PRINCIPLES OF IDIOMATIC GUITAR WRITING

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For my parents, Ken and Sandra
and my wife, Jenny

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Preface

> It is almost impossible to write well for the guitar without being a player on the instrument. The majority of composers who employ it are, however, far from knowing its powers; and therefore they frequently assign it things to play of excessive difficulty, of little sonorousness, and small effect… Some performers have studied it, and still study it, as a solo instrument, in such a way as to derive effects from it no less original than delightful… Nevertheless its melancholy and dreamy character might more frequently be made available; it has a real charm of its own, and there would be no impossibility in writing for it so that this should be made manifest…
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> One hardly, I repeat, without playing the guitar, [can] write for it pieces in several parts, containing various passages, and introducing all the resources of the instrument.
> - Hector Berlioz, *Modern Instrumentation and Orchestration, pp. 67-70* (1856)

Though Berlioz penned these words over a century-and-a-half ago, their relevance regrettably continues to persist today. Indeed, guitar composition can be an exceptionally tedious activity for the non-guitarist composer, an implication that largely stems from the guitar idiom revolving around polyphonic and sustaining qualities not known for being particularly conducive to necked chordophones. To very loosely frame the implications of this notion, one might imagine the challenges a non-violinist composer would face writing for the violin if triple and quadruple stops were the idiom's norm. Idiomatic guitar writing is not entirely dissimilar, and perhaps in some ways is even more problematic given that the guitar has more strings, is tuned in irregular intervals, and is played with a slew of techniques not found on any other instrument.

Confronted with such challenges, a composer's initial reaction might be to write "simply" and "safely" in order to elude any idiomatic pitfalls. Because accomplishing this typically involves using relatively basic textures that are indifferent to the full breadth of the guitar's said polyphonic and sustaining qualities, the musical result of such an approach is rarely effective and predictably mirrors what Berlioz references to when he speaks of things of "little sonorousness, and little effect." It would seem then that *easy* writing and *idiomatic* writing are then two very different entities. Can non-guitarist composers hope to achieve the latter without resorting to the former? The surge in

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marvelously successful non-guitarist works that has taken place since the early-mid 20th century should be a resounding "yes," though the guitar's reputation of being challenging to write for has hardly diminished in the composition world. Alberto Ginastera once remarked that despite evoking guitar gestures prolifically throughout his output, the guitar being the national instrument of his native Argentina, and having been encouraged by numerous performers to write guitar music from the time he was a student, it would be *forty years* into his career before he would pen his Sonata Op. 47, his first and only work for the instrument. The sole reason he cited for this postponement? "…the complexity of the task delayed my creative impulse."[1]

It is possible that one factor to blame for such a general sense of wariness is that resources to assist the non-guitarist composer in this "complex task" have been scant. While several important orchestration books include at least some basic information on the guitar, they are generally of very little help to those writing anything of substance and some are even surprisingly inaccurate with the sparse information they do offer.[2] A few beneficial reference books focused specifically on how to write for the guitar are available, though fully decoding the idiom for the non-guitarist composer has ultimately proven to be quite difficult: To this day, no author has come close to suggesting a comprehensive *modus operandi* for guitar composition.

This text does not claim to contain such a *modus operandi*. What it *does* claim, however, is a unique vantage point that specifically aims to accommodate the non-

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[1] Ginastera, Sonata for Guitar, op. 47 (Boosey & Hawkes, 1978). Program notes.
[2] In *The Study of Orchestration* by Samuel Adler p. 105, Adler incorrectly lists the guitar's highest pitch as E_5: The guitar can very easily extend to a B above this. Adler also states that the guitar is "plucked with all five fingers of the right hand;" in truth, only four are used as the pink never plucks. Lastly, Adler claims that "the tuning of the guitar stems from the old lute tunings." Actually, the tuning of the guitar is far more rooted in the Spanish *vihuela* and was achieved by a gradual evolution from its original four-course Renaissance incarnation mostly out of the desire to play denser chords in root position; the lute had very little direct influence on the modern tuning of the guitar.

guitarist composer in writing for the guitar. In achieving this, common music terminology will be the preferred avenue for explaining the parameters of the guitar idiom over esoteric physical allusions to the instrument. Obviously references to strings, frets, and fingers will be inevitable in clarifying the technical aspects of most topics, but the comprehension of guitar technique will be far subordinate to understanding how to navigate the guitar from a purely compositional perspective.

