Douglas Niedt's

GUITAR TECHNIQUE TIP OF THE MONTH

Yes, it's "Doug's Dirty Little Secrets"

(Doug subtitled his Tech Tip as "Doug's Dirty Little Secrets" after reading someone's posted message on a guitar web forum. The writer asserted that professional virtuoso guitarists all had secrets they kept to themselves and wouldn't tell anyone else, so no one would play as well as them!)

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of Dirty Little Secrets.
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Guitar Technique Tips of the Month

Whole Lot of Shakin' Goin' On:
How to Execute Vibrato

By Douglas Niedt

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What Is It?

In *Ornamentation in Baroque and Post-Baroque Music* (one of my all-time favorite books), Frederick Neumann tells us:

> *The vibrato consists of fast, regular fluctuations of pitch, loudness, or timbre, or a combination of these. Its effect rests on the physio-psychological phenomenon of sonance, i.e. the fusion of the vibrato oscillations above a definite threshold of speed into the sensation of a richer tone, while the perception of the oscillations is minimized or disappears altogether. The phenomenon is closely akin to the stereophonic merger of slightly different sound impressions into a single one with added depth.*
>
> *Vocal vibrato must be ageless, and even instrumental vibrato might be as old as many instruments themselves. Haas speaks of a vibrato effect in classical Greece through the use of a plectron in kithara playing. He mentions the use in the Middle Ages of specific ornamental neumes, the Bistropha and Tristropha, which prescribed a pulsation of the voice.*

Wow. Now *that's* a definition. Here are a few salient points about vibrato and the guitar in plain English:

Vibrato is the regular fluctuation of a note's pitch causing the note to "waver," producing what we think of as a more emotional sound. When mastered, vibrato can be varied in amplitude (amount of pitch variation) and speed. Vibrato is an essential technique for the intermediate and advanced guitarist to master. The pleasing use of vibrato can give a beautiful effect even when playing just a simple melody. When executed and used well, it raises the perceived musicality of your playing tremendously. It adds fullness to your tone (thickens it up) and variety to your palette of sound (your tonal palette). In some instances, it can even lengthen the sustain of a note. A guitarist's individuality is decidedly expressed in his sound--that quality of tone peculiar to him. Vibrato is a key component of that sound.

Vibrato, the Human Voice, and Instrumentalists

The descriptive language of music has its roots in the expressive characteristics of the human voice. Indeed the human voice is the standard to which all expressive instrumental tone aspires. Imitation of the voice is the ideal every instrumentalist has in mind. Leopold Mozart, Wolfgang's father, wrote back in 1756, "And who is not aware that singing is at all times the aim of every instrumentalist; because one must always approximate to nature as nearly as possible."

When we ask ourselves why we use vibrato, we usually refer to the "natural" vibrato of the human singing voice. As instrumentalists aspiring to imitate the human voice, we imitate that vibrato. Wolfgang Mozart himself wrote in one of his more famous letters (June 12, 1778), “The human voice quivers well enough by itself, but in such a fashion that it is beautiful--that is the nature of the voice, and it is imitated not just on wind instruments, but also on stringed instruments, and even on the piano.”

For a singer, vibrato is said to be an innate expressive tool. It is heard in many musically unrelated cultures. Some theorize the origins of the vibrato lie in the tendency of the emotionally charged voice to quiver. Violin pedagogue Carl Flesch calls it the merging of tone "with psychic powers deep within our subconsciousness." Easy there Carl.

But in a way, he is correct. Even the speaking voice is subject to dramatic change as we experience emotions of joy, pain, hatred, or love. It has an elastic and unstable vibratory or swinging quality owing to the fact that we usually don't control our vocal cords under the influence of strong passions and emotions.

On the other hand, some studies with untrained voices show that vibrato in singing is not necessarily a natural effect. Boy's choirs for example, are usually completely without vibrato.

So, we have researchers on both sides of the fence. Some postulate that vibrato is a consciously employed means of intensifying expression. Others believe it is used unconsciously and is an innate part of being human. But whatever its origins, vibrato has been with us and will continue to be with us for a long time.

