

GOOD VIBRATIONS

HOW **VIBRATO** CAN SHAKE UP YOUR MUSIC

By Jon Chappell

Vibrato is one of the most expressive techniques a musician can use. Playing notes loudly and softly or varying the tempo may create a sense of drama, but if you really want to make a long note shimmer—and send shivers down the spines of your listeners—just the right bit of vibrato can steal the show.

The term *vibrato* comes from the Italian word for “vibrate,” but in music, it has a more specific meaning. The *Harvard Dictionary of Music* calls it “a slight fluctuation in pitch produced on sustained notes by an oscillating motion.” (To oscillate means “to move back and forth between two points.”) Sometimes, vibrato gets confused with *tremolo*, but the latter is a change in loudness, not pitch.

While a few instruments (sorry, pianists!) can’t play vibrato at all—at least without the help of electronic aids—the ability to produce and control vibrato adds soul to the performances of vocalists, wind and string players, and even some percussionists. But the techniques used to produce vibrato, and the character of the sound itself, can vary widely from instrument to instrument and from genre to genre.

The main variations between different types of vibrato are in the *range* of pitch change (wide or narrow) and the *rate* (or speed) at which this range is covered. Vibrato should not be perceived as rhythmic in nature, though sometimes a very slow vibrato (as in the sax playing of jazz great Ben Webster) can actually be counted in eighth notes and quarter notes. In any case, the first step in mastering vibrato is learning how to listen for it, both on your own instrument and in the playing of others.

Unlike expressive devices such as dynamics and articulation, vibrato is not typically written into a musical score. Usually, it’s up to the player to decide when and how to use it. However, some arrangers and composers are now adopting symbols to



FLUTIST ANNE DRUMMOND

indicate where to apply vibrato, and if it should be narrow or wide (Example 1).

Though vibrato primarily affects pitch, the technique is often accompanied by changes to other parts of the sound, such as volume and tone quality. We mentioned that vibrato sometimes gets confused with *tremolo* (the rapid change of volume): With voice as well as brass and woodwind instruments, vibrato and tremolo are often combined into one inseparable effect because the change in airflow needed to raise and lower the pitch also alters the loudness at about the same rate.

VIBRATING VOICES Nothing is more dramatic than vocal vibrato. In fact, this is the effect that many instrumentalists are trying to emulate with their playing. “I like to use the innate vibrato of a singer as a model to learn from,” says flutist and keyboardist Anne Drummond, a rising star on the jazz scene who’s also toured with rock band Bright Eyes. “A vocalist’s vibrato tends to be natural and personal.”

Every musician can experiment with vibrato by using his or her voice. Try singing a long note, and then raise and lower the pitch in a regular cycle. Vary the speed of the cycle, but keep the pitch change slight, so that it still sounds like you’re holding one note, not singing a phrase.

While some voice teachers feel that natural changes in airflow control singing vibrato, Jeannette LoVetri, a New York City-based singer, vocal coach, and director of The Voice Workshop, contends that vibrato occurs in the vocal cords. “Contrary to popular belief, vibrato doesn’t have much to do with breath support,” she says. “Vibrato is generated at the level of the vocal folds themselves, which control the airflow.” These can be controlled by contracting and releasing tiny muscles in the throat. A teacher or vocal coach can help you develop your vibrato.

The style and speed of vocal vibrato can vary by musical genre. “Mainstream classical vocalists are expected to have vibrato that is generally agreed to be between 5.5 to 6.5 cycles [oscillations] per second and between a quarter to a half tone above and below the pitch being sustained,” LoVetri says.

STRINGS Vocal vibrato may come naturally, but developing instrumental vibrato takes practice. On bowed strings like

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Example 1: Vibrato Variations

a) Classical performers normally play tied whole notes with vibrato; b) A score direction (“with vibrato”) tells you to play vibrato, but the interpretation is left open; c) A wavy line sometimes acts as a graphic substitute for the score direction; d) The music specifies that vibrato begins on beat 3 in the first bar, becoming wider at beat 2 in the following bar.

Example 2: First Steps

An exercise with score directions suggesting vibrato oscillation rate and tempo.

Example 3: Bartók’s Vibrato Notation

Bela Bartók’s *String Quartet No. 4* has notation telling players when to avoid vibrato (indicated with *senza vibrato*) and when to use it.

violin, viola, cello, and double bass, the performer plants a left-hand finger on a string and rolls back and forth on the fingertip, using the wrist to move the hand forward and back. This motion changes the vibrating length of the string, which alters the pitch slightly. Usually, string players rock the hand from *behind* the fingertip, which means their brand of

vibrato sees the note go slightly flat and then brought back up to pitch.

