

than one "correct" slurring is usually possible, responsibility rests with the player to adopt a fingering consistent with his own most deeply felt musical concept of a piece.

## VIBRATO

Vibrato is a way of enriching notes by means of rapid fluctuation in pitch (generally accompanied by some secondary fluctuation in intensity). Vibrato of the voice, or "tremolo", seems to be an innate expressive device. Appearing in several unrelated musical cultures, its origins may lie in the tendency of the emotionally charged voice to quiver. In any case, it is so much a part of fine singing as we know it that vibratoless song today is inconceivable. By analogy, all instruments capable of producing vibrato have used it for centuries. The use of string vibrato as an ornament apparently was common in baroque times, and was no novelty then.

There is some controversy today, however, as to whether continual vibrato suits a historically correct style of playing old music. The issue would seem to belong as much to the realm of musical taste as music history. On the one hand, some evidence does exist for the use of a subdued continual string vibrato in the eighteenth century.<sup>1</sup> On the other, objections to the "sempre vibrato" are not confined to the performance of renaissance or baroque music.<sup>2</sup> One likely reason for the controversy is that sensitivity to minute amounts of pitch fluctuation varies even among trained musicians; a vibrato that sounds rich to one listener may possibly offend a more acute ear. Another lies in the appropriateness of the pitch fluctuation to the music at hand, whatever its century. Electronic measurements of the amplitude of pitch fluctuation have shown the average in violin vibrato to be a quarter of a tone. The average among operatic singers is a semitone with some as much as three-quarters of a tone.<sup>3</sup>

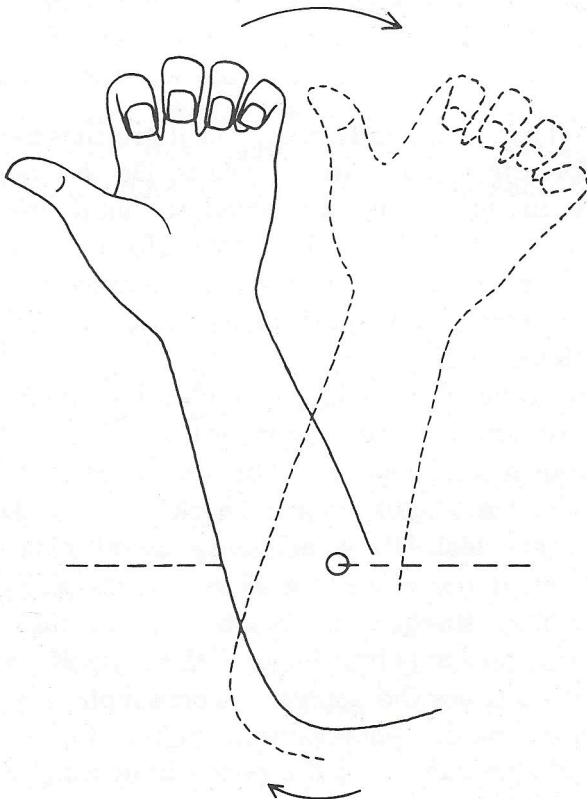
A vocal vibrato that does splendidly in the climax of an operatic aria will obviously not suit the performance of a Renaissance madrigal. This does not mean, however, that a perfectly neutral delivery in all early music is desirable, even in the interest of historically "correct" performance. Rather, the intensity should suit the music. The same is true for the guitar. No guitarist should hesitate to use vibrato, but there must be musical taste and good sense in its use. With few exceptions, if the listener is actually aware of vibrato, then there is too much.

Although the vibrato produced on the guitar is similar in effect to that of a violin, the mechanism differs slightly. On bowed instruments, vibrato is commonly produced by the rotation of the fingertip from one side to another, thereby alternately shortening and lengthening the stopped portion of the string by about one-eighth of a tone. On the guitar, the finger by the friction of its pressure literally stretches the string in alternate

directions. This causes both increase and decrease in pitch from the mean tone. The amplitude of the pitch fluctuation ranges from less than a quarter tone on the lower frets of the first string, to a potential of more than a semitone on the higher frets of the sixth.