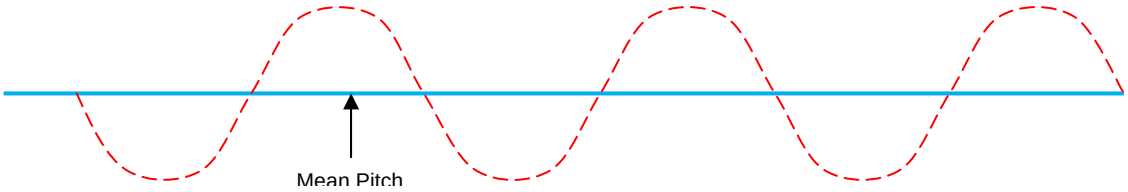
Instruments capable of producing it have used it for centuries. There are even instructions in some scores to use it for instruments that most of us would think are incapable of producing the effect. For instance, Franz Liszt specifies its use in several of his piano(!) works, though in a different, nuanced manner. And note Mozart's piano reference above. Incidentally, it is *not* true that vibrato should only be used in post-baroque or post-classical era music. More about that later.

Of all the instruments, the guitar comes very close to the mobility of nuance of the human voice. There is an intimate connection between guitarist and guitar. Our fingers are in direct contact with the strings, with no mechanical contrivances standing in the way. There are no bows, hammer mechanisms, or reeds. It is flesh to string. This intimacy gives us an immediacy of union of our feelings with the music that is second only to the human voice. With a good technique in general and good vibrato technique in particular, we can produce tones which approach those of the human voice in expressiveness and actually exceed it in terms of possible varieties of expression.

The Fluctuation of Pitch in Vibrato

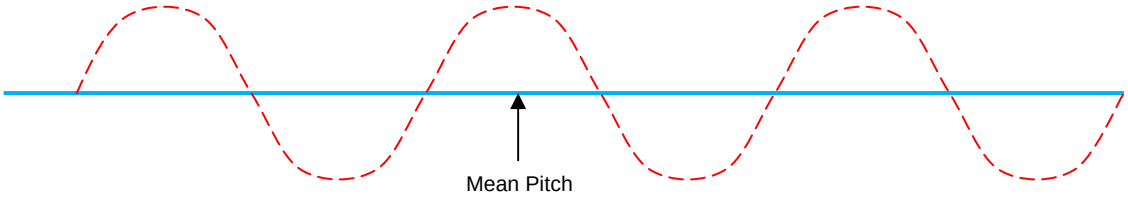
The vibrato's characteristic fluctuation of the note's pitch can be varied many ways. To my way of thinking, a true vibrato "circles" the pitch. We start at the notated pitch (the home or mean pitch), then go below that home pitch, return home, then go above the mean pitch, and finally return home. The cycle repeats according to how long the note is to be held. Diagrammed, it would look like this:

Figure #1



Or, we can begin at the home pitch, then go *above* that mean pitch, return home, then go below the mean pitch, and finally return home. This one looks like this:

Figure #2

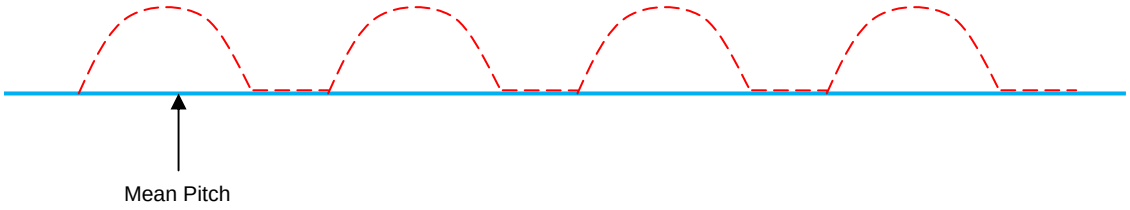


The difference is whether after hitting the initial pitch, you first go above or below the mean pitch.

The "circular" vibrato is the one most often used by classic guitarists (the guitar technique is called the *longitudinal vibrato*—see below), singers, violinists, cellists, etc.

Electric guitarists and steel-string acoustic guitarists usually use a different technique called the *transversal vibrato*. They begin at the mean or home pitch, go above the mean pitch, and return home. Again, the cycle repeats according to how long the note is held. Diagrammed, it looks like this:

Figure #3



As you see, in this type of vibrato the pitch only goes sharp—it doesn't "circle" the mean pitch.

The amount the pitch is altered is called the amplitude, width, or depth of the vibrato. The average amplitude of a violin vibrato is in the neighborhood of a quarter of a tone—in other

words an eighth of a tone sharp to an eighth of a tone flat. Operatic singers and Tiny Tim (remember *Tip Toe Through the Tulips*?) average a semitone to as much as three-quarters of a tone!!!! Classic guitarists vary the amplitude from barely noticeable on the lower frets of the 1st string to potentially more than a half tone on the higher frets of the 6th string.

