restraining situation that prompted me to be very systematic and have the students understand that a lot of hard work was required in order to progress. The specifics of the teaching method are discussed in the proposed dissertation.

**Focal point**

The objective of my study is to provide a creative teaching method for musicians studying the art of improvisation. It is a retrospective account of the method I used while teaching in Israel and which I have developed over the past 20 years in the various teaching situations I encountered.

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[1] Information about the Rimon School can be accessed on <www.rimonschool.co.il>.

It is the creative thought process that takes place during an improvisation that will influence the quality of the music produced. The mere imitation of phrases used previously by other musicians (as mentioned before with regard to transcription) and practicing exercises, will not ensure a person's ability to improvise. It is rather the originality of an idea and the thought process used to develop it that determines the quality of the music produced. Merely repeating a phrase used previously by Charlie Parker does not mean that it would sound interesting. The freshness of invention at the time it was played by Parker is lost, and once removed from its context, the phrase also loses its thematic and compositional meaning. Understanding the thought process that led Parker to playing a particular phrase could help another musician come up with his/her new ideas. That is what makes the analysis of transcriptions such an important part of studying jazz improvisation.

Jazz improvisation, as with any other discipline in music, must be taught by a guide/teacher. The reason is that theoretical ideas need to be integrated into a person's way of thinking through practice and repetition. It is through the physical application of ideas onto an instrument, that a musician transforms information into knowledge. The role of the teacher is to provide guidance in the sense that he or she must follow through on exercises given to a student and make sure that a sufficient level of competence has been achieved before moving to the next topic or exercise. In that sense a teaching book or method cannot in themselves teach people how to improvise. They can and should provide with valuable information to assist a student and\or teacher in understanding theoretical concepts.

The method I devised introduces a person to jazz through 'Bebop', a style in jazz developed in the 1940s in the United States. The reason for choosing this particular style is that it codified concepts of rhythm, melody and harmony.

> […] it [bebop] represented a marked increase in complexity, and was considered revolutionary at the time of its development (Owens, 1988:137).

According to Coker,

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> [t]echnically and artistically, the additions and changes brought about through the experimentation of the early forties caused jazz to become an *art music* (music that develops at its own pace, artistically, regardless of consumption rate by the masses), rather than the folk-popular music it had been since the beginning (Coker, 1964:48)

Guthrie P.Ramsey noted that

> […] beboppers took a stance that helped give their music a sharp and, to many, an uncomfortable edge. (Ramsey, 2000:v).

The dissertation discusses the aspect of *harmony* in the bebop style. Chords will be explained by showing their origin in previous styles of Western music. In that sense a link will be made between so-called 'Classical harmony' (explained in chapter 2) and jazz harmony. Although the issues of rhythm and melody will *not* be addressed, they will be mentioned in the following segment to illustrate the important developments that occurred during the bebop era with regard to all three foundations of music; rhythm, melody and harmony.

***Harmony***

The II V7 I progression was harmonized in a different way by the bebop musicians to that of their predecessors in the sense that the b9 tension[2] was applied to the V7 chord on a regular basis. The I chord, whether in a major or minor key, became richer in texture through the use of the 9 tension and often the 11 and/or the 13 would be added as well (the sharp 11 would be used in the case of a Major 7 chord). All the above mentioned resulted in a heightened level of dissonance. Analyzing the accompaniment of pianists such as Wynton Kelly, Red Garland and Bill Evans, illustrates this point.

***Melody***

During the bebop era improvisation evolved into composition in real time. Analyzing Wynton Kelly's solo on 'Autumn Leaves' (Kelly, 1961) illustrates how jazz musicians of

[2] Notes other than the basic chord tones (root, third, fifth, seventh), derived from a scale from which a chord originates, used to enrich the texture and enhance the dissonance level of a chord.

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that era began to utilize thematic material in a similar way to that of classical composers. In his solo, Wynton Kelly starts by using a short, simple idea based on an element found in the melody of the tune. He develops this idea up to a point in which a new element emerges. He continues the improvisation based on that new element from which a third idea emerges, and so on and so forth. This way of thinking ensures the improvisation has an internal logical structure. This concept of 'composition in real time' was revolutionary at the time and can be attributed to the bebop musicians. The following generation of musicians such as Keith Jarrett, Chick Corea, Herbie Hancock (Hancock, 1965) and others would develop it further. In that respect bebop had a profound impact on the evolution of modern jazz.

***Rhythm***

The changes mentioned above regarding harmony and melody would have an influence on the rhythmic concepts.

> Perhaps its [bebop's] most significant characteristic was its highly diversified texture created by the rhythm section, a considerable contrast to the insistent four-beat approach that was taken by swing musicians. In the newer style, the basic beat was stated by the double bass player and elaborated by the drummer on ride cymbal and hi-hat, while a variety of on- and off-beat punctuations were added on the piano, bass drum, and snare drum. These punctuations sometimes reinforced and sometimes complemented the melody, causing much rhythmic interplay during improvised solos (Owens, 1988:137).

Transcribing rhythmic patterns played by a pianist or guitar player while accompanying an improvisation played by a trumpet or saxophone player is one way of becoming familiar with basic rhythmic patterns commonly found in this style.

Introducing a musician to jazz via this style provides that person with the sense of how multi-layered jazz is. It provides with the tools required for listening to jazz which is the key to understanding and being able to play jazz. It also establishes the ability of that individual to play in a group setting as well as in a solo situation and/or big band.

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**Research methodology**

The focal point of this study is to describe my teaching method, which was developed over the past 20 years. This method will be compared to those written by Levine and Coker.

Herewith a preliminary comparison as an example; as mentioned before, Levine and Coker's methods require a basic understanding of jazz. Levine defines the term "Three-Note Voicings" (Levine, 1989:17): Constructing chords using only the root, third and seventh of the chord and then linking one chord to another using these three degrees exclusively. There is no mention of tensions at this point, and in the following chapter Levine extends the idea of three note voicings by "Adding Notes". These "added notes" are in fact tensions, but Levine does not specify which tensions are used on what chord type. That is to say that such information must be acquired elsewhere. Chapter four in Levine's book is entitled "Sus and Phrygian Chords". A Phrygian is a mode or a scale, and not a chord. This mode suggests a minor chord with a b9 in a particular style in jazz, but again that needs to be spelled out. Coker refers to the tensions as a "Chord Superimposition". Superimposing suggests polytonality as it is a particular chord that is constructed on an existing one. That however is not the case with tensions since the idea is the enrichment of a chord without the alteration of its function in the harmonic structure. That too must be clarified if the student is to understand the difference between the two.

These are just a few examples and a more detailed comparison and analysis will follow and be linked to each topic individually.

**Time line and provisional chapter outline**

As for the research itself, a timeframe of one year will be required for the completion of the dissertation. Several months of research and the examination of existing data are

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required, followed by the actual writing of the work. The chapters of the dissertation are as follows:

- Introduction;
- Triads;
- Fundamental position & inversions of triads;
- Voice leading;
- Chord symbols;
- Introducing the II, V, I progression and the concept of tonality;
- The dominant Seventh chord;
- Seventh chords on functions other than the V7;
- Tensions or extension notes;
- Applying tensions to the II V I progression;
- Harmonizing a 'standard' using the tools acquired in the previous chapter;
- Left hand voicings;
- Conclusion

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# CHAPTER TWO
# HARMONY IN THE BEBOP STYLE

This teaching method presents basic theory and exercises required for the understanding and playing of jazz harmony. The method aims at teaching students and teachers of all musical backgrounds, regardless of the instrument they play. Instrumentalists (other than pianists) and vocalists must have basic piano playing skills as will be outlined in 'Prerequisites'. The theory presented in each section must immediately be applied to the piano and understood before moving on to the next topic.

## Prerequisites

1. Knowledge of:

    - Intervals
    - Scales; Major and Minor (the different forms)
    - Cycle of fifths
    - Accidentals
    - Treble and bass clefs
    - Note- and rest-values
    - Time signatures

2. Basic piano playing skills;

    - Playing chords in each hand
    - Playing a melodic line in the right hand while playing chords in the left hand
    - Basic reading skills in treble and bass clefs, including fingerings.

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## 2.1 What Is a Chord?

This phenomenon known as a *chord* originates from the meeting of several melodic lines progressing in simultaneous linear motion. The origin of *harmony* is in *melody.* According to Hugo Riemann:

> …chord successions arise from simultaneous melodic motion of several parts. The history of music teaches us that simultaneous melodic progression in several parts was practiced and more and more perfected over the centuries before the idea of harmony in the modern sense (chord) was even conceived. Thus *harmony,* in so far as it may be defined as composition in several parts (polyphony), takes root in *melody.* (Riemann, 1895:1).

According to Rameau:

> The arrangement of several sounds heard together, each marked by a note in one of the given parts, is called a chord. (Rameau, 1722:207).

### 2.1.1 Triads

Triads are chords made up of a root, third and fifth of a particular scale.

> Triads are named according to their roots, e.g. C major, E minor.
> (Hindemith, 1943:1)

There are two principal forms: Major and Minor. The major triad comprises of a root, major third and a perfect fifth. The minor triad comprises of a root, minor third and a perfect fifth. There are two other forms, those of the diminished and augmented triads. The diminished triad comprises of a root, minor third and a diminished fifth, while the augmented triad comprises of a root, major third and an augmented fifth.

The first step when studying harmony in any style of Western music is to master the triads on both a theoretical and practical level. The triads must be thought of as the building blocks of the foundation of harmony since all other chord types (such as seventh chords) and their extensions are based on one of the four basic triads.

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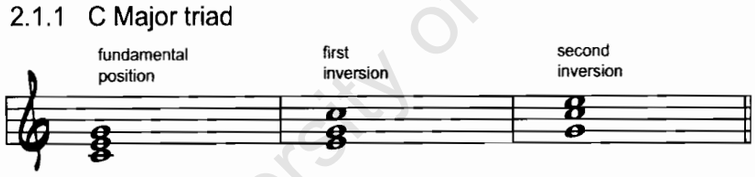
> These chords [triads] are the foundation on which seventh chords are built. (Gardner, 1996: 64).

### 2.1.1.a Fundamental position and inversions of Triads

Each triad consists of a *fundamental* position' and two *inversions*. The fundamental position of a C major chord is based on c; this is called 'root position'. Once a triad has been constructed on a particular root, the order of the notes can be changed to create *inversions*. For example: a C major triad in root position is made up of the notes C, E, G. 'Inverting' the order of notes would mean that the lowest note of the chord, the root, will move up by an octave. This results in the *first inversion* of the chord: E, G, and C. Inverting these notes again would result in the *second inversion*: G, C and E. The inversions are needed in order to smoothly connect one chord to another in a harmonic progression. Allen Forte explains inversions in the following way:

> By chord inversion is meant the placement of the bass an 8ve higher (or two 8ves, three 8ves…), so that the chord note which was immediately above the bass becomes the new bass note. (Forte, 1974:61).

2.1.1 C Major triad

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### 2.1.2 Voice Leading

The term *voice leading* relates to how a particular note in a melodic line is *led* to the next in a musically logical manner. Forte says the following:

> Influenced by the two-dimensional notation of music, we often speak of chord construction as occurring in the *vertical* dimension, whereas chord connection occurs in the *horizontal* dimension. This distinction pervades musical terminology. Thus, the techniques of chord connection are commonly called *voice leading* techniques, referring to the progression of the individual chord notes which form "voices" in the horizontal dimension. (Forte, 1974:47).

In the study of classical harmony, music is written in *four-voice* harmony, representing the range of the human voice: soprano, alto, tenor and bass (soprano and alto being the high and low ranges of the female voice and the tenor and bass being those of the male voice respectively). According to Forte.

> Although the three-note chord, the triad, is fundamental to tonal music, compositional practice features four-note chords. One reason for this is that the lowest note or bass was initially regarded as the foundation which supported the chord, as an independent element upon which the triad was constructed. Thus we have the familiar expression "bass and chord", meaning the bass note plus the three notes of the triad. (Forte, 1974:41).

Chapter three in book three of Rameau's Treatise is entitled 'On the Perfect Chord, with which Composition in four Parts begins'. (Rameau, 1722: 207).

**2.1.2.a The historical context of four-voice harmony**

The practice of composing music in four parts bearing in mind the possibilities of the human voice, stems from the fact that for several centuries prior to what we define today as the 'Classical era'[1], Western music was primarily vocal and written mainly for religious ceremonies. Texts taken from the bible were used, and composers such as J.S. Bach wrote mainly for choir and soloists accompanied by orchestra. The *cantata* is one of the musical forms that Bach used in this context.

> ...multi-movement liturgical pieces comprising recitatives and arias to freely composed poetry as well as choral movements with biblical texts and settings of chorale melodies. (Kuster, 1999: 82).

[1] The term "Classic", then, as applied to a period in music history, refers to the music of the second half of the eighteenth and the beginning of the nineteenth centuries. (Pauly, 3:1973)

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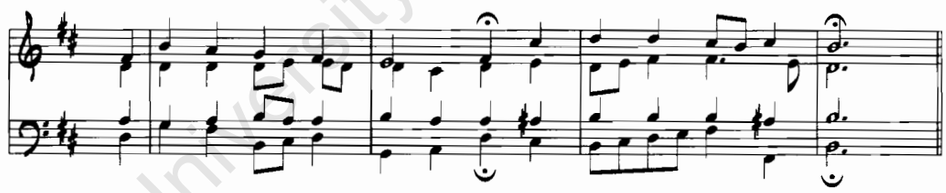
When analysing the Chorales that Bach harmonized in four-voice harmony, one can appreciate how the musical line created *in each voice* is musically interesting. While each note has a function in the chord it is also serving as a melody within a particular voice. These chorales appear as the centrepiece for the many cantatas that Bach composed while serving as musical director of the cathedral in Leipzig. According to Daw:

> Bach's official duties as Thomaskantor and *director chori musici* centred on his singers at the Thomasschule and particularly on the first choir, which performed the cantata in the two main churches, the Thomaskirche and the Nikolaikirch, alternately on most Sundays, and at both churches on major feast-days (Daw, 1999:264).

