POLITECNICO DI MILANO

# Homework #1 - Harmonic Analysis

Students: *Matteo Pettenò - Marco Viviani*

Course: *Computer Music - Representations and Models* – Professor: *Augusto Sarti*
Due date: *December 9th, 2021*

**Leadsheet:** Horace Silver - Peace

**Arrangement:** Norah Jones

Med. Ballad
♩ = 50

# Peace (Bb)

Bb
Horace Silver

A B

(C#-7) (F#7)

(trp.)

II ø (V7) V7/II subV/V subV I
AMI 7(b5) Ab7 GMI 7 C 7(b9) BMA 7

SECONDARY DOMINANT — TRITONE SUBSTITUTION — TRITONE SUBSTITUTION

II ø V alt
CMI (b5) 7 F7(#9 #5)

II-V-I minor progression

A

Imaj7
BbMA 7
harmonic surprise

II V I + VI
BMI 7 E7 AMA 7 F#MI 7

II-V-I-VI progression (II-V-I major + VI)

Db

II ø V I
EbMI 7(b5) Ab13 Ab7(b5) DbMA 9
harmonic surprise

II-V-I minor

Bb

(F7)

(C 9(#11) B 9(#11) )
C 7(#11 #9) C 9(#11) B 7(#11 #9) B 9(#11) BbMA 9

(pn. w/ ten.)

(fine)

V7/V (secondary dominant)

sub V (tritone substitution)

I

(harmony) A

(ten.)

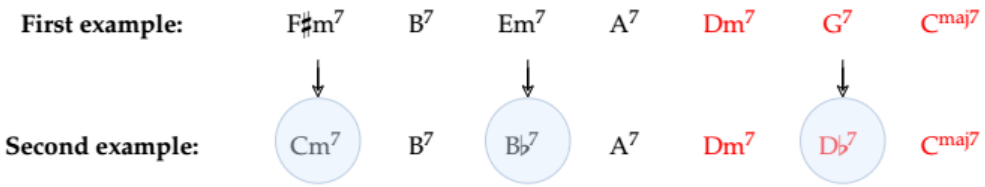
Play head twice before solos, once after.
Bass line at bar 6 is not played during solos.
Chords in parentheses are used for solos.

Compare with harmonic analysis for more information

## A. Analysis of the leadsheet - Comments

The chord progression of *Horace Silver*'s *Peace* consists of a considerable number of *II-V-I* substitutions. Before proceding with the analysis, we consider it appropriate to clarify a recurring concept in the piece, useful for the interpretation of the first five chords as well.

**Tritone substitutions on minor chords in *II-V-I* turnarounds.** The tritone substitution is a dominant chord whose root is a tritone away from the original *dominant 7th* chord. These chords are interchangeable because the tritone interval pitches are identical in each. In *II-V-I* turnarounds it is common to do this for any of the chords: indeed it is possible to substitute those minor chords as *ii* in *ii-V-I* progressions and their extensions. In the first example below, $Em^7$ is the *II/V* of $A^7$, based on the classic major turnaround $Dm^7$ $G^7$ C. In the second example we substitute $G^7$ with its tritone $D♭^7$. Based on this new *II-V-I* turnaround, we can see the $B♭m^7$ as the II of a subV ($A^7$). $Em^7$ is a tritone away from $B♭m^7$. **Conclusion**: in *II-V-I* turnarounds it is possible to substitute minor chords with their tritone.




**Note**: In the figure the third chord should be $B♭m^7$.

**Initial progression $Am^{7(♭5)}$ $A♭^7$ $Gm^7$ $C^{7(♭9)}$ $B^{maj7}$.** The first five chords have lent themselves to numerous interpretations and reasoning. They create a feeling of instability but at the same time of surprise, waiting for a stable tonal center, the $B^{maj7}$.

(*a*) **First intepretation - Key of *B major***: after this introduction it is necessary to justify the coexistence of these five chords in the key of *B major*. In order to do so, we use the following scheme which takes into account a hypothetical original progression:

**Original progression**: $D♯^{ø}$ $G♯^7$ $C♯m^7$ $F♯^7$ $B^{maj7}$

**Song progression**: $Am^{ø}$ $A♭^7$ $Gm^7$ $C^7$ $B^{maj7}$

First of all, we note that the second chords is the same for both progressions, as $G♯^7$ and $A♭^7$ are enharmonic. And also the target ($B^{maj7}$) does not change. To be clear, let's split the original progression into two parts - two *II-V-I* turnarounds: a major and a minor one.