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How Is It Done?

Because the guitar has frets, vibrato requires more physical effort to produce than on other stringed instruments such as the violin or cello. Merely "rocking" the fingertip on the string produces vibrato on the violin. If you do that on the guitar, you get nothing.

The Guitarist Uses Two Types of Vibrato

On the guitar we have two types of vibrato:

1. The longitudinal vibrato (some call it horizontal). This is the kind most commonly used on the classic guitar.

2. The transversal vibrato (some call it vertical, others call it lateral-bend. Although it is used on the classic guitar, it is more commonly used on the electric guitar or steel-string acoustic.

The Longitudinal Vibrato

In her *Method for Classic Guitar*, Vahdah Olcott Bickford gives us a succinct description of how to execute the longitudinal vibrato:

> *"The vibrato is produced by keeping the pressure on the note to be vibrated during its full value, and immediately after striking the note commencing an oscillatory motion of the hand, by which the string is alternately pulled towards the nut and the bridge, continuing the motion during the full time of the note. The alternate pulling of the string in opposite directions has the effect of alternately tightening and loosening the tension and producing a corresponding sensible raising and lowering of the pitch so that it gives a pulsating, live effect, adding greatly to the duration of the tone as regards sustaining quality, as well as giving a depth of feeling not found in a long tone where the vibrato is not used. When used with taste and well produced, its effects are very beautiful."*

On the common longitudinal vibrato, a finger literally stretches the string in alternate directions along the length of the string. As the finger pulls the string to your left (stretching it from the bridge but slackening it to the roller), it stretches the string sharp. As the finger pushes the string to your right (slackening it to the bridge but stretching it from the roller) it slackens the string and it goes flat. Another way of thinking of it is that in pushing and pulling the string right and left along its length, you are forcing the string itself to slide right and left across the fret, (in the direction parallel with the string length), causing the note to go sharp and flat.

The weakness of the longitudinal vibrato is that there needs to be sufficient string length on both sides of the stopped note for the finger to push and pull the string without excessive effort to produce a rise and fall in pitch. Therefore, the longitudinal vibrato is most effectively used from the 4th or 5th fret and up. (I personally also use it often at the 3rd fret.)

To demonstrate this for yourself, try to vibrato the E on the 5th string at the 7th fret. Then try to vibrato the E on the 4th string at the 2nd fret. It is difficult to eke out much vibrato from the 2nd fret E simply because you can't stretch the string on both sides of the finger.

 Watch this video demo of how the longitudinal vibrato works.

The Arm Movements

To execute the longitudinal vibrato, use your entire arm. The arm movement for the vibrato requires almost no muscular effort. It builds its own momentum like a pendulum. The elbow should feel fairly stationary and the forearm muscles relaxed.

In *The Art of Classical Guitar Playing* Charles Duncan tells us, "Lateral movements of the forearm in rapid succession are resolved against the friction of the fingertip." That left-hand finger must press firmly on the string in order for the movement of the arm to be transmitted to the string. The amount of pressure will vary according to the depth of vibrato desired, what string you are on, and what fret you are on. The finger must not slide on the string. A sliding finger is wasting a lot of energy and will not produce vibrato efficiently. The amount of finger pressure will always be greater than playing a note without vibrato and can be quite heavy if you must vibrato a slippery treble string at the 3rd or 4th fret.

 Watch as I demonstrate the basics of the longitudinal vibrato.

Be sure your arm movements are moving the hand absolutely parallel with the string. Otherwise, you will lose the desired even rhythmic movement and even pitch variation of a good vibrato. If you notice the head of the guitar (where the tuning keys are) bouncing or moving around, something is wrong. Some of your hand movement is probably transversal (crossways) instead of strictly longitudinal (parallel with the strings).

 Watch as I demo this important point.

The Thumb

There is disagreement about the position of the thumb during vibrato. In *A Conscious Approach to Guitar Technique* Joseph Urshalmi tells us, "The thumb has only to touch the back of the fingerboard without any pressure. Practising vibrato with the thumb in the air provokes tension in other places, such as the forearm, palm and fingers, particularly in chords with vibrato. From the beginning, therefore, one must involve the thumb in the process."

