

Key Changes and Modulations

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This document aims at exploring as many different types of modulations as possible using examples from a wide variety of popular songs. Although, because there are so many different ways to modulate and there are so many little nuances involved with each chord progression, it is probably impossible to try and list every single unique type of modulation. The main approach in categorizing them here will be to explain the different ways a song can modulate (regardless of how many semitones the key center shifts), and then to classify each modulation by the change in semitones between the two key centers involved. The following theories are all based on the 12 tone equal temperament system. When we talk about a change from C major to Db major, for our purposes, that is equivalent to a change from C major to C# major. We are using enharmonic equivalents. For example, the C major scale {C,D,E,F,G,A,B} technically has one note in common with the Gb major scale {Gb,Ab,Bb,Cb,Db,Eb,F} and also one note in common with the F# major scale {F#,G#,A#,B,C#,D#,E#} but these are different notes. So enharmonically, C major has two notes in common with the Gb/F# major scale. There also might be some enharmonic spelling mistakes in a few examples in order to make things look nicer, especially with keys like Gb or F#. I prefer to write B rather than Cb and also F rather than E#.

Types of Modulations: First things first, let's discuss the difference between modulations, key changes, and modal interchange. The words 'key change' and 'modulation' seem to be used mostly interchangeably, though a lot of people tend to distinguish the two for different reasons.

The way I've come to understand it is that a 'key change' is a full-on change of the tonal center permanently, whereas a 'modulation' (sometimes called a 'tonicization') is usually a brief switch of the tonal center that soon returns back to the original key. Modal interchange is when chords are borrowed from parallel modes or scales but the key center never changes. Oftentimes, the lines between these 3 things are blurred and a mixture of a few different techniques are employed. For example, how long does a song have to stay in the new key center for it to be considered a key change and not just a modulation? I can't answer that one.

Here are the main different types of modulations. Most of the time, a specific modulation in question can fit into more than one of these types of modulations. Some of these modulation techniques are very similar to each and almost interchangeable, but there are usually subtle differences that can separate the different types. Every type of modulation listed below will be included in at least one of the examples listed later on.

Direct Modulation (Phrase Modulation): A direct modulation is when the key changes unexpectedly without any kind of harmonic or melodic setup. The two key centers can be closely related or seemingly far away from each other although the farther the key centers are from each other the more unexpected and direct the modulation is. This type of modulation usually happens within an instant by directly introducing a non-diatonic chord that leads to a new key. Modulations can be direct and still sometimes fit into a lot of the other categories as well.

Common-Tone Modulation: A common-tone modulation is when a certain note is used as a bridge between the two key centers. Most of the time, this means that the note is emphasized and specifically used as the pivot note common to both keys, but sometimes the note can be subtle and just barely connect the two keys. This also includes enharmonic tones like G# and Ab. The fact that the two notes are enharmonic doesn't change the function of the modulation, it is only a matter of how the chords are spelled. You could change the spelling of either key to make it a regular common-tone modulation. A lot of other types of modulations also have common tones, specifically chromatic modulations, which means that this type of modulation can often accompany other types of modulations. All keys share at least two tones with another key so a common-tone modulation can be used to change to any key.

Common-Chord (Pivot Chord) Modulation: This type of modulation is similar to the previous one, only it deals with chords and not single tones. When dealing with purely diatonic chords, each key has 4 chords in common with neighboring keys a fifth apart and 2 chords in common with keys spaced 2 fifths apart. This means that the key of C major shares 4 chords in common with both G major and F major, and it shares two chords in common with both D major and Bb major. However, if you start to include borrowed or secondary chords that aren't diatonic but still loosely related to the key, there are a lot of other options when it comes to common-chord modulations. Usually though, these types of modulations might also be seen as chromatic or common-tone modulations.

Chromatic Modulation: - A chromatic modulation is usually when a diatonic chord is altered to lead to a new key. This can be when one or two of the notes are altered as is the case with secondary dominant or chromatic mediant chords, or this can be when all the notes of the chord are altered chromatically. This type of modulation is often similar to and can accompany common-tone or common-chord modulations. The case for a chromatic modulation can just about be made for any non-diatonic movement.

Sequential Modulation: A sequence is when a chord progression repeats itself in a different key. This is usually up or down a whole step but can also happen with any other interval. Sometimes these modulations can be unexpected like direct modulations or they might even share a common tone or common chord. I don't think it matters as much to try and relate the two keys to each other because the idea is that the whole key center is sort of picked up and moved to a new location.

Chain Modulation: - A chain modulation is usually when a progression travels through the circle of fifths without necessarily resolving to a different key center. This is also sometimes referred to as a constant structure progression. There is one example of this type of modulation in the modal interchange chapter. This type of modulation can be somewhat similar to a sequential modulation in the way that it moves by a constant structure.

Parallel Modulation (Modal Interchange): A parallel modulation, or modal interchange, is when chords are borrowed from parallel modes or scales but the key center doesn't necessarily change. This could indicate a change from C major to C minor, but could also remain completely in C major and just borrow chords from other C scales, major or minor. There are specific chapters for this type of modulation at the end since the tonic note doesn't change by any interval.

Visual Representations of Different Modulations:

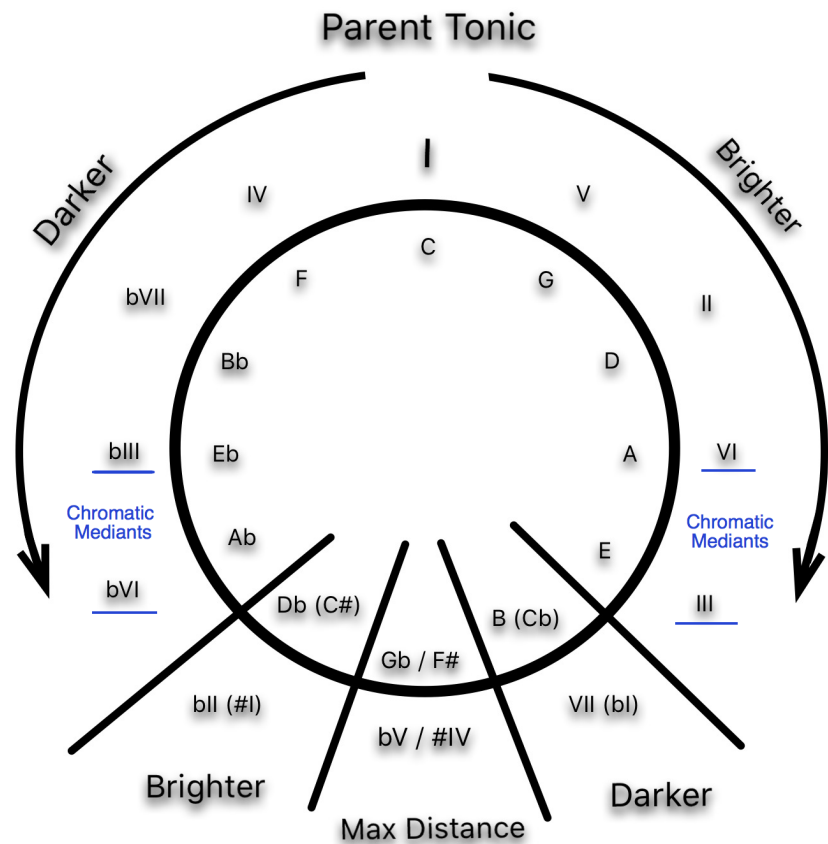
The following few diagrams show a few simple visual representations of different key changes by mapping the different ways keys relate to each other. The study of modulations however, goes much deeper than what can be drawn in 2 dimensions. Harmony works in multiple dimensions. It's based on multiple different harmonic relationships between notes and chords, the keys or scales that are being used, the tempo, dynamics, meter/rhythm, the placement of certain chords on stressed/unstressed beats, and more. The diagrams serve well as loose guidelines, but they are not foolproof explanations of how each key change will always sound.

The first diagram is similar to a diagram from "The Berklee Book of Jazz Harmony" by Mulholland/Hojnacki. This can be used for major or minor keys as long as you stick to either major or minor but not both. It arranges each key in a circle of fifths and in this example uses C as the original tonic. As you can see, modulating the tonal center clockwise on this circle usually

has a 'brightening' effect and moving counterclockwise usually has a 'darkening' effect. As stated before, this is only a rough idea of what different key changes can sound like and definitely isn't always the case. Of course key

changes go much deeper than brighter and darker but for now we will use these adjectives. The idea is that when you modulate up a fifth (down a fourth) the tonal center brightens because we have added a sharp to the key signature. If you move up 2 fifths, you add 2 sharps, and the effect is usually even more bright and so on. The same idea goes for when you travel counterclockwise only you are adding flats and thus getting darker. Again, this isn't always the case and any key change may sound darker or brighter depending on context. This is also only true until you move 5 fifths away from the tonic and in

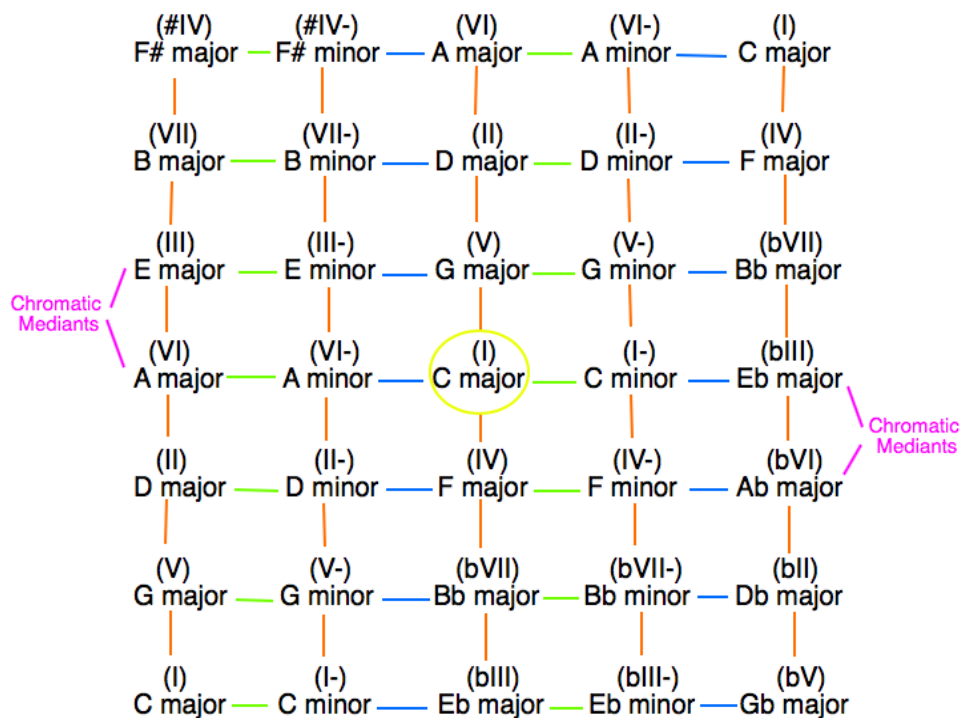
that case it seems more that you have moved by one semitone instead of 5 fifths. For example, when you change from C major {C,D,E,F,G,A,B} up a semitone, it sounds more convincing every note has moved up a half step to C# major {C#,D#,E#,F#,G#,A#,B#} rather than moved 5 fifths down to Db major {Db,Eb,F,Gb,Ab,Bb,C}. Again, for our purposes in 12TET, the scales of Db major and C# major are enharmonically equivalent. Because we are so used to 12TET we blur the distinction between these two keys, although our mind's ear can make the distinction between these keys without us consciously labeling it, so it is useful to know the difference. With C major to Db major (C locrian), 5 notes are flattened. With C major to C# major, every note is raised one semitone. This distinction is only to explain why this specific key change seems to brighten the tonal center. This effect can also be felt with changing keys by a whole step. For example, with C major {C,D,E,F,G,A,B} changing to D major {D,E,F#,G,A,B,C#}, two notes are made sharp, but the other 5 notes stay the same. With C major {C,D,E,F,G,A,B} changing to C## major {C##,D##,E##,F##,G##,A##,B##} (which would most likely be spelled D major), all notes are sharpened twice, or moved up a whole step. This is really a whole other type of key change, a sequential or melodic key change or instead of a harmonic key change. Melodic key changes are usually with a half step or whole step because the farther you go away, the less convincing it is. Where instead of a handful of notes being sharpened or flattened, every note in



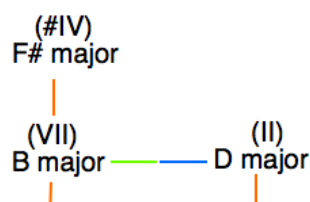
the scale is lifted by the same amount. Both of these feelings can be accomplished in 12TET and again sometimes the lines between these two types of key changes can be blurred and it can be hard to tell which one it is. This is one of the main big differences between common-tone or common-chord modulations and direct or sequential modulations.

