

# STRING THEORY

## LOST IN SPACE

The subject matter in the previous column may have gotten a little too spacey — literally. I somehow managed to touch on Black Holes and String Theory while professing to cover Music Theory. In this issue, however, I will try to be a bit more “down to earth” although I will still talk about String Theory. The difference is that the “String Theory” this time refers to techniques that may be applied to stringed instruments.

## WHAT'S YOUR TECHNIQUE?

Have you ever been to a recital where a violin teacher is showing off a half dozen of her young Suzuki method students playing together as a group? If so you may have been amazed that such young children can read and play music so well. At that age or stage, though, it is enough that the students are able to find and play the correct notes. Now think about the same tune (perhaps *Twinkle Twinkle Little Star*), being played by a concert violinist such as Itzhak Perlman. It's the same song, the same notes, but it sounds completely different. What is the difference? It's actually a whole collection of things that—simply stated—can be referred to as “technique.” In this column we will review some of the standard techniques that you may already know and use or may wish to include in your own bag of musical tricks.

## FEEL THE VIBE

One of the techniques used by the more experienced violinist to sweeten the sound of a note is vibrato. By comparison, the young students' notes sound blunt and flat. It may seem that the purest, cleanest notes would sound the best, but the use of vibrato actually improves the sound of the note by distorting it. The violinist usually produces vibrato by rolling the fingertip back and forth, keeping the arm still and bending the wrist to produce the back and forth motion. Other, less standard methods include the use of arm motion instead of, or in addition to, the wrist motion or just varying the pressure on the fingertip to give the notes a slight waiver. Guitarists can also get a vibrato by bending the string side to side, though this works better on an electric guitar where the extra sustain provides more time to vary the note before it dies off.

## IF I HAD A HAMMER

There are other methods that may be used to vary a note that is already sounding. The two most common of these are “hammer-ons” and “pull-offs.” Guitarists often use these two methods as an embellishment. A hammer-on starts by sounding a note that is one or two frets below the note desired and then slamming down on the desired fret position in such a way that the resulting new note is left sounding. The finger of the left hand lands on the fret board like a hammer, hence, this is called a hammer-on.

## I THINK WE CAN PULL IT OFF

The opposite of the hammer-on is a pull-off and it is just what you would think it to be. A fretted note is sounded and then the fretting finger is pulled-off in such a way as to pluck the string sounding the next lower note, be it fretted or open. These two techniques may be used as embellishments as well as melodic tools. For example, old-time frailing or claw hammer banjo uses a very structured right-hand technique. Unlike the alternating up-and-down picking that enables rapid note changing on the guitar or the plectrum banjo, frailing banjo uses only a downward picking action. To be able to play very melodic passages on a frailing banjo necessitates the heavy use of both hammer-ons and pull-offs. If you watch a melodically ornate old-time banjo player you will see a minimum of right-hand movement producing a multitude of notes thanks largely to the use of these techniques.

## THE TRILL IS GONE

If you combine hammer-ons and pull-offs in rapid succession, alternating between the same two notes, you get a “trill.” Trills have been an acceptable

classical music technique for so long that they have their own musical shortcut notation. The initial note is shown on the musical staff and above it is written “tr” or sometimes a heavy jagged saw-toothed line is used. This tells the musician to start on the written note but then alternate rapidly between that note and the note a half step above. Trills can impart a Baroque feeling in some classical pieces and are effective punctuation in rock and roll as evidenced by the air-guitar in the movie *Bill and Ted's Excellent Adventure*.

## SLIDERS

Another way of affecting a note that is already sounding is the slide. It consists of sounding a fretted note and then sliding it up to a higher pitch. It makes a nice embellishment and is a good technique for repositioning the left hand in preparation for a passage to be played up the neck. Texas style fiddling seems to use the slide to produce a drone by playing a double stop (bowing on two strings at once) and sliding the lower string's note up until it matches the open note of the higher string. Modal tunes on the banjo also take well to this slide up to a drone on the lower strings.

