PART 01: WHY MUSIC THEORY?

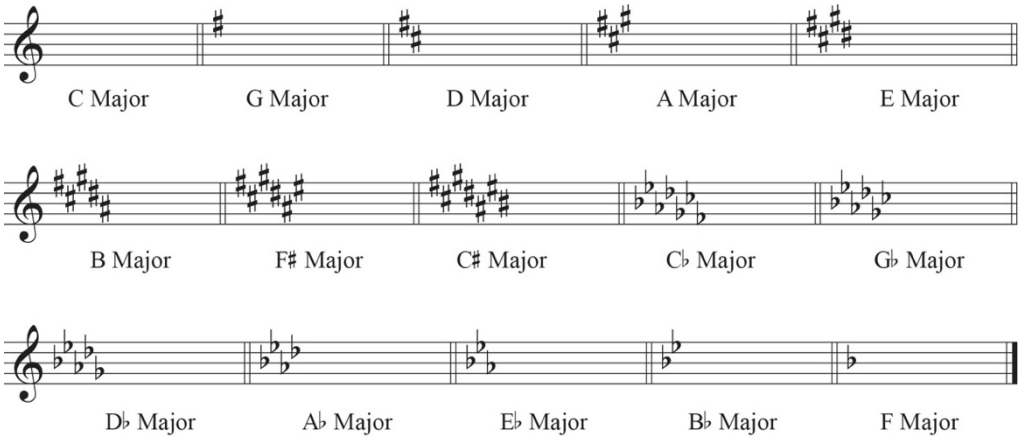
Music theory, essentially, is analysis (or descriptions) of a given piece of music. The more thoroughly we can describe what is happening in a tune, the better will be our understanding of how that tune is assembled ("composed") and, as a result, the better we will be able to perform that tune (regardless of one's instrument).

Because music is a language, there are certain rules (or principles) that it tends to follow in order for it to make sense... just like grammar. Because different languages follow different grammatical rules, so to do different musical styles. A thorough analysis of a given tune requires knowledge of such rules.

Music is also an artform; a type of personal expression delivered by the composer. The way we describe music is a representation of our hearing and can, therefore, be subjective. There are certain aspects of our analysis, however, that are unquestionable and, as a result, objective. For instance, what chords does it include? What is the meter/time signature? Or what key is it in? It is with these aspects that we will begin our discussions.

The 15 Major Keys, Their Chords (Triads) & Functions

Knowing your key signatures is something that will help many of you (especially melody and harmony players) more than anything else that we will discuss. It is for this reason that we are starting with them.



Sharp Keys	Flat Keys
C Major: C—D—E—F—G—A—B—C	F Major: F—G—A—B♭—C—D—E—F
G Major: G—A—B—C—D—E—F♯—G	B♭ Major: B♭—C—D—E♭—F—G—A—B♭
D Major: D—E—F♯—G—A—B—C♯—D	E♭ Major: E♭—F—G—A♭—B♭—C—D—E♭
A Major: A—B—C♯—D—E—F♯—G♯—A	A♭ Major: A♭—B♭—C—D♭—E♭—F—G—A♭
E Major: E—F♯—G♯—A—B—C♯—D♯—E	D♭ Major: D♭—E♭—F—G♭—A♭—B♭—C—D♭
B Major: B—C♯—D♯—E—F♯—G♯—A♯—B	G♭ Major: G♭—A♭—B♭—C♭—D♭—E♭—F—G♭
F♯ Major: F♯—G♯—A♯—B—C♯—D♯—E♯—F♯	C♭ Major: C♭—D♭—E♭—F♭—G♭—A♭—B♭—C♭
C♯ Major: C♯—D♯—E♯—F♯—G♯—A♯—B♯—C♯	

Note: There's no way around it... You simply have to memorize these!!

In many cases, it is the notes of these scales that provide the melodies that we know. This means that, if you know what key a given tune is in, you will likely have an easier time figuring out its melody (and trying to do so is a great ear training exercise!).

Ex. "Star Wars (Main Theme)" • Key: B♭ Major (B♭, C, D, E♭, F, G, A, B♭)

Triads & Their Qualities

Chords are formed by stacking notes. Though any type of stacking is possible, the most common manner of stacking is by THIRD. This means that if you want to stack a third above the note C, you stack the note E on top of it (C—[skip over D]—E). The note that is in the lowest position—meaning the note on which the chord is built—is called the ROOT.

Most of us are familiar with major and minor chords. These are TRIADS (chords with 3 different notes in them) that are constructed by stacking 2 thirds above a root. For instance, C—[d]—E—[f]—G = {C,E,G} = C Major.

There are four different qualities of triad: major, minor, augmented, and diminished. What determines the quality of a triad is the distance between the notes involved.

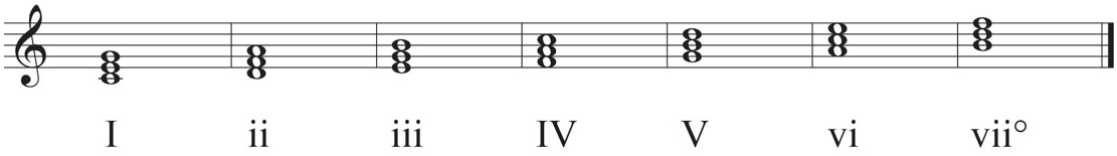
C Major =	{C,E,G}	= Maj3 + min3
C minor =	{C,E♭,G}	= min3 + Maj3
C Augmented =	{C,E,G♯}	= Maj3 + Maj3
C diminished =	{C,E♭,G♭}	= min3 + min3

Triads Within Major Keys

When stacking thirds to build triads with any of the major keys listed above, we always end up with the same succession of chord qualities (albeit with different roots).

For example, when building triads using a C major scale, we get the following chords:

C Major, D minor, E minor, F Major, G Major, A minor, B diminished



For the sake of labelling, we will use Roman numerals to represent chords in our upcoming analyses. The numeral represents the scale degree on which the chord is built (the root), and the case of the numeral represents its quality (major or minor; the degree sign beside vii differentiates it from the other lower case, minor chords).

Generally, this recurring order of chord qualities is worth committing to memory as it can help you to memorize chord progressions in different tunes.

Let's now see how understanding chords and their qualities can help to determine a song's key using the following brief analyses:

ANALYSES

"Happy Birthday" • Key: C Major (C, D, E, F, G, A, B, C)

CMaj | GMaj | GMaj | CMaj | CMaj | FMaj | CMaj GMaj | CMaj

RN Analysis: I | V | V | I | I | IV | I V | I

"From Me to You" (The Beatles) • Key: C Major (C, D, E, F, G, A, B, C)

CMaj | Amin | CMaj | GMaj | Fmaj | Amin | CMaj GMaj | CMaj

RN Analysis: I | vi | I | V | IV | vi | I V | I

"Like a Rolling Stone" (Bob Dylan) • Key: C Major (C, D, E, F, G, A, B, C)

CMaj Dmin | Emin FMaj | GMaj | GMaj

RN Analysis: I ii | iii IV | V | V

"Wish You Were Here" (Pink Floyd) • Key: G Major (G, A, B, C, D, E, F♯, G)

CMaj | DMaj | Amin | GMaj | DMaj | CMaj | Amin | GMaj

RN Analysis: IV | V | I | ii | V | IV | ii | I

"Every Breath You Take" (The Police) • Key: A♭ Major (A♭, B♭, C, D♭, E♭, F, G, A♭)

A♭Maj | Fmin | D♭Maj | E♭Maj | Fmin

RN Analysis: I | vi | IV | V | vi

"Redemption Song" (Bob Marley) • Key: G Major (G, A, B, C, D, E, F♯, G)

GMaj | Emin | CMaj | Amin

RN Analysis: I | vi | IV | ii

The preceding analyses demonstrate how a knowledge of key signatures and the chords contained within helps us to reduce the amount of guess work needed when learning chord progressions and helps us to memorize those progressions in a more efficient way.

"Ziggy Stardust" (David Bowie) • Key: G Major (G, A, B, C, D, E, F♯, G)

GMaj | Bmin | CMaj | DMaj | GMaj | Emin | AMaj |CMaj

RN Analysis: I | iii | IV | V | I | vi | II* | IV

PART 02: WHAT ORDER SHOULD CHORDS GO IN?

Last time, I compared music to grammar. Traditionally, there are principles that are followed that enable us to categorize a piece of music. One such principle describes the order in which chords should progress, one to the next.

Consider the following sentence: "Could right beer for now I really a cold go."

We can probably figure out what I'm trying to say here since we understand the language that I'm speaking. The challenge to comprehend comes from the fact that the words are presented in the wrong order; the grammatical syntax is wrong.

Regarding chord progressions, *harmonic syntax* is the order in which chords progress. In much of the music that we listen to ("western music"), for instance, moving chords by fifth is common. This means that the distance between the roots of each chord is separated by a fifth:

Ex: F up to C = F (skip over g, a, and b♭) C *or* F down to B♭ = F (skip over e, d, and c) B♭

The qualities of the chords involved will be commonly derived from whatever key they belong to. For instance, if we are in the key of F Major, all three chords (FMaj, B♭Maj, and CMaj) are all have a major quality. We know this because we remember the order of chord qualities in all major keys: I, ii, iii, IV, V, vi, vii°.

Ex: "Hey Jude" (The Beatles) • Key: F major (F, G, A, B♭, C, D, E, F)

FMaj | CMaj | CMaj | FMaj | B♭Maj | FMaj | CMaj | FMaj

RN Analysis: I | V | V | I | IV | I | V | I

The Cycle of Fifths

Any of our major scales can be expressed as a succession, or series of fifths. For instance, the following example arranges a C Major scale as a series of descending fifths:

Ex: C–D–E–F–G–A–B *becomes* C–F–B–E–A–D–G–C

Note: all of our fifths in this cycle are not the same size. While most of the notes are separated by a Perfect 5th, the distance between F and B is a Diminished 5th. This irregularity allows the cycle to remain within the single collection of notes.

Ex. "Hey Joe" (Jimi Hendrix) • Key: G Major (G, A, B, C, D, E, F♯, G)

CMaj | GMaj | DMaj | AMaj | EMaj

RN Analysis: IV | I | V | II* | VI*

Ex. "Fly Me to the Moon" (Frank Sinatra) • Key: C Major

Amin | Dmin | GMaj | CMaj | FMaj | Bdim | EMaj* | Amin

RN Analysis: vi | ii | V | I | IV | vii°...

Ex. "I Will Survive" (Gloria Gaynor) • Key: A minor

Amin | Dmin | GMaj | CMaj | FMaj | Bdim | EMaj* | Amin

RN Analysis: i | iv | VII | III | VI | ii° | V | i

Reminder: these analyses are "casual," simply for demonstrating extended fifth-related progressions.

Harmonic Function

Traditionally, chords tend to move through progressions based on their harmonic function; essentially, the *role* that a chord plays within a progression.

