Scales, Chords, and Patterns on the Guitar

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A Walk in the Fret-Park

Memorizing scales on instruments that have an irregular note pattern placement, with a couple of notes here, only one note there, and so forth, can be terribly daunting. Even scarier to me is seeing a picture of all of the notes found on the fretboard and being told you should memorize all of it. How should I do that?

Fortunately, when you get further into guitar theory, most people will tell you, you only have to memorize the first two strings.

Study an instrument's layout and you have to deal with two things: general music theory and how it applies to the specific instrument. I'm not going into all of music theory here, although I will have to discuss some of it, but what I'm going to do instead is analyze the way the guitar has been put together.

To analyze those two things, you need to come up with an approach.

Embodiment Principles To Facilitate Playing Technique

One thing I have found to be a universal necessity to all instruments, that you need to study and practice to great length even before you think about anything else, is how you set up and hold the instrument to be able to play it correctly. In case of the guitar, for instance the position of the guitar and the hands are highly important.

Some techniques can be applied more easily also in positions that aren't favorable to other techniques. If you're only allowed to assume one position without changing positions, all techniques can only be applied in one position : that of the classical guitarist.

The optimal way of holding your guitar to also be able to work close to the body of the guitar is to hold the guitar diagonally. Staying close to the body of the guitar, you can go full-out Rock'n'Roll and keep it near vertical, but the point is that close to the body a lot of techniques aren't going to work otherwise, because you can't fret the strings properly with your fingers if you keep the guitar horizontal.

Maybe some guitar players will have different hands, wrists, and arms that allow them to disregard the diagonal position, but for *all* guitarists the above is a *workable* approach.

With your guitar in a for you comfortable position, fretting a single string isn't that difficult, but more of them is, or at least seems to be. With all techniques you need to find a way of actually performing them with minimal effort, so you can repeatedly adequately put them to good use. If you grow too tense, that's the end of your performance.

Throughout my analyses I often refer to it as *mental parkour training* or how to overcome maximum resistance with minimal effort.

The Need for Speed

Syllable, word, phrase, theme driven solo. You have to practice your patterns first, that you apply horizontally on the string *or* vertically alternating strings *or* recombining horizontal and vertical to get a more diagonal approach. Savvy? No? That's o-kay.

Single notes, eighths, thirds, and sixteenths : those are your first words when practicing your vocabulary on the guitar and you practice them in one spot. As soon as you can do it fast in one spot, take another look at the fretboard : choose the *tonics for / root notes of* every pattern that you want to play and just shift that pattern from the one tonic to the next.

Say you have a triplet pattern and you start on the G string on the fifth fret, meaning that the tonic for the full run and the first pattern equals E. You are playing in E. Now you choose to use a particular scale like the major scale. That scale determines the tonic for every time you play that pattern.

If you want to fill up a single four quarter bar with sixteenth notes, you take your sixteenth note pattern, start with the index on the fifth fret, play it, shift the index to the seventh fret, play it, shift the index to the ninth fret, play it, and finally tenth fret, play it. That's one fast shifting pattern right there.

An example on the G and B string : A-D-D#-D — B-E-F#-E — C#-F#-G-F# — D-G#-A-G#. The pattern shifts according to the major scale and makes use of a blues-scale pattern grounded in the tonic, using the first, third, and fourth tone of the blues-scale for that tonic. That way you combine an upbeat major run with maybe a bit of a pleading blues-phrase.

You can also decide to just shift the pattern with either minor or major seconds (one or two frets at a time). The options are limited only by your ear.

Look into players like Zakk Wylde and Slash and what you see them do onstage. Instead of trying to figure out what they play, try to identify repeated patterns in finger-movement and combine and recombine those as you see fit with the scales you can play on your guitar. Make the techniques they use your own, focusing on grounding them in practicality of playing rather than complexity of resulting sound.

Much like you can play horizontal patterns, you can play vertically as well. Now shift according to the chord or scale you're playing vertically or both horizontally and vertically to track the entire chord or scale vertically up or down the fretboard.

Now combine the number of steps normally found on two strings on just one with a vertical step after that, essentially playing a full scale on two strings instead of three : this way you can walk the fretboard in either direction.

Now combine different words : alternate eighths and/or triplets and/or sixteenths.

Throw in a single whole note or maybe even lengthen it with a quarter, half, one-and-a-half or another whole note. That's how you develop *speed* and *feel*. Instead of thinking speed, think, "How do I gain more notes in different places with minimal effort, so it *sounds* fast?" It's mental parkour training.

Once you've mastered the techniques you deem necessary for your solo, go back to the theme. The theme can be the question, the answer to all questions, or maybe even a whole phrase.

You can introduce variety in your solo in two ways : keep the parts in between the repetitive theme *vary*ing in length — short, middle, or long — and *develop* the theme — altering and refining it along the way, both adding to it and removing superfluous beats and notes or tones.

Fretting Barre Chords : the Skinny-Fingered Approach

Are you one of those skinny-fingered people like me?

Before continuing, also worry about your guitar setup : keep your action as low as possible, meaning that the strings are as close as possible to the fretboard without generating a buzz when fretted. Also, don't use strings that are too heavy, so you don't have to increase your effort to play : 009 a.k.a *super-slinky* may be the way.

Reducing strength needed to play isn't a beginner-tactic like some would argue : it's just plain smart and there isn't a single viable reason not to do it. Embodiment focuses not only on your body but also on that of your instrument : it focuses on making playing the instrument achievable and seemingly without effort.

For a full sound, focus on the kind of strings you use instead of how thick they are. Your pickups need to respond to them and some strings handle this better due to what they are made of than others. Think additional iron/steel hexagonal core, nickel wound.

For barre chords, keep your barre-finger nice and relaxed, roll it toward the tuning knobs a little as you use your bigger arm-muscles to press the finger with minimal but sufficient

pressure against the strings. Don't actively bend your finger. When you press it against the fretboard, you'll notice the pressure on the fretboard in combination with relaxation will bend it for you. This allows you to fret multiple strings at once.

When you keep your guitar horizontal, when you're close to the guitar body, you'll notice that your second knuckle is bent and the barre finger doesn't catch the higher pitched strings. This is where you have to keep your guitar at least diagonal in order to be able to fret the strings properly.

Once you've figured out your basic technique (look up raking, bending, tremolos, vibratos and you'll find more) you need to figure out where to apply it. In order to do so, you need to gain a deeper understanding of the scales you're going to apply and how these translate to emerging patterns on your guitar.

Technique-Giveaway : Raking

Raking is an important and often overlooked technique, so as a giveaway I'll just illustrate it here. Look for it on the Internet and you'll probably also find some other less-frequently addressed techniques that provide you with a wider range of guitar playing. (Yes, that seriously was hint #2.)

Use for instance your index finger as a muted-barre, not pressing the strings against the fretboard, but just muting them, unmute one string by fretting it with another finger and strike the muted strings up until and including the unmuted string. You get the same kind of effect on the guitar sound-wise as what you achieve on the mouth harp by tongue-slapping.

A well-known example of someone using this was B.B. King.

It doesn't hurt to try muting with other fingers as well, while fretting with your index finger. Whatever works for you.

What's a Fret and How Does This Relate to Intervals?

A fret provides the same tonal distance as from one piano key to the one directly next to it : white to black if there's a black key in between the white keys, black to white, or white to white if there's no key in between these two white keys, not even a black one.

The prime indicates that there's zero distance, meaning you play the same tone. If you play a note, then its prime, you really just play the exact same tonal height twice. Remember : a note has a tone and a duration, but a tone without a duration isn't a note.

