

JAZZ ANALYSIS

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Analysis in Jazz:

The musical approach of jazz players/singers tends to be mainly *aural*, based on playing by ear and using little written/notated music. It is in the nature of jazz as an improvised music art form that theory and analysis can only support the musical mind through study and practice. They cannot replace spontaneity and the inner urge¹ to express oneself in the most individual way. Likewise the academic teaching of jazz cannot replace the active (playing) scene where players meet and learn from each other through trial and error. A school can only provide skills and the necessary network/contacts for prospective jazz musicians.

Duke Ellington „*You need the conservatory – but with an ear for what’s happening on the street...*“²

These lectures aim to back up a jazz player’s musical abilities by building a knowledge of the material used in jazz and jazz related music. Knowledge can help to listen more critically to one’s own and others’ playing. Theory and analysis can only enrich one’s music though if they are part of an every day practice routine.

<p>LISTENING AND THINKING ANALYTICALLY CAN ENHANCE YOUR PLAYING</p>

What can we analyse ? Why do we analyse ?

A musical piece, e.g. a jazz standard or original has a distinctive form, melody, chord progression, key(s), rhythmic shapes/kicks, a characteristic mood, lyrics (some written later by vocalists). All these musical elements make a tune unique. Analysis is a slow motion process, one sits down to examine some details just like a doctor on a patient. It requires good ears (especially if there is only a recording and no written music), the ability to visualize music (notation, score reading, text) and a focused mind. Jazz musicians analyze for some particular reasons:

- to learn a tune and how to improvise on it (T.Monk said „*if you know the melody you can make a better solo*“³)
- to learn melodic/harmonic/formal structures and how to use them in a personal way
- to listen more actively and critically

Typical elements of musical analysis:

MELODY

FORM

HARMONY

RHYTHM is very often implied in the melody of a tune (e.g. riffs). Its specific analysis can be important in polyrhythmic (e.g. African) or polymetric music where rhythm is the predominant element.

For jazz musicians:

Individual improvisation styles of jazz musicians (melody, tone, harmony, rhythm, „*the personal sound*“). Every complete music contains all musical elements. An overall analysis is an advanced project and needs some basic analytic methods such as:

- *Melodic Analysis* using numbers to indicate intervals between melodic note and root and linear movements
- *Form Analysis* using mainly letters to indicate parts of the overall structure of a piece (motives, phrases, parts, intros, interludes etc....) and relations between them (e.g. AABA, a, a', etc....)
- *Harmonic Analysis* using Roman numbers (I, V, IV etc...) to indicate the harmonic function (tonic, dominant, subdominant etc..) and the degree, modulations etc...

¹ Album and song title by jazz saxophonist Joe Henderson

² Tucker, Mark, ed. 1993. The Duke Ellington Reader. New York: Oxford University Press

³ see Graham Collier’s book *Interaction* (Advance Music, 1995)

Melodic Analysis

The theme/tune/melody represents the „face“ of a song. Many people know and recognize a song by its characteristic motive(s) and overall melody. In most cases the overall form of a tune derives from its melody (treatment of initial motive and consequences).

For a jazz musician as for anyone else it is useful to analyse the melody:

- To learn the theme of a new piece by analyzing and memorizing intervals to the root and then transpose the whole line (a practical exercise!)
- Analyse and understand counterpoint between the parts (e.g. melody and bass)
- Listen to solos of great jazz players and understand their use of tone material
- Listen back critically to one's own soloing on a recording
- Be aware of the relation between text (if there is) and melody

From a **vertical** point of view (below to above, bass to treble) one can detect intervals between the root and each melodic note. In tonal music the notes of a melody can be roughly subdivided into the following categories:

- Chord notes 1 3 5 7 (3 and 7 are functional)
- Chord extensions 9 11 13 and their alterations
- Non harmonic (dissonant) notes (ornaments, approach notes), usually of short duration

Since ancient times intervals have been categorized into *consonances* and *dissonances*. According to common human hearing habits *consonances* (3,4,5,6,8 etc.) create stability (the „chords“), *dissonances* (b2, b5, b7, b9 etc.) need resolution and create motion.

