

Extended Techniques for the Classical Guitar: A Guide for Composers

DMA Document

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ABSTRACT

The primary purpose this document serves is to give composers writing for the guitar a reference tool to guide them in using extended techniques for the guitar. This document will aid the composer by giving examples of a variety of different techniques possible on the guitar, as well as how to notate these techniques. The examples used in this document are limited to compositions professionally published for the classical guitar.

Dedicated to

Amy Diane Lunn

My Children, Andrew and Samuel Lunn

My Parents, John and Sheryl Lunn

My Mother-in-Law, Judith Schutter

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INTRODUCTION

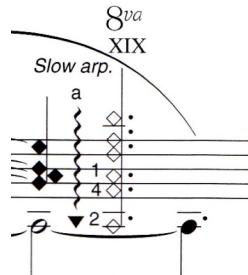
The purpose of this document is to give composers a reference tool in which newly developed instrumental techniques common to the classical guitar are discussed and explained. In addition, this document will discuss ways in which the composer might notate these techniques to give the performer the best idea of the composer's intent. In cases where there are multiple examples of notating the same technique I will discuss the merits of each and discuss the issue from the performer's perspective.

Throughout the twentieth century composers have used extended techniques to increase the expressive range of instruments. There are a variety of books composers can turn to assist them in using extended techniques. For example, *The Contemporary Violin* by Patricia and Allen Strange, *The Modern Trombone* by Stuart Dempster and *The Contemporary Contrabass* by Bertram Turetzky. This document is meant to help fill the void of literature dealing with extended techniques for the guitar.

An extended technique uses a non-traditional way to produce sound from an instrument. For the classical guitar, the traditional way to produce sound is to fret the notes with the left hand and to pluck the notes with the right hand. This traditional approach to the instrument can be found in the guitar music from the 19th century. This includes composers such as Fernando Sor (1778-1839), Mauro Giuliani (1781-1829), and

Francisco Tárrega (1852-1909). It should also be noted that many 20th century and present day composers continue to use the instrument in a traditional way.

Most of the examples of extended technique for the guitar cited by this document are found by composers that worked in the latter half of the 20th Century up to the present day. These new techniques include percussion effects, new glissando techniques, muted sounds and prepared guitars. In addition to new techniques, an extended technique also includes using a traditional technique in a new way. For example, artificial harmonics are commonly used before 1900, but quickly arpeggiating chords using only artificial harmonics would be using artificial harmonics in a different way (Example 1).



Example 1. Quickly arpeggiated harmonics in “Milwaukee, WI,” from *Some Towns and Cities* by Benjamin Verdery. Measure 2.

Most of the examples of extended technique for the guitar cited by this document are found by composers that worked in the latter half of the 20th Century up to the present day.

For the sake of creating boundaries this document is limited to music that is published and composed specifically for the classical guitar. The electric guitar is not included even though composers such as Steven Mackey and George Crumb have

successfully composed works for this instrument and in some cases have included extended techniques.¹

Chapter one discusses techniques involving the left hand. This includes glissandi, vibrato effects and left hand muting. Chapter two discusses techniques involving the right hand, such as right hand tapping and pizzicato. Percussive effects are covered in chapter three and includes striking the strings. Chapter four, titled, “With Objects,” discusses using various objects to alter the sound of the instrument. This includes preparing the guitar as well as using different objects to activate the string. Chapter five discusses techniques incorporated from other traditions. This includes discussing the rasgueado technique borrowed from the Flamenco tradition and using alternate tunings to try and get the flavor of other traditions, such as Middle Eastern Music. Chapter six covers techniques not easily categorized. The first two appendices are devoted to techniques that are not necessarily new techniques, but are nonetheless important techniques a composer for the guitar should be aware of. Appendix A discusses natural and artificial harmonics, and appendix B discusses the tremolo technique. Appendix C is a summary of musical symbols and appendix D is a discography of recordings commercially available of the examples used in this document.

I would like to mention a few books that were important in helping me with this document. The first is *The Contemporary Guitar* by John Schneider. This book is a thorough document on how a guitar is built, acoustics of the instrument, and various traditional and non-traditional techniques. *The Contemporary Violin* by Patricia and Allen Strange discusses extended techniques in the violin literature. This book was an

¹ An example that uses the electric guitar would be *Songs, Drones, and Refraints of Death* by George Crumb.

important source for organizational ideas about this document as well as terms used for certain techniques. Finally, *A Composer's Desk Reference for the Classic Guitar* by Chris Kachian was a helpful guide in organizing this document. Although Kachian only superficially covers a few extended techniques, the conciseness of his writing was used as a model in this document.

Finally, I decided that the examples should appear as the composers/publishers intended them. All of the examples used in this document are copies from the original. The examples are all in the treble clef even if there is not a clef sign used in the example. In standard notation practice, a clef sign is used at the beginning of a system. If an example was used from the middle of a staff, a clef sign does not appear.

CHAPTER I

THE LEFT HAND

1.1 Glissandi

The Harvard Dictionary of Music defines a glissando as, “a continuous or sliding movement from one pitch to another.”¹ There are two basic types of glissandi that can be performed on the guitar. The first is called the fret glissandi.² This involves the left hand finger sliding up or down the string from one note to the next. The problem with the fret glissandi is that no matter how fast the performer plays the glissando, the pitch is still moving by discrete half-steps. Due to the frets, a slide from one fret to the next will not be seamless, but instead, there will be a distinctive half-step shift from one fret to the next. The glissandi can occur anywhere within the range of the guitar but the composer should be aware that a glissando on the bottom three strings might have some additional noise because these strings are wrapped with steel (Figure 1.1).

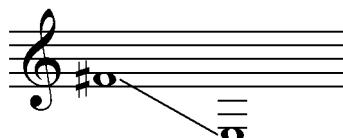


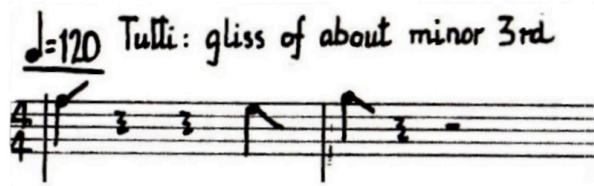
Figure 1.1 Notes limited to the bottom three strings.

¹ Don Michael Randel, ed., *The Harvard Dictionary of Music* (Cambridge: The Belknap Press of Harvard University Press, 2003), 353.

² John Schneider, *The Contemporary Guitar* (Berkeley: University of California Press, 1985), 143.

The second type of glissando is the bending glissando.³ Bending a string is a common technique found in Blues and Rock and Roll style guitar playing, but does not appear in the classical guitar literature until the 20th century. The bending glissando allows the performer to move up a half or whole step seamlessly. Bending the string allows the performer to move from one half-step to the next without the audible step associated with the fret glissando. Typically the bend will be up in pitch although the performer could have the bend setup before striking the string, then releasing the string. This is referred to in Rock guitar as a ghost bend. The interval limit for a pitch glissando is roughly a major second on the classical guitar because of the loose tension of the strings.

Fretted Glissandi

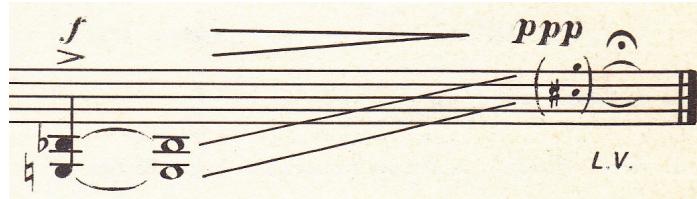


Example 1.1 Glissando of a minor third in *A Horse, His Name Was Hunry Fencewaver Walkins* by David Bedford., Rehearsal letter E.

David Bedford uses fretted glissandi in his *A Horse, His Name Was Hunry Fencewaver Walkin* written for guitar, flute, clarinet, violin, cello, double bass and piano. In this example, Bedford has the guitarist glissando roughly the span of a minor third, or three frets on the guitar. In addition, Bedford notates the direction of the glissando by using up and down lines that tell the guitarist whether the glissando should go up or down

³ Ibid., 143.

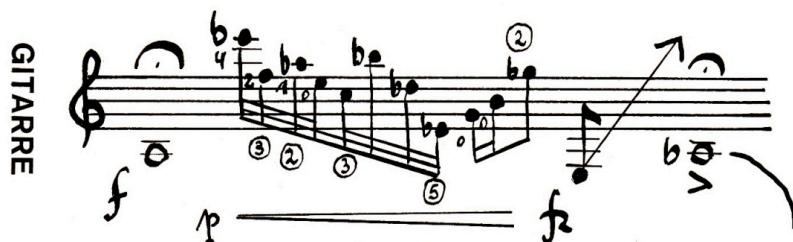
in pitch. Bedford mentions that the glissando should be “about” a minor 3rd. Due to the frets, this interval will not be an approximation as indicated by the term “about”. If it is too low it will be a major 2nd and if too high it will be a major 3rd.



Example 1.2 Glissando to a specific pitch. *Etude No.1* for solo guitar by Jacques Charpentier. Page 5, System 9.

In Example 1.2, Jacques Charpentier, in his *Etude No.1* for solo guitar, ends this composition with a large glissando that covers the complete range of the fifth and sixth strings. It should be noted that starting an ascending glissando on an open string, the low E string in Example 1.2, does not pose a problem because the mere act of the left hand finger hitting the first fret during the glissando causes the string to activate and create sound.

Using a glissando to an indeterminate pitch is a common extended technique found in the guitar literature during the twentieth and twenty-first centuries.



Example 1.3 *Dialoge für Gitarre und Percussionsklänge* by Siegfried Fink, Movement 1, System 1.

In Siegfried Fink's *Dialoge für Gitarre und Percussionsklänge*, Fink notates this by using an arrow in the direction of the intended glissando.



Example 1.4 Etude No.1 by Jacques Charpentier, Page 5, System 3.

Another example of this technique can be found in *Etude No.1* by Jacques Charpentier.

In example 1.4, two notes, F and B natural, glissando up to an indeterminate pitch.

Another common glissando technique is to glissando up to the highest note possible.



Example 1.5 Highest possible pitch notated in *Synchronisms No. 10* for guitar and tape by Mario Davidovsky. Measure 240.

In this example for guitar and tape, Mario Davidovsky notates the indeterminate note with an X and then explains at the bottom of the page that the note marked with an X

should be played, “as high as possible.”⁴ A similar technique can be found in Alberto Ginastera’s *Sonata* for guitar.



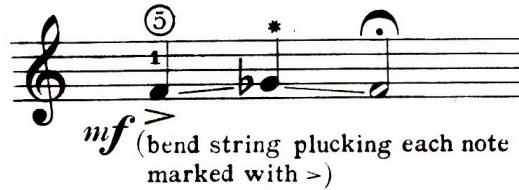
Example 1.6 Notating highest possible pitch in the 2nd movement, “Scherzo,” from *Sonata*, by Alberto Ginastera. Measure 88.

Instead of using an “X” to notate the highest pitch possible, as in Example 1.5, Ginastera uses arrow shaped noteheads to denote the highest pitch possible. In this example the high B does not take part in the glissandi which explains the three arrows. It should be noted that the glissando can extend past the fretboard, much the same way as a violinist can play beyond the fingerboard.

Bending Glissandi

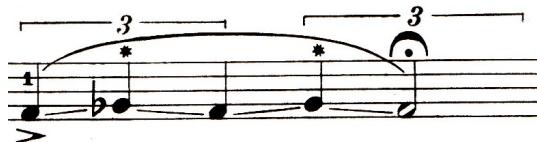
As previously mentioned, bending a string is a common technique found in the Rock and Blues literature. Due to the loose string tension on the classical guitar it can be difficult for a performer to get a bend larger than a major second.

⁴ Mario Davidovsky, *Synchronisms No.10 for guitar and tape*, (New York: C.F. Peters Corporation, 1995), 11.



Example 1.7 String Bending in *Dreammusic* by Thomas Wilson. Measure 1.

Thomas Wilson uses string bending in his solo guitar piece, *Dreammusic*. In Example 1.7 he instructs the performer to only pluck the notes marked with an accent. This particular bend is a half step. This could also be notated by using a slur as Wilson does in measure 2:



Example 1.8 String Bending in *Dreammusic* by Thomas Wilson. Measure 2.

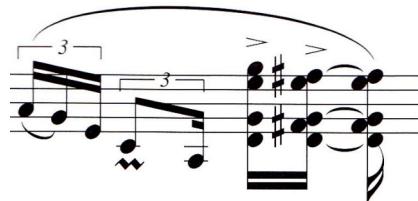
In Example 1.8 the guitarist strikes the initial F and then bends the string back and forth between the F and the G-flat. This technique can also be used to incorporate tones smaller than a half-step.

Stretch the string down against the side of fingerboard.
(The interval will depend on the instrument.)

Example 1.9 String Bending in the 2nd movement, “Serenading a Pair of Giffly Nymphs (Drunk of Night),” from *Serenades of the Unicorn* by Einojuhani Rautavaara. Measure 13.

Einojuhani Rautavaara uses string bending in *Serenades of the Unicorn*. Like Thomas Wilson, Rautavaara uses a slur to notate the bend. In addition, Rautavaara does not give a specific note to bend to, but instead says, “the interval will depend on the instrument.”⁵

Another way of notating a bend, although not as clear as the Wilson or Rautavaara examples, can be found in Benjamin Verdery’s piece for solo guitar titled, “Chicago, IL.,” from his group of pieces titled, *Some Towns and Cities*.

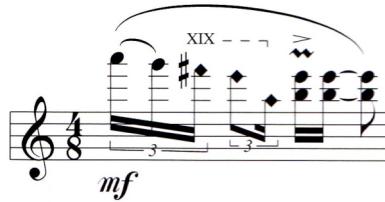


Example 1.10 Bending a string found in “Chicago, IL.,” from Benjamin Verdery’s *Some Towns and Cities*. Measure 48.

In Example 1.10 Verdery notates the bend by using a trill indication under the C. In the performance notes he mentions that the C should be bent, although he does not give an indication of how far the note should be bent.

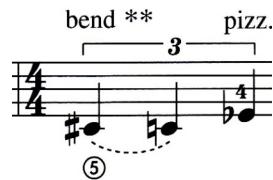
It is also possible to bend more than one string at a time (Example 1.11).