The two most basic intervals between two notes are the minor second : the ½ step; and the major second : the whole step. On the guitar, staying on the same string, the minor second always equals one fret and the major second always equals two frets.

The minor third equals 1 major and 1 minor second. This means that on one string, it's a three fret interval. The major third equals 2 major seconds or a four fret interval.

The perfect quart equals 2 major and 1 minor second or 5 frets. The augmented quart equals 3 major seconds or six frets.

The perfect quint equals 3 major and 1 minor second or seven frets. The diminished quint equals 2 major and 2 minor seconds or six frets.

When it doesn't say 1 major second, but 2 minor seconds in relation to more major seconds, consider the order of the intervals within the major and the minor scale as you will come to know them and use those to analyze the subdivision and names of the intervals as you use them.

The minor sext equals 3 major and 2 minor seconds or eight frets. The major sext equals 4 major and 1 minor second or nine frets.

The minor seventh equals 4 major and 2 minor seconds or ten frets. The major seventh equals 5 major and 1 minor second or eleven frets.

The octave only exists perfectly from the tonic as a prime to the next tonic and equals 5 major and 2 minor seconds or twelve frets. It's called an octave due to the arrangement in names for tones that you can see visually on the piano. Count the first white key as one and the octave is the eighth white key.

What's a Chord?

Minor and major intervals of different sorts on the chromatic scale lead to specific musical scales. You could even come up with your own scale, but it will be hard to really be original, also because musicians arrange and rearrange combinations of scales based on emotional emphasis during specific phrases of their playing, especially during their solos.

When you have a particular scale, stacking three or more tones on top of each other, you get a chord : it has a minimum of three different tones. On your instrument, from basic three-tone chord shapes spanning one or more octaves, you can derive other chord shapes that can also consist of four or five tones. Just replace one tone with another.

It isn't really that difficult, if it weren't for music theory seemingly getting a bit funky in the way it names chords. This essay focuses on the major and minor scale when it comes to chords, that so happen to share chord structures. Also, I hope to introduce some clarity in terms of naming conventions.

Before continuing with these adaptive chord shapes, as in how different chord shapes can be alternated to generate different chords, you need to have a solid understanding of both scales and the basic chord structures. One of the things you need to realize is that the sound of the tonic is highly important in terms of it being the lowest tone.

Look at the different structures as they present themselves and at the difference between major and minor chords. This difference for a large part will show you the way in why the order of the tones from low to high is so important : take a major chord, omit the tonic as the lowest tone playing it one octave up, and the first interval suddenly is that of a minor chord.

When you have such a structure consisting of more than one tone, you can play these tones harmonically (together) or arpeggiated (separately). In terms of musical interplay between instruments harmonics and melodics are important also.

In classically arranged music for orchestras the approach is chordal in that all instruments rapidly go through many chord changes to allow for greater harmonic interplay. The fixed and limited chordal structure of pop-music allows for greater melodic soloing freedom. David Barrett touches on this subject in "Mel Bay's Complete Chicago Blues Harp".

Although I don't have it, I assume the "Harvard Dictionary of Music" goes into subjects like this in more detail.

The Upsetting Standard Tuning?

Due to the fact that most of the strings have a perfect quart interval between them — E to A, A to D, D to G, and B to E — with as an exception G to B, which only has a major third interval, when you start on different strings you get irregular looking patterns.

In reality, for every scale next to the intervals of tones, when playing arpeggiated (melodically), you mostly only have to learn two patterns in *all-fourths tuning* : a neck-oriented pattern and a body-oriented pattern. The great thing about the guitar in all-fourths tuning is that both these patterns are contained in the vertical pattern.

On the low-E string and on the high-E string knowing the actual scale and how it works becomes more important, but essentially it's important everywhere. (Say "No!" to not studying, kids!) Know the patterns and the scales and walking across the fretboard from the lowest to the highest notes is easy.

Understand the scale and the interval relations of the strings and you won't have a problem reconstructing any pattern, once you've seen it. You really just need to understand relative distances, scales, and the way the instrument works. This essay should prove good practice in learning to recognize the patterns.

Curious about guitar "statistics" and maneuvers?

When you look closely at the guitar, on the low-E string at the twelfth fret you're one octave up from the lowest E. In total, from the lowest E to the highest, the guitar offers you three octaves. Once you finish reading this essay, pick your scale and find your way from lowest to highest using that scale in a way that's easy and efficient to play to you.

How about first octave on two strings to get away from the neck, second on three, and third on three strings?

When analyzing the scales as laid out in this essay for all-fourths tuning, you always have a perfect fourth (5 frets) between the strings : for standard tuning, deal with the G to B string transition with only a major third between them (4 frets) by shifting the all-fourths pattern on the highest pitch strings (B and high-E) one fret toward the body.

Do you start on either of the strings? Learning to go back up basically means thinking about how you ended up on the high pitched strings if you were to start on lower-pitched strings. It only takes a little bit of practice after you've gone down to go up.

The Chromatic Scale

The Chromatic scale when using the all-fourths tuning looks like figure 1 : low to high strings from left to right and low to high fret finger placement from top to bottom. A circle indicates the tonic, squares indicate all other minor seconds. The chromatic scale is the reference scale all other scales use, containing all the musical tones we can play.

Notice how for the highest pitch strings, here C and F, in reality in standard tuning, B and high-E, you would have to shift the notes one fret toward the guitar body, in the picture : down. Also note the two patterns : the lower octave is the body-oriented pattern and the high octave neck-oriented.

If you shift the pattern of the C string one fret making it a B string, it's easier to move the last tone to the first of the now high-E string instead of moving it to the sixth fret of the B string. You also get two ways of playing the highest tone on the G string : fifth fret on the G string or first fret on the B string. Choose and pick.

If you want to work your way toward the guitar body, you can use the body-oriented pattern because the next tonic is located closer to the body, and append it to the higher tonic. If you want to work your way closer to the neck, you can append it to the lower tonic.

The body-oriented pattern is easiest to use to walk the neck of the guitar.

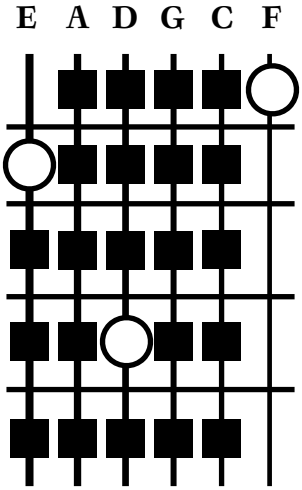

Figure 1. Chromatic scale in all-fourths tuning

You can also use the neck-oriented pattern to walk toward the higher pitched notes on the low-E string if you want to. If you somehow end up playing a high pitched note on the low-E string and you want to distance yourself from the body even though the pitch of your lick goes up, you can use it also.

Nine Scales for the Guitar

There are many different scales. When you study scales, don't think about wanting to be sophisticated or popular, think about the character of the music and whatever you mean to express through it. As illustrated above in "The Need for Speed" you can also combine scales using one for the general mood and the other for the contextual interpretation of that mood.

You might be struggling with life or overcoming struggles, emphasized in Blues, or maybe it feels a little less heavy and you go Mixolydian. If the happiness or anger you feel is veiled through mystery, you might want to turn to one of the Gypsy scales. You have many options.