The cantatas Bach composed bare the same names as the chorales featured in them. According to Riemenschneider:

> A glance over a catalogue of the names of the two hundred cantatas that survive impresses one with the frequent coincidence of the titles of these cantatas with the names of the chorales then in general use. (Riemenschneider, 1941:v).

The voice leading aspect of Bach's music is an important topic since it serves as the basis of Western music harmony. A sense for what is considered as 'good' or 'logical' voice leading can be acquired through the study of Bach's music. This is an important tool for a musician to have, regardless of the style of music being practiced. See an excerpt from a chorale harmonized by Bach as shown below:

Bach: Chorale 80 (excerpt) *O Haupt voll Blut und Wunden* (2.1.2, voice leading)

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As discussed in 2.1, triads consist of three notes. In the case of four-voice harmony, one of these notes must be doubled. According to Hindemith:

> Distribution of the triad tones among the four voices: one tone must be

> Doubled. Permissible doublings: root (preferred), or fifth. (No third-doubling). (Hindemith, 1944:2).

### 2.1.3 The difference between Classical and Jazz harmony

There is a fundamental difference between what is commonly referred to as 'classical harmony'[1] and jazz harmony. In classical harmony an inversion of a chord occurs when the note found in the bass would move from its natural root position to either the third, fifth or seventh. (The *seventh chords* will be addressed in 2.3).

> Note: there is a difference between the bass of a chord and its root. (Schoenberg, 1969:6)

As noted earlier in Hindemith's quote, the fifth of the chord can be doubled, and so a possible voicing (distribution of the tones) in this case could be as follows; fifth, root, third and fifth (from the lowest voice upward). In a C major chord, that would translate into the following notes: G, C, E, and G. The notes appearing in the tenor, alto and soprano form a fundamental position of the chord 'c'. *Since the note found in the bass determines the position of the chord*, the chord is now in its second inversion.

In jazz harmony, with few exceptions, the root of the chord is present in the bass. Since the bass part (usually played by a double bass) progresses according to the root motion dictated by the chord- changes of a particular tune, it is essential to use chord 'inversions' in the other voices (tenor, alto and soprano). The use of inverted positions in these voices will help in the creation of smooth and logical voice leading as will be described in exercise 1.

### 2.1.4 Chord symbols

Since jazz is a relatively recent art form, the issue of terminology, especially with regard to chord symbols, bears inconsistencies. When examining chord symbols

[1] Harmony that abides by Baroque era voice-leading aesthetics, commonly used by composers of that era, that were later defined as voice-leading rules by scholars during the periods that followed.

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used in jazz textbooks such as transcriptions of jazz solos, arrangements of tunes done by jazz musicians etc., it can be observed how chord- symbol methods differ. For example: In a book of transcriptions of Kenny Barron solos, the minor chord is written with a lower case 'm' (Barron, 1996). In a book of transcriptions of McCoy Tyner solos, the 'major seventh' chord (which will be discussed in the section entitled 'seventh chords') is symbolized by the letters 'maj' (Tyner, 1992). In a book of transcriptions of Herbie Hancock solos, the minor chord is symbolized by a '–' (minus) while the 'major seventh' is symbolized by a triangle sign (Hancock, 1992). In the 'Real Book', originally an illicit unpublished reference book for jazz musicians, used mainly for so called jam sessions and similar playing situations, the major seventh chord is symbolized by lower case letters 'maj' followed by the numeral 7. The minor seventh chord is symbolized by the '-' sign followed by the numeral 7. This goes to show that jazz musicians and scholars have yet to agree on a unified method of chord symbol writing. That results in confusing and at times conflicting methods.

For the purpose of clarity and consistency, one specific form of chord symbols will be used. The chord symbols that will be used for triads are as follows:

- Major triad: no symbol required. Example: B = B major
- Minor triad: the 'minus' symbol is the most commonly used in jazz. Example: A- = A minor. The other symbol used for a minor chord is a lower case 'm'. That often leads to confusion between 'major' and 'minor' especially with hand written music, since certain texts use a capital 'M' to express a major chord.
- Diminished triad: a small circle is the most commonly used symbol in jazz. Although writing the abbreviation 'dim' is acceptable, the first option is the one that will be used throughout this method.
  Example: $G^{o}$ = G diminished.
- Augmented triad: the 'plus' sign is the most commonly used symbol in jazz. Although the abbreviation 'aug' is also acceptable, the first option is the one that will be used throughout this method.
  Example: $D^{+}$ = D augmented.

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The reason for choosing this specific chord symbol method rather than another is due to it being the most commonly used and easiest to write (and read) in a hand written text.

**Exercise 1**

The goal of this exercise is to get acquainted with the triads by playing the chord changes of a well-known standard. The tune that will be used for this exercise is 'Autumn Leaves' (See chord changes in the appendix).

Step 1: In the central octave of the piano (the register surrounding middle C or C4), play the triads in the right hand in the following way: play each chord individually, first in its fundamental position followed by the two possible inversions.

Step 2: Repeat the same procedure only this time; add the roots of the chords in the left hand.

Step 3: In the octave below middle 'C', play the triads and their inversions in the left hand.

Step 4: Link the chord changes of the tune by using inversions that are closest to each other. When there is a common tone or tones between two chords, they will be tied. Example: in the first chord sequence C-, F, the note 'c' is common to both chords. The C- (the first chord of the tune) can be played in any one of the available positions (fundamental, inversions). If the first inversion is chosen, then the note 'c' is in the soprano. This note is found in the next chord F and is therefore a 'common tone', it is tied and becomes the fifth of that chord. The other three voices (alto, tenor, bass) move to their required positions to create the F major chord, and that will result in the formation of its fundamental position. The following chord is $B^b$ major. The note F is found to be a common tone to both F major and $B^b$ major chords. That note is tied and becomes the 'fifth' of the $B^b$ major chord. From this point there are two possible positions: Either the *first* or *second* inversions of the $B^b$ chord. Both options allow us to meet the requirement of tying common tones and both can therefore be considered as the 'closest inversion possible'. The choice is left to our discretion and will have an influence on which inversions will be used in the chords that follow (See appendix 1).

Step 4.a. Continue linking the chords of Autumn Leaves in the same manner described in step 4. Study the tune by playing these inversions in the right hand while playing the roots of the chords in the left hand. The correct fingerings must be used

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and the exercise played at a tempo of a quarter- note= 60. The tempo must be brought up gradually to quarter- note= 120 (See appendix 1).

Step 5: In the left hand, play the inverted chords shown in step 4 an octave lower than the one used for the right hand.

Step 6: Play the melody of the tune in the right hand. The tempo required for this exercise is quarter note= 120 (See appendix 2).

Step 7: Play the melody in the right hand while playing the inverted chords in the left hand. The tempo requirement is quarter- note = 120

Note that the form of this particular tune is A A B (As indicated in appendix 1).

This exercise must be repeated on the following tunes: All the Things You Are (Kern and Hammerstien), Alone Together (Dietz and Schwartz), All of You (Cole Porter).

### 2.2. Introducing the II, V, I progression and the concept of *tonality*

The idea of tonality lies at the root of Western music since the Baroque era[1]. The triad serves as the foundation of this idea.

> This triad - with its tonic-dominant relationship, plus the third sandwiched in between – this triad is the foundation of Western tonal music as it developed over the last three centuries or so, along with the development of our Western culture in general. (Bernstein, 1976:23).

A *tonal centre* means that at a particular moment in a given piece of music, one note, on which a chord is constructed, is of greater importance and stability than all the others. That occurs when a *dissonant* element is followed by one that is *consonant*. According to Allen Forte:

> Consonant intervals were emphasized as stable and foundational elements of tonal music. We can now extend that statement to include consonant chords. When the intervals of a chord are consonant with the bass, the entire chord is called consonant. If the chord contains an interval which is dissonant against the bass, the entire chord is called dissonant. (Forte, 1974:39)

[1] ...the music of the period from approximately 1580 to 1750. (Palisca: 1968:1)

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The relationship between consonance and dissonance is also referred to as 'tension and release'; Dissonance, sounding 'unpleasant' to the ear and therefore 'tense', followed by consonance that provides a welcome relief from that moment of dissatisfaction. Dissonance is *unstable* and therefore tends to resolve to a consonant interval/chord, which is *stable*.

> The adjective *consonant* is applied to stable intervals, intervals which tend to remain stationary, in contrast to more active intervals called *dissonant* intervals. (Forte, 1974:15)

In order to understand the idea of tonality in terms of actual sound, we must elaborate on a term mentioned earlier by Bernstein, that of the *tonic-dominant* relationship. Two of the three notes of the triad: the root and the fifth are also named tonic and dominant respectively. When referred to in these terms they suggest *harmonic functions* and *tonality*. In order to understand the connection between these two chord tones and the idea of tonality, a momentary deviation into the world of physics is required.

Every note produced on an acoustic instrument consists of a sound that is perceivable to the human ear and a series of sounds called overtones that are inaudible. The *overtones* are also known as the *harmonic series.*

> This acoustical phenomenon called the harmonic series, or overtone series, is not hard to understand, if you remember the basic high school fact that all sounds are produced by vibrating bodies, which send out waves. If such a vibrating body is irregularly constituted, like this floor, or this lectern, it will when struck emit waves which are irregular, and our ears will perceive them as noise. But if the source of vibration is of a consistent structure, like any one of the strings in this piano, it will emit *regular* waves, and we hear them as a musical tone. (Bernstein, 1976:17)

Bernstein goes on to say:

> If I sit at the piano and play that low C, you may think you're hearing only that one tone- a dark, rich bass note- but you're not; you are simultaneously hearing a whole series of higher tones that are sounding at the same time. (Bernstein, 1976:19).

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The first overtone in the series of overtones is the same note as the fundamental only an octave higher.

> The first overtone of the series, according to the laws of physics, has to be exactly an octave higher than the fundamental C we have been hearing. (Bernstein, 1976:21).

The second overtone in this series will be a fifth above the first overtone, meaning an octave and a fifth above the fundamental note of the series.

> The next overtone of this preordained order results from that same fundamental string vibrating in three parts: and this one will be the first *different* overtone- that is, the first one you'll hear other than a C. It's going to be a G. (Bernstein, 1976:21).

The fundamental note of a chord is *physically* linked to its fifth, which explains the strong link between *tonic* and *dominant.*

> But this new overtone, G is a fifth away from C. So we now have two *different* tones; and once they are established in our ears, we are in possession of the key to the whole tonal system- a system based on the concept of tonic and dominant. (Bernstein, 1976:23).

Now that the *tonic-dominant* relationship is understood, the idea can be extended through the construction of chords on these two roots. Constructing triads on diatonic[1] notes of a major scale show the chords of both the root and the fifth as being major chords.

The third of the triad built on the fifth degree of this major scale (the *dominant)* is of particular importance. It is known as the *leading tone*. The *leading tone* is the seventh degree of a major scale, and that of a 'harmonic minor' scale. The chord of the fifth degree, the dominant, is major in both major and minor tonalities.

[1] Notes related to a particular scale.

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> The dominant in both modes [major and minor] is a major triad. It contains the leading tone as its third. (Hindemith, 1943:3).

The leading tone tends to resolve upward by a half step to the fundamental note of the scale. By doing so it enforces the link between dominant and tonic: the leading tone being the third of the *dominant* moves upward to the fundamental note of the *tonic.*

These functions tonic and dominant, can be seen as being two polarities or extremes that are linked by laws of physics as shown earlier. These two functions however, are insufficient to account for the diversity and complexity characterizing western music for the past several centuries. What is needed to complete the equation is an additional function that will serve as a sort of 'middle ground' between these two extremities (tonic and dominant). This function appears in the form of the *subdominant.*

> The triad on the IV is called subdominant because it occupies a position *below* the tonic triad analogous to that occupied by the dominant above. (Forte, 1974:104).

According to Liebman:

> In Western music, the principle of tension and release has been realized harmonically in the dominant-tonic axis. In between these two extremes lies the subdominant function. (Liebman, 1991:13).

The diatonic triad constructed on the IV degree (subdominant) of a major scale is a major chord and that of a minor scale is a minor chord. The subdominant triad is consonant and possesses neither the leading tone nor any other element that can effectively lead it to the tonic. It therefore serves as a preparation of the dominant.

Arranging these functions in an order that conveys the idea of tonality results in the following: IV, V, I: *Subdominant* leading to *dominant,* and *dominant* leading and resolving to *tonic.* According to Schoenberg:

> The chords which express a tonality unmistakably are the three main triads: I, IV and V. (Schoenberg, 1969:13).

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In classical music, the term used to describe the above progression is a *cadence*. The parallel term to the classical cadence in jazz is the *two five one progression* (symbolized by the roman numerals II, V, I). The reason for the difference between the degrees representing the subdominant is the following: The chord constructed on the IV degree of a particular scale can be substituted by one that is constructed on the II degree since each major scale has a parallel in minor, situated a minor third below it. Example: the parallel minor scale of F major is D minor. The two scales, F major and D minor are made up of the same notes. The order of these notes differs since the one is based on F while the other is based on D. Due to their commonality; the *chord* constructed on the II degree of a particular scale can share the same function as that of the IV degree. The II degree can therefore function as a *subdominant*.

The issue of the three major functions in tonal music has been addressed (tonic, dominant, subdominant). Mastering them on a theoretical and practical level is vital for mastering any style of Western music, including jazz. According to Schoenberg:

> A tonality is expressed by the inclusive use of all of its tones. A scale (or part of one) and a certain order of the harmonies affirm it more definitely. In classical and popular music, a mere interchange of I and V is sufficient if not contradicted by extra-tonal harmonies. (Schoenberg, 1969:11).

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**Exercise 2.1**

In this exercise the II V I progression will be played using triads in the following manner: As in exercise number 1, the triads will first be played in the right hand while the roots of the chords will be played in the left hand. The chord positions will vary from one 'step' to the other. Each II V I progression will be played in all twelve Major tonalities (keys) starting from C major and progressing in the order of the 'cycle of fifths'. For example: the key that follows C major is G major etc. In each 'step' of the exercise chord positions pertaining to each function will be given.