For analysis we use numbers to indicate the exact interval between root and melodic note. Intervallic numbers should be written on top of the melodic note.

Autumn Leaves...

intervals root - melodic note

If the downbeat is anticipated, the melodic note must be related to the root that follows (see last note of bar 2).

From a **horizontal** point of view one can see the melody as a succession of intervals from one note to the other (stepwise or jumps) in a particular *rhythm* (notes of various lengths and rests). One of the characteristics of jazz is the swing phrasing of eighth notes and the anticipation of the downbeat. A typical swing melody has a backbone of *strong notes* (*target notes*) and some *interconnecting or filling notes*. The following example shows movements from note to note and the emphasized down- and offbeats (strong notes) plus the fill notes (x).

Autumn Leaves

Chords: (Gm^6) , Cm^7 , F^7 , $B^b\Delta$

↓ strong notes (target notes) x filling notes/approach notes/passing tones

For a complete melodic analysis of a rhythmical line (e.g. a jazz phrase) it is important to examine both perspectives: *horizontal* and *vertical* (in that order!). The horizontal analysis determines a which notes to identify first (target notes), the vertical analysis the interval between melodic note and root. The filling notes will then be related to their target notes.

Examples of melodic analysis:

Have You Met Mrs Jones

Chords: F^Δ , D^7 , Gm^7 , C^7

ect...

BYE BYE BLACKBIRD

Chords: F^6 , D^7 , Gm^7 , C^7 , F^Δ

↑ "sus" = suspended 4th
dt. "Quart-Vorhalt"

IN A SENTIMENTAL MOOD / Duke Ellington

Chords: (F^6) , Dm , Dm^Δ , Dm^7 , Gm

p.t. passing tone (dt. *Durchgangston*)

T, Monk: "Introspection"

Chords: (Db Δ), Bm⁷, C⁷, B⁷, B \flat ⁷, Am⁷, D⁷, D⁷, G Δ

Annotations: 7, 1, T₉ ch, T₁₁, 3 n.n., T₁₁ S₃, T $\#$ ₁₁, T $\#$ ₁₁, T \flat ₁₃, T \flat ₁₃ S₆, 5, T₁₃ ch, 7, n.n. ch, 7, S₅, T $\#$ ₁₁ ch, 5, 5, ch n.n., 5, 3, etc...

- ↑ strong/emphasized notes
- n.n. neighbour/auxiliary note/ dt. Nebennote
- ch chromatic approach
- T Tension
- S scale approach

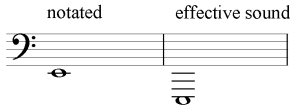
Musical analysis is often a matter of interpretation. A good way to determine target notes is to sing a tune and think like a drummer adding kicks on the emphasized beats (see accents in example above). That's where the strong points of the melody are. The remaining notes can mostly be linked to those targets.

Bass Lines

The bass has three fundamental functions in the jazz rhythm section

1. harmonic: to provide the root of the chords on a low pitch - „the bass“
2. rhythmic: to provide a steady pulse or pattern (e.g. walking in 4) usually *pizzicato*
3. melodic: to play/improvise a melodic line at the bottom of the ensemble

The double bass and the bass guitar are notated one octave higher than they actually sound:



LOWEST NOTE = empty string E
(on a regular 4 string double bass or bass guitar)

Swing:

The bass plays usually in quarter notes („in 4“ in a 4/4 meter). Together with the ride cymbal it provides a steady beat against which the soloist and the other instruments can use offbeat rhythm. „In 2“ or „half time feel“ means half notes over a 4/4 meter, calming down the pace without changing the actual tempo.

It is a useful exercise for everyone to write bass lines. Start with the *root* of the given chord on the first downbeat of the chord (mostly 1 or 3 of a bar). The remaining quarter notes should lead smoothly from one root to the other using *chord notes* or *stepwise motion* or *approach notes* to the successive root). Try to avoid dissonant jumps without resolution or contrary motion.