I should address that all the scales here are named scales for a reason. The Mixolydian scale is often referred to as the Mixolydian mode, but then it has a *dominant*, the fifth step of the scale, and a *finalis*, the tonic. These tones represent set conventions that you *can* use in for instance church music that you *don't have to* stick to in a general context.

Every scale adheres to a set number of usually varying intervals on the chromatic scale. The chromatic scale is made up of minor seconds : C C# D D# E F F# G G# A A# B c. Scales derive from the chromatic scale, by using one or more seconds as an interval between two tones, a specific sound or feel that expresses the character of the music.

The relative degrees or intervals between tones determine the general feel of the scale. The tonic introduces gravity : some keys sound more like what the relative degrees express than others. For instance Blues uses some keys more frequently, because they better represent the general feel of that genre, but you *don't have to* limit yourself to those keys.

As you can see, different octaves in general music theory are noted with different capitalization. They also add a number of underscores for the lower octaves noted in capitals (ABC...) and overscores for the higher octaves noted in minuscules (abc...). This goes beyond naming conventions that I have to use in this essay, suffice it to say all the octaves are actually numbered.

The Major Scale

Let's be grand and start with the major scale. On the chromatic scale, you basically pick a key you play in (you *can* pick *any* key) according to absolute pitch. All other notes then are relative. All of the note distances are derived from the major scale in C. This looks like : C D E F G A B c. As such the chromatic scale intervals are :

1 1 ½ 1 1 1 ½

In terms of frets, to get from the tonic to the next tonic, an octave higher, you pick your key and from there the fret-intervals are 2 2 1 2 2 2 1. One possible way to look at the fretboard is saying that you start with a zero fret and then on your lowest string you shift 2 frets, 2 frets, shift to the next string which is exactly five frets higher, and so forth.

For pattern analysis I stick to the chromatic pattern as laid out in figure 1. Apply this and the "all-fourths tuning" major scale-pattern looks like figure 2. Note that these patterns, if this were the neck of the guitar, are all noted with F# as a tonic, but in reality you can shift them up and down the neck and they are relative.

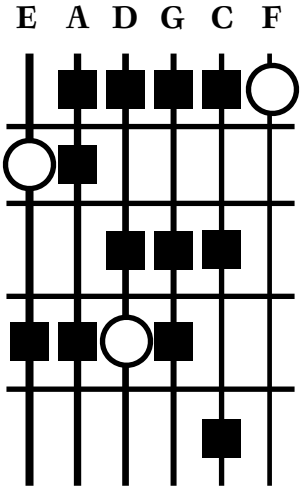

Figure 2. Major scale in all-fourths tuning

As you can see, you have a body-oriented pattern and a neck-oriented pattern. Study both, placing the tonic on any string and consider that for the B and high-E string you need to shift the pattern one fret toward the body.

The Minor Scale : Regular and Melodic Descending

Next to the major scale, you also have the minor scale, but the name minor scale can be a bit confusing, since there are essentially three variations: the regular or melodic descending minor scale, the melodic ascending minor scale, and the harmonic minor.

The regular minor scale and the equivalent melodic descending minor scale is probably most well known, since its foundation is the relative note distances between the minor scale in A, which as you can see is just another permutation of the major scale in C, starting on the A : A B c d e f g a. As such the chromatic scale intervals are :

1 ½ 1 1 ½ 1 1

Why is it called a minor scale?

If you add up the first two steps and add up the two steps after that, you see that with the major scale you get 2 1½. With the minor scale you get 1½ 2. Based on the tonic these are the two most basic types of chords. That's basically it and also why the major scale notes its chords as I ii iii IV V vi vii. The prime, quart, and quint are major third chords, the other minor third chords.

As you can see, the chords of the minor scale are the same chords in terms of shapes. The difference is that the chords of the minor scale start on the sixth scale degree of that of the major scale. From there on you walk through the same permutation of chords. This results in chords not being named after their scale, but after their shape.

You can also see how scales relate in the pattern formed on the guitar. Figure 3a illustrates the regular or melodic descending minor scale. Check the sixth scale degree of the major scale in figure 2, the first fretted tone on the D string, and relate how the pattern develops from there to figure 3a starting on the low-E string with the tonic.

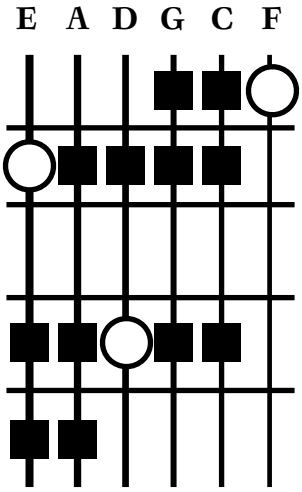

Figure 3a. Minor scale (regular & melodic descending) in all-fourths tuning

The Minor Scale : Melodic Ascending

As you can see some types of music make use of a melodic minor scale, that can both be ascending and descending, the descending being the same as the regular one. Some types of music, like for instance Jazz, only make use of the minor ascending scale, without using the descending scale. Essentially, it's up to you as a musician to pick your tone : forget about genres, think feeling and expression.

So what does the ascending melodic minor scale look and sound like? I find it sounds conventional and a bit lecturing in all honesty. In A it looks like : A B c d e f# g# a. The chromatic scale intervals, as illustrated in figure 3b, are :

1 ½ 1 1 1 1 ½.

Officially, it sounds Jazzy. That's what it typically is used for and what we recognize it from. It shares a couple of notes with the pentatonic Blues scale in the beginning, but adds a note and then completely diverges. When you check figure 3b, be sure to compare it to the Blues-scale in figure 5. While you're at it, why don't you try and relate all the figures to each other to see whether they mix and match here and there?

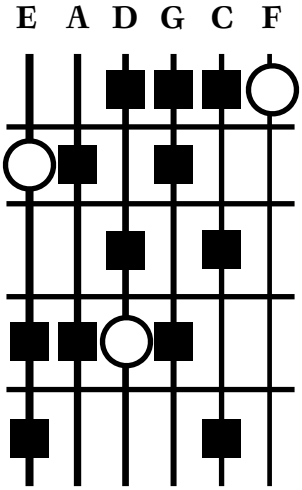

Figure 3b. Melodic minor scale ascending in all-fourths tuning

The Minor Scale : Harmonic

Who can do with just a melodic scale right? I'm not saying that the regular or melodic descending minor or the melodic ascending minor won't work harmonically, but if you can add another scale, why not? You do also have the harmonic minor scale, and in A it provides you with a sharp seventh : A B c d e f g# a. The chromatic scale intervals are :

1 ½ 1 1 ½ 1½ ½

What do you use it for? It sounds a little bit more mysterious and leans toward one of the gypsy scales, that has all but one of its notes in common with the harmonic minor. You might feel it's to Gypsy what the Mixolydian scale is to Blues : a bit light-weight, but addressing a broader audience. Figure 3c illustrates the scale pattern on your fretboard in all-fourths tuning.

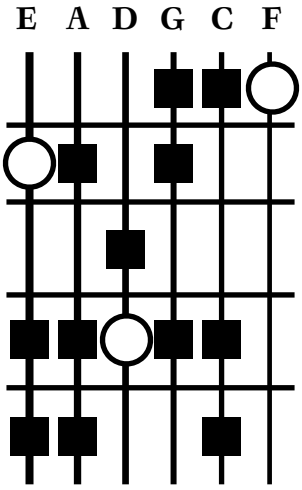

Figure 3c. Harmonic minor scale in all-fourths tuning

Mixolydian Scale

Before we get all heavy with the Blues and the Gypsy scales, what's interesting to note is that if in the major scale you replace the seventh with a flat seventh, you get the Mixolydian

scale. You typically see it used in full for backing grooves like walking shuffles a.k.a. boogies. The Mixolydian in C reads : C D E F G A A# c. The chromatic scale intervals are:

1 1 ½ 1 1 ½ 1

Do you see how it's again a different permutation of the major intervals? Essentially, you can change the entire tone of voice of your music, just by switching the permutation, starting on a different point in the interval range. And who says you can't do this to the Blues-scale or the Gypsy-scales or any other kind of scale? Your options are limitless. Figure 4 illustrates the Mixolydian fretboard pattern in all-fourths tuning.