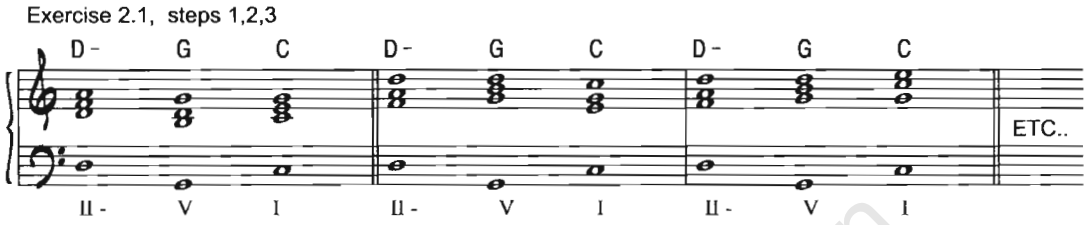
Step 1: II; fundamental position, V; first inversion, I; fundamental position
Step 2: II; fundamental position, V; second inversion, I; first inversion
Step 3: II; first inversion, V; fundamental position, I; first inversion

Step 4: II; first inversion, V; fundamental position, I; second inversion

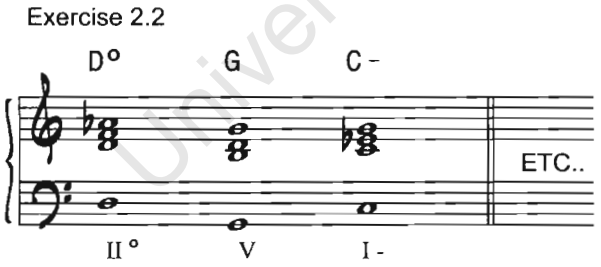
Step 5: II; second inversion, V; first inversion, I; fundamental position

Step 6: II; second inversion, V first inversion, I; second inversion

Step 7; Play the same chord positions dictated in the above-mentioned '5 steps' in the left hand.




**Exercise 2.2**

The II V I progression will be played in minor tonalities. The diatonic triad found on the second degree of a minor scale is a diminished chord and that of the V degree, a minor chord. As mentioned earlier, a major chord is placed on the V of a minor tonality in order to have a *leading tone*. The II V I progression of a minor tonality will therefore be played as follows: II°, V, I-. Example: D°, G, C-. (See this example in the appendix).

Play the 6 'steps' given in exercise 2.1 in all 12 minor tonalities, starting from C and progressing according to the cycle of fifths.

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**2.3. The Dominant Seventh chord**

The addition of the seventh degree of a scale to a particular triad creates a *seventh chord*. Initially the seventh was added only to the triad of the dominant, resulting in the *dominant seventh* chord. According to Hindemith.

> *The dominant seventh chord* consists of the dominant triad with the seventh of its root added. (Hindemith, 1943:18).

As with the triads, the dominant seventh chord is a major chord in both major and minor tonalities since it possesses the leading tone.

> The dominant triad in both major and minor keys being major (see Chap. III., par. 42), the chord of the *dominant seventh* is also alike in both modes. (Bridge and Sawyer, 1899:56).

The addition of the seventh degree to a triad first came about as a means to avoid parallel octaves while connecting the IV degree to the V. Parallel movement of octaves is forbidden according to Classical voice-leading rules.

> Ever since the fifteenth century the movement of a pair of voices in parallel fifths or octaves has been considered objectionable in sound, since the effect is somewhat inconsistent with counterline procedure and with the flexible play of interval sonorities. (Ratner, 1962:46).

Carrying the root of the IV found in one of the voices; soprano, alto, tenor, (that doubles the one found in the bass) on to the V results in the creation of a *seventh chord* on the V degree. Conducting this voice in that particular way achieves the following: 1. Smooth voice leading between these two important functions (IV and V). 2. The apparition of a *tritone* in the *seventh chord* (formed by the third and the seventh of this chord, as shown in the example below). This tritone is resolved by conducting the leading tone (the *third* of the chord) upward to the root of the I, while the seventh of the V moves downward to the third of the I: The tritone being dissonant resolves to a third being consonant, which goes to reinforce the idea of tonality as discussed earlier. (2.2) (See example below).

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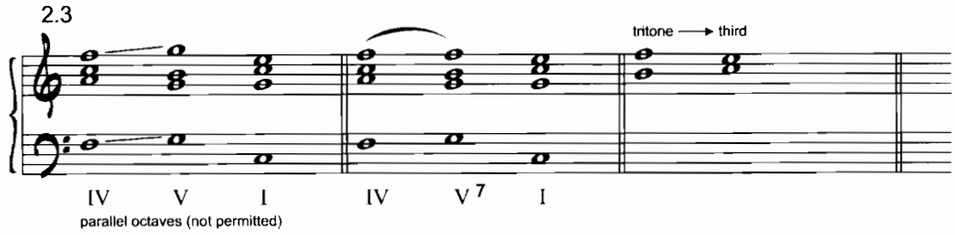
2.3




According to Rameau:

> The seventh is naturally formed, moreover, by adding two fourths or by adding a third and a fifth; it is also the origin of all dissonance. (Rameau, 1722:127).

Forte makes the following comment about the dominant seventh chord:

> Since 7th chords are derived directly from the triads, the basic harmonies, they constitute the first and most important class of dissonant chords. And since the dominant 7th chord is derived from a primary triad it is the most important representative of the entire class of 7th chords. (Forte, 1974:124).

Seventh chords on functions other than the V first came about as *secondary dominants*. A secondary dominant is a chord that functions as a V7 in relation to the chord that precedes it, which does *not* represent the tonal centre. According to Hindemith:

> Any major or minor triad other than the tonic triad of a key (II, III, IV, V, VI in major; IV, V, VI in minor), as well as all major or minor triads created by alterations, can be emphasized by being preceded by a triad (major, less frequently minor) or seventh chord (mostly of the dominant seventh type- that is, consisting of major triad and minor seventh) which stands in the relation of a dominant to it. (Hindemith, 1944:82).

**2.4 Seventh chords on functions other than the V7**

Once the idea of adding the minor seventh to a major triad was established, as with the dominant seventh chord, what would follow is the addition of the seventh to other chord types and functions such as the minor seventh added to the minor triad. According to Forte:

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> In all, there are five types of $7^{th}$ chords. The first type is the dominant $7^{th}$ explained previously. The second type is the minor $7^{th}$. (Forte, 1974:133).

Constructing diatonic seventh chords on a major scale results in the following:

- First degree: *major seventh chord.*
- Second degree: *minor seventh chord.*
- Third degree: *minor seventh chord.*
- Fourth degree: *major seventh chord.*
- Fifth degree: *dominant seventh chord.*
- Sixth degree: *minor seventh chord.*
- Seventh degree: *minor seventh flat five chord* (also known as a *half diminished chord*).

Jerry Coker shows the chord types of the seventh chords in a chart found in his book and brought in the appendix 3. (Coker, 1964:40).

As this chart illustrates, there are varying ways of writing chord symbols. The following chord symbol method pertaining to seventh chords will be used:

- Major seventh = X maj 7
- Minor seventh = X -7
- Dominant seventh = X 7
- Minor seventh flat five (also known as *half diminished)* = X-7($^{b}$5)
- Augmented seventh = $X^{+}7$
- Diminished seventh = $X^{o}7$

Note: The 'X' in the above chart represents the different letters that signify musical notes (from A to G).

There are two types of chords with four notes that are not seventh chords. These are the sixth chords: Major sixth, written with the numeral 6, and Minor sixth, which is symbolized by the X-6. These chords consist of a root, major third, perfect fifth and major sixth, and a root, minor third, perfect fifth and major sixth respectively.

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The seventh chord with a diminished fifth, as mentioned by Coker in the above mentioned chart, is in fact a dominant seventh with an extension note, a topic that will be addressed at a later stage.

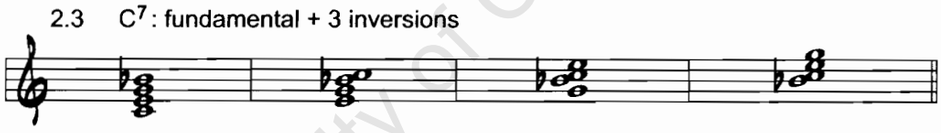
In Mark Levine's book, chord types pertaining to seventh chords are scattered throughout the various chapters. On page 14 (chapter two) for example, Levine makes reference to the Major Seventh and Minor Seventh chord types and on page 15 he mentions the Dominant Seventh chord. Levine links these chord types to the scales (modes) from which they are derived but does not spell out all chord types used in jazz in a systematic manner as Coker does.

In *Practical Jazz* by Lionel Grigson, the chord types are shown in the following manner:

> The three main types of 7th chords are:
> (i) Major triad + minor $7^{th}$ (a $7^{th}$ chord)
> (ii) Minor triad + minor $7^{th}$ (a minor $7^{th}$ chord)
> (iii) Major triad + major $7^{th}$ (a major $7^{th}$ chord). (Grigson, 1988:7).

There is no mention of all chord types and in addition, Grigson does not differentiate between triads and seventh chords.

Seventh chords consist of four notes, resulting in a *third* inversion. (See example below).

2.3 $C^7$: fundamental + 3 inversions

**Exercise 3.1**

The objective of this exercise is to get acquainted with the various types of seventh chords. The seventh chords are applied to the II V I progression. As in exercise 2.1, the II V I progression will be played using various possibilities of chord inversions, resulting in smooth voice-leading as described in step 4 of exercise 1.1. This exercise must be played first in all major tonalities followed by minor tonalities. The seventh-

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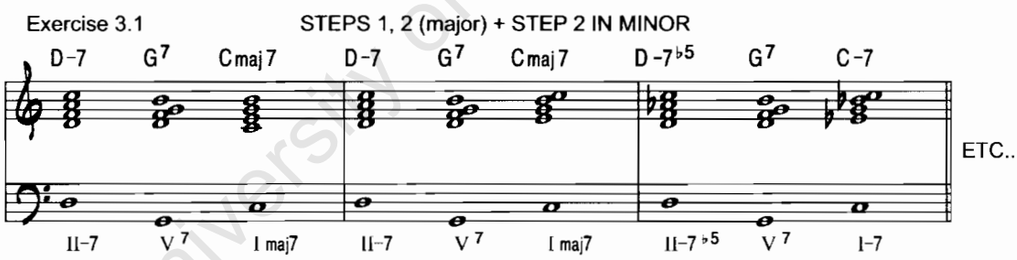
chord types pertaining to the II V I progression are as follows: In major tonalities: II-7, V7, I maj7. In minor tonalities: II-7($^{b}$5), V7, I-7. According to Coker, Knapp and Vincent:

> To prepare the sound of a *minor* key center, we need chord- types for the II and V that will already be hinting at the minor I chord that is to follow. And so we generally find that the II chord will be a half-diminished seventh chord, instead of the II-7 that was used in major. (Coker, Knapp, Vincent, 1997: 15).

Play the II, V, I progression in the following positions:

- Step 1: II fundamental, V second inversion, I fundamental.
- Step 2: II fundamental, V second inversion, I first inversion.
- Step 3: II first inversion, V third inversion, I first inversion.
- Step 4: II first inversion, V third inversion, I second inversion.
- Step 5: II second inversion, V fundamental, I second inversion.
- Step 6: II second inversion, V first inversion, I third inversion.
- Step 7: II third inversion, V first inversion, I third inversion.
- Step 8: II third inversion, V second inversion, I first inversion.

Play this exercise in all major keys. Begin with C major and progress to the other keys according the order in which they appear in the cycle of fifths. Repeat the same procedure in all minor keys. See example below.

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**Exercise 3.2**

The objective of this exercise is to apply exercise 3.1 to a standard. The first tune that will be used, as in exercise 1, is Autumn Leaves. (See appendix for chord changes and symbols).

First, the tonality of the tune must be identified. This can be determined by the last chord of the tune and the progression that leads to it: By ending on the chord representing the tonal centre, the tonality of a piece of music is affirmed. In the case of this tune, it ends with a II, V, I progression in G minor. This indicates the fact that G minor is the tonal centre. Once this fact has been established, all other chord progressions in the tune stand in relation to this tonal centre. For example: The first progression of the tune is a II, V, I in $B^b$ major. This is the parallel major of G minor, which links it to the tonal centre. The last progression in the A section is a II, V, I in G minor, which goes to further reinforce G minor as the tonal centre. The only chord in the A section that does not appear in the context of a II, V, I progression is the $E^b$ which functions as a IV degree in the key of $B^b$ major. It serves as a passage chord. In the analysis of the tune appearing in appendix 4, both II, V, I progressions (that of the G minor as well as the Bb major) are marked with the numerals II, V, I. This fact might cause some confusion since as mentioned above; the tonal centre is G minor. In the II, V, I progression of the relative major ($B^b$ major) the F7 chord is a *secondary dominant* and could therefore be marked in parenthesis. (Refer to examples 95 and 96 from Forte's book as shown in appendix 5). In the $12^{th}$ measure of the B section, the progression F-7, $B^b7$ is a II, V that does *not* resolve to its I (which would be $E^b$ maj7). Once again the chords are symbolized with the numerals II, V with no parenthesis. The reason for this is, that when harmonizing a II, V, I progression, whether or not it is the one representing the tonal centre does not change the way in which it is harmonized. This issue will be addressed in 2.6.

Step 1: In the right hand, play each chord separately, first in its fundamental position followed by the three inversions.
Step 2: Repeat the above mentioned while playing the root of each chord in the left hand.

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Step 3: Repeat the procedure mentioned in step 1, only this time play the chords in the left hand and octave below middle C.