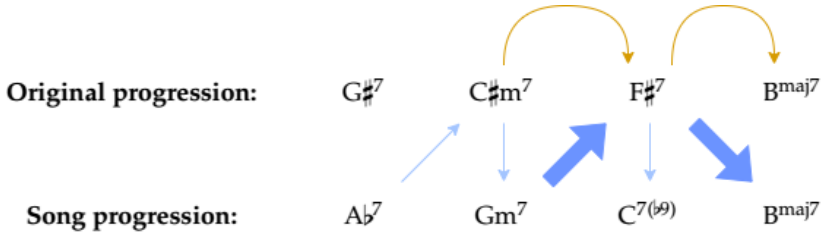
**Minor *II-V-I* turnaround**: $D♯^{ø}$ $G♯^7$ $C♯m^7$

**Major *II-V-I* turnaround**: $C♯m^7$ $F♯^7$ $B^{maj7}$

In the original progression the $F\sharp^7$ is the *V7* of the $B^{maj7}$, the $C\sharp m^7$ is the *II* of the $B^{maj7}$. The $G\sharp^7$ is the *V7* of a *II* ($C\sharp m^7$). Similarly, $D\sharp^{ø}$ is the $II^{ø}$ of $C\sharp m^7$, which completes the minor *II-V-I* turnaround with $G\sharp^7$. Therefore we end up with this nomenclature for the chords in the original progression:

| $D\sharp^{ø}$ | $G\sharp^7$ | $C\sharp m^7$ | $F\sharp^7$ | $B^{maj7}$ |
|---|---|---|---|---|
| $II^{ø}(V7)$ | $V7/II$ | $II$ | $V7$ | $I$ |

Let's now analyze the progression of the piece by Horace Silver: we'll see that it presents copious substitutions. The $C^{7(\flat 9)}$ is the tritone substitution of the $F\sharp^7$, denoted by *subV*. The $Gm^7$ can instead be seen as the tritone substitution of the $IIm^7$ ($C\sharp m^7$) in the *II-V-I* major turnaround of the original progression. In this way the $Gm^7$ would point (implicitly) to the *V7* of the turnaround - the $F\sharp^7$ chord - with a chromatic movement, which however is not perceived precisely because the $F\sharp^7$ is replaced by the $C^{7(\flat 9)}$. The $Gm^7$ would then have the same function as the $C\sharp m^7$.




Both progressions therefore point to $B^{maj7}$. We call the $Gm^7$ as *subV/V* in the notation because it is the tritone of a $IIm^7$ ($C\sharp\text{-}^7$) that points chromatically to the same chord ($F\sharp^7$), later replaced by $C^{7(\flat 9)}$. The $A\flat^7$ is the $V^7$ of the $C\sharp m^7$, later replaced by the $Gm^7$ (*V7/II*). The $A^{ø}$ is the $II^{ø}$ compared to the $Gm^7$, which can also be interpreted as a tritone substitution of $D\sharp^{ø}$. It is therefore indicated with $II^{ø}$ (of a V7 - $G\sharp^7$).
According to this, we can see the *II-V-I* major turnaround as the target of two micromodulations due to $A^{ø}$ and $A\flat^7$, but which clearly point to the tonal center $B^{maj7}$.

| $A^{ø}$ | $A\flat^7$ | $Gm^7$ | $C^{7(\flat 9)}$ | $B^{maj7}$ |
|---|---|---|---|---|
| $II^{ø}(V7)$ | $V7/II$ | $subV/V$ | $subV$ | $I$ |

(*b*) **Second intepretation - Key of *F major***: we want now to give a second interpretation to the first five chords. Let's consider the song progression and these two consecutive turnarounds where the $Gm^7$ chord is in common:

**Minor *II-V-I* turnaround**: $A^{ø}$ $D^7$ $Gm^7$

**Major *II-V-I* turnaround**: $Gm^7$ $C^{7(\flat 9)}$ $F^{maj7}$

**Song progression**: $Am^{ø}$ $A\flat^7$ $Gm^7$ $C^{7(\flat 9)}$ $B^{maj7}$

From here we note that the $D^7$ in the minor *II-V-I* turnaround has been replaced with its tritone $A\flat^7$ and that the major *II-V-I* turnround is pointing to the $F^{maj7}$, while the song progression resolves to $B^{maj7}$. So we can see the chords in the song progression in the *F major* key as a descending *iii-bIII7–ii-V* that would typically lead right into the *I* chord $F^{maj7}$. Instead Silver harmonically surprise us with a resolution to a Bmaj7: this is actually made possible by the fact that the first two chords in the major *II-V-I* turnaround can be seen as replacements for the *II* and *V* in

$$C\sharp m^7 \; F\sharp^7 \; B^{maj7}$$

Here, $C^{7(\flat 9)}$ would be the tritone substitution of $F\sharp^7$ and $Gm^7$ the tritone substitution of $C\sharp m^7$. By combining the two modified turnarounds - again, $Gm^7$ is common - we get back the first five chords of the song progression, for which we keep the same nomenclature used in the first interpretation:

| $A^{\varnothing}$ | $A\flat^7$ | $Gm^7$ | $C^{7(\flat 9)}$ | $B^{maj7}$ |
|---|---|---|---|---|
| *$II^{\varnothing}$(V7)* | *V7/II* | *subV/V* | *subV* | *I* |

In conclusion we also want to mention that it is possibile to consider a nomencalture that gives the first four chords a role in function of the root $B^{maj7}$:

| $A^{\varnothing}$ | $A\flat^7$ | $Gm^7$ | $C^{7(\flat 9)}$ | $B^{maj7}$ |
|---|---|---|---|---|
| *$\flat VII^{\varnothing}$* | *V7/II* | *$\flat VIm^7$* | *$\flat IIm^7$* | *I* |
| *tritone sub. of $III^{\varnothing}$* | | *tritone sub. of $IIm^7$* | *tritone sub. of V7* | |

**Interpretation from measure 3 to 10.**

1. Following the first five chords we have a one semitone modulation to *Bb major* with a classic minor *II-V-I* turnaround which however resolves on the major root, creating harmonic surprise.