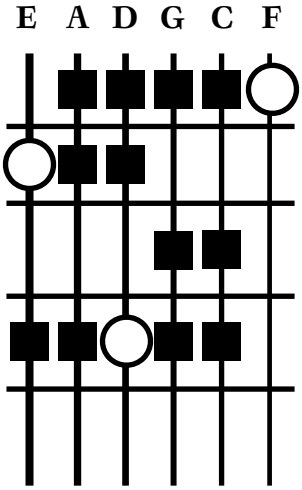

Figure 4. Mixolydian scale in all-fourths tuning

Nice and regular isn't it? It can also be used to play something that's bluesy, but not too heavy, which means that you can typically use it to approach a broader audience, or just set a different tone. To do this, you can omit the second and sixth tone.

Blues Scale

When you've drawn people in with some mellow toned version of the Blues, using the Mixolydian, you can hit them full-on with the Blues scale. What is Blues? Most people will automatically shout, "Feeling blue!" associating it with sadness.

Although it can be that, Blues is much more than that. It's about struggle, life, death, perseverance, love, hate, pain, joy... Both comedy and tragedy. It's a kind of character and that character goes through happiness and sadness, it's just rough and that's what it sounds like, because life can be difficult, yet it has its moments.

If you're there for the moment, a Blues scale is there for you.

Let's accommodate harmonica players, using a D-harp, played in second position (equaling A that follows D on the circle of fifths, hence second position). The Blues scale in A reads : A c d d# e g a. The chromatic scale intervals are :

1½ 1 ½ ½ 1½ 1

Rock musicians tend to make use of the pentatonic blues scale more, which adds up the two half steps. That does illustrate how important that half step is in terms of expression in

Blues. Try it. The pentatonic blues scale, one of many pentatonic scales and the most well-known, looks like this when you note the chromatic scale intervals :

1½ 1 1 1½ 1

Figure 5 illustrates the Blues scale in full, but if you leave out the fourth tone that adds another half step, you automatically get the pentatonic blues scale, so I think you can imagine that for yourself. You can also remember the pentatonic blues scale as a pattern on your guitar, since it's easy to trace, and add the half step when and where you need it.

Think of the pentatonic blues scale as the delimiting figure to your blues playing within which you have many more options. Officially you don't have to stick to the tones of the Blues scale or any scale when playing that particular kind of music, since you can add different tones for a different feel and contrast.

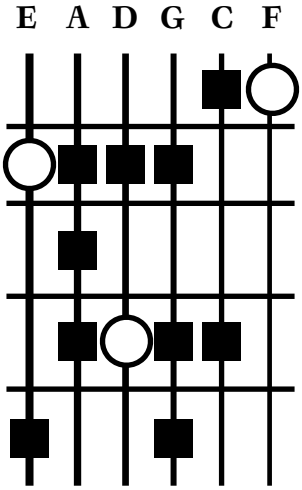

Figure 5. Blues scale in all-fourths tuning

First Gypsy Scale

Blues people are Hobo's : they like to move from place to place, trying to find work, creating art along the way, hooking up with who they meet and care to play with them, and as soon as the playing is done, they say their goodbyes, hope to meet each other again on the road, and move on in hope of finding another gig.

They aren't that different from gypsies, but gypsies are a bit more communal in that they travel in groups, whereas Blues people tend to be alone every now and then, happy to be together, but also afraid to be alone again. Either way it's the human condition, but what makes a gypsy a gypsy is kept a mystery, whereas the Blues is all out there.

That's also the difference in sound achieved through the different scales gypsies employ. I know of three gypsy scales that I mean to experiment with, but I don't know them that well yet. Either way, I figured you might enjoy them as well. Here they are. Gypsy scale 1, let's just illustrate them all in F, a mysterious note all by itself, looks like this : F G G# B *c c# e* f.

I've italicized three of the notes and underscored the tonic. I'll explain shortly hereafter why. The chromatic scale intervals for the first gypsy scale are:

1 ½ 1½ ½ ½ 1½ ½

When you look at the other two, it's interesting to note that, considering they consist of the tonic and six notes (seven in total indeed) there's some overlap. The first three notes of the second gypsy scale are the same as those of the third. The last three notes of the second are the same as the last three of the first.

This means you can migrate between these scales, alternating them, much like with the ascending and descending melodic minor scale, but with an added third dimension. To illustrate this further I've not only italicized and underscored in the second gypsy scale, but also bolded to illustrate the overlap with the third.

Figure 6a illustrates the fretting pattern in all-fourths tuning of the first gypsy scale.

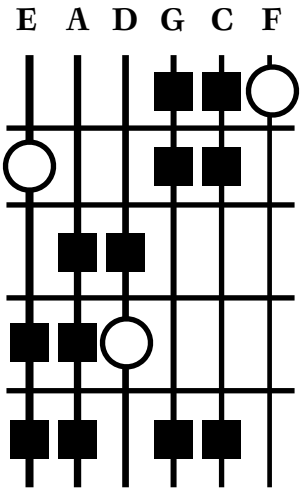

Figure 6a. First gypsy scale in all-fourths tuning

Second Gypsy Scale

In F, the corresponding second gypsy scale looks like this : F **F# A A#** *c c# e* f. The chromatic scale intervals for the second gypsy scale are :

½ 1½ ½ 1 ½ 1½ ½

Figure 6b illustrates the fretting pattern in all-fourths tuning of the second gypsy scale.

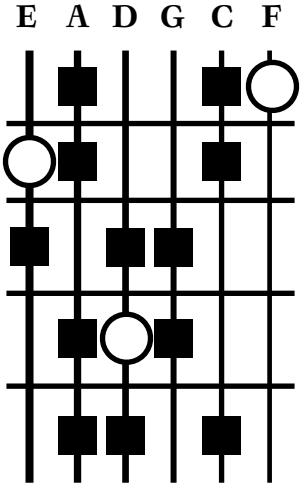

Figure 6b. Second gypsy scale in all-fourths tuning

Third Gypsy Scale

Basically, when you look at it, the chromatic scale intervals of the second gypsy scale are a different permutation of that of the first, shifting the whole interval pattern three spots to the right. Does this also happen with the third? In F, the corresponding the third gypsy scale looks like : F **F# A A#** B d d# f. The chromatic scale intervals for the third gypsy scale are :

½ 1½ ½ ½ 1½ ½ 1

As you can now see, it does. The three gypsy scales basically use the same kind of theory that the different modes in church music use : those are different permutations of the major scale. It's a matter of what note you start on, where you want to end, and what character it expresses based on these different permutations and the associated sounds.

Figure 6c illustrate the all-fourths tuning of the third gypsy scale.