Step 4: Connect the chord changes in the sequence dictated by the tune in the same way as mentioned in exercise number 1.1. Identify the II, V, I progressions, and refer to the examples shown in 3.1. Play the first chord (C-7) in its first inversion. In this case step 4 of exercise 3.1 can be used: II first inversion, V third inversion, I second inversion. Continue linking the chord progressions in this way. See correct example in appendix 4.

**2.5 The Tensions or Extension Notes.**

The degrees of a scale that form a seventh chord in its fundamental position are found within the context of an octave: The notes of a Cmaj7 chord in its fundamental position for example, can be found within the parameter of any given C and the following C an octave higher. These chord tones are the foundation of harmony in any given style. Jazz harmony bears a distinctive character influenced by the way *tensions* or *extension notes* are applied.

*Tensions* are notes *other than chord tones* that appear in the octave above the one in which a chord is found in its fundamental position. These notes serve the purpose of enriching the texture of a chord. The degrees representing the tensions in the order of their appearance in the second octave are as follows: The $9^{th}$ degree, $11^{th}$ and $13^{th}$. The $8^{th}$, $10^{th}$, 12th and $14^{th}$ degrees are analogous to the chord tones root, third, fifth and seventh respectively and are therefore not mentioned.

There are two principal schools of thought with regard to the tensions: The first consists of those who view the addition of the $9^{th}$ degree to a dominant seventh chord as forming a 'new' chord, namely the *$9^{th}$ chord*. The same would apply when adding the $11^{th}$ and the $13^{th}$ ($11^{th}$ chord, $13^{th}$ chord). These 'newly formed' chords are treated in the same way as triads and seventh chords, i.e. fundamental position and inversions. The second school of thought sees tensions as additions to an existing chord that do not influence its basic function: they enhance the richness and highten the dissonance level of a chord. According to Richter:

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> The views which may be entertained of the above chords are various, but they all tend to one practical result. It may be taken for granted that these are either *real chords,* such as the chord of the seventh, in which case they must be considered and treated as such, or else they belong to the list of suspensions, or occur *accidentally* when one or more parts remain stationary. (Richter, 1887:65).

Coker belongs to the 'second school' and refers to the tensions as 'chord superimpositions':

> Ninth, eleventh, and thirteenth chords are produced by superimposing third intervals above the seventh chord, thereby adding color and a thicker texture to the seventh chord without changing its function. (Coker, 1964: 63).

Lionel Grigson notes the following:

> By continuing upwards in thirds each of these chords can be extended to include seven notes: the four notes of the basic chord (root, $3^{rd}$, $5^{th}$, $7^{th}$) plus the three extensions of the $9^{th}$, $11^{th}$, and $13^{th}$. ( Grigson, 1988:37).

According to Ottman:

> The principle of chord construction by the addition of thirds can be continued past the triad and the seventh chord to include the ninth chord, the eleventh chord, and the thirteenth chord. (Ottman, 1961:223).

In Levine's book the tensions are not discussed as a topic but rather mentioned sporadically when referring to various harmonic issues. Levine mentions the tensions as notes that are added to what he defines as 'three-note voicings'. (Levine, 1989:27).

There are variants pertaining to each one of these tensions: The 9 consists of the natural 9 (an octave and a *major second* above the root), the $^{b}9$ (an octave and a *minor second* above the root), the $^{+}9$, also referred to as the 'sharp 9' (an octave and an *augmented second* above the root). The 11 consists of the natural 11 (an octave and a *perfect fourth* above the root), and a $^{\#}11$ (an octave and an *augmented fourth* above

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the root). The 13 consists of the natural 13 (an octave and a *major sixth* from the root), and the $^{b}13$ (an octave and a ***minor sixth*** from the root). According to Coker:

> These superimpositions have a certain potential for alteration, as do the third, fifth, and seventh of the seventh chords. It is up to you to remember which types of chords can use ninths, elevenths, and thirteenths, and which of these superimpositions can be altered in certain chords. (Coker, 1964:63).

Each chord type has its related tensions and as Coker mentions in the above quotations, one must memorize which tensions can or cannot be used on a particular chord type.

The tensions that are applicable to the chord types used in bebop are as follows:

- X Maj7: 9, $^{\#}11$, 13.
- X -7: 9, 11, 13.
- X 7: 9, $^{b}9$, +9, $^{\#}11$, 13, $^{b}13$.
- X $^{+}7$: $^{+}9$, $^{b}13$.
- X -7 ($^{b}5$): 9, 11, $^{b}13$.
- X 6: 9, $^{\#}11$.
- X -6: 9, 11.

See Coker's chart in appendix 6.

In Coker's chart, the $^{b}13$ is not mentioned. There is a possible explanation to this oversight: At the time when Coker's book was written (1964), the use of tensions was determined by the individual musicians based on the accepted aesthetic rules of the styles that were prevalent. There were no prescribed rules as to which tensions should be used on a particular chord type. As the $^{b}13$ is synonymous with the chord tone $^{+}5$ (which appears in an augmented chord), it is conceivable that the musicians of the day, and consequently Coker, regarded the $^{b}13$ as what he defines 'superfluous'. (See Coker's chart in appendix). A dominant seventh chord with a $^{b}13$ added to it, and an augmented chord are made up of the same notes. There is however a difference between the two, based on the order of the notes in the voicing and the harmonic function of the chord.

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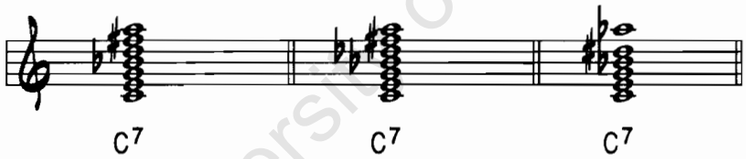
**Exercise 4.1**

In the left hand, play a seventh chord in its root position. In the right hand, play all tensions applicable to that particular chord type as indicated on page 22. Begin with C and progress to the other tonalities according to the cycle of fifths. Follow the order of chord- types as indicated in 4.2, page 22. Example: Play the Cmaj7 chord in the left hand while playing the 9, $^{\#}11$ and 13 in the right hand. Let the chord resonate for a few seconds and appreciate the effect created by the addition of the tensions. Next, play the C-7 chord in the left hand while playing the 9, 11 and 13 in the right hand. Once all chord types have been played in this manner on a particular tonality, proceed to the next tonality in the order of the cycle of fifths.

The dominant seventh chord can have all but one tension applied to it, the natural 11. The reason is that this tension, being an octave and a perfect fourth from the root, clashes with the major third. The following possibilities are available when applying tensions to a dominant seventh chord in its fundamental position:

- 9, $^{\#}11$, 13
- $^{b}9$, $^{\#}11$, 13
- $^{+}9$, $^{b}13$

See example below:

Exercise 4.1

**Exercise 4.2**

Apply exercise 4.1 to the following tunes: Autumn Leaves, All the Things You Are. Play each chord in its fundamental position (with the addition of the tensions). When playing a dominant seventh chord, play the possible combinations as in 4.1.

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**2.6 Applying tensions to the II V I progression**

In this segment, tensions will be added to the chords of the II, V, I progression. In the bebop style, tensions are applied to most chords. This accounts,for the relatively high level of dissonance and richness characterizing this style. The decisions as to which tension should be applied to a particular chord are based on the chord's harmonic function.

As discussed in 2.2, the idea of a tonal centre is based on the idea of tension and release: dissonance resolving to consonance. As jazz harmony is based on seventh chords, it is conceivable to have a dissonance resolve to yet another dissonance. This idea has been in existence for several centuries. According to Rameau:

> It is not enough to have perceived that a dissonance prefers to be prepared and resolved by a consonance. We have also observed that a dissonance may be heard without preparation, and we ought to inquire whether it may not also be resolved against the general rule. (Rameau, 1722: 126, 127).

The I chord, which could either be a maj7 or a –7 chord, is in itself dissonant due to the presence of the seventh. It has to sound consonant by *comparison,* in order to fill its role in the equation: dissonance leading to consonance. It is therefore necessary for the chord preceding it, the V chord, to sound more dissonant than the I chord by comparison. That is achieved through the use of certain tensions applied to the V chord and will be discussed in exercise 4.3. It is important to understand that bebop harmony is based on the idea of *relative dissonance and consonance:* A higher level of dissonance resolving to a lower level of dissonance.

With this idea in mind the II, V, I progression will be harmonized using tensions.

**Exercise 4.3**

In this exercise, tensions will be incorporated in the harmonization of a II, V, I progression. Since the chords in this exercise will often consist of more than four voices, the term *soprano* will be substituted with the term *lead* to signify the highest note of the chord. A *lead* will be assigned to each chord and then harmonized. Each

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*voice* in a chord will be explained and attention will be given to *voice leading.* The exercise will be written on paper and then applied to the piano. The knowledge acquired in this segment will be applied to the harmonization of jazz standards.

Step 1: Using the II V I progression of C major, commence by writing out the roots of the chords in the bass: D, G and C.

Step 2: Write the chord symbols: D-7, G7, Cmaj7.

Step 3: The idea of the exercise is to harmonize a *lead,* therefore one will be assigned to the roots appearing in the bass. First, the fifth of D-7 (A) will be assigned as the lead. This note will be led in a logical manner: The lead-note of the following chord (G7) should be as close as possible to the one assigned to the D-7.

> When connecting chords it is advisable that each of the four voices (soprano, alto, tenor and bass, generally used to present harmonic succession) should move no more than necessary. Accordingly large leaps are avoided, and if two chords have a tone in common it should, if possible, be held over in the same voice. (Schoenberg, 1969:4).

The lead can stay stationary (depending on its function in the following chord), descend or ascend. When leading a particular lead in either direction (ascending/descending), chromatic movement should first be considered: If descending from A, the first note to consider is $A^{b}$ since it is the closest possible. Its function on a G7 chord determines whether or not it will be chosen. The $A^{b}$ is the $^{b}9$ of a G7 chord. This is welcome since our goal is to *charge* the V7 with as much dissonance as is available to us in this style. Since the $^{b}9$ is more dissonant than the natural 9 it is preferred in this case.

Step 4: Resolving the $A^{b}$ (the lead of G7) chromatically downward results in the note G serving as the lead of Cmaj7. G is the fifth of Cmaj7 and is therefore permitted.

Step 5: Once the bass and lead have been assigned to this progression, the other voices will be addressed. Each chord harmonized has to include its root, third and seventh in order to be complete: The root determines which chord is being played, the third determines whether it is major or minor and the seventh determines whether it is a major or dominant seventh. The fifth can be omitted in some cases. According to Hindemith:

> The fifth can be omitted. (Hindemith, 1945:12).

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As the third and the seventh of the chord are required to complete the D-7 being constructed, the third (F) will be placed just below the lead (A). It could in theory be placed right above the root, but that would mean positioning a *third* in a relatively low register. As was shown by quoting Bernstein, the overtone series begins with the lowest note (the one that is audible) and progresses upward. When an interval is played, two overtone series' exist parallel to each other. The lower the register in which an interval is played, the longer the overtone series becomes. It is for this reason that intervals such as seconds and third sound denser and can become undecipherable at a very low register. Since there is no precise limitation as to just how low an interval *third* can be played, the third of a chord should be systematically placed in the highest register available in a particular voicing. That enhances the clarity and stability of the chord. (A recommended limit to how low a third should be played in this style: G below middle C being the lowest note of the third).

The seventh (C) of this D-7 chord: It will be placed a *seventh* above the root, which is the only possible position for it in this particular voicing. By adding the third and the seventh we have established the chord. The *ninth* will be added. The reason for this addition is that in bebop, the ninth is always added to a minor seventh chord. This aesthetical choice was made by pianists of the bebop era due to the generally high level of dissonance expressed in this style. The ninth of D-7 (E) will be added to the chord just below the third (F).

Step 6: The G7 consists at present of the root (G) in the bass and the $^{b}9$ ($A^{b}$) in the lead. As with all chord types, the third and seventh are required. The third (B) will be placed an octave and a third above the root for the reason discussed previously. The seventh (F) will be placed a minor seventh above the root. Although this note is a common tone and should therefore be held, the choice of moving it down by an octave is based on it reinforcing the dominant seventh chord by creating a seventh with the bass.

In step 3 of this exercise there was mention of the $^{b}9$ and its contribution to the heightened level of dissonance in the V7 chord. This point will be elaborated upon: Prior to the bebop era, the tension most commonly used on a V7 was the natural 9. It

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was also conceivable to play a dominant seventh chord without applying a 9 of any sort. The $^{b}9$ was introduced at the start of the bebop era by Charlie Parker, Bud Powell and their contemporaries. Refer to the musical examples in appendices 7, 7.a and 7.b. Appendix 7 is an excerpt from a transcription of Fats Waller's version of Two Sleepy People by Frank Loesser and Hoagy Carmichael. As can be observed at the end of the third measure and the start of the fourth, the chord progression C7, F: the C7 (V7) does not posses any tensions and the F is a major triad. Appendix 7.a is an excerpt from Art Tatum's version of his own composition Jumpin' For Sumpin'. As can be observed at the end of the fifth measure and the start of the sixth, the chord progression is F7, $B^{b}$. Once again the F7 (V7) does not posses tensions. Appendix 7.b is an excerpt from a score of a Duke Ellington composition, Harlem Airshaft. In measure 116, the second alto saxophone is playing a $^{b}9$ and the chord indicated for the guitar ($E^{b}7$) consists of a $^{b}9$ to support the harmony played by the horn section.

This seemingly small alteration greatly influenced the level of dissonance. Jazz audiences as well as certain musicians had difficulty adapting to the dissonance created by this change (See information pertaining to this issue in chapter 1). The $^{+}9$ is more dissonant than the natural 9 and can therefore fulfil the requirement of charging the V7 with dissonance as well. In conclusion it can be said that either the $^{b}9$ or the $^{+}9$ are to be applied to a V7 in this style.

Another tension that can be used on the V7 is the 13. Depending on which type of 9 has been chosen ($^{b}9$ or $^{+}9$), a 13 or a $^{b}13$ can be added: When a $^{+}9$ is used, there is one option available, that of the $^{b}13$. When the $^{b}9$ is used, both the natural and $^{b}13$ can be considered[1]. The decision on which of these two options to use will be determined by the voicing, range and the context in which the chord appears. In the case of this particular voicing both the 13 and $^{b}13$ are possible, the difference between the two is textural.