⁵ Einojuhani Rautavaara, *Serenades of the Unicorn*, edited by Joseph Holeček, (New York: Schirmer, Inc., 1980), 7.



Example 1.11 Bending two at the same time in “Chicago, IL.,” from *Some Towns and Cities* by Benjamin Verdery. Measure 47.

In Example 1.11, both the B and the E will be bent at the same time. The composer does not clearly notate this in the score, but mentions his intentions in the performance notes.



Example 1.12 Ghost bend in “Greed” from *11 Etudes* by Benjamin Verdery. Measure 2.

In “Greed,” from *11 Etudes*, Verdery uses a ghost bend. This is a note that is bent before plucking the string. After the string is plucked the performer releases the bend. In Example 1.12, the performer bends the string to a C-sharp, plucks the note, then releases the bend to a C-natural.

Other possibilities include the bending of three strings at the same time and the possibility of playing one note which is not bent, while bending another note at the same time. As shown in Example 1.12, it would be possible for a guitarist to bend the B, while playing, but not bending the E. This is a common technique found in Rock music. It would be advisable that the higher sounding pitch be the stationary pitch and the lower note the bent note, otherwise the higher string will not sound.



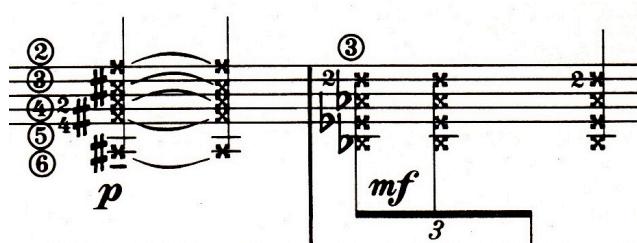
Example 1.13 Tuning a string “mid-flight” from D down to C in *Simple Gifts* arranged for guitar by Ronald Ravenscroft, B.J. Sutherland and John Sutherland. Measures 64-65.

An interesting example of a glissando can be found in the arrangement of *Simple Gifts* for guitar by Ronald Ravenscroft, B.J. Sutherland and John Sutherland. In this example the guitarist must tune the sixth string down, “mid-flight,” from D to a C. The aural result is that there is a glissando from the ringing D down to the C-sharp and a glissando from the C-sharp down to the C natural.

1.2 Left Hand Muting Over Frets

A left hand muted sound is created by lightly touching the string. This can be used rhythmically as well as melodically. Typically this technique is indicated by the use of an X as a notehead. The sound produced is made up of mostly noise but there is also a perceptible pitch that can be heard within the noise. Composers can give specific indications of pitch or general ideas of pitch, such as using low or high to inform the performer the type of sound that is desired. If the composer decides to give a specific

pitch, he/she should make sure that the pitch is not at the spot of a harmonic node because a harmonic will ring instead of a muted sound.



Example 1.14 Muting in the 1st movement, “Gloucester,” from *Royal Winter Music* by Hans Werner Henze. Measures 101-102.

Example 1.14 from the first movement of *Royal Winter Music* by Hans Werner Henze gives specific locations of where the muted notes should be.

ponticello

Extremely rhythmic, but the player may improvise alternate rhythms if so desired.
Alternate freely between pitched and muted chords.

Example 1.15 Muting in “New York, NY,” from *Some Towns and Cities* by Benjamin Verdery. Measure 41.

In *New York, NY*, Benjamin Verdery has notated an improvisatory section that is meant to mimic the feel of Funk by its use of syncopated rhythms and muted chords. In this example the use of muted chords are more for a percussive effect.

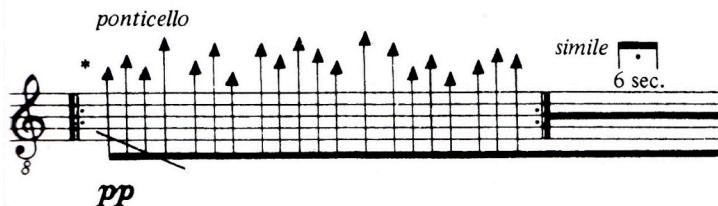


Example 1.16 Muting in *La Espiral Eterna* by Leo Brouwer. Page 7, System 4.

Leo Brouwer, in *La Espiral Eterna*, notates the specific spot on the fingerboard the muted notes should be played by placing an X under the particular notehead. In addition, he gives suggestions in the performance notes on how best to play this. Brouwer states that “muted or damped sound produced by the left hand fingers slightly on the strings without pressure. Not touching the fingerboard. Right hand plays normally. A better sound is possible touching the string with the fingernail.”⁶

1.3 Left Hand Muting Over the Soundhole

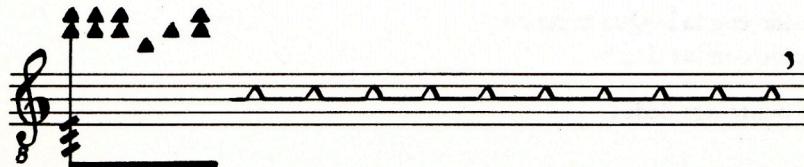
Composers occasionally call for performers to play notes above or near the soundhole. The sound that results is of a pitched, muted note.



Example 1.17 Notes over the soundhole in the 2nd movement, “Scherzo,” from *Sonata* by Alberto Ginastera. Measure 88.

⁶ Leo Brouwer, *La Espiral Eterna*, (Mainz: Schott Musik International, 1973), 7.

In Ginastera's *Sonata* for solo guitar, he notates this effect by using arrow heads as note heads and below the measure he writes, "very fast but discontinuous improvisation *sul ponticello* on the first, second and third strings near the soundhole."⁷



Example 1.18 Notes over the soundhole in *Memorias de “El Cimarrón”* by Hans Werner Henze. Page 10, System 8.

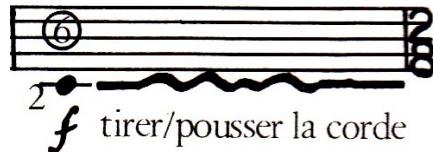
Example 1.18, from *Memorias de “El Cimarrón,”* Hans Werner Henze notates an effect similar to the previous example by Ginastera. Like Ginastera, Henze uses arrowheads as noteheads, and again they are used to indicate that this is an improvisatory figure played over the soundhole.

1.4 Vibrato

There are two different ways to produce vibrato on the guitar. The first is to move the left hand finger back and forth horizontal to the string. This method of vibrato is similar, visually, to what a violinist does when producing a vibrato. On the guitar, this back and forth motion pushes the string down against the fret causing the string to go a little sharp. The second method of producing a vibrato on the guitar is to bend the string perpendicular to the other strings. This causes the string to tighten and therefore go sharp.

⁷ Alberto Ginastera, *Sonata for Guitar Op.47*, (London: Boosey & Hawkes, 1978), 5.

This second method gives more variety to the vibrato because the performer has more control of the speed of the vibrato. This method causes the widest fluctuation of pitch.



Example 1.19 Vibrato in *Seis Pinceladas* by Jesus Villa-Rojo. 6th Movement. Measure 6.

Jesus Villa-Rojo, in the sixth movement of his *Seis Pinceladas*, gives a general contour of what the vibrato should sound like. Although Villa-Rojo does not mention it specifically, in order to perform this type of vibrato the guitarist would bend the string perpendicularly to the other strings.

Alvaro Company, in *Las Seis Cuerdas*, uses a variety of symbols to describe the different types of vibrato the performer should use. Company uses a checkered symbol to notate a normal vibrato (Figure 1-2).



Figure 1.2 Normal vibrato in *Las Seis Cuerdas* by Alvaro Company.

Figure 1.3 is the symbol Company uses to notate a slow vibrato.



Figure 1.3 Slow vibrato in *Las Seis Cuerdas* by Alvaro Company.



Figure 1.4 Rapid vibrato in *Las Seis Cuerdas* by Alvaro Company.

Company uses a straight line to symbolize when there should be no vibrato (Figure 1.5).



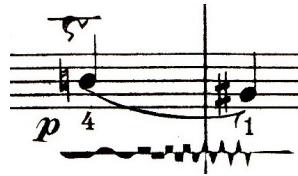
Figure 1.5 No vibrato in *Las Seis Cuerdas* by Alvaro Company.

Company combines these symbols in *Las Seis Cuerdas* to create different vibrato effects.



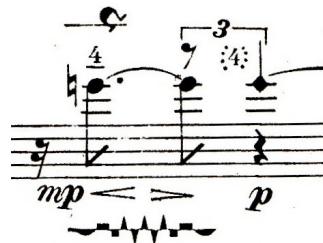
Example 1.20 Mixed vibrato in *Las Seis Cuerdas* by Alvaro Company. Measure 9.

In Example 1.20, the guitarist is to start with a rapid vibrato and then end the note with no vibrato.



Example 1.21 Mixed vibrato in *Las Seis Cuerdas* by Alvaro Company. Measures 23-24

The next example (Example 1.21) begins with a slow vibrato and then speeds up to a normal vibrato, followed by a rapid vibrato and ending with no vibrato.



Example 1.22 Bi-tones in “Start Now” from *11 Etudes* by Benjamin Verdery. Measure 2

The final vibrato example from 'Las Seis Cuerdas' (Example 1.22) begins slowly, accelerates to a rapid vibrato before ending with a slow vibrato.

It should be noted that there is no standard way to notate vibrato effects in the guitar literature. It is recommended that whatever system is used, it is fully explained in the performance notes.

1.5 Bi-Tones

John Schneider, in his book, *The Contemporary Guitar*, describes a bi-tone by saying: “when a string is made to vibrate by hammering-on two notes emerge — one from the length of the string between the fingered fret and the bridge, and one from the length of string between the fret behind the left-hand finger and the nut.”⁸ This second note is the bi-tone.

6th String

5th String

4th String

3rd String

2nd String

1st String

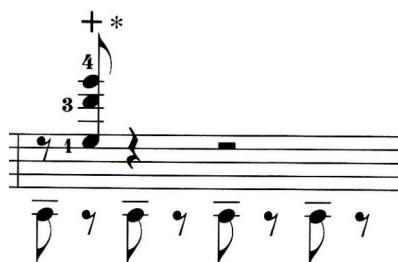
*= quarter tone flat
+= quarter tone flat

Figure 1.6 Bi-tones on the guitar.

Figure 1.6 gives a list of bi-tones available on the guitar. The square noteheads are the bi-tones and the filled in noteheads are the fretted note. As the fretted note progresses up the fingerboard (towards the soundhole) the string length gets smaller causing a higher pitch. At the same time, the string length from the fretted note to the nut gets longer causing a lower sounding note. Typically, bi-tones are notated by just writing

⁸ John Schneider, *The Contemporary Guitar* (Berkeley: University of California Press, 1985), 126.

the fretted notes and giving an indication in the score or the performance notes that the bi-tone is the desired effect.



**Example 1.23 Bi-tones in “Start Now” from *11 Etudes* by Benjamin Verdery.
Measure 2.**

Benjamin Verdery, in “Start Now” from *11 Etudes*, notates the bi-tones by writing the fretted notes and then describing the desired effect at the bottom of the page. To perform this technique the guitarist would slam the fingers down on the fretboard with enough force to cause the strings to vibrate creating the pitches. It should be noted that using this technique the right hand does not pluck the strings. The resulting sound will contain the fretted notes and the bi-tones.

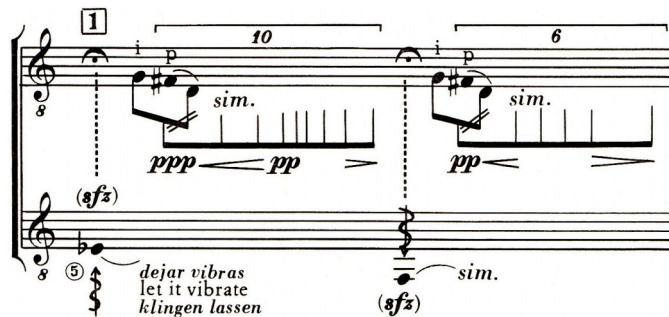
It should also be noted that the bi-tones are very quiet and the guitar would need to be amplified if they are to be performed in a large space. In addition, if the composer only wants the bi-tones without the sounds of the fretted notes, the performer can mute the strings with the right hand and create the bi-tones with the left hand.

CHAPTER 2

THE RIGHT HAND

The right hand can produce a variety of effects on the guitar. These effects range from right hand glissandi to pizzicato sounds to tremolo effects. The right hand can also produce fretted notes by hammering the finger on the fret with enough force to activate the note. This frees up left hand to produce other additional effects as well.

2.1 Right Hand Glissando



Example 2.1 Right hand glissando in *La Espiral Eterna* by Leo Brouwer. Page 6, System 1.

In *La Espiral Eterna*, Leo Brouwer calls for the guitarist to perform a right hand glissando. Brouwer uses the following symbol to notate this effect



Figure 2.1 The symbol Leo Brower uses to notate a right hand glissando in *La Espiral Eterna*.

This glissando is produced by holding down the indicated note in the left hand and sliding the right hand fingernails from that spot to the soundhole. This effect is louder when performed on the fourth, fifth, or sixth strings because these strings are wound with steel. The steel produces more noise than the nylon first, second, and third strings.

2.2 Pizzicato

Pizzicato is a technique that is borrowed from the string literature. A pizzicato articulation for a violin involves the performer plucking the string with the fingers. For a guitarist, this involves muting the string, close to the bridge, with the flesh of the right hand. Pizzicato is a common technique found throughout the guitar literature. For the purposes of this document, I will give examples of two types, the Bartók pizzicato and the extended pizzicato.

A Bartok pizzicato is a common technique found in orchestral strings literature and named after the Hungarian composer Béla Bartók. The performer lifts the string above the fingerboard, then releases the string so that it slaps against the fingerboard. The resulting pitch contains a noisy attack.



Example 2.2 Bartók pizzicato in Movement VI of *Seis Pinceladas* by Jesus Villa-Rojo. Measure 10.

In *Seis Pinceladas* by Jesus Villa-Rojo we find an example of a Bartók pizzicato (Example 2.2).



Figure 2.2 Bartók Pizzicato

The symbol used to notate a Bartók pizzicato can be found above in Figure 2.2.

Example 2.3 Extended pizzicato in *La Espiral Eterna* by Leo Brouwer. Page 6, System 2.