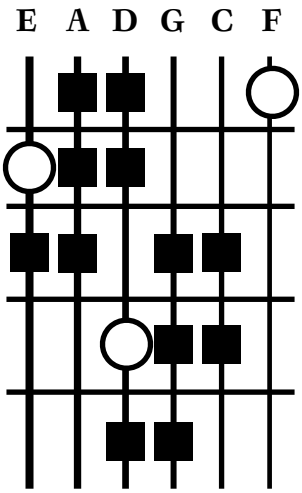

Figure 6c. Third gypsy scale in all-fourths tuning

On Studying Scales

That's a pretty solid set of scales that you can use to make a wide range of different types of musical pieces, each with their very own character or characters speaking to your audience. When you study them, study them separately first and see how you can get from one scale to the next. Do you just change the pattern or do you actually migrate with the permutation?

Take the gypsy scales. If you change the tonic of the gypsy scale to that associated with the offset of another gypsy scale, meaning that you maintain the same pattern on the fretboard, that's one way of approaching the change of pattern, while in fact keeping it the same, with the necessity of returning to the original tonic to end the piece. You could also maintain the same tonic throughout and just change the pattern.

Chords

What's a chord and what's its use? Do you play it harmonically (strummed) or melodically (arpeggiated)? All in all, a chord is nothing but a stack of three or more notes, but why and how do you stack them?

When you look at the regular minor scale and the major scale they both have the same interval distribution, just starting on a different step. They both have seven tones to them, leaving you with seven chords.

The way chords are named isn't directly based on what scale they're derived from. Instead of naming the chords after the scale itself, they receive their names based on the intervals and the way they've been organized. Okay, the major scale does start with a major and a major second, that add up to a major third, and the minor with major and minor, adding up to a minor third.

If a three tone chord has a major third before the perfect quint, both relative to the prime, it's called a major chord. If it has a minor third before the perfect quint, both relative to the prime, it's a minor chord. Remember, all major scale intervals appear as minor scale intervals also, just as a different permutation of the same sequence of intervals.

Since the chords appear both within the major and the minor scale, I'll only show them once, but I'll label them twice. Whether it's a major chord or a minor chord is noted by using either capital roman numerals or minuscule roman numerals respectively. What the number is, is based on the offset relatively to the tonic you're playing in.

Remember : the major scale in C is C D E F G A B c, the minor scale in A is A B c d e f g a. This means that the I chord based on the major scale is the III chord based on the minor scale. The chords are :

Major scale	I	—	Minor scale	III	—	ex. : C E G	(Major chord)
Major scale	ii	—	Minor scale	iv	—	ex. : D F A	(minor chord)
Major scale	iii	—	Minor scale	v	—	ex. : E G B	(minor chord)
Major scale	IV	—	Minor scale	VI	—	ex. : F A C	(Major chord)
Major scale	V	—	Minor scale	VII	—	ex. : G B D	(Major chord)
Major scale	vi	—	Minor scale	i	—	ex. : A C E	(minor chord)
Major scale	vii	—	Minor scale	ii	—	ex. : B D F	(minor chord)

Please note that the sample chords with a minimal three notes provided here should be seen as the chords based on the either major scale in C or minor scale in A. The possible chord shapes on the guitar are the same, but the tones vary per key you're actually playing in.

Here are the chord shapes, with the tonic of the chord, so not the scale you're using, set as a black circle and the other two notes that make up the chord as a square. They've been listed in the order found in the major scale, like above. I'm not including the fourth note, or the seventh scale degree.

If a fretted tone is black you play it, otherwise you don't, or maybe I'm wrong and you're better off playing the other tone? And why would you want to play all six strings?

And have you noted that it uses the all-fourths pattern to make it easier to understand? Do you get that I'm going to actually transpose the chords for you on paper to standard tuning, unlike the scales? That's just me being selfish, in that that way I understand it better myself. Or not really? Maybe I do also want to help? Who knows?

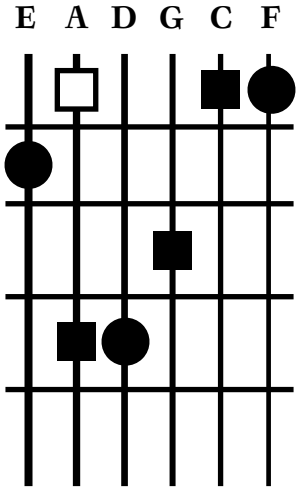

Figure 7a. Major scale I & Minor scale III chord in all-fourths tuning

What's interesting to note is that either the third or quint in the low octave isn't played, when you play the chord harmonically and not arpeggiated. Yet do you play the lower octave? In what way are these two chord patterns going to translate to a chord played?

If you want, you can transpose the chord patterns to any fret, but you can also start on any string. Just don't forget, that as soon as you hit one of the highest pitch strings in standard tuning, you need to shift it one fret toward the body. There are more chord shapes to this diagram than meet the eye.

Figure 7b illustrates two minor scale chord-shapes in all-fourths tuning.

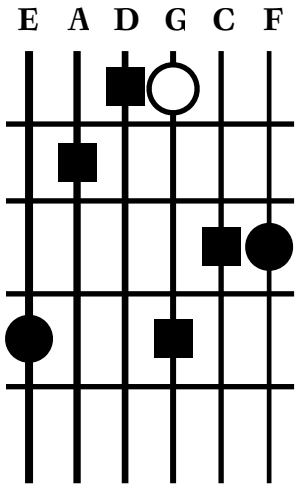

Figure 7b. Major scale ii & Minor scale iv chord in all-fourths tuning

Note in figure 7c no tones are played on the low-E string, simply because these chord shapes are derived from the major scale as illustrated in figure 2. The two tones noted in figure 2 on the low-E string aren't a part of the chord.

When you analyze these chords, really think about what you can use in your musical piece. Always consider practicality, emotion, and sound. What do you want to play and what's the easiest way of doing it? Mental parkour, once again.

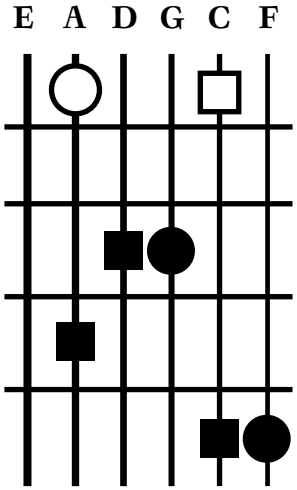

Figure 7c. Major scale iii & Minor scale v chord in all-fourths tuning

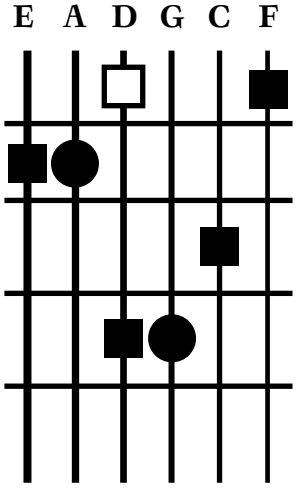

Figure 7d. Major scale IV & Minor scale VI chord in all-fourths tuning

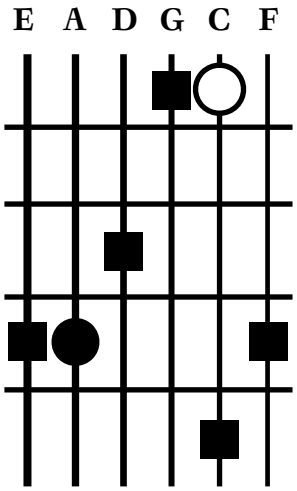

Figure 7e. Major scale V & Minor scale VII chord in all-fourths tuning

Looking at that chord shape, you shouldn't sound the low-E string if you do start on the A string. Remember you can also shift the shape to the root note for the IV-chord on the low-E string.