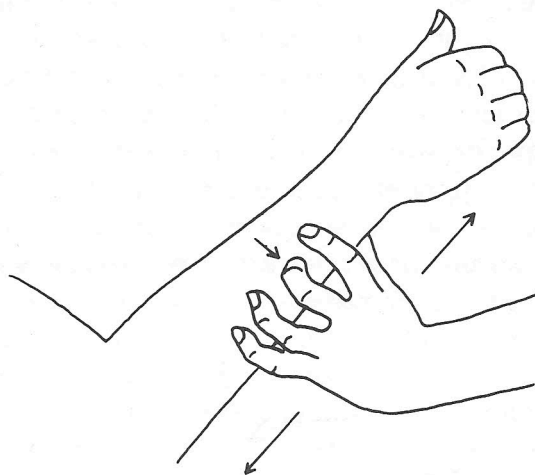
You can test the principle easily. Make the note D at the tenth fret of the sixth string; place the finger in the center of the fret space, midway between the actual ninth and tenth frets. Press hard and push your finger down until it touches the tenth fret. Note the decrease in pitch as you stretch the string away from the nut, thereby slackening the stopped portion. Still pressing hard, pull the finger in the opposite direction until it touches the ninth fret. Note this time the increase in pitch as you increase the tension on the stopped portion of the string. If you repeat these movements alternately you should notice a total pitch fluctuation of about a semitone.

The entire arm is used to produce vibrato on the guitar. Lateral movements of the forearm in rapid succession are resolved against the friction of the fingertip. These movements are practically without muscular effort. They originate in upper arm rotation, but once started, continue of their own momentum exactly like a seesaw or pendulum. In fact, the upper arm and hand do form a kind of seesaw, whose pivotal axis is a point some two or three inches from the elbow:<sup>4</sup>



When one shakes a bottle to agitate the contents (mixing frozen orange juice, for example), one performs just such a motion. The seesaw play between hand and elbow is identical for the vibrato. Since the distance traversed by the hand in an actual vibrato is so small, however—perhaps an inch—then there is no perceptible displacement of the elbow. The movement will seem rather to originate in a back-and-forth throw of the hand in which the elbow is the pivot.

You can learn the “feel” of vibrato, without the guitar, in the following way. Place your right forearm across your body so as to simulate the fingerboard; then grasp your right wrist with thumb and second finger, as if holding down a note:

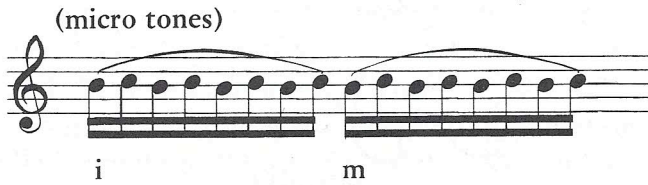


Now shake your left hand back and forth so that it stretches the skin on your right wrist and forearm in alternate directions. Do this rapidly but not spasmodically. Be sure to keep the wrist fixed, so that the hand makes no independent movement. Keep up an even shaking for at least ten seconds. If the movement is free enough, you will notice the muscles in your upper arm jiggling loosely. Your second finger may also wobble slightly from side to side but without losing its grip.

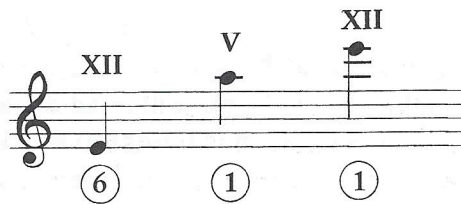
To transfer the movement to the guitar, play the note B on the fourth string at the ninth fret; fourth-string notes in the upper positions are the most responsive. Use your second finger again but do *not* grip the neck with the thumb. The thumb may rest lightly upon the neck, but without pressure. Try to re-create the essential feel of the simulation; above all, make sure that the shaking of the hand is rhythmically even and takes place only in the longitudinal plane of the string. Students sometimes fall into a spasmodic, lateral back-and-forth pushing of the finger. If this happens, go back to the simulation in order to check the appropriate sensations; repeat until you can do the movement on the guitar without strain.