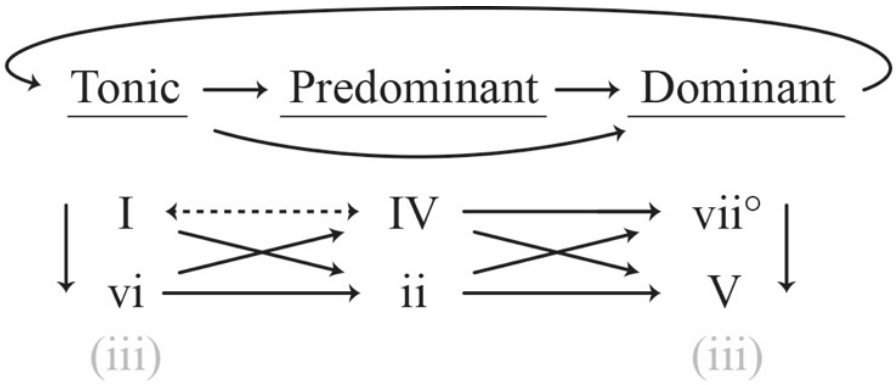
Stability vs. Instability: Much of the music that we are familiar with relies on a certain amount of tension and its resolution (stability vs. instability). The concept of stability can be perceived with individual notes once a key is established. Consider the relationship between the first note in a scale and the seventh note in a scale. Play any major scale from its beginning ($\hat{1}$) but stop on second-to-last note ($\hat{7}$). The feeling you get when stopping on $\hat{7}$ is instability that becomes stable only once $\hat{7}$ resolves to $\hat{1}$.

This sensation can also exist with chords that are within the context of a key. The level of stability or instability determines the role that a chord plays within that key and, thus, determines its harmonic function.

There are three functions, and these are categorized based on their level of stability within a key:

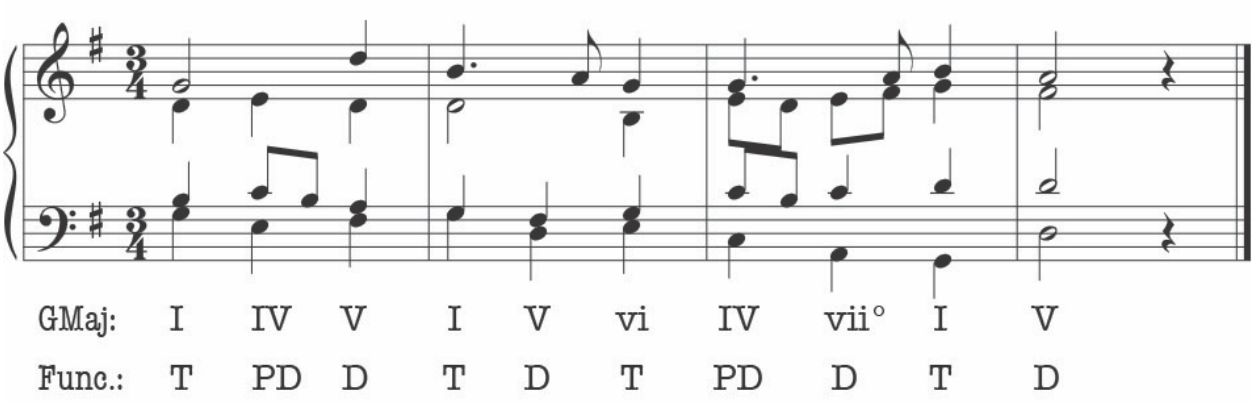
1) Tonic = most stable
2) Dominant = least stable
3) Predominant = intermediary (prepares dominant)

The following table groups the chords within a given major key into their respective functional category. The arrows show the general direction that those chords tend to move within chord progressions:



Here is a traditional example that demonstrates how chords progress from one to another according to their function. The example, adapted from one of J.S. Bach's chorales, is in G Major and labels the chords according to their Roman numeral as well as their harmonic function (T, PD, and D).

Ex. "Aus meines Herzens Grunde," mm.1-4 (adapted, J.S. Bach) • Key: G Major



ANALYSES

"Heartbreak Hotel" (Elvis Presley) • Key: E Major (E, F♯, G♯, A, B, C♯, D♯, E)

EMaj | EMaj | AMaj | BMaj

RN Analysis: I | I | IV | V

"What's Going On" (Marvin Gaye) • Key: E Major (E, F♯, G♯, A, B, C♯, D♯, E)

EMaj | C♯min | EMaj | C♯min | F♯min | BMaj

RN Analysis: I | vi | I | vi | ii | V

"The Times They Are A' Changin'" (Bob Dylan) • Key: G Major (G, A, B, C, D, E, F♯, G)

GMaj | Emin | CMaj | GMaj | GMaj | CMaj | Amin | DMaj

RN Analysis: I | vi | IV | I | I | IV | ii | V

"Good Riddance (Time of Your Life)" (Green Day) • Key: G Major (G, A, B, C, D, E, F♯, G)

GMaj | GMaj | CMaj | DMaj

RN Analysis: I | I | IV | V

"Backwards" Progressions?

Because we are focusing on popular music, we need to understand that some of the principles that are being introduced on are loose. For instance, it isn't all that uncommon to find examples of chord progressions in pop tunes that go against traditional rules of syntax.

This "breaking of the rules" should be considered a stylistic thing; one that contributes to the musical language on which we are focusing. It doesn't change the fact that being aware of what is traditional enables us to recognize that which we might consider to be "exceptions to the rule."

"Johnny Be. Goode" (Chuck Berry) • B♭ Major (B♭, C, D, E♭, F, G, A, B♭)*

B♭Maj | E♭Maj | B♭Maj | FMaj | E♭Maj | B♭Maj

RN Analysis: I | IV | I | V | IV | I

**The changes in this tune follow a traditional 12-Bar Blues progression*

"Sympathy for the Devil" (Rolling Stones) • Key: A Major (A, B, C♯, D, E, F♯, G♯, A)

EMaj | DMaj | AMaj | EMaj

RN Analysis: V | IV | I | V

"Go Your Own Way" (Fleetwood Mac) • Key: F Major (F, G, A, B♭, C, D, E, F)

FMaj | CMaj | B♭Maj | FMaj

RN Analysis: I | V | IV | I

"Sweet Child O' Mine" (Guns n' Roses) • Key: G Major (G, A, B, C, D, E, F♯, G)

DMaj | CMaj | GMaj | DMaj

RN Analysis: V | IV | I | V

PART 03: Minor Keys & Scales

The most common differentiator when comparing major and minor is "happy" vs. "sad." When a composer wants to write a happy song then, instinctually, he/she would more often than not choose a major key. Alternatively, minor keys evoke sad feelings, and so a sad-sounding song will, more often than not, be composed in a minor key. Of course, sentiments such as these are subjective and, also, contextual (major doesn't always sound happy and minor doesn't always sound sad).

We have already been introduced to the 15 major keys and their corresponding key signatures. When dealing with minor keys, we don't have memorize a whole new set of key signatures. Instead, we just need to find the 6th note of our major scales.

Each of our major keys has what is referred to as its "relative minor." The relationship between a major scale and its relative minor is that both scales use the exact same notes. The difference is that, in the case of minor keys, the related major scale is reordered to start from its 6th note. Thus,

C Major (C, D, E, F, G, A, B, C) rotates to become A minor (A, B, C, D, E, F, G, A)

A simple progression of the two tonic chords of a major and its relative minor is not uncommon in pop music progressions. Consider, for instance:

"Hallelujah," verse (Leonard Cohen) • Key: C Major (C, D, E, F, G, A, B, C)

CMaj | Amin | CMaj | Amin...

RN Analysis: I | vi | III | vi...

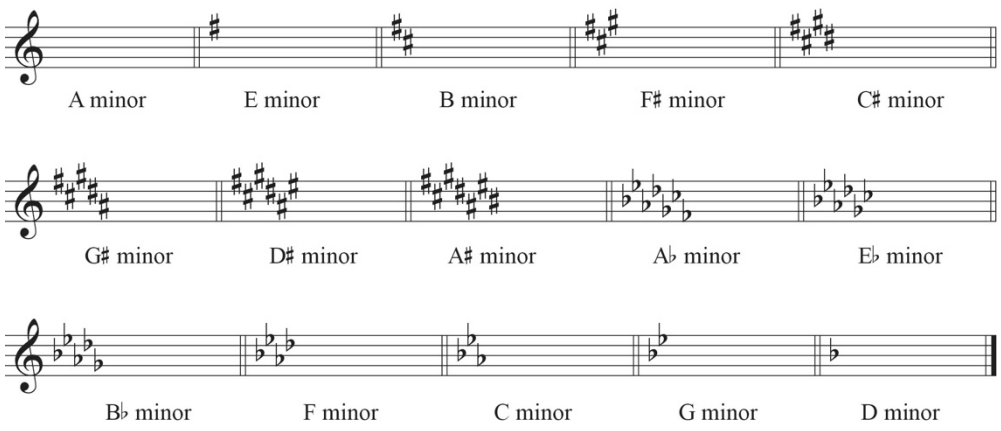
"Dust in the Wind," introduction (Kansas) • Key: A minor (A, B, C, D, E, F, G, A)

CMaj | CMaj | Amin | Amin

RN Analysis: III | III | i | i

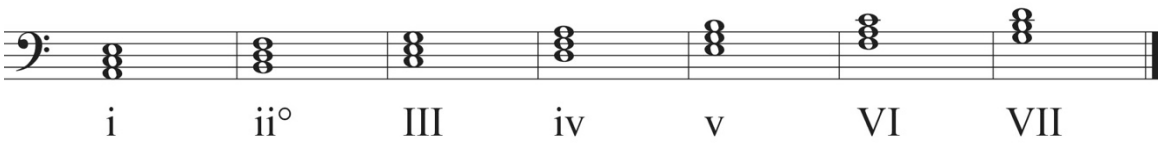
The collection of notes in this case remains unchanged and is referred to as the **Natural Minor scale**. However, what is important to realize is that we have a new tonic (the first note of the scale = tonic = $\hat{1}$) and, thus, a new point of stability.

The 15 Relative minor Keys & Their Chords (Triads)



Sharp Keys	Flat Keys
A minor: A–B–C–D–E–F–G–A	D minor: D–E–F–G–A–B♭–C–D
E minor: E–F♯–G–A–B–C–D–E	G minor: G–A–B♭–C–D–E♭–F–G
B minor: B–C♯–D–E–F♯–G–A–B	C minor: C–D–E♭–F–G–A♭–B♭–C
F♯ minor: F♯–G♯–A–B–C♯–D–E–F♯	F minor: F–G–A♭–B♭–C–D♭–E♭–F
C♯ minor: C♯–D♯–E–F♯–G♯–A–B–C♯	B♭ minor: B♭–C–D♭–E♭–F–G♭–A♭–B♭
G♯ minor: G♯–A♯–B–C♯–D♯–E–F♯–G♯	E♭ minor: E♭–F–G♭–A♭–B♭–C♭–D♭–E♭
D♯ minor: D♯–E♯–F♯–G♯–A♯–B–C♯–D♯	A♭ minor: A♭–B♭–C♭–D♭–E♭–F♭–G♭–A♭
A♯ minor: A♯–B♯–C♯–D♯–E♯–F♯–G♯–A♯	

Just as the notes in our major scales get reordered to create their relative minor scales, so do the corresponding chord qualities get reordered. As a result, when stacking the notes from an A minor scale to build triads, the following order of qualities results:



The Different Forms of minor: Natural, Harmonic & Melodic

Previously, we discussed the idea of stability and instability in music, tension and its resolution. One major contributor to this sensation, both in terms of melody as well as harmony, is the leading tone (the 7th note in our major scales, $\hat{7}$). In regard to melody, we observed how $\hat{7}$ very strongly pushes our ears towards the tonic ($\hat{1}$). In terms of harmony, $\hat{7}$ is a characteristic member of both of our Dominant-functioning chords: V and vii°.