Compare figure 7e to figures 7a and 7d and you'll see it's the same shape! That's interesting, isn't it? This shape includes all three notes in the chord, so the I, IV, and V chord can all be played using the same shapes, just placing the root notes on different strings and frets of the guitar, quite simply, because the tone distances are the same. I already told you this.

Really? Yes, really! Here, check it out : C 2 E 1½ G — F 2 A 1½ C — G 2 B 1½ D! So, to play all of the major chords you only need to learn a couple of basic shapes, know where the tonic or root note of that chord is at, and transpose that shape to wherever you care to play it. The main question then becomes, what's the easiest way of playing these major chords?

The last two chord shapes are minor chords, but you may note that when you take the minor chord starting on the seventh, as illustrated in figure 7g, it's actually different, because it has two minor third intervals. All other minor chords have a minor third major third interval combination.

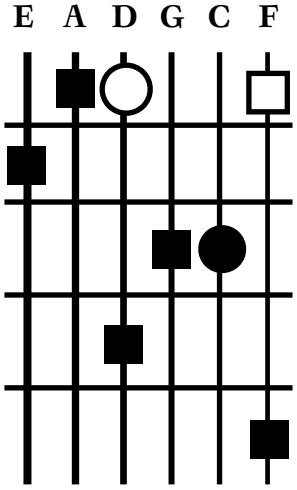

Figure 7f. *Major scale vi & Minor scale i chord in all-fourths tuning*

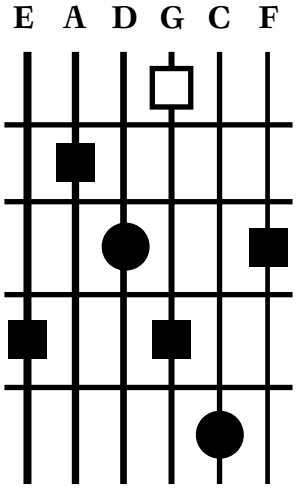

Figure 7g. *Major scale vii & Minor scale ii chord in all-fourths tuning*

Some people like mnemonics to learn theories or in this case remember chord shapes. I feel it distracts from the theory and if you stick to the theory, everything fits just fine and is perfectly understandable. As such I have to ask one question, going against something other people try to sell and make a living off of...

What CAGED-System?

It's not really a system is it? I don't really get the diagram and by the time you do, you already get all of the chords. It's a bit like, maybe you just need to identify the chord shapes individually? And not say that it's a C or an A even though you could play the C with the A-pattern as well and vice-versa?

When guitar books teach major and minor chords, they tend to split them up. In the previous section I deduced three major chord shapes and four minor. Let's group them accordingly first. Please note that they represent the chord associated with the tonic you assign to them.

Major Chords

Major chord shapes in all-fourths tuning, as illustrated in figure eight, adhere to a fixed pattern. One of the things you need to know is where your second tonic is at, because lowering it will give you your seventh or flat-seventh.

Play guitar and consider how you can play the most difficult patterns in a relaxed manner. Question how you can overcome all of this resistance you feel at first with minimal effort. How do you take away the resistance you feel, instead of avoiding it? In case of chords, what chord shapes can you really play?

You do want them to include the tones you want them to include, don't avoid them.

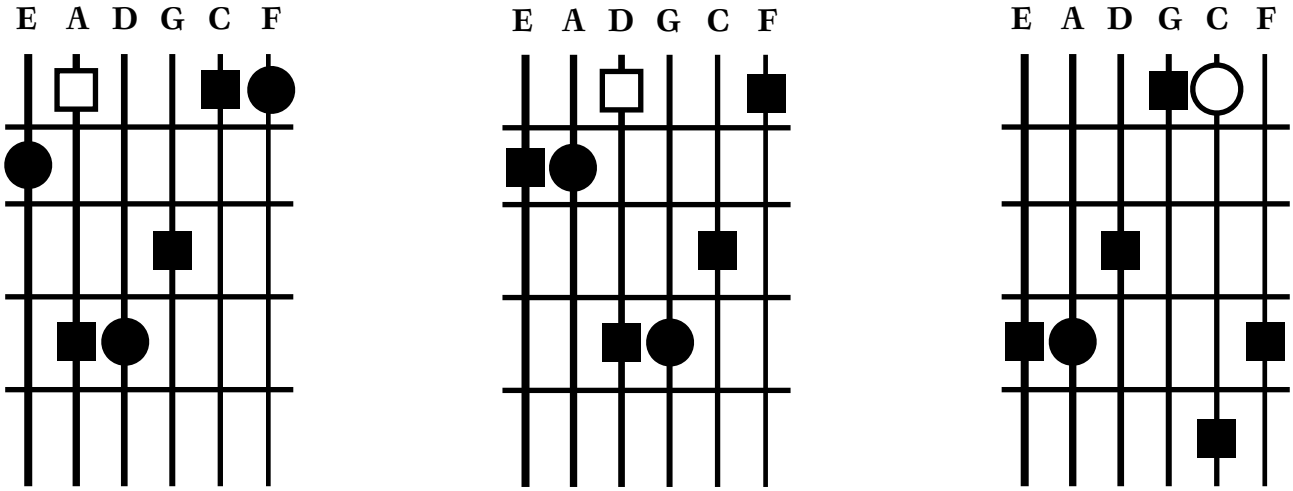

Figure 8. The all-fourths tuning major chord shapes assembled

When you look at these chord shapes, the repetition of the pattern becomes quite obvious. For the standard tuning the two highest pitch strings will actually shift their patterns one fret toward the body. This means that they will look like figure 9.

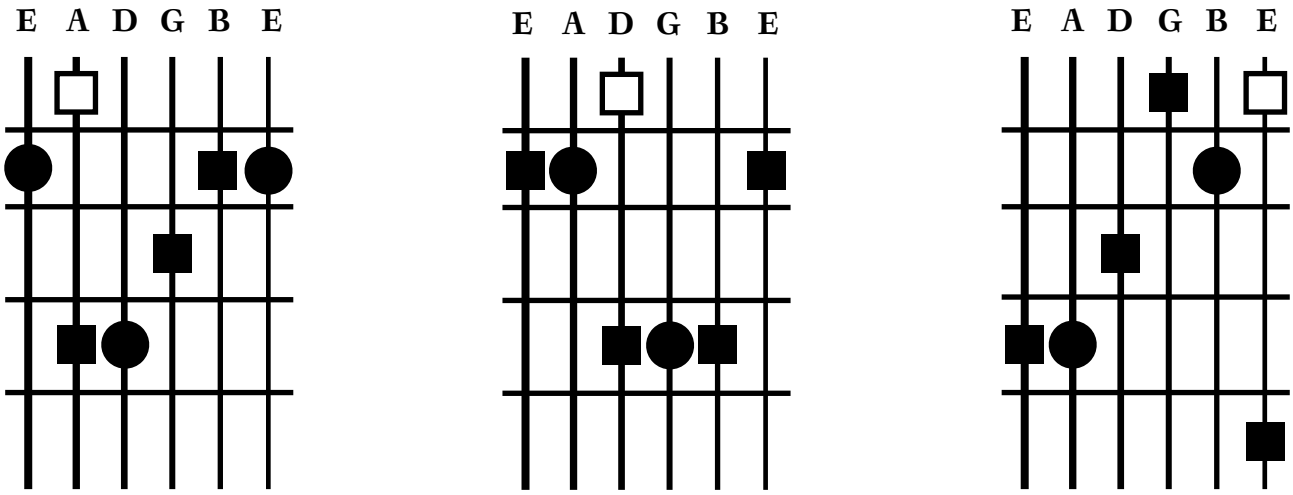

Figure 9a. The major chord shapes in standard tuning

Familiar? Who needs chord posters, right? These three diagrams basically offer you the basic possible constructs for your major chords. The first one offers a tonic on the low-E string, which means it's a pattern you can play in full. The shape consists of the prime, quint, prime, terz, quint, and prime.