A movement by 6 fifths is the same as a movement by 6 semitones. With this type of movement, it is mostly impossible to tell which direction you are moving on the circle of fifths, it is both harmonically and melodically the farthest that two keys are from each other. Another important relationship in music is that of chromatic mediants. A mediant chord is a chord that is a third (major or minor) away from the parent tonic note, a chromatic mediant means that one or more of the notes is not found in the parent tonic scale. The 4 shown here each share one note with the original tonic chord which makes for some interesting common-tone key changes. Technically A and Ab are chromatic sub-mediants and E and Eb are chromatic mediants. This is important to point out separately because it is based on the movement of thirds and not of fifths. The diagram above is only based on fifths but doesn't do the best job at showing the relationships of mediant chords. A better way to show the relationship with mediant chords is with an extended version of a diagram shown in Arnold Schoenberg's book "Structural Functions of Harmony". Schoenberg refers to it as the chart of the regions.

This diagram shows both major and minor keys. The movement by a green line is between parallel majors and minors, the movement by a blue line is between relative majors and minors, and movement by an orange line is by fifths/fourths. You can see that there are multiple pathways to D minor from C major. This is because D minor can be used as the V-/V or as the VI-/IV. The duplicate keys in this example would actually have different tunings in just intonation, but in our case they are the same key. The same goes for Gb major and F# major.



Below is the same diagram with all of the minor keys and duplicates taken out. This shows the movement between all 12 key centers of a keyboard.



F# major and Gb major are both shown here, but they count as one key in our case. This diagram shows the same keys as the first diagram only in a different orientation. Instead of basing the relationships all on fifths, this diagram includes the relationships between relative and parallel keys.

Again, these are only guides to help us understand what kind of movements are taking place. These are not definitive proof for how key changes work as there are often other factors at play. One thing these diagrams do lack is the representation of sequential movements, where, as mentioned before, the key center is shifted entirely, usually by a half step or whole step, to a new location. Like the difference between a movement from C major up half step to C# major or a movement from C major down 5 fifths to Db major.

They also don't show the relationship between all the parallel keys which will be shown in a diagram later on in the chapter on modal interchange.

Here are examples of all the different movements in order of distance by semitone.

Up a half-step (+1 semitone): This type of modulation isn't the most popular but still used a fair amount. I most often see this type of modulation at the end of a song where it is used to lift the key center a half-step for the last chorus. Usually movement by a half step can be abrupt because the two keys only have 2 notes in common as they are 5 fifths away from each other. This type of modulation can also like going from major (ionian) to locrian, though the locrian sound is an unpopular one.

The first example of this comes from the song "[I Couldn't Be More in Love](#)" by The 1975. This is an example of a sequential modulation from the key of Eb major to the key of E major, simply by repeating the same progression a half step higher. This would probably mostly just be referred to as a key change. Because the change is abrupt, this might also be called a direct modulation. Fm7 and Amaj7 also share an enharmonic note, the Ab in Fm7 and the G# in Amaj7.

(Eb major) (E major)

IVΔ7 I II-7
| *Abmaj7* | *Eb/G* | *Fm7* | - |

IVΔ7 I II-7 I
Amaj7 E/G# F#m7 E/G#

So, what about these feelings I've got?

The next example, from the song "[With Each Beat of My Heart](#)" by Stevie Wonder, is similar to the first in that it directly modulates up a half step. The difference with this song is that, rather than the progression simply repeating itself a semitone higher, the V7 chord moves up a half step before resolving to the new tonic chord. This might also be

referred to as a chromatic modulation where every note in G9sus4 moves up a half step chromatically to make G#9sus4.

(C major) (C# major)

V7sus4
A7sus4

You are my first breath

V7/II
A7

My first smile

VI-7 V7/II
Am7 A7

And my morning cup of tea

II7sus4 V7/V
D7sus4 D7

Yours is the love that I pray for

#IV7sus4 V7sus4
V7sus4 bVI7sus4
G9sus4 G#9sus4

Before I go to sleep

IΔ7 bVIIΔ7
C#maj7 Bmaj9

And from the time I saw your face

IΔ7 V-7
C#maj7 G#m9

I knew no other could erase

The next example is from another Stevie Wonder song, "[Saturn](#)", and is a little bit more complicated than the first two. The phrase starts in the key of C major and briefly modulates up a half step to Db major/C locrian (with Fmaj7 to Ab) before coming back down to C major (with Dbmaj7 to C). This type of modulation might be referred to as a few different things. First it could be thought of as a common-tone modulation because Fmaj7 and Ab share a C note, as do Dbmaj7 and C. This could also be thought of as a type of chromatic modulation, Fmaj7 moving mostly chromatically to Ab and then Dbmaj7 moving down chromatically to C (phrygian cadence). Lastly, this might be considered a parallel modulation, or C major borrowing chords from C locrian, but the case for this is weak.

(C major) (Db major)

I IVΔ7
C Fmaj7

There's no principles in what you say

V IV6
bVI bV6
Ab Gb6

No direction in the things you do

III- II-7 IΔ7
IV- bIII-7 bIIΔ7
Fm Ebm7 Dbmaj7

For your world is soon to come to a close

V/III IIIΔ7
I IVΔ7
C Fmaj7

Through the ages all great men have taught

The last example of this type of modulation is from the song "[Metanoia](#)" by MGMT. It is a little hard to be sure exactly what type of modulation is happening here. Even though its analyzed as A major to A# major, this doesn't actually sound like it is ever in the key of A# major. The reason it is analyzed that way is because the 3 non-diatonic chords here (Cm, D#, and Dsus4) are all diatonic to the key of A# major (A locrian) only. If anything it almost sounds like the D# chord is briefly tonicized. This modulation could be called a chromatic modulation, with C#m moving down to Cm and then Dsus4 moving down to C#m, or it might be thought of as a parallel modulation with the non-diatonic chords being borrowed from A locrian. In the end however, I think most people might analyze this as a modulation from A major to D# major and back again.

(A major) (A# major)

I IV III-
A D C#m(9)
Metanoia, reshaping the world
II-
bIII-
Cm
It can teach you
IV III-
#IV IVsus4
D# Dsus4
And reprogram you
III- IV
C#m(9) D
It can show you the flood
V I
E A

That's trapped inside

Down a half-step (-1 semitone): This type of modulation basically acts like the opposite of the previous type of modulation, in that, instead of lifting the tonal center, modulating down a half step depresses the tonal center. This type of modulation also isn't the most popular, but still gets its use, especially when a song wants to achieve a darker last chorus.

The first example of this type of modulation comes from "[The Youth](#)" by MGMT. This is a really good example of a key change down a half step. This is a pretty direct modulation, especially if you're hearing it for the first time, but you could make the case that it is a common-chord modulation because Bb is the IV in F major, but it is the SubV/IV chord in E major.

(F major) (E major)

<i>IV</i>	<i>V/VI</i>
Bb	A
<i>The youth are starting to change</i>	
<i>VI-</i>	<i>V</i>
Dm	C/E
<i>Are you starting to change</i>	
<i>I</i>	
F	
<i>Are you together, together, together</i>	
<i>I</i>	
F	
<i>Together, together, together, together</i>	
<i>SubV/IV</i>	
<i>IV</i>	
Bb/F	
<i>Together, together, together, together</i>	
<i>SubV/IV</i>	
<i>IV</i>	
Bb/F	
<i>Together, together, together, together</i>	
<i>IV</i>	<i>V/VI</i>
A	G#
<i>The youth are starting to change</i>	
<i>VI-</i>	<i>V</i>
C#m	B/D#
<i>Are you starting to change</i>	
<i>I</i>	

E
Are you together, together, together

Another good example of a key change down a half step at the end of the song "[Stranger in Moscow](#)" by Michael Jackson. This is more direct than the previous example. The movement from A to Eb is by a tritone, the maximum melodic distance between two notes.

(E major) (Eb major)

	<i>I</i>	<i>bVII</i>	<i>bIII</i>	<i>IV</i>
	<i>E</i>	<i>Dadd9</i>	<i>G6</i>	<i>A</i>

Like a stranger in Moscow

<i>I</i>	<i>bVII</i>
<i>E</i>	<i>Dadd9</i>

I'm livin' lonely

<i>bIII</i>	<i>IV</i>
<i>G6</i>	<i>A</i>

I'm livin' lonely baby

	<i>I</i>	<i>bVII</i>	<i>bIII</i>	<i>IV</i>
	<i>E</i>	<i>Dadd9</i>	<i>G6</i>	<i>A</i>

A stranger in Moscow

<i>I</i>	<i>bVII</i>	<i>bIII</i>	<i>IV</i>
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| *Eb* | *Dbadd9* | *Gb6* | *Ab* | *x until fade out*

This example from "[Floating up the Stairs](#)" by Dot Hacker, has a unique way of making this key change sound even darker. The key change is very direct, though there is a common tone, F, with the Fmaj7 and Bbm chords. The Bbm chord is an interesting chord that is somewhat distant but still relative to each key, being the bVII- chord from C phrygian and the VII- chord from B lydian. Bbm minor then moves by a tritone to Emaj7.

(C major) (B major)

<i>VI-</i>
<i>Am</i>

Remark my words

<i>IVΔ7</i>
<i>Fmaj7</i>

They shouldn't mean a thing

<i>IVΔ7</i>

Fmaj7

Even with how mean I like to be

bVII- IIIΔ7

VII- IVΔ7 IV VI- IV I

Bbm Emaj7 E G#m E B

Come rake me over... new form of torture

The last example of this type of modulation from "[When You're Small](#)" by MGMT changes keys down a half step, but not long after modulates back up a half step to the original key. The first modulation from C major to B major is very direct and unexpected. The tonal center actually briefly shifts from B major to B minor before resolving from a Bm chord down a whole step to Am, effectively modulating back to C major (A minor). You could point out that Bm is found in the C Lydian scale but I'm not sure exactly how relevant that is in this case.

(C major) (B major)

VI- IV

Am F

When you're high

I III-7 VI VI-

C/E Em7 A Am

You don't have to know why

III- V/VI I I III-

| D#m | D# | B | B D#m/A# |

II- III- V/II V/II

| C#m | D#m | G# | G# |

II-VI II-VI

VI- V VI- V/II I- I-

| G#m | F# | G#m | G# | Bm | Bm |

VI- IV

Am F

When you're small

I V

C/E G

You don't have very far to fall

Up a whole-step (+2 semitones): Changing keys up a whole step is one of the most popular modulations used in modern music, and it can be used in a number of different ways. This type of modulation is unique because for one, keys a whole step apart have five notes in common and only two notes not in common. In addition to this, and similar to a modulation by half step, keys a whole step away are still close enough where you can picture all of the notes moving melodically up or down a whole step. So the change is up two semitones, but also up two fifths, a double lift.

The first example of this movement from the classic Queen song "[We are the Champions](#)" might best be described as common-chord modulation (pivot modulation) mixed with a 'chromatic modulation'. A common-chord modulation because the Fm/Bb (Bb7sus2) and C7 chords are the V7sus2 and VI7 (V7/II) chords in Eb major, but they can also be seen as the IV7sus2 and V7 chords in F major. This modulation also might be seen as a chromatic modulation because C7 is a chromatically altered VI-7 chord in Eb major.

(Eb major) (F major)

	I	V	VI-
	Eb	Bb/D	Cm
<i>I've had my share of sand kicked in my face</i>			
V/V	V		
F7	Bb		
<i>But I've come through</i>			
		IV7sus2	V7
	V7sus4	V7sus2	V7sus2
	V7sus2	V7/II	
	Ab/Bb	Ab+/Bb	Fm/Bb
		C7	
<i>And we mean to go on and on and on and on</i>			
I	III-	VI-	IV
F	Am	Dm	Bb
		V7	C7
<i>We are the champions, my friends</i>			

The next example from "[Plenty of Girls in the Sea](#)" by MGMT is similar to the previous one in that the V7/II chord is used to modulate up a whole step.

