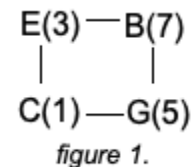


Major Seventh Chords

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Basics: - The major seventh ($\Delta 7$) chord is arguably one of the most stable 4-note chords available. This obviously depends on context, but generally speaking it is very stable and a lot of the time used as the tonic chord. The reason for its stability has to do with the notes used in the chord and how they relate to each other. Start with the tonic note, in this case we'll use C, and imagine the fifth, G, to the right of C. Now add the major third, E, above C. Lastly, add the major third of the fifth, B, above the fifth, G. B can also be thought of as the fifth of the major third. As you can see in *figure 1* to the right, a major seventh chord is a perfect square of fifths and major thirds. This may seem arbitrary, but perfect fifths and major thirds are the first two notes, other than the octave, found in the harmonic series. They are the two most prominent intervals in relation to the tonic note. If you are curious about this subject I would recommend the book "Harmonic Experience" by W. A. Mathieu.



The study of major seventh chords, and all that entails, can get pretty deep so I will try to be brief so you have room to form your own ideas. Although this document brings up the subject of just intonation tuning a lot, it is only an aid to understanding the nature of major seventh chords. At the end of the day, most of us play equal tempered instruments and so we want to make this information useful to the 12TET system that we're all so familiar with. The first part of this document will dive right into the study of all 12 major seventh chords in relation to the tonic, starting with the diatonic $I\Delta 7$ and $IV\Delta 7$ chords and moving on chromatically from there. This does go into depth about a few different ideas on each chord so I encourage you to skim through all the words if you only want to see the examples. If you have any questions about the progressions then hopefully what I have written can help. Most of the songs used as examples have a full analysis provided as a link. All of my other song analyses can be found [here](#).

All 12 Major Seventh Chords: I want to briefly explain a few specifics before we get started naming all the major seventh chords. If you don't resonate with this way of thinking then please ignore this part and move on. I only wish to clarify why I am analyzing things the way I am analyzing them, my aim is not to make things more complicated so this is your chance to move to the next section if you wish. For one, we are relating this to a single key center by use of roman numeral analysis. For example, labeling a chord as Gmaj7 doesn't give us any

information on how it relates to a key center. Instead, labeling that same chord as a roman numeral, say $IV\Delta7$ (in the key of D major), tells us what we want to know about how it relates to a key center. Second, the reason there are only 12 major seventh chords in this study is because there are only 12 distinct notes on an equal tempered piano (and most other modern instruments). We will refer to these 12 notes as the I, bII, II, bIII, III, IV, #IV/bV, V, bVI, VI, bVII, and VII, in this case the roman numerals represent the note names not the chord names. The reason that the #IV/bV is named with both note names is because it is sometimes hard to say whether or not a note is a #IV or a bV. There are times when one is favored over the other, for example the #IV is a note from the more popular lydian scale and bV is a note from the not so popular locrian scale, so depending on the context of the song you can tell when #IV would make more sense than bV. However, when the notes are made into chords, #IV $\Delta7$ (#IV, #VI, #I, and #III) is not found in any related modes or scales by a long shot, while the bV $\Delta7$ chord (bV, bVII, bII, IV) is found in the locrian mode.

Again, this might make more sense if you refer to a note lattice like the ones in *figure 2* and *figure 3*. The lattice in *figure 2* uses the same concept as the lattice from *figure 1* except it is expanded out to show 30 different notes. The notes outlined in blue are the 12 notes (bV and #IV counted as one) that we will study, layed out so you can see their relationship to the tonic chord. It is valuable to understand that technically there are more than 12 roman numerals that can represent these notes. For example, as you already know, the bV instead of #IV, or the #I instead of the bII, or even something like the bbVII instead of VI or #VII instead of I. Without getting too deep into it, the 12 notes that listed above are the most popular roman numerals out of all their counterparts.

#IV	#I	#V	#II	#VI	#III
II	VI	III	VII	#IV	#I
bVII	IV	I	V	II	VI
bV	bII	bVI	bIII	bVII	IV
bbIII	bbVII	bIV	bl	bV	bII

figure 2.

Figure 3 shows all of the 12 major seventh chords and the notes that make them up (again bV $\Delta7$ and #IV $\Delta7$ counting as the same chord). If we were to stick to the 12 notes shown in *figure 2* we would only be able to make 6 "real" major seventh chords and 6 "fake" ones. A "real" major seventh chord being a perfect square of fifths and major

#IV	#I	#V	#II	#VI	#III
	VI $\Delta7$	III $\Delta7$	VII $\Delta7$	#IV $\Delta7$	
II	VI	III	VII	#IV	#I
	IV $\Delta7$	I $\Delta7$	V $\Delta7$	II $\Delta7$	
bVII	IV	I	V	II	VI
	bV $\Delta7$	bII $\Delta7$	bVI $\Delta7$	bIII $\Delta7$	bVII $\Delta7$
bV	bII	bVI	bIII	bVII	IV
bbIII	bbVII	bIV	bl	bV	bII

figure 3.

thirds as mentioned above and a "fake" one being an enharmonic equivalent. The example in *figure 4* shows

#IV	#I	#V	#II	#VI	#III
II	VI	III	VII	#IV	#I
bVII	IV	I	V	II	VI
bV	bII	bVI	bIII	bVII	IV
bbIII	bbVII	bIV	bl	bV	bII

figure 4.

The example in *figure 4* shows

what I mean by a "fake" major seventh chord. It has all of the notes capable of forming a IIΔ7 chord and in 12TET it would sound the same, but the relationships each note has with the other notes is different to that of a "real" major seventh chord. Note that theoretically the lattice can expand out infinitely in each direction. Also notice that each roman numeral will appear multiple times. For example, in the lattices shown there are two IV notes and also a #III note. All three of these notes are mathematically different in just intonation, but on an equal tempered piano they are all represented by the same note. Again, I don't want to get too deep into this subject, even though I kinda already have because I can't help myself, so if you are curious you should refer to Mathieu's book mentioned above.

One last thing to note is that this study is going to try and stick to the perspective of the major (Ionian) key as much as possible to avoid confusion. So instead of analyzing something from the perspective of a minor key, I will try and convert everything to the relative major. For example with a simple [Ebmaj7 G7 C-7] progression, instead of analyzing it as a [bIIIΔ7 V7 I-7] progression in C minor, it will be analyzed as [IΔ7 III7 VI-7] in Eb major. This way we can distinguish a bIIIΔ7 chord from a IΔ7 chord because obviously a bIIIΔ7 chord will show up a lot more when analyzing from the perspective of a minor key, when really it's just a IΔ7 chord. There are a few instances where it does make more sense to analyze from the minor key and those instances will be clarified when they come up. Hopefully this clears up a few different questions you might have on why I chose to analyze the way I did and hopefully it didn't just end up confusing you. Things might clear up a bit after we get into it.

- **IΔ7 and IVΔ7:** The first two major seventh chords that are shown are the IΔ7 and the IVΔ7. These are by far the two most popular major seventh chords, they are the only two found in the major scale. I will provide one quick example that uses both of these chords, you will see IΔ7 and IVΔ7 pop up in many of the other examples. If you were to extend these two chords out by thirds sticking to the major scale they would be the IΔ7(9,11,13) and the IVΔ7(9,#11,13). The only note that separates these two chords is the 11 and #11. Now, when you play these two chords, the IVΔ7(9,#11,13) chord sounds a lot more stable than the IΔ7(9,11,13). This is one of the points made in George Russel's "Lydian Chromatic Concept", that the lydian scale is the true 'major' scale. This is obviously debated because the ionian scale has the V7 chord which tonicizes the IΔ7 chord, and a few other reasons.

This following example is from the song "[Fly me to the Moon](#)", originally written by Bart Howard, although the version I analyzed was played by Charles Cornell. This is a classic progression that has been used in thousands of songs, a very good example of how the IΔ7 and IVΔ7 might typically be used.

II-7	V7sus4	
Dm7	Fmaj7/G	
<i>Fly me to the moon</i>		
V7	IΔ7	IVΔ7

G7(13) Cmaj7 Fmaj7
And let me play among the stars

- **bIIΔ7**: bIIΔ7 is a chord from the phrygian mode that is most often used to resolve to the tonic chord. You could say it is somewhat similar to the substitute dominant chord, bII7, which is also commonly used to resolve to the tonic chord. The bIIΔ7 chord might not be used as much as some of the other major seventh chords but it definitely still gets a fair amount of usage.

The first example of this chord from the song "[With Each Beat of My Heart](#)" by Stevie Wonder shows how it is used to resolve the tonic chord.