"How Deep Is The Ocean"

In 2 Cm A^ø D^ø G⁷ Cm Cm/B^b A^ø D⁷ Gm

"Softly As In A Morning Sunrise"

In 4 Cm A^ø D^ø G⁷ Cm A^ø D^ø G⁷ Cm

IN 4 1 b3 1 b3 1 b5 ch 1 3 ch 1 ch 1 b5 ch 1 b5 ch 1 1 1

A walking bass line is a piece of improvisation just as any other solo. Experienced bass players don't just play roots, chord notes etc... but create a melody supporting the ensemble harmonically and rhythmically.

Latin/Bossa Nova:

For a general latin feel the bass can play ostinati/patterns using mainly roots and the fifth or other intervals.

"How Insensitive / Intensatez"

BOSSA/LATIN/EVEN 8th

Dm A⁷/C[#] Cm⁶

In Afro-Cuban music (Cuba/Salsa) or Samba (Brasil) the bass line is involved in more complex rhythms which should be studied from appropriate recordings or books (e.g. Rebeca Mauléon's *SALSA GUIDE BOOK*, available from SHER MUSIC)

Harmonic Analysis

A lot of jazz improvisation is based on playing the chords of a tune („the changes“). Most jazz tunes, especially standards, work within the tonal framework of a key/tonality. In order to understand the function of each chord one must know the basic functions (tonic I, subdominant IV and dominant V) and the other degree chords of every major and minor key.

For harmonic analysis we use roman numbers (I, II, III, IV etc...) to indicate degrees and functions. One of the most frequent structures in traditional jazz tunes is the cadence **V7 I** (**V7 Im** in minor keys) and its extended form **IIm7 V7 I** (**IIØ V7 Im** in minor keys) – „Two-Five-Ones“

A cadence means, in exact terms, that a phrase or musical section comes („falls“ from lat. *cadere*) to an end. The strongest form, the *authentic cadence* is **V7 to I**:

G⁷ C

V⁷ → I

Dm⁷ G⁷ C^Δ

IIm⁷ V⁷ → I

Other forms of cadences exist, e.g. the *half cadence* where the phrase ends on V or the *plagal cadence* **IV I** or **IVm I**

Main Cadence / Tonicization / Secondary Dominants

The *main cadence* of a key happens when the key's dominant moves to the tonic (e.g. G7 to C in the key of C). It is important to note that any chord can be approached by its related dominant. This process is called *tonicization* and is very common through the use of *secondary dominants*.

F^Δ D⁷^b₉ Gm⁷ C⁷ F^Δ

I^Δ V⁷/II → IIm⁷ V⁷ → I^Δ

tonicization of II

Start harmonic analysis with dominants / cadences

It is useful to start a harmonic analysis of a tune with an eye on dominant chords. They might resolve to their related tonic (*authentic cadence*) or not (*deceptive cadence*). The chord before the dominant will often be its related IIm7 chord. Once this work is done one should have an overview of tonal centers (main key, modulations).

An arrow is used for a complete cadence from **V to I**, a bracket to indicate a **II V** movement. It is recommended to indicate the exact harmonic function (e.g. V7 and not just V).

GONE WITH THE WIND

Fm⁷ B^{b7} E^{bΔ} Cm⁷ Fm⁷ B^{b7} E^{bΔ} Am⁷ D⁷ G⁶

If the tune shifts to another key (modulation), the new key has to be indicated before it starts (see boxed letter **G** for a modulation from Eb to G).

Deceptive cadence (dt. Trugschluss)

If a dominant chord (V7) does not progress to its tonic (I) we speak of a *deceptive cadence* (dt. *Trugschluss*). Its most common forms in jazz lead to **bVIΔ** or **bIIΔ**:

Diminished chords

Diminished chords can serve as substitutes for dominant chords as they include the tritone. Diminished seventh chords even contain TWO tritones therefore substituting FOUR dominants.

Analysis should try to distinguish between dim. chords that have dominant function and those that have not.

Blues


The Blues is one of the most important Afro-American musical styles. It developed among the African slaves brought to North America in the second half of the 19th century. The first blues forms are only badly documented (no recordings yet!) and can be considered rural folklore sung mainly at work.

The Blues was a mostly melodic style in the beginning, its lines deriving from African pentatonic scales. When slavery officially ended in 1865 (end of American Civil War) the Afro-American musicians began to travel throughout North America and the Blues was confronted with European instruments (especially guitars/piano) and musical theory/form. Over the years an 8-bar and a 12-bar pattern became the common standard. The 12-bar Blues scheme consists of 3 phrases of 4 bars each.