(Bb Major) (C major)

I	V7/VI
Bb	D7
<i>Just cause the grass wasn't green</i>	
IV7	V7
	I
	V7/II

Eb7
Bb
G7

Yeah, there's plenty of girls in the sea

I
VI-

C
Am

There's plenty of girls in the sea

IV7
V7/VI

F7
E7

And plenty of clowns in the village

In "[Let it Happen](#)" by Tame Impala, the verse modulates up a whole step to the chorus similarly to the first two, by a chromatic alteration that acts as a common chord. In this case G# is an altered III- chord in E major, but it acts as the IV chord of the D#m chord creating a sort of dorian minor plagal cadence. This is also a common-tone modulation because the G# and D#m chords both have a D# note.

(E major) (F# major)

IV
II-
V/VI

A
F#m
G#sus4

Let it happen, let it happen (It's gonna feel so good)

IV
IV/VI

IV
II-
V/VI

A
F#m
G#

Just let it happen, let it happen

VI-
IVΔ7

D#m
Bmaj7

All this running around

V
IΔ7

C#
F#maj7

Trying to cover my shadow

In the chorus of "[Good Vibrations](#)" by The Beach Boys, the chord progression directly moves up a whole step, twice. This is called a sequence, thus, this type of modulation is called a sequential modulation. In this case the progression is simply repeated a whole step up. This movement is pretty direct, but you could also make the case that the transition chords are loosely related to each key. In F# major, G# is the II chord borrowed from F# lydian.

(F# major) (G# major) (A# major)

I
IV
I
IV

F#
B/F#
F#
B/F#

I'm pickin' up good vibrations

I IV I IV

F# B/F# F# B/F#

She's giving me excitations

I IV I IV I

G# C#/G# G# C#/G# G#

Good good good good vibrations

IV I IV

C#/G# G# C#/G#

She's giving me excitations

I IV I IV I

A# D#/A# A# D#/A# A#

Good good good good vibrations

IV I IV

D#/A# A# D#/A#

She's giving me excitations

In the song "[Hand It Over](#)" by MGMT, there is a brief modulation up a whole step and then back down. The first modulation from E major to F# major is a common-chord modulation as the B chord is the V in E major and the IV in F# major. The modulation back down is a sequential modulation, with the IV- to I cadence repeating in both keys.

(E major) (F# major)

II- III- V

F#m G#m B

Look who's bending over

IV

I VII bVII V

E Eb D B

V

V/II

C#

But the stars weren't wrong, the time felt right

IV- I

V- V/V

Bm F#/A#

We both knew it was true

IV- I

Am E/G#

The smart ones exit early

II- III- V
F#m G#m B
And the rest hope for a shoulder

The last example of this modulation is from the song "[Visions](#)" by Stevie Wonder. Again this is a brief modulation up a whole step and then back down again, though this one is from the perspective of the minor key. The first modulation from B minor to C# minor is through the use of chromatically altered chords in B minor used as the relative II-7b5 and V7sus4 chords of C# minor. The modulation back down uses the I-7 and IV+ chords in C# minor as the II-7 and V+ chords in B minor.

(B minor) (C# minor)

V+
I-7
II-7
I-7
II-7
F#+
Bm7(9)
C#m7(9)
Bm7(9)
C#m7(9)

Or is this a vision in my mind?

bVII7
VI-7b5
A7(9,13)
G#m7b5

I'm not one who make believes

V7/V
V-
#IV+
C#7
F#m
F+

I know that leaves are green

II-7b5
V7sus4
III-7b5
V7sus4/II
D#m7b5
G#7sus4

They only turn to brown

V7
I-
V7/II
II-
G#7
C#m

When autumn comes around

I-7
VI-7b5
II-7
VII-7b5
C#m/B
A#m7b5

I know just what I say

II-7b5
III-7b5
D#m7b5

Today's not yesterday

V7
I-7
IV+
V7/II
II-7
V+
G#7
C#m7
F#+

And all things have an ending

I-7

Bm7(9)

But what I'd like to know

Down a whole-step (-2 semitones): This type of modulation acts in a similar way as the previous one, only in a reciprocal manner, meaning it usually darkens the harmony rather than brightens it. In that way, this modulation can also be similar to a change down a half step. Although probably not as popular as a change up a whole step, this modulation is still used in many different ways.

The first example is again from "[We are the Champions](#)", a few lines later from the previous example of this song where it just modulated from Eb major up a whole step to F major. Here, the key center switches back from F major to Eb major by first modulating from F major to F minor, then using the Fm chord as a common chord that is diatonic to both F minor and Eb major.

(F major) (Eb major)

I bVII
F Eb/G
No time for losers

 bIII IV7 V-7
 Ab Bb7 Cm7(11)
'Cause we are the champions

 II- III-7 II- III-7 II- III-7
 I- II-7 I- II-7 I- V7sus4
 Fm Gm7/F Fm Gm7/F Fm Gm7/C
Of the world

 VI- III-7
 Cm Gm7/C
I've taken my bows

 VI- III-7
 Cm Gm7/C
And my curtain calls

This is another example continued from earlier. A few lines after the previous example from "[Let it Happen](#)" by Tame Impala, the tonal center moves back down from F# major to E major in a similar way. This modulation also uses a common tone to bridge the two keys, though the result is still pretty direct. In this case, the C# in C#sus4 is the major third of the A chord.

(F# major) (E major)

VI- IVΔ7
D#m Bmaj7
I can hear an alarm
V/II
V Vsus4
C#/F C#sus4
Must be morning
IV II- V/VI
| A | F#m | G#sus4 G# |

This progression from "[Leave the door open](#)" by Silk Sonic is an example of a sequential modulation down a whole step. In this case, the G7sus4 chord also acts as the SubV7 chord of the upcoming Gbmaj7.

(Eb major) (Db major)

IVΔ7 SubV7/IV
Abmaj7 G7sus4(13)
La-la-la-la-la-la-la (I gotta see you, baby)
IVΔ7 V7/VI
Gbmaj7 F7sus4(13)
La-la-la-la-la-la-la

At the end of "[In the Real Early Morning](#)" by Jacob Collier there is a sequential modulation down a whole step which settles the song back down nicely before it ends. The F# chord could possibly be thought of as the V/V chord in the key of E major.

(F# major) (E major)

II- I
G#m/B F#/A#
I was here when you started
V/V
V7sus4 I
C#7sus4 F#
I'll be here till the end
IV7sus4

Up a minor third (+3 semitones): Moving the tonal center up a minor third is a fairly popular way to modulate in music. One of the reasons is because it is similar to going from a major key to the parallel minor key. For example, D major to F major is similar to the change of D major to D minor because D minor is the relative minor of F major. Even though it is similar to a parallel modulation and sometimes it can be hard to tell which one it is, these two types of modulations can be very different. Movement by a minor third can also be popular because you can play around with chromatic mediant chords which have their own special flavor. This type of modulation usually darkens the tonal center (major to minor), but because we are moving up 3 steps, it can also be used to brighten the tonal center.

In the song "[Total Eclipse of the Heart](#)" by Bonnie Tyler there is a really nice example of this type of modulation. This part of the song starts in the key of Db major with a two chord progression between the Db (I) and Bb (bVII) chord, which is borrowed from the Db mixolydian scale. The Bb chord is then used as the V chord of the new key, E major. Because the Bb chord is related to both keys, this is a common-chord modulation. Even though the change in scales is like going from Db/C# major to Db/C# minor, this is not a parallel modulation because the tonal center clearly resolves to the E major chord, not the relative Db/C# minor chord. In my opinion, this modulation seems to brighten the tonal center.

(Db major) (E major)

I
Db
Turn around, every now and then I get a
bVII
B
Little bit nervous that the best of all the years have gone by
I
Db
Turn around, every now and then I get a
V
bVII
B
Little bit terrified and then I see the look in your eyes
I IV
E A
Turn around bright eyes, every now and then I fall apart

In "[The Handshake](#)" by MGMT, there is another really satisfying example of this type of modulation. This one is also a common-chord modulation but it is done in a different way than the previous example. This time the F# chord, which is acting as the V chord in the key of B major, is used as the V/VI chord in the new key of D major. This could also be

seen as a chromatic modulation. One because every note in the F# chord moves up a semitone to make a G chord, and also because the F# chord is a chromatic alteration of an F#m chord which is diatonic to the new key of D major. It is hard to tell if this movement brightens or darkens the tonal center, in my opinion it seems to just shift.

(B major) (D major)

bVII
A
It would only take a few seconds of darkness to

IV *V/VI*
E *F#*
figure out what's in store... little girl

IV *IΔ7* *II-* *V* *I*
G *G/F#* *Em* *A* *D*
Mmmmmm you convince yourself that you want

V *VI-*
A *Bm*
it, but you don't know

In another MGMT song, "[Flash Delirium](#)", the same type of modulation is approached in a very similar way with a common chord, but in this case you can see how the key of C major also feels like it could be represented as A minor which would make this a parallel modulation. Soon after the change to C major/A minor, the chords resolve back to an A major chord briefly before resolving back to C major again before the final resolve back to A major. Again, whether this brightens or darkens the tonal center is hard to say.

(A major) (C major)

I
A
And see flash the mirror ball's throwing mold

IV-
Dm
You can't get a grip if there's nothing to hold

V/V
B
See the flash catch a white lily laugh and wilt

V7/VI
V7
E7
And if you must smash a glass first fill it to the hilt

IV
 bVI
 F
 Plants, as far as i know are still,
 I VI-
 bIII I-
 C Am
 Still bending toward the light
 IV
 bVI
 F
 And if we dance until the heart explodes
 II- V/II
 IV- I
 Dm A
 It'll make this place ignite
 IV V
 bVI bVII
 F G
 And even if this hall collapses
 I VI- IV
 bIII I- bVI
 C Am F
 I can stand by my pillar of hope it's just
 II- V/II
 IV- I
 Dm A
 A case of Flash delirium

A somewhat similar example of this type of modulation is from the song "[In the Real Early Morning](#)" by Jacob Collier. This example also uses the V chord, B, as the new V/VI chord, but this time it resolves to a G chord which becomes the new tonic. This is a pretty direct modulation but it could also be seen as a common-tone modulation, with the B note connecting both chords/keys. This is also mostly the case when it switches back from G major to E major. The Ab/A chord is really faint and therefore isn't quite as tense as it seems, and the melody actually sings a B note over top. This definitely has a brightening effect overall.

(E major) (G major)

I
 E
 In the real early morning

IV I
A/E E
With the sun slowly rising

I IV
E/G# A
I was walking out slowly

V7/VI
II-7 V7sus4 V
F#m7 B7sus4 B
Wanderin' free

I
bIII
G
When out in the distance

IVΔ7 I
bVIΔ7 bIII
Cmaj7/E G
Over the valley

II°Δ7
IV°Δ7 I
Ab/A E2/B
I saw an old friend

II- V7sus4
F#m/C# B7sus4/F#
Waiting for me

I
E
Waiting for me

In the song "[Introspection](#)" by Faine Jade (and covered by MGMT), the key center travels from D major to F major and back again by only using the I, IV, and V chords of each key. The effect is a little more abrupt than the other examples here, the movement from A to F (chromatic mediants) is unexpected at first. The movement from F major back to D major, between the C and G chords, isn't as abrupt because C and G are related by fifths, but it is still fairly sudden. The best way to describe these modulations is probably as direct modulations, or as common-tone modulations. You could say that the F, Bb, and C chords are all borrowed from the parallel D minor but the chords definitely resolve to the tonal center of F major.

(D major) (F major)

I
D

Introspection

IV V
G A

Why have all the prophets lied

I
bIII
F

There's a season

IV V
bVI bVII
Bb C

When I will find out where I am

I
bIII
F

And there's a reason

IV V II III
bVI bVII IV V I
Bb C G A D

And I will someday find the plan

A pretty unique example of this type of modulation can be found in "[4th Dimensional Transition](#)" by MGMT. The minor plagal cadence from Am to E suggests the key of E major at first, but then the next 3 chords, D, C, and G, suggest a shift to the key of G major. This only lasts for a second because the next 3 chords, F, D/F#, and E, reestablish the key of E major. You could relate all of the chords here to the key center of E, where about half of the chords are borrowed from E minor (G major). The F chord can be found in the E phrygian scale and acts like a neapolitan chord coupled with D/F# for a 'backdoor' resolution to E major. There might be a case for calling this a common-chord modulation or a chromatic modulation, but the melody actually does play with the common tones to connect each key, so it is definitely a common-tone modulation.