The second diagram contains your second shape. You need to consider that your lowest note should be the tonic, so don't strum the low-E string, only the highest pitched four or five strings. You need to barre it for five, but that may be to difficult, so you could also just play the A, D, G, and B strings instead of also the high-E string.

The shape consists of the quint, prime, quint, prime, terz, and possibly quint.

The third shape actually has multiple ways of interpreting it. Again, you don't strum the low-E string, since your tonic is located on the A string. Instead of playing the highest tone on the high-E string, play the one that's blank or don't play the high-E string at all. The second tonic is once again interesting for your seventh or flat seventh, lowering it one or two frets.

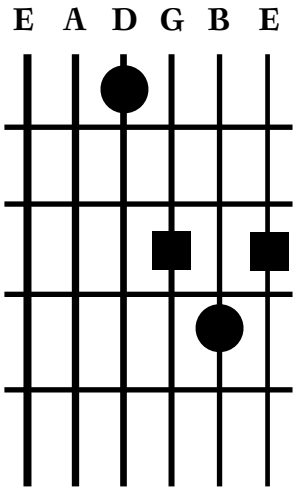

Figure 9b. Another major chord shape

By shifting the first pattern down two strings or the second one string, your tonic lands on the D string. You only play the bottom four strings. Note that shifting the second pattern down one fret means you only have to shift the pattern that was previously on the G string

one fret toward the body, since the pattern that was on the B string but is now on the high-E string already was shifted one fret toward the body.

This shape consists of the prime, quint, prime, and terz.

Minor Chords

Minor chords typically consist of the prime, minor third, and perfect fifth, but one chord actually offers the prime, minor third, and diminished fifth, which contains two major and two minor seconds.

When you look at the all-fourths tuning, it offers four basic minor chord shapes to begin with, noted with minuscule roman numerals as seen before. Figure 10 assembles these chord shapes in all-fourths tuning. Compare the first three to the major chords and how the shapes are different : the second note of the chord gets lowered a minor second or one fret.

Don't forget that the fourth shape has the diminished fifth and as such provides a different combination of intervals and sound altogether.

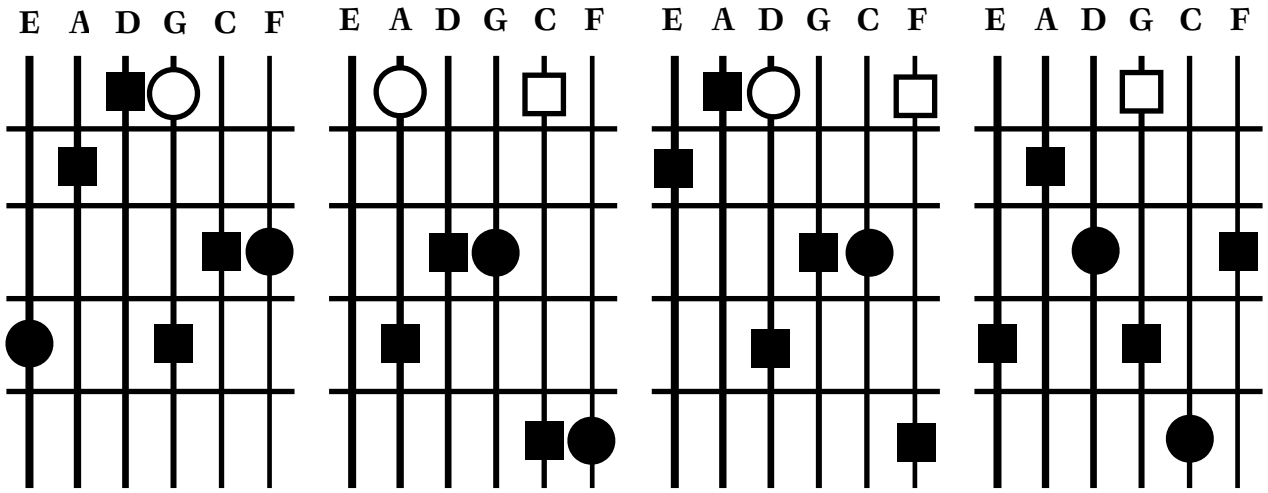

Figure 10. The all-fourths tuning minor chord shapes assembled

Transpose certain shapes' tonic to a lower string and derive more extensive chord shapes in the standard tuning. To do so, first analyze the prime, minor third, perfect fifth shapes separately. Figure 11a illustrates the standard tuning transpositions of the first three chord shapes and then adds a fourth that transposes the basic pattern to the low-E string.

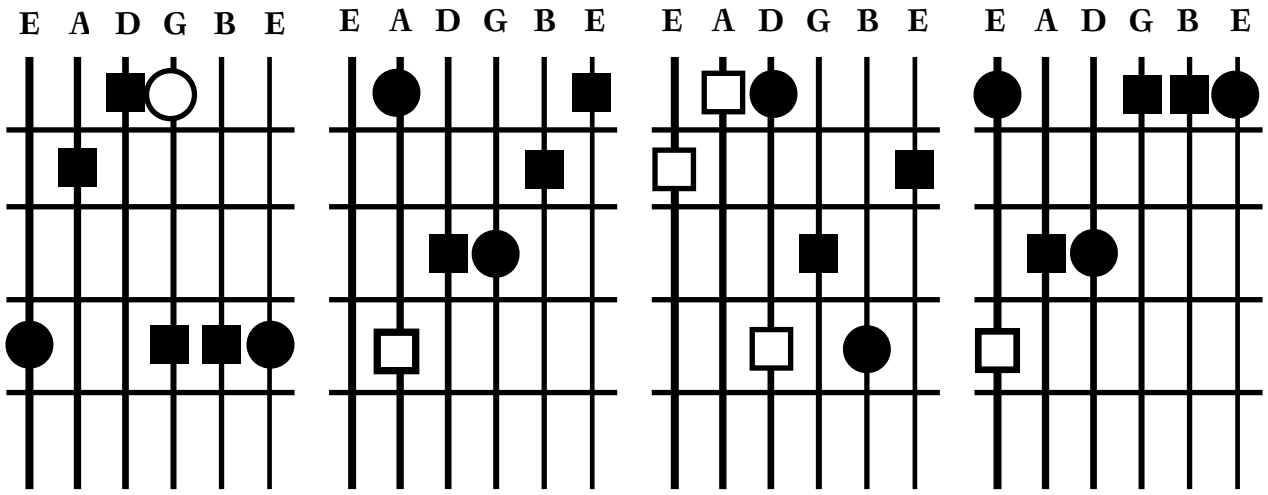

Figure 11a. Four minor chords with a minor third, major third shape in standard tuning

Try fretting all of them : you're an animal if you can do it. Ro-ar!

In all honesty, I don't blame you if you consider practicality, but don't forget that you can play chords both harmonically and arpeggiated, so if you have problems fretting a chord in one go, don't blame yourself. The first chord pattern consists of the prime, terz, quint, and prime, the lowest four strings. The others all consist of the prime, quint, prime, and terz.