Arguably, the idea of tension and resolution is not as strong in our relative minor keys simply based on the fact that there is no leading tone in these scales, i.e., $\hat{7}$ is a whole step below the tonic as opposed to a half step.

As a result of this distinction, there is more than one form of the minor scale. A second version of the minor scale, as opposed to the **Natural minor** form, raises $\hat{7}$ by a half step. The reason for this alteration is give the minor scale a leading and, in turn, increase the amount of tension and resolution in minor keys. This form of minor is referred to as the **Harmonic minor scale**.

A natural minor = A, B, C, D, E, F, G, A
A harmonic minor = A, B, C, D, E, F, G♯, A

Melodically speaking, the Harmonic minor scale presents an irregularity: as a result of the raised $\hat{7}$, the distance (interval) between $\hat{6}$ & $\hat{7}$ (in this case, F up to G♯) is three semitones, or a tone and a half. The resulting interval, known as an *augmented second*, produces a sound that is not characteristic of traditional musical styles and is awkward to sing. For these reasons, the augmented second was considered "illegal" in traditional, Western music practices.

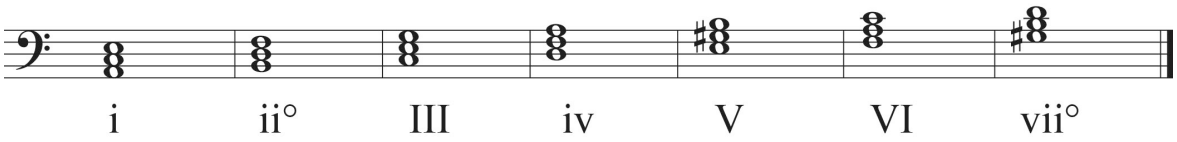
To deal with this, a second alteration was made by raising $\hat{6}$ to create the **Melodic minor scale**. The motivation for this scale is melody (as opposed to the Harmonic minor's alteration that is more so motivated by harmony). More specifically in cases where a

melody climbs from $\hat{5}$ up to $\hat{1}$, where we would want the melodic push from raised $\hat{7}$ to $\hat{1}$ but would also want to avoid the augmented second. However, when moving melodically down from 1, the melodic push is not needed. As a result, the Melodic minor scale becomes slightly more complicated by using a different version of the scale when descending.

A melodic minor (asc) = A, B, C, D, E, F♯, G♯, A
A melodic minor (desc) = A, G, F, E, D, C, B, A (same as nat. minor)

Note: alterations such as those found in the Harmonic and Melodic minor scales do not affect the key signatures.

It's worth keeping in mind that alterations made within the melodic forms of the scale can have an impact on the chords formed from stacking these notes. For instance, consider how the chord qualities in minor differ between the Natural minor form of the scale and the Harmonic minor.



Minor in Pop Music (and What You Should Remember)

In many instances, minor-mode tunes in popular music make use of the Natural minor form of the scale (avoid the raised leading tone). So, familiarity between major keys and their relative, specifically Natural minor forms is handy.

This suggests that a basic reordering of any major scale can change the mode, or "feel", of that scale. Consider these melodic examples from popular tunes, shown as simple scale-degree patterns, and then imagine them with raised leading tones:

Ex. Led Zeppelin, "Stairway to Heaven," end (key: A minor): $\hat{1}$–$\hat{1}$–$\hat{2}$–$\hat{3}$–$\hat{2}$–$\hat{1}$–$\hat{7}$–$\hat{1}$, …
Ex. Stevie Nicks, "Edge of Seventeen" (key: D minor): $\hat{1}$–$\hat{3}$–$\hat{4}$–$\hat{4}$–$\hat{5}$–$\hat{1}$, $\hat{1}$–$\hat{7}$–$\hat{1}$–$\hat{1}$–$\hat{1}$–$\hat{3}$–$\hat{1}$…
Ex. Nirvana, "Smells Like Teen Spirit" (key: F minor): $\hat{5}$–$\hat{7}$–$\hat{1}$–$\hat{3}$, $\hat{1}$–$\hat{7}$–$\hat{6}$–$\hat{5}$, …

When it comes to chord progressions in minor keys, pop tunes tend to use a mixed balance of Natural and Harmonic minor forms. What is worth pointing out, however, is that the raised leading tone tends to present itself in V chords, while the unraised $\hat{7}$ is more often used as the root of the VII chord. An example that uses both is "California Dreamin'":

"California Dreamin'" (The Mamas & the Papas) • Key: C♯ minor (C♯, D♯, E, F♯, G♯, A, B, C♯)

C♯min BMaj | AMaj BMaj | G♯Maj |

RN Analysis: i VII | VI VII | V |

ANALYSES

The following analyses present examples from pop music that use minor keys, with and without the raised leading tone. The first few present the variations on the same progression i–VII–VI (as was seen in "California Dreamin'"): Stairway to Heaven, All Along the Watchtower, Layla (Unplugged), Gimmie Shelter... then include Comfortably Numb, London Calling, Hotel California

"All Along the Watchtower" (Bob Dylan) • Key: C♯ minor (C♯, D♯, E, F♯, G♯, A, B, C♯)

C♯min BMaj | AMaj BMaj | C♯min BMaj | AMaj BMaj

RN Analysis: i VII | VI VII | i VII | VI VII

"Layla" (Derek & the Dominos/Eric Clapton) • Key: D minor (D, E, F, G, A, B♭, C, D)

Dmin B♭Maj | CMaj Dmin | Dmin B♭Maj | CMaj Dmin

RN Analysis: i VI | VII i | i VI | VII i

"Stairway to Heaven," end (Led Zeppelin) • Key: A minor (A, B, C, D, E, F, G, A)

Amin GMaj | FMaj | Amin GMaj | FMaj

RN Analysis: i VII | VI | i VII | VI

"Comfortably Numb," verse (Pink Floyd) • Key: B minor (B, C♯, D, E, F♯, G, A, B)

Bmin | AMaj | GMaj Emin | Bmin

RN Analysis: i | VII | VI iv | i

"London Calling," chorus (The Clash) • Key: E minor (E, F♯, G, A, B, C, D, E)

Emin | GMaj | Emin | GMaj | Emin | GMaj | Emin | DMaj | DMaj

RN Analysis: i | III | i | III | i | III | i | VII | VII

<u>Here are a couple of examples that use the proper V chord (raised leading tone)</u>:

"House of the Rising Sun" (The Animals) • Key: A minor (A, B, C, D, E, F, G)

Amin | CMaj | DMaj* | FMaj | Amin | CMaj | EMaj | EMaj

RN Analysis: i | III | IV* | VI | i | III | V | V

"Hotel California" (The Eagles) • Key: B minor (B, C♯, D, E, F♯, G, A, B)

Bmin | F♯Maj | AMaj | EMaj* | GMaj | DMaj | Emin | F♯Maj

RN Analysis: i | V | VII | IV* | VI | III | iv | V

PART 04: CADENCES

We've already compared music to language and noted how some of the principles that define it have similarities in English grammar. Keeping with this comparison, let us discuss and define the role of cadence.

Most basically, a cadence in music can be considered a type of punctuation, such as a period, a comma, or a semi-colon. In this regard, cadences provide different levels of closure within a musical phrase and these, in turn, contribute to the musical structure of an entire piece.

Traditionally, there are different types of cadences, though we will only focus on four, the first and fourth being the most common:

1. **Authentic Cadence [AC]: a musical phrase that ends with a V—›I chord progression**
2. **Deceptive Cadence [DC]: a musical phrase that ends with a V—›vi chord progression***
3. **Plagal Cadence [PC]: a musical phrase that ends with a IV—›I chord progression**
4. **Half Cadence [HC]: a musical phrase that ends with a V chord**

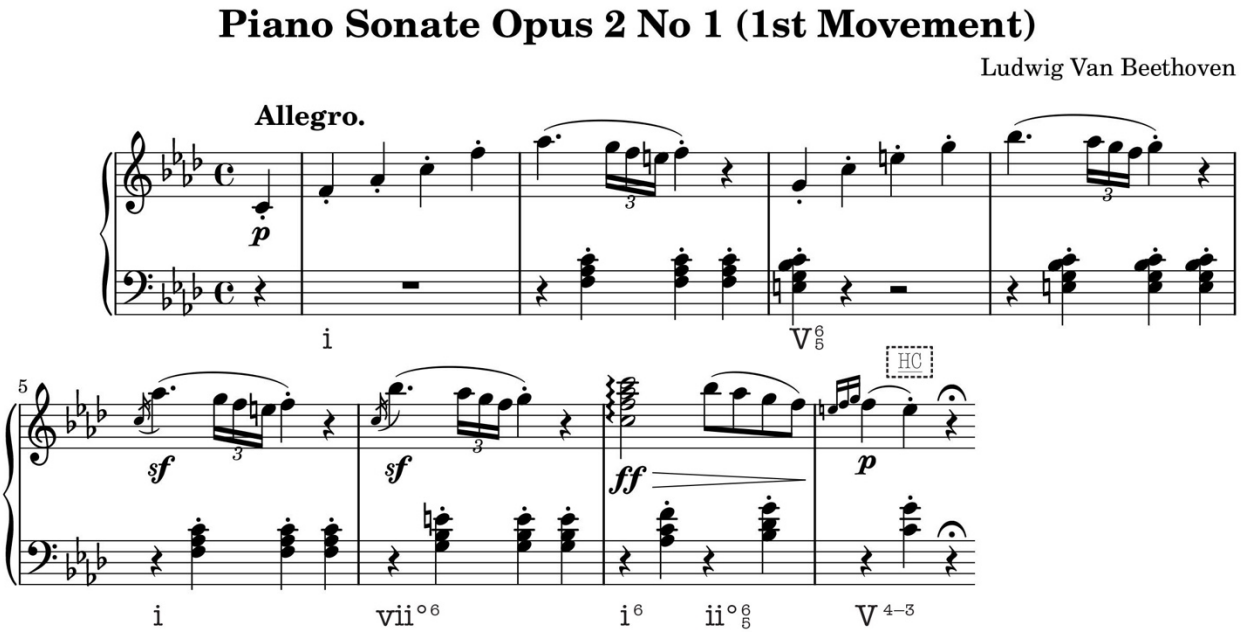
** Actually, the [DC] is a musical phrase that ends with the V chord, which is expected to be followed by I, but which is followed by anything else (thus "deceiving" the listener). But V—›vi is the most common deception.*

The order in which these are listed represents the hierarchical ranking of the different types in terms of their degree of closure; at least as far as the first and fourth are concerned. For instance, an [AC] sounds more closed than a [HC]. (In fact, the [AC] is the cadence that provides the greatest amount of closure.) Alternatively, a [HC] leaves a musical phrase feeling incomplete and needing to go on. As a result, we might compare a [HC] to a comma in English writing, whereas an [AC] is closer to a period.