La Espiral Eterna by Leo Brouwer contains an extended pizzicato section. A typical right hand pizzicato on the guitar is accomplished by resting part of the right hand on the strings close to the bridge. The flesh of the hand muffles the sound. The performer can control the amount of muting by how hard the right hand presses on the strings. In

the example above (Example 2.3) the right hand rests on the strings for the entire segment while the left hand plays a cluster series.

2.3 Plucking

Alvaro Company, in *Las Seis Cuerdas*, gives specific instructions of where the performer should pluck the string with the right hand. Plucking close to the bridge produces a bright, thin sound, while plucking over the soundhole produces a darker, thicker sound. Company calls for the performer to pluck exactly twelve frets higher than the fret the left hand is playing.



**Example 2.4 Plucking twelve frets higher in *Las Seis Cuerdas* by Alvaro Company.
Page 8, system 2.**

This cuts the string in half and produces a hollow sound similar to that of a clarinet. The symbol Company uses to notate this technique, often named the “clarinet sound,” can be found in Figure 2.3.



Figure 2.3 Symbol Alvaro Company uses in *Las Seis Cuerdas* to instruct the performer to pluck the string.

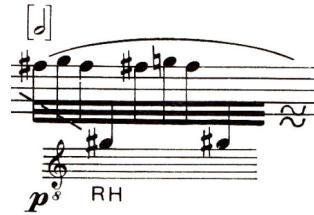
There is not a standard way to notate this technique and is often added to a performance by the performer as a way to add color to the piece. Writing, “clarinet sound” above the intended passage with an explanation in the performance notes should suffice.

2.4 Right Hand Tapping



Example 2.5 Right hand tapping in “Chicago, IL.” from *Some Towns and Cities* by Benjamin Verdery. Measure 67.

In Example 2.5, “Chicago, IL.” from *Some Towns and Cities* by Benjamin Verdery, the performer activates the string at a particular fret with the right hand. This technique is known as right hand tapping, or just tapping. In this example, the left hand is playing slur figures while the right hand activates the low G by hitting the fret with the right hand thumb hard enough to produce the G3. The right hand thumb then glides up the sixth string producing a glissando to the E4. Verdery notates this by using a T at the spots where the right hand finger produces the sound (see Example 2.5).



Example 2.6 Right hand tapping in *Sequenza XI* by Luciano Berio. Page 4, system 2.

A different type of right hand tapping can be found in *Sequenza XI* by Luciano Berio. Berio has notated the technique using two staves, the top for the left hand and the bottom for the right hand. The left hand begins by slurring F-sharp, G, F-sharp. Then one of the right hand fingers hits the G-sharp, followed by F-sharp, G, F-sharp slurred in the left hand. This technique is very smooth and fluid. It does not contain any strong attacks due to the fact that the string is never plucked in a traditional sense (see Example 2-6).

*Usar de la m. izq. dedos: 1. 2. 3., mano derecha i.m.a.
To use left hand fingers: 1. 2. and 3. Right hand: i.m.a.
Mit dem 1., 2. und 3. Finger der linken Hand. Rechte Hand: i.m.a.*

Example 2.7 Right hand tapping in *La Espiral Eterna* by Leo Brouwer. Page 8, System 1.

Leo Brouwer incorporates right hand tapping in *La Espiral Eterna*. In Example 2.7, the right hand hits the fretboard at indiscriminate spots. Brouwer indicates the rhythm and dynamics and uses an x for the noteheads to provide a basic melodic contour

without notating specific pitches. The *i*, *m*, and *a* markings are standard fingerings for the right hand.¹

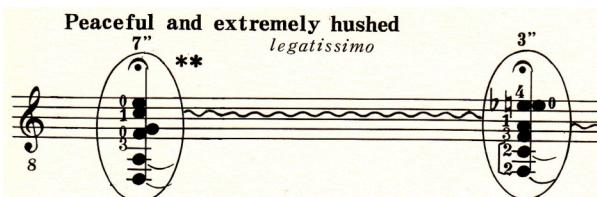
2.5 Right Hand Tremolo

A fast tremolo with the side of the fingertip only – not with the nail.



Example 2.8 Thumb tremolo in the 3rd movement, “Serenading the Beauty Unobtainable (Too Far in Time), from *Serenades of the Unicorn* by Einojuhani Rautavaara.

In *Serenades of the Unicorn*, Einojuhani Rautavaara calls for the performer to play a tremolo with the flesh of the thumb. Because this technique does not involve the nail, the resulting sound is a very quiet, whispering sound. There is a lot of string noise from the finger rubbing against the strings. This technique can only be used at soft volume levels.



Example 2.9 Thumb pad tremolo in “VII. Close,” from *Shadows* by William Albright. Page 21, system 3.

¹ The *i* stands for the index finger, *m* for middle finger, and *a* for ring finger.

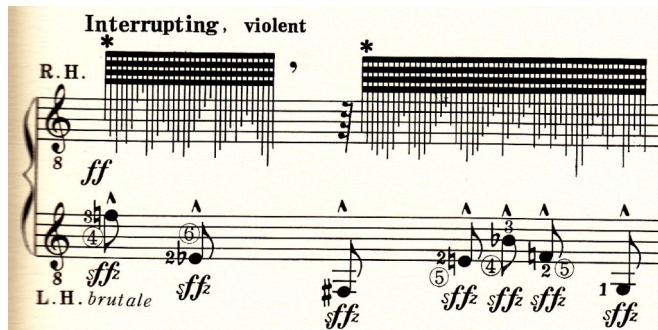
Another example of a tremolo played by the flesh of the thumb can be found in *Shadows* by William Albright. In this example, Albright has notated the entire chord at the beginning of the measure and then gives a squiggly line to represent the thumb tremolo.

CHAPTER 3

PERCUSSIVE SOUNDS

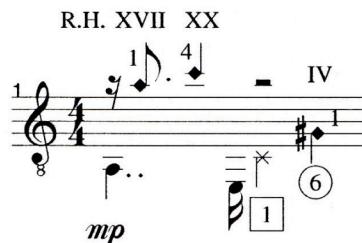
Composers during the last hundred years have often used the guitar as a percussive instrument by hitting the strings or the body of the guitar. I will discuss three basic types of percussive sounds in this chapter. The first is string percussion. This involves hitting the strings at various points to get different sounds. The strings can be struck on the fretboard to get the added sound, or a special quality can be achieved by hitting the strings without the string hitting the fretboard. The later is called the tambora effect and is discussed in section 3.2. The final percussive sound involves hitting the wood of the guitar, called body percussion, and this is discussed in section 3.3.

3.1 String Percussion



Example 3.1 Right hand percussive sounds in movement 4, “Spirits,” from *Shadows* by William Albright. Page 11, System 5.

In the fourth movement, “Spirits,” from the piece titled, *Shadows*, William Albright has the performer slap the “strings against the fretboard with the [right hand] fingers to produce random, fast, percussive sounds.”¹ Albright has notated this section using two staves, the top for the right hand and the bottom for the left hand. He has also given the rhythm. The resulting sound is a mix of bi-tones², noise from the strings hitting the frets, as well as the notes created when the string hits the fret.



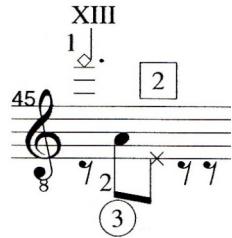
Example 3.2 slapping string in “Jumping Cholla” from *A Whisper in the Desert* by Brad Richter. Measure 1.

In “Jumping Cholla” from *A Whisper in the Desert*, Brad Richter writes that the performer should slap the “[right hand] thumb against the sixth string near the 19th fret.”³ Richter notates this with an “X” notehead and describes what he wants at the bottom of the score. The resulting sound is a mix of noise, from the string hitting the fretboard, and pitch. The nineteenth fret is a spot where there is a harmonic node. The act of slapping the fingerboard brings out this harmonic. A similar effect can be found later in the piece:

¹ William Albright, “IV. Spirits,” from *Shadows*, ed., Michael Lorimer (Pacific: Mel Bay Publications, 1984), 11.

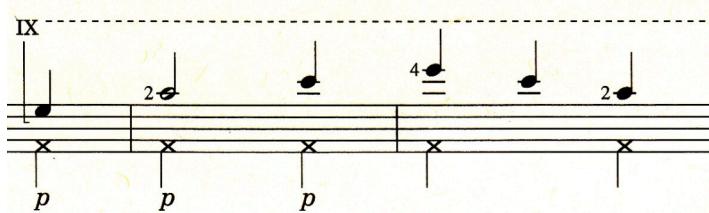
² Bi-tones are discussed in Chapter 1.

³ Brad Richter, *Solo Guitar Collection* (Pacific: Mel Bay Publications, INC, 2005), 8.



Example 3.3 slapping string in “Jumping Cholla” from *A Whisper in the Desert* by Brad Richter. Measure 45.

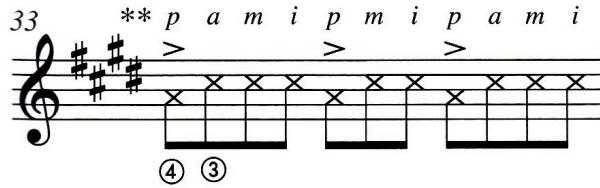
In Example 3.3, Richter notates that the performer should slap the string at the 12th fret. Just like example 3.2, the 12th fret is a harmonic node so the resulting sound will contain the noise from the string hitting the fretboard and that harmonic



Example 3.4 Crossing strings in *Jota* by Francisco Tárrega. Measures 308-309.

Francisco Tárrega creates a percussion sound by crossing the strings in his composition titled, *Jota*. The performer must cross the 5th string over the 6th string. The resulting sound gives the impression of a snare drum. The string crossing is made possible because of the rather loose tension nylon strings have. This would be a much more difficult technique to do with the higher tension steel string guitars used in folk music. The composer should be aware that it does take a second or two for the performer to cross the strings.

A similar technique can be found in “Home is Here,” from *11 Etudes* by Benjamin Verdery:



Example 3.5 Crossing strings in “XI- Home is Here,” from *11 Etudes* by Benjamin Verdery. Measure 33.

In the performance notes Verdery writes that the performer should pull the 4th string over the 3rd string. The first finger of the left hand should hold the 3rd string at the sixth fret while the third finger holds the 4th string at the seventh fret. This is prepared in the measure before where the guitarist plays eighth notes on the open 1st string (Example 3.6):

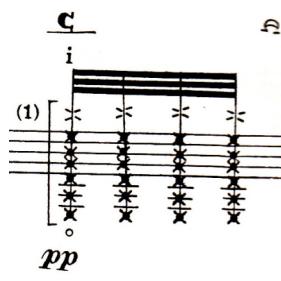


Example 3.6 “Home is Here,” from *11 Etudes* by Benjamin Verdery. Measure 32.

Because the left hand is not used to play the open strings, the performer has time to prepare the string crossing.

3.2 Tambora

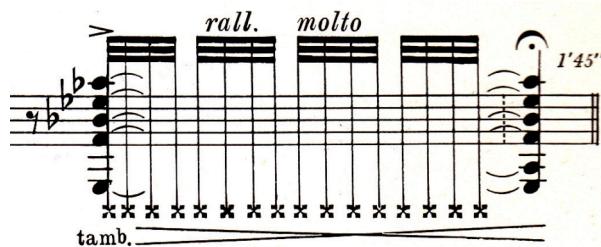
The tambora is a popular percussive effect used in guitar music from the twentieth century. The Harvard Dictionary of Music defines tambora as “a two-headed drum of Latin America. In the Dominican Republic, where it is particularly prominent, it is made from a hollowed tree trunk and played with the bare left hand and a stick held in the right hand.”⁴ A tambora for the guitar involves the performer hitting the guitar, close to the bridge, with the flesh portion of the right hand thumb or fingers. The resulting sound is similar to that of a timpani.



Example 3.7 Tambora in *Las Seis Cuerdas* by Alvaro Company. 4th Movement, measure 10.

There are a variety of ways to notate the tambora effect. In *Las Seis Cuerdas* by Alvaro Company, the tambora effect is notated by using the letter X. Company uses the letter X to notate the left hand notes while the right hand hits the strings.

⁴ Don Michael Randel, ed., *The Harvard Dictionary of Music* (Cambridge: The Belknap Press of Harvard University Press, 2003), 869.



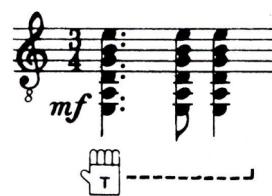
Example 3.8 Tambora in *November Memories* by Reginald Smith Brindle. Measure 25.

Reginald Smith Brindle, in *November Memories*, notates the tambora by writing the complete chord only at the beginning. The remainder of the tambora is notated with an x at the bottom of the stem.

Alberto Ginastera notates three different types of tambora effects in his *Sonata* for guitar, each describing a different way the right hand hits the strings. The first method is to have the palm of the right hand hit the strings. Ginastera notates this with a drawing of an open hand (Figure 3.1).



Figure 3.1 Tambora with the palm of the hand in *Sonata* by Alberto Ginastera.



Example 3.9 Tambora with the palm open in *Sonata* by Alberto Ginastera. 1st Movement, “Esordio.” Page 2, system 5.

An example of this type of tambora from the *Sonata* by Alberto Ginastera can be found in the first movement titled, “Esordio” (Example 3.9). Hitting the strings with the palm of the hand creates a louder, sharper sound than the traditional tambora. This is because the strings hit the fretboard creating extra noise in the attack.

The second type of tambora found in the *Sonata* is the traditional tambora played with the flesh of the thumb close to the bridge. Ginastera notates this type with a drawing of a closed hand with the thumb extended (Figure 3.2).



Figure 3.2 Tambora with the thumb in *Sonata* by Alberto Ginastera.

An example of this type of tambora can be found in the first movement, “Esordio.”



Example 3.10. Tambora with the flesh of the thumb in the first movement, “Esordio,” from *Sonata* by Alberto Ginastera. Page 2, System 1.

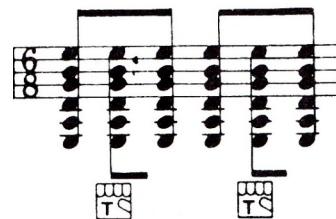
The final type of tambora that Ginastera employs in his *Sonata* involves the guitarist hitting the strings with a closed fist. This technique is found throughout the final

movement of the *Sonata*. Ginastera notates this technique with a drawing of a closed fist (Figure 3.3).