Will such an approach be an exact or all-inclusive science? Not at all, and while the author has made every attempt to be as thorough and methodical as possible, the reader should approach any "guidelines" detailed herein with the understanding that there may be possible exceptions that should be reasoned through with common sense and a competent guitarist to discuss them with. Will the composer make mistakes in the idiom even if all the "rules" in this document are followed? Possibly, but given how extraordinarily counterintuitive, impractical, and ultimately futile any attempt to perfectly explain the guitar idiom would be, the present author believes that it is far better that such rules be coherent and flexible enough that the composer's "creative impulses" are kept at the forefront of the composition process, even if at the expense of a few minor technical errors. One might reflect on Joaquín Rodrigo's seminal *Concierto de Aranjuez* as an example of the spirit this approach seeks to encapsulate: Consider that while the work's guitar writing is quite remarkable as a whole, it is actually also fairly unidiomatic in a number of instances to the point that even world-renowned guitarists are prompted to make a few subtle (and sometimes not-so-subtle) editorial revisions. Despite this, *Aranjuez* is perhaps the most recognized and celebrated piece of music for classical guitar

in existence and is, to say the least, immensely more significant to the repertoire than the vast sea of trifles that make exquisite use of the idiom yet lack any real artistic substance.

This document can be used either as a reference tool or as a cover-to-cover read before composing. The first three chapters will focus on basic conventions of the guitar's basic techniques and notation that will be referenced throughout, while the remainder will deal with a variety of idiomatic textures and techniques available to the instrument. Though not necessarily required, a full-size guitar of any worth can be a valuable aid to the learning and composition processes. Additionally, consultation with a proficient classically-trained guitarist cannot be encouraged enough.

Note that while the present author feels that this text contains as many textures and techniques as are needed to be a functional composer of guitar music, it is by no means exhaustive. This is especially true of extended techniques, as only those that are relatively common in the standard repertoire have been included. The composer is encouraged to consult *The Contemporary Guitar* by John Schneider (University of California Press: Berkeley, 1985) for an extraordinarily detailed study of those beyond this discussion.

Undoubtedly, the guitar has the capacity to be one of the most sublime, evocative, and inviting instruments that exists. It does not scream at its audience nor forces their attention, but rather lures, seduces, and entices its listeners through sounds certainly worthy of the descriptors of "melancholy," "dreamy," and "charming." Without question, these are sounds that rightfully belong to the pallet of any composer who wishes to use them, not just those who play the instrument. Let us then proceed to challenge Berlioz's

cynicism toward the non-guitarist composer by defining the principles of idiomatic guitar

writing.

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*Recorded by Erol Ozsever
**Recorded by Nemanja Ostoich
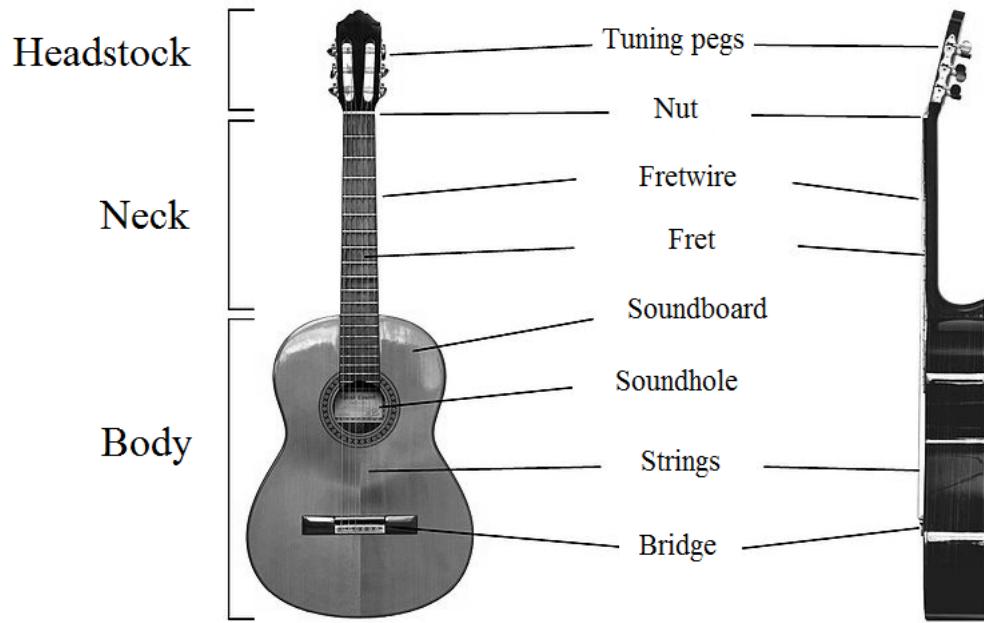
Chapter I. Basics of Construction, Tuning, and Sound