On the other hand, in his *School of Guitar*, Abel Carlevaro tells us, "the thumb should be released from the back of the neck. Through this action the arm is able to apply direct pressure onto the fingerboard via the finger and without any opposition from the thumb." However, if several fingers are involved executing a chord with longitudinal vibrato, Carlevaro says it "may necessitate the added opposition of the thumb, which in this case should remain in contact with the neck in order to combine its own force with that of the fingers. In spite of this joint participation of the thumb and fingers the vibrato is still to be realized by the arm."

In an Oscar Ghiglia master class many years ago, I remember him saying to leave the thumb on the neck as usual for light vibrato. Release the pressure but keep the thumb on the neck for a medium vibrato. For heavy vibrato, take the thumb entirely off the neck.

I find I can get a very heavy vibrato with the thumb resting lightly on the neck with little pressure. I agree with Urshalmi that removing the thumb from the neck invites a lot of forearm tension. But experiment. Test the different thumb techniques for yourself and observe the results in both sound and ease of playing.

 Watch as I demonstrate the use of the left-hand thumb.

How Do I Practice the Longitudinal Vibrato?

This vibrato is most easily practiced on the bass strings around the 7th to 10th frets. The bass strings are very responsive to vibrato, allowing you to easily hear the results of your efforts. I would begin practicing with the 2nd and 3rd fingers. Being in the middle of the hand and fairly strong, it is easiest for the beginner to get the feel of the rocking movement of the hand with them than the 1st or 4th fingers.

Begin with the 2nd finger on F on the 5th string at the 8th fret.

GO THROUGH THIS 5-PART CHECKLIST:

1. SET THE FINGER RIGHT BEHIND THE FRET AS USUAL.

2. SET THE THUMB LIGHTLY ON THE NECK.

3. KEEP THE INSIDE OF THE LEFT HAND SLIGHTLY AWAY FROM THE NECK.

4. KEEP YOUR LEFT ELBOW CLOSE TO YOUR BODY AND HANGING LOOSELY.

5. BE SURE THE LEFT-HAND 4TH FINGER (PINKY) IS BENT, NOT STICKING OUT.

 In this video clip, watch me go through this five-part checklist.

After going through the checklist, pluck the 5th string with your right-hand thumb. Now shake your hand left and right, parallel with the string. Try to shake with even force left and right—the movement must be symmetrical to ensure rhythmic evenness and even pitch variation.

Your 2nd finger will also wobble or rock left and right but should not slide on the string. If it slides, press a little harder.

Keep shaking for a full 10 seconds before plucking again. The sound will have largely died away, but I want you to keep observing the shaking of your hand. Be sure it maintains a strictly longitudinal movement parallel with the string length. We don't want any crosswise movements creeping in. If you notice the head of the guitar (where the tuning keys are) bouncing or moving around, something is wrong. Some of your hand movement is probably transversal instead of strictly longitudinal.

Don't be concerned about the speed of the movement. At this stage, you want to try to develop what comes naturally to you. Rhythmically even movements and strictly longitudinal movements are the important things to focus on.

You must develop the habit of keeping the forearm relaxed. Here is a test to try. After doing the vibrato for 10 seconds, let go of the note. If your forearm is relaxed, your arm will fall to your side. If it is tense, your hand will still be in position on the neck. I actually want your forearm to be so relaxed that when you let go of the note, it falls to your side. (In real life playing situations, the amount of tension in the forearm muscles will vary from nearly zero as in this exercise, to moderate.)

HERE IS THE 3-STEP PRACTICE ROUTINE:

1. Vibrato the F on the 5th string for ten seconds.

2. Let your arm drop to your side and shake out your hand. We want to ingrain the habits of relaxed muscles and ease.

3. Reread the 5-part checklist above and repeat these three steps.

Perform this 3-step practice routine five to ten times. Each repetition of the routine will take about 30 seconds: 10 seconds to read the checklist, 10 seconds to vibrato, and 10 seconds to observe how relaxed the muscles in your forearm are after letting the arm drop and to shake out the hand. So, a total of up to five minutes for the second-finger vibrato exercise.

Then, practice something else entirely and come back to this exercise. The break is good to prevent tension from building up or creeping into your vibrato mechanism. You can return to the vibrato exercise every 15 to 20 minutes. You should have good control of it in just 2-3 days if not sooner. Remember, don't worry about speed. You want to develop even movements that are natural to you.

 In this video clip, watch me go through all the details of the three-step practice routine.

If you have difficulty, you might try this: set the 2nd finger on the 5th string at the 10th fret. As you shake the hand, allow the side of the hand to hit the side of the guitar. Use the sound of the hit, hit, hit, hit, hit to develop an even hand motion.

 Watch the video to see this little trick.