(E major) (G major)

II- V/II
IV- I
Am E

While we drifted we were one

II- V/II
IV- I
Am E

Ceilings lifted walls were gone

V IV

	<i>bVII</i>		<i>bVI</i>	
	D		C	

You speak the language of the breeze

<i>I</i>		
<i>bIII</i>		
G		

All your leaves were meant for me

<i>bVI</i>	<i>V</i>	<i>V/II</i>
<i>bII</i>	<i>bVII</i>	<i>I</i>
F	D/F#	E

The love that every person wants to be

Down a minor third (-3 semitones): This type of modulation shares a lot in common with the previous one, and the previous 3 examples also show this type of movement. Because it's the reciprocal of the previous type of modulation, this one is similar to a movement from the minor key to the major key and usually has a brightening effect. Depending on the context it could also be used to darken the tonal center but this isn't as popular. Coupled with the previous 3 examples, here are a few more that show this type of movement.

This example from "[It's Working](#)" by MGMT is a fairly simple example of this type of modulation. From the key of D major, a B chord is played, instead of the diatonic Bm chord, which is used to shift the key to B major. This is probably best described as a chromatic modulation which brightens the tonal center. Earlier in the song this same progression is used but the B chord moves back to the A chord in the key of D major.

(D major) (B major)

<i>I</i>	<i>VI-</i>	<i>IV</i>
D	Bm	G

It's just like striking matches

<i>V-</i>	<i>I</i>
<i>III-</i>	<i>VI</i>
F#m	B

The polish lies

<i>I</i>	<i>VI-</i>	<i>IV</i>
B	G#m	E

But it's working in your blood (working in your blood)

A similar but slightly more complicated example of this modulation comes from the song "[You and I](#)" by Stevie Wonder. This progression starts in F# major and uses the relative II and V of D# to modulate down a minor third to D# major. Shortly after this, a handful of other relative chords are borrowed for a much more complicated return back to F# major.

It's hard to say exactly when the shift back to F# major occurs as it is a little ambiguous and pretty drawn out. A relative 'II V' progression brings us to Fm7b5 which is the II-7b5 chord from D# minor, and also the diatonic VII-7b5 chord from F# major. This leads to the C#7 chord resolving back to the tonic F#maj7 chord. These modulations are best described as chromatic modulations or perhaps common chord modulations because you can sort of relate the transition chords loosely to both keys. The changes brighten the tonal center briefly before returning to the original key.

(F# major) (D# major)

IΔ7 IV IV-6
 F#maj7 B/F# Bm6/F#
 Here we are on earth together
 IΔ7 IV IV-6
 F#maj7 B/F# Bm6/F#
 It's you and I,
 II-7 V+7 IΔ7
 VII-7 V+7/VI VIΔ7
 Fm11 A#+7(#9) D#maj7
 God has made us fall in love, it's true
 III-7 V7/II II-7b5 bVI-6 bVII7
 bII-7 #IV+7 VII-7b5 IV-6 Vsus4 V7
 Gm11 C+7(#9) Fm7b5 Bm6 C#sus4 C#7
 I've really found someone like you
 IΔ7 IV IV-6
 F#maj7 B/F# Bm6/F#
 Will it stay, the love you feel for me?

The last example of this type of modulation, from "[Either Way](#)" by Phony Ppl, is pretty similar to the previous example but this time it stays put in the new key for a while. Again, a secondary dominant chord is introduced to land on the VIΔ7 chord which becomes the new tonic chord. This can be seen as a chromatic modulation or a common chord modulation because you can loosely relate the transition chords to each key.

(Gb major) (Eb major)

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
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

Up a major third (+4 semitones): This type of modulation isn't the most popular but still used a fair amount. The relationship between keys a major third away is fairly distant. Their roots are 4 semitones away, they are 4 steps away on the circle of fifths, and they only share 3 notes in common. One thing that is somewhat unique about this type of modulation is that two tonic chords that are a major third apart have the relationship of chromatic mediants. The movement up a major third usually accomplishes a brightening effect, but it can also darken the tonal center in some cases, most of the time is somewhere in between.

The first example of this modulation is a classic example, Adam Neely even made a full [video](#) describing it. In the cover of "[All By Myself](#)" sung by Celine Dion, there is a wonderful key change up a major third from G major to B major. This part of the song starts in G major, but only plays the first chord while Celine keeps singing the melody. On the word 'Anymore', she sings an Eb note, which would usually be in the Cm/Eb chord that is normally played there. As the new tonic chord, B, is played, this Eb note turns into the major third, an enharmonic D#, of the B major chord. This is a really good example of a common-tone modulation (technically an enharmonic common-tone modulation), especially one that has such an interesting relationship to each key. Eb is heard as the b6 of G major, which is the reciprocal major third of the tonic note G. In the new key of B major, Eb is D# and is the major third of the tonic note B. This is an interesting effect because major thirds on the piano are 14% out of tune and this modulation has to account for two of them. Overall, this seems to bring some brightness to the tonal center.

(G major) (B major)

I
G
All by myself
N.C.
Don't wanna be
N.C.

All by myself
N.C.
Anymore

I I III- III- V- V7sus4/II V7/II II- III- IV- V- bVI bVII
 | B | B | D#m | D#m | F#m/A | G#7sus4 G#7 | C#m D#m | Em F#m G A |

The next example from “[Total Eclipse of the Heart](#)” by Bonnie Tyler is a somewhat similar example though this modulation sounds darker than the previous one, mostly because the A chord falls to an Ab chord. This is also an enharmonic common-tone modulation, centered around the G# note, the major third of E major, which turns into an Ab note and becomes the new tonic. This could also be a chromatic modulation if you say the A chord is moving chromatically to Ab, and a common-chord modulation if you analyze A as the substitute dominant chord of Ab.

(E major) (Ab major)

I SubV I
 IV V/VI
 E A Ab
Turn around bright eyes, every now and then I fall apart
 VI- IV V I
 Fm Db Eb Ab
And I need you now, tonight, and I need you more than ever

The very beginning of the song “[Flash Delirium](#)” by MGMT has an interesting and brief example of this modulation. The first three chords sound like they mostly indicate the key of F major but the A chord also sounds like it could be a candidate for the tonic chord. In fact, later in the song these same three chords do sound more like A major because of the context. It is hard to point out exactly where the modulation takes place if there even is one. The first four lines could be heard from the perspective of both keys, though at the end of this phrase there is a perfect cadence that lands on A major. The first chord definitely indicates the key of F major, then the tonal center sort of exists between F major and A major, but then the last chord definitely indicates the key of A major. I would probably call this a common-chord modulation because the chords can be related to both keys. It could also be seen as a chromatic modulation where the A chord is a chromatic alteration of the diatonic Am chord.

(F major) (A major)

bVI
 I

F
Mild apprehension
IV- I
VI- V/V
Dm A/E

Blank dreams of the coming fun
bVI
I
F

Distort the odds of a turnaround
IV- I
VI- V/V
Dm A

Gut screams out next to none
V/V V
B E

So turn it on, tune it in
I
A

And stay inert

In another MGMT song, "[Alien Days](#)", this modulation is accomplished in an interesting way. The Gb and Ab chord set up an expected resolution to the tonic Db major chord, but instead land on a chord with one note different, Dm7b5. This sounds sort of like a suspended tonic chord, the tonic note being the note that is suspended. Later on in the song this chord moves back to the Gb chord, but here it is used to move to F major by making a couple chromatic steps. I would probably call this a chromatic modulation or a common-tone modulation because the melody sings a C on 'smile' that carries over to the F/C chord. Dm7b5 is also somewhat related to each key so you might be able to call this a common-tone modulation. Just before this in the song, the key center actually changes from F major to Db major which will be shown with the next type of modulation.

(Db major) (F major)

II- V/V
Ebm Eb
And in the summer, virgin visions, mindless humming

IV V VI-7b5
Gb Ab #I-7b5
Dm7b5

Numbers can't decide if the day's supposed to smile

I V7 I V7

| F/C | C7 | F/C | C7 |

Down a major third (-4 semitones): Like the other types of modulation, moving down a major third can be compared to the opposite of moving up a major third. Most of the things that apply to the previous type of modulation also apply to this one, though sometimes in a reciprocal way. In that case, this type of modulation usually accomplishes a darkening effect, but in some cases can also sound like the tonal center is brightening.

The first example of this type of modulation is from the first chorus of "[Good Vibrations](#)" by The Beach Boys. This is probably best classified as a chromatic modulation with the D# chord turning into D#m. It could also be seen as common-tone modulation centered around the D# note, or possibly a common-chord modulation if you analyze D# as an IV-chord borrowed from A# minor. Lastly, the chords in F# major really sound more like they are centered in the key of D# minor, but for this purpose it is analyzed from the perspective of the relative major. Because a D# major moves to D#m, this seems to darken the tonal center.

(A# major) (F# major)

I IV I IV I
A# D#/A# A# D#/A# A#
Good good good good vibrations
IV I IV
D#/A# A# D#/A#
She's giving me excitations
IV-
VI-
D#m
Close my eyes
V
C#
She's somehow closer now
IV V/VI
B A#
Softly smile, I know she must be kind

Here is the example from "[Alien Days](#)" by MGMT that happens just before the example shown before from this song. This is pretty similar to a few examples we have already seen. A chord that is diatonic to the original key is used as a secondary dominant chord in the new key. This can be seen as a common-chord modulation or a chromatic modulation where every note in the F chord moves up a half step to Gb. This might also

just be seen as a direct modulation. Either way, this change seems to brighten the tonal center.

(F major) (Db major)

		V/V I	
V7		I	
C7		F	
<i>Mmm, the alien days</i>			
IV		V	I
Gb		Ab	Db
<i>When the peels are down it feels like traveling in style</i>			

Later in the same song the same type of modulation is accomplished in a different way. Here, the tonal center starts to borrow chords from F minor before moving to Db major. The Gm7b5 chord is found in F minor, but also acts similarly to the V7/II chord, Eb9, in the key of Db major, which resolves nicely to the Gb chord. The melody in the previous section ends on a Bb, which is the flat third of Gm7b5. The melody in the upcoming chorus starts on the same note, Bb, which is now the major third of Gb. Because of this, it seems most like a common-note modulation, but could also be seen as a common-chord modulation since the Gm7b5 chord is loosely related to each key.

(F major)

I	V	I	I7
F/C	C	F	F7
<i>Today find infinite ways it could be plenty worse</i>			
		#IV-7b5	
bVI		II-7b5	
Db		Gm7b5	
<i>It's a blessing, but it's also a curse</i>			
IV	V	I	
Gb	Ab	Db	
<i>Those days taught me everything I know</i>			

This example is from a classical piano piece titled "[Un Sospiro](#)", written by Franz Liszt in the 1840's. Classical music has a lot of really great examples of key changes that have probably inspired a lot of the chord progressions shown here. Freddy Mercury's work has been inspired by a lot of classical music, and the song All By Myself that is included in a few examples here is originally based off of a chord progression from a classical piano concerto by Sergei Rachmaninoff. This is a fairly simple example of a chromatic modulation where Db moves to Dbm, darkening the tonal center. However, like most

chromatic modulations, this could also be analyzed as a common-chord or common-tone modulation.

(Db major) (A major)

III-

I IV I I IV I I-

| Db | Gb/Db | Db | Db | Gb/Db | Db Dbm |

V7 I V+/VI IV6 V7 I

| E7/B E7/G# | A C#aug | D6 E7 | A |

Another enharmonic common-tone modulation can be found at the end of “[In the Real Early Morning](#)” by Jacob Collier. The change here is somewhat direct but the melody sings a Bb note with the Bbsus2 chord which then becomes an A# note with the F#/D chord. There is a loose connection of the chords to each key but this seems to fit more as a common-tone modulation or perhaps a chromatic modulation. This modulation starts to signal the end of the song, darkening by bringing the tonal center down a major third. Right after the last line there is another modulation down a whole step that was included in an example above.

(Bb major) (F# major)

II-7 I

Cm7 Bbadd2

You were my first love

V-7 Isus2

Fm7 Bbsus2

I won't forget you

V+/VI bVI

bVI+Δ7 I

F#/D F#add2/C#

I'm walking beside you

II- I

G#m/B F#/A#

I was here when you started

V7sus4 I

C#7sus4 F#

I'll be here till the end

In “[Take A Chance](#)” by Domi and JD Beck, the chorus in Db major changes directly to the second verse in A major. Like any other non-diatonic movement you can call this a chromatic modulation, but I think a direct modulation is probably the best description.

The Dmaj7/E chord here is analyzed as an E7sus4 chord but could also be analyzed as a Dmaj7 with the 9 in the bass. Either way, the movement from Ab7 to Dmaj7 is a rare movement by a tritone and Ab7 to E7sus4 is down a major 3rd which is also not very popular.