We can see in the descriptions above that cadences are defined by harmony, and that each cadence type has a chord progression associated with it. Of course, as is noted, these chord progressions must also correspond with phrase endings, i.e., we wouldn't consider any nor every V—›I progression an [AC].

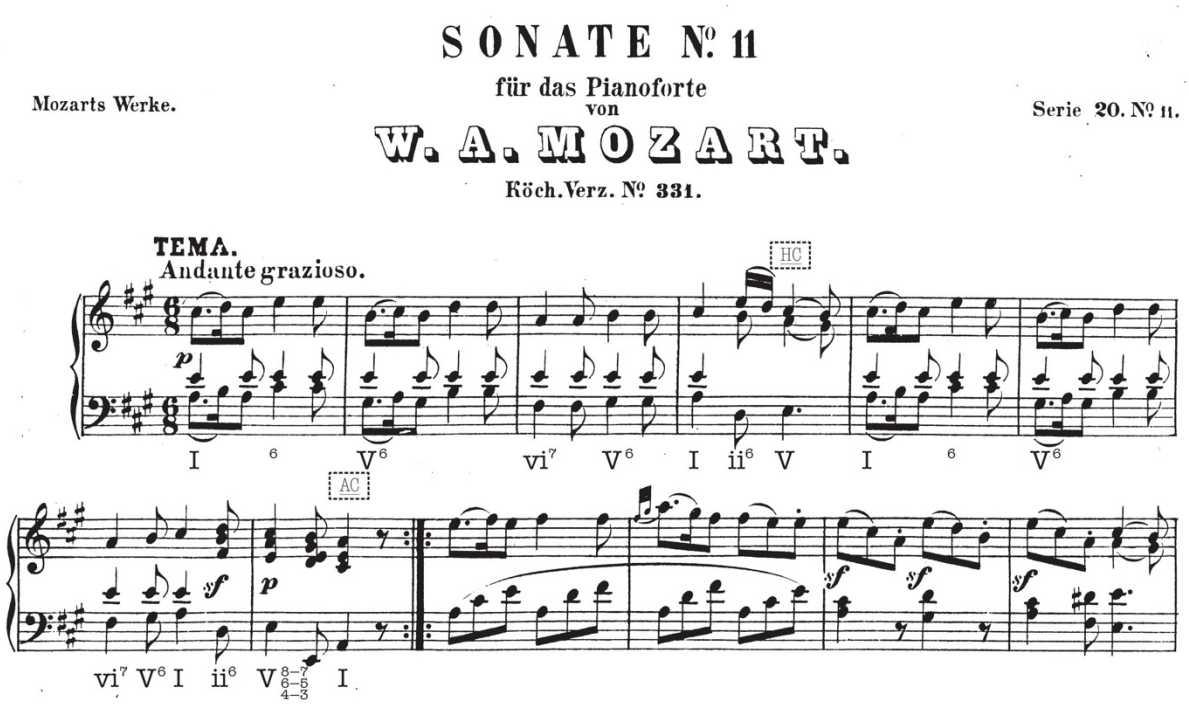
That said, both rhythm and melody also contribute to a sense of closure within a musical phrase and are, therefore, characteristic parts of cadences. In so far as rhythm is concerned, we often get a sense of "slowing down," or pausing at cadences. This could mean that, even if the actual pulse is not slowing down, we might sit on a final chord longer than we did the previous so as to provide emphasis on that chord.

The following example provides a musical phrase in the key of F minor. The phrase's structure is symmetrical in that these opening 8 measures can be heard as 4+4 measures (note how things begin to change in m.4, creating a dividing point). In the eighth measure, Beethoven ends on a V chord, creating a [HC]. The arrival on this chord, as well as the emphasis of the ending of the phrase is reinforced in the performance by a slight slowing down at the end.



Regarding melody, individual scale degrees certainly contribute to the sense of closure. We have already discussed how singing a major scale up to $\hat{7}$ (tension) results in a need to push to $\hat{1}$ (resolution). This sensation is achieved without the need for any underlying chords, such as V—›I.

In terms of cadences, there are actually two types of [AC], and these are distinguished by the melody. The "Perfect" Authentic Cadence [PAC] occurs when a phrase ends on V—›I in the harmony but the I chord also supports $\hat{1}$ in the melody. The "Imperfect" Authentic Cadence [IAC] uses the same chord progression but the final chord has $\hat{3}$ (or sometimes $\hat{5}$) is in the melody. As a result of this difference, the [PAC] sounds more closed than the [IAC].



The preceding example from Mozart also features a symmetrical, 4+4-measure phrase structure. This example, however, has a cadence at the midpoint as well as at the end. In cases such as this, it is common for the final cadence to be "stronger" than the internal cadence. Further, it's worth noting how the final [AC] is "perfect" since the melody concludes with $\hat{1}$ in the melody.

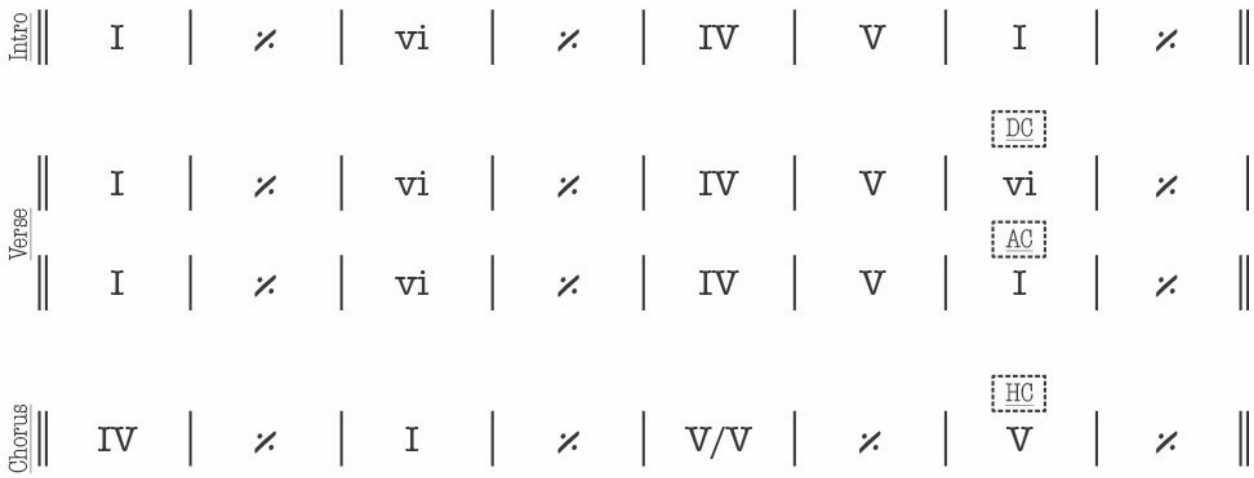
Cadences in Pop Music

Cadences tend to be less prominent in popular music or, at least, less strict. This is, perhaps, a result of a lowered need for traditional closure. For instance, it's not uncommon for recordings of pop tunes to end with a fade (the song's ending just repeats over and over while the recording fades out to silence). Deviations from traditional principles are often the result of stylistic considerations that come from the musical genre, e.g., rock n' roll. But they still exist and are worth being aware, especially when attempting to memorize a song.

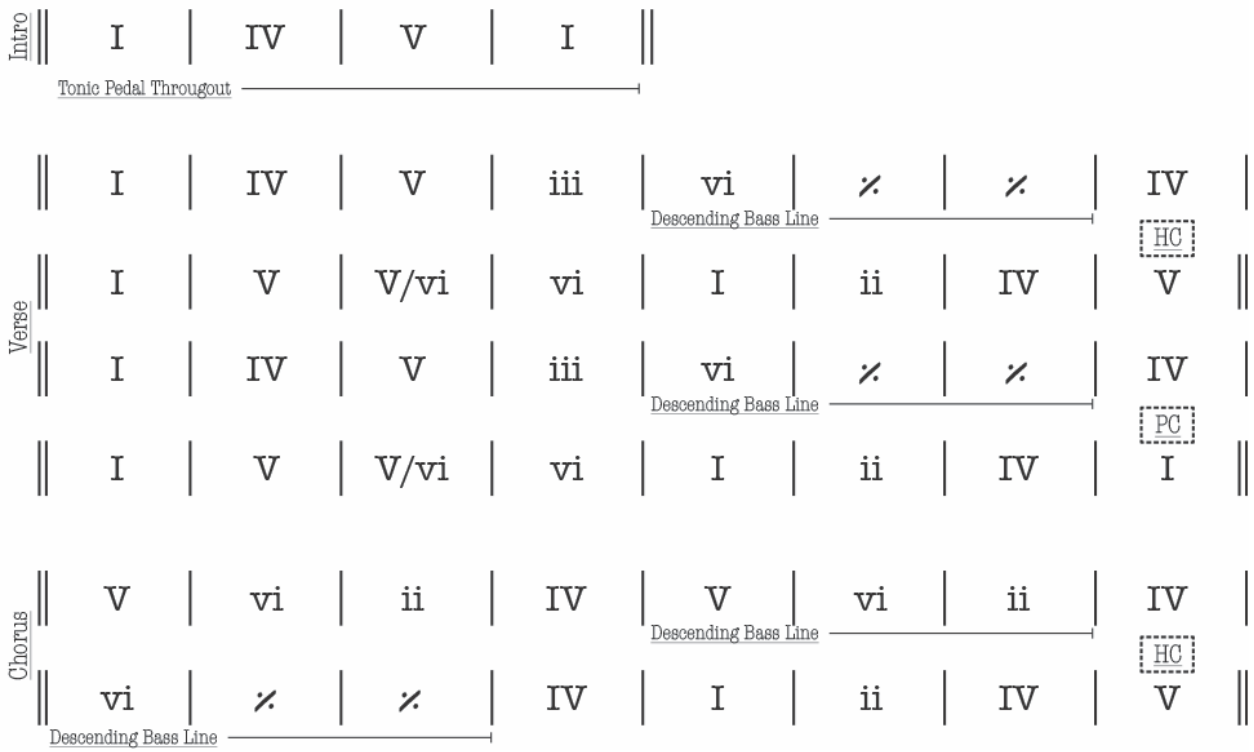
ANALYSES

"House of the Rising Sun" (The Animals): Key A minor (A, B, C, D, E, F, G, A)

"Every Breath You Take" (The Police): Key A♭ Major (A♭, B♭, C, D♭, E♭, F, G, A♭)



"Your Song" (Elton John): Key E♭ Major (E♭, F, G, A♭, B♭, C, D, E♭)



PART 05: Song Structure Basics

When we listen to, or play, music—especially as musicians—our comprehension of a piece is often determined by its structure or form. More specifically, a lot of the music that we are exposed to is structured in a particular way so that our expectations are realized largely by how a song is organized into parts.

