

The concepts discussed in this article are a part of the comprehensive analysis of songwriting presented in the complete book "Songcrafters' Coloring Book: The Essential Guide to Effective and Successful Songwriting" , by Bill Pere. For additional information or to order a copy, visit <http://www.songcrafterscoloringbook.com>

## Nothing Fishy About Scales

by Bill Pere

In working with artists around the world, I get many questions about how to make music both interesting and accessible. I was recently asked this question from a songwriter in London: "How does knowing about scales help you in songwriting, and if you write in a specific scale, are you limited to using just the notes in that scale?"

His question is similar to many others I get on the same topic. Considering how much time we are made to practice scales when learning an instrument or in vocal exercises, and how much we do not enjoy it, what's all the fuss about scales? And what is the difference between scales and modes (those things with really funny sounding names that sound like Klingon words)?

The names of the modes (Mixolydian, Phrygian, Ionian, etc) are old classical designations derived from Greek and are not really necessary to know by name, unless you like that kind of trivia. What is relevant to songwriting is to understand that if you have a major scale, you can designate any of the 7 notes as the "anchor" or tonal center. Typically (if referring to the C-scale) we use c-d-e-f-g-a-b-c, or intervals of whole-whole-half-whole-whole-whole-half. (one fret to the next on a guitar or one key to the next on a piano is a half-step). That is known as the Ionian mode and it sounds most familiar to us (do-re-mi-fa-sol-la-ti-do)

If you use the second note of the scale (in this case "d") as the tonal center and keep everything else the same, you have d-e-f-g-a-b-c-d. Same notes as the c-scale ( it is still the key of C) but the intervals are now whole-half-whole-whole-whole-half-whole. Everything is just offset by 1 position. This is called Dorian mode.

If you use the third note of the scale as the tonal center (still key of C) you now have e-f-g-a-b-c-d-e (half-whole-whole-whole-half-whole-whole). Everything is just offset by 2 and this is called Phrygian.

You can continue offsetting one position at a time and get all seven modes, each with very different sound and mood quality, as follows:

Ionian: C, D, E, F, G, A, B, C (The standard major scale)  
Dorian: D, E, F, G, A, B, C, D  
Phrygian: E, F, G, A, B, C, D, E  
Lydian: F, G, A, B, C, D, E, F  
Mixolydian: G, A, B, C, D, E, F, G  
Aeolian: A, B, C, D, E, F, G, A (This is the natural minor scale)  
Locrian: B, C, D, E, F, G, A, B

But they are all still the key of C, using the same notes, with no sharps or flats. Depending on your own ear and musical preferences, some will sound familiar and welcoming, some will sound like they are lost and disoriented.

When writing a song, the mode names are not important, nor is it even critical to know that you are using a mode. Your ear is your guide to know that the melodic phrases you are using are doing what you want them to do. What really matters is that you know you are always in the key of C (or whichever key you are in) and that the chords based on that scale will always work in any mode (C-Dm-Em-F-G-Am-Bdim) and not sound dissonant. Remember that you can always identify the key you are in by seeing where the accidentals (sharps or flats) are as based on the Circle of 5ths. I discuss this in my book [Songcrafters Coloring Book](#), and you can see these relationships in this [condensed infographic from Chapter 25](#).

With regard to the question about having to stick to the notes in a scale if you are writing in that scale or mode: You are never locked into using only the notes of the scale -- in fact, you should make a point of strategically using non-scale notes to create points of interest and tension in your melodies and harmonies. One of the key reasons for knowing the notes in a scale is so you know which notes are NOT in the scale. The two ways to create interesting points of tension/dissonance are:  
(a) use a non-scale note in your chord. Experiment and heed what your ear tells you.  
(b) use a non-scale note as the root of a chord. (e.g. A simple major or minor chord built on a root that is not in the scale can work wonders in creating a point of interest for your song).

This technique is best mastered by understanding the above, and by knowing the relationship between intervals and the number of steps/half-steps between any points in the scale. This is all at the above referenced link.