V7sus4/V V7/V bIIΔ7
 D9sus4 D9 Dbmaj9
Like the love that I felt from the start
IΔ7 IV IΔ7 IV
 Cmaj9 F/C Cmaj7 F/C
With each beat of my heart

The next example, from the version of "[Tennessee Waltz](#)" sung by the group Masterpiece, is almost identical to the first example.

IV I- V7/V bIIΔ7 I
 F Cm/Eb D7 Dbmaj7 C
I broke down and cried

The next two examples come from the same song, "[It Might Be Time](#)" by Tame Impala. The first time it uses this chord it comes from the bVIIΔ7 and moves up a minor third to bIIΔ7 before moving up a major third to the IVΔ7 and eventually resolving back to the tonic chord.

III-7
 F#m7
That's enough for one night
IΔ7 bVIIΔ7
 Dmaj7 Cmaj7
Hope y'all get home alright
bIIΔ7 IVΔ7 III-7
 D#maj7 Gmaj7 F#m7
There I go, blame it on the weather
IΔ7 bVIIΔ7 IVΔ7

Dmaj7
Cmaj7
Gmaj7
But hey, there's nothin' wrong

The next instance of this chord, from the same song only a few lines later, shows how a $bII\Delta7$ chord might sound resolving to a minor tonic chord. In the original key of the song this would just be looked at as the diatonic $IV\Delta7$ and $III-7$ chords, however the use of the $C\#m7$ chord suggests the key of $F\#$ minor over D major. As I said earlier I am going to try and keep everything in reference to the relative major key, in this case the $bII\Delta7$ to $I-7$ chord in minor would really be the $bVII\Delta7$ to $VI-7$ chord in major. Nevertheless, I think it is interesting to include this particular example to show how a $bII\Delta7$ chord might resolve to a $I-7$ chord.

VII-7
I\Delta7
VII-7
bVII\Delta7
IV\Delta7
III-7
V-7
bVI\Delta7
V-7
\#IV\Delta7
bII\Delta7
I-7
C\#m7/G\#
Dmaj7
C\#m7
Cmaj7
Gmaj7
F\#m7
It might be time to face it

- **$II\Delta7$:** The $II\Delta7$ chord is not found in any of the regular major or minor modes, pretty much because the major seventh of $II\Delta7$ is the $\#1$ note. It is usually a fairly bright sounding chord because of the use of this note and also the Lydian $\#4$ note. It is not a super popular chord but it is used every now and then, mostly in 'constant structure progressions' (which we will get to later) due to the fact it is only two fifths away from the $I\Delta7$ chord.

The first example of this chord comes from "[Lady Dada's Nightmare](#)" by MGMT. In this example, the $II\Delta7$ chord sits nicely between the $II-7$ and $III-7$ chords and the movement between these 3 chords is mostly chromatic. The $II\Delta7$ chord is played just long enough where it starts to feel as if it might become the new tonic chord. This doesn't last long however and the tonal center soon shifts back to the original key.

bVII\Delta7
I-7
I\Delta7
II-7
IV- V7/V
bIII
I\Delta7
II-7
II\Delta7
III-7
V- V7/VI
IV
| *Cmaj7* | - | *Dm7* | *Dmaj7* | - | *Em7* | *Gm E7* | *F* | - |

The second example of this chord is used in the song "[God is Fair. Sexy Nasty](#)" by Mac Miller. This example shows a $II\Delta7$ chord being used in what is known as a 'constant structure progression'. We will explore constant structure progressions later on. The tonal center is not actually as clear here and it also seems to shift around to a few different key centers as is the nature of constant structure progressions. Because of this it could be also analyzed in a different key or multiple different keys, but the rest of the verses and chorus do resolve to the key of A major. All of the chords here move up by

fifths (down by fourths), except for the $II\Delta 7$ chord which moves up a minor third to $IV\Delta 7$, which means that each preceding chord acts as the $IV\Delta 7$ of the next chord.

$IV\Delta 7$	$I\Delta 7$	$V\Delta 7$	$II\Delta 7$
<i>Dmaj7</i>	<i>Amaj7</i>	<i>Emaj7</i>	<i>Bmaj7</i>
<i>La, la, la, la, la</i>		<i>La, la, la, la</i>	
$IV\Delta 7$	$I\Delta 7$	$V\Delta 7$	$II\Delta 7$
<i>Dmaj7</i>	<i>Amaj7</i>	<i>Emaj7</i>	<i>Bmaj7</i>
<i>La, la, la, la, la</i>		<i>La, la, la, la</i>	

The last example of the $II\Delta 7$ chord comes from "[Fkn Around](#)" by Phony Ppl. The beginning of this phrase is hard to pinpoint to one key, although it is approached from the key of E major. Here, $C\#9sus4$, which is diatonic to the key of E major, acts as the $V7/II$ chord which resolves to the $II\Delta 7$ chord, before the progression resolves back to an $Emaj9$ chord.

$\#IV-7b5$ $I+7$
A#-7b5 C+/D
You know I know
 $V7/II$ $II\Delta 7$
C#9sus4 F#maj7
You're so wrong for
 $V7sus4$
Amaj7/B
What we've been doing
 $bII^{\circ}\Delta 7$
C#m7/F
This place seems to ruin
 $I\Delta 7$
Emaj9
This love thing

- **$bIII\Delta 7$** : The $bIII\Delta 7$ chord is diatonic to the minor key as it is the relative major chord of the minor tonic chord. However, the following examples are all from the perspective of the major key as we are trying to keep looking at everything from a single perspective. In that case, the $bIII\Delta 7$ chord is borrowed from the parallel minor key and is a somewhat popular chord used in a number of different ways.

The first example is another constant structure progression from "[My Sentiment](#)" by Universal Togetherness Band. This progression is similar to the previous example except the chords are moving up by fourths (down by fifths) this time, meaning each chord can

be seen as the $IV\Delta7$ of the previous chord. The $Eb\Delta7$ chord is another example of the $bII\Delta7$ chord which then resolves back to the $I\Delta7$ chord.

$IV\Delta7$	$bVII\Delta7$	
$G\Delta7$	$C\Delta7$	
<i>Watching you is the highlight of my day</i>		
$bIII\Delta7$	$bVI\Delta7$	$IV-7$ $bII\Delta7$ $IV-7$
$F\Delta7$	$Bb\Delta7$	$Gm7$ $Eb\Delta9$ $Gm7$
<i>And afternoons with you are like a dream come true</i>		

The next example of this chord comes from the intro of “[All in Love is Fair](#)” by Stevie Wonder. In this case the $bIII\Delta7$ chord is the only non-diatonic chord in the progression. It is preceded by the $IV\Delta7$ chord which moves down a whole step to the $bIII\Delta7$ chord from the parallel minor key.

$VI-$	$VI-7$	$IV\Delta7$	$bIII\Delta7$	$II-$	$V7sus2$
$C\#m$	$C\#m/B$	$Amaj7$	$Gmaj7$	$F\#m$	$B7sus2$

In this example from “[Weakness](#)” by Stevie Wonder, the $bIII\Delta7$ is a little more ambiguous. The first two chords suggest the key of $C\#$ major, but the key center seems to shift down a whole step to B major briefly before resolving back to $C\#$ major. From the perspective of $C\#$ major, $Emaj7$ is the $bIII\Delta7$ chord borrowed from the parallel $C\#$ minor, but if you analyze it in B major it is the $IV\Delta7$ chord.

II	$II\Delta7$	$VI-7$	V
I	$I\Delta7$	$V-7$	IV
$C\#$	$G\#/C\#$	$G\#m/F\#$	$F\#$
<i>Every time I think our love is drifting apart</i>			
$V7$	$II-7$	$IV\Delta7$	$V7sus4$ $VI7sus4$
$IV7$	$I-7$	$bIII\Delta7$	$IV7sus4$ $V7sus4$
$F\#/E$	$C\#m7$	$Emaj7$	$F\#\#9sus4$ $G\#\#9sus4$
<i>Something always throws it back toge - ther</i>			

- $III\Delta7$: The $III\Delta7$ chord is a somewhat distant chord although it does share two notes with the $I\Delta7$ chord. Because of this distance, when the $III\Delta7$ chord is introduced it usually disrupts the tonal center and suggests that a key change or some type of modulation is taking place. Most of the time, the $III\Delta7$ chord becomes the new tonic chord either permanently or temporarily as we will see in some of the examples below.

The first example comes from the song "[I Love You Too Much](#)" by Stevie Wonder. The beginning of this phrase starts in the key of Bb major but quickly resolves to the IIIΔ7 chord, Dmaj7. For a second, it feels as if we might have modulated to the key of D major, but the tonal center soon shifts back to Bb major.