The Guitar – "Classical" and Otherwise

Because there are many types of guitars that may be used for genres running the gamut from classical to country, rock to jazz, the term "guitar" presents a great deal of ambiguity. Solid-body electric, hollow-body electric, Dreadnought, Dobro, and flamenco instruments are just a few examples of guitars with very specific constructions, musical purposes, and technical traits. For that reason, the guitar that is the focus of this study is commonly distinguished as the **classical**, **classic, Spanish**, or **nylon-string guitar**, the former two being the most widely accepted. It is only in classical music that one can refer to the "guitar" knowing that the classical guitar is implied. **When referencing the classical guitar in a classical or "art music" score, one needs only write "Guitar" (abbreviated "Gtr.").** In some less traditional performance settings or ensembles – guitar with electronics, for instance – the specific type of guitar to be used should be designated even if it is classical. Guitar types beyond classical should always be specified when desired. Be mindful that though the classical guitar is obviously an "acoustic" instrument, it should never be listed as an "acoustic guitar" as this title is almost always used to indicate a steel-string instrument.

This text will deal exclusively with the classical guitar, and from hereon it will be what is referred to when the term "guitar" is used without any additional designation.

Figure 1.1: The classical guitar and its parts

Headstock		Tuning pegs
		Nut
Neck		Fretwire
		Fret
		Soundboard
		Soundhole
Body		Strings
		Bridge
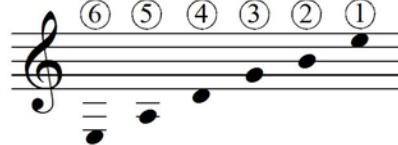
Strings and Tuning

While several discrepancies in construction and body style separate the classical guitar from other guitar types, one of its most fundamental distinctions is its use of nylon strings (or strings of a similar synthetic material) as opposed to steel strings. **Not all nylon-string guitars are classical guitars, but all classical guitars use nylon strings.** Nylon strings are more conducive to classical music than steel strings perhaps because of their more versatile tone, more responsive dynamic range, and clearer definition between strings (which in turn makes for more definitive voice separation in polyphonic textures). A relatively soft material, nylon also feels much more comfortable on the fingers than steel, making it especially beneficial for the fingerstyle right-hand technique of classical playing.

The standard classical guitar has six strings evenly divided between brilliant wire-wound basses and mellower non-wound trebles. The tuning scheme from lowest string to highest is **E-A-D-g-b-e'** (P4-P4-P4-M3-P4). Since the open strings of the guitar will be repeatedly mentioned throughout this text, the reader is strongly encouraged to commit them to memory for future reference (a humorous mnemonic for remembering their order might be *Eat A Darn Good Breakfast Everyday*). While one may identify a specific string by pitch letter name (i.e. the "A string" or the "B string"), **it is more common to refer to the strings by numbers 1-6, with 1 being the highest pitched and 6 being the lowest.** In notation, strings are identified numerically and in a circle.