Figure 3.3 Tambora with a closed fist in *Sonata* by Alberto Ginastera.

An example of this can be found in the final movement, “Finale.”



Example 3.11 Tambora with the clenched fist in the fourth movement, “Finale,” from *Sonata* by Alberto Ginastera. Measure 2.

Ginastera uses the closed fist to serve two purposes. The first is to create a percussive attack on the off beats. The second reason is that the closed fist is in the ready position for a rasgueado⁵. Ginastera states in the program notes:

The combination of “rasgueado” and “tambora” is a percussive effect which marks the rhythms at the off beat. The “rasgueado” is achieved by a fast, energetic brushing by the fingers of the right hand. The “tambora” chords are played by the right hand’s clenched fist which hits the strings over the soundhole dryly with the last phalanx of all fingers in order to subdue all vibration. At *fortissimo* the strokes must be sufficiently energetic to cause the strings to rebound against the fingerboard. This effect of Argentinean popular style playing is essential to the fulfillment of the composer’s intentions.⁶

⁵ Rasgueado’s are discussed in Chapter 5.

⁶ Alberto Ginastera, *Sonata* for Guitar, (London: Boosey & Hawkes, 1978), 11.

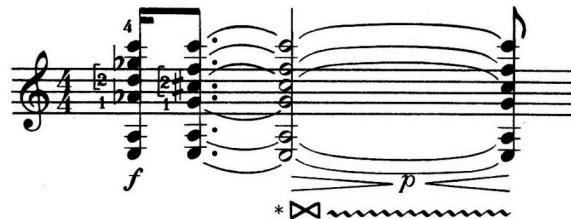
Hushed and suspended ($\text{♩} = 44$)

*tamb. tremolando** ♩ sim. ♩

*ppp**Drum ⑥—④ with the fleshy pads of *i* and *m*
or with the soft ball of *p*.

Example 3.12 Tambora tremolando in *Shadows* by William Albright. 3rd Movement, “Nights,” measure 1.

William Albright employs a tambora tremolando in the third movement of his solo guitar piece, *Shadows*. The technique is easy to do and sounds like a quiet tremolo with a timpani. Another example of this can be found throughout the first movement, titled, “Lamentacion de la Muerte,” from *Four Poems of Garcia Lorca* by Reginald Smith Brindle (Example 3.12).



Example 3.13. Drum roll in *Four Poems of Garcia Lorca* by Reginald Smith Brindle. 1st Movement, “Lamentacion de la Muerte,” measure 1.

3.3 Body Percussion

Body percussion is any percussive sound created by hitting the wood of the guitar. The golpe is a common body percussive technique that involves a right hand finger, usually the ring finger, hitting the wood just below the bridge.



Example 3.14 Golpes in *Shadows* by William Albright. 2nd Movement, “Tierra,” Page 7, system 6.

William Albright uses golpes in the second movement of *Shadows*. In the score, Albright writes that the golpes should be “of the loudest and brightest pitch possible.”⁷ This would suggest that the performer would use the nail from the right hand to hit the wood of the guitar. Golpes are usually notated with a box notehead although, sometimes composers will use an X as a notehead and write golpe above.

* (strike body of instrument with all fingers flat)

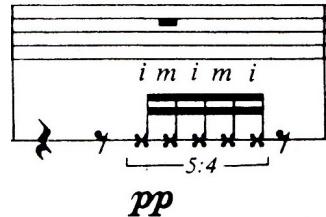
Example 3.15 Percussion on the body of the guitar in *Four Poems of Garcia Lorca* by Reginald Smith Brindle. 3rd Movement, “Tierra Seca,” measures 1-2.

Reginald Smith Brindle, in the third movement of his *Four Poems of Garcia Lorca*, uses percussion on the body of the guitar. Brindle writes that the performer should “strike [the] body of instrument with all fingers flat.”⁸ Brindle is telling the

⁷ William Albright, *Shadows* ed., Michael Lorimer (Pacific: Mel Bay Publications, INC., 1984), 7.

⁸ Reginald Smith Brindle, *Four Poems of Garcia Lorca* (London: Schott & Company, 1977), 8.

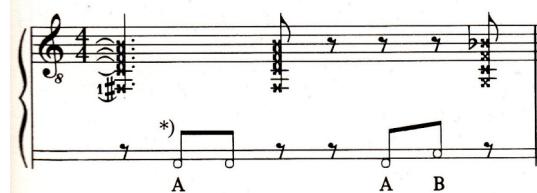
performer to use the finger pads and not use nails. The resulting sound will have less of an attack.



Example 3.16 Tapping the body of the guitar in *Sonata* by Alberto Ginastera. 2nd Movement, “Scherzo,” measure 86.

Alberto Ginastera also uses tapping on the body of the guitar in his *Sonata*.

Ginastera states in the performance notes that the performer should “tap on the sound box with the knuckles.”⁹



Example 3.17 Hitting various parts of the guitar in *Royal Winter Music* by Hans Werner Henze. Movement 1, “Gloucester,” Measure 99.

Hans Werner Henze uses body percussion throughout his *Royal Winter Music*.

Henze notates the percussion on a different staff and labels three areas on the guitar that should be used for the percussion. He uses A, B and C to label the spots. In the

⁹ Alberto Ginastera, *Sonata for Guitar* (London: Boosey & Hawkes, 1978), Unnumbered Performance Notes.

performance notes he gives a diagram of a guitar with an explanation on the locations of these spots (Figure 3.4):

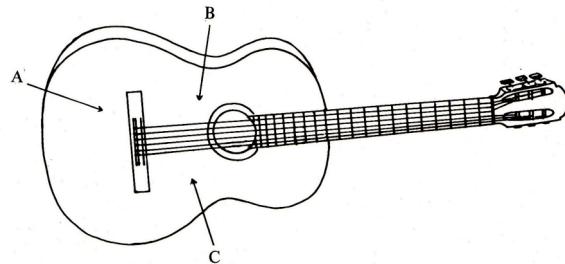
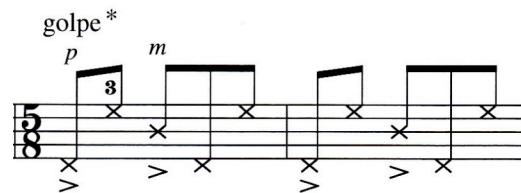


Figure 3.4 Percussion diagram in *Royal Winter Music* by Hans Werner Henze.



Example 3.18 Hitting the wood of the guitar in “III- Worry Knot” from *11 Etudes* by Benjamin Verdery. Measures 35-36.

Benjamin Verdery, in, “Worry Knot,” from *11 Etudes*, asks the guitarist to perform percussive effects at various points on the guitar. Instead of having a diagram of a guitar and pointing to spots like Henze did in the previous example, Verdery assigns different locations on the staff to indicate where the percussive effect should happen (Figure 3.5).

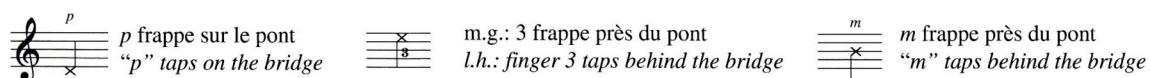
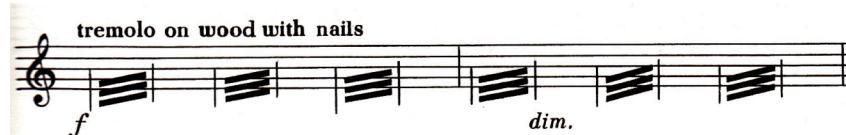


Figure 3.5 “Worry Knot” from *11 Etudes* by Benjamin Verdery.

Verdery identifies three different ways to hit the instrument: the thumb “taps on the bridge,” the left hand finger “taps behind the bridge,” and the middle finger of the right hand “taps behind the bridge.”¹⁰



Example 3.19 Tremolo on the wood of the guitar in *A Sad Humoresque* by Phyllis Tate. Measure 38.

The final example comes from *A Sad Humoresque* by Phyllis Tate. In this example the performer performs a tremolo on the wood of the guitar with the nails. The nails will give this a brighter sound.

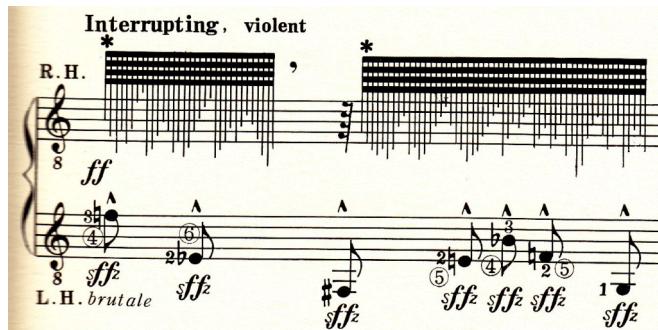
¹⁰ Benjamin Verdery, *11 Etudes* (Québec: Les Éditions Doberman-Yppan, 2005), 7.

CHAPTER 3

PERCUSSIVE SOUNDS

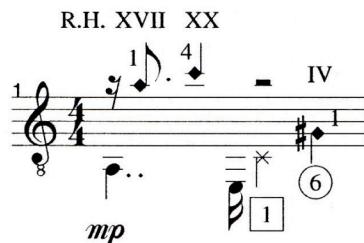
Composers during the last hundred years have often used the guitar as a percussive instrument by hitting the strings or the body of the guitar. I will discuss three basic types of percussive sounds in this chapter. The first is string percussion. This involves hitting the strings at various points to get different sounds. The strings can be struck on the fretboard to get the added sound, or a special quality can be achieved by hitting the strings without the string hitting the fretboard. The later is called the tambora effect and is discussed in section 3.2. The final percussive sound involves hitting the wood of the guitar, called body percussion, and this is discussed in section 3.3.

3.1 String Percussion



Example 3.1 Right hand percussive sounds in movement 4, “Spirits,” from *Shadows* by William Albright. Page 11, System 5.

In the fourth movement, “Spirits,” from the piece titled, *Shadows*, William Albright has the performer slap the “strings against the fretboard with the [right hand] fingers to produce random, fast, percussive sounds.”¹ Albright has notated this section using two staves, the top for the right hand and the bottom for the left hand. He has also given the rhythm. The resulting sound is a mix of bi-tones², noise from the strings hitting the frets, as well as the notes created when the string hits the fret.



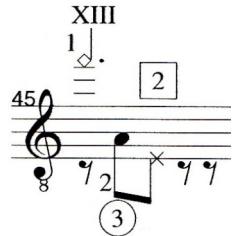
Example 3.2 slapping string in “Jumping Cholla” from *A Whisper in the Desert* by Brad Richter. Measure 1.

In “Jumping Cholla” from *A Whisper in the Desert*, Brad Richter writes that the performer should slap the “[right hand] thumb against the sixth string near the 19th fret.”³ Richter notates this with an “X” notehead and describes what he wants at the bottom of the score. The resulting sound is a mix of noise, from the string hitting the fretboard, and pitch. The nineteenth fret is a spot where there is a harmonic node. The act of slapping the fingerboard brings out this harmonic. A similar effect can be found later in the piece:

¹ William Albright, “IV. Spirits,” from *Shadows*, ed., Michael Lorimer (Pacific: Mel Bay Publications, 1984), 11.

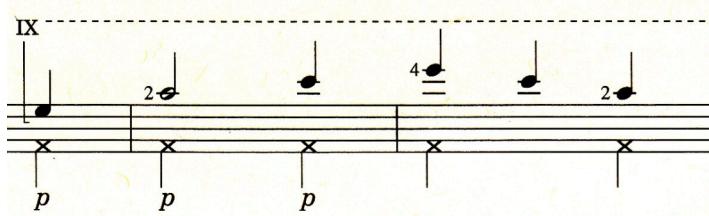
² Bi-tones are discussed in Chapter 1.

³ Brad Richter, *Solo Guitar Collection* (Pacific: Mel Bay Publications, INC, 2005), 8.



Example 3.3 slapping string in “Jumping Cholla” from *A Whisper in the Desert* by Brad Richter. Measure 45.

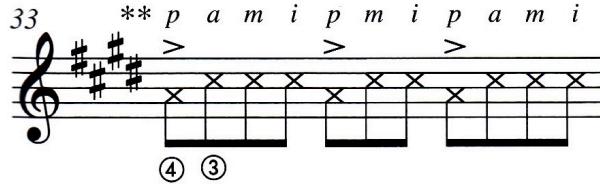
In Example 3.3, Richter notates that the performer should slap the string at the 12th fret. Just like example 3.2, the 12th fret is a harmonic node so the resulting sound will contain the noise from the string hitting the fretboard and that harmonic



Example 3.4 Crossing strings in *Jota* by Francisco Tárrega. Measures 308-309.

Francisco Tárrega creates a percussion sound by crossing the strings in his composition titled, *Jota*. The performer must cross the 5th string over the 6th string. The resulting sound gives the impression of a snare drum. The string crossing is made possible because of the rather loose tension nylon strings have. This would be a much more difficult technique to do with the higher tension steel string guitars used in folk music. The composer should be aware that it does take a second or two for the performer to cross the strings.

A similar technique can be found in “Home is Here,” from *11 Etudes* by Benjamin Verdery:



Example 3.5 Crossing strings in “XI- Home is Here,” from *11 Etudes* by Benjamin Verdery. Measure 33.

In the performance notes Verdery writes that the performer should pull the 4th string over the 3rd string. The first finger of the left hand should hold the 3rd string at the sixth fret while the third finger holds the 4th string at the seventh fret. This is prepared in the measure before where the guitarist plays eighth notes on the open 1st string (Example 3.6):

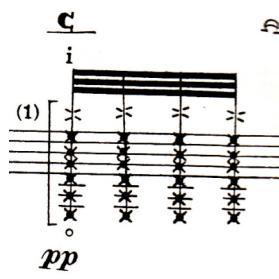


Example 3.6 “Home is Here,” from *11 Etudes* by Benjamin Verdery. Measure 32.

Because the left hand is not used to play the open strings, the performer has time to prepare the string crossing.