		IV7sus4 V7sus4
IV	III-	VI7sus4 VII7sus4
Eb	Dm	F/G G/A
<i>When you say those words of love to me</i>		
	IΔ7	IV7sus4 bIII7sus4 IV7sus4
	IIIΔ7	VI7sus4 V7sus4 VI7sus4
	Dmaj7	Dm7/G Cm7/F F/G
<i>It makes me feel so good inside</i>		

The following example is a simple analysis from "[The Christmas Song \(Chestnuts Roasting on an Open Fire\)](#)" originally composed by Mel Tormé. The overall key center of this phrase is in C major though there are a few moments where the key center is pulled in other directions using a lot of different relative II-7 V7 cadences. One of these cadences lands us on the IIIΔ7 chord, Emaj7, which could suggest a change of key but instead repeats the cadence a half step down to land on Ebmaj7, another good example of the bIIIΔ7 chord, before using a final cadence to land back in C major.

IΔ7	II-7	III-7	IV6 V7
Cmaj7	Dm7	Em7	F6 G7
<i>Chestnuts roasting on an open fire</i>			
IΔ7	II-7/IV	V7/IV	IVΔ7 V7/VI
Cmaj7	Gm7	C7	Fmaj7 E7
<i>Jack Frost nipping at your nose</i>			
VI-7	IV-6	I	II-7/III V7/III
Am7	Fm6/Ab	C/G	F#m7 B7
<i>Yuletide carols being sung by a choir</i>			
IIIΔ7	II-7/bIII	V7/bIII	bIIIΔ7
Emaj7	Fm7	Bb7	Ebmaj7
<i>And folks dressed up like Eskimos</i>			
II-7	V7	IΔ7	
Dm7	G7	Cmaj7	
<i>Everybody knows</i>			

The following two examples show how the IIIΔ7 is used to modulate to a new key. The first example from the song "[2009](#)" by Mac Miller modulates up a major third from the key of Bb major to the key of D major by simply moving from the IVΔ7 chord down a half step

to the III Δ 7 chord, which becomes the new I Δ 7 chord. From the perspective of D major, Bbmaj7 is the bII Δ 7 chord which resolves down a semitone like a few of the examples from before.

I Δ 7 IV Δ 7 I Δ 7 bII Δ 7
IV Δ 7 I Δ 7 IV Δ 7 I Δ 7
 | Bbmaj7 | Ebmaj7 | Bbmaj7 | Ebmaj7 |
III Δ 7 III Δ 7 VI Δ 7 VI Δ 7
I Δ 7 I Δ 7 IV Δ 7 IV Δ 7
 | Dmaj7 | Dmaj7 | Gmaj7 | Gmaj7 |
VI- VI- III- V7
 | Bsus2/C# | Bm/D | F#m/A | A7 |

In "[Floating up the Stairs](#)" by Dot Hacker, the III Δ 7 chord is used to modulate down a half step, from C major to B major by becoming the new IV Δ 7 chord. This definitely isn't a typical way of modulating down a half step, mostly because of the Bbm chord which is pretty distant to each key. Bbm isn't diatonic to C major or B major but it is the bVII- from C phrygian and the VII- from B lydian.

VI-
 Am
Incendiary
VI-
 Am
Remark my words

IV Δ 7
 Fmaj7
They shouldn't mean a thing
IV Δ 7
 Fmaj7
Even with how mean I like to be
bVII- III Δ 7
VII- IV Δ 7 IV VI-
 Bbm Emaj7 E G#m
Come rake me over
IV I
 E B
New form of torture

- **#IV Δ 7/bV Δ 7**: We briefly discussed the nature of this chord and why it uses two names in the intro to this chapter. The #IV Δ 7/bV Δ 7 chord is definitely the most ambiguous chord

on this list for many different reasons. It is also probably the rarest chord on this list which was why it was so hard to find good examples. You can see on the lattice that the #IV and the bV notes are both pretty far away from the tonic note which is why this chord is not often used. When deciding if a chord is a bV chord or a #IV chord, first know that there is no way to know for sure what chord it really is, it might even be a mixture of both. With 12TET there is a lot of room for ambiguity in what we are actually hearing, not to mention that everyone will interpret it in their own way. Second, think about the key center(s) and how that chord relates to those centers. Lastly, consider the chords before and after the chord in question and see if they relate more to #IV or bV. Even though I'm making the case for both the #IVΔ7 and bVΔ7, I couldn't actually find any examples where it was justified using a #IVΔ7 over a bVΔ7 chord. However, I can definitely think of a scenario where that might not be the case.

This first example is from a progression I wrote from a song titled "[samsara](#)" by smokebag. There isn't a full analysis for this song but the main progression is based off of the following chords. I was tempted to call this chord an F#maj7 rather than Gbmaj7 because, at least to me, it looks nicer and there is already a Gm7 chord. I still mostly think about it as an F#maj7 chord, but it is probably more accurately described as a Gbmaj7 chord. This is mostly because the notes of Gbmaj7, as described above, are closer to the key of C by being in C locrian and I do play notes from C locrian (Gb lydian) when playing this chord. Otherwise, the chords that surround this chord could point to either F#maj7 or Gbmaj7 depending on how you look at it. The progression here definitely resolves to the key of C major though at times the key center may feel a bit uncertain. The F/Bb, Gm7 and Am7 together might sound like a IVΔ7, II-7 and III-7 from the key of F major (C mixolydian). From the perspective of this key, Gbmaj7 is the more common phrygian bIIΔ7 chord. In the end though this resolves back to C major. The resolution down a tritone from Gbmaj7 to Cmaj9 is also a movement (down a tritone) between major seventh chords that I haven't found in any other songs.

I bVIIΔ7 I bVIIΔ7 V-7 VI-7 bVΔ7 IΔ7
| C | F/Bb | C | F/Bb | Gm7 | Am7 | Gbmaj7 | Cmaj9 |

This next example from "[No More Lies](#)" by Tame Impala and Thundercat isn't the best example of this chord because it is from the perspective of the minor key and I said I wasn't gonna do that. However, because this song starts out in the key of Bb major and also due to the lack of examples of this chord, I let myself break my rule. This progression is repeated throughout the song and there are times when the key of Eb minor might make more sense than Bb minor, but in this phrase, the key of Bb minor seems to be the tonic. The chord in question, Emaj7 (really Fbmaj7), is the bVΔ7 in relation to Bb, but from the perspective of the relative major, Db major, it is only the common bIIIΔ7 chord.

I-7 *bVIIΔ7* *bVII-7*
Bbm9 *Abmaj9* *Abm9*
I'm sorry, girl, didn't mean to drag you in my dreams
bVIΔ7 *bVI-7* *bVΔ7* *IV-7*
Gbmaj9 *Gbm9* *Emaj9* *Ebm9*
Baby, no more lies

This last example is also unfortunately not the best example but may be worth mentioning. It comes from the song "[It Might Be Time](#)" also by Tame Impala. The song is mostly in the key of D major, but the chorus partly sounds like it resolves to the F# minor chord. From that perspective, the Cmaj7 is the bVΔ7 chord which moves to bIIΔ7 before resolving to I-7. Again, the analysis might be a bit of a stretch but you can see how it might work from that perspective. This example was also shown above under the bIIΔ7 chord.

VII-7 *IΔ7* *VII-7* *bVIIΔ7* *IVΔ7*
V-7 *bVIΔ7* *V-7* *bVΔ7* *bIIΔ7*
C#m7/G# *Dmaj7* *C#m7* *Cmaj7* *Gmaj7*
It might be time to face it
III-7 *VII-7* *IΔ7* *VII-7*
I-7 *V-7* *bVIΔ7* *V-7*
F#m7 *C#m7/G#* *Dmaj7* *C#m7*
It ain't as fun as it used to be, no

- **VΔ7:** The VΔ7 chord is a bright chord that only has one non-diatonic note. The major seventh of the VΔ7 chord is the #IV of the key, a note found in the lydian scale. This chord can be introduced randomly as a lydian chord but more often than not I see it used in a sort of sequence or in a constant structure progression.

The first example of this chord is from the song "[God is Fair, Sexy Nasty](#)" by Mac Miller. This four chord progression repeats a number of times in the song and the only non diatonic chord is the VΔ7 chord. You can analyze it as a brief constant structure progression as the IVΔ7 moves down a fourth to IΔ7 which then moves down another fourth to VΔ7. This is a good example of how this chord can be used in a simpler sense.

II-7
Bm7
Hearts on my timeline
IVΔ7
Dmaj7
Bullet to your rose, then I watch your petal fold
IΔ7

Amaj7
 Don't you know your body been mine?
 VΔ7
 Emaj7
 I know you know I know

The next example of this chord is a little more complicated than the previous one. The tonal center of this phrase from "[Take a Chance](#)" by Domi and JD Beck is not quite as clear. This could probably be analyzed from a few different perspectives. There is never a proper resolution, but I mostly hear the Cmaj7 chord wanting to resolve to G major. From this perspective, the Dmaj7 chord is the VΔ7, which moves to the SubV7/IV before landing back on the IVΔ7 chord.