All good vibrato has a regular pulse; poor vibrato is nervous-sounding and erratic. The more control you can exercise over the rate of pitch

fluctuation, the more spontaneous and natural your vibrato will be in performance. A good test, and exercise in control, is to sustain a continuous vibrato on the fourth-string B slowly enough to count regular pulsations:

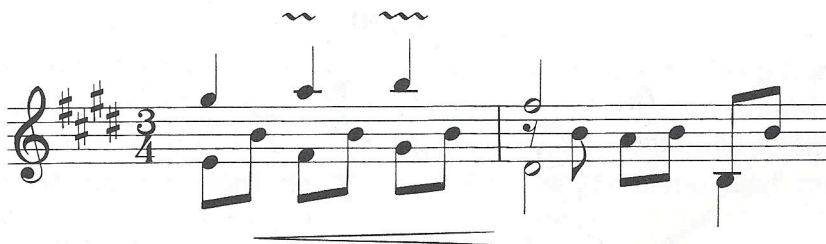


Some experimenting will show that different intensities of vibration are necessary for different strings and fingerboard positions. Take the following three notes as an example:

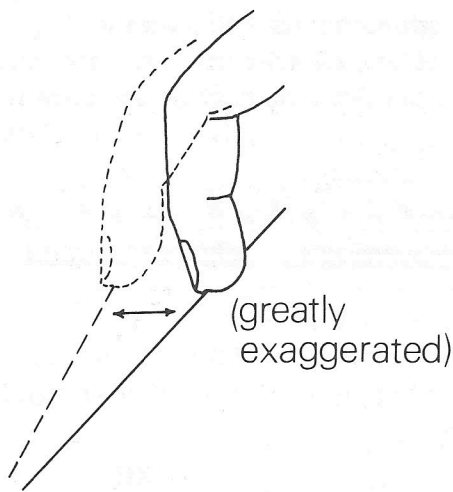


A vibrato appropriate for the sixth string E will not produce audible pitch fluctuation on the first-string A. Conversely, the same intensity that makes a nice vibrato on the A will make the sixth string E sound grotesque. The intensity appropriate to the first string E falls between these extremes. Broadly speaking, therefore, in moving from bass strings to treble, or from higher to lower on the same string, the intensity of vibrato must increase.

One does not have to create a flurry of sound for the vibrato to add life and color. Even two or three vibrations on a few notes can make the difference between wooden playing and music that sings. The beginning of Tárrega's "Lagrima" offers as plain and simple an example as can be found:



The rising melodic line can be dramatized nicely while retaining the simple charm of the music by a restrained vibrato on A and B. Two vibrations will do for A; three or four for B will emphasize its climactic value. The F-sharp coming at the end of the phrase does not need the emphasis that vibrato imparts. But what if it did? The strings are so stiff at lower frets that vibrato by the usual means is inefficient. In those cases where vibrato at a fret below the fourth really seems desirable, another technique is used: the lateral-bend vibrato. In this form of vibrato the finger, flexing from its tip and middle joints, moves the string from side to side.



The shortcomings of this form of vibrato are several. First, since it can only increase the tension on the string, the pitch fluctuation consists entirely in a sharpening of the mean tone. Second, it is harder to control and tends to be obtrusive. Third, it is less natural than the normal vibrato and cannot be done with quite the same careless ease.

Its virtues, however, make its mastery eminently worthwhile; these include its use in the lower positions. Normal vibrato in the very highest register is also impractical because of the quick decay of the notes and the narrowness of the frets. To make the highest A or B speak clearly, a lateral bend vibrato is necessary. Again, a very few vibrations will suffice; if the movement is done properly, the note will actually seem to swell.

Finally, this type of vibrato can be used to dramatize single notes in chords without making the entire chord quaver. Try making the lowest note of the inverted C major seventh below and the highest note of the following G major vibrate without disturbing the other fingers in either chord:



The first can be found, among other places, at the end of Torroba's "Preambulo" (No. 1 of *Pièces Caractéristiques*) and profits there from this nuanced handling of the dissonant bass. A pointed example of the second is in Sor's *Estudio 17*, measure 13 (quoted above, p. 25) where the melody can be made to sing with this technique.

## Vibrato

Vibrato is a special means of emotional expression where a string (or strings) is made to fluctuate in pitch by the left hand. There are two kinds of vibrato in common use on the guitar. The *standard* or longitudinal type, which is used by violinists, cellists and other string players, is created by the motion and friction of the fingertip. This causes the string to be moved back and forth along its length. This motion alternately shortens and lengthens the string and thus causes the pitch to fluctuate above and below the note being vibrated. The other type, which we shall call the *pull-release* vibrato, is made by alternately pulling the string toward the palm of the hand with one of the fingers and, keeping the finger lightly on the string, letting it return to its normal position. With this type the pitch also fluctuates, but only above the note vibrated, not below.