(Db major) (A major)

III-7	VI-7	II-7	V7sus4	V7
Fm7	Bbm7	Ebm7	Ab7sus4	Ab7/Gb

Right now, I need you to take a chance on me (Yeah)

bIII7sus4

V7sus4	VI7sus4	II-7
Dmaj7/E	C#m7/F#	Bm7

The bang I needed for the breakthrough

III-7

C#m7

The nights I entertained women, what a waste

Up a perfect fourth/down a perfect fifth (+5 semitones): Modulating by a perfect fifth (perfect fourth) is probably the most popular type of modulation, mostly because there is only a one note difference between keys spaced a fifth apart as we explored earlier. Because of this there is obviously a lot of space for common-chord or common-tone modulations. There are also a lot of other creative ways to modulate by a fifth. Because of the closeness between the two keys, this modulation can sometimes sneak up on you and it can be hard to tell when the modulation even occurs. If you remember from the diagram before, moving up a perfect fourth, or down a perfect fifth, usually, but not always, darkens the tonal center. This is because in the process of changing keys, the 7 is flattened. This movement is similar to a song in a major key borrowing chords from the mixolydian scale. A lot of times though it is hard to tell if it has brightened or darkened the tonal center.

In Queen's "[Bohemian Rhapsody](#)", this type of modulation happens many times throughout the song. Within the first 30 seconds there is already a modulation from Bb major to Eb major. On the word '*reality*' the tonal center feels pretty anchored in the key of Bb major. The Gm7 chord is diatonic to both keys, but the Bb7 chord is only diatonic to the key of Eb major and the resolve to Eb solidifies the key change. Depending on how you look at it, this is a common-chord modulation that shifts on the Gm7 chord or a chromatic modulation that uses Bb7 as a secondary dominant chord. It is hard to tell whether this brightens or darkens the tonal center.

(Bb major) (Eb major)

VI-7
Gm7/D

Is this the real life?
 V7/IV VI-7 V7/IV
 C7 Gm7/D C7
Is this just fantasy?
 V7 II-7 V7
 F7/C Cm7 F7/C
Caught in a landslide
 I II-7 I V7 I
 Bb Cm7 Bb F7/A Bb/F
No escape from re - a - li - ty
 III-7
 VI-7
 Gm7
Open your eyes
 V7 I IV I
 V7/IV IV bVII IV
 Bb7 Eb Ab/Eb Eb
Look up to the skies and see

A fairly simple example of this modulation is found in “[Impossible Year](#)” by Panic at the Disco. Starting from the F/C chord, the bass walks up chromatically until the Eb chord. Like the last example, depending on how you look at it, it can be seen as a chromatic modulation or a common-chord modulation with the Dm chord being diatonic to both keys. Later on in the song the key changes up another fourth to Eb major in the exact same way.

(F major) (Bb major)

IV I
 Bb F/A
And storms full of sorrow
 VI- V/V
 Dm G
That won't disappear
 I I+
 F/C C#aug
Just typhoons and monsoons
 III- IV
 VI- bVII
 Dm Eb
This impossible year
 I I+
 Bb Bbaug

There's no good times
I6 I+
Gm/Bb Bbaug
This impossible year

This example from "[Joy Inside My Tears](#)" by Stevie Wonder shows how a simple modulation up a fourth can be made a little more complicated. All of the chords can relate to both keys in some way or another, but it seems that the first four chords indicate the key of B major and the next four resolve to the key of E major. The chord that uproots the key center is the Dmaj7 which actually isn't diatonic to either of the keys. It can be found in the B minor scale or the E mixolydian scale. The next three chords resolve to E major but then the progression repeats from the beginning, back in B major. Since we are now used to the key of E major, the second B chord could sound like the V chord of E major, and the b9 in G#7b9 is an A which is found in E major and not B major. The next two chords however, C#m7 and F#7 suggest a resolution to B major. Instead of this, after repeating, they resolve to a B7+ chord which then resolves to E major for the chorus. This is a tricky modulation but I would call it a mixture between a common-chord modulation and a chromatic modulation. Personally, I think that when the chords resolve to that last E chord, it has a soft brightening effect, but it is hard to be sure.

(B major) (E major)

<i>V</i>	<i>V7/VI</i>	<i>VI-7</i>	<i>V7/IV</i>
<i>I</i>	<i>V7/II</i>	<i>II-7</i>	<i>V7</i>
<i>B</i>	<i>G#7b9</i>	<i>C#m7</i>	<i>F#7</i>

I've always come to the conclusion that 'but' is the way

<i>bVIIΔ7</i>	<i>V7sus4</i>	<i>V7</i>	<i>I</i>
<i>bIIIΔ7</i>	<i>V7/IV</i>	<i>V7/IV</i>	<i>IV</i>
<i>Dmaj7</i>	<i>B7sus4</i>	<i>B7</i>	<i>E</i>

Of asking for permission to lay something heavy on one's head

<i>V</i>	<i>V7/VI</i>	<i>VI-7</i>	<i>V7/IV</i>
<i>I</i>	<i>V7/II</i>	<i>II-7</i>	<i>V7</i>
<i>B</i>	<i>G#7b9</i>	<i>C#m7</i>	<i>F#7</i>

So I have tried to not be the one who'll fall into that line

<i>VI-7</i>	<i>V7/IV</i>	<i>V7+</i>
<i>II-7</i>	<i>V7</i>	<i>V7/IV</i>
<i>C#m7</i>	<i>F#7</i>	<i>B7+</i>

But what I feel inside I think you should know

<i>I</i>	<i>VI-7</i>
<i>E</i>	<i>C#m9</i>

And baby that's you you you

The next example is from the song "[4th Dimensional Transition](#)" by MGMT. A similar example from the same song was shown earlier modulating from E major to G major and back. This one goes from E major to A major and back. The first line is a minor plagal cadence (IV- to I) to E major and the second line is also diatonic to E major. The third line is another minor plagal cadence, but this time in the key of A major. The repeat of the minor plagal cadence makes this a sequential modulation, but the movement from Am/E to B to Dm/A to A/E is a clever chromatic movement. The last 3 chords, G, F, and E, create a sort of phrygian major cadence back to the key of E major. You could analyze the G chord in both keys where it is borrowed from each of the parallel minor keys (E minor and A minor). In this case, the modulation back to E major can be seen as a common-chord, common-tone modulation, or a chromatic modulation depending on how you look at it.

(E major) (A major)

	I-	I-	V
	IV-	IV-	I
	Am	Am/C	E
	<i>I am fire, where's my form?</i>		
	I-7	I-	V/V
	IV-7	IV-	V
	Am/G	Am/E	B
	<i>Whisper crimson I intrude</i>		
	IV-	IV-	I
	bVII-	bVII-	IV
	Dm/A	Dm/C#	A/E
	<i>There's light beneath your eyes</i>		
	IV-	IV-	bVII
	bVII-	bVII-	bIII
	Dm/F	Dm	G
	<i>New overtones in view</i>		
		bVI	V
		bII	I
		F	E
	<i>Endless form, endless time</i>		

A more simple example of this type of modulation from the Stevie Wonder song "[It's You](#)", changes keys up fourth simply by the use of secondary dominants. This phrase starts in the key of C major and it does actually slightly start to suggest a modulation to the key of A major, but try to ignore that for now. After the Amaj9 chord, the relative II-7 and V7 of F major are used to modulate up a fourth. With the use of secondary dominant chords, this is probably best described as a chromatic modulation. Shortly after this, the key actually changes again, this time down a minor third to D major.

(C major) (F major)

II-7 V7
IΔ7 I6 IΔ7 bVIIΔ7 VIΔ7 V-7 V7/IV
Cmaj9 C6/G Cmaj9 Bbmaj9 Amaj9 Gm7 C7
For me, for you and you, for me
IΔ7 III7sus4
IVΔ7 VI7sus4
Fmaj9 A9sus4
If only I had not waited, I would have picked the wrong one
IΔ7 II-7 V7
IVΔ7 V-7 V7/IV
Fmaj9 Gm9 C9
If only I had not waited, my life would be undone

In another Stevie Wonder song, "[Lately](#)", the modulation up a fourth is a little more complicated. This example uses a lot of borrowed chords and it can be hard to tell at times what key we're in. It definitely begins in the key of Db major and then seems to start borrowing chords Db minor (Cbm7 from Db phrygian) before the Bb+/C chord (C7sus2(#11)) acts as the substitute dominant chord of the upcoming Cb6 chord. A lot of the movement here is chromatic and perhaps Bb+/C could be seen as a loosely related common chord, but the melody emphasizes the Gb and Ab notes, the 4 and 5 in Db major, which then turn into the 5 and 6 of the Cb6 chord. Because of the melody I would call this a common-tone modulation. At first, the resolution to Cb6 feels like we are in the key of Cb major, but we soon learn that this is the IV6 chord of Gb major. Even though it sounds like a modulation from Db down a whole step to Cb, it still seems to brighten the tonal center which is not usual for a modulation down a whole step.

(Db major) (Gb major)

V-7 VI-7 bVIIΔ7 I-7 II-7 SubV7(b5)
II- III- II-7 III-7 IV-7 V-7 bVIΔ7 bVII-7 I-7 V7(b5)/III
Ebm Fm Ebm7 Fm7 Gbm7 Abm7 Amaj7 Cbm7 Dbm7 Bb+/C
'Cause this time could mean good- bye, goodbye
bVII6
IV6
Cb6
Oh, I'm a man of many wishes
IV-6
Cbm6
I hope my premonition misses

Down a perfect fourth/up a perfect fifth (-5 semitones): Almost everything that was said about the last type of modulation also applies to this one. The difference is that, like the opposite of the last type of modulation, this one tends to brighten the tonal center. In this movement, the 4 is sharpened, which is similar to a song in a major key borrowing chords from the lydian scale.

A fairly simple example of this modulation is found in the bridge of "[Good Vibrations](#)" by The Beach Boys. It starts with a sort of bluesy feel in A# major and then uses the A#7 chord as the IV7 of F to modulate to the key of F major. You could say this is a chromatic movement or a common-tone modulation but I would probably call it a common-chord progression where A#7 acts as a secondary dominant chord in each key. Because the keys are so similar, it is hard to say whether this darkens or brightens the tonal center, however, the tempo slows down and the volume decreases which does seem to have more of a darkening effect.

(A# major) (F major)

IV
D#
I don't know where but she sends me there
IV7
D#7
Oooo my my what a sensation
V7/IV
A#7
Oooo my my what an elation
IV7
V7/IV
A#7
Oooo my my my

V V VI- II
I I II- V
| F | F | Gm | C |

I II-
F Gm
Gotta keep those lovin' good vibrations
V
C
A happenin' with her

In another song by The Beach Boys, "[God Only Knows](#)", there is a really interesting example of a chromatic/common-chord modulation. The first two lines here establish the key of A major. The next two lines still feel like A major, but the secondary dominant chord B/A (B7) is introduced to modulate to the key of E major. Similar modulations to this pretty much occur throughout the entire song. The last three lines use the same chord progression as the first two lines only in the key of E major instead of A major. Even though the progression is repeated, I wouldn't call it a sequential modulation because that's not where the modulation actually takes place, and there is a different progression separating the other two. I actually do hear this one having an overall brightening effect on the tonal center though it is subtle.

(A major) (E major)

I	bVI [°] 7	I	#IV-7b5
A/E	Fdim7	A/E	D#m7b5
IV		I	II-
D		A/C#	Bm
<i>God only knows what I'd be without you</i>			
IV		II-	
D/A		Bm6	
<i>If you should ever leave me</i>			
II-7		V7	
VI-7		V/V	
F#m7		B/A	
<i>Though life would still go on, believe me</i>			
I		bVI [°] 7	
E/B		Cdim7	
<i>The world could show nothing to me</i>			
I		#IV-7b5	
E/B		A#m7b5	
<i>So what good would living do me</i>			
IV		I	II-7
A		E/G#	F#m7
			E/G#
<i>God only knows what I'd be without you</i>			

This example from "[I Found a Whistle](#)" by MGMT has such a smooth common-chord modulation from C major to G major (E minor) and back. The song starts in the key of C major for a few lines before the first non-diatonic chord, D, is introduced. The phrase [Em D Em B7] suggests the key of E minor and the first Em chord is used as a pivot chord that is diatonic to both keys. The next 3 chords, C, G, and F, still sound like they are in the key of E minor or G major. This time, the F chord acts as the pivot chord between the two keys. To me it sounds like it is the bVII chord in G major at first but when the next C chord is played it changes the context and the F now seems like the IV chord of C major.