IVΔ7 III7sus4 VΔ7 SubV7/IV IVΔ7
 Cmaj7 B7sus4 Dmaj7 C#7 Cmaj7
 Come back, it can't be too late (Come back home)

The last example of this chord is also a little tricky to analyze as the key center shifts between two poles. "[I Just Knew](#)" by Andrew Vanwyngarden uses an interesting progression that repeats through most of the song. It is mostly centered in the key of B major but the verse starts on a F#maj7 chord which makes sound more like it in the key of F# major. The example below shows the end of the first verse, which is clearly in B major, going into the second verse which sounds more attracted to F# major. The last chord of the first verse is the V chord in B major which would normally be a V7 chord, but instead turns into a VΔ7 chord to start the next verse. It is a little hard to be certain which key the first part of the second verse is in. At first it sounds like it could be in F# major, but then it plays an Fm which is not diatonic to either F# major or B major. Another way to analyze these chords is in C# major where F#maj7 and Fm are the diatonic IVΔ7 and III- respectively. The C# and D# act like a IV and V chord which resolve to G#m, the relative minor of B major, before resolving to B major.

VI- II- VI- V IV I
 G#m C#m G#m F# E B
 It was still standing by, one more try and that should do, hey hey
 II- V
 C#m F#
 I'll never waste my time if I reach you

[Verse 2]

IΔ7 VII- IV V V/II

VΔ7
 F#maj7

#IV-
 Fm

I
 B

V/V
 C#

V/VI
 D#

When it got tough we had just enough to see things through

II-
 G#m

VI-
 G#m

II-
 C#m

VI-
 G#m

V
 F#

IV
 E

I
 B

In spite of sleepless nights; morning try to make it through, hey hey

- **bVIΔ7:** The bVIΔ7 chord is found within the minor scale so it is obviously a popular chord in a minor key, but from the perspective of a major key it can also be used in a number of ways. It is often a good substitute for a subdominant chord, sometimes referred to as a 'minor subdominant' chord. It is also used in some constant structure progressions as you might see throughout this document.

The first example comes from the song "[Leave the Door Open](#)" by Silk Sonic. Here, the bVIΔ7 chord, Amaj7, is preceded by a Bb+7(b9) which is the VI+7 chord and can be used as the V7/II or the SubV7/bVI. This progression is used a few times throughout the song in a couple of different keys. Earlier in the song this progression isn't as clear as to where the tonal center is, but here it feels like the Dbmaj7 chord is the tonic. Amaj7 and Ab7sus4 also seem like they could act as the IVΔ7 and V7/VI chords in the key of E major.

IΔ7
 Dbmaj7

SubV7/bVI
 Bb+7(b9)

Tell me that you're coming through

bVIΔ7
 Amaj7

V7sus4
 Ab7sus4(13)

La-la-la-la-la-la-la

IΔ7
 Dbmaj7

SubV7/bVI
 Bb+7(b9)

Tell me that you're coming through

In the second example from "[I Couldn't be More in Love](#)" by The 1975, the bVIΔ7 chord is used to modulate up a minor third, from C major to Eb major, by becoming the new IVΔ7 chord. This key change is like modulating from C major to C minor. Since the bVIΔ7 chord is one semitone above the V7 chord, the V7 will sometimes resolve deceptively up a half step, similar to the popular III7 to IVΔ7 progression.

II-
 C/D

III-
 C/E

IVΔ7
 C/F

She said, "I gave you four years of my life"

Vsus4 V
 C

bVIΔ7
 Eb

V/VI $IV\Delta 7$ I $II-7$ I
Gsus4 G *Abmaj7 Eb/G* *Fm7* *Eb/G*
So, what about these feelings I've got?

The final example of this chord is mostly in a minor key, but it does resolve to the major tonic. The song “[Solitude](#)” by M83, is mostly in the key of C minor (Eb major) but the major IV, V, and I are all played at some point throughout the song. In the relative major key, Eb major, the Abmaj7 chord would be seen as the IVΔ7 chord, but from the perspective of C, it is the bVIΔ7 chord.

$bIII\Delta 7$ $bVI\Delta 7$ $IV-$ $V7sus4$ $V7$ $IV-7$ I
Ebmaj7 *Abmaj7* *Fm* *G7sus4* *G7* *Fm7* *C*
Drink a little bit of me *No*

- **VIΔ7:** This chord is not diatonic to any of the common scales or modes, as it contains a #I and a #V note. It is not super popular in a general sense, but it definitely does get its fair share of usage. I couldn't help myself including 7 different examples of this chord, 4 of them from Stevie Wonder, but they are all somewhat unique and all valuable examples of how this chord is used. The reason VIΔ7 is a little more popular than some other non-diatonic chords is because it is the parallel major of the diatonic VI-7 chord. Because of this, it is often used in a deceptive cadence where instead of a dominant chord resolving to IΔ7 or VI-7, it resolves to VIΔ7 which usually becomes the new tonic. As you can see in the examples below, a VIΔ7 chord often disrupts the key center enough to make it hard to analyze from a single key's perspective.

The first 4 examples are all from songs written by the great Stevie Wonder, the first being the intro from his and Dionne Warwick's song “[It's You](#)”. This is a really good example of when a VIΔ7 chord is used without a key change involved, even though it could be analyzed from two different perspectives. The progression resolves back to a Cmaj9 chord and the upcoming verse also implies the key of C major, but the Bbmaj7 to Amaj7 does kinda sound like the phrygian bIIIΔ7 to IΔ7 cadence we talked about above. From the perspective of C major though, the IΔ7 chord moves down to the bVIIΔ7 chord, which is the next chord we will talk about, and then to the VIΔ7 chord, Amaj9. This might suggest a resolve to the Amaj9 chord, but the following V7sus4 chord brings the tonal center back to the key of C major.

$bIII\Delta 7$ $bIII6$ $bIII\Delta 7$ $bII\Delta 7$ $I\Delta 7$ $bVII7$
 $I\Delta 7$ $I6$ $I\Delta 7$ $bVII\Delta 7$ $VI\Delta 7$ $V7sus4$
 | *Cmaj9 C6/G* | *Cmaj9 Bbmaj9* | *Amaj9* | *G9sus4* | x4

This example, from the bridge of "[Weakness](#)", is a good example of a deceptive cadence where the V7 chord resolves to a VIΔ7 chord instead of a more expected and diatonic VI-7 chord. This progression on its own sounds like it would be in the key of D major and perhaps modulating to the key of B major, but in the song, the preceding and following phrases are both in the key of C# major and one line after that they resolve back to D major. Regardless, this isolated line makes the most sense either in D major or B major. In the key of B major, Em7 and A7 are borrowed from B minor, and create a 'backdoor' cadence to the Bmaj7 chord.

<i>IV-7</i>	<i>bVII7</i>	<i>IΔ7</i>	<i>bVII°7</i>
<i>II-7</i>	<i>V7</i>	<i>VIΔ7</i>	<i>V°7</i>
<i>Em7</i>	<i>A7</i>	<i>Bmaj7</i>	<i>Adim7</i>

We keep thinking that our love won't last beyond tomorrow

This example is similar to the one above but this time the context is a little less confusing. The last chorus and outro of "[Lately](#)" are firmly in the key of Gb major but the very last V7 chord resolves deceptively to a VIΔ7 chord and the song ends. From the perspective of Eb major, the Cb/Db chord, or Db9sus4 with no 5, acts as the 'backdoor' bVII7 chord and resolves up a whole step to Ebmaj7.

				<i>bVII7</i>	<i>IΔ7</i>
<i>Iadd9</i>	<i>VI-7</i>	<i>IVΔ7</i>	<i>II-7</i>	<i>V7</i>	<i>VIΔ7</i>

| *Gbadd9* | *Ebm7* | *Cbmaj7* | *Abm7* *Cb/Db* | *Ebmaj7* |

The last Stevie Wonder example is from the song "[You and I](#)" and has a really interesting use of the VIΔ7 chord. This phrase starts in the key of Gb major but quickly introduces the VII-7 and III+7 to use as the relative II-7 and V+7 of the upcoming VIΔ7 chord. This briefly brings the tonal center to the key of Eb major before the chords Gm11 and C+7(#9) are used to resolve to Fm7b5, the diatonic VII-7b5 chord back in the key of Gb major. It should be noted that the B chords in this phrase should technically be spelled as Cb chords. At the end of this phrase, the Db7 chord is used to resolve back to Gb major.