In its early stages the blues scheme was:

Ex.6:

A




woke up this morning, blues all around my head

A



woke up this morning, blues all around my head

B



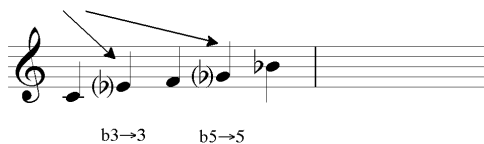
well I dreamed last night the girl I love was dead

The words are taken from *East Coast Blues* by Terry/McGhee. The blues lyrics are structurally important. The first 4-bar phrase presents a problem or a thought, the second 4-bar phrase repeats it (harmonic variation through the subdominant IV), the third 4-bar phrase concludes the thought or solves the problem (and contains the dominant V and therefore the cadence). The text could be structured into three lines: **aab**

From the simple blues scheme using just tonic (I), subdominant (IV) and dominant (V) harmony emerged a more complex chord scheme in jazz. The musicians of the Bebop Era (1940's) added auxiliary dominants and turnarounds and the basic modern jazz blues form became what it is today.

It is important to consider African scales when looking at the melodic material of the Blues. African tone material cannot simply be related to our western chromatic tonal system. The nearest approximation on a piano would be the (pentatonic) scale notes 1, b3→3, 4, b5→5, b7. The „blurred“ notes between b3→3 and b5→5 are called „blue notes“. Since blues harmony has been adapted to western musical thinking it is common to speak of *major blues* and *minor blues*.

BLUE NOTES (from African Pentatonics)



b3→3 b5→5

BLUES SCALE (as played on a piano)



chromatics

One of the best sources of information about blues and jazz roots is Gunther Schuller's book *Early Jazz* (Oxford Univ.Press 1968).

Now's The Time (Charlie Parker)

The image shows a musical score for 'Now's The Time' by Charlie Parker. It consists of three staves labeled 'a', 'a'', and 'b'. Above each staff are Roman numerals and chord symbols. Staff 'a' has chords: I (F7), IV (Bb7), I (F7), II (Cm7), and V/IV (F7). Staff 'a'' has chords: IV (Bb7), #IVo7 (Bo7), I (F7/C), and VI (Dm7). Staff 'b' has chords: II (Gm7), V (C7), I (F7), VI (Dm7), II (Gm7), and V (C7). The melody is written in treble clef with a key signature of one flat (Bb) and a 4/4 time signature.

This Charlie Parker composition is a typical example for a jazz (major) blues. The melody even follows the (text) structure of **aab** (see above). It is obvious that there are more chord changes than in the archaic blues scheme. Bebop improvisors preferred more variety and movement to improvise on chord changes and related scales.

Harmonic analysis of Ex.7:

The subdominant appears in bar 2. The auxiliary dominant (V/IV = V of IV) and its related II in bar 4 lead to the subdominant (IV) in bar 5. Bar 6 has a passing diminished chord leading to the bass note of bar 7 (the fifth of the tonic). In bar 8 the 6th degree chord (VI_m7) provides for a better bass line. This chord could also be altered to an auxiliary dominant (VI₇ or V of II) for bar 9. Instead of two bars of the dominant V chord bars 9-10 have now a II-V progression, again this creates more change of the harmony and bass line. The last two bars (11-12) contain the typical **turnaround** (I-VI-II-V) which is an extended form of the cadence and concludes the chorus.

„Blues Key“

Although the blues scheme has been integrated into (western) musical theory and functional harmony, some original elements are preserved that are essential for the character and mood of the style. In a typical blues there are no major seventh chords. The three main chords (I, IV, V) are all dominant because blues melody does usually not include the major seventh. Nevertheless a blues is notated in a certain tonality (e.g. Blues in F – one flat, see *Now's The Time* above) with relevant accidentals written at the beginning of each staff. Notes are altered within the staff whenever they occur.