This is somewhat similar to a song borrowing chords from the parallel lydian scale but here the tonal center definitely seems to shift from C major to E minor to G major and back to C major. Since the tonal center moves from a major key to a minor key, it does seem to have a sort of darkening effect.

(C major) (G major)

I	VI-	IV	VI-
C	Am	F	Am
<i>Hey I found a whistle that hangs like a charm,</i>			
I	VI-	IV	
C	Am	F	
<i>And when my noose is tied I could blow it</i>			
		VI-	
V	V7	III-	
G	G7	Em	
<i>And fall down into your arms</i>			
V	VI-	V7/VI	
V/V	III-	V7/III	
D	Em	B7	
<i>Fifteen centuries of dissolution and grief,</i>			
IV	I	bVII	
I	V	IV	
C	G	F	
<i>To return a yellow trickster and a thief</i>			
I	VI-	IV	VI-
C	Am	F	Am
<i>Hey I found a whistle that works every time</i>			

The last example of this type of modulation is from "[Blame it on the Sun](#)" by Stevie Wonder. This is actually pretty similar to the previous example where it modulates up a fifth but sounds more like the relative minor of the new key is tonicized. In this example I included the analyses for Eb major and its relative C minor. This phrase starts in the key of Ab major but is quickly disrupted by a chromatic chord, F, which then acts as the IV of the upcoming Cm chord followed by a V to I- cadence tonicizing the key of C minor (Eb major). An Fm chord is then played which is diatonic to both keys and takes us back to the key of Ab major. The first modulation is a chromatic modulation with the F chord and the modulation back is a common-chord modulation with the Fm as the pivot chord. This brief modulation does seem to have a subtle brightening effect on the tonal center.

(Ab major) (Eb major) (C minor)

IV I- V I-

		II	VI-	V/VI	VI-
I	V	VI	III-	V/III	III-
Ab	Eb/G	F	Cm	G/B	Cm
<i>Where has my love gone?</i>			<i>How can I go on?</i>		

IV-	bVII-				
II-	V-				
VI-	II-	V7	V	Vsus4	V
Fm	Bbm	Eb7	Eb	Ebsus4/F	Eb/G
<i>It seems dear love has gone away</i>					

Up or down a tritone (+/-6 semitones): As we saw with the diagrams above, a modulation by a tritone is the farthest type of modulation possible both melodically and harmonically. As we talked about briefly in the intro, two major keys separated by a tritone only have 2 notes in common, and one of those notes is enharmonically equivalent. Because they only have two notes in common there are no common triads. This means that there is some room for common-tone modulations and only room for common-chord modulations if the chords are borrowed from parallel keys. For example, an Em chord is the III- chord in C major and the bVII- chord in F# phrygian which could facilitate a sort of common-chord modulation between these two keys. Even though these are possible, it's more likely that this type of modulation is pretty direct as it can often be hard to form a relationship between both of the keys.

A really good example of this type of modulation is found at the end of the guitar solo in Queen's "[Bohemian Rhapsody](#)" going into the bridge. This is a pretty direct and abrupt modulation but the bass line follows the chromatic scale from the Fm chord all the way to the first A chord. Though the solo starts in the key of Eb major, a lot of the chords are borrowed chords or chromatic chords, so the tonal center is a little disrupted for a moment until the A chord. It's hard to say whether this has a brightening or darkening effect, it seems to just be a wild shift of the tonal center.

(Eb major) (A major)

I	V	VI-	VI-	II- bII+	IV	VII-7b5	bVII	bVIIΔ7	bVII7	V-7
Eb Bb/D Cm Cm Fm E+ Ab/Eb Dm7b5 Db Db/C Db/B Bbm7										
I	I									
A A										
IV	I	I°	I	IV	I	I°				
D/A	A	Adim	A	D/A	A	Adim				
<i>I see a little silhouetto of a man</i>										

A really clever modulation by tritone can be found in the song "[Unbreak My Heart](#)" by Toni Braxton. Throughout the song, the key changes between D minor and B minor, but

after the second chorus it moves from D minor to G# minor using Bb as an enharmonic common chord. Bb is diatonic to the key of D minor as the bVI chord and it is also used (as the enharmonic A# chord) as the the secondary dominant V/V chord in the key of G# minor. Even though the Bb chord is somewhat common to both keys, it is still an abrupt modulation and it can be hard for the ear to connect both key centers. After the key of G# minor is established, the last F#7 chord then facilitates a modulation back to the key of B minor.

(D minor) (G# minor)

V7	I-
A7	Dm
<i>Un-cry these tears</i>	
IV-7	bVII
Gm7	C
<i>I cried so many nights</i>	
	V/V
V7	bVII bVI
A7	C/Bb Bb
<i>Un-break my heart</i>	

V	I-	IV-7	bVII	V7	I-	IV-7	bVII7
D#	G#m	C#m7	F#	D#7	G#m	C#m7	F#7

There is a pretty direct modulation by tritone from the pre-chorus to the chorus in song "[Take A Chance](#)" by Domi and JD Beck. The pre-chorus mostly seems to be in the key of G major although a couple of the chords used are non-diatonic. The C#7 chord is used as the SubV7/IV chord in G major but then moves to an unexpected Fm7 chord. C#7 (Db7) and Fm7 both share two notes, F and Ab, so this movement could be considered chromatic. C#7, or Db7, also might be analyzed as the V7/IV chord in the key of Db major. You could call this a chromatic modulation, common-chord modulation with the C#7/Db7 chord being loosely related to each key, or a common-tone modulation with the melody mostly centered around the G#/Ab note, or even just a direct modulation. In my opinion the modulation has a brightening effect on the tonal center, I think mostly from the B in C#7 moving up to the C in Fm7.

(G major) (Db major)

III7sus4	VΔ7	SubV7/IV	IVΔ7
B7sus4	Dmaj7	C#7	Cmaj7
<i>No one could ever replace (If it's not too late)</i>			
		V7/IV	
III7sus4	VΔ7	SubV7/IV	

B7sus4 Dmaj7 C#7
Before you walk away
III-7 VI-7 II-7 V7sus4 V7
Fm7 Bbm7 Ebm7 Ab7sus4 Ab7/Gb
Hold on, just let go of who I used to be

The last example of this modulation is pretty direct and also a little ambiguous. In the transition from the verse to the hook of "[I Love Louis Cole](#)" by Thundercat, the key center changes directly from F# major to A minor (C major). This actually might be the only example of a purely direct modulation on this list. There are no common tones between the F# and Am11 chords and I wouldn't exactly call this movement chromatic. The closest relationship is probably that the key of A minor is the parallel minor key of the relative major key (A major) of the parallel minor (F# minor) of F# major. That might seem like a stretch but the hook quickly starts to borrow chords from A major before ending up in A major completely for the upcoming chorus. To me it feels as though this modulation could have somewhat of a brightening effect on the tonal center.

(F# major) (C major) (A minor)

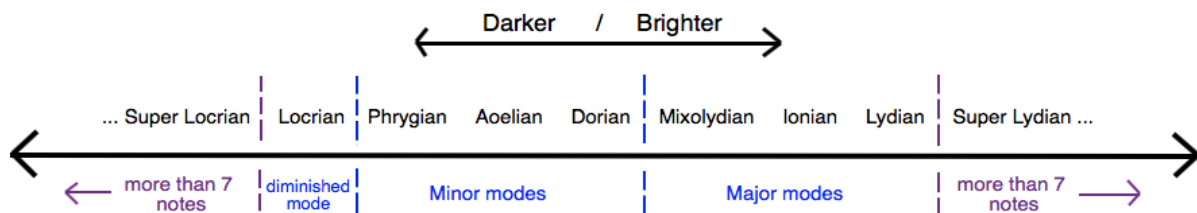
IΔ7 I-7 IVsus2 I
F#maj7 F#m7 Bsus2 F#
I can't find my phone and I can't find my shoes
I sus2 bVI sus2 IVΔ7 I
F#sus2 D6sus2 Bmaj7 F#
But nothing beats being a party with you

I-7 bVII bIII sus2 III-7
VI-7 V Isus2 #I-7
Am11 G/B Csus2 C#m11
Let's do it all again
IVΔ7 #IV-7 II-7 bIII
IIΔ7 bIII-7 VII-7 I
Dmaj9 D#m9 Bm7 Cadd2
Let's do it again

Modal Interchange: Another way to modulate in music, and something we've already seen in many of the above examples, is by something called modal interchange or parallel modulation. This is when you travel through different modes while keeping the tonic note the same. Moving to a neighboring mode is similar to changing keys by a fifth. For example, a change from C dorian to C mixolydian uses the same scale notes as a change from Bb major to F major. It is only where our ear hears the perceived tonic that makes the difference between these two modulations. If you look at the diagram below, moving one space to the right is similar to

changing keys up a fifth (down a fourth), it tends to brighten the tonal center. Reciprocally, moving one space to the left is similar to changing keys down a fifth (up a fourth), and it tends to darken the tonal center.

Even though there are many scales and modes, there are only two keys. The major key and the minor key. You can either resolve to a major chord or a minor chord. Major and minor can encompass many different things. Again, like everything else, the lines between major and minor are blurred. Sometimes there appears to be a mixture of both like we've seen in a few examples already, so it's not always black and white. A major key can use ionian (major), lydian, mixolydian, harmonic major, or any of the scales that use a 1, 3 and 5. A minor key can use aeolian (natural minor), harmonic minor, melodic minor, dorian, phrygian, or any scales that use a 1, b3, and 6. In the North Indian system of 32 scales/modes (thaats), there are 17 major scales and 15 minor scales. With that being said, if you are in C major but you start using chords from C lydian. It is like going from C major to G major in that you use the same notes, but it sounds much different, and you haven't actually changed keys cause you've been in C major the whole time. Now if you were to change from using the C phrygian scale to then using the C mixolydian scale, the note changes are similar to changing from Ab major to F major, but really you have changed from C minor to C major. The locrian mode is really hard to make a case for because the tonic chord of this scale is a diminished chord and there's not really a diminished key. Even in the system of 32 thaats, there is no equivalent to the locrain scale because without a 5 note, the tonic chord is not stable.



The modes from Locrian to Lydian are called the seven church modes, there are seven modes because there are seven notes in a typical scale. If you wanted to go beyond these modes you would have to add more notes which is theoretically possible. Instead of stopping at C lydian, which has the same notes as G Ionian, you could go to the next scale a 5th away from that which would be D Ionian. When you add a C to D Ionian and use that as the root, you get an 8 note scale {C,C#,D,E,F#,G,A,B} that some people call the super-lydian scale. This scale has a 1 and a #1 in it which makes it hard to annotate sometimes. Theoretically you could keep this going until you add all 12 notes to make what Jacob Collier has dubbed the 'super-ultra-hyper-mega-meta lydian-scale'. The next scale would be A Ionian with an added C and now G, making a 9 note scale {C,C#,D,E,F#,G,G#,A,B}. If you notice, the lydian scale has the #4 note, super-lydian adds the #1, super-ultra-lydian adds the #5 note, and so as the pattern continues the next notes added are the #2, #6, and then lastly the #3, not to be mistaken for its enharmonic sibling, the 4. There is actually not a 4 in the super-ultra-hyper-mega-meta-lydian scale, as this would bring us into reciprocal harmonic territory. So now everything we just

applied to the super-ultra-hyper-mega-meta-lydian scale we can apply to the super-ultra-hyper-mega-meta-locrian scale. The locrian scale has the b5 note; we can then add the b1 (while keeping the natural 1) to create the 8 note super-locrian scale {C,Db,Eb,F,Gb,Ab,Bb,Cb}. As the pattern continues we add the b4, then the bb7 (enharmonic 6), then the bb3 (enharmonic 2) and lastly the bb6 (enharmonic 5). Notice that the super-ultra-hyper-mega-meta-lydian scale and the super-ultra-hyper-mega-meta-locrian scale both use the same 12 notes, but they have very different ways of associating those 12 notes. Also note that this is mostly a hypothetical thought experiment and that most people don't try to make much musical use of these scales. In my own personal music however I have used this model of thought a few times when composing. Although seven church modes are some of the most popular, there are many other scales, all of them with their own modes, that can be explored and used in major or minor keys.

One good example of modal interchange that hasn't already been included elsewhere because it mostly sticks to one key center, is from the song "[My Sentiment](#)" by The Universal Togetherness Band. This song is in the key of D major, but there are a few major seventh chords used here that are not diatonic to the D major scale. The bVIIΔ7, bIIIΔ7, bVIΔ7, and bIIΔ7 chords are all borrowed from parallel modes. This is a good example of a chain modulation, sometimes called a constant structure progression because the major seventh chord is moving down by a constant structure, a perfect fifth each time.