The vibrato can be a beautiful effect on the guitar if it makes sense in the context of the music you are playing. The finest players use vibrato with discrimination. It is not used on every note. Vibrato is best treated as an ornament to heighten the emotional intensity of certain notes and give them a lively singing quality. For example, it can be used to bring out the climactic note of a phrase or to emphasize the melody notes in a melody and accompaniment piece. Vibrato can also be used to help sustain a note. There is naturally a considerable range of expression available with the vibrato on the guitar and the best players exploit it. As the violinist Yehudi Menuhin says, "Vibrato must be as varied as the weather in England."<sup>5</sup>

The variety in the vibrato comes mostly from its two basic components: the fluctuation of the pitch and the speed. The guitarist should be aware of how much the pitch fluctuates in the vibrato because the effect changes according to the amount of fluctuation. It is generally good to have only minor

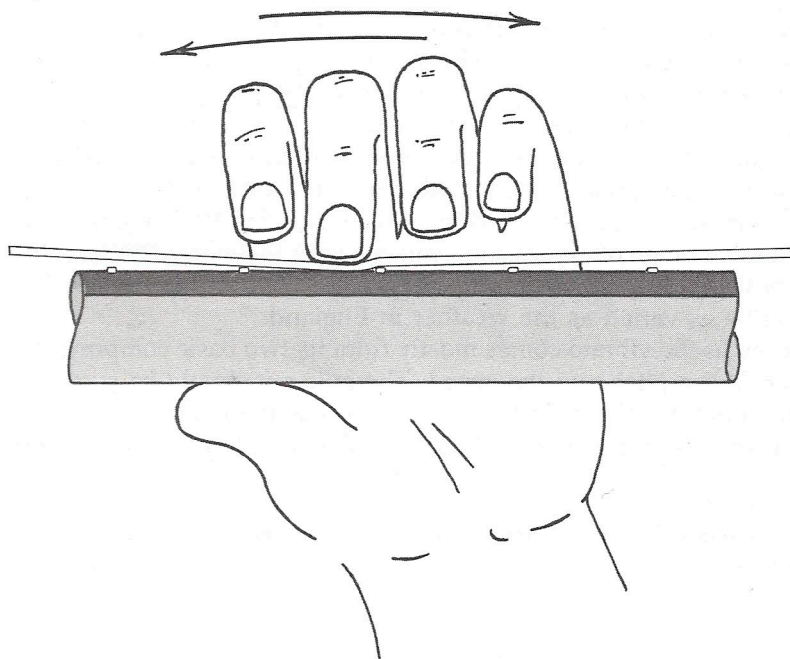
<sup>5</sup>Yehudi Menuhin and William Primrose, *Violin and Viola* (New York: Schirmer Books, 1976), p. 75.

deviations in the pitch or the effect will be overdone. Normally the deviation should not be much more than a quarter-tone on either side of the main pitch, although it may be somewhat more.

The speed of the vibrato should be varied according to the speed and emotional character of the music you are playing; the speed should also be related to the register in which you are playing. Generally, the quicker or more intense the music, the faster the vibrato; the upper register of the guitar also calls for a somewhat faster vibrato because of the greater intensity of higher pitches. The speed of the vibrato usually falls within the relatively narrow range of four to ten cycles per second. It is important to avoid extremes in the speed so that the vibrato will seem to be a natural, unobtrusive part of the music. A vibrato that is too slow for a given passage is just as undesirable as one that is too fast. A very slow vibrato may be fine for special effects but not for most of the standard repertoire; a very fast vibrato usually ends up sounding very nervous rather than intense as the player may have intended. A truly artistic vibrato should also have an even rhythm instead of a chaotic one.

The *standard* or longitudinal vibrato on the guitar is not difficult if it is approached in the right way. To practice this type of vibrato, it is best to sit with the guitar in the usual classical position. Since it is easiest to get results with the standard vibrato between the fifth and ninth frets, choose a note in that range. Now try the following exercise with each left-hand finger, starting with the first. Place the finger on the note as shown in Figure 6-45.

Figure 6-45 Standard vibrato



Do not press hard against the neck with the thumb. Many players find it better not to touch the neck at all. Lack of thumb pressure facilitates the hand and arm movements. Now put some pressure on the fingertip using the weight of the arm so that the tip stays in one spot close to the fret and does not slide up and down the string. The wrist should be held straight and firm. To make the vibrato, make small movements from side to side with the hand and arm together so that the finger moves back and forth like a rocking chair. The arm should be loose so that it can move freely. The upper arm need not move much; the forearm can move slightly more.