A word on minor keys:

There are several different minor scales producing even more different degree chords. It is important for functional harmony that the cadence works in a minor key as well. The **leading note** (the maj.7 in relation to the tonic or the maj.3 seen from the dominant) is needed but not included in the natural minor scale. Therefore the seventh note of the natural minor scale is raised which results in the **harmonic minor scale** (1 2 b3 4 5 b6 7 1). In order to avoid the augmented second between b6 and 7 the sixth is also raised which produces the **melodic minor scale**. Those are the two scales most common with minor tonics. The chord quality of the tonic is therefore a minor chord with the major seventh or the major sixth.

Equinox (John Coltrane)

The image shows three staves of musical notation for the piece "Equinox" by John Coltrane. The key signature is three sharps (F#, C#, G#) and the time signature is 4/4. The first staff has two measures with chords I_m and C[♯]_m above. The second staff has four measures with chords IV_m (F[♯]_m) and I_m (C[♯]_m) above. The third staff has six measures with chords bVI₇ (A⁷(13)), V₇ (G[♯]), I_m (C[♯]_m), (VI)[♯] (A[♯]), II[♯] (D[♯]), and V₇ (G[♯]) above. The notation includes eighth and quarter notes with stems, and rests.

In a minor jazz blues like the one above there are usually less chord changes than in major. The tonic (minor!) in bar 1-4, the subdominant (minor!) in bars 5-6, the tonic in bars 7-8. Bar 9 contains the dominant of the dominant (V of V) in form of its tritone substitute (so called „sub-five“ of V or subV/V). Bar 10 has the actual dominant chord. The last two bars (11-12) contain a turnaround (like in a major blues) to conclude the chorus.

Other minor blues themes: *Mr. P.C.* (J.Coltrane), *Israel* (J.Carisi), *Nothing Personal* (Don Grolnick), *Footprints* (W.Shorter), *Birk's Works* (D.Gillespie), *Nutville* (H.Silver), *Inception* (McCoy Tyner), *Procession* (Dave Holland)

Blues Forms

The 12-bar scheme is the most common (major and minor). Other forms include:

24-bars: (12-bar scheme doubled, common with up-tempo pieces): Example: *Inception* (minor blues by McCoy Tyner, rec. on *Early Trios*), *West Coast Blues* (Wes Montgomery, in 3/4), *Nothing Personal* (Don Grolnick, rec. Michael Brecker)

8-bar Blues: more common in early jazz: e.g. *Basin Street Blues* (AABB, 8+8+8+8), blues sung by Bessie Smith and Ma Rainey, *Hippy* by Horace Silver (LP *Senor Blues*)

The diagram shows two 8-bar blues chord progressions. The first progression is labeled "8-BAR BLUES" and has four bars with chords I, I⁷, IV⁶, and IV_m⁶ or [♯]IV_o⁷ above. The second progression has eight bars with chords I, VI⁷, II⁷, V⁷, I, IV, IV_m, I, and V above. Each bar is represented by a staff with diagonal lines indicating the rhythm.

special forms: e.g. mixed forms using a blues scheme and a bridge or extended blues schemes. Some tunes use the blues scheme just for the solo section. Examples by Duke Ellington (*Wig Wise*, *Black And Tan Fantasy*), Cedar Walton (*Cedar's Blues* – 12-bar scheme extended to 16 bars), H.Hancock (*Eye Of The Hurricane* – odd meter insertions in theme) and others.

More pieces of interest to analyze/study: *With Hunt* (Wayne Shorter), *Stolen Moments* (Oliver Nelson), *Bluesette* (T.Thielemans), *Nostalgia In Timesquare* (C.Mingus), *Pussycat Dues* (C.Mingus)

Structural Analysis

Every piece of music happens within a time. Time is structured through the form of a piece. Musical form emerges from certain ideas/shapes (e.g. of the melody, chord progressions, rhythmic patterns etc...) and their subsequent treatment (repetition, variation, contrast etc...). Too much contrast produces confusion, too many repeats make the music boring.

Many jazz musicians feel that form is the first thing one needs to know about a tune to join in with a solo. This makes sense since the „container“ (the form of the chorus, intro, ending etc...) is the common basis for the comping rhythm section to hook up if someone gets lost.