(D major)

<i>IVΔ7</i>	<i>bVIIΔ7</i>	
<i>GΔ7</i>	<i>CΔ7</i>	
<i>Watching you is the highlight of my day</i>		
<i>bIIIΔ7</i>	<i>bVIΔ7</i>	<i>IV-7 bIIΔ7 IV-7</i>
<i>FΔ7</i>	<i>BbΔ7</i>	<i>Gm7 EbΔ9 Gm7</i>
<i>And afternoons with you are like a dream come true</i>		
<i>bVI6</i>	<i>IΔ7</i>	
<i>Bb6</i>	<i>DΔ9</i>	
<i>My sentiments</i>		

Major To Minor: Parallel modulations from major to minor and vice versa are pretty popular in a lot of different music. Sometimes the effect can be subtle and other times it is very noticeable. As was mentioned earlier, sometimes the tonal center is somewhat suspended between major and minor and the changes aren't so black and white. This type of modulation specifically can be similar to a modulation up a minor third which was explored earlier. Again, the thing that separates the two types of modulation is the perceived tonic. In parallel modulations (modal interchange), the tonic note stays the same although the tonic chord might switch from major to minor. Also note that, although the major scale and natural minor scale don't share any common chords, other scales and modes in major or minor keys can share some of the same chords. For

example, the dorian scale, a minor scale, has a major IV chord which is usually used in a major key. Similarly, the harmonic minor scale has a major V chord, and the mixolydian scale has a V-chord.

I think one of the best examples of this type of modulation can be found in "[We are the Champions](#)" by Queen. The chorus is in the key of F major until the end where it starts to modulate to the key of F minor. While still in F major, the song starts borrowing chords from the minor key until the Cm7(11) chord resolves to the minor tonic, Fm. The Bb7, Gm7/F, and Gm7/C chords are all found in F dorian. From here, the song modulates back to the verse in the key of Eb major using Gm7/C as a common chord.

(F major/minor)

<i>I</i>		<i>bVII</i>			
<i>F</i>		<i>Eb/G</i>			
<i>No time for losers</i>					
	<i>bIII</i>		<i>IV7</i>		<i>V-7</i>
	<i>Ab</i>		<i>Bb7</i>		<i>Cm7(11)</i>
<i>'Cause we are the champions</i>					
	<i>I-</i>	<i>II-7</i>	<i>I-</i>	<i>II-7</i>	<i>I- V7sus4</i>
	<i>Fm</i>	<i>Gm7/F</i>	<i>Fm</i>	<i>Gm7/F</i>	<i>Fm Gm7/C</i>
<i>Of the world</i>					

Another good example of this modulation is in the song "[She Looks To Me](#)" by The Red Hot Chili Peppers when the chorus changes back into the verse. This example is good because it only uses diatonic chords in each key center. The chorus ends in the key of A major and the verse starts directly in the key of A minor (C major). It is usually easy to resolve a V chord to either the major or minor tonic. The first chord of the verse, Asus2, is actually diatonic to both keys which is why it is a good transition chord, it still sounds like a tonic chord but it doesn't specify if it's a major or minor chord.

(A major/minor)

<i>VI-</i>		<i>I</i>
<i>F#m</i>		<i>A/E</i>
<i>Who's going to take you home</i>		
	<i>V</i>	<i>V</i>
	<i>E</i>	<i>Eadd9/G#</i>
<i>And hold you when things aren't so bright</i>		
<i>VI-</i>		<i>I</i>
<i>F#m</i>		<i>A/E</i>
<i>She looks to me</i>		
	<i>V</i>	

We're always one step behind him

IV

G

He's Brian Eno (Brian Eno)

V

A

Brian Eno (Brian Eno)

V V

| A | A |

VI-

IV-

III-

I-

bVI-

V-

Dm

Bbm

Am

When I was stuck he'd make me memorize elaborate curses

VI-

IV-

III-

I-

bVI-

V-

Dm

Bbm

Am

Tinctures and formulas to ditch the chori and flip the verses

This time, in the song "[Weakness](#)" by Stevie Wonder, the verse is in a major key while the chorus is in the parallel minor key. This example looks a little bit more complicated because of all of the extra borrowed chords, but the overall tonal center clearly starts in the key of C# major and then moves to the parallel C# minor chord for the chorus before resolving to the relative Emaj7 chord. Again the change here is easy to pull off because the V7 chord can resolve to either the major or minor tonic chord. The verse in C# major also starts borrowing chords from B major (C# dorian) before the transition to C# minor fully takes place.

(C# major/minor) (E major)

I

IΔ7

V-7

IV

C#

G#/C#

G#/F#

F#

And every time I think I've found someone new for my heart

IV7

I-7

IVΔ7

V7

F#/E

C#m7

C#/F#

G#7

After one kiss my heart tells me ne - ver

VI-7

VII-7

V7/VI

I-7

II-7

V7

C#m7

D#m7

G#7

Ooh, oh, everyone has got a weakness in life

II-7

V6

IΔ7

V+/VI

IV-7

bVII6

bIIIΔ7

V+

F#m7

B6

Emaj7

G#+

Girl, you just happen to be mine

Minor To Major: A lot of what was said for the last type of modulation can be said for this one as well, though I feel like this one might be a little more popular. When songs in a minor key land on a major tonic chord it is called a Picardy cadence or a Picardy third. Changing from minor to major can be similar to a modulation down a minor third. Some of the previous examples showed changes from minor to major, but here are a few more.

As we saw before, a lot of songs modulate to the parallel major key for the chorus, which is what happens in "[I Love Louis Cole](#)" by Thundercat. The hook is mostly based in the key of A minor (C major) although there are a lot of borrowed chords and chromatic passing chords used. Before the song resolves to the A major chord for the chorus, there are already three chords used (C#m11, Dmaj9, and Bm7) that are borrowed from the key of A major. Other than that, this modulation is pretty direct.

(A minor/major)

I-7 bVII bIII sus2 III-7
Am11 G/B C sus2 C#m11
Let's do it all again

IVΔ7 #IV-7 II-7 bIII
Dmaj9 D#m9 Bm7 Cadd2
Let's do it again

I IΔ7 IV I
A A/G# D/F# A/E

It's just more fun when you come around

IV III-7 II-7 V
D C#m7 Bm11 E
Even if I act up you let me know that I'm not crazy

Again, in "[Brian Eno](#)" by MGMT, the verse is in a minor key that resolves to the parallel major key for the chorus. Here the IV- chord in D minor is used to create a minor plagal cadence to the resolve to the key of D major.

(D minor/major) (F major)

VI- IV-
I- bVI-
Dm Bbm
The prophet of a sapphire soul
III-
V-

Am
 Presented through creative freedoms
II- *V/Vi*
IV- *V*
Gm *A*
 And everything I say is true
II-
IV-
Gm
 'Cause if I was telling lies it'd probably show
I *VI-*
D *Bm*
 I can tell that he's kind of smiling
IV
G
 But what does he know? (what does he know)

In “[No More Lies](#)” by Tame Impala and Thundercat the majority of the song is in a minor key, but the bridge resolves to the parallel major key. Here, the Ab7 chord which is diatonic to Bb minor is used as the ‘backdoor’ dominant chord (bVII7) and resolves to the major tonic, Bbmaj7.

(Bb minor/major)

I-7 *bVIIΔ7* *bVII-7*
 | *Bbm9* | *Abmaj9* *Abm9* |
bVIΔ7 *bVI-7* *bVΔ7* *IV-7* *IV-7* *bVII7*
 | *Gbmaj9* *Gbm9* *Emaj9* *Ebm9* | *Ebm9* *Ab7* |

IΔ7 *bVIΔ7*
Bbmaj7 *Gbmaj7*
 As you go out in the world

The last example of this type of modulation is a little bit more complicated. The first verse of “[Siberian Breaks](#)” by MGMT starts in the key of A minor (C major) but then has an interesting modulation before resolving to the A major chord. The Bbm and Cm chords can be analyzed in a few different ways. They are hard to relate to the key of A minor or A major, but from the perspective of the key of C, they can be found in the C phrygian scale. Bbm and Cm are only diatonic together in the key of Ab major (C phrygian). The last Cm chord resolves, in a way, to the Amaj7 chord. This movement is mostly chromatic as Amaj7 could also be thought of as C#m/A, a half step above the previous

Cm chord. After this brief resolution to the key of A major, the Amaj7 chord turns back into an Am9 chord to repeat the progression.

(A minor/major) (C major) (Ab major)

VI-7	IΔ7	
I-7	bIIIΔ7	
Am9	Cmaj7	
<i>Sleep as the goer</i>		
VI-7	IΔ7	
I-7	bIIIΔ7	
Am9	Cmaj7	
<i>The bridge that watches the light speed through</i>		
II-	III-	
bVII-	I-	
bII-	bIII-	
Bbm	Cm	
<i>And cries while the spirit stumbles</i>		
II-7	III-	
bVII-7	I-	
bII-7	bIII-	IΔ7
Bbm7	Cm	Amaj7
<i>The inside missile for the protection of you</i>		
VI-7	IΔ7	
I-7	bIIIΔ7	
Am9	Cmaj7	
<i>Maybe it's silent</i>		
VI-7	IΔ7	
I-7	bIIIΔ7	
Am9	Cmaj7	
<i>The voice can't bear anymore strain</i>		

Switching between Major and Minor: The previous two types of modulations show a lot of movement between major and minor, but here are some better examples that mix the major and minor key together really well.

A good example of mixing major and minor comes from the song "[I Love You Too Much](#)" by Stevie Wonder. These two chords cycle between each other through most of the song. The Gm9 seems to be the tonic chord while the Ebm9 seems to draw us towards a slightly different key center. With G minor as the tonic chord, an Ebm9 could be analyzed as the IV-/bIII chord, otherwise it is non-diatonic. If you analyze this from the perspective of G minor's relative major, Bb major, then the Ebm9 chord is borrowed from the parallel Bb minor scale.

(G minor) (Bb major/minor)

VI-7 IV-7 VI-7
I-7 bVI-7 I-7
Gm9 Ebm9 Gm9
Honey, you make me feel like you care a lot
IV-7 VI-7
bVI-7 I-7
Ebm9 Gm9
But I, I love you too much

A very similar example of this comes from the song “[Friend Zone](#)” by Thudercat. Again, Dm9 might be seen as the tonic chord, but when analyzed from the relative major’s point of view, it is switching between the scales of F major and F minor.

(D minor) (F major/minor)

VI-7 bVIΔ7
I-7 VIIΔ7
Dm9 Dbmaj9
I'm your biggest fan, but I guess that's just not good enough
VI-7 bVIΔ7
I-7 VIIΔ7
Dm9 Dbmaj9
Is it 'cause I wear my hair weird or because I like to play Diablo

In “[Faraway](#)” by The Japanese House, the first 7 chords alternate between the C major and C minor key. The next line resolves to the C major tonic but soon starts borrowing chords from C minor until it resolves to the relative major key in Eb.

(C major/minor) (Eb major)

IΔ7 IV-
Cmaj7 Fm
I wasted all my time
VI- I-
Am Cm
Waiting for the stars
IV I- IV
F Cm F
To align, to intertwine
I IV I IV

	C	F		C	F
	And now you're taking up all of my time				
	III-	IV		V	
	V-	bVI		bVII	
	Gm	Ab		Bb	
	Wherever you are I'm with you from afar				
	I	VI-			
	Eb	Cm			
	She makes me wonder why				

The main progression in "[Retrograde](#)" by James Blake mostly uses chords from the key of G minor, but it resolves to a G major chord. The only other chords that aren't diatonic to the C minor scale are C/D from C dorian, and Am from C major.

(G major/minor)

	I
	G
	You're on your own
	IV-
	Cm
	In a world you've grown
	I-
	Gm/D
	Few more years to go
	V7sus4
	C/D
	Don't let the hurdle fall
	bIII
	II-
	I-
	V7sus4
	Bb
	Am
	Gm
	C/D
	So be the girl you loved
	bIII
	II-
	I-
	V7sus4
	V7
	Bb/D
	Am/D
	Gm/D
	C/D
	D7
	Be the girl you loved
	I
	G
	I'll wait

This example from "[Solitude](#)" by M83 starts in the key of C minor but later on resolves to a C major chord. Every other chord is diatonic to the key of C minor, F from C dorian and

G7 from C harmonic minor. The one resolution to the C major chord is a perfect example of a Picardy cadence.