3.2 Tambora

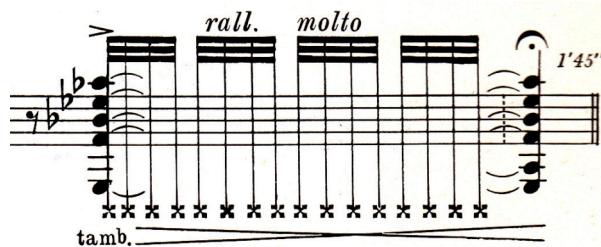
The tambora is a popular percussive effect used in guitar music from the twentieth century. The Harvard Dictionary of Music defines tambora as “a two-headed drum of Latin America. In the Dominican Republic, where it is particularly prominent, it is made from a hollowed tree trunk and played with the bare left hand and a stick held in the right hand.”⁴ A tambora for the guitar involves the performer hitting the guitar, close to the bridge, with the flesh portion of the right hand thumb or fingers. The resulting sound is similar to that of a timpani.



Example 3.7 Tambora in *Las Seis Cuerdas* by Alvaro Company. 4th Movement, measure 10.

There are a variety of ways to notate the tambora effect. In *Las Seis Cuerdas* by Alvaro Company, the tambora effect is notated by using the letter X. Company uses the letter X to notate the left hand notes while the right hand hits the strings.

⁴ Don Michael Randel, ed., *The Harvard Dictionary of Music* (Cambridge: The Belknap Press of Harvard University Press, 2003), 869.



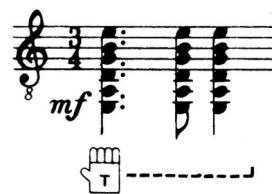
Example 3.8 Tambora in *November Memories* by Reginald Smith Brindle. Measure 25.

Reginald Smith Brindle, in *November Memories*, notates the tambora by writing the complete chord only at the beginning. The remainder of the tambora is notated with an x at the bottom of the stem.

Alberto Ginastera notates three different types of tambora effects in his *Sonata* for guitar, each describing a different way the right hand hits the strings. The first method is to have the palm of the right hand hit the strings. Ginastera notates this with a drawing of an open hand (Figure 3.1).



Figure 3.1 Tambora with the palm of the hand in *Sonata* by Alberto Ginastera.



Example 3.9 Tambora with the palm open in *Sonata* by Alberto Ginastera. 1st Movement, “Esordio.” Page 2, system 5.

An example of this type of tambora from the *Sonata* by Alberto Ginastera can be found in the first movement titled, “Esordio” (Example 3.9). Hitting the strings with the palm of the hand creates a louder, sharper sound than the traditional tambora. This is because the strings hit the fretboard creating extra noise in the attack.

The second type of tambora found in the *Sonata* is the traditional tambora played with the flesh of the thumb close to the bridge. Ginastera notates this type with a drawing of a closed hand with the thumb extended (Figure 3.2).



Figure 3.2 Tambora with the thumb in *Sonata* by Alberto Ginastera.

An example of this type of tambora can be found in the first movement, “Esordio.”



Example 3.10. Tambora with the flesh of the thumb in the first movement, “Esordio,” from *Sonata* by Alberto Ginastera. Page 2, System 1.

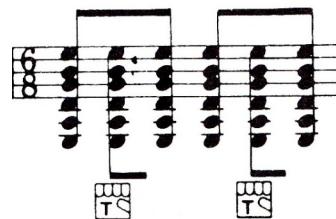
The final type of tambora that Ginastera employs in his *Sonata* involves the guitarist hitting the strings with a closed fist. This technique is found throughout the final

movement of the *Sonata*. Ginastera notates this technique with a drawing of a closed fist (Figure 3.3).



Figure 3.3 Tambora with a closed fist in *Sonata* by Alberto Ginastera.

An example of this can be found in the final movement, “Finale.”



Example 3.11 Tambora with the clenched fist in the fourth movement, “Finale,” from *Sonata* by Alberto Ginastera. Measure 2.

Ginastera uses the closed fist to serve two purposes. The first is to create a percussive attack on the off beats. The second reason is that the closed fist is in the ready position for a rasgueado⁵. Ginastera states in the program notes:

The combination of “rasgueado” and “tambora” is a percussive effect which marks the rhythms at the off beat. The “rasgueado” is achieved by a fast, energetic brushing by the fingers of the right hand. The “tambora” chords are played by the right hand’s clenched fist which hits the strings over the soundhole dryly with the last phalanx of all fingers in order to subdue all vibration. At *fortissimo* the strokes must be sufficiently energetic to cause the strings to rebound against the fingerboard. This effect of Argentinean popular style playing is essential to the fulfillment of the composer’s intentions.⁶

⁵ Rasgueado’s are discussed in Chapter 5.

⁶ Alberto Ginastera, *Sonata* for Guitar, (London: Boosey & Hawkes, 1978), 11.

Hushed and suspended ($\text{♩} = 44$)

*tamb. tremolando** ♩ sim. ♩

*ppp**Drum ⑥—④ with the fleshy pads of *i* and *m* or with the soft ball of *p*.

Example 3.12 Tambora tremolando in *Shadows* by William Albright. 3rd Movement, “Nights,” measure 1.

William Albright employs a tambora tremolando in the third movement of his solo guitar piece, *Shadows*. The technique is easy to do and sounds like a quiet tremolo with a timpani. Another example of this can be found throughout the first movement, titled, “Lamentacion de la Muerte,” from *Four Poems of Garcia Lorca* by Reginald Smith Brindle (Example 3.12).

Example 3.13. Drum roll in *Four Poems of Garcia Lorca* by Reginald Smith Brindle. 1st Movement, “Lamentacion de la Muerte,” measure 1.

3.3 Body Percussion

Body percussion is any percussive sound created by hitting the wood of the guitar. The golpe is a common body percussive technique that involves a right hand finger, usually the ring finger, hitting the wood just below the bridge.



Example 3.14 Golpes in *Shadows* by William Albright. 2nd Movement, “Tierra,” Page 7, system 6.

William Albright uses golpes in the second movement of *Shadows*. In the score, Albright writes that the golpes should be “of the loudest and brightest pitch possible.”⁷ This would suggest that the performer would use the nail from the right hand to hit the wood of the guitar. Golpes are usually notated with a box notehead although, sometimes composers will use an X as a notehead and write golpe above.

* (strike body of instrument with all fingers flat)

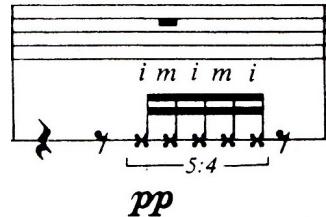
Example 3.15 Percussion on the body of the guitar in *Four Poems of Garcia Lorca* by Reginald Smith Brindle. 3rd Movement, “Tierra Seca,” measures 1-2.

Reginald Smith Brindle, in the third movement of his *Four Poems of Garcia Lorca*, uses percussion on the body of the guitar. Brindle writes that the performer should “strike [the] body of instrument with all fingers flat.”⁸ Brindle is telling the

⁷ William Albright, *Shadows* ed., Michael Lorimer (Pacific: Mel Bay Publications, INC., 1984), 7.

⁸ Reginald Smith Brindle, *Four Poems of Garcia Lorca* (London: Schott & Company, 1977), 8.

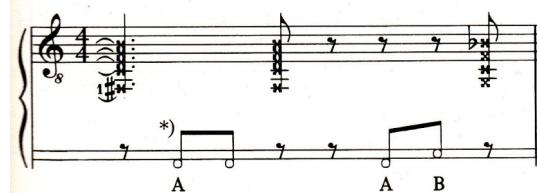
performer to use the finger pads and not use nails. The resulting sound will have less of an attack.



Example 3.16 Tapping the body of the guitar in *Sonata* by Alberto Ginastera. 2nd Movement, “Scherzo,” measure 86.

Alberto Ginastera also uses tapping on the body of the guitar in his *Sonata*.

Ginastera states in the performance notes that the performer should “tap on the sound box with the knuckles.”⁹



Example 3.17 Hitting various parts of the guitar in *Royal Winter Music* by Hans Werner Henze. Movement 1, “Gloucester,” Measure 99.

Hans Werner Henze uses body percussion throughout his *Royal Winter Music*.

Henze notates the percussion on a different staff and labels three areas on the guitar that should be used for the percussion. He uses A, B and C to label the spots. In the

⁹ Alberto Ginastera, *Sonata for Guitar* (London: Boosey & Hawkes, 1978), Unnumbered Performance Notes.

performance notes he gives a diagram of a guitar with an explanation on the locations of these spots (Figure 3.4):

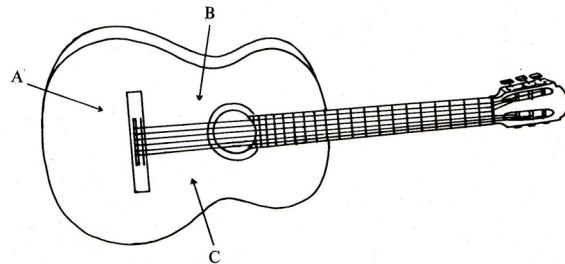
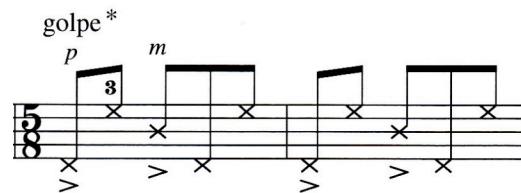


Figure 3.4 Percussion diagram in *Royal Winter Music* by Hans Werner Henze.



Example 3.18 Hitting the wood of the guitar in “III- Worry Knot” from *11 Etudes* by Benjamin Verdery. Measures 35-36.

Benjamin Verdery, in, “Worry Knot,” from *11 Etudes*, asks the guitarist to perform percussive effects at various points on the guitar. Instead of having a diagram of a guitar and pointing to spots like Henze did in the previous example, Verdery assigns different locations on the staff to indicate where the percussive effect should happen (Figure 3.5).

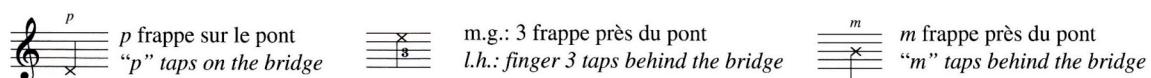


Figure 3.5 “Worry Knot” from *11 Etudes* by Benjamin Verdery.

Verdery identifies three different ways to hit the instrument: the thumb “taps on the bridge,” the left hand finger “taps behind the bridge,” and the middle finger of the right hand “taps behind the bridge.”¹⁰



Example 3.19 Tremolo on the wood of the guitar in *A Sad Humoresque* by Phyllis Tate. Measure 38.

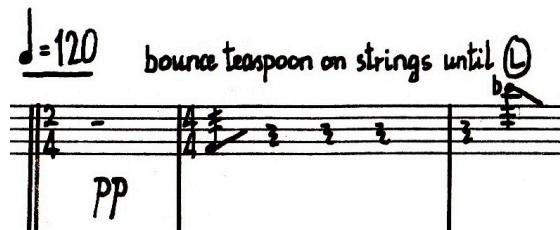
The final example comes from *A Sad Humoresque* by Phyllis Tate. In this example the performer performs a tremolo on the wood of the guitar with the nails. The nails will give this a brighter sound.

¹⁰ Benjamin Verdery, *11 Etudes* (Québec: Les Éditions Doberman-Yppan, 2005), 7.

CHAPTER 4

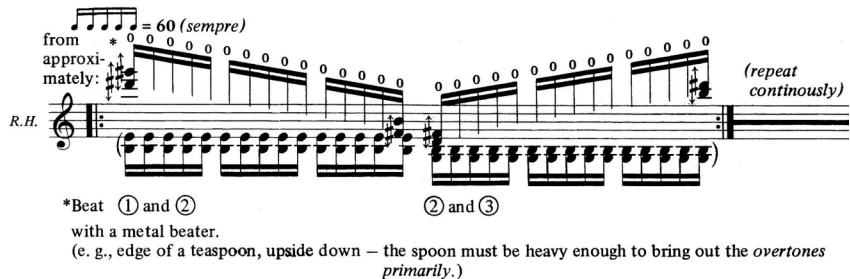
WITH OBJECTS

In the twentieth and twenty-first centuries composers have incorporated objects to alter the sound of the instrument. This includes preparing the guitar with various objects as well as using different objects to activate the string. For example, teaspoons have been used to create tremolos, bottle neck slides used for glissandi and matchsticks have been woven into the strings to give a percussive sound, just to name a few.



Example 4.1 Bouncing a spoon on strings in *A Horse, His Name was Hungry Fencewaver Walkins* by David Bedford. Rehearsal K and L, page 26.

In *A Horse, His Name was Hungry Fencewaver Walkins* by David Bedford, the performer uses a teaspoon to create a tremolo effect. This effect is created by bouncing the spoon on the string with the right hand while fretting the note with the left hand. The composer should give the performer a couple of seconds to grab and prepare the spoon, similar to the length of time given to a violinist when switching to a mute.



Example 4.2 Bouncing a spoon on strings in *Serenades of the Unicorn* by Einojuhani Rautavaara. 2nd Movement, “Serenading a Pair of Giggly Nymphs (Drunk of Night). Measure 1.

Einojuhani Rautavaara, in *Serenades of the Unicorn*, also calls for the performer to bounce a spoon on the strings. Rautavaara gives an approximate starting pitch and indicates the general contour of the rhythm of the bouncing spoon. In addition to that, he indicates that on the descending figure the spoon should bounce on the first two strings while on the ascending figure the spoon should bounce on the second and third strings.

After the introduction, Rautavaara continues with the bouncing spoon in the right hand and adds hammer-ons¹ and glissandi in the left hand (Example 4-3).

R.H. L.H.

$\text{♩} = 96$

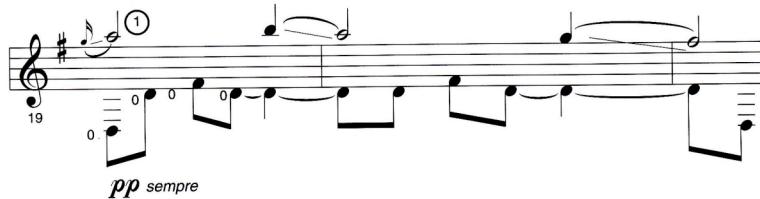
(6) (5) (6) (5) (6)

gliss.