Many jazz standards and originals are organized in phrases of 8 bars. They have „symmetrical“ forms because of the multiples of 2 and 4-bar motive patterns. The theme/melody of the tune is the reference. Like in the following example:

IT'S ONLY A PAPER MOON

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Words by Billy Rose & E.Y. Harburg
Music by Harold Arlen

Moderately

The image shows a musical score for the song 'It's Only a Paper Moon'. It consists of two staves of music in G major. The first staff contains the first four bars of the melody, with lyrics 'Say, It's On - ly - A Pa - per Moon...' and chords G6, G6dim7, Am7, D7, Am7, D9, G. The second staff contains the next four bars, with lyrics 'but it would-n't be make be - lieve... if you... be - lieved... in me...' and chords G7/B, C6, A7/C#, D7, G, Am7, D7. The tempo is marked 'Moderately'.

The structure in this song is 2+2+4 (bars). Together these 8 bars form part **A** of the song. Capital letters are used to indicate parts of the overall form.

The most common form schemes of jazz tunes are:

1-part form: 12-bar BLUES (see dedicated chapter on BLUES)

AABA, AABA' (also known as 3-part form, *dt. dreiteilige Form*)

A is repeated, a contrasting section (B or Bridge) follows and finally A is presented again (*reprise*), often with a different ending (A'). This structure is known as AABA. Each section being 8 bars long results in a 32-bar chorus.

Examples from the jazz standard song book: *Rhythm Changes*, *Softly As In A Morning Sunrise*, *The Lady Is A Tramp*, *Let's Fall In Love*, *Love For Sale* etc....

Variation of AABA:

AA'BC: *All The Things (36bar chorus!)*, *Autumn Leaves*

ABAB', ABAC

The first 8 bars are NOT repeated but followed by a contrasting section (B). Then A happens again, the last 8 bars often start like B but go somewhere else to conclude the chorus form. If the last 8 repeat most of B but have just a different ending one should use letter **B'**. Otherwise a new letter (**C**) is used. Each section being 8 bars long results in a 32-bar chorus.

Examples from the jazz standard song book: *On Green Dolphin Street (ABAC)*, *But Not For Me (ABAB')*, *Here's That Rainy Day (ABAC)*, *All Of Me (ABAC)*, *Beautiful Love (ABAB')* etc....

Many jazz players find it challenging to play over tunes that have odd forms. They are rare in the jazz standard repertoire but are quite common among originals written by jazz musicians. Of particular interest are pieces by Wayne Shorter (e.g. *Speak No Evil*), Charles Mingus (e.g. *Goodbye Pork Pie Hat*), Herbie Hancock (e.g. *Dolphin Dance*), Chick Corea (e.g. *Friends*) and others.

Methods of structural analysis

This method is a suggestion for practical use. It is a good tool to prepare transcription work as well. If I know how long a piece is and how it is structured half of the actual transcription and notation work is already done.

1. *Getting to know the piece:* Listen through the piece several times with an ear to the order of parts (intro, parts, interludes, solos, ending etc...). Try to write down a first sketch of the form using letters to indicate parts
2. *Refinement:* On the basis of this first sketch listen to the piece again stopping and repeating sections if needed. Now the overall structure should become clear: which part(s) is/are repeated? Are there any similar sections with only tiny variations. Is there a contrasting bridge? AABA, ABAC or other? Intros? Who plays a solo (which instrument) over what structure, who is comping? Try to count the EXACT number of bars per section (applicable only if the piece has a metric structure using a beat).
3. *writing it out:* Draw a diagram using columns for the parts. On top write CAPS naming the parts. Below you could write the amount of bars (and time if needed). Now fill the remaining space with more details (see example below)

Example: Duke Ellington's *Black And Tan Fantasy* (rec. late 1920ies)

Part	A	B	B (rep.)	A	A	A	A	A
Bars	12	8	8	12	12	12	12	12
add. info	Main theme, minor blues in Bbm 2-part theme played by 2 tpts	Bridge Played by alto sax backgrounds Bowed bass		Tp solo Chorus 1 B Miley Plunger	Tp solo Chorus 2 B Miley Plunger	P solo Duke stride	Tp solo Chorus 3 B Miley Plunger	Tp solo Chorus 4 B Miley Plunger Last 4 bars Tutti Chopin's Funeral march