Figure 1.2: Tuning scheme with string notation (sounds one octave lower)

The evolution of this "standard tuning" was historically driven by two factors that remain relevant today. The first is the optimization of left-hand chord shapes. By using a series of fourths, the bass strings offer access to the roots of I, IV, and V in a single position and in multiple keys[1] (earlier four and five-course incarnations of the guitar had been plagued by inverted chords).[2] The use of a minor third instead of a perfect fourth between the third and second strings is pivotal for the fingering of multiple full triadic

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[1] Graham Wade. *Traditions of the Classical Guitar*. (London: John Calder Publishers, 1980), 93

[2] Harvey Turnbull. *The Guitar: from the Renaissance to the Present Day*. (Westport, Conn: The Bold Strummer, 1991), 64

harmonies stemming from the low E string; moreover, it also provides an ideal segue for one last perfect fourth to be built on top of the second string to create a high e-string that immensely enriches the instrument's sonorousness in doubling the lowest string two octaves higher. The second factor is that the tuning facilitates access to a large number of pitches in a single position: 29 of the guitar's 44 possible ordinario notes can be reached in first position alone.[3]

Scordatura will be discussed in-depth in chapter five, but there is one small deviant from standard tuning so commonplace that it must be acknowledged upfront. Colloquially known as "Drop D," the only change from standard tuning is that the sixth string is lowered a whole-step from E to D. The main advantage to this alteration aside from the small extension of the guitar's overall tessitura is the resultant perfect fifth relationship between the sixth and fifth strings that makes available a number left-hand chords and fingering options not feasible in standard tuning. Drop D is so common that any competent performer should be able to read notation in it without problem. The composer should indicate Drop D by writing ⑥ = D on the first page of the score, typically somewhere in the top left-hand corner or under first system's initial instrument designation (if used).

Frets

A simple though imperative concept to understand is that of frets, spaces on the neck partitioned by fretwire. When a string is depressed in a fret, the string is stopped by the fretwire and produces a specific corresponding pitch when plucked. Frets proceed

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[3] Chris Kachian. *Composer's Desk Reference: for the Classic Guitar*. (Pacific, MO: Mel Bay, 2006), 7.

chromatically, so that, for instance, the first fret pitch on the B string is C, the second fret is C-sharp, the third fret is D, and so on. A fretted note will sustain until the left hand releases the fret or the string is dampened. To maintain the ratio of equal temperament, the space between frets becomes progressively smaller the higher up the neck they lay.

Issues of intonation that plague bowed string instruments are for all practical purposes non-existent on the guitar because of the fret system. This hardly means that fretted notes are invariable – pitch can be manipulated by factors as simple as the finger's distance behind the fret and the bend of the string – but intonation is at least not a *technical* concern the guitarist has to deal with. Yet the fret system is not without its own challenges: "Buzzed" and "muted" notes are very common undesirable sounds that generally occur as the result of a left-hand finger not sufficiently depressing the string. Such mistakes are more likely to appear in passages that are strenuous to the left hand.

Range and characteristics

The sounding range of the standard classical guitar extends from E_2 to B_5, though an increasing number of guitars are built with a one fret extension to C_6.

As with bowed string instruments, the tone of a note will vary depending on what string it is played on. When the option to choose a string solely based on tone-quality is available, a lower string is generally preferable for its warmer sound and richer vibrato. However, be mindful that once a string is fretted an octave above its open pitch – the halfway point of the string – its tone tends to become hollow and less appealing (from a technical standpoint, positions in this upper range can also be a bit awkward for the left hand to reach).

Guitar music is written exclusively in the treble clef and sounds down an octave from the notated pitch. Some composers use the suboctave treble clef to clarify this discrepancy; either is acceptable.

Figure 1.3: Range of each individual string
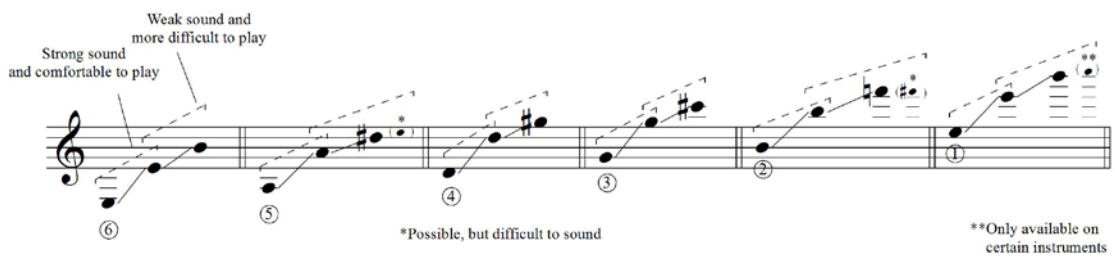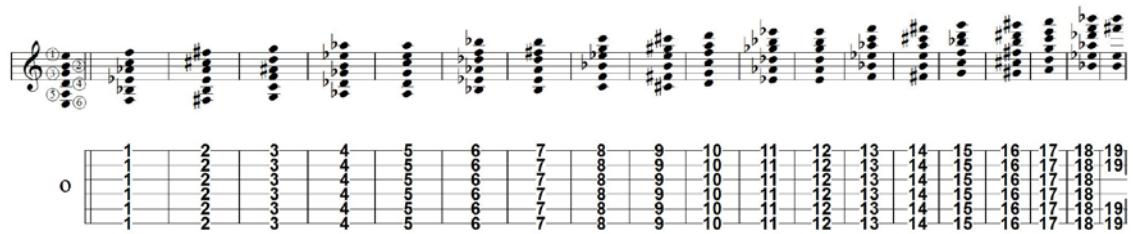
Figure 1.4: Diagram of the guitar neck and notes sounded at respective frets