<i>IΔ7</i>	<i>IV</i>	<i>IV-6</i>		
<i>Gbmaj7</i>	<i>B/Gb</i>	<i>Bm6/Gb</i>		

It's you and I,

	<i>II-7</i>	<i>V+7</i>	<i>IΔ7</i>	
	<i>VII-7</i>	<i>V+7/VI</i>	<i>VIΔ7</i>	
	<i>Fm11</i>	<i>A#+7(#9)</i>	<i>D#maj7</i>	

God has made us fall in love, it's true

<i>III-7</i>	<i>V7/II</i>	<i>II-7b5</i>	<i>bVI-6</i>	<i>bVII7</i>
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II-7/VII V+7/VII VII-7b5 IV-6 Vsus4 V7
 Gm11 C+7(#9) Fm7b5 Bm6 C#sus4 C#7
I've really found someone like you

The next example of this chord, somewhat similar to the previous example and even in the same key, comes from the song "[Either Way](#)" by Phony Ppl. It starts in the key of Gb and with the secondary dominant V7/VI chord resolves to Ebmaj9, the VIΔ7 chord. Unlike the previous example, this one continues in the key of Eb major and doesn't return to Gb major until later on in the song.

II-7 V7 VI7sus4
 Abm7 Db9 Eb7sus4
With you it's kinda hard to recognize the feeling is there
 bVII°7 V7/II II-7
 Edim7 Eb7 Abm9
Cause it's like looking at yourself in the mirror
 V+7(b9,#9) V7(b9,#9)
 V+7/VI V7/VI
 Db7sus4/Bb Db7/Bb
You've seen yourself everyday
 VIΔ7 VII-7
 IΔ7 II-7
 Ebmaj9 Fm9
I've seen you way clearer
 IΔ7 II-7 III-7 IVΔ7 IV6
 Ebmaj9 Fm9 Gm7 Abmaj7 Ab6
No your situation, won't push me away

In this example from the song "[Faraway](#)" by The Japanese House, the VIΔ7 chord again becomes the new IΔ7 chord, but this time the modulation between keys is much more direct. Here the progression plays more on the fact that the keys of Eb major and C major are related, as Eb major has the same notes as C major's parallel C minor. In this instance the chords flow through a few different tonal centers. They start in Eb major but borrow chords from Eb minor. The Cm7 and F chords sound mostly like they will resolve back to the tonic Eb major chord, but instead land on the 'chromatic mediant' bVI chord, B or technically Cb, also found in Eb minor. The B chord resolves up a half step to Cmaj7 and suggests that we could now be in the key of C major. The next few chords solidify the new tonal center in C major, although one of the chords, Fm, is borrowed from the parallel key of C minor.

I V-7

Eb Bbm7
Being far away
IV II-7b5
Ab Fm7b5
I'm lost in space
VI-7 V/V
Cm7 F
Make it go away
I-7 IV V/III IΔ7
VI-7 V/V bVI VIΔ7
Cm7 F B Cmaj7
All this space between us
IV- VI-
II- #IV-
| Fm | Am |
I IV
C F
You're taking up all of my time

This last example of the VIΔ7 chord comes from the song "[Siberian Breaks](#)" by MGMT. This progression can also get a bit confusing, but for the most part it starts in the key of C major (A minor) and then lands on an Amaj7 chord, the VIΔ7 in C major, or the IΔ7 in A minor. Before it lands on this Amaj7 chord though it passes through another cloudy tonal center by playing Bbm and Cm, which are only diatonic to the key of Ab major (C phrygian). The movement from Cm to Amaj7 is mostly chromatic as Amaj7 could also be thought of as C#m/A. The Amaj7 chord is played briefly and then turns back into an Am9 chord to repeat the progression in C major (A minor).

I-7 bIIIΔ7
VI-7 IΔ7
Am9 Cmaj7
Sleep as the goer
I-7 bIIIΔ7
VI-7 IΔ7
Am9 Cmaj7
The bridge that watches the light speed through
bII- bIII-
bVII- I-
Bbm Cm
And cries while the spirit stumbles
bII-7 bIII- IΔ7

bVII-7 I- VIΔ7
 Bbm7 Cm Amaj7
The inside missile for the protection of you
I-7 bIIIΔ7
VI-7 IΔ7
 Am9 Cmaj7
Maybe it's silent
I-7 bIIIΔ7
VI-7 IΔ7
 Am9 Cmaj7
The voice can't bear anymore strain

- **bVIIΔ7:** The bVIIΔ7 chord is probably the third most popular major seventh chord behind the IΔ7 and IVΔ7. It is found in the mixolydian mode and the dorian mode so it is easy to use in both major and minor keys. It has already popped up a number of times in previous examples but I will include a few more interesting ones here.

The first example is from the intro of "[No More Lies](#)" by Tame Impala and Thundercat. It is hard to be sure about which key this is in with only these two chords as context. To me it mostly sounds like the key of Bb major but these chords might also be interpreted as the VΔ7 and IVΔ7 in the key of Eb major. These two chords together could simply be seen as a sequence where a major seventh chord moves down a whole step then back up again, sort of like a brief constant structure progression. From the perspective of Bb major however, Abmaj7 is the bVIIΔ7 chord borrowed from Bb mixolydian.

IΔ7 bVIIΔ7 IΔ7 bVIIΔ7
 Bbmaj7 Abmaj7 Bbmaj7 Abmaj7
Oooh-ooooh-ooooh, oooh oooh-ooooh-ooooh

In the next example from another Tame Impala song, "[It Might be Time](#)", the key center is a little more certain, in this case it is in the key of D major. The bVIIΔ7 chord, Cmaj7, is the only non-diatonic chord in this progression. Like the previous example, someone might argue that these chords could be in the key of G major, being the VΔ7, IVΔ7 and the IΔ7, but in that case the F#m7 chord would be the non-diatonic VII-7 chord.

IΔ7 bVIIΔ7 IVΔ7
 Dmaj7 Cmaj7 Gmaj7
Something doesn't feel right
III-7
 F#m7

That's enough for one night
IΔ7 bVIIΔ7
Dmaj7 Cmaj7
Hope y'all get home alright

The last example of a bVIIΔ7 chord is from another Stevie Wonder song, "[With Each Beat of my Heart](#)". It is very similar to the first example and even the second example as well with the IΔ7 to bVIIΔ7 progression. In this example however, the second line plays a Gm9 and C13 chord, also in C mixolydian like the Bbmaj9 chord, to land on the IVΔ7 chord.

IΔ7 bVIIΔ7
Cmaj7 Bbmaj9
And from the time I saw your face
IΔ7 V-7
Cmaj7 Gm9
I knew no other could erase
V7/IV IVΔ7 III-7 II-7 V7
C13 Fmaj7 Em7 Dm7 G9
My loving you with each beat of my heart

- **VIIΔ7:** The last major seventh chord on this list is also probably the rarest, along with the #IVΔ7/bVΔ7 chord. When this chord is used, someone could make the case for it being a bIΔ7 (bI, bIII, bV, bVII) chord rather than a VIIΔ7 (VII, #II, #IV, #VI) chord. bIΔ7 has two notes, bIII and bVII, found in the minor scale, and VIIΔ7 has one note, VII, found in the major scale and one note, #IV, found in the minor scale. Rather than get too into that theory we're just gonna agree to call it a VIIΔ7 chord for now.

The first example of this chord is from "[My Sentiment](#)" by Universal Togetherness Band and is the best example I could find. Throughout the song, this progression is usually played with a Bb6 (bVI6) chord instead of DbΔ9 (VIIΔ7). We have seen a few times throughout this document a bIIΔ7 chord resolve down a half step to a IΔ7 chord. This time, a bIIΔ7 chord moves down a whole step to VIIΔ7 before resolving from that chord up a half step to IΔ7. The only note that ties a C#Δ9 chord to the DΔ9 is a C#, the 1 of C#Δ9 and the major seventh of DΔ9.

V7sus4 bIIΔ7 VIIΔ7 IΔ7
A7sus4 EbΔ9 C#Δ9 DΔ9
My sentiments of you

This last example from “[No More Lies](#)” by Tame Impala and Thundercat is less compelling but still worth mentioning. This bridge starts out in the key of Bb major but through a series of relative ‘II V’ cadences moves through a number of different temporary key centers including Db major, B major, A major, and Gb major. This example will be discussed in more detail in the following chapter on constant structure progressions. Because of these quick changes, it is hard to pinpoint any of these chords into one key center, but if you analyze from the original key of Bb major, the Amaj7 chords are the VIIΔ7 of that key. After the Dmaj7 chord, the tonal center shifts back to Bb minor.