A more advanced area of scales looks at what happens when you alter the basic order of whole-whole-half-whole-whole-whole-half (or expressed in half-steps or guitar frets: 2-2-1-2-2-2-1). All the modes maintain this order, just starting at a different point each time (e.g. 2-1-2-2-2-1-2 for Dorian mode, an offset of 1). But you'll note they always add up to 12 half steps, as that makes up an octave. If you alter the order of whole/half

steps e.g. instead of 2-2-1-2-2-2-1, you use 2-2-2-1-1-2-2, it still adds up to 12 half-steps, but does not correspond to any of the 7 modes. It will sound very unusual to most listeners of Western music and will evoke the music of different cultures or sometimes just plain dissonance. Sometimes you may stumble upon something that actually sounds familiar, like 2-1-2-2-1-3-1. This permutation still adds up to 12 and is the familiar harmonic minor scale. The combination 2-1-2-2-2-2-1 also adds up to 12, and is the familiar sounding ascending harmonic minor scale. Again, there are no restrictions on what you as a songwriter can or cannot do. Your ear is the final arbiter of what is right for your song.

As an example of a familiar-sounding non-traditional scale, you've probably heard the song "Misirlou", made popular by the 1962 surf-style instrumental of Dick Dale and covered by many other bands. The folk melody was first recorded in 1927 by a Greek band, and the scale is middle-Eastern in flavor, simply going up and down the *Hijaz Kar* or double harmonic scale in the key of E: (E-F-G#-A-B-C-D#-E) a non-traditional spacing of seven notes, 1-3-1-2-1-3-1, but still adding up to 12).

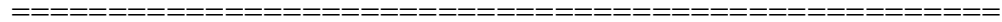
You've probably heard of pentatonic scales – those that use only five notes instead of seven (heptatonic scales). If you take any five notes within an octave that means you have 5 intervals (the spaces between the notes). For example, c-d-e-g-a-c gives you intervals (in half-steps) of 2-2-3-2-3. Still adds up to 12. If you play it, it will sound very familiar in the realm of blues and jazz. This is the major pentatonic scale. Any 5 intervals that add up to 12 will give you pentatonic scale. Some will sound familiar, others will sound alien, and they all will have some technical odd name that you don't need to know unless you like names. *(If you are interested: The consonance, dissonance and familiarity of scales has to do with the mathematical ratios of the vibration rates of the notes – that's a whole separate discussion, but see the seminal book "On the Sensations of Tone" by Hermann Helmholtz).*

And just as a scale can have 7 notes or 5 notes, as long as the number of total half-steps equals 12, you can invent any scale you want, if it makes your ear happy. You've probably heard of the chromatic scale, which uses all 12 tones in an octave. Thus, the spacing is 1-1-1-1-1-1-1-1-1-1-1-1. It still adds up to 12. This is inherently dissonant and is used primarily for the style known as atonal music (e.g. works by Arnold Schoenberg). It's music for the mathematical mind, not so much for the ear.

**Bottom line:** Don't worry about the historical names for modes (unless you are interested in that kind of thing or need to speak in those terms with colleagues). They are just permutations of the major scale in a given key. Even the natural minor scale is just the same as the major scale except starting on the 6th position (called Aeolian Mode). Don't worry about exotic or unusual scales. If your song needs them, your ear will find them.

Concentrate on knowing the notes and chords for any given key, the intervals, and how to strategically use borrowed tones from outside the scale. That is what helps you create interesting and engaging music for your songs. Learn the diagram given in the link above. That, plus your own ears, will give you all the tools you need to create whatever kinds of musical moods you wish.

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*Bill Pere, is named one of the "Top 50 Innovators, Groundbreakers and Guiding Lights of the Music Industry" by Music Connection Magazine. With more than 30 years in the music business, as a recording artist, award winning songwriter, performer, and educator Bill is well known for his superbly crafted lyrics, with lasting impact. Bill has songs on more than 26 CD's including a Grammy, and has received many awards for his philanthropy through music. He is President of the Connecticut Songwriters Association, an Official Connecticut State Troubadour, and is the Founder and Executive Director of the LUNCH Ensemble. Twice named Connecticut Songwriter of the Year, Bill is a qualified MBTI practitioner, trained by the Association for Psychological Type. As Director of the Connecticut Songwriting Academy, he helps develop young talent in songwriting, performing, and learning about the music business. Bill's song analyses and critiques are among the best in the industry. Bill has a graduate degree in Molecular Biology, an ARC Science teaching certification, and he has received two awards for Outstanding contribution to Music Education. The New York Times calls Bill "the link between science and music. For workshops, consultation, performances, or other songwriter services, contact Bill via his web sites, at <http://www.billpere.com>, <http://www.ctsongwriting.com>, and <http://www.lunchensemble.com>".*

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