The Purpose of Nails

Perhaps the only distinguishing physical characteristic of a classical guitarist is his or her long right-hand fingernails. While length and shape may differ from player to player, a guitarist's nails always serve the same function: To produce a fuller, louder, and more articulate tone. Flesh alone produces a very weak sound with a limited dynamic range, leading virtually all professional guitarists to use nails in some capacity. While some of the techniques that will be discussed in this document make more blatant use of them than others, the composer needs only understand the basic purpose of nails as they are a relatively negligible parameter of the compositional process.[4] Furthermore, note that plucking with flesh is mostly impractical for guitarists with nails because of the awkward position the right hand would need to have toward the strings to accommodate this. The only exception to this is plucking with flesh of the thumb, which can create a sound characterized by a dark, quiet tone with minimal attack. This manner of playing should be reserved for plucking monophonic notes or strumming chords – using it in conjunction with other fingers is both technically awkward and musically ineffective. Guitarists will many times use the flesh of the thumb simply based on the context of the music, but if the composer specifically desires the technique he or she should simply write "*p* flesh." Likewise, "ord." or "*p* nail" should be written to return to the nail when necessary.

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[4] Schneider argues otherwise in *The Contemporary Guitar* (118-120) by advocating for a tone-color system pioneered by Italian composer Alvaro Company in which a set of symbols are used to indicate the angle that the nail is to strike through the string as well as what point along the string it is to strike. However, the composer should be aware that the actual effect of this parameter is subtle at best and should only be considered in music in which tone-colorings are the most salient feature. Dictating specific nail angles is a superfluous and ineffective enterprise in most writing styles, if for no other reason than that the specificity of the notation is belied by how incredibly ambiguous the tones of these different nail angles actually are. This is not even to mention the fact that several other parameters go into the production of tone that are typically beyond the control of the composer (most notably nail length, shape, and refinement).

Chapter II. Fundamentals of Guitar Notation

Single Staff Notation

Because guitar notation uses only one staff yet frequently facilitates complex polyphonic textures, it has a tendency to become easily cluttered. Even so, dense writing with multiple layers on a single staff is not at all uncommon as long as the writing is legible.

Example 2.1: Dense contrapuntal writing in the Fugue from Bach's BWV 997 (mm.12–14)

Some composers have used a grand-staff of two treble clefs to prohibit excessive density, but usually only for the span of the specific passage that requires it. However, because the grand-staff defies the norm in guitar writing and is generally less comfortable for the guitarist to read than a single staff, it should only be used when the alternative would be illegible or less reflective of the desired sonic result. Compare examples 2.2 A and B and notice how much clearer the cross-rhythm is in the former.

Example 2.2: Two staffs vs. one staff in *never odd or even* by Jonathan Godfrey (mm.15–19)

A. Two staffs

B. One staff

Strings, Fingers, and Frets

In listing the following finger, string, and fret notational conventions, it should be made clear upfront that inserting such comprehensive "how-to-play" markings into a score is not expected of the composer in most cases. Non-guitarist composers should *especially* not feel obligated to include them, as fingerings made without a fluent understanding of the idiom can often cause more confusion than clarity. Trained classical guitarists should be able to function proficiently without the aid of fingerings; if such markings are necessary for publication or other professional purposes, it is often best to consult with a competent guitarist or ask him or her to add them altogether. **The only items that the composer should always take responsibility for are the notation of strings when a very specific tone is desired** (e.g. the warmer tone of a lower string, the use of an open string versus a closed string, etc.) **and the appropriate strings and frets of natural harmonics** (see discussion on harmonics in chapter five).