IΔ7					bVIΔ7
Bbmaj7					Gbmaj7
<i>There's something wrong in your mind</i>					
IV-7	bVII7	bIIIΔ7	bVI7	bIIΔ7	
Ebm7	Ab7	Dbmaj7	Gb7	Bmaj7	
<i>If you think there's no pain in my heart to say goodbye</i>					
#IV7	VIIΔ7	bIII7	bVIΔ7	VIIΔ7	IIIΔ7
E7	Amaj7	Db7	Gbmaj7	Amaj7	Dmaj7
<i>Please don't cry, I'm let - ting go</i>					
I-7	bVIIΔ7		bVII-7		
Bbm9	Abmaj9		Abm9		
<i>I'll just be on my own, I'll just stay home alone</i>					

Constant structure: - By this point I've already mentioned constant structure progressions a few times and you might have already gotten the gist of them, but here are a few more examples. Basically, a constant structure progression is a progression of chords that are all the same chord type (i.e. major sevenths or minor ninths) and these chords will usually move in some sort of pattern. Usually constant structure progressions work well with more stable chords, which is why major seventh chords are usually the most popular chord to use in constant structure progressions.

This first example from “[My Sentiment](#)” was included above under the bIIIΔ7 chord but it is a good example of a simple constant structure progression. Gm7 and EbΔ9 are basically the same chord, EbΔ9 can be seen as Gm7/Eb, so we will treat them both as the bIIΔ7. This progression starts on the IVΔ7 chord and moves down by fifths until it plays the bIIΔ7 chord. Since there are two major seventh chords in every key, each major seventh chord can be found in two different keys. So as the chords move down by fifths, the key centers blend slowly through each chord change. If you were to picture all of this from the perspective of the songs key, D major, GΔ7 is in D major and D mixolydian, CΔ7 is in D mixolydian and D dorian, FΔ7 is in D dorian and D minor, BbΔ7 is in D minor and D phrygian, and EbΔ7 is in D phrygian and D locrian. EbΔ9 moves to a similar Bb6 chord before resolving back to the IΔ7 chord.

IVΔ7
bVIIΔ7

GΔ7	CΔ7	
<i>Watching you is the highlight of my day</i>		
bIIIΔ7	bVIΔ7	IV-7 bIIΔ7 IV-7
FΔ7	BbΔ7	Gm7 EbΔ9 Gm7
<i>And afternoons with you are like a dream come true</i>		
bVI6	IΔ7	
Bb6	DΔ9	
<i>My sentiments</i>		

Robert Glasper’s piano outro on the song “[God is Fair, Sexy Nasty](#)” by Mac Miller is a perfect example of a constant structure progression. In fact the whole song is basically all major seventh chords. The example below uses 8 different major seventh chords only excluding the IIIΔ7, #IVΔ7, VIΔ7, and VIIΔ7, which, as you can see on the lattice, is the top row of major seventh chords. The movement of these chords doesn’t seem to follow any specific pattern. There is a lot of movement by fifths/fourths and major seconds, but there is also some movement by minor seconds and minor thirds. Like the previous example, and most other constant structure progressions, the key center travels through a few different places but here it mostly sticks to the key of G major and sometimes Eb major.

IVΔ7	IΔ7	IVΔ7	IΔ7
Cmaj7 Gmaj7 Cmaj7 Gmaj7			
IVΔ7	IΔ7	bVIΔ7	bIIΔ7
Cmaj7 Gmaj7 Ebmaj7 Abmaj7			
IΔ7	bVIIΔ7	IΔ7	bVIIΔ7
Gmaj7 Fmaj7 Gmaj7 Fmaj7			
bVIΔ7	bVIΔ7	bVIΔ7	bVIΔ7
Ebmaj7 Ebmaj7 Ebmaj7 Ebmaj7			
IVΔ7	IΔ7	IVΔ7	IΔ7
Cmaj7 Gmaj7 Cmaj7 Gmaj7			
IVΔ7	IΔ7	bVIΔ7	bIIΔ7
Cmaj7 Gmaj7 Ebmaj7 Abmaj7			
IΔ7	bVIIΔ7	IΔ7	bVIIΔ7
Gmaj7 Fmaj7 Gmaj7 Fmaj7			
bVIΔ7	bVIΔ7	bVIΔ7	bVIΔ7
Ebmaj7 Ebmaj7 Ebmaj7 Ebmaj7			
IVΔ7	IΔ7	IVΔ7	IΔ7
Cmaj7 Gmaj7 Cmaj7 Gmaj7			
IVΔ7	IΔ7	bVIΔ7	bIIΔ7

| Cmaj7 | Gmaj7 | Ebmaj7 | Abmaj7 |
IΔ7 bVIIΔ7 IΔ7 bVIIΔ7
 | Gmaj7 | Fmaj7 | Gmaj7 | Fmaj7 |

bVIΔ7 bVIΔ7 bVIΔ7 bIIΔ7
 | Ebmaj7 | Ebmaj7 | Ebmaj7 | Abmaj7 |
IΔ7 IΔ7 IIΔ7 IIΔ7
 | Gmaj7 | Gmaj7 | Amaj7 | Amaj7 |

bIIIΔ7 bIIIΔ7 bVIΔ7 bIIΔ7
 | Bbmaj7 | Bbmaj7 | Ebmaj7 | Abmaj7 |
IΔ7 IΔ7 VΔ7 VΔ7
 | Gmaj7 | Gmaj7 | Dmaj7 | Dmaj7 |

bVIΔ7 bVIΔ7 bVIΔ7 bIIΔ7
 | Ebmaj7 | Ebmaj7 | Ebmaj7 | Abmaj7 |
IΔ7 IΔ7 IIΔ7 IIΔ7
 | Gmaj7 | Gmaj7 | Amaj7 | Amaj7 |
bIIIΔ7 bIIIΔ7 bVIΔ7 bIIΔ7
 | Bbmaj7 | Bbmaj7 | Ebmaj7 | Abmaj7 |
IΔ7 IΔ7 VΔ7 VΔ7
 | Gmaj7 | Gmaj7 | Dmaj7 | Dmaj7 |

IVΔ7 IΔ7 IVΔ7 IΔ7
 | Cmaj7 | Gmaj7 | Cmaj7 | Gmaj7 |
IVΔ7 IΔ7 bVIΔ7 bIIΔ7
 | Cmaj7 | Gmaj7 | Ebmaj7 | Abmaj7 |
IΔ7 bVIIΔ7 IΔ7 bVIIΔ7
 | Gmaj7 | Fmaj7 | Gmaj7 | Fmaj7 |
bVIΔ7 bVIΔ7 bVIΔ7 bVIΔ7
 | Ebmaj7 | Ebmaj7 | Ebmaj7 | Ebmaj7 |

This example from "[No More Lies](#)" was also used before under the VIIΔ7 chord. This example doesn't quite have the same constant structure as the previous examples but it is still worth mentioning. The following progression uses 6 different major seventh chords, 4 of them being preceded by their relative V7 chord. Because of this, there are at least five different key centers that this progression travels through. Almost every major seventh chord seems to be briefly tonicized. This starts in the key of Bb major but quickly begins to move further and further away

from that key. Two of the major seventh chord movements are down a whole step (Dbmaj7 to Bmaj7 to Amaj7) and the rest of the movements are all different.

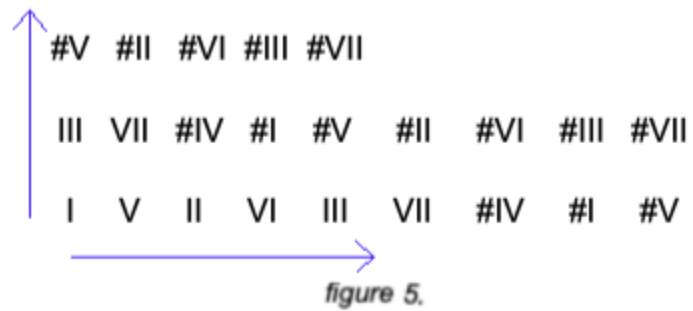
<i>IΔ7</i>		<i>bVIΔ7</i>			
<i>Bbmaj7</i>		<i>Gbmaj7</i>			
<i>There's something wrong in your mind</i>					
			<i>I7</i>	<i>IVΔ7</i>	
			<i>VI7</i>	<i>IIΔ7</i>	
		<i>IIΔ7</i>	<i>V7</i>	<i>IΔ7</i>	
<i>II-7</i>	<i>V7</i>	<i>IΔ7</i>	<i>IV7</i>	<i>bVIIΔ7</i>	
<i>IV-7</i>	<i>bVII7</i>	<i>bIIIΔ7</i>	<i>bVI7</i>	<i>bIIΔ7</i>	
<i>Ebm7</i>	<i>Ab7</i>	<i>Dbmaj7</i>	<i>Gb7</i>	<i>Bmaj7</i>	
<i>If you think there's no pain in my heart to say goodbye</i>					
<i>bVII7</i>	<i>bIIIΔ7</i>	<i>V7</i>	<i>IΔ7</i>	<i>bIIIΔ7</i>	<i>bVIΔ7</i>
<i>V7</i>	<i>IΔ7</i>	<i>III7</i>	<i>VIΔ7</i>	<i>IΔ7</i>	<i>IVΔ7</i>
<i>IV7</i>	<i>bVIIΔ7</i>				
<i>bIII7</i>	<i>bVIΔ7</i>	<i>I7</i>	<i>IVΔ7</i>	<i>bVIΔ7</i>	<i>bIIΔ7</i>
<i>#IV7</i>	<i>VIIΔ7</i>	<i>bIII7</i>	<i>bVIΔ7</i>	<i>VIIΔ7</i>	<i>IIIΔ7</i>
<i>E7</i>	<i>Amaj7</i>	<i>Db7</i>	<i>Gbmaj7</i>	<i>Amaj7</i>	<i>Dmaj7</i>
<i>Please don't cry, I'm let - ting go</i>					