Hit the string with left hand finger. (Use the wire strings whenever possible.)

Example 4.3. 2nd Movement, “Serenading a Pair of Giggly Nymphs (Drunk of Night)” from *Serenades of the Unicorn* by Einojuhani Rautavaara. Measures 2-4.

¹ Hammer-ons are played by hitting the fret with the left hand hard enough to get the string to activate. This is a way to play notes without plucking with the right hand fingers.



Example 4.4 Using a slide in “Keanae, HI” from *Some Towns and Cities* by Benjamin Verdery. Measures 19-21.

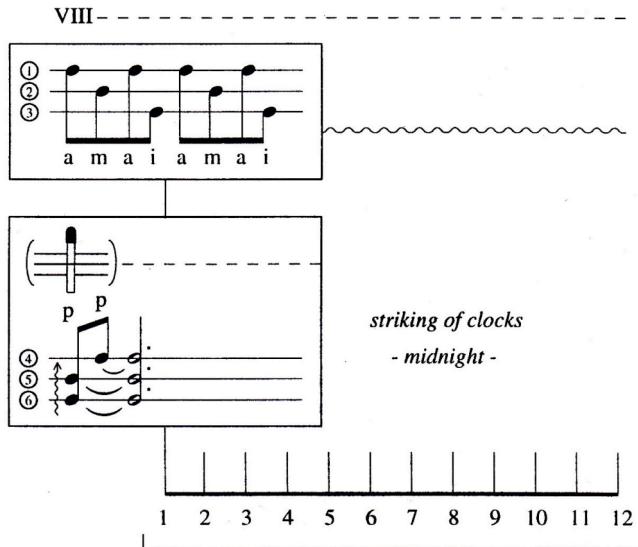
In the movement, “Keanae, HI” from *Some Towns and Cities* by Benjamin Verdery, the performer uses a slide to create glissandi in the melodic voice. The use of a slide can be found throughout the guitar literature in Rock and Blues music. In those styles it is used to play notes just slightly flat or sharp of pitch, as well as to create glissandi to and from pitches.

The slide is a metal or plastic cylinder that slips over anyone of the left hand fingers. As seen in the first couple of examples in this chapter, the composer should give the guitarist a couple of seconds to prepare the slide (Example 4.5).

Place slide bar on 3 or 4 during arpeggio

Example 4.5 “Keanae, HI,” from *Some Towns and Cities* by Benjamin Verdery. Measure 15.

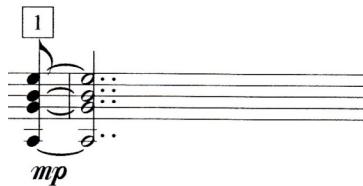
A few measures before the guitarist is to use the slide, Verdery has written a group of open notes so that while the right hand is playing the open strings the left hand prepares the slide.²



Example 4.6 Matchsticks in *Piece with Clocks* by Nikita Koshkin. Page 3, system 1.

In *Piece with Clocks*, by Nikita Koshkin, the guitar is prepared by using a matchstick that is inserted in the strings. In the score, Koshkin has diagrammed how the matchstick should be prepared. The matchstick should cover the fourth, fifth, and sixth strings. The matchstick mutes the strings and gives the guitar a percussive sound. Meanwhile, the upper three strings are played normally. This gives the aural impression of two instruments being played. The first is the guitar sound (first three strings) and the second is the percussive sounds (bottom three strings.)

² In “Keanae, HI” the guitar is tuned differently than the normal tuning. From first to sixth string: D, A, F-sharp, D, G, D.



Example 4.7 Matchstick in “Clock Strikes Midnight” from *Three Little Nightmares* by Brad Richter. Measures 1-2.

Sticking with the clock theme and using matchsticks, Brad Richter in “Clock Strikes Midnight,” from *Three Little Nightmares*, calls for two matchsticks to be woven into the strings. Richter explains in the performance notes how the matchsticks should be placed:

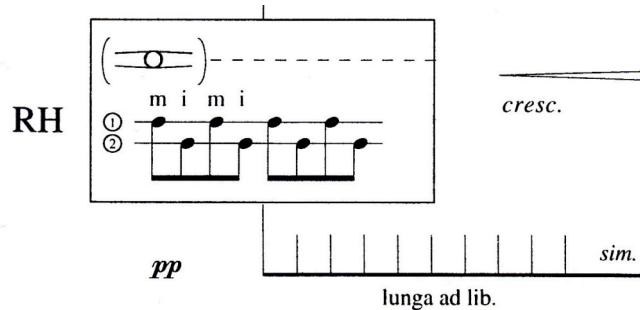
Place two wooden match sticks in the strings. One should be ‘woven’ under the first string, over the second and back under the third string at the second fret. Be sure the match does not touch the fourth string. The other match should be woven under the sixth string, over the fifth string and back under the fourth string about 5 cm from the bridge. Be sure this match does not touch the third string. Though placing the matches in the strings changes the pitches as well as the timbre of the open strings, the open strings are notated in standard pitch.³

Example 4.8 Folded newspaper under the strings in *A Horse, his Name was Hungry Fencewaver Walkins* by David Bedford. Rehearsal J.

In *A Horse, his Name was Hungry Fencewaver Walkins* by David Bedford, the guitarist inserts folded newspaper under the strings in order “to produce [a] dry, rattling

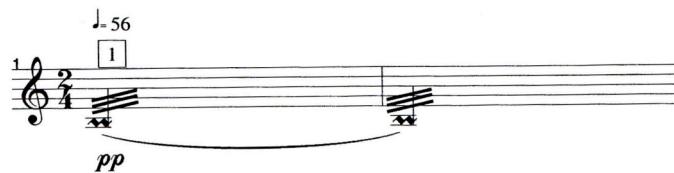
³³ Brad Richter, Solo Guitar Collection (Pacific: Mel Bay Publications, INC, 2005), 31.

sound.”⁴ This is a similar effect to the matchstick in the previous example. The difference is that the newspaper will create a “rattling sound” because the paper is not as stiff as the matchstick.



Example 4.9 Using a cork in between the strings in *Piece with Clocks* by Nikita Koshkin. Page 15, system 2.

In addition to the matchsticks, Koshkin, in *Piece with Clocks*, prepares the guitar with a cork. The cork is placed in between the first and the second strings. This creates a percussive sound similar to the matchstick sound.



Example 4.10 Clothespin in “I felt a Funeral in My Brain” from *Three Little Nightmares* by Brad Richter. Measures 1-2.

In “I felt a funeral in My Brain” from *Three Little Nightmares*, Brad Richter specifies that the performer should attach a clothespin to the sixth string of the guitar. Richter states in the performance notes:

⁴ David Bedford, *A Horse, His Name was Henry Fencewaver Walkins* (London: Universal Edition, 1978), 23.

Attach a clothespin to the sixth string (2-3 cm. from the bridge). Let it lean against the fifth string such that when the clothes pin is pulled back and released, it bounces on the fifth string for around three seconds. The piece begins by letting the clothespin bounce twice in this manner.⁵

The aural impression given by the bouncing clothespin is that of a snare drum. Richter uses the percussive clothespin along with open and fretted notes to give the impression of a funeral march (Example 4.11).



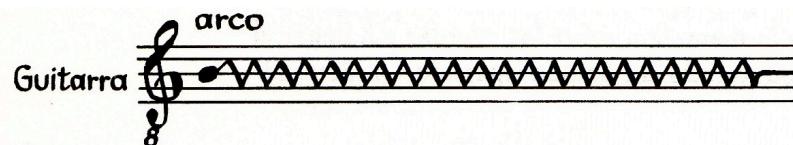
Example 4.11 Clothespin in “I felt a Funeral in My Brain” from *Three Little Nightmares* by Brad Richter. Measures 5-6.

Example 4.12 Playing the guitar with a bow in *A Horse, his Name was Hunry Fencewaver Walkins* by David Bedford. Rehearsal L

In *A Horse, his Name was Hunry Fencewaver Walkins*, David Bedford calls for the guitarist to play with a double bass bow. Bedford adds a theatrical element in that the guitarist should walk over to the bass player and take the bass bow.

⁵ Brad Richter, *Solo Guitar Collection* (Pacific: Mel Bay Publications, INC, 2005), 36.

Due to the construction of the guitar, it is difficult to play individual lines, using a bow, with any kind of accuracy. The guitar bridge, unlike the violin bridge, is flat, therefore it would be impossible to bow the inner strings separately. However, it would be possible to bow the outer two strings separately. In this example (Example 4.12) by Bedford, the guitarist bows all six strings at the same time.



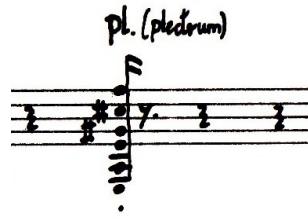
Example 4.13 Playing the guitar with a bow in *Memorias de “El Cimarrón”* by Hans Werner Henze. 1st Movement, system 1.

Hans Werner Henze, in *Memorias de “El Cimarrón,”* also makes use of the bow. In this example, the performer is to alternate between harmonics at the twelfth fret and nineteenth frets. In the performance notes, Henze states that “the guitar should be held between the legs like a violincello.”⁶ In addition, Henze recommends that a cello bow be used, “because of its weight and size.”⁷ Finally, Henze states, “It is recommended that one plays ‘sul ponticello’ (on the bridge) with the bow throughout, so that the rosin does not affect the middle position of the right hand; furthermore, this style of playing produces a sound which is richer in partials.”⁸

⁶ Hans Werner Henze, *Memorias de “El Cimarrón,”* (London: Schot & Co., 1973), 6.

⁷ Ibid., 6.

⁸ Ibid., 6.



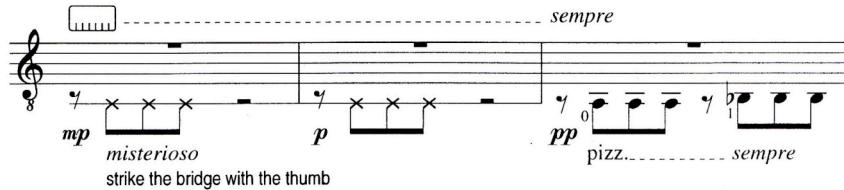
Example 4.14 Plucking the guitar with a pick in *A Horse, his Name was Hungry Fencewaver Walkins* by David Bedford. Measure 5.

In *A Horse, his Name was Hungry Fencewaver Walkins*, David Bedford has the guitarist perform for a bit with a plectrum, or pick, as it is often referred to. Picks are usually made of plastic, although sometimes metal, and are generally triangular in shape. Picks are rarely used in classical guitar music, but quite common in other styles of guitar playing. A pick gives a brighter, thinner sound, compared to the use of the flesh and nail as in traditional classical guitar playing.

A musical staff with a tempo marking of $\text{♩} = 48$. The instruction "Slow and ghostly, with a whispering tremolando*" is written above the staff. The first note is marked with "ppp". The instruction "(6) semper" is written below the staff. The notes are small and rapid, indicating a tremolo effect.

Example 4.15 Tremolo with a pick from the 1st movement, “Open,” from *Shadows* by William Albright. Page 4, system 1.

The opening of the first movement from the piece, *Shadows*, by William Albright, the guitarist is asked to use a pick to create the opening tremolo.



Example 4.16 Con sordino in *Piece with Clocks* by Nikita Koshkin. Page 6, system 1.

Nikita Koshkin, in *Piece with Clocks*, incorporates a guitar mute into the piece.

The guitar mute is generally made out of foam and attaches to the strings at the bridge, similar to a violin mute. The guitar mute is rarely used in the classical guitar literature. The mute does two things, first, it lowers the volume, and second, it does not allow the strings to ring for very long.

CHAPTER 5

BORROWED FROM OTHER TRADITIONS

5.1 The Rasgueado

The Harvard Dictionary of Music defines the rasgueado as “a style of guitar playing in which the strings are strummed, as distinct from *punteado*, in which individual strings are plucked.”¹ The rasgueado is a strumming technique commonly found in flamenco and latin style guitar playing. Rasgueados are good for increasing the volume of the guitar. There are a variety of ways to perform a rasgueado. One way is to fan the right hand fingers across the six strings creating quick, successive attacks. Generally it begins with the pinky (labeled *c*), followed by the ring finger (labeled *a*), followed by the middle finger (labeled *m*) and concluding with the index finger (labeled *i*). This can also be incorporated with the thumb (labeled *p*) in various permutations. Another way to perform a rasgueado is to strum quickly with one right hand finger. The finger moves up and down across the strings.

There are a couple different ways to notate the rasgueado. One thing they all have in common is that the word rasgueado, or an abbreviation, will be included in the score.

¹ Don Michael Randel, ed., *The Harvard Dictionary of Music* (Cambridge: The Belknap Press of Harvard University Press, 2003), 705.



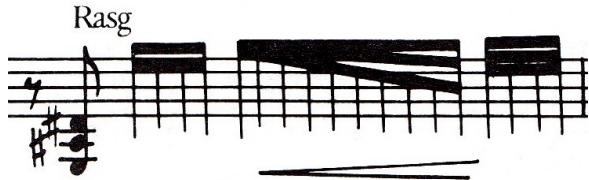
Example 5.1 Rasgueado from the 7th movement, “Tarantas,” from *Shadows* by William Albright. Measure 1.

William Albright uses a rasgueado in the 7th movement of *Shadows*. Example 5.1 begins with a quick arpeggiation of a chord using the thumb. The rasgueado begins with the encircled notes.



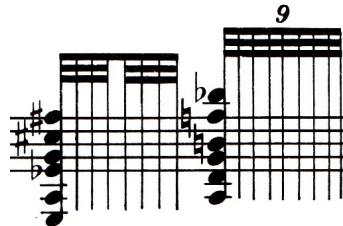
Example 5.2 Rasgueado in *Couleurs* by Edith Lejet. Measure 13.

Edith Lejet notates the rasgueado in her piece, *Couleurs*, by using a tremolo articulation and indicating that it should be performed as a rasgueado. Lejet also gives an indication of how it should be performed. The *c,a,m,i* indications tell the performer what left hand fingers should be used. The arrows give the direction the fingers should strum. An arrow pointing up tells the performer that the rasgueado should go from low pitch to high pitch.