When a song is placed within a particular genre of music (e.g., rock n roll, blues, jazz), it often brings with it certain characteristics that allow listeners of such genres, at least experienced ones, to expect things to happen during the listening experience. When this expectation is fulfilled, we often enjoy the listening experience more than if we are constantly in a state of unknown ("here comes the chorus" versus "I have no idea what is going to happen next").

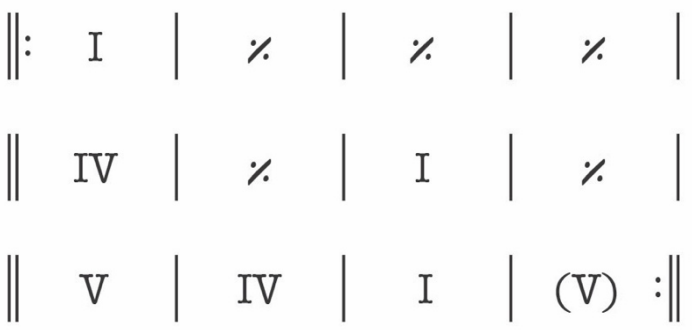
As listeners, we are often comforted by our ability to expect certain things to happen and to have those expectations realized. Our level of expectation and of comfort comes from the extent to which we have exposed ourselves to a particular genre. A comparison would be when I watch a movie for the first time with my 11yr old son and am able to tell him with relative confidence "don't worry, son, he won't die—he's the star of the movie!" I can say this because we are watching a movie in which certain expectations can be made based on the movie's genre and the style on which it is based (a "Hollywood" movie, for instance), and because I have seen many movies that are "structured" similarly.

Knowing how a song is structured is part of the memorization process when we are trying to learn how to play a song. More than just "what is the melody" and "what are the chords," we should be thinking about the song's sections. If we know these, and how they are organized, then we can often answer the questions about melody and chords a little more easily. This is because we can more specifically ask "how does the melody go *in the verse?"* or "what is the chord progression *of the chorus?"*

For many of us, because of our level of exposure to the rock n roll genre, common song structures are relatively familiar. However, we should not diminish its significance by skipping over them as a topic. Nor should we take them for granted. Even though we might expect something to happen, there's always a chance that it may not. Therefore, recognizing this may mean that an exception to the norm is underway; something that is perhaps characteristic of the song in question and, as a result, helps us to memorize the song more easily.

12-Bar Blues

Because we would not have rock n roll without the blues, we will begin with what is known as the "12-Bar Blues" form:



This form is based on a repeating 12-bar chord progression, that which is diagrammed above. The understanding is that this progression can be played in any key (major or minor), commonly using the chord qualities associated with that key. Often times, songs that use the 12-Bar Blues form simply repeat the progression over and over. One of the characteristic features of this progression is the shift to the IV chord in measure 5.

Listening Examples:

1. "Pony Blues," Charlie Patton (1929), key: F Major
2. "Crossroad Blues," Robert Johnson (1936), key: B♭ Major
3. "Johnny B. Goode," Chuck Berry (1958), key: B♭ Major
4. "Tush," ZZ Top (1975), key: G Major

AABA Form

This form is used in many styles of music, from classical to jazz to pop, and is similar to what we hear in a lot of music today. It's based on sections that repeat and is less defined by characteristics of each section, such as what chords are used. In other words, we identify a particular section (A) that repeats (A). The repetition is often exact, with the exception of the lyrics. We then get a contrasting section (B), followed by a return to the opening material (A). One thing to note is how these sections are traditionally matching in length (commonly 8 measures each, and so AABA is sometimes referred to as "32-bar form"). From this, we get the term "the middle 8" that is used to describe the contrasting middle section, since it is 8 measures long.

A (8 measures)	A (8 measures)	B (8 measures)	A (8 measures)

Listening Examples:

1. "Take the A Train," Duke Ellington (1939)
2. "Blueberry Hill," Fats Domino (1940)
3. "From Me to You," The Beatles (1964)

"Block Form" (Variations of AABA)

Depending on how strict we are with our expectations in AABA form, it is possible to use this structure as a guide to many popular songs. Consider, for instance, "I Want to Hold Your Hand" (The Beatles, 1963):

"Oh yeah, I'll tell you somethin'..." A (12 measures)	"Oh please, say to me..." A (12 measures)	"And when I touch you I feel happy..." B (11 measures)	"Yeah you, got that somethin'..." A (12 measures)

Variations such as these are very common, but the AABA structure provides pillars through the listening and playing experience and help us to understand how a song is constructed.

Of course, in the case of "I Want to Hold Your Hand," some may hear the A section as an 8-measure verse followed by a 4-measure chorus. This is subjective, and as long as general repetitions are observed then an overall understanding of the song should be achieved.*

**Personally, I feel that the "I want to hold your hand" repeated line sounds like a closing to the verse instead of a pickup to a new part, which is more characteristic of choruses.*

Let's now consider the song "Every Little Thing She Does is Magic" (1981) by The Police.

"Though I've tried before to tell her..." "Every little thing she does is magic..."	"Do I have to tell the story..." "Every little thing she does is magic..."	"I resolved to call her up..."	"Every little thing she does is magic..."
A	A	B	A'

Can we hear this song as a variation of the AABA form? If yes, then we are grouping what some would likely consider the verse and chorus together into a single A section. Furthermore, the final A section is truncated to only include the second part (chorus) of the initial two A sections (thus labeled as A' to represent that the final A is altered in some way).

"Block Form" (Verse/Chorus/Bridge)

Loosening up how we hear these sections shows us how we might have arrived at the often-used Verse/Chorus/Bridge song structure that is found so often in popular music. In such cases, it's common to find the verse and chorus presented twice each before the bridge. The bridge (which functions as a contrasting middle section) then leads into a final chorus:

Verse	Chorus	Verse	Chorus	Bridge	Chorus

Consider, for instance, "Hurts So Good" (1982) by John Cougar Mellencamp:

"When I was a young boy..."	"Hurts so good..."	"Don't have to be so exciting..."	"Hurts so good..."	"I ain't talkin' no big deals..."	"Hurts so good..."
Verse	Chorus	Verse	Chorus	Bridge	Chorus

As we get to this type of song structure, our hearing may be guided less by the individual length of each section (number of measures) and more simply by the different parts. The point is that when considering form in songs, recognizing repetition is key. Variations will present themselves, but rarely to the extent in which nothing is repeated. Consider "I Love Rock n Roll" (1982) as performed by Joan Jett & the Blackhearts:

"I saw him dancin' there by the..."	"Me, yeah me..."	"I love rock n roll..."
Verse	Pre-Chorus	Chorus

This song presents a three-part structure: verse/pre-chorus/chorus. This three-part structure repeats into a second verse/pre-chorus/chorus, but the song does not include a bridge.

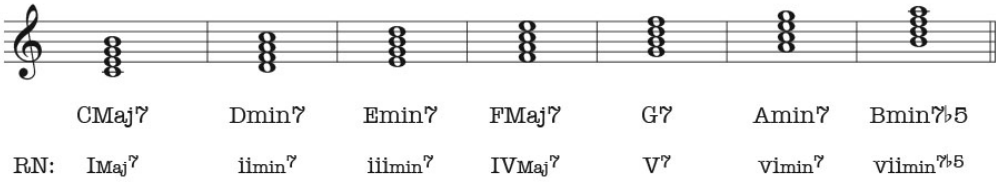
The more you consider form in the songs you listen to, the more similarities you will find. But you will also more easily recognize the variations. For instance, it's common for the final chorus to be doubled (repeated). Or it's common for a song to have an instrumental break, such as a guitar solo (though these breaks are commonly played over existing parts of the song, such as the verse music).

The goal is to recognize the returning sections as a way of organizing our hearing. This recognition will help a great deal when attempting to memorize tunes (even tunes that are less familiar). By learning "parts" or sections instead of individual notes and chords, we allow ourselves to reduce the general amount of material that needs to be internalized, and the more we do it the easier it gets.

PART 06: Seventh Chords, Slash Chords, & Voice Leading

Though a lot of popular music primarily uses triads (specifically major and minor ones), it's not uncommon to come across harmonies that make use of "upper extensions" (notes beyond the fifth) or some sorts of alteration.

Remember how triads are built by stacking thirds, and that each triad consists of a root, a third and a fifth? Well, it's possible to continue stacking notes by third to add a seventh, a 9th, an 11th, or even a 13th. Additions such as these can create a more varied (and often thicker) harmonic texture. The first example shows the **seventh chords** that result from adding one more third to our basic triads in the key of C Major, with the corresponding Roman numerals added underneath. In each case, the added note creates a seventh above the root so that each chord now has a root, a third, a fifth and a seventh.



The qualities of these chords follow from those described previously: major, minor, minor, major, major, minor and diminished (recall Meeting 01). This means that seventh chords can be grouped together within a key based on their qualities, just as triads can be. Further, when learning a tune that uses seventh chords it is possible to play the structural, or "base" triad without spoiling the harmonic feel of the song. For instance, the following progression could be played either way:

| CMaj7 | FMaj7#11 | G13 | Amin9 |

| CMaj | FMaj | GMaj | Amin |

What this means is that, if playing an accompanimental role, both versions of the chord progression could support the same melody. The difference between these two versions is that the bottom version has less "spice," but the chord progression remains intact, nonetheless. Understanding this should help to navigate through progressions that might look a little more complicated.

Dominant 7th Chords and "Tonicization"

The seventh chord that is most frequently encountered in popular music is the one that is known as the **Dominant 7th chord**. On lead sheets and chord charts, this would be represented by the addition of a "7" after the chord, e.g., G7 (as opposed to G*Maj7* or G*min7*). This chord type is special within the context of a key since its quality is unique.

More specifically, there are two "Maj7" chords and three "min7" chords in each of our 15 major keys, but only one "7" chord.[1]

The way that Dominant 7th chords tend to function in a chord progression is as a "V of something," with that *something* most often being the chord that follows.

Consider the song "Hey Jude" (The Beatles). The song is in the key of F Major, and we previously described how its verse uses a chord progression that adheres to functional harmonic syntax (Tonic —› Pre-Dominant —› Dominant; recall Meeting 02). At this point, we were restricting ourselves to triads. It should be observed from our previous discussion how the song works fine using only triads. However, the actual song uses the dominant 7th chord in the key of F Major, and so the V chord shown previously is actually V7 (C7).

Ex: "Hey Jude," Verse 01 (The Beatles) • Key: F major (F, G, A, B♭, C, D, E, F)

FMaj | **C7** | **C7** | FMaj | B♭Maj | FMaj | **C7** | FMaj

RN Analysis: I | **V7** | **V7** | I | IV | I | **V7** | I

At the end of the second verse, there is an extra measure added containing an F7 chord. Because we know that, in the key of F Major, the seventh chord that is built on F would be FMaj7 (remember how the quality of the I chord is Maj7?), and not an F7, then it would be incorrect to analyze this chord as "I7". Further, we need to understand that this chord contains at least one note that is not in the home key of F Major. This, therefore, raises the question "what the heck is an F7 chord doing in the key of F Major?"