In conclusion of the above harmonization of the V7 chord, the following can be said: The goal in harmonizing this function is to ensure it contains the necessary 'ingredients' to fulfil its function. This means that the chord tones and tensions used

[1] The explanation as to how the 13/$^{b}13$ are linked to the $^{b}9/^{+}9$ lies in the modes from which the seventh chord originates, a topic not addressed in this study.

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to construct this chord and the order in which they appear, must ensure a sufficient level of dissonance so that the following function, the I chord, sound consonant by comparison.

Step 7: The last chord in this progression, the Cmaj7 chord, is harmonized as follows: The fifth of the chord (G) is in the lead, the root (C) is in the bass. The third and seventh are added: The third (E) will be placed an octave and a third above the root while the seventh (B) will be placed a major seventh above the root. Since the I chord represents a tonal centre, a high level of stability is required. The interval considered as being the most stable within an octave is the fifth since it serves as the framework for both major and minor triads.

> The fifth is the primary element of all chords; i.e., a chord cannot subsist without either it or the fourth which represents it. (Rameau, 1722:63).

It is this attribute that brought about the following: In classical music voice leading, conducting two *fifths* in parallel motion is not permitted.

> Avoid parallel fifths. (Hindemith, 1944:12).

Since the fifth signifies stability and therefore suggests a tonal centre, conducting two *fifths* in parallel motion would suggest a momentary shift from one tonal centre to another. Such a 'shift' would be considered as a modulation. According to Hindemith:

> Modulation is a progression from one tonality to another. (Hindemith, 1944:99)

Coming back to the Cmaj7 being harmonized: The fifth will be placed above the root to support the idea of stability. It is doubling the lead in this case. With regard to the addition of tensions to the maj7 chord, the possibilities available in this style have been shown in the segment relating to tensions. It is not however, required to add tensions to all maj7 chords. That decision will be made based on the function of the chord and the musical context in which it appears. With regard to the Cmaj7 in question, the addition of tensions is not required. (See correct harmonization of exercise 4.3 in appendix 8).

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**4.3.a**

Now that the II, V, I progression has been harmonized, play the progression. Allow each chord to resonate for a few seconds. Note that each chord fulfils its function in the progression: The II chord (the *subdominant)* is rich sounding and at the same time relatively consonant. The V chord (the *dominant)* is very rich sounding by comparison due to the dissonant elements it contains. This dissonance creates a sense of anticipation. That anticipation finds its resolution in the I chord (the *tonic),* which sounds consonant by comparison and therefore fulfils its function as the chord representing the tonal centre. According to Liebman:

> This means that a musical gesture (harmonic, melodic, rhythmic) is active and leading towards some goal (dominant); is between a feeling of activity and response (subdominant); or is at a place of rest (tonic). (Liebman, 1991:13).

**Exercise 4.3.1**

This II, V, I progression in C major (4.3) will be harmonized using different notes in the lead. The harmonization is based on the same principles described in exercise 4.3. First, lead-notes are assigned to the progression: from the initial lead-note of the D-7, the fifth (A) will be led upward. The goal is for the voices to move as little as possible. The first note that is to be considered for the lead of G7 is A# (a half step *above* A). This note being the $^{+}9$ of the dominant seventh chord is recommended for use on this function. Leading this note upward will result in the placement of B in the lead of Cmaj7 (the seventh of Cmaj7). When a third or seventh of a chord appear in the lead, they must be reinforced in the chord. This 'reinforcement' is achieved by doubling the note (third or seventh). This rule applies to all chord types with the exception of the X-7($^{b}5$) chord. Harmonize these lead notes of G7 and Cmaj7 in the same way described in 4.3. The voicing of the D-7 will be the same as in the first example. (See correct harmonization in appendix 8).

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**4.3.1.a**

Other notes of this D-7 can be assigned to its lead. The same principal of conducting the lead in both directions (descending/ascending) is applied. Inverting the notes of the initial voicing of D-7 upwards, results in the seventh of the chord (C) being in the lead. Inverting these notes further causes the 9 to become lead. Both lead-notes are led downward and then upward throughout the other functions (V7, I maj7). Harmonize the given lead-notes of the V7, I maj7 by using the method described in 4.3. (See correct harmonization in appendix 8).

**Exercise 4.3.2**

The exercise described in 4.3, 4.3.1 and 4.3.1.a is applied to a minor tonality. As mentioned in exercise 3.1, the chords pertaining to a II, V, I progression in a minor key are as follows: II-7($^{b}$5), V7, I-7.

The same II, V, I progressions harmonized in 4.3 and 4.3.1 will be transformed into a minor tonality in the following manner: The II-7 becomes a II-7($^{b}$5) by simply lowering the fifth of the chord a half step. The other voices remain stationary and their functions in the 'newly formed' chord are analogues to the ones they held in the D-7. The V7 chord does not change since its function is the same in both major and minor tonalities. Transforming the I maj7 into a I-7 is done by lowering the third and seventh of the chord by a half step. In addition, in the bebop style, a tension 9 is added to the X-7 chord. Write all exercises from 4.3 and 4.3.1 in C minor. See correct example in appendix 8.

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**4.3.2.a**

Transpose the above written examples in major and minor to the following tonalities: F, B$^{b}$, E$^{b}$, A$^{b}$, D$^{b}$. The transposition to these keys should first be written on paper and then played on the piano. The transposition to the remaining keys is done at the piano in the following way:

Step 1: looking at the examples written in C (major and minor), say out loud which degrees of the chord make up the voicing. Apply that information to the voicing in the required tonality.
Step 2: Play each chord of the progression separately.
Step 3: Play the chords of the progression in their sequence by visualizing their physical location on the keyboard and memorizing their sound.
Step 4: Apply the same procedure to all the examples given in 4.3, 4.3.1, 4.3.1.a.
Step 5: On a particular practice day, play the examples that have been transposed (including the written ones) and then add 2 'new' tonalities in the order of the cycle of fifths. Since this exercise is based on memorizing the voicings, practicing these II, V, I progressions has to be done on a daily basis.

## 2.7 Applying the harmonization technique shown in exercise 4.3 to a jazz standard

In this segment, the knowledge acquired in exercises 4.3 and 4.3.1 is applied to the harmonization of a jazz standard. The tune that will be used is Autumn Leaves. This tune has been used for every topic of this study and the assumption is that the student/teacher following this study knows the tune, i.e. can play the melody and chord changes in the manner described in previous exercises.

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### Exercise 4.3.3

The II, V, I progressions appearing in the tune will be harmonized in the same way described in exercises 4.3 and 4.3.1. See harmonic analysis as shown in appendix 4. The voicing of the C-7 chord is given (See appendix 9).

Harmonize the F7 and $B^{b}$maj7 chords using the steps mentioned in 4.3 and taking into consideration the above mentioned (4.3.2). (See correct harmonization in appendix 9). The chord following this II, V, I progression is an $E^{b}$maj7 with the note D as its lead. Since it is the seventh of the chord, its doubling is required. The root and third are required. (See voicing in appendix 9). The following chord progression; A-7($^{b}$5), D7,

G-7 is a II V I progression in the key of G minor. The voicing for A-7($^{b}$5) is given. Harmonize the D7 and G-7 following the steps mentioned in 4.3. (See harmonization in appendix 9).

These two II, V, I progressions (in B$^{b}$ major and G minor) are repeated in the B section of the tune, with different lead notes to the ones found in the A section.

**4.3.3.a**

Harmonize the B section using the same harmonization technique applied to the A section. (See harmonization in appendix 9). With regard to the progression F-7, B$^{b}$7; this is a II, V progression that does *not* resolve to the I. These functions are harmonized in the same way when they do not resolve to the I as they are when they do.

**4.3.3.b**

After having completed the harmonization of the tune Autumn Leaves, play the tune (including the melody) in a slow tempo (quarter note= 80).

All standards can be harmonized using the method described above (4.3.2).

**2.8 Left Hand Voicings**

Left hand voicings are accompaniment chords played in the left hand to a melody or an improvisation on a tune played in the right hand. These chords appear within an octave and are *condensed versions* of the chords discussed in section 2.5 (chords spread-out over a range that exceeds an octave). When condensing these chords to within the boundaries of an octave, the essential elements of the original chord have to be maintained so as to allow the chord to fulfil its function. Notes that are doubled and notes that do not have a vital role in the chord are omitted.

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The procedure for creating a left hand voicing is as follows: The example will be given on the first II, V, I progression of Autumn Leaves (4.3.3). The first chord being C-7:

Step 1: The root of the chord is omitted. The reason is that in a playing situation in which a bass is present (such as in a common jazz ensemble; piano, bass, drums), the double bass will play the roots of the chords. Playing the root on the piano would mean doubling the one already played by the double bass. This doubling is not required. In a playing situation in which a bass instrument is not present (solo piano for example), the root of the chord will be added independently to the left hand voicing: Since the left hand voicing will consist of close intervals (seconds, thirds etc.), playing the root will make the chord sound cumbersome. The root of this C-7 is therefore omitted.

Step 2: Omit any remaining doubled notes. In this voicing the $E^{b}$ is doubled and so the one found in the lead is omitted.

Step 3: The remaining notes from bottom to top are as follows: G, D, $E^{b}$, $B^{b}$. These are the notes that will be used for the left hand voicing as each one of them plays an important role in the construction of this C-7. In their current order, they exceed the range of an octave. As a left hand voicing must *not* exceed the limits of an octave, it is necessary to rearrange the notes of this voicing. The $B^{b}$ can be moved down an octave, which will enable the notes to be within an octave. The left hand voicing of this C-7 is as follows: D, $E^{b}$, G, $B^{b}$ (See example 2.7).

Step 4: This voicing sounds clear due to its positioning on the keyboard. In other cases it could happen that a voicing will be positioned too low or too high on the keyboard, which necessitates the repositioning of the notes in a more central part of the keyboard. This particular voicing can also be played in the following order: $E^{b}$, G, $B^{b}$, D. A third option exists in this case: G, $B^{b}$, D, $E^{b}$. All three options are acceptable and can be used for this chord. The decision as to which of these three options to choose lies in the context in which the voicing appears and will have an influence on the positioning of the following ones. The third option; G, $B^{b}$, D, $E^{b}$ is chosen since it will allow the following voicings (of the F7, Bbmaj7 etc.) to sound clear.

Step 5: Applying the procedure of steps 1 to 4 to the F7 chord results in the following: Omit the root. Omit the $E^{b}$, which is a doubled note. Position the remaining notes within an octave. Position the voicing as close as possible to the previous chord. The result is: $G^{b}$, A, $E^{b}$.

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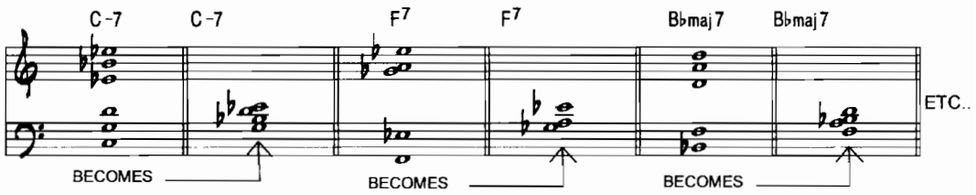
Step 6: The left hand voicing of a Xmaj7 chord is harmonized differently to other chord types: an inversion of the chord tones including the root, is used. The reason is, that the proximity of the root to the major seventh gives the chord a unique colour. The addition of tensions, even if they appear in the original chord, is determined by the specific requirements of a particular musical situation. In the case of this Bbmaj.7, no tensions are required, and the inversion chosen is the closest to the previous voicing. (See example below).

2.7 LEFT HAND VOICINGS




Following the same procedure used for the above chords, reduce all chords that appear in the harmonization of Autumn Leaves (4.3.3) to their respective left had voicings.

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**2.9 Conclusion**

The goal of this study was to show how chords have evolved from their initial phase of resulting from the meeting of several melodic lines that could be viewed vertically, to the rich and complex structures that are known to us today. Emphasis was put on the origin of chord types and the idea of tonality. The foundations of this idea were set during the Baroque era. These foundations are based on the nature of sound itself as was explained by quoting Leonard Bernstein from his thought provoking series of Harvard lectures. The link between tonic and dominant was shown as stemming from the harmonic series, i.e. the nature of sound itself. Chords and their functions are therefore also derived from this series. This leads to conclude that music in Western civilisation has been drawing from the *same source* over the past several centuries. Differences in style and musical concept stem from the way the information drawn from this source was used by composers of a particular era, as opposed to composers

of another era. The goal in teaching harmony is to provide the learner with a broad understanding of chords through the knowledge of their historic origin. It is also essential to provide the student with a sound sense of voice leading.

Jazz harmony education in recent years, has been focusing mainly on the vertical aspect of chords. That approach misleads students into believing that chords originate from chords rather than from the melodic lines that create them. Viewing chords as occurring exclusively on the *vertical* plane is erroneous. Viewing them as occurring exclusively on the *horizontal* plane is equally as erroneous. The approach that should be adopted is that of a chord occurring on both the horizontal and vertical planes. This approach leads to an understanding of chords and the best way in which they can be linked, resulting in what is known as *harmony.*

Jazz harmonists did *not* invent the elements used in the harmony of this music. The tension 9 for example, has been used in music for over 300 years. In the Classical era it functioned as a passing tone whereas in jazz it serves as a *real* tone in the chord. Voice leading rules have remained the same from the time of J.S.Bach and up to the 20th century. These rules supported the idea of a tonal centre and encouraged smooth and logical links between chords. Although the idea of tonality was contradicted by Arnold Schoenberg and his colleagues from the second Viennese school, namely Berg and Webern, the idea of *atonality* did not survive for much time after the death of these three composers. The fact that tonality stems from nature means that there will always be a need for its manifestation in musical expression. It is perhaps not a coincidence that Johann Sebastian Bach published the *Well Tempered Clavier* in the same year Jean-Philippe Rameau published his controversial *Treatise on Harmony* (1722).[1] Both works, the first in musical composition, the latter in musical theory, attempted to define tonality and understand its mechanism. It is this concept that unifies all styles of Western music and should therefore be the centrepiece of any study in harmony.