Example 5.3 Rasgueado from the 3rd movement, “De Velocite,” from *3 Preludes pour “Fatum”* by Charles Chaynes. Measure 5.

Example 5.3 from the 3rd movement of Charles Chaynes' *3 Preludes pour “Fatum,”* uses a popular way of notating the rasgueado. The first chord is given followed by the rhythm of the rasgueado. Luciano Berio, in *Sequenza XI*, notates a rasgueado similarly (Example 5.4):



Example 5.4 Rasgueado in *Sequenza XI* by Luciano Berio. Page 1, system 3.

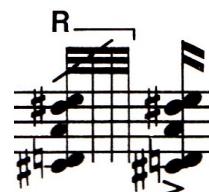
Luciano Berio's *Sequenza XI* is a fourteen minute tour-de-force that contains many different types of rasgueados. Berio states that he was trying to fuse elements from the classical and flamenco styles in this work. He says, “In *Sequenza XI* two instrumental and gestural styles are also present, one having its roots in the flamenco guitar tradition, and the other in that of the classical guitar.”²

² Luciano Berio, “Sequenzas.” Liner notes for *Berio: Sequenzas 20/21 Series* (Deutsche Grammophon GmbH, Hamburg, 1998. CD 457 038-2 GH3), 20.



Example 5.5 Rasgueado in *Sequenza XI* by Luciano Berio. Page 1, system 2.

In Example 5.5, Berio writes in the performance notes that the rasgueado should be achieved by using the *c, a, m, i* fingers of the right hand creating a “fast grace note rasgueado.”³ Berio notates four stems, each representing a different attack by the four different right hand fingers.



Example 5.6 Rasgueado in *Sequenza XI* by Luciano Berio. Page 1, system 4.

Berio describes Example 5.6 in the program notes as a “fast grace note rasgueado followed by an accented chord.”⁴ The grace note rasgueado’s should be performed the same as Example 5.5. The additional accented chord should be performed by the thumb.



³ Luciano Berio, *Sequenza XI* (Wein: Universal Edition, 1988), Performance Notes.

⁴ Ibid., Performance Notes.

Example 5.7 Rasgueado in *Sequenza XI* by Luciano Berio. Page 1, system 3.

Berio describes the rasgueado in example 7 as played, “as fast as possible:

continuous rasgueado as in flamenco.”⁵ Berio then goes on to say that it can be played using a combination of fingers and thumb, or can be strummed up and down with a single right hand finger.

5.2 Scordatura

Scordatura is a common technique found throughout the literature of the guitar. The most common alternate tuning would be what is referred to as “drop D” tuning (Figure 5.1).



Figure 5.1 Drop-D Tuning.

In Drop-D tuning the sixth string is tuned from the pitch E, down to a D. This is often used in pieces that are in the key of D major because it allows the tonic to be the lowest sounding note, and the open fifth string A, is the dominant.

Recently composers have used scordatura to evoke sounds from different cultures. A good example of this can be found in *Koyunbaba* by the Italian guitarist/composer, Carlo Domeniconi. In *Koyunbaba*, Domeniconi draws from Turkish music and he uses

⁵ Luciano Berio, *Sequenza XI* (Wein: Universal Edition, 1988), Performance Notes.

scordatura to facilitate this.⁶ Domeniconi calls for the open strings to be tuned to a D minor chord (Figure 5.2).⁷

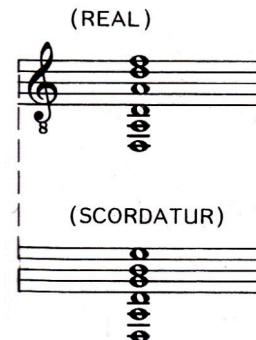


Figure 5.2 Scordatura in *Koyunbaba* by Carlo Domeniconi.

Domeniconi notates *Koyunbaba* using two staves. The top staff, which Domeniconi describes as ‘real,’ is the sounding pitch. The bottom staff, which Domeniconi describes as ‘scordatur,’ is used to help the performer play the proper notes. *Koyunbaba* uses a tuning that is quite different compared to standard guitar tuning. When a guitarist sees a C5 notated, the location of that note is clear in the mind of the performer. If that string is tuned up a minor 3rd, as is the case in this piece, then the location of C5 is not as clear. Domeniconi notates the music in the bottom staff as if it were in drop-D tuning (see Example 5.8).

⁶ Joseph Martinez, “The Guitar Music of Carlo Domeniconi,” *Soundboard* 35, no. 2: 33-4.

⁷ Domeniconi then states, on page 21 in the score, that the guitarist should tune the strings $\frac{1}{2}$ step lower and tune the guitar to a C-sharp minor chord. He does not give a reason for this but I speculate that by tuning the first string up a half step might lead to broken strings.

Moderato

Example 5.8 Scordatura in *Koyunbaba* by Carlo Domeniconi. 1st Movement, measures 1-3.

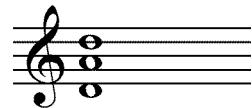
In Example 5.8, the top staff is the sounding pitch and the bottom staff is notated as if the tuning were in drop-d tuning.

The open strings enable the use of drones as can be seen in Example 5-9 below.

[A]

Example 5.9 Drones in the 4th Movement of *Koyunbaba* by Carlo Domeniconi. Measures 1-2.

Domeniconi calls for three notes to create the drone, D4, A4, and D5 (Figure 5.3). They occur on the second and third notes of each three-note figure.



**Figure 5.3 Drone in the 4th Movement of *Koyunbaba* by Carlo Domeniconi.
Measures 1-2.**

Domeniconi uses the open strings because they will ring freely. The aural effect is similar to using a sustain pedal on the piano. On top of this drone is the melody which occurs on the first note of each three-note figure (Figure 5.4).



**Figure 5.4 The melody in the 4th Movement of *Koyunbaba* by Carlo Domeniconi.
Measures 1-2.**

The final example comes from Robert Beaser who composed a group of songs for flute and guitar based on American folk music. In the third song, “He’s Gone Away,” the guitarist tunes the fifth string to G, down from A, and the sixth string to D, down from E (Example 5.10).

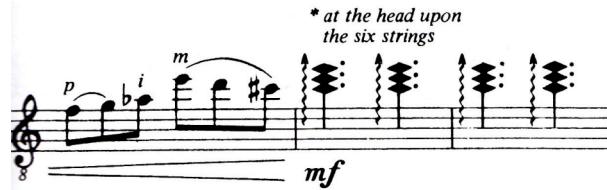
**Example 5.10 Scordatura in the third movement, “He’s Gone Away,” from
Mountain Songs for Flute and Guitar by Robert Beaser. Measures 1-2.**

This tuning creates a tonic/dominant relationship in the lower two strings which Beaser uses in the first two measures from Example 5.10. This motion back and forth between the two strings is a popular bass line found throughout the folk literature.

CHAPTER 6

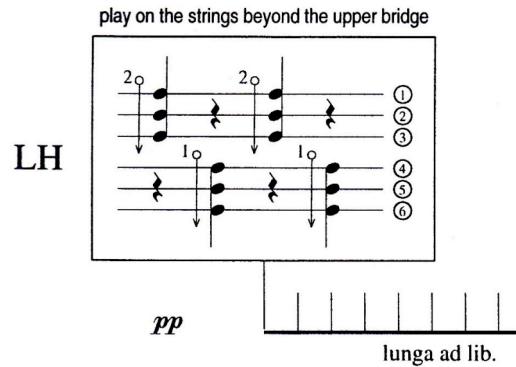
MISCELLANEOUS TECHNIQUES

This chapter discusses certain techniques from the guitar literature that do not easily fit into any of the earlier chapters. For example, techniques such as strumming the strings between the nut and the tuning pegs can be performed with either the left or right hand.



Example 6.1 Strumming behind the nut in *Sonata* by Alberto Ginastera. 2nd Movement, “Scherzo,” measures 14-16.

Alberto Ginastera, in the second movement of his *Sonata*, writes that the guitarist should strum the strings between the nut and the tuning pegs. Due to the short string lengths the sound from the strings is high in pitch. This technique can be achieved by either hand. In this particular example the guitarist uses his/her right hand to strum the strings above the nut. In the last beat of measure 14 the guitarist plays a slur figure with the left hand. This frees the right hand up to strum the strings above the nut in measures 15 and 16.



Example 6.2 Playing above the nut in *Piece with Clocks* by Nikita Koshkin. Page 15, system 1.

Nikita Koshkin uses the same technique in *Piece with Clocks*. In this piece, Koshkin gives a diagram of how to perform this technique. Using the left hand, the performer alternates between two groups of three strings with the first two fingers of the left hand. This occurs a total of eight times as indicated by the eight vertical lines (Example 6.3).



Example 6.3 Piece with Clocks by Nikita Koshkin. Page 15, system 1.

Koshkin then goes on to add the right hand while the left hand is simultaneously playing above the nut (Example 6.4).

The image shows two staves of musical notation. The top staff, labeled 'LH', consists of five horizontal lines with small circles at the top of each. Arrows point downwards from each circle. The bottom staff, labeled 'RH', shows a hand position on a guitar neck with fingers numbered 'm i m i'. A circled '(=o)' symbol is above the RH staff.

Example 6.4 Playing above the nut in *Piece with Clocks* by Nikita Koshkin. Page 15, system 2.

Brad Richter, in “Something Softly out of Silence,” from *A Whisper in the Desert* also incorporates strumming behind the nut (Example 6.5).

The image shows a musical score. The top staff is a treble clef staff with a key signature of one sharp. It has a dynamic marking 'pp' and a tempo marking '♩ 68-72'. Above the staff, there are positions marked 'XII', '(2)', 'XIX', and 'XII'. The bottom staff is a bass clef staff with a key signature of one sharp. It shows a strumming pattern with vertical strokes and a box labeled '1' with two arrows pointing down to the strings.

Example 6.5 Playing above the nut in “Something Softly our of Silence” from *A Whisper in the Desert* by Brad Richter. Measure 1.

In this example the performer strums the strings behind the nut with the left hand while the right hand plays harmonics. Richter explains why he uses this technique in the program notes for this piece:

After moving to Arizona, I got into the habit of going out into the desert or up into the mountains to compose. As I sat one day looking at a beautiful and vast landscape, but having no idea what to write, the wind made a vague and haunting chime-like sound as it blew through my guitar strings. I found that I could

produce a similar sound by strumming the strings above the nut and began to compose around that timbre. “Something Softly out of Silence” was the result.¹

Richter goes on to give a playing tip:

Be sure your strings are not touching any part of the headstock above the nut of your guitar. This ensures better clarity as your left hand index finger strums the strings above the nut. The “above the nut strumming” must be done quite loudly to balance with the rest of the piece.²

As can be seen from the first five examples, there is not a single correct way to notate this technique. Each composer has notated it differently and has provided clear directions for the performer.

The musical score shows two staves. The top staff is labeled 'R.H.' and features a treble clef, a '4' indicating 4/4 time, and a dynamic 'f'. It contains a sixteenth-note pattern labeled 'rasgueado' with 'm m m m' above it. The bottom staff is labeled 'L.H.' and features a bass clef, a '4' indicating 4/4 time, and a dynamic 'ff'. It shows a strumming pattern with the index finger (labeled '5') and a wavy line indicating motion. A note at the bottom right of the page reads: 'As loud as possible; play from the front (the player's) side of the instrument.'

Example 6.6 Both hands strumming in the 4th movement, “Having a Grand Time (With Some Scythian Centaurs), from *Serenades of the Unicorn* by Einojuhani Rautavaara. Measures 1-3.

In the 4th movement of *Serenades of the Unicorn*, by Einojuhani Rautavaara we find an example where both hands are used to strum the strings. The right hand plays a rasgueado while the left hand strums the six strings. The result is that the left hand motion creates accents in the piece.

¹ Brad Richter, *Solo Guitar Collection* (Pacific: Mel Bay Publications, 2005), 4.

² Brad Richter, *Solo Guitar Collection* (Pacific: Mel Bay Publications, 2005), 4.

APPENDIX A

NATURAL AND ARTIFICIAL HARMONICS

As with all stringed instruments, there are two types of harmonics that can be played on the guitar. The first is the natural harmonic and the second is the artificial harmonic. The natural harmonic is the easiest and involves one hand, usually the left hand, touching the particular spot on the string while the right hand plucks the string. The artificial harmonic is usually plucked using the right hand and is a little more involved. First, the left hand fingers a note at a fret and then the right hand index finger touches the string twelve frets higher. Finally, the right hand ring finger or thumb plucks the string. Composers often use harmonics to extend the range of the guitar.

A.1 Natural Harmonics

The most commonly used natural harmonics occur at the fifth, seventh and twelfth frets (Figure A.1).

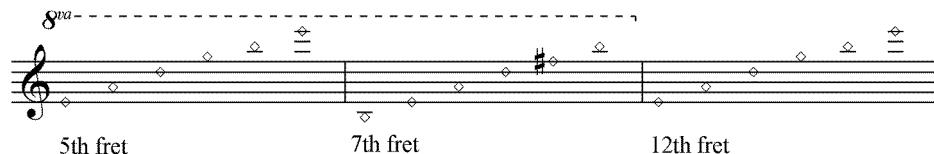


Figure A.1 Natural harmonics at the 5th, 7th and 12th Frets.

The fifth fret harmonics can also be found over the soundhole where the twenty-fourth fret would be found, if the guitar had that many frets. The harmonics at the seventh fret can also be found at the nineteenth frets.

In addition to harmonics found at the fifth, seventh and twelfth frets, natural harmonics can also be found at the third, fourth, and ninth frets (Figure A.2).

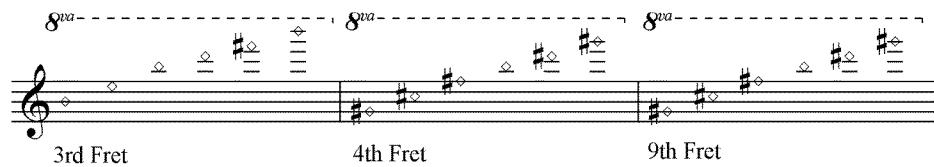


Figure A.2 Natural harmonics at the 3rd, 4th, and 9th frets.