In terms of practicality, transposing the first pattern to different strings also offers one more options in terms of a chord pattern : figure 11b. Notice how in figure 11a the first and fourth pattern are also related when you transpose the first to the tonic on the D string.

Figure 11c analyses all of the prime, minor third, diminished fifth-patterns for the minor chord. When you analyze the provided patterns, check for overlap, feasibility, ease-of-play, and necessity.

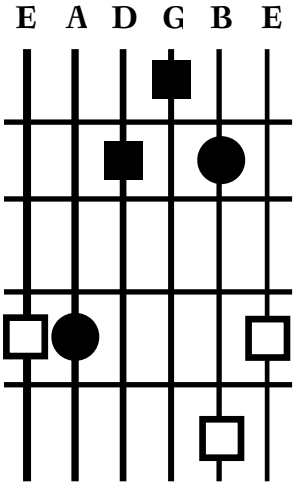

Figure 11b. One more minor chord with a prime, minor third, perfect fifth pattern in standard tuning

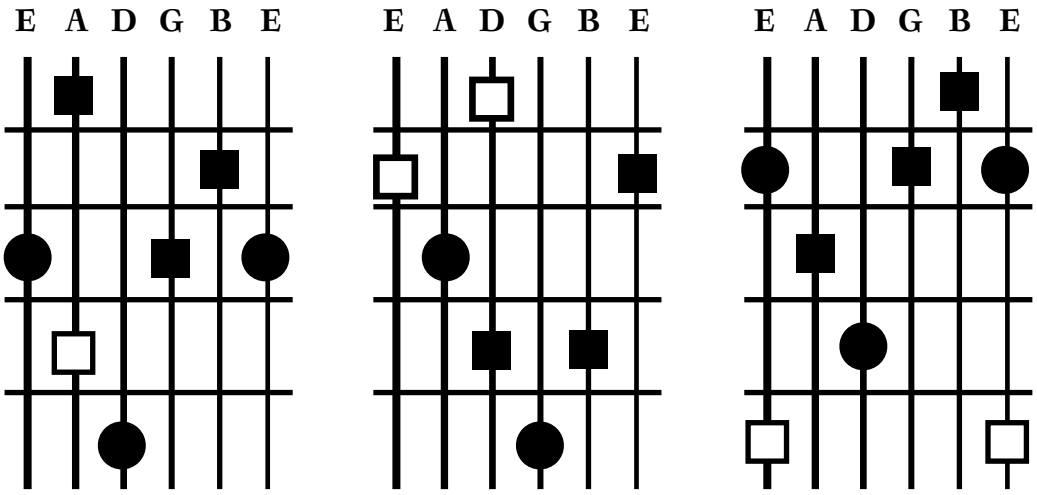

Figure 11c. Minor chords with a prime, minor third, diminished fifth pattern in standard tuning

Adapting Chord Shapes

Finding new chord shapes doesn't have to be that difficult.

Do you want to add a seventh? Find your second tonic and lower it a minor second a.k.a. one fret. Do you want to add a flat seventh? Lower the second tonic not a minor but a major second a.ka. two frets.

Do you want to add an "augmented ninth"? Find your second tonic and raise it a minor third. Do you want to add a sustained fourth? Find your major third and raise it with a minor second or find your minor third and raise it with a major second.

It's all relative. Maintain your tonic, but other than that, just consider which notes you want in and which ones you want out.

Song Structure

Blues and rock typically use chord progressions that focus on the I, IV, and V chord, but where are they located? Where's your tonic at? Figure 12 shows what it look like in all-fourths tuning.

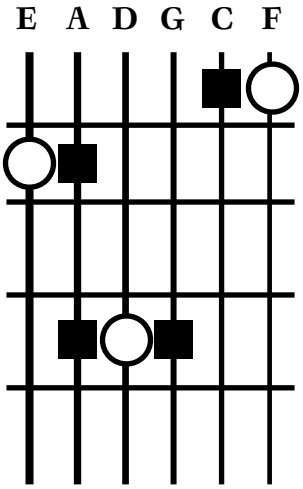

Figure 12. Prime, quart, and quint in all-fourths tuning

It's really just the first, fourth, and fifth scale degree as found on your guitar and you can choose to stay in the key you were playing in for the entire song or use the tonic as the new key for that measure in the chord progression. Figure 13 shows what it looks like in standard tuning, with the tonic on the low-E string and the tonic on the A string.

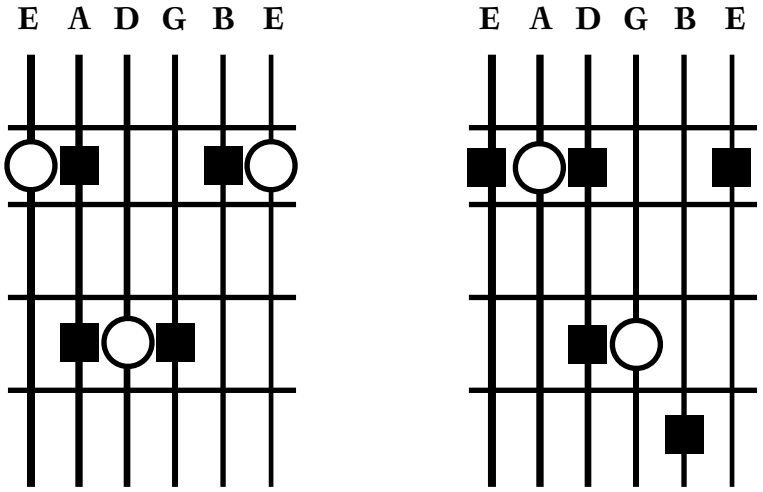

Figure 13. Prime, quart, and quint in standard tuning

You should now get other possible offsets, also when starting on the G string. It's interesting to see that when you start on the A string or higher, you can also move to a string that's tuned lower right above it, and play your tonics on that relative bass string. You could for the blues progressions opt to move up or down based on where you're playing in the progression to create some variety. You could also vary it per set of bars.

Here's a basic list of two eight and three twelve bar blues progressions as found in "Blues Guitar – Inside & Out" by Richard Daniels:

		1:	I	I	IV	IV	I	V	I	V/I		
		2:	I	V	IV	IV	I	V	I	V/I		
3:	I	I	I	I	I	I	I	I	V	IV	I	V/I
4:	I	I	I	I	IV	IV	I	I	V	IV	I	V/I
5:	I	IV	I	I	IV	IV	I	I	V	IV	I	V/I

The book you find these in is really for the Blues enthusiasts with a young heart, since it teaches blues guitar using a story of a young man meeting an old man on the tracks. I do have to point out that the book actually does introduce a lot of the theory, also in terms of the physics of sound, and a good literature list, but if you're a bit older you might first want to skim it with your marker.

Personally, I believe that if you want to learn to play an instrument creatively, you just need to get your general theory books, a book on technique, and figure things out for yourself. First theory, then practice, because otherwise, what is it you're practicing? What, why, how, when, and where are the questions that should be answered before anything else.

People telling you that you just need to practice it and get a feel don't really get it and set you back right from the start. Always settle for more understanding, never for less.

Literature

Bernard Nelleke (1981) "Eenvoudige Algemene Muziekleer" : Heuwekemeijer, Hillegom.

David Barrett (1995) "Mel Bay's Complete Classic Chicago Blues Harp" : Mel Bay Publications, Inc.

Richard Daniels (1981) "Blues Guitar – Inside & Out" : Cherry Lane Music Co., Inc.