The idea of linking traditional harmony rules with jazz harmony has been largely overlooked. Mark Levine's book, which was published almost 20 years ago, is to this

[1] For more about the controversy surrounding Rameau's Treatise, refer to Oswald Jonas's introduction to Hienrich Schenker's *Harmony* (Schenker, 1954:x-xv).

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day one of the most commonly used teaching methods for aspiring jazz pianists. As shown in chapter two of this dissertation, Levine's book does not make any reference to traditional harmony and lacks systematic explanations of harmonic concepts in jazz. Jerry Coker's book is admirable considering the time of its publication, but is not methodical enough to provide a student with an understanding of jazz harmony. Much of the material published in recent years addresses advanced students and in some cases references are made to classical music concepts, but the origin of these concepts is not addressed. By reverting back to the origin of chords and the nature of sound itself, one can see how advanced concepts in jazz harmony can be understood.

In the method described in this chapter, a step-by-step approach was used, to provide a student with fundamental concepts necessary for the harmonization of a 'standard' in the bebop style.

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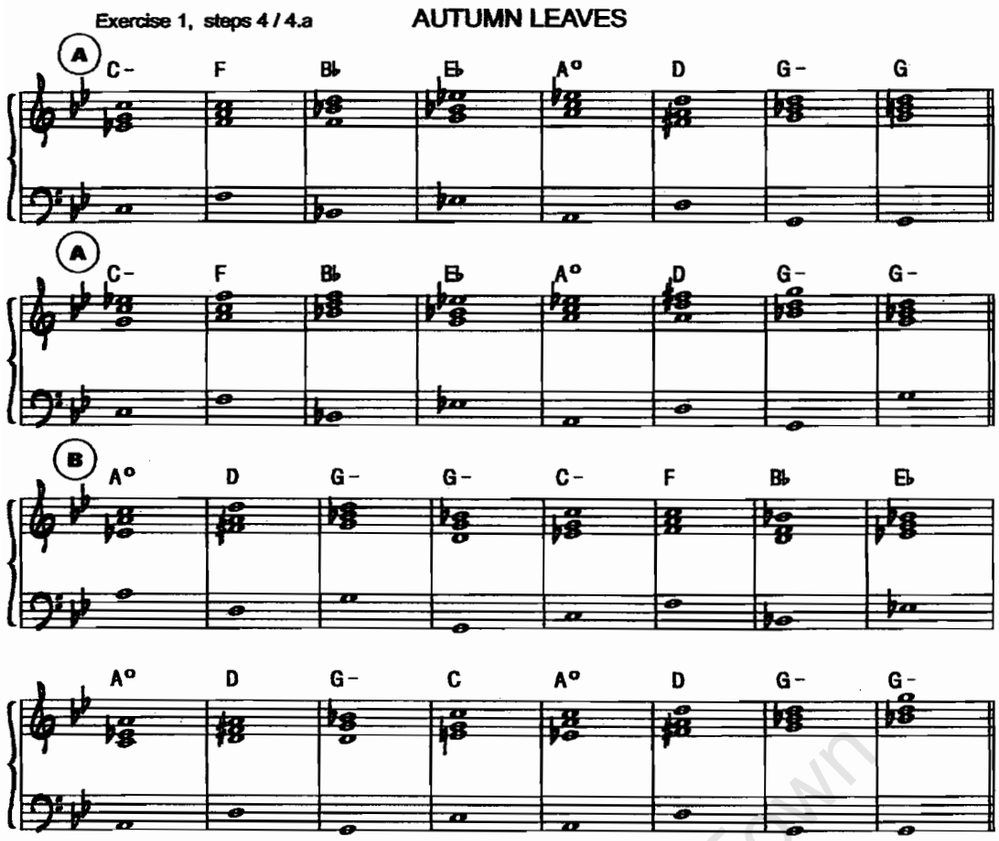
## Appendix 1

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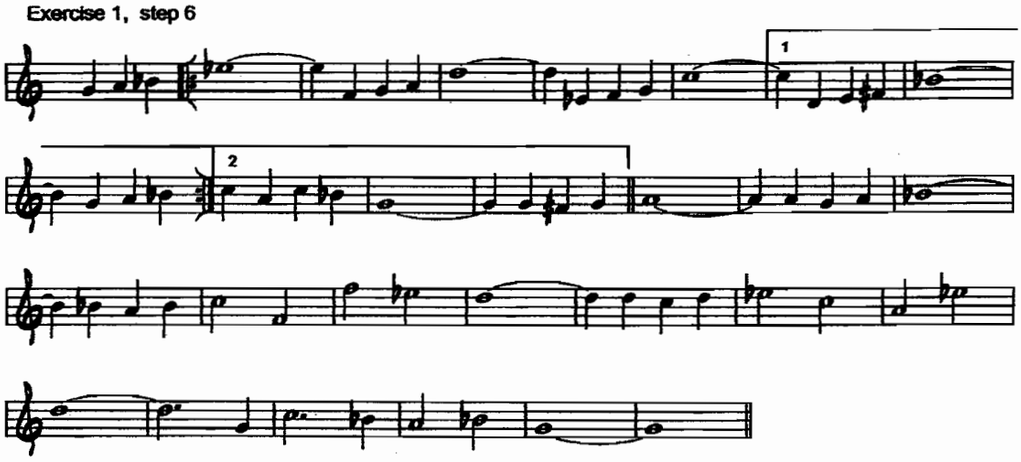
## Appendix 2

Exercise 1, step 6

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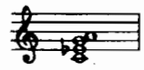
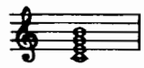
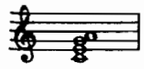
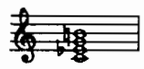
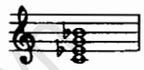
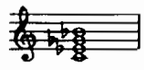
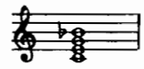
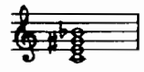
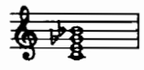
# Appendix 3[1]

| SYMBOL | NAME | INTERVALS CONTAINED | EXAMPLE |
|---|---|---|---|
| M7 | major seventh chord | major third<br>perfect fifth<br>major seventh | CM7 |
| M6 | major sixth chord | major third<br>perfect fifth<br>major sixth | CM6 |
| m6 | minor sixth chord | minor third<br>perfect fifth<br>major sixth | Cm6  |
| m♮7<br>or<br>m♯7 | minor chord with a major seventh | minor third<br>perfect fifth<br>major seventh | Cm♮7 |
| m7 | minor seventh chord | minor third<br>perfect fifth<br>minor seventh | Cm7 |
| ø 7 | half-diminished seventh chord | minor third<br>diminished fifth<br>minor seventh | Cø7 |
| 7 | seventh chord<br>or<br>dominant seventh chord | major third<br>perfect fifth<br>minor seventh | C7 |
| 7<br>+5 or +7 | augmented seventh chord | major third<br>augmented fifth<br>minor seventh | C+7 |
| 7<br>♭5 | seventh chord with a diminished fifth | major third<br>diminished fifth<br>minor seventh | C 7 ♭5 |

[1] This example is taken from: Coker, J. (1964). *Improvising Jazz.* Englewood Cliffs. Prentice Hall.

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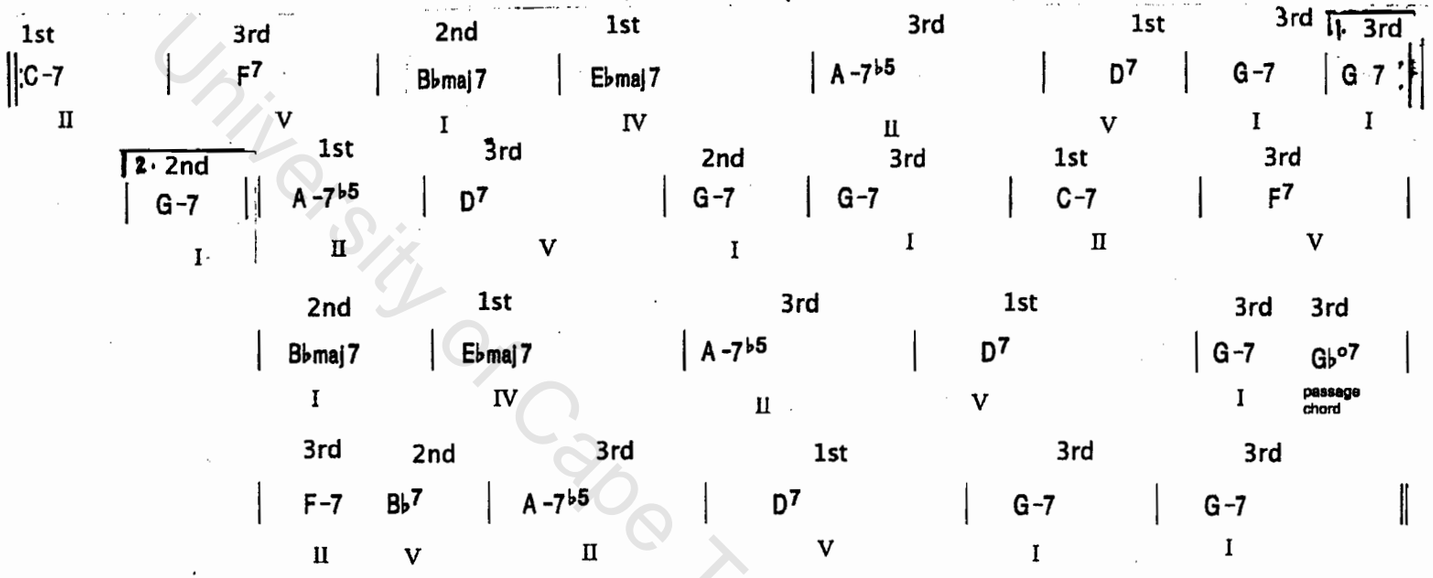
**Appendix 4**

AUTUMN LEAVES (SEVENTH CHORDS)

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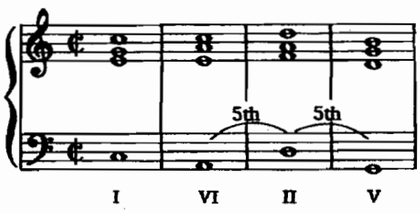
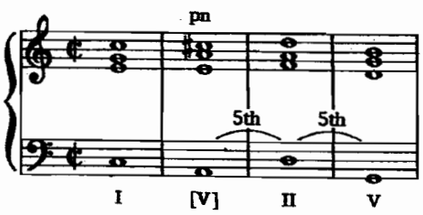
# Appendix 5[2]

**example 94.**

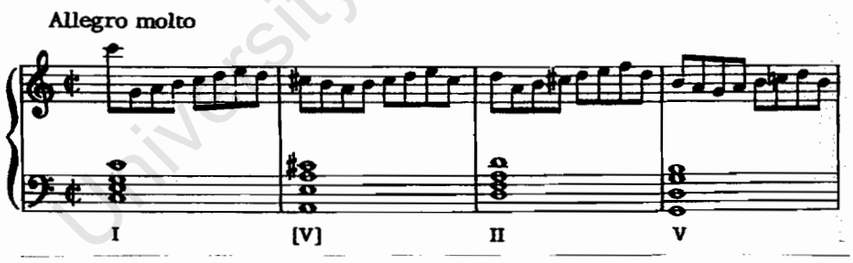



Example 94 shows a progression of four chords terminating on V. The last three chords are related by 5th. In the next example the bass remains the same, but the 3rd of the second chord has been raised, creating a chromatic passing note in the soprano.

**example 95.**




This altered, or chromatic, triad now relates to the following chord exactly as does dominant to tonic in minor. The chromatic passing note may be regarded as a transitory leading note, exemplifying the law of the half step (section 10). For these reasons it is called a secondary dominant triad and symbolized by [V]. It does not usurp the role of the main dominant triad in the key, the primary triad, but merely imitates its structure and function, and thus enhances the progression to the triad which it precedes—II in this instance. Example 96 presents the passage upon which Examples 94 and 95 are based.

**example 96.** BEETHOVEN: *Prometheus Overture*

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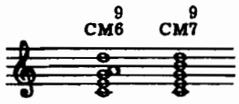
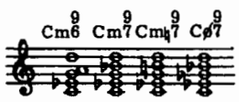
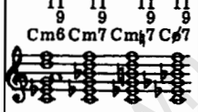
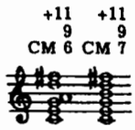
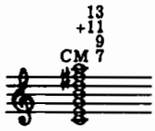
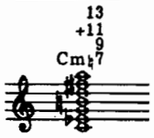
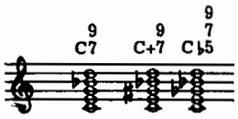
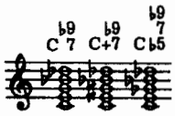
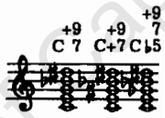
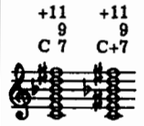
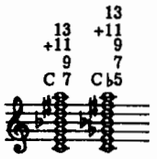
[2] These examples are taken from: Forte, A. (1974). *Tonal Harmony in Concept and Practice,* second edition. New York. Holt, Rinehart and Winston.