The answer comes when we start the bridge, which begins with the chord B♭Maj. We know from our key signatures that F is $\hat{5}$ in the key of B♭ Major and, therefore, F7 is functioning as a V7 of B♭Maj. The chord B♭Maj is IV in the song's home key of F Major. Thus, F7 is functioning as a "V7 of IV" (labeled as V7/IV in the analysis). Of course, the song would sound fine with just an FMaj triad in that extra measure at the end of Verse 02, but the pull towards B♭Maj would not be as strong.

Ex: "Hey Jude," Verse 02 (The Beatles) • Key: F major (F, G, A, B♭, C, D, E, F)

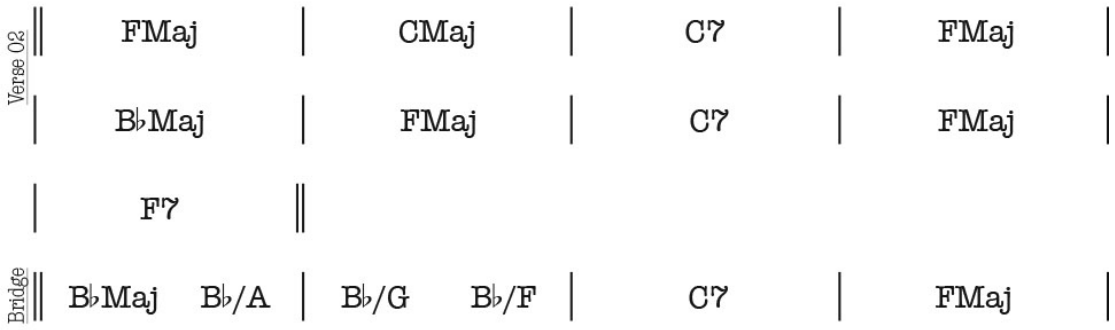
FMaj | C7 | C7 | FMaj | B♭Maj | FMaj | C7 | FMaj | **F7**

RN Analysis: I | V7 | V7 | I | IV | I | V7 | I | **V7/IV**

The theoretical term for this type of harmonic event is **tonicization**, e.g., "F7 is *tonicizing* B♭." This means that F7 is functioning to make B♭ sound like a new tonic, albeit a temporary one. Because it's temporary, tonicization differs from modulation, which means to change from one key to another. The bridge of "Hey Jude" does not fully modulate to the key of B♭ Major since it returns to F as goal soon after (as shown in the example below). However, B♭Maj becomes the temporary focus that kicks off the bridge, and this focus is achieved, at least partially, by the push from B♭'s dominant, F7.

[1] Of course, there is also only one min7♭5 chord. However, the diminished quality (or, in this case, half-diminished) is less-often used and rarely functions as a structural part of a chord progression.

"Hey Jude" (The Beatles): Key F Major (F, G, A, B♭, C, D, E, F)



In sum, Dominant 7th chords are most often used to tonicize whichever chord comes next by functioning as its V chord.

Slash Chords & Inversions

Slash chords are relatively simple to understand. However, it's possible that they result in a little confusion if one is not accustomed to them or does not know what they are.

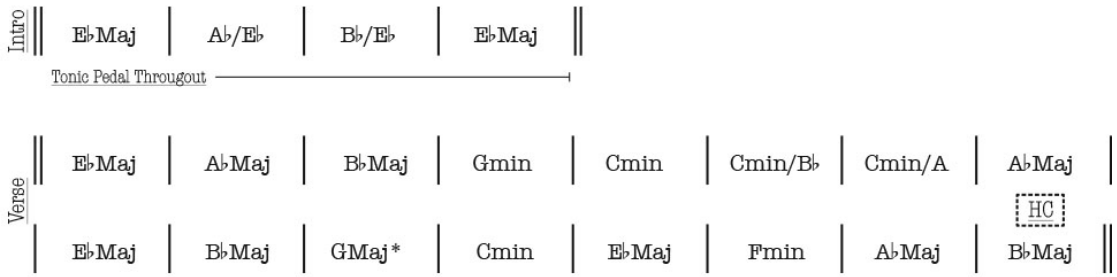
Basically, a slash chord is a chord that has a specified bass note other than the root. Often times this bass note is one of the other chord tones, such as the third or fifth, resulting in an **inversion** of the chord. For example, if we see "C/E", this usually means "play a CMaj chord but put the note E in the lowest position." In a guitar-and-bass scenario, for instance, it would be the bass player who plays E, while the guitarist could simply play CMaj. However, if that guitarist is playing alone, then he/she may choose to voice their CMaj chord in such a way that has the note E as the lowest sounding note since this bass note is likely a characteristic of the particular song. In either case, because E is part of the CMaj chord (the third), the result would be an inversion of the chord. It is possible, however, to come across slash chord that specify bass notes that are not part of the chord, such as in the bridge for "Hey Jude."

The first two bars of the bridge contain a IV chord (B♭Maj), which leads to V7 followed by I in the key of F Major. However, the IV chord is embellished by a descending bass line that begins on the chord's root (B♭) and moves down the scale to $\hat{1}$ (B♭—›A—›G—›F). This bass line adds motion to the progression though the basic, underlying chord of B♭Maj alone does not conflict with the song's vocal melody.

Another example of slash chords was observed in Elton John's "Your Song." For instance, the song begins with a tonic pedal (an extended passage during which the tonic note is sustained in the bass while the chords change above it). Once the verse proper begins, there is a descending bass line that is characteristic of the tune starting in measure 5, where the root of the vi chord (Cmin) descends to the IV chord (A♭Maj). In this case, as opposed to "Hey Jude," there is a *chromatic* note (a note that is not part of the home key) added: A. This helps to increase the push towards the goal of the line, which is A♭.

Note: The GMaj chord in measure 11 is tonicizing the following Cmin chord by functioning as its V chord.

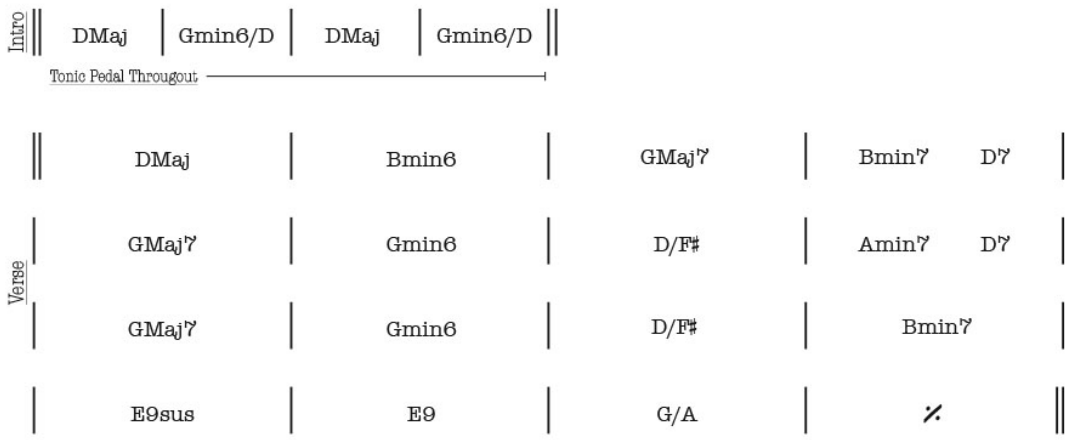
"Your Song" (Elton John): Key E♭ Major (E♭, F, G, A♭, B♭, C, D, E♭)



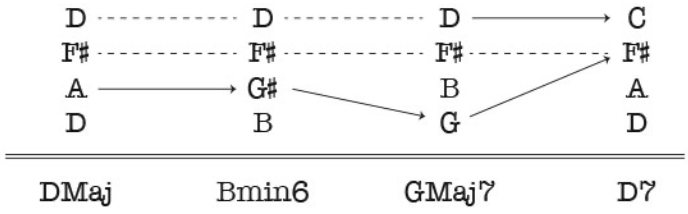
Voice Leading

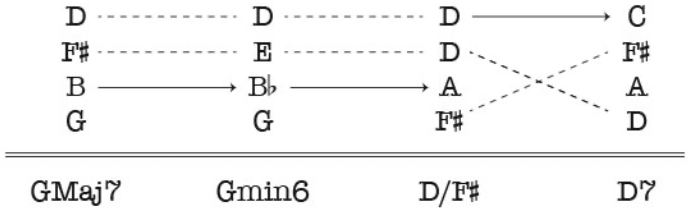
The type of motion described in the previous examples is often the result of a single "voice," or melody that is occurring within the accompaniment. In those examples, the "voice" that we are focusing on is that of the bass. Because the bass is one of the outer most voices (often times the lowest in range), it seems to have an impact on the structure of the piece, or section in which the motion is happening. Despite this, the bass involves a type of **voice leading**, which is the way notes move from one to the next. This can also occur in inner voices, resulting in a similar motion, though with perhaps less of a structural effect. Consider the song "Just the Way You Are," by Billy Joel:

"Just the Way You Are" (Billy Joel): Key D Major (D, E, F♯, G, A, B, C♯, D)



Like "Your Song," this tune opens with a tonic pedal. In both the intro and the verse, some of the chords may seem a little less common. First, we should remember that the "base" triads would work when accompanying a singer (for instance, you could play Gmin instead of Gmin6). Second, a lot of this progression can be described in terms of its voice leading, as shown in the next examples:



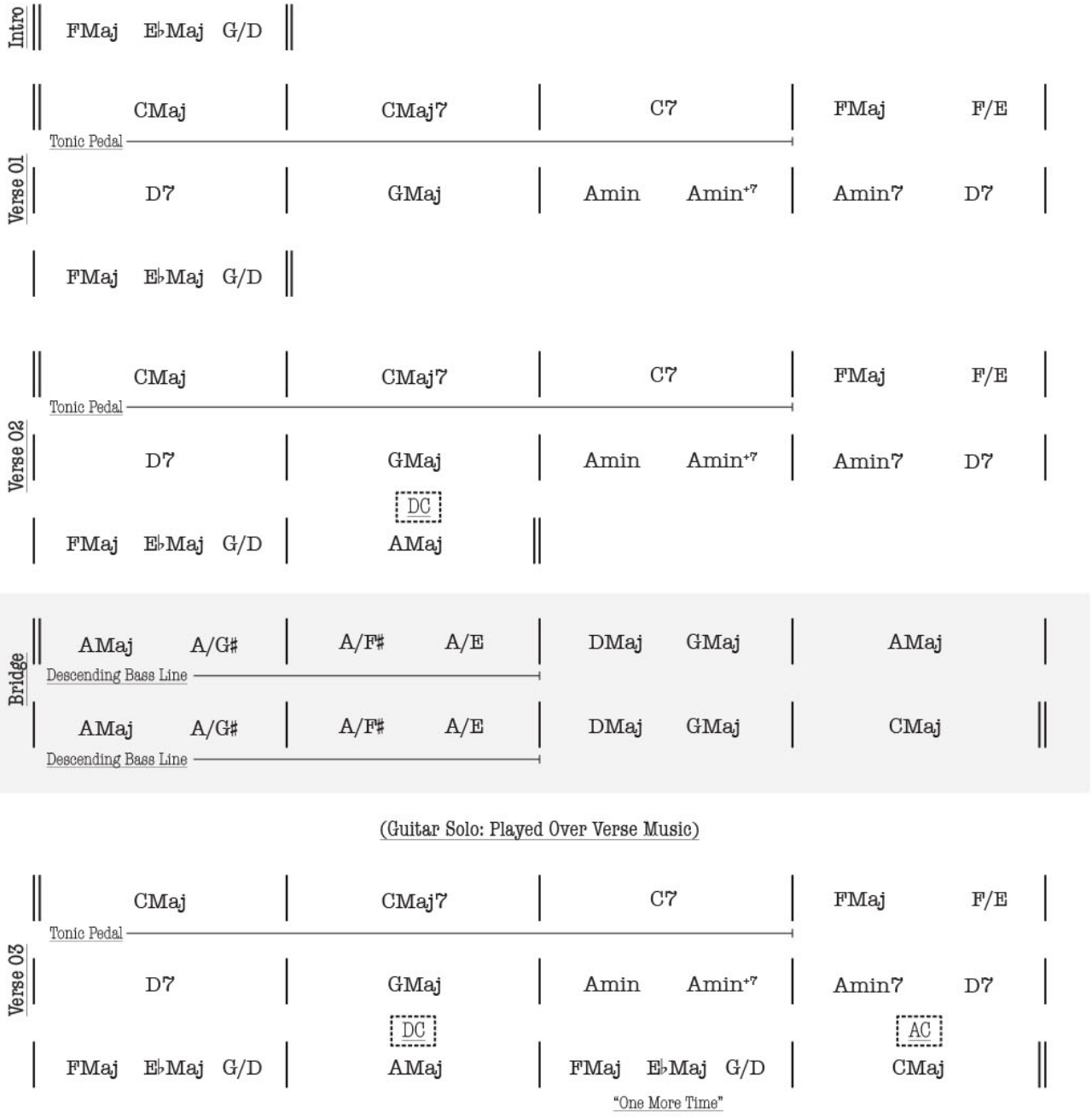


In both examples, arrows show the movement of a particular line, or “voice” that connects the chords, while dotted lines show common tones (notes that remain unchanged). Regardless of functional relationships or connections to key, these types of observations may help us to navigate through more complex changes.

PART 07: Longer Analyses

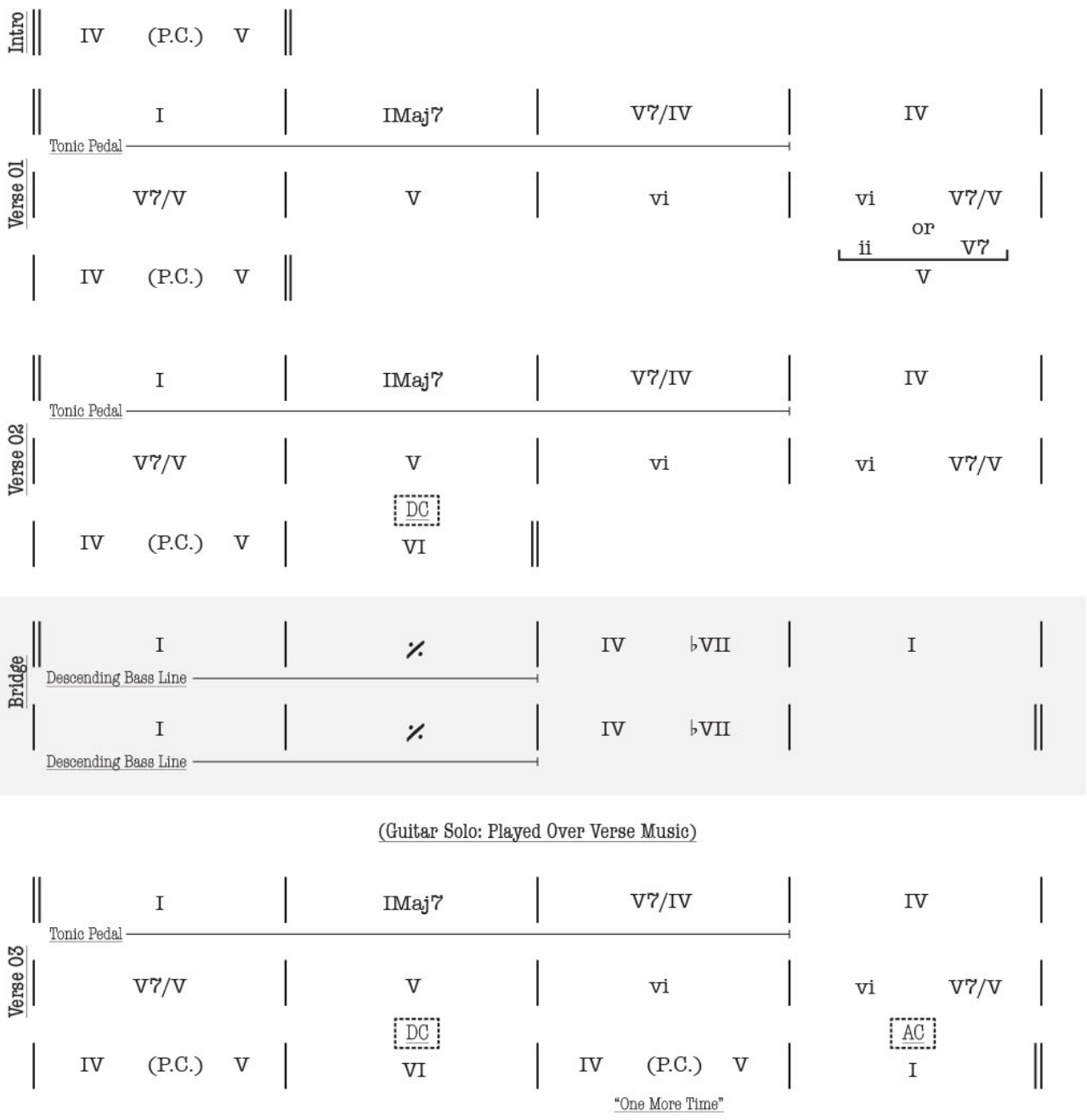
At this point, let's consider two songs in greater detail and see how some of the concepts we've studied can help us to understand (and memorize) them more easily.

"Something" (The Beatles): Key C Major (C, D, E, F, G, A, B, C)



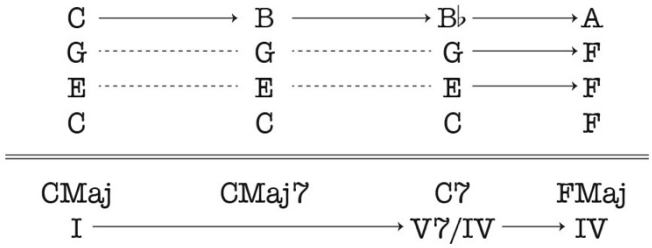
The Beatles's "Something" uses an **AABA** song structure, with an extra A section inserted to accommodate the guitar solo. There is a one-measure introduction to the song that returns to introduce the second verse. Including this measure in our count results in an irregular, asymmetrical number of bars (9 instead of 8). This bar features an instrumental "hook," so it seems like a part in itself that is characteristic of the song, and so any asymmetry goes by without any real sense of disruption to the flow.

"Something" (The Beatles): Key C Major (C, D, E, F, G, A, B, C)

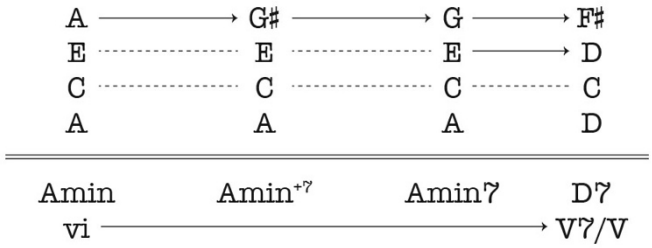


The chord progression in the verse consists of a relatively basic, and **functional chord progression**: I —› IV —› V —› vi (remember how, in progressions such as these, the vi chord creates a deceptive resolution of the dominant chord, GMaj). What makes the verse so special from a musical perspective is the voice leading. There is a chromatic **voice leading** pattern that happens over both the I chord and its **relative minor**, vi:

Ex.: Chromatic voice leading over CMaj

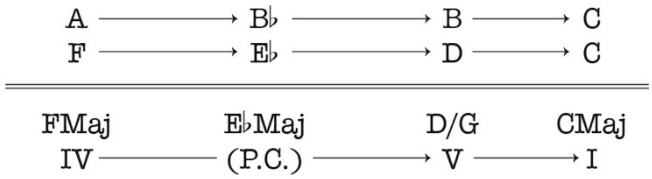


Ex.: Chromatic voice leading over Amin



We can also use voice leading to explain the progression used in the "Intro" measure. Considering the key of the song, the intro seems non-functional because of the E♭Maj chord that is not part of the home key. The example shows how we can conceive of this as a passing chord (labeled P.C. on the analysis) that connects the IV and V chords.

Ex.: Voice leading in "Intro" measure



The song's second verse ends with a **deceptive cadence** (DC) to the relative minor, which is leading us towards the bridge (B section). It is very common for composers to alternate between tonic chords and their relatives (from major to minor, or vice versa). What is peculiar here is that the quality of the relative minor is *major* (represented by the upper case VI on the analysis). As a result, it's handy to think of this as a new key.

The progression in the bridge is slightly less traditional, but nonetheless common in rock tunes because it uses a ♭VII chord and consists of a I —› IV —› ♭VII —› I progression in the key of A Major. The I chord is embellished by a **descending bass line**, represented by **slash chords** in the analysis, that walks down the scale from A —› G♯ —› F♯ —› E (we saw this exact move in the bridge of "Let it Be") before continuing to DMaj. The inclusion of ♭VII when the progression repeats itself makes for an easy transition back to the home key of C Major, since ♭VII in A is V in C, so we get a more common V —› I resolution to bring back the song's A section.

After Verse 03, the song closes with the instrumental hook that resolves deceptively, again to VI, as was done when leading to the bridge, followed by an immediate repeat of the hook that resolves as expected on I, providing the **authentic cadence** that closes the song.