## ON A BENDER

A bent note most typically finds a home with blues or rock-and-roll guitar playing. Bending a note begins by playing a fretted note and then squeezing or sliding the string sideways to raise the pitch. When played along with an adjacent string whose pitch does not change, it is sometimes called a “choke.” A really nice technique is to start with a choke and then un-bend the string, resolving the two notes to be part of the tonic triad. This effect is similar to the sound of a pedal steel guitar chord where the sharpening-pedal is released to resolve to the sound of the tonic chord. To complete the pedal steel effect on an electric guitar, work the volume knob with the pinkie of your right hand while un-bending the choke. This emulates the sound of the dwell-pedal that pedal steel guitarists use to control the volume, helping to give the instrument its characteristically mournful and plaintive sound.

## HARMONIC DIVERGENCE

Harmonics on stringed instruments encompass an entire set of their own techniques. I won't cover them here because they've already been discussed in their own column available at [www.folkworks.org](http://www.folkworks.org), Archives, Vol. 05, No. 03, page 4.

There you have it — more goodies for you to take along on your musical journey. I hope to see you back here for the next issue and until then, please stay tuned.

*Roger Goodman is a musician, mathematician, punster, reader of esoteric books and sometime writer, none of which pays the mortgage. For that, he is a computer network guy for a law firm. He has been part of the Los Angeles old-time & contra-dance music community for over thirty years. While not a dancer, he does play fiddle, guitar, harmonica, mandolin, banjo & spoons. Roger has a penchant for trivia and obscure and sometimes tries to explain how the clock works when asked only for the time. He lives with his wife, Monika White, in Santa Monica, CA*



BY  
ROGER  
GOODMAN

## LETTERS

### WE ARE ALL FOLKS [Re: *Tied to the Tracks*]

I just read your article in FolkWorks. I was excited by your article. I have always felt so strongly that there is no other musical truth truer than folk music. We are all folks and this is the genre of our collective wisdom. Classical music is based 90% on folk music. The words of folksong are the experience of history and life in music. Therefore, folk music is truth! I value what you said about the canned prefab untruth of pop music and the negative narrow useless untruth they provide for limited minds. FOLK music and song then is also about freedom of expression and rebellion that are true American values. I was a Philosophy major in college in the early 70s and played and sung in all the folk clubs I could. I have been waiting for the re-valuing and re-vival of folk music. I have predicted it's coming for a long time. So my angle is folk music of the 60s done with a “new age” harp instrumental gentleness to help bring peace and healing to this war-torn weary world. This is why I signed up for the *Music for Healing and Transistion Program* and have become its area coordinator.

Thank you.  
Rachel Brill, via email

### CELLOS RULE [Re: *Tied to the Tracks*]

A cello student of mine posted part of your article on an Internet chat board, where I caught it. I am a multi-instrumentalist from Long Beach and I will be coming home next week after a year in Germany where I have been studying the cello. My background in folk music is very strong. I was a singer-songwriter in the late 60's, I took a degree on guitar in 1977, and all through the 80's and 90's I led a string band, playing hammered dulcimer and mandolin. More recently I have been playing Arab music, using Middle Eastern scales. I used to tour with singers as a side-man, playing whatever instruments they wanted.

I have been enjoying your Internet postings about musical events, and they have helped me stay in touch with the local music scene there while I was away. When I come back I will be looking for work again. I really like to play cello (or bass) with singers. I'll make it a point to look you up when I get back.

Ken Shaw, via email

### SHE GOT ME AGAIN

Normally, when I'm laying out the latest issue of FolkWorks, I don't have the time to stop and read all the articles (Leda is such a slave-driver). But, every once in awhile one particular continuing column will grab my eye and before I know it I've stopped working and found myself absorbed in another beautiful story.

So, Uncle Ruthie, here I sit again with a tear in my eye and a tug in my heart after getting caught again this month. Your story about your relationship with the kids at Frances Blend School (pg. 22) struck me in a personal way because my wife and I have child who has ADD and LD and throughout his school years he attended special ed schools not unlike Frances Blend. Each school was private and, unfortunately, not one had a music program, something I believe was a serious lack of planning and understanding.

I hope you continue to bring joy, hope and a creative learning experience to these special young children.

Alan Stone  
Galaxidi, Greece