# Appendix 6[3]

POSSIBLE SUPERIMPOSITIONS

| BASIC CHORD | Ninth ( 9 ) | Diminished Ninth ( ♭9 ) | Augmented Ninth (+9) | Eleventh ( 11 ) * | Augmented Eleventh ( +11 ) * | Thirteenth ( 13 ) * |
|---|---|---|---|---|---|---|
| Group A<br>M6<br>M7 |  | ill - advised | ill - advised | ill - advised | | M6 - superfluous<br>( M6 = 13 )<br> |
| Group B<br>m6<br>m7<br>m♮7 or m♯7<br>ø7 |  | ill - advised | superfluous<br>( m3 = +9 ) |  | ø7 - superfluous<br>( ♭5 = +11 )<br>m7. m♮7, and m6<br>ill - advised | m6 - superfluous<br>( M6 = 13 )<br>ø7 and m<br>ill - advised<br> |
| Group C **<br>7<br>+7<br>7<br>♭5 | | | | ill - advised | 7<br>♭5 - superfluous<br>( ♭5 = +11 )<br> | +7 ill - advised<br> |

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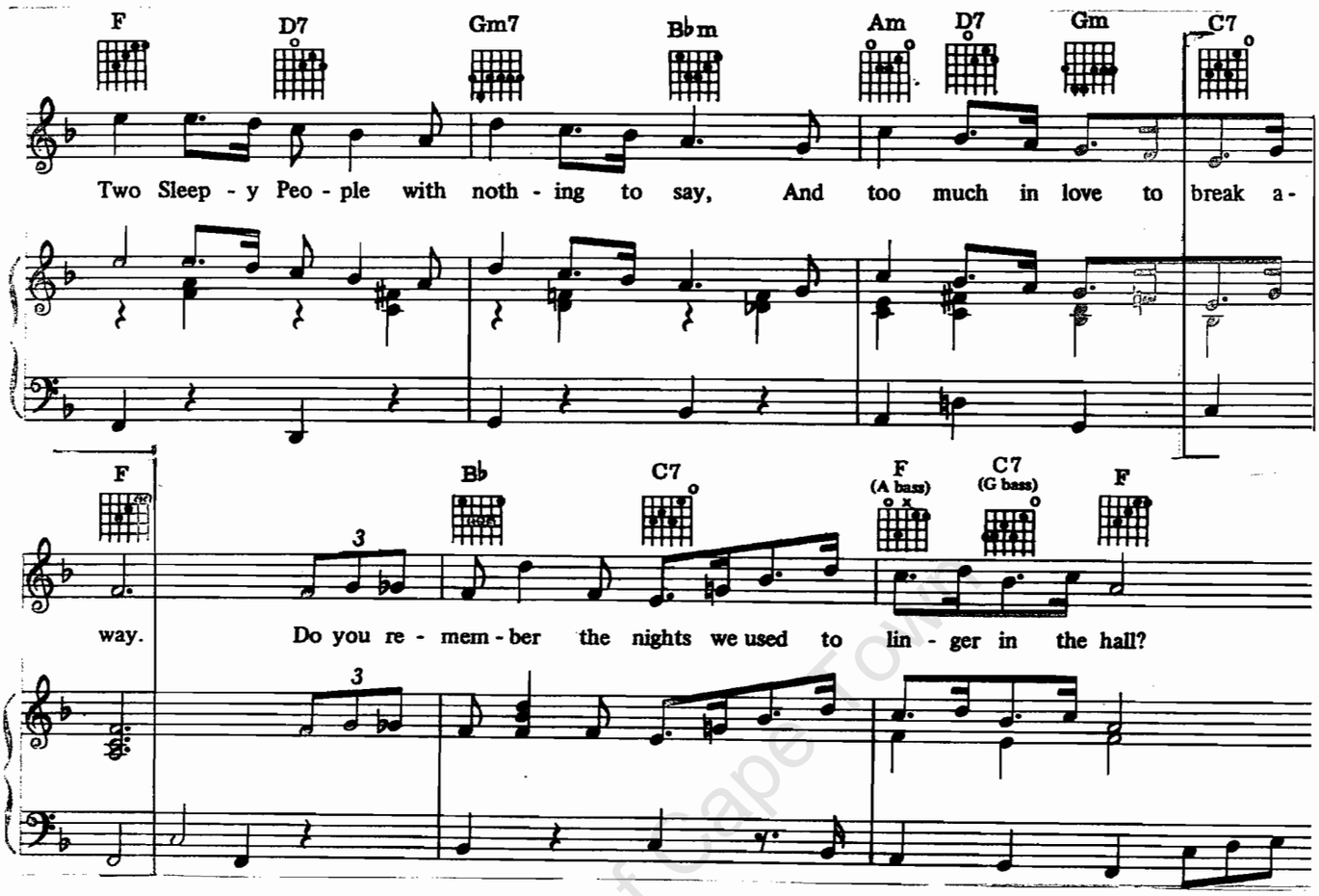
[3] This chart is taken from: Coker, J. (1964). *Improvising Jazz.* Englewood Cliffs. Prentice Hall.

## Appendix 7[4]

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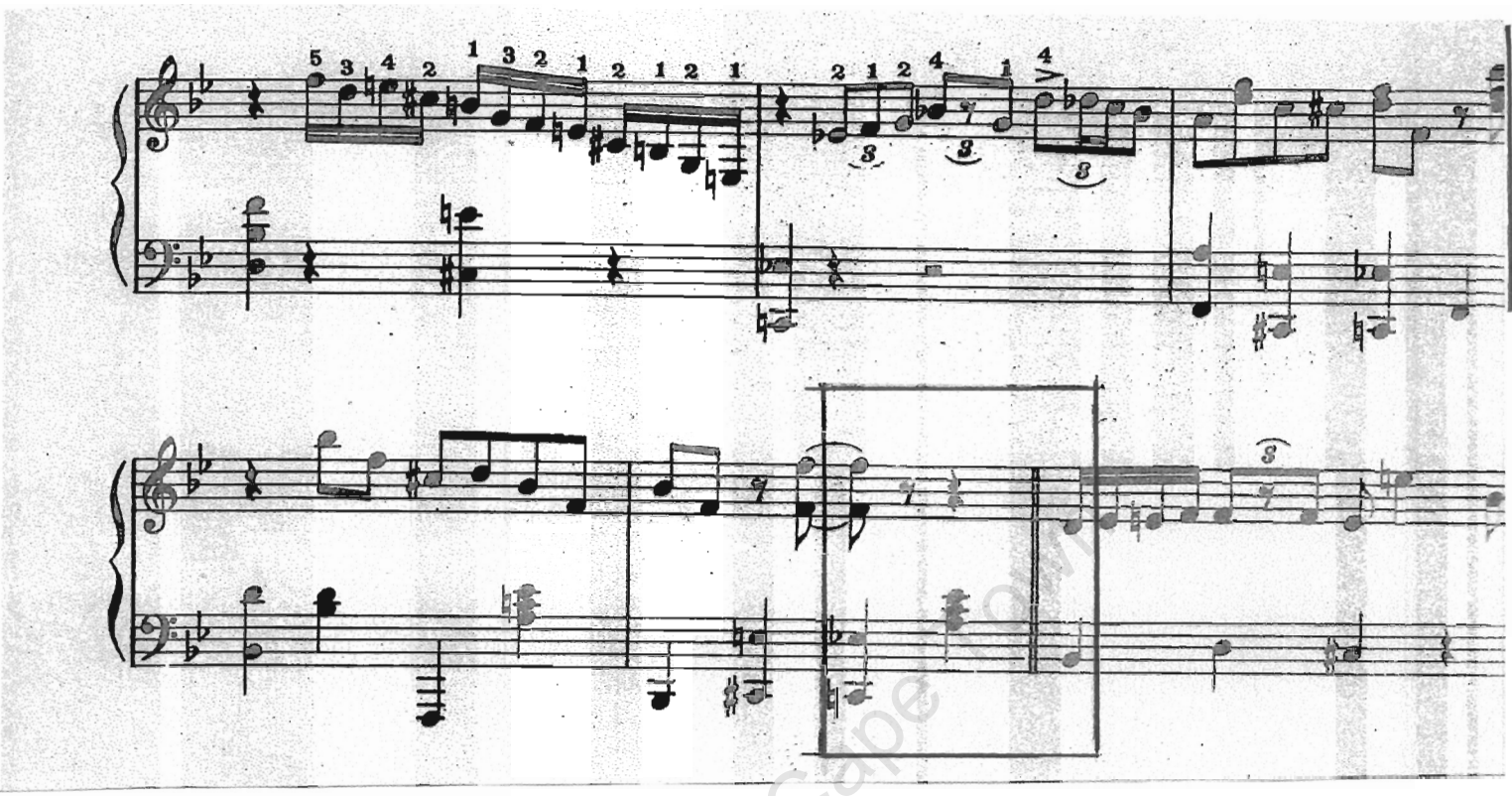
[4] This example is taken from: Waller, T.F. (1990). In Olsen, D.C. (ed.), *The Genius of Thomas "Fats" Waller.* Miami. CPP/Belwin.

## Appendix 7.a[5]



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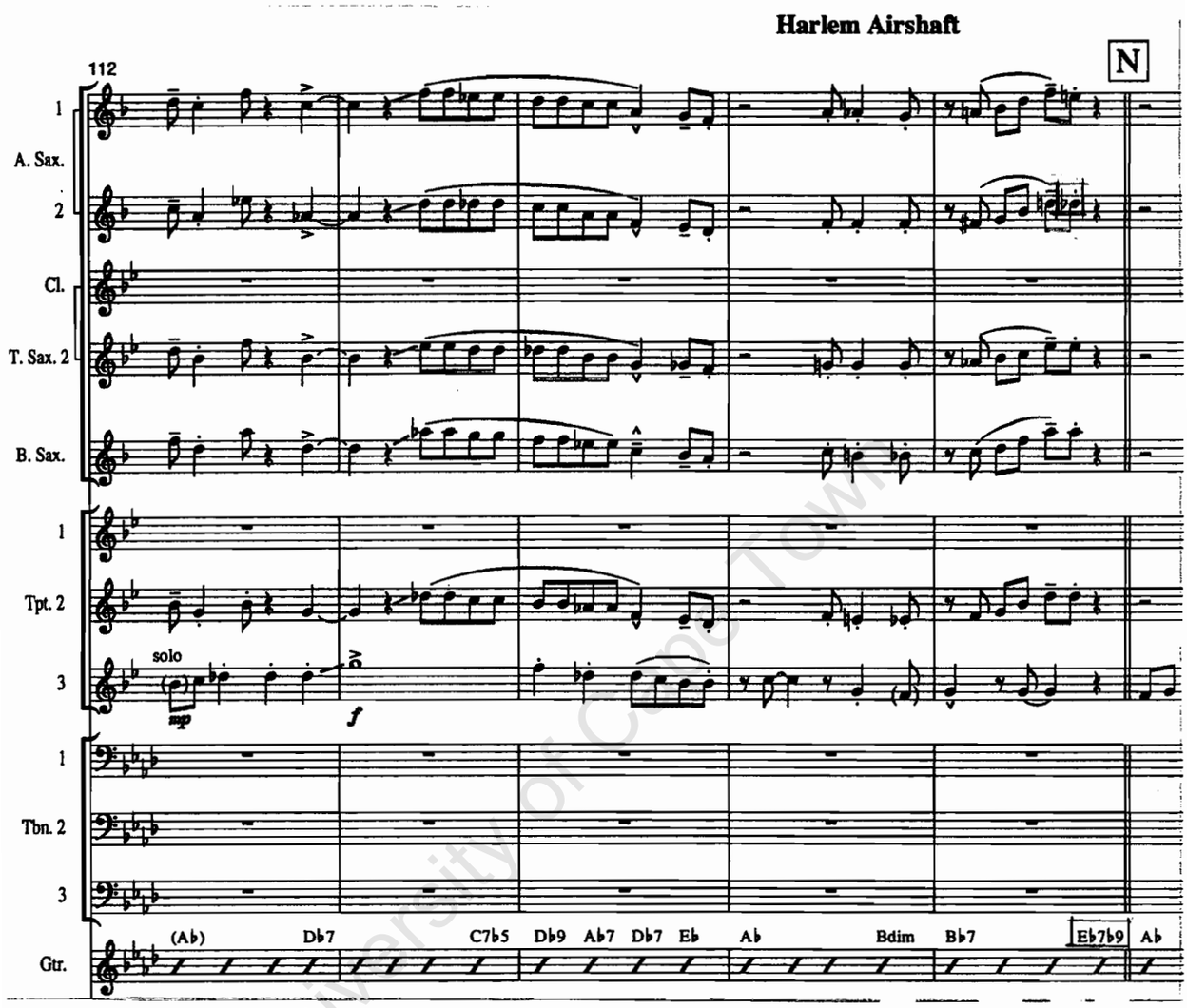
[5] This example is taken from: Tatum, A. (1944). In Paparelli, F. (ed.), *5 Jazz Piano Solos by Art Tatum.* London. Peter Maurice Music.

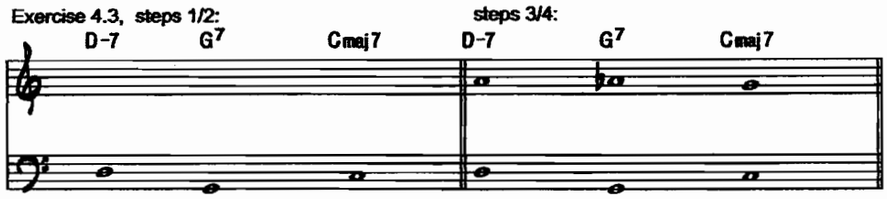
**Appendix 7.b**[6]

University of Cape Town

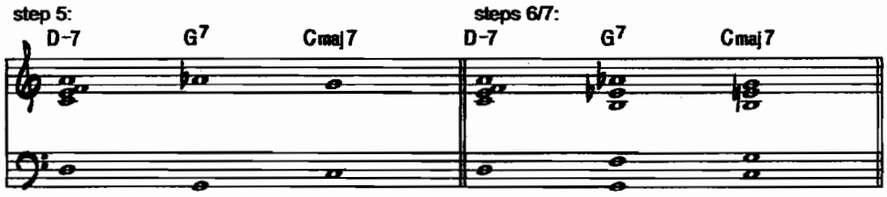
[6] This example is taken from: Ellington, D. (1940). *Harlem Airshaft.* Transcribed by Brent Wallarb. New York. Jazz at Lincoln Center Library.