The last example of a constant structure progression is from Stevie Wonder's "Too High" which I haven't done a full analysis for. It isn't quite a major seventh chord but it is a chord that we will talk about later with the other types of major seventh chords so I am including it here. This looks tricky at first but it is only one chord shape, the major seventh with a flattened 5, that moves down by whole steps until it resolves to the I-7 chord. There is only one bass note, E, so each chord could be related to that note. The first chord can be analyzed as a weird sort of Esus2(b5,b9,b13) chord. This one is definitely the hardest one to analyze in respect to E because it has an E, F, and F# note. The second chord is just EΔ7b5 but it could also be analyzed as an EΔ7(#11) chord with no 5. The third chord is an E9(13) chord with no 5. The fourth chord could be thought of as Esus2(b13). The fifth could be seen as an E7sus4(b5) chord and the last chord is E+7(#9) which resolves perfectly into an Am9 chord.

		<i>V7alt</i>			<i>I-7</i>
<i>GbΔ7b5/E</i>	<i>EΔ7b5</i>	<i>DΔ7b5/E</i>	<i>CΔ7b5/E</i>	<i>BbΔ7b5/E</i>	<i>AbΔ7b5/E</i>
<i>I'm too</i>	<i>high,</i>	<i>I'm too</i>	<i>high,</i>	<i>but I ain't</i>	<i>touched the sky</i>

Tensions: When it comes to adding extra notes to a major seventh chord, it is a little more tricky to conceptualize what notes are actually being added, and even harder to decide what is the most accurate name for these notes. This might be a matter of personal opinion but I think the nature of major seventh chords is that all of the relationships are purely overtone and not

reciprocal. Or, referring again to the note lattice reproduced in *figure 5*, the notes don't go below or to the left of the tonic note. If they do, then whatever note is found closest to the bottom left corner tends to sound like the tonic note. So if you're trying to figure out what notes should be added to a major seventh chord the note lattice in *figure 6* is a good place to start. The notes contained in the blue box are the most practical notes to use with a



major seventh chord but the #I might be pushing it a little bit. This 8 note chord is the last chord played in the song "New York State of Mind" by Billy Joel as we will see in the first example below. Minus the #I, these notes in the blue box make up the lydian scale. If you really want to



figure 6.

push the limits as far as you can go then you can start looking at notes to the right of the ones in the blue box. The notes in the red box, although they have a different mathematical relationship to the tonic in just intonation, are all repeating notes from other boxes. The two green boxes are also identical to each other through the lens of 12TET tuning. The green box is where you can rent those extra spicy

major seventh chord added tensions, though the farther to the right you get, the harder it is to pull off. Notice that all the notes in the blue box plus the green box adds up to 13 notes. This is because the last note in the box, #VII is enharmonically equivalent to the tonic note. Because of this, there is probably no way to evoke the feeling of a #VII note where the mind doesn't mistake it as the I. So in the end this does give us 12 notes that we could possibly use if you were so inclined. The only two notes that can be a problem are the #III and #VI, which we would normally mistake as the IV and bVII respectively, which are both found just to the left of the tonic note on the lattice. So theoretically you could use all 12 notes in one major seventh chord, as I attempted with the last chord of my song "[anzick-1](#)" by smokebag, and if you had to conceptualize and name it, it would probably make the most sense as a CΔ7(9,#11,13) with an added #8, #9, #10, and #13 or to put it nicely, CΔ9(6,#8,#9,#10,#11,#12,#13). Obviously this is way over the top and there's no reason to write it all out, but for me it has been helpful, or at the least entertaining, to try and conceptualize. With all this being said, in the chord system we use today we aren't used to writing #8, #10, or #13, these are usually written as the b9, 11, and b7 respectively. Therefore, instead of writing a chord as CΔ7(#8) it would probably be easier to read written as CΔ7(b9), which is technically misspelled. At the end of the day, even though the #8 or #10 might make more sense when looking on the lattice, who's to say that this isn't the b9 and 11 notes. These are a few of the petty troubles that have come from adopting the 12TET system.

Now let's get into a few examples from actual songs. As you can see above, the 9th is a very popular addition to a major seventh chord. Although they aren't found in any examples above, the #11th and 13th are probably the two next most popular additions, with the #8 (b9) also sometimes making an appearance. The last phrase of "[New York State of Mind](#)" by Billy Joel, which unfortunately I haven't done a full analysis for, is a great example of added tensions on major seventh chords (and also another example of a bVIΔ7 and bIIΔ7 chord). The last two chords of the song make the bIIΔ7 to IΔ7 phrygian cadence that we have seen a few times in earlier examples. Both of these chords use a #11 and a 13 note, but the DbΔ7 uses a #8 (b9) while the CΔ7 uses a regular 9. The DbΔ7(#8,#11,13) chord is made up of the notes [Db, F, Ab, C, G, Bb, D] where the D note, the b9, is actually played by the saxophone so the separation of instruments eases some tension between the C, Db and D notes. All of these notes, except for D, resolve down a half step to make [C, E, G, B, F#, A, D], or CΔ7(9, #11,13). The notes from CΔ7(9, #11,13) make a complete C Lydian scale.

I V7/VI VI-7 II7/bVI V7/bVI bVIΔ7 II-7 bIIΔ7 IΔ7
 | C | E7(#9) | Am7 | Bb9 | Eb6 AbΔ7 | D-7(11) DbΔ7(#8,#11,13) | CΔ7(9,#11,13) |

Another note that I see on occasion is the #5 (#12), which is usually just written as an augmented chord like C+Δ7. In the cover of "[Fly Me to the Moon](#)" by Charles Cornell, the final 'II V' cadence lands on a C+Δ7 or E/C chord. Even though this is an augmented chord, it wouldn't make much difference if you snuck the 5 of the chord in the lower register. The 5 and the #5 can be played at the same time though it's hard to specify that because #5 usually means to raise the 5th, not keep them both. Because of this people might write this chord as a CΔ7(b13) chord. But in this case the 5th is omitted and the #5th is used in its place.

II-7 V7 I+Δ7
 | Dm7 G7(b9,13) | C+Δ7 |

Another note that I like to add to major seventh chords sometimes is the #9. This note is a lot easier to add on a major seventh chord that isn't the tonic note. In the following example, again from the song "[anzick-1](#)" by smokebag, the notes used mostly stick to the C Lydian scale. The melody plays the notes [G, F#, E] first over the D/C chord and then over the Ebmaj7 chord. These notes when played against the Ebmaj7 chord add the 10 (G), #9 (F#) and the b9 (E) to Ebmaj7. This is definitely a more dissonant example, but I assure you it is an acquired taste. With this example you can see how major seventh chords with different roots can use different tensions a bit easier than others might, because those tensions will have different relationships to the tonic note. For example, the #9 of the IIIΔ7 chord is the V of the scale, a very popular note, while the #9 of the IVΔ7 chord is the less popular #VI note. This subject can get a lot deeper if you're willing to dive in.

II7 II7 bIIIΔ7 bIIIΔ7 bIIIΔ7
 | D/C | D/C | Ebmaj7 Ebmaj7(#9) Ebmaj7(b9) |

Another example of using a #9 with a major seventh chord is by playing a IΔ7 chord in the left hand, and a IIIΔ7 chord in the right hand an octave above. These two chords share two of the same notes, for example in the key of C this would be CΔ7 and EΔ7 which both have an E and a B note. The two other notes that the EΔ7 offers is the G# and the D#, or the #5 (#12) and #2 (#9) in the key of C.

The only two notes left are the #10 (4 or 11) and the #13 (b7) which I've never really seen before unless of course all 12 notes are played at once like the last chord of "[anzick-1](#)". These two notes are the farthest away from the tonic note as you can see on the lattice, and they are easily mistaken as the more popular 4 or b7 notes. Because of this, it would take a good amount of energy to try and evoke these notes in 12TET.

Other Types of Major Seventh Chords: This document was aimed at exploring major seventh chords, as in a major seventh note added to a major triad, but of course there are other chords that can include the major seventh note. Minor chords, diminished chords, augmented chords, b5 chords, and suspended chords all sometimes add a major seventh note, but these are all very different chords to the major seventh chord. It probably doesn't help putting them into the same category as major seventh chords, but regardless here are a few examples. We won't get too into all the lattice theory stuff with these chords because it can get complicated with some of them, but if you are curious you should try and identify what these chords would look like on the lattice.