But if things are going well, after practicing using the 2nd finger, try to vibrato with the 3rd finger on F# on the 5th string at the 9th fret. Then the 1st finger on E on the 5th string at the 7th fret, and finally the 4th finger on G on the 5th string at the 10th fret.

Depending on how things go, you may be able to practice all four fingers in one practice session, or you may need to take a week or two to cultivate an effortless, natural, relaxed vibrato motion. Don't overdo your practice of this technique. Your muscles will tense up from too much effort and interfere with the development of a natural swing of the hand. The last thing you want is to inculcate tension into your vibrato.

Next, try the same exercises on the 4th and 6th strings in 7th position. Then try the bass strings in 5th position.

After working on the bass strings, try the same exercises on the treble strings:

1. Begin with the 3rd string in 7th position.
2. Next, the 2nd string in 7th position.
3. Then, the 1st string in 7th position.
4. Finally, tackle the treble strings in 5th position.

The major problem you might have when working on the treble strings in general is that the finger might slide back and forth on the string. If a finger slides, press harder and/or decrease the force of your left/right longitudinal hand movements.

As you proceed from string to string and position to position, you will find that different intensities of hand movement and finger pressure are necessary. In general, lower positions require stronger left/right hand movements and finger pressure than upper positions. The treble strings require stronger left/right hand movements and finger pressure than the bass strings.

 Watch as I demo the rest of the exercise procedure.

Learning to Vary the Vibrato Speed

Once you have developed your own natural and even vibrato motion on all six strings 5th fret through the 10th fret, your next task is to learn to vary the speed of the vibrato. The speed of the vibrato will vary from piece to piece, from string to string, phrase to phrase, and even note to note. You want to be able to vary the speed at will from very slow to very fast.

Some guitarists recommend setting a metronome at a slow speed of 50-60 and trying metrical left-right movements at 16th-note or 8th-note durations and then speeding the metronome up incrementally. Personally, I think it is difficult for an intermediate player to feel the pulses of the vibrato movement with the metronome. It tends to tense the player more than instruct. I favor learning to vary the vibrato speed by vibratoing a note at one's natural speed and then consciously slowing down and speeding up the hand movements by feel rather than trying to sync the movements with a metronome.

Once again, only practice one note at a time. Begin on the bass strings in 7th position but eventually practice on all six strings and the 5th through the 10th fret.

 Watch me demonstrate how to practice this valuable skill.

Learning to Vary the Vibrato Amplitude

Varying the amplitude (or depth or width) of the vibrato is also important. As with the speed, the amplitude you use will vary from piece to piece, from string to string, phrase to phrase, and even note to note.

Practice one note at a time. Like the speed exercises, begin on the bass strings in 7th position. You will be able to hear your variance of the amplitude very clearly in this sector of the fretboard. Eventually practice on all six strings and the 5th through the 10th fret. It will be a little more difficult to hear your variance of the amplitude on the treble strings especially on the lower frets.

 Here is how to practice this technique.

Left-Hand/Right-Hand Independence

The next step in our quest for a great vibrato technique is to be sure our left-hand vibrato movements are independent of our right-hand finger movements.

Begin once again with the 2nd finger on F on the 5th string at the 8th fret. Set your friendly metronome at 60 (for the quarter-note). Pluck the F with the thumb as half notes (two ticks per note) and vibrato.

As you play, observe your left-hand vibrato movements making sure they are continuous as you pluck the string each time. It is very common for the left-hand movement to hesitate or stop intermittently as the note is restruck. Keep working until the left hand is unaffected by the right hand.

Practice each finger individually on all strings, 5th fret through the 10th fret using the thumb to pluck the bass strings and the fingers to pluck the treble strings.

Also practice the exercise with the metronome at 80, 100, and 120; two ticks per note.

 Watch the video. Don't skip over this one.

END PART 1

This is just the tip of the iceberg folks.

Still to come:

- *1. How to keep the vibrato going as you change from note to note. (I have a great technique for this.)*
- *2. How to vibrato intervals and chords.*
- *3. How to vibrato open(!) strings.*
- *4. Your guitar strings and vibrato.*
- *5. Notation of vibrato.*
- *6. THE ENTIRE SUBJECT OF TRANSVERSAL VIBRATO.*
- *7. How and when to use vibrato--techniques and historical considerations.*
- *8. Relating to #7, how to deal with THE HIPPLIFS (the members of the Historically-Informed Performance Practice Lunatic Fringe.)*

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