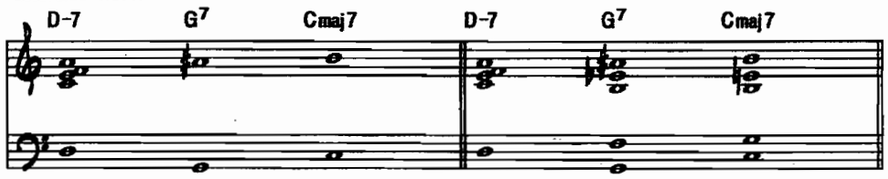
# Appendix 8

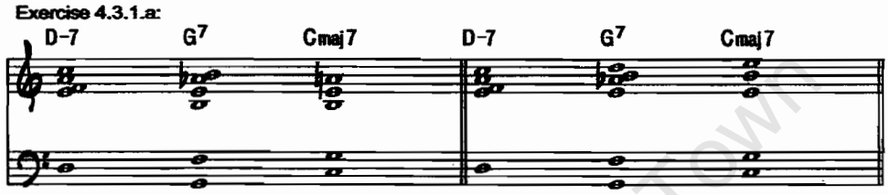
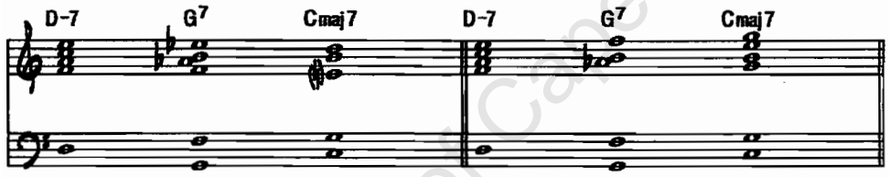
EXERCISES 4.3, 4.3.1, 4.3.1.a

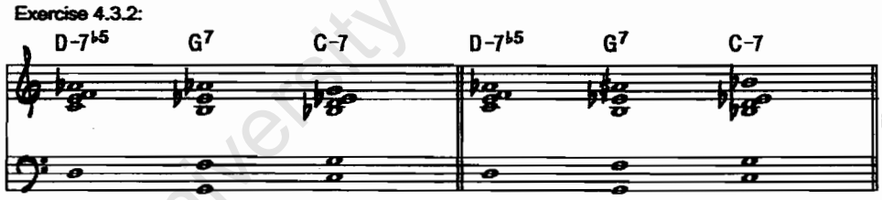
Exercise 4.3, steps 1/2: steps 3/4:




step 5: steps 6/7:

Exercise 4.3.1:




Exercise 4.3.1.a:

Exercise 4.3.2:

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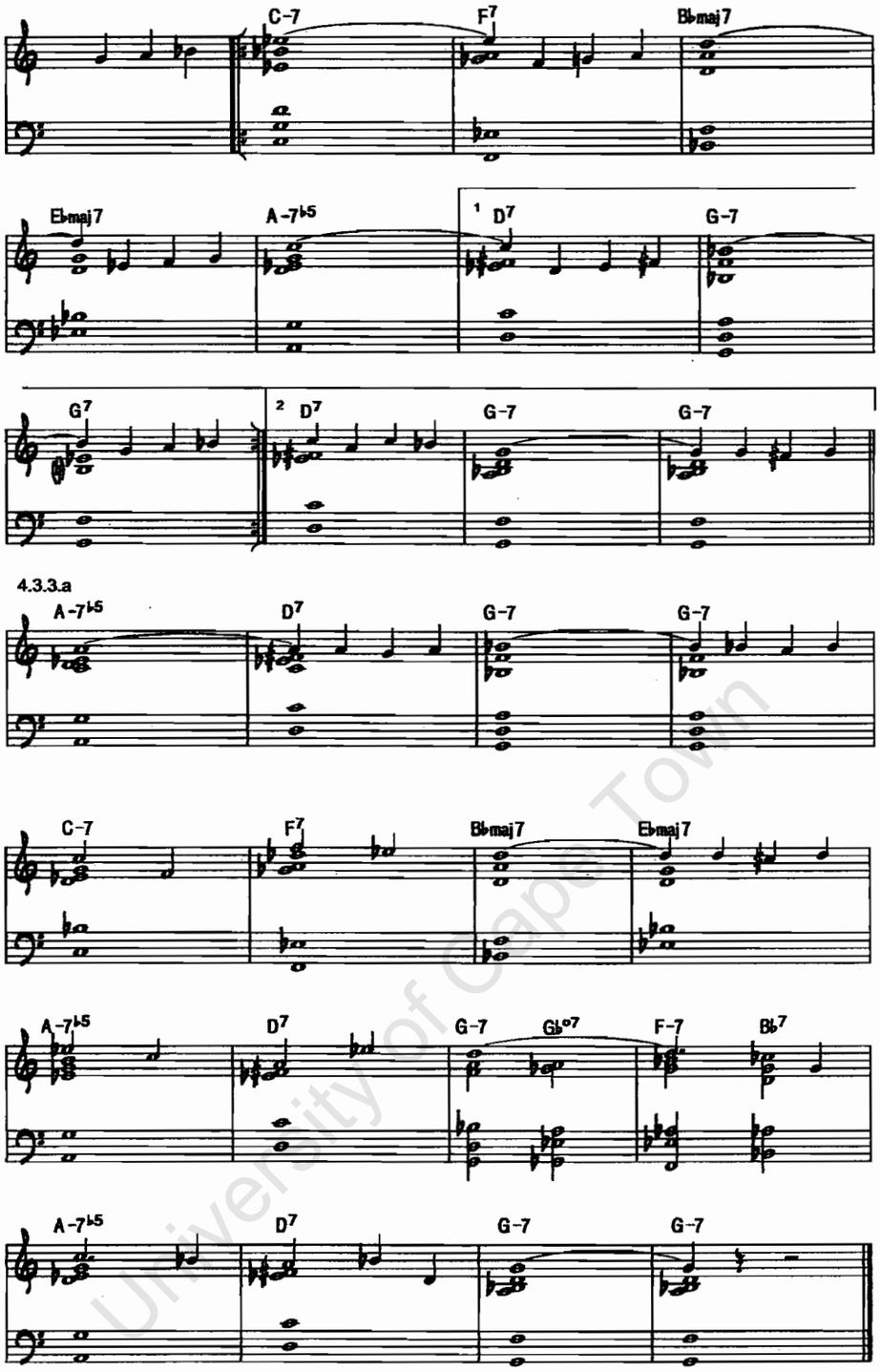
Exercise 4.3.3

AUTUMN LEAVES

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References

Bach, J.S. (1941). In A.Riemenschneider (ed.), *371 Harmonized Chorales and 69 Chorale Melodies with Figured Bass.* Milwaukee. G.Schirmer.

Baker, D. (1993). *Jazz Pedagogy: a Comprehensive Method for Teacher and Student.* New York. N.Y. Alfred Publishers.

Baker, D. (2000). Bebop-Era Standards. In J.E. Hasse (ed.), *Jazz, The First Century.* New York. Harper Collins Publishers, 102-103.

Barron, K. (1996). *Artists Transcriptions, Transcribed by Brent Edstrom*. New York. Hal Leonard.

Bergonzi, J. (1992). *Melodic Structures: A step-by-step Method for Learning to Play over Changes for all Instruments.* Rottenburg. Advance Music.

Bernstein, L. (1976). *The Unanswered Question, Six Talks at Harvard.* Cambridge. Harvard University Press.

Bridge, F. & Sawyer, F. (1899). *A Course in Harmony.* London. Novelo.

Carter, W.L. (1986) *Jazz pedagogy: A History still in the Making. Jazz Educators Journal*. Vol. XVIII, No. 3, Page 13.

Coker, J. (1964). *Improvising Jazz*. Englewood Cliffs. Prentice Hall.

Coker, J. (1975). *The Jazz Idiom.* Englewood Cliffs. N.J. Prentice Hall.

Coker, J. (1978). *Listening to Jazz.* Englewood Cliffs. Prentice Hall.

Coker, J. Knapp, B., Vincent, L. (1997). *Hearin' the Changes.* Rottenburg.. Advance Music.

Collier, G. (1988). *Jazz Workshop.* London. Universal Edition.

Crook, H. (2006). *Beyond Time and Changes.* Rottenburg. Advance Music.

University of Cape Town

Daw, S. (1999). 'Leipzig'. In M. Boyd (ed), *Oxford Composer Companion, J. S. Bach,* New York: Oxford University Press, 263-265.

De Veaux, S. (2000). In B.Kirchner (ed.), *Oxford Companion to Jazz.* Carey. Oxford University Press, 49-57.

Felts, R. (2002). *Arranging, Reharmonization.* Boston. Berklee Press.

Fisher, L. (ed.), 1994, *Jazz Research Papers.* Manhattan, KC. IAJE Publications.

Forte, A. (1974). *Tonal Harmony in Concept and Practice,* second edition. New Haven. Holt, Rinehart and Winston.

Gardner, G. (1996). *Jazz Piano, Creative Concepts and Techniques.* Paris. Edition Henry Lemoine.

Gridley, M.C. (1985). *Jazz Styles, History and Analysis.* Englewood Cliffs, N.J. Prentice Hall.

Grigson, L. (1988). *Practical Jazz.* London. Stainer & Bell.

Hancock, H. (1992). *Classis Jazz Compositions and Piano Solos Transcribed By Bill Dobbins.* Rottenburg. Advance Music.

Herzig, M. (1997). Elements of Jazz Piano Pedagogy. Indiana University. Master's Dissertation.

Hodeir, A. (1962). *Toward Jazz.* New York. Grove Press.

Kuster, K. (1999). 'Cantata'. In M. Boyd (ed.), *Oxford Composer Companion, J. S.Bach,* New York: Oxford University Press, 82-89.

Larsen, J.J. (1986). Teaching Basic Jazz Piano Skills to Classically Trained Adult Pianists. University of Florida. Master's Dissertation.

University of Cape Town

Lateef, Y.A. (1981). *Repository of Scales and Melodic Patterns.* Amherst. Fana Music.

Levine, M. (1989). *The Jazz Piano Book*. Petaluma, Ca. Sher Music.

Levine, M. (1995). *The Jazz Theory Book.* Petaluma. Sher Music.

Liebman, D. (1991). *A Chromatic Approach to Jazz Harmony and Melody.* Rottenburg. Advance Music.

Liebman, Dave. [Online]. <www.daveliebman.com>, <www.upbeat.com_lieb>, [2006, March 15].

Marohnic, C. (1979). *How To Create Jazz Progressions.* Lebanon, IN. Studio 224.

Mc Neely, J. (1993). *The Art of Comping.* Rottenburg. Advance Music.

McCury, R.C. (1978). *A Survey of Improvisational Methods and Materials Applied to Curriculum for Teaching of Jazz.* University of Kansas.

Ottman, R. (1970). *Elementary Harmony.* Second edition. Englewood Cliffs.Prentice-Hall.

Ottman, R. (1972). *Advanced Harmony.* Second edition. Englewood cliffs. Prentice-Hall.

Owens, T. (1988). 'Bop'. In B. Kernfeld (ed.), *The New Grove Dictionary of Jazz.* New York: St. Martin's Press, 137-139.

Palisca, C. (1968). *Baroque Music.* Englewood Cliffs. Prentice- Hall.

Patrick, B.J. (1988). Parker, Charlie. In B. Kernfeld (ed.), *The New Grove Dictionary of Jazz*, New York. St. Martin's Press, 954-958.

Pauly, R. (1973). *Music in the Classic Period,* second edition. Englewood Cliffs. Prentice- Hall.

University of Cape Town

Pelote, V. (2000). Jazz Clubs. In B. Kirchner (ed.), *Oxford Companion to Jazz*. Carey. Oxford University Press, 87-94.

Pressing, J.(1987). Improvisation: Methods and Modes. In J. Sloboda (ed.), *Generative Processes in Music.* Oxford University Press.

Rameau, J-P. (1971). *Treatise of Harmony.* New York. Dover Publications.

Ramsey, G.P. (2000). The Art of Bebop: Earl "Bud" Powell and the Emergence of Modern Jazz. Masters Dissertation.

.

Ratner, L.G. (1962). *Harmony Structure and Style.* New York. McGraw-Hill.

Reeves, S.D. (1995). *Creative Jazz Improvisation.* Englewood Cliffs. N.J. Prentice Hall.

Richter, E.F. (1887). *Treatise on Harmony.* London. J.B. Cramer.

Riemann, H. (1974). *History of Music Theory.* New York. Da Capo Press.

Riemann, H. (1895). *Harmony Simplified.* London. Augener.

Robinson, J.B. (1988). 'Rhythm'. In B.Kernfeld (ed.), *The New Grove Dictionary of Jazz*. New York: St.Martin's Press, 1176.

Schenker, H. (1954). *Harmony*. Chicago. The University of Chicago Press.

Schonberg, A. (1954). *Structural Functions of Harmony.* London. Ernest Benn.

.

Tucker, M. (1988). 'Transcription'. In B. Kernfeld (ed.), *The New Grove Dictionary of Jazz.* New York. St. Martin's Press, 1213-1216.

Tyner, M. (1992). *Artists Piano Transcription, Transcribed by Bob Leso.* Milwaukee. Hal Leonard.

University of Cape Town

**Discography**

Coltrane, John (1964). *Crescent*. Impulse, MCD05889.

Coltrane, John (1965). *First Meditations*. Impulse, GRD-118.

Coltrane, John (1966). *Meditations*. Impulse, MCAD-39139.

**Scores**

Ellington, D. (1940). *Harlem Airshaft* Transcribed by Brent Wallarab. Jazz at Lincoln Center Library.

Tatum, A. (1944). In Paparelli, F. (ed.). *5 Jazz Piano Solos by Art Tatum.* London. Peter Maurice Music.

Waller, T.F. (1990). In Olsen, D.C. (ed.). *The Genius of Thomas "Fats" Waller.* Miami. CPP/Belwin.

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