- **-Δ7:** The minor major seventh chord is the tonic chord of the harmonic and melodic minor scales. To me, this chord definitely has more characteristics of an augmented chord than a major seventh chord. For example, a C-Δ7 chord can also be seen as an inverted B+(b9), G+add4, or Eb+(b13) chord. Augmented chords in their nature are very ambiguous chords. It is pretty hard to tell what note relationships are actually taking place in these chords because of the fact that they are a stack of 3 major thirds in just intonation, but also a symmetrical split in 12TET of 12 notes into 3 equidistant intervals. This means that, in 12TET, a C+ chord could also be interpreted as an E+, G#+, Ab+, B#+, Fb+, etc.

The first example of this chord, from "[It's You](#)" by Stevie Wonder, shows a classic use of this chord as a chromatic bridge between the I- and I-7 chord. In this case the DmΔ7 chord isn't as ambiguous because it is surrounded by a Dm and Dm7 chord.

II-

I-

Dm

No more playing around

II-Δ7	II-7
I-Δ7	I-7
DmΔ7	Dm7

No more waiting around for the special one to come

In the next example from the song "[Unluck](#)" by James Blake, it is a little harder to be sure of the exact nature of this chord. Gm/F# can be looked at as an inverted GmΔ7 chord with the major seventh in the bass, but with the root in mind, it can also be looked at as an F#+b9 chord which acts like the secondary dominant V/II but moves to the relative major of the II- chord, the IV chord Eb.

III-	VI-Δ7	IV	I	VII-	VI-
Dm	Gm/F#	Eb	Bb	Am	Gm

Only child take good care I wouldn't like you playing, falling there

- **°Δ7:** This is another ambiguous chord that is only diatonic to the harmonic minor scale as the bVI°Δ7 chord. Similar to the previous chord, the diminished major seventh chord can be used in a few different ways and it is sometimes better thought of as a different chord, for example C°maj7 can be thought of as B(b9).

In the first example from the intro of "[Fly Me to the Moon](#)" played by Charles Cornell, The C°maj7 chord, sometimes written B/C, is used as an 'embellishing' or 'auxiliary' diminished chord, meaning it is used as an embellishment to the tonic Cmaj7 chord.

IΔ7	I°Δ7	IΔ7	I°Δ7	IΔ7	II-7	V7
Cmaj7	C°maj7	Cmaj7	C°maj7	Cmaj7	Dm7	G7(13)

The next example of this chord, from the song "[Sincerity is Scary](#)" by the 1975, uses the diminished major seventh chord in a slightly different way. Here the F°maj7 chord, or E/F, acts as the 'leading diminished' (VII°) chord of the following F#m chord. F°maj7 is diatonic to the F# harmonic minor scale.

bVIΔ7	VII°Δ7	I-7	SubV7
IVΔ7	bVI°Δ7	VI-7	bVII7
Dmaj9	F°maj7	F#m7	G9

The diminished major seventh chord is also often used with a different bass note like in this example from the song "[Visions](#)" by Stevie Wonder. E7(#9) and D7(#9) can be thought of as G#°maj7/E and F#°maj7/D.

<i>bVII7</i>	<i>bVI7</i>	<i>IV7</i>	<i>bIII7</i>
A7(9,13)	G7(9,13)	E7(#9)	D7(#9)

Where hate's a dream and love forever stands

- **+Δ7**: This chord is actually very similar to the minor major seventh chord so what was said under that chord also applies to this one, although the +Δ7 chord is only diatonic to the harmonic minor scale as the bIII+Δ7 chord. This chord is also pretty ambiguous, for example a C+Δ7, or E/C, could also be interpreted as an inverted E(b13/#5), Ab+(#9), or a B6sus4(b9) with no 5.

Both examples of this chord come from Mac Miller songs, the first one coming from the outro "[Small Worlds](#)". The last chord Db+Δ7, or F/Db, is the bIII+Δ7 chord which is diatonic to the Bb harmonic minor scale. This could also be thought of as an inverted F(b13) chord, the dominant V chord of the upcoming Bbm chord.

<i>I-7</i>	<i>VII7+</i>
Bbm7	A7+

Do you want it all if it's all mediocre?

<i>bVIIIsus4</i>	<i>VI-7b5</i>
Db/Ab	Bbm/G

Starin' at the wall and the wall's full of posters

<i>bVIΔ7</i>	<i>V</i>
Gbmaj9	F

Lookin' at my dreams, who I wanna be

<i>IV7</i>	<i>bIII+Δ7</i>
Eb9	Db+Δ7

I guess you gotta see it to believe

<i>IV7sus2</i>
Bbm/Eb

Ooh, I been a fool but it's cool

<i>III-7</i>
Bbsus2/D

That's what human beings do

The next example is from the outro to the song "[Cinderella](#)". It starts in the key of Bb major but soon modulates to the key of Db major. The Db+Δ7 chord, or F/Db, acts as an embellishment chord to the tonic Dbmaj7 chord. A similar example to this from the outro of "[Fly Me to the Moon](#)" was discussed earlier under the b13/#5 tension.

<i>IVΔ7</i>
Ebmaj7

A13(#11)	Abmaj9	A13(#11)	Abmaj9
Looking in my mirror		Took me by surprise	
VI-7	V7/V		
Fm9	Bb13		
I can't help but see you			
IV7sus2	V7+	bVIΔ7	bVII-7 I-7 bIIΔ7
Db7sus2	Eb+7(#9)	Emaj7	F#m7 G#m7 Amaj7
	Running often through my mind		

This example comes from yet another Stevie Wonder song, "[All in Love is Fair](#)". This voicing for the Am6(9) chord is easier for me to think about as a CΔ7(b5)/A chord. In this case it is used as a minor chord which then moves to D13 or really CΔ7b5/D. Even though CΔ7b5/D is technically a D7(9,13,no5) chord, it is easier to write it as D13 because in essence it is a D13 chord. This also gives each musician the room to use their own favorite 13th chord voicings. A few chords later, an F#13, or EΔ7b5/F#, is played. As you can tell, Stevie Wonder likes to use the Δ7b5 chord in his right hand with a number of different root notes played in the left hand.

V7/VI	VI-	VI-7	#IV-7b5	IV-6	
G#7/C	C#m	C#m/B	A#m7b5	Am6(9)	
But all is fair in love....		I had to go away			
bVII7	I	V7/II	V7/V	V7sus2	I
D13	E/B	C#9	F#13	B7sus2	E
A writer takes his pen to write the words again, that all in love is fair					

- **Δ7sus4:** I have never actually seen this chord written out or used in many ways if any. At least I couldn't find any examples. It is only diatonic to the major key as the IΔ7sus4 but the 4 and 7 create a tritone interval that doesn't sound as nice with a tonic chord. If this chord were to ever be played, it might just be thought of as a different chord. For example, CΔ7sus4, which could be written Csus4/B or Fsus2/B, might be interpreted as an Fsus2(#11) chord or possibly a G7(11) chord with no 5.
- **Δ7sus2:** This chord is a really nice sounding chord although it would probably be written as something else and might just be interpreted as an incomplete Δ9 chord. For example, CΔ7sus2 could be written G/C and might be interpreted as a CΔ9 or inverted Gadd4 chord.

One example of this chord comes from the song "[She Works Out Too Much](#)" by MGMT. If there's one band that has taught me the most about chord progressions it's MGMT. This chord progression uses a Bb note as the root of every chord. The first chord, F/Bb, could be thought of as BbΔ7sus2, a BbΔ9 with no 3, or possibly an Fadd4 with the 4 in the bass.

IΔ7
F/Bb

bVI
Gb/Bb

bVII
Ab/Bb

IΔ7
F/Bb

Don't take it the wrong way... I can never keep up

Conclusions: As you can see, major seventh chords can be used in many different ways. They can be stable like the IΔ7 chord, or they can be tense and seeking for a resolution like the bIIΔ7 chord. There is definitely a lot more to explore than just the diatonic IΔ7 and IVΔ7 chords. Hopefully this guide deepened your understanding of major seventh chords in some way, or at least inspired you to think about your own understanding of major seventh chords. Another thing that is interesting is that, of all the examples included above, every type of root movement between major seventh chords (+1, -1, +2, -2, +/-6) is shown at least once.

“[Dominant Chords](#)” is a similar document that explores the nature and movement of dominant chords, which seem to be a lot more complex than major seventh chords.

“[Chord Theory](#)” is a document exploring every possible type of chord, how chords are built and how they can function.

Lastly, here is my [Chord Analysis](#) folder with all of the songs I have analyzed.