(C minor/major)

I-7
Cm7
You gotta go
bVII
Bb6
Where I cry
IV
F
And take in all the tears
IV-7
Fm7
I wanna see if you can try
bIIIΔ7 bVIΔ7 IV- V7sus4 V7
Ebmaj7 Abmaj7 Fm G7sus4 G7
Drink a little bit of me
IV-7 I
Fm7 C
No
IV-7 bIIIΔ7 V- IV-7 V-7 bVIΔ7
Fm7 Ebmaj7 Gm Fm7 Gm7 Abmaj7
No

Multiple modulations: Some songs have a lot of modulations that happen back to back and not always in a noticeable pattern. Most of the time when this happens, there are a lot of secondary dominant chords involved in order to convince the ear that we are resolving to new key centers. With multiple modulations it can sometimes be hard to keep track of what's going on with the tonic, so there is a tendency for the keys to sort of blend together. It's not always easy to say if the different keys involved are actually being tonicized or if they're just lending out passing chords.

The first example with multiple modulations is from the bridge of "[No More Lies](#)" by Tame Impala and Thundercat. Every modulation here, except for the last one, is accomplished by introducing the relative V7 of each new tonic chord. Making most of these chromatic or common-chord modulations. The bridge starts in the key of Bb major but the second chord is already borrowed from the parallel minor key, Bb minor, which then resolves to the relative major key, Db major. From the Ab7 to Dbmaj7 resolution, the next 6 chords are sequential as the V7 to I progression is repeated in B major, A major, then Gb major. The [Gbmaj7 Amaj7 Dmaj7] progression is hard to place in any specific key center and

the chords can be analyzed in a number of ways, though it does seem to be mostly centered around Gb as a possible tonal center. The Dmaj7 chord then resolves back to the main progression of the song in Bb minor/Eb minor (Db major/Gb major). The movement from Dmaj7 to Bbm9 (bIIΔ7 to VI-7 in Db major) is similar to that of a bIIΔ7 chord resolving down a semitone to IΔ7. So to recap quickly, the first modulation from Bb major to Db major is similar to the change from Bb major to Bb minor. The next 3 modulations are sequential modulations down a whole step twice and then down a minor third. The last modulation from Gb major to Db major (Bb minor) is down a fifth.

(Bb major) (Db major) (B major) (A major) (Gb major)

VIΔ7		IVΔ7	
IΔ7		bVIΔ7	
Bbmaj7		Gbmaj7	
<i>There's something wrong in your mind</i>			
		I7	IVΔ7
		V17	IIΔ7
		IIΔ7	V7
		IΔ7	IΔ7
II-7	V7	IV7	bVIIΔ7
IV-7	bVII7	bIIIΔ7	bVI7
Ebm7	Ab7	Dbmaj7	Gb7
		Bmaj7	
<i>If you think there's no pain in my heart to say goodbye</i>			
bVII7	bIIIΔ7	V7	IΔ7
V7	IΔ7	III7	VIΔ7
IV7	bVIIΔ7	IΔ7	IVΔ7
bIII7	bVIΔ7	I7	IVΔ7
#IV7	VIIΔ7	bIII7	bVIΔ7
E7	Amaj7	Db7	Gbmaj7
	Amaj7	Dmaj7	
<i>Please don't cry, I'm let - ting go</i>			
III-7	IIΔ7	II-7	
VI-7	VΔ7	V-7	
I-7	bVIIΔ7	bVII-7	
Bbm9	Abmaj9	Abm9	
<i>I'll just be on my own, I'll just stay home alone</i>			
IΔ7	I-7	bVIIΔ7	VI-7
IVΔ7	IV-7	bIIIΔ7	II-7
bVIΔ7	bVI-7	bVΔ7	IV-7
Gbmaj9	Gbm9	Emaj9	Ebm9
<i>My troubles are my own</i>			
	VI-7		
	II-7		
	IV-7		
	Ebm9		

Unless she wants to come back

A similar example with a mixture of different modulations is found in the chorus of “[She’s Always a Woman](#)” by Billy Joel. In the following example, the tonal center changes 8 times through 6 different key centers. In order of fifths the key centers are Bb major, Eb major, Ab major, Db major, Gb major, and B major (technically Cb major). Even though the perceived tonal center does shift throughout, the whole chorus can still be analyzed in respect to the key of Eb, where a lot of the chords are borrowed from parallel modes. Those 6 key centers expressed as modes of Eb in the same order would be Eb lydian, Eb ionian, Eb mixolydian, Eb dorian, Eb aeolian, and Eb phrygian. Like a lot of other examples, it’s not always easy to determine exactly what key we are in because a lot of them are similar and share common chords.

The chorus starts in Eb major (C minor) but quickly modulates up a fifth to Bb major with the relative VII°7 and V7 from that key. Here a [I III- VI-7] progression is played in Bb major which will be repeated in a few of the other keys as well. The chorus then plays the [I, III-, VI-7] progression again, only a whole step down in Ab major. However, because of the Ebmaj7 chord before Ab, this progression might be better analyzed as [IV, VI-, II-7] back in Eb major. The next line then reestablishes the original key of Eb major with a perfect cadence. From here, the tonal center moves from Eb major directly to Eb minor (Gb major) and the next ten chords, from Ebm7 to Ebm/Bb use the same progression as the first 10 chords in this example. In the same way as before, this modulates from Gb major up a fifth to Db major then down a whole step to B major. Following the Ebm/Bb chord in B major, the relative VII° and V7 chord from Bb major are introduced to resolve to Bb major. From here, the Bb chord is used as a common chord to modulate back to the original key of Eb major. A lot of the modulations here are accomplished with the use of secondary dominants or chromatic chords. There is also a little bit of sequential action happening with some of the chords here, a lot of progressions are used more than once. There is one direct parallel modulation from Eb major to Eb minor (more parallel modulations will be explored later on), and the last modulation is a simple common-chord modulation.

(Eb major) (Bb major) (Ab major) (Gb major) (Db major) (B major)

		VII°7			
VI-	VI-7	#IV°7			
Cm	Cm/Bb	Adim7			
Oh					
	V7	I	III-	VI-7	
	V7/V	V	VII-	III-7	
	F7	Bb	Dm/A	Gm7	
She takes care of herself					
	IVΔ7				

VΔ7 I III- VI-7
IΔ7 IV VI- II-7
Ebmaj7 Ab Cm/G Fm7
She can wait if she wants
V7/V
V7sus4 I Isus4 I Isus2
Fm7/Bb Eb Ebsus4/Bb Eb Ebsus2
She's ahead of her time
VI- VI-7 #IV°7
I-7 I-7 VI°
Eb m7 Ebm/Db Cdim
Oh
V7/V V
V7 I III- VI-7
IV7 bVII II- V-
Ab7 Db Fm/C Bbm
And she never gives out
IVΔ7
VΔ7 I III- bVI°
IΔ7 IV VI- bIII°
bIIIΔ7 bVI I- #IV°
Gbmaj7 B Ebm/Bb Adim
And she never gives in
V7/VII
V7/III
V7 I I6 I7
V7/V V V6 V7
F7 Bb Bb6 Bb7
She just changes her mind
V6 I V I
Bb6 Eb Bb Eb
And she'll promise you more than the garden of Eden

In the live version of "[All By Myself](#)" by Celine Dion, the key changes down a whole step 3 times in a row before moving back up a tritone to the original key. Up until this point, the song has been in the key of G major. At the end of the second chorus, the chords start to walk down chromatically from Cm to A7 which is then used to resolve to a Dm in the key of F major (D minor). The instrumental plays in the key of F major (D minor) for a little while before introducing a [VII-7b5 II- V7/VI] progression which is then repeated a whole step down in Eb major and then again in Db major. This is a really clever sequential modulation because the last chord of the sequence becomes the relative V7/VII chord in the upcoming key a whole step below. The last time the [VII-7b5 II- V7/VI]

In the next example from “[Too Late](#)” by Mat Zo, it’s not so much that there are multiple modulations during the progression, but there are multiple angles to analyzing this. The first chord is an interesting chord because it doesn’t quite seem resolved but at the same time also feels like it could be the tonic chord. Dominant seventh chords are unconventional tonic chords but are still used, especially in blues music or songs using the mixolydian scale. From this point of view, the other chords here are borrowed from parallel scales, Ab6 from G phrygian and the rest from G minor. Since the G7add11 chord is the only chord from a G major scale, this could really just be seen as being in G minor with one chord borrowed from G major. The last G minor chord then feels like the I- chord. The analysis in Bb major is the relative major of G minor, so it might help to look at it from that point of view as well. You can see how the Ebsus2 and F chords are the IV and V chords in Bb major. The Ab6 to Ebsus2 progression feels like a plagal cadence in the key of Eb major. In this case, G7add11 and F are secondary dominant chords. So all in all, my personal order of perceived tonicity is G major to Eb major to G major to Eb major then to G minor (Bb major), which then repeats. All of these keys are very similar, so it is hard to say exactly what is going on and when but this is what I tend to hear.

(Eb Major) (G major/minor) (Bb major)

V7/II	bVII6	IV	
I7	bII6	bVI	
V7/VI	IV6	Isus2	
G7add11	Ab6	Ebsus2	

Look out the window

V	V7/II		
bVII	I7		
V/V	V7/VI		
F	G7add11		

All I see is rain

bVII	IV	V	VI-
bII	bVI	bVII	I-
IV	Isus2	V/V	III-
Ab	Ebsus2	F	Gm

And a whisper, calling out her name

One last example I want to include here is from the classic album “Kind of Blue” by Miles Davis which inspired a movement in what is known as modal music. In the last song of the album, “[Flamenco Sketches](#)”, there are 5 main parts of the song. Each part of the song is in its own key, and uses a specific scale to play in that key. You can think of each mode as its own chord, as the bass note usually stays centered on each tonic note. In that sense, each key change here can be viewed as a chord change. Each mode then has two main chords that are played (shown in parentheses), the tonic chord and a secondary chord. The best way to see what I’m talking about here is to listen to this song

and try to play along. These are just the main guidelines of the song and are not always followed to a tee.

The bottom line of the analysis shows the scale used, the middle line is the key that each scale is in, and the top line shows the tonic and main secondary chord. In most of the modulations here, the secondary dominant V7 chord is used to modulate to the new key center. The progression starts in C major mostly using the C ionian scale. This then modulates down a major third to the key of Ab major using the Ab mixolydian scale. The Ab mixolydian scale shares the same notes as the Db ionian scale, so this modulation is similar to modulating up a half-step, but as you can tell it sounds much different. Here it seems that the note C connects the two keys in a way making this a common-tone modulation. The tonic Ab7 chord is then used as the backdoor bVII7 chord in the next key of Bb major. The next modulation is up a major third by the use of a common chord and has a brightening effect on the tonal center. As you can see, the parts in Bb major and D major both use an Ebmaj7 chord as the secondary chord. In Bb major it is the IVΔ7 chord and in D major it is the bIIΔ7 chord. The Bb major scale and D phrygian dominant scale only have one note that is uncommon. The Ebmaj7 chord then moves to its relative minor chord, Gm7 which modulates to the key of G minor. The phrygian dominant scale is actually a mode of the G harmonic minor scale, so this change can be related in that sense as well. Lastly, the key center moves back to the original key of C major and repeats the cycle. The scales of G dorian and C ionian only have one note not in common, so this change is a lot more subtle than some of the others. The secondary chord used in G dorian, C7, shares 3 notes in common with the upcoming Cmaj7 chord. As you can see, most of the changes here are pretty smooth and only involve one or two note changes. The most drastic one is probably C ionian to Ab mixolydian as they only have two notes in common. These 5 modulations alone can really show you just how much there is to explore with key changes and modulations.

(CΔ7 Dm7)	(Ab7 GbΔ7)	(BbΔ7 EbΔ7)	(D7 EbΔ7)	(Gm7 C7)
<i>C major</i>	<i>Ab major</i>	<i>Bb major</i>	<i>D major</i>	<i>G minor</i>
C ionian	Ab mixolydian	Bb ionian	D phrygian dominant	G dorian

Conclusions: As you can see, there are a lot of different ways to modulate and the examples provided above don't even come close to exhausting all of the options. The analyses of all the modulations above are also only from certain limited perspectives and there are a lot of other ways you can try and explain each modulation. After all of these examples, it seems like there really aren't many limits on what you can do when it comes to modulating in music.

Here is a link to the rest of my [chord analyses](#) which have a lot more examples of many different kinds of modulations. Here are more links to similar studies on [dominant chords](#), [major seventh chords](#), and a study on different [chord possibilities](#).