Left hand fingers are notated as **1** (index), **2** (middle), **3** (ring), and **4** (pinky). The purpose of the thumb is to give support behind the neck and thus is not used to fret strings. If a string is to be played open, it is notated as **0**. When present, left-hand fingerings are usually provided generously throughout the score.

Right-hand fingers are identified by the first letter of their Spanish names: ***p*** (*pulgar*, thumb), ***i*** (*índice*, index), ***m*** (*medio*, middle), and ***a*** (*anular*, ring). Typically reserved for more complex or demanding gestures and passages, right-hand fingerings do not appear as prolifically in scores as left-hand fingerings. Note that the right-hand pinky is never used for plucking but is labeled as ***c*** in the extraordinarily rare instances that it is notated in a strumming pattern, though some composers have labeled it as *u* and still others *s*; because of this non-uniformity and how uncommon it is to see music that calls for the pinky at all, if used the composer should clarify the pinky's association with whatever letter is chosen in the score or program notes.

Figure 2.1: Left and right hand fingerings
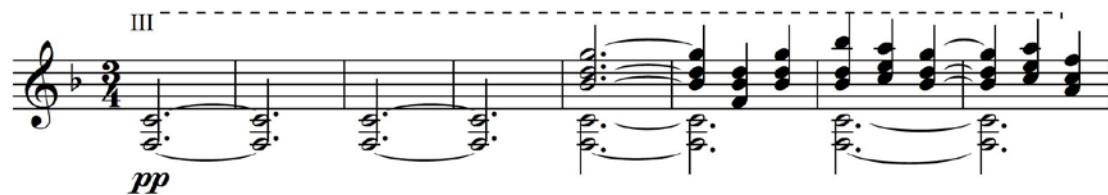
As mentioned above, strings are notated numerically and in a circle: ① ② ③ ④ ⑤ ⑥. String numbers are not needed in scores nearly as often as left-hand

fingerings but are nevertheless helpful in cuing the left hand to play in certain positions that might otherwise be difficult to immediately ascertain.
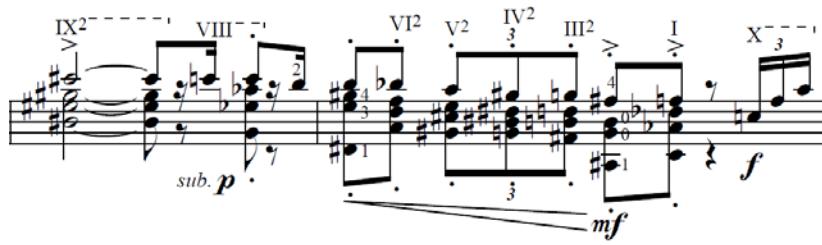
Frets are written as roman numerals and generally are only needed in two instances. The first is natural harmonics, which will receive a more comprehensive discussion in chapter five. The second is **barring,** a technique in which a single finger – almost invariably the first – holds down multiple strings. A dashed-line indicating how long the barre is to be held should follow the roman numeral when it extends longer than one note.

Example 2.3: Opening bar chord notated in *Cordoba* from *Chants d'Espagne* (Op. 232, No. 4) by Isaac Albéniz (mm. 1–8)
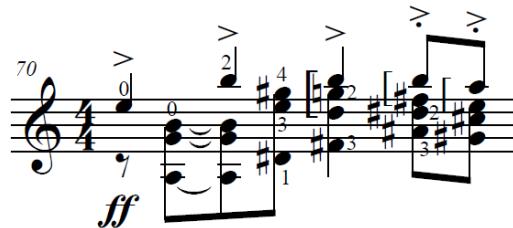
Some composers have elected to further clarify the use of the barre by placing a "B" or "C" in front of the numeral. Some composers have also elected to make discrepancies between "full-barres" in which all six strings are fretted and "half-barres" in which five or less are fretted, though the usage and notation of such is not universal. A simple way to distinguish the two is