2. Then in measures 5 and 6 there is another modulation - this time down a semitone - to *A major*. This happens with another major *II-V-I* turnaround followed by a $F\sharp m^7$ which is the *VI* degree of the key. This is the only unaltered seventh chords sequence and the longest range in a single middle key with no substitutions. It represents a moment of pause from the constant substitutions, modulations and alterations of chords in the rest of the piece, and occurs exactly in the center of the form.

3. Measures 7 and 8 present another modulation - this time in *Db major* - with a minor *II-V-I* turnaround. Also here we have a harmonic surprise with a resolution to the major tonic.

4. The end of the piece ends with another substitutions turnaround in *Bb major*, the only repeated tonal center of the piece. In the last two bars the $B\flat^{maj7}$ is preceded by two chromatic dominants that start even from the $D\flat^{maj9}$ of the previous bar.

## B. Analysis of the arrangement by Norah Jones

The original version of *Horace Silver* is a 10-bar ballad with copious tonal substitutions. The song is played in $\frac{4}{4}$ time signature at about 50 BPM. As seen thw harmony involves five different key centers and manages the range of *II-V-I* substitutions in a short span of time.

*Norah Jones*'s arrangement of *Peace* broadly maintains the same structure as *Horace Silver*'s piece. The song consists in the repetition of the 10-bar main section - A in the leadsheet - five times. However, it does not maintain both the key and the rhythmic structure of the original: the first is raised two tones and a half to *Eb major* while the time signature is $\frac{12}{8}$ (basically is a $\frac{4}{4}$ played with eighth note triplets). The BPMs also change, rising from 50 to 69. The piece maintains the same modulations compared to the original. As already mentioned, the harmonic structure of the piece has only a small presence of harmonic changes or substitutions with respect to the leadsheet. For the analysis we can divide the arrangement into three macro sections: the first consists in the repetition of the 10-bar section three times (the first used as an introduction to the vocal part), the second coincides with the piano solo and the last with the outro. Below we aim to highlight the differences between the entities described in the leadsheet analysis and those identified in each section of the arrangement.

**Note**: All differences indicated in section A apply to sections B and C.

### Section A - Intro and Verse (Measures 1-30).

1. The first five chords sequence now is transposed to *E major*:

   $$D^{\varnothing} \qquad G^{+7(\flat 9)} \qquad Cm^{7} \qquad F^{7(\flat 9)} \qquad E^{maj7}$$

   The only difference here is that *Jones* prefers to create tension towards the $Cm^7$ with a $G^{+7(\flat 9)}$ avoiding the tritone substitution.

2. The following minor *II-V-I* turnaround is transposed to *Eb major* and the *II* is omitted to obtain a dominant *V-I* resolution:

   $$B\flat^{7(\sharp 9)} \qquad E\flat^{maj7}$$

3. The *II-V-I-VI* turnaround in bars 5 and 6 remains the same but is transposed to *D major*:

   $$Em^{7} \qquad A^{7} \qquad D^{maj7} \qquad Bm^{7}$$

4. We still find the minor *II-V-I* turnaround in measures 7 and 8, but it is transposed to F♯ - resolution with harmonic surprise to major tonic is preserved:

   $$F^{\varnothing} \qquad C\sharp^{7(\flat 5)} \qquad F\sharp^{maj9}$$

5. In conclusion the chromatic resolution to E♭ presents the same relations in the chords:

   $$F^{7(\sharp 11)} \qquad E^{7(\sharp 11)} \qquad E\flat^{maj9}$$

**Section B - Piano Solo (Measures 31-40).** On the fourth repetition of the 10-bar section, slight variations can be seen that better blend with the instrumental part of the piano.

1. The chords in measure 2 and the first chord in measure 3 are replaced by:

$$\mathrm{E}\flat^{\mathrm{maj7}} \qquad \mathrm{D}^{7} \qquad \mathrm{A}\flat\mathrm{m}$$

2. We hear some kind of alteration in the *V* of the *A major II-V-I-VI* turnaround. It may be a $\mathrm{A}^{7(\sharp 9)}$.

**Section C - Outro (Measures 41-54).** The only difference that we observe in this outro is the addition of four measures after the minor *II-V-I* turnaround in F♯. These bars allow the insertion of the refrain *"Peace is for everyone"* before the final chromatic resolution in E♭. We hear the following chord progression:

$$\mathrm{C}\sharp \qquad \mathrm{B}\flat^{+} \qquad \mathrm{D}^{\mathrm{maj7}(\sharp 5)} \qquad \mathrm{G}\sharp\mathrm{m}^{7} \qquad \mathrm{F}\sharp^{\mathrm{maj9}}$$