Since the evenness of the rhythm of the vibrato is important, the metronome can be put into service here. Try an initial setting of about 100. Each "back" movement and each "forth" movement should get one click of the metronome. When you have a regular vibrato going at 100, set the metronome faster by several clicks and repeat the exercise. Increase the tempo until you can vibrate evenly at 208, then set the metronome back to 100 and instead of each back and each forth movement taking one click, do "back and forth" on one click. The tempo can then be increased until the desired speed is reached. It is also possible to do the "back and forth" twice on each click and start at a slower speed.

When you are comfortable doing the vibrato on one note with each finger in this exercise, then a good further study is to play the Segovia scales<sup>6</sup> with a vibrato on each note. The D major scale is a good one to start with because it falls in the easiest register for the standard vibrato. Another perhaps more enjoyable exercise is to take only the melody line of a favorite study or piece and practice doing vibrato on every possible note.

The standard vibrato as described here is useful for a good portion of the fingerboard. However, the standard vibrato is difficult to execute on the first four frets mainly because it is difficult to move the hand and arm freely. In the lower positions the *pull-release* type of vibrato works better. The pull-release vibrato is executed by placing your finger firmly on a note and then alternately pulling the string to the side and letting it return to its normal position (Figure 6-46).

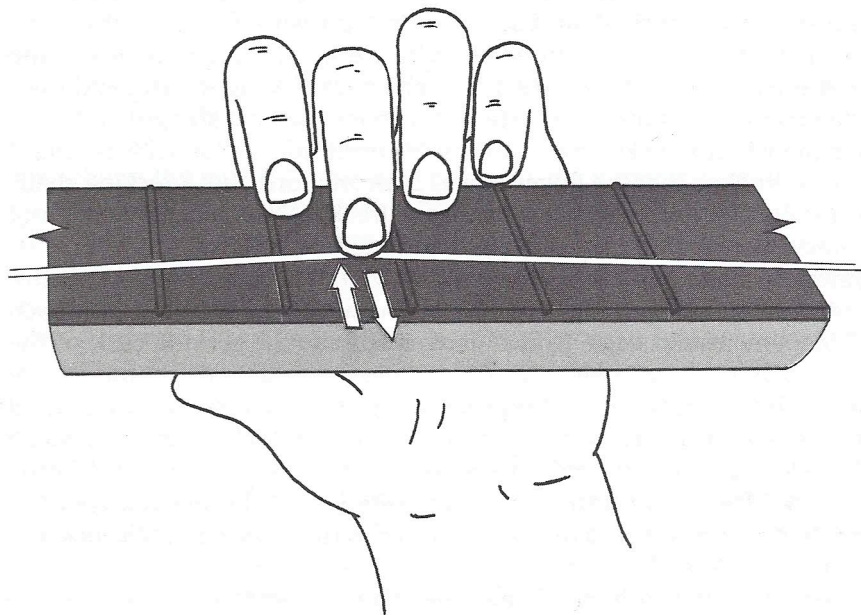
The pull-release vibrato also is more effective than the standard type for notes above the twelfth fret. Further, it is the only practical way to vibrate a single note in a chord being held by the left hand. This is often done in pieces such as Tárrega's *Prelude No. 2* in A minor where vibrato is done only on the melody notes in order to make them sing out beautifully over the accompaniment. The pull-release vibrato can naturally be applied to any note on the fingerboard, but many players prefer to use the standard variety wherever feasible because it can be more easily controlled and can create pitch fluctuations both above and below the vibrated note.

Be sure to practice the pull-release vibrato with even rhythm as you did

<sup>6</sup>See footnote 1 in this chapter for the publisher of these useful scales.



Figure 6-46 Pull-release vibrato



the standard one. It is also good to practice this vibrato on each note of a Segovia scale. Another way of studying this vibrato is to take a simple melody and accompaniment piece such as the Sor Study Op. 6, No. 2 (No. 3, Segovia edition) and play vibrato on every melody note. You will find that working with the pull-release vibrato will greatly increase your left-hand coordination and strength. It takes particularly good coordination to play a good vibrato on the first string without pulling the string off the board!

For further examples of how the vibrato can be used, see "Refine the Interpretation" in Chapter 9.