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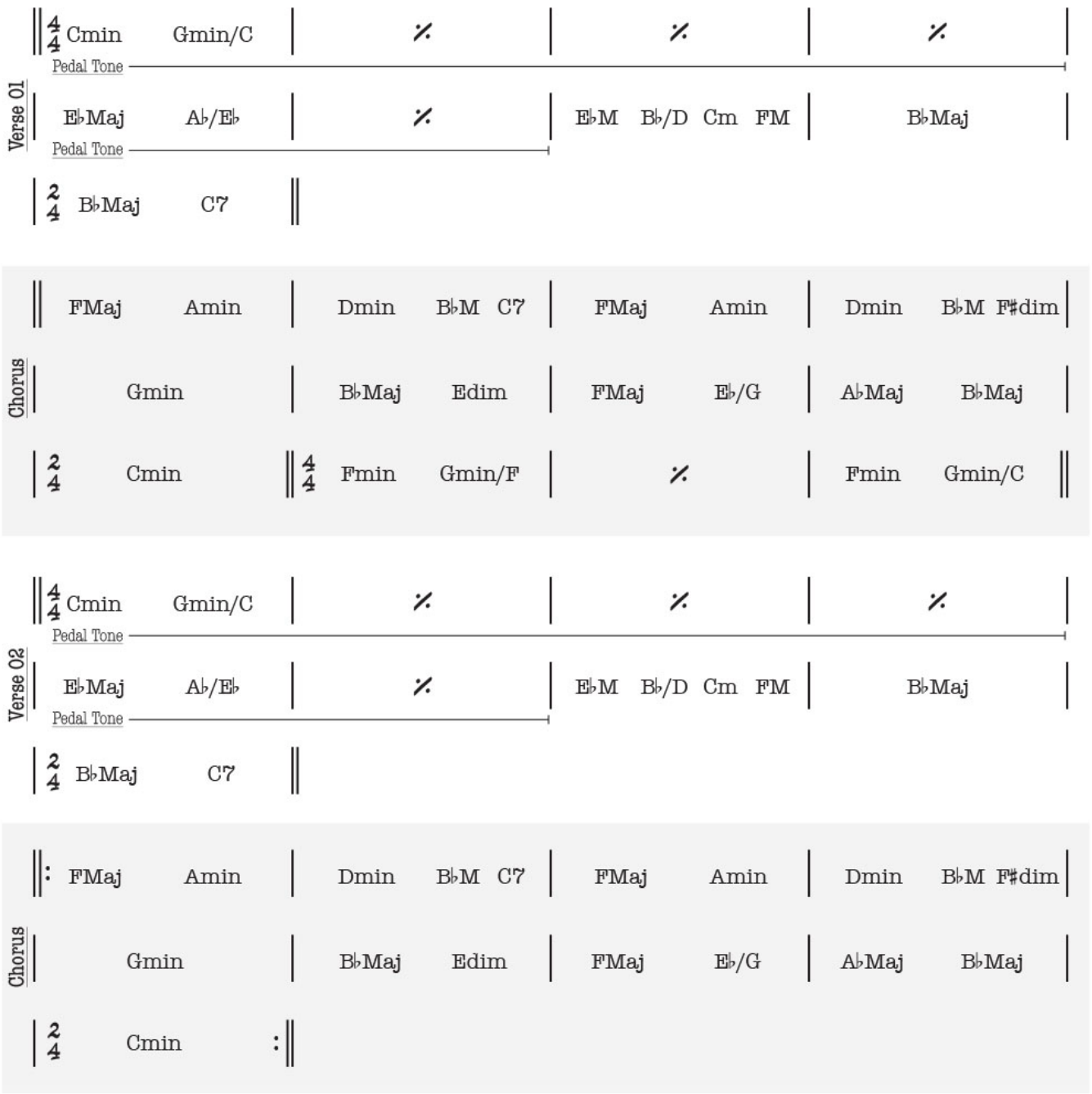
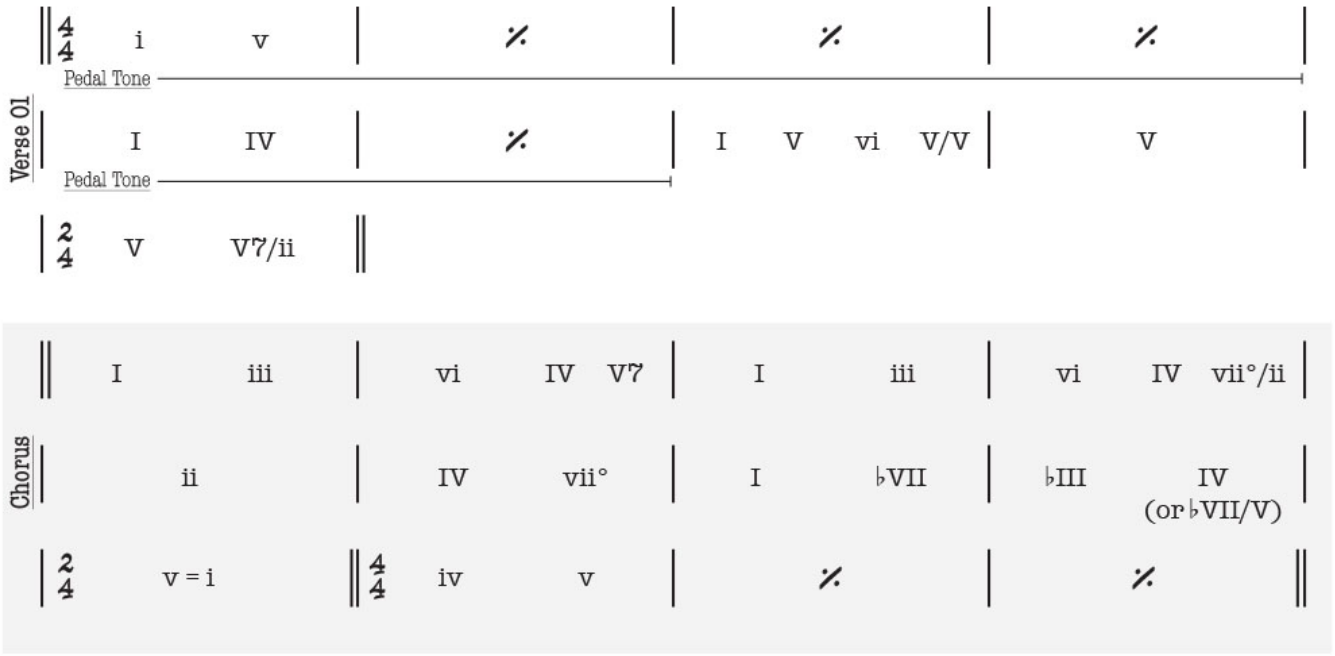
"We Are the Champions" (Queen): Key C minor (C, D, E♭, F, G, A♭, B♭, C)

(chord progression slightly simplified)



The song "We Are the Champions" has a two-part structure, consisting of ABAB or verse-chorus, verse-chorus. It is less common in popular music to not have a bridge (sometimes referred to as the "middle 8"). However, Queen's song is hardly lacking. This is perhaps because the progression and tonal structure of the song is more complex than some, and the individual A and B parts are quite elaborate.

"We Are the Champions" (Queen): Key C minor (C, D, E♭, F, G, A♭, B♭, C)



The verse starts in the home key of C minor, with the tonic being reinforced by a pedal tone. The i —› v chord progression uses the natural minor form of the dominant (without the raised leading tone), keeping both chords minor. There is a pickup in the second half of the verse that is achieved by the move to the relative major, E♭. Focus is shifted now with a new pedal tone, encouraging us to hear E♭ as the new tonal center (labeled, therefore, as I in the analysis). The verse then moves towards B♭, the dominant of E♭, with a **tonicization**, shown as V/V. However, B♭, which is the dominant of E♭, is quickly reinterpreted as IV in F when it is followed by C7. This happens in an extra bar, which itself is only 2 beats as opposed to 4, making the verse's overall structure asymmetrical. (The change in time signature is shown in the analysis.)

The song pickups yet again as we move into the chorus, which moves up by step to the key of F Major. The chorus begins with a tonal progression in this key, I —› iii —› vi —› IV —› V7. The progression then repeats, but this time ends with a tonicization of ii (Gmin) using its vii° chord (F♯dim). As previously mentioned, diminished chords are rare in popular music, but Freddie Mercury's harmonic vocabulary is more extensive, at least partially as a result of his classical training. In fact, he then uses a second diminished chord in the following measure (Edim) to bring back the tonic FMaj chord.

From here, the chords become less functional as the song retransitions back towards C minor. More specifically, by adding E♭ and A♭ into the mix, the move from F Major (1 ♭ in the key signature) back to C minor (3 ♭s in the key signature) is more smooth, albeit more chromatic. As we did in "Something," we can identify the use of ♭VII as a type of dominant-functioning chord that is characteristic of rock tunes. For instance, E♭ Major is ♭VII of F, but is also a strong focal point of the verse. Also, because the last chord in the

chorus is Cmin, we can understand this as a return of the song's primary key (as opposed to a minor-dominant in F Major). If so, the Cmin chord is preceded by B♭Maj, which is its own ♭VII. The arrival on Cmin at the end of the chorus, followed by Fmin and Gmin, prepares the return of the verse, and re-establishes C as our tonal focus.

Though distinct, both songs share certain characteristics, such as pedal tones, tonicizations, and motions between relative tonal centers. They both rely on relatively basic song structures, but these are modified by slightly skewing parts of those structures by adding measures. They both use non-functional chord progressions as a way of moving between tonal centers. These types of irregularities are what give the individual tunes their character and beauty, but also give us details to latch onto as we attempt to memorize them.

PART 08: "Recapitulation"

These final pages provide a summary of those elements that should be retained in order to gain as much as possible from the preceding discussions. That being said, the best way to absorb this material is to **practice using it**.

As you continue to learn how to play songs, you should be attempting to dive deeper than the surface-level characteristics that so often initially catch our ears. By going below the surface of the song that you are learning in order to explore some of the more structural elements can often reveal those characteristics that connect the song to a specific genre of music and what it shares in common with other songs from that genre. These types of discoveries help us to recognize more easily what is unique about a specific song, but also what is the same. Sameness helps us to learn and retain the song more easily, while uniqueness provides us with handles to hold onto when performing the song—those parts of the song that need to be brought out in order to make our performance convincing.

Suggested Approach to Learning Songs (Using Music Theory)

In order to specify which elements are most important, we should always be attempting to address the following while learning tunes:

1. General Observations (no instrument needed)
   a. What is the general mood or character of the song (major/minor mode, fast/slow, connected/disjointed (pitch content), straightforward/complex (number of parts))?
   b. What is the song's structure?

2. Specific Observations (likely using instrument)
   a. What key is the song in? Does it seem to change key at any point?
   b. Once key structure is established, make mental note about chord possibilities (i.e., Maj, min, min, Maj, Maj, min, dim) and functional progressions (e.g., I—›IV—›V—›I). *This should be done, or known, before actually trying to play the song in question.*
   c. Start working out the chords for one part at a time (verse, chorus, bridge) so that if/when these sections return, relearning is not necessary (since you should already know the form).
   d. If there are any "riffs" and/or melodies that you plan to learn, the underlying chord structure that supports those riffs and melodies should be known.

In order to do this, you will need to know...

1. Key Signatures (2a, 2b): discussed in Meeting 01 (major) and Meeting 03 (minor)
2. Common song structures (1b, 2c): discussed primarily in Meeting 05, but also in Meeting 04 (Cadences)
3. Order of chord qualities in keys (2b): discussed in Meeting 01 (major) and Meeting 03 (minor)
4. Common chord progressions (2b): discussed in Meeting 02