With fretted string instruments such as the guitar, electric bass, banjo, and mandolin, the left-hand finger is also rocked in a rapid motion. But because these instruments have frets (which prevent the string length from being changed in microtonal increments), vibrato is produced by varying

tension—stretching and releasing the string. Since stretching a string raises the pitch, a guitar player's vibrato alternates between the principal pitch and a higher one. An important exception is when a guitarist bends up to a note first: a skilled player can push and pull the string to both raise and lower the pitch. Some electric guitars are equipped with specially designed vibrato bridges that float on springs (sometimes incorrectly called tremolo bridges); guitarists use an arm attached to the bridge to raise and lower the strings' pitch. This lets them apply vibrato to complete chords as well as single notes.

BRASS & WOODWINDS Brass players can create vibrato in several different ways, depending on the instrument. Trumpeters usually employ one of two techniques: 1) shaking the horn (repeatedly pulling it away from their face and back again with their hand), which varies the pressure of their lips on the mouthpiece; or 2) altering their *embouchure* (the position and use of the lips, tongue, and teeth) by moving the jaw up and down or adjusting the opening of their lips slightly in what's known as "lip vibrato."

Woodwind players (flute, oboe, clarinet, bassoon, and sax) create vibrato by modulating the airflow into their instrument. This can be accomplished through abdominal or throat control, or by moving the hump of the tongue forward and back in the mouth. For flutists, oboists, and bassoonists, these are really the only ways, because they must maintain their embouchure or they'll lose sound. Saxophonists and clarinetists, on the other hand, have the option of using their lips, or dropping the jaw while maintaining lip contact, to create vibrato. Interestingly, classical clarinetists rarely employ vibrato, while folk and jazz players (like the late, great Benny Goodman) have often used it to great effect.

KEYBOARDS While the piano and harpsichord can't create vibrato by natural means, some keyboard instruments can. The clavichord, a smaller cousin to the harpsichord whose strings are struck and not plucked, can play vibrato because its strings stay in contact with part of the hammer mechanism for as long as the keys are held down. By varying the pressure of his or her finger on a key, the performer stretches and releases the string, creating vibrato.

Electronic keyboards such as synthesizers, electric organs, and software-based instruments all have the ability to introduce vibrato using technology. Most of these instruments have a feature called *aftertouch* that works a little like the clavichord mentioned above: pushing down hard on a key generates a vibrato effect, which can be programmed to any speed and range the player wants.

External electronic effects devices—such as the pedals used by guitarists—can also create vibrato, though with these, the effect is applied to *every* note played while the device is turned on.

Not all artificial vibrato is created with electronics. The vibraphone, a popular mallet instrument in jazz, gets its vibrato-like sound from fan blades, which rotate below the sound-amplifying tubes extending underneath the instrument's tone bars.

MASTERING VIBRATO Developing a good-sounding vibrato takes a lot of practice, and because it's not one of the basic techniques of most instruments, it can seem especially hard at first.

On the other hand, you can practice vibrato while you're working on any song or exercise. Start slowly, and focus on producing a regular pitch change on one long note.

Try the exercise in Example 2. Make sure you observe the score direction regarding the metronome's beats-per-minute settings before you begin. And make sure to produce a full, sustained note.

One common mistake is overusing intense vibrato. "Intonation is a major reason why people default to heavy vibrato—trying to find the right pitch is easier when you're wavering around," flutist Drummond says. "I try to practice vibrato-less long tones with a tuner and make my students do the same."

Drummond—whose debut solo album *Like Water* comes out this fall—recommends the following exercise, which can be applied to all instruments. "With a metronome at 60, practice long tones vibrating three times, four times, five times per beat, etc. Try this with both shallow and wide oscillations, making sure there's accuracy and symmetry to each and every wave."

CONCLUSION Vibrato was once thought of as an unusual effect—an orna-

Figure 1: A View of Vibrato



This waveform display of a flute vibrato shows oscillations of between 5 and 6 cycles per second.

ment like the trill or grace note—and was used sparingly. But today, it's common in most styles of music. This is especially true with symphonic strings, where vibrato is almost always present—except in passages containing very fast notes. Some classical players are so in the habit of using vibrato that they find it difficult to play slower tones without adding it automatically! Therefore, composers may actually notate in their scores that a passage should be played without vibrato, as Bela Bartók did in his famous *String Quartet No. 4* (Example 3). It's important that the first phrase be played without vibrato (indicated by *senza vibrato* in the score) so that the second phrase sounds more dramatic when the vibrato comes in. "Using vibrato sparingly can be a test of maturity and confidence," Drummond says.

The ideal timing and placement of vibrato can vary depending on the style of music. Classical vibrato usually starts right at the beginning of a note and is typically faster and narrower than a vibrato used in pop or jazz. In those genres, the timing and intensity of vibrato is often left to the player's personal style. Blues guitarist B.B. King is noted for his super-smooth and very fast vibrato, while some rock guitarists may use wider pitch changes. Singers on Broadway may add a light vibrato to almost every note, while an R&B singer might save it for long, climactic notes and combine it with bends, dynamic shifts, and other techniques.

But no matter the style, vibrato can make any instrument sing (and any singer more expressive). Make it part of your regular practice routine and pretty soon you'll be able to add it whenever the mood (or musical direction) calls for it. **T**