The fourth fret harmonics are the same as the ninth fret harmonics. The harmonics at the third, fourth and ninth frets do not follow the equal-tempered nature of the guitar and are therefore a little off the fret. The harmonics at the third fret can be found a little to the right of the third fret wire. The fourth fret harmonics can be found just a little left of the fourth fret wire. The ninth fret harmonics can be found a little to the left of the ninth fret wire.

Natural harmonics can be used for both melodic and harmonic writing. Due to the tuning of the guitar, the harmonics of any particular fret, when played together, will produce a chord containing mostly fourths with one third.



Example A.1. Wilfred Josephs harmonic chord at the 7th fret in *Toccata*. Measure 13.

An example of this can be found in Wilfred Josephs' *Toccata* for guitar.

Composers are not limited to just natural harmonics at one fret, but can play a harmonic chord consisting of harmonics from different frets. A few possibilities can be found in figure A.3.

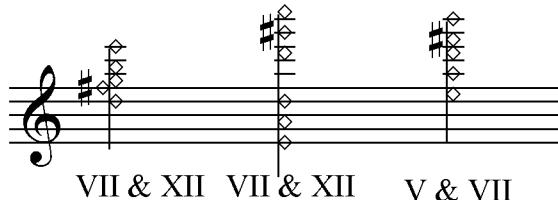


Figure A.3 Harmonic possibilities from playing harmonics from different frets at the same time.

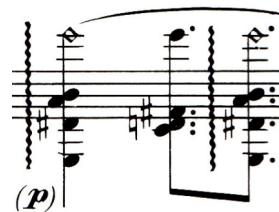
The first and second chords from figure A.3 contain harmonics from the seventh and twelfth frets. The third chord contains harmonics from the fifth and seventh frets. A guitarist can easily reach the harmonics at the third and seventh frets, fourth and seventh frets, and the seventh to the twelfth frets. It is a bit of a stretch to reach from the fourth to the ninth fret harmonics.

Mechanically, it is just as easy to arpeggiate the harmonics as it is to play them as a straight chord.



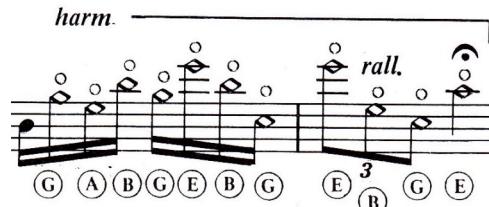
Example A.2 Natural harmonics in *Sequenza XI* by Luciano Berio. Page 3, system 3.

Luciano Berio, in *Sequenza XI*, arpeggiates the harmonics found at the seventh fret.



Example A.3 Harmonics mixed with naturally plucked notes in *Sequenza XI* by Luciano Berio. Page 1, system 1.

In the same piece, Berio combines natural notes with harmonics in a rolled chord.



Example A.4 Natural harmonics in *Etude No. 1* by Heitor Villa-Lobos. Measures 32-33.

Heitor Villa-Lobos uses arpeggiated natural harmonics to close his *Etude No. 1* for guitar. Villa-Lobos' notation of the harmonics can lead to confusion for the performer. Ideally, the composer should notate the sounding pitch and give the fret and/or string that the harmonic is located on. Villa-Lobos notates the location of the harmonic at the

particular fret note, which may or may not coincide to the actual pitch. Furthermore, instead of using numbers to distinguish the strings, Villa-Lobos gives the string name. This can cause confusion because both the first and sixth strings are E. A better way of notating these harmonics can be found in Figure A.4.

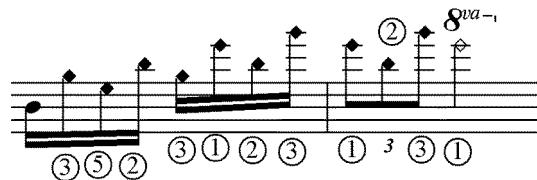
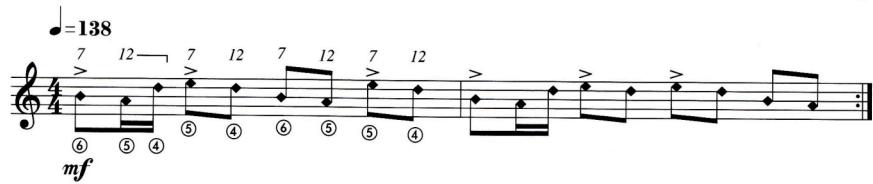


Figure A.4 Renotation of measures 32 and 33 from *Etude No. 1* by Heitor Villa-Lobos.



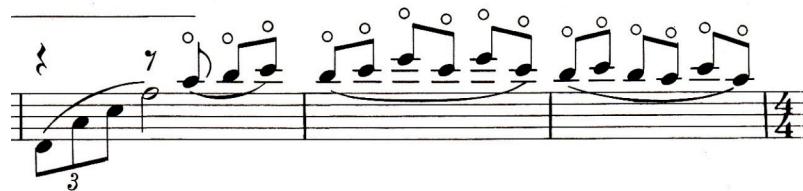
Example A.5 Natural harmonics used to form melodies in “Now you see it, now you don’t, now you do,” from *11 Etudes* by Benjamin Verdery. Measures 1-2.

Benjamin Verdery, in “Now you see it, now you don’t, now you do,” from *11 Etudes*, begins with harmonics played melodically. Even though the tempo is rather quick, this opening should not pose a problem for the performer because the natural harmonics are fairly close together.

A.2 Artificial Harmonics

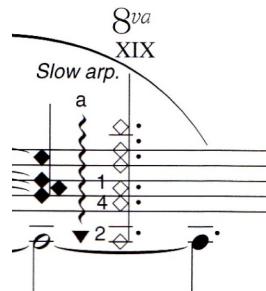
Artificial harmonics are not limited to certain frets like natural harmonics. Artificial harmonics can be performed any place on the guitar. Typically, artificial

harmonics are produced by plucking the string with the ring finger or thumb while lightly touching the string with the right hand index finger twelve frets higher than what is being fretted with the left hand.



Example A.6 Artificial harmonics in Movement I from *Five Bagatelles* by William Walton. Measures 81-83.

An example of artificial harmonics can be found in the first movement of *Five Bagatelles* by William Walton. Walton uses a circle above the note to notate the harmonic. This passage would sound an octave higher than notated.



Example A.7 Arpeggiating artificial harmonics in “Milwaukee, WI,” from *Some Towns and Cities* by Benjamin Verdery. Measure 2.

Example A.7, from “Milwaukee, WI” from *Some Towns and Cities* by Benjamin Verdery, contains an interesting example of artificial harmonics. The left hand frets the chord while the right hand rolls the chord using artificial harmonics. The resulting sound is harp-like.

APPENDIX B

THE TREMOLO

The tremolo, like harmonics, is an effect that is not considered an extended technique, but is an important technique that a composer for the guitar should be aware of. The Harvard Dictionary of Music defines tremolo as “the quick and continuous reiteration of a single pitch.”¹ The technique is created by having the thumb play the bass note while the fingers do the tremolo (Figure B.1).

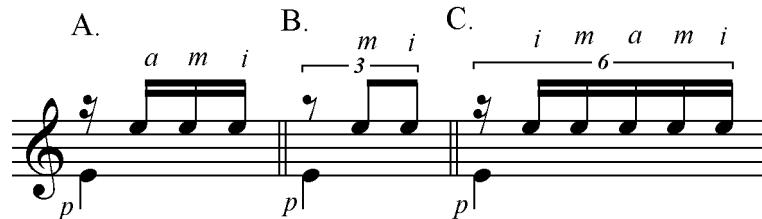


Figure B.1 Different ways to do the tremolo.

Figure B.1 shows three common ways to play the tremolo on the guitar. When played at a quick tempo the aural impression is of two instruments, one playing the bass line and one the melody.

¹ Don Michael Randel, ed., *The Harvard Dictionary of Music* (Cambridge: The Belknap Press of Harvard University Press, 2003), 905.

Hommage à l'émminent artiste Alfred Cottin

Recuerdos de la Alhambra

Andante

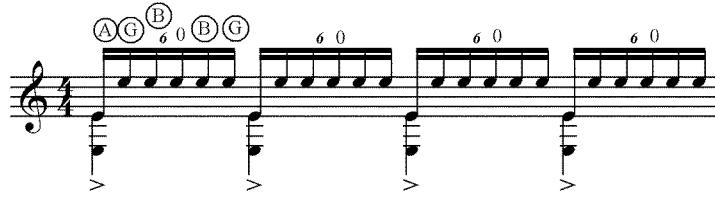
Example B.1 Tremolo in *Recuerdos de la Alhambra* by Francisco Tárrega. Measures 1-2.

Example B.1 contains the first two measures from *Recuerdos de la Alhambra* by Francisco Tárrega, one of the most popular pieces in the guitar repertoire. *Recuerdos de la Alhambra* was inspired by a trip the composer took to Granada where the composer was “enthralled [by] the famed Moorish palace of the Alhambra.”²

Example B.2 Tremolo in “Starry Night on the Beach (with federales),” from *A Whisper in the Desert* by Brad Richter. Measures 9-10.

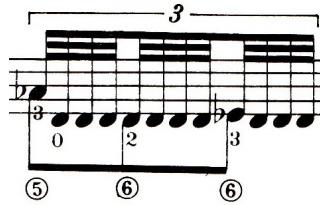
In “Starry Night on the Beach (with federales),” from *A Whisper in the Desert*, Brad Richter uses a variation of the tremolo technique. After the bass is struck, Richter inserts a slur figure before moving to the repeated E’s.

² Adrián Rius, *Francisco Tárrega: 1852-1909 Biography* (Valencia: Piles Editorial de Música, 2006), 104.



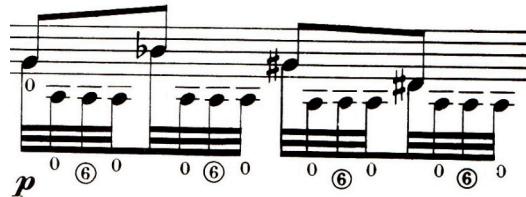
Example B.3 Tremolo in *Etude No. 7* by Heitor Villa-Lobos. Measure 49.

Heitor Villa-Lobos also uses a variation on the tremolo effect in *Etude No. 7*. Instead of having the E's performed on the same string, they are performed on three different strings. A guitarist can easily perform certain notes on different strings simultaneously.



Example B.4 Tremolo in *Sequenza XI* by Luciano Berio. Page 2, system 2.

Luciano Berio uses the tremolo throughout *Sequenza XI*. In Example B.4 the tremolo is written below the bass notes. The A-flat, D, and E-flat bass notes are all performed on lower strings than the tremolo, even though those notes are higher in pitch. This is evident because of the encircled 5 and 6 in the example. The tremolo is played on the open 4th string, D. Another example of the tremolo technique can be found in Example B-5 below:



Example B.5 Tremolo in *Sequenza XI* by Luciano Berio. Page 4, system 1.

In this example the tremolo is once again below the bass notes. In this particular example the tremolo is performed on two different strings, similar to the Villa-Lobos example above. The A is played on the open fifth string, followed by the same note played at the fifth fret sixth string, followed by open fifth string.

APPENDIX C

A SUMMARY OF MUSICAL SYMBOLS

p,i,m,a

Right hand fingers. *P* is for the thumb, *i* is for the index finger, *m* is for the middle finger, and *a* is for the ring finger

1,2,3,4

Left hand fingers. 1 is for the index finger, 2 is for the middle finger, 3 is for the ring finger and 4 is for the pinky finger



Bartók Pizzicato



Glissando



Alvaro Company's symbol for no vibrato



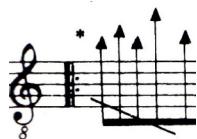
Alvaro Company's symbol for a normal vibrato



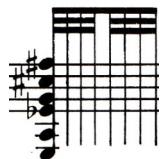
Alvaro Company's symbol for a slow vibrato



Alvaro Company's symbol for a rapid vibrato



Play left notes over the soundhole



Rasgueado



Golpe



Tambora



Alberto Ginastera's symbol for using an open palm to perform the tambora



Alberto Ginastera's symbol for using a closed fist to perform a tambora



Alberto Ginastera's symbol for using the thumb to perform a tambora

APPENDIX D

SELECTED DISCOGRAPHY

- Berio, Luciano. *Sequenza!* Eliot Fisk. Music Masters Jazz compact disk B000000FSG
- Brouwer, Leo. *Brouwer.* Elena Papandreou. Naxos compact disk B00005RT4M
- Davidovsky, Mario. *Flashbacks: Music by Mario Davidovsky.* David Starobin. Bridge compact disk B00004T91M
- Domeniconi, Carlo. *The Guitarist John Williams.* John Williams. Sony compact disk B00000C28V
- Ginastera, Alberto. *Guitar Recital.* Jérôme Ducharme. Naxos compact disk B000H4VZDU
- Henze, Hans Werner. *Royal Winter Music.* David Tanenbaum. Stradivarius compact disk B000A0HFVC
- Koshkin, Nikita. *The Prince's Toys.* Nikita Koshkin. Soundset Recordings compact disk B00000BKEX
- Rautavaara, Einojuhani. *Einojuhani Rautavaara.* Jukka Savijoki. Bis compact disk B00000166X
- Ravenscroft, Ronald. *Simple Gifts.* Christopher Parkening. Angel Records compact disk B000002SJ
- Richter, Brad. *A Whisper in the Desert.* Brad Richter. Acoustic Music Records compact disk LC07103
- Tárrega, Francisco. *Noches de España: Romantic Guitar Classics.* Pepe Romero. Philips compact disk B00000418Y
- Tárrega, Francisco. *The Legendary Segovia.* Andres Segovia. EMI Classics compact disk B00000I3VA

Verdery, Benjamin. *Start Now*. Benjamin Verdery. Mushkatweek compact disk
B00A6VY40

Verdery, Benjamin. *Some Towns and Cities*. Benjamin Verdery. Newport Classics
compact disk NPD85509

Villa-Lobos, Heitor. *Villa-Lobos: Complete Music for Solo Guitar*. Norbert Kraft. Naxos
compact disk B00004YYRQ

Walton, William. *British Guitar Music*. Graham Anthony Devine. Naxos compact disk
B0006M4SSW

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- Schneider, John. *The Contemporary Guitar*. Berkeley: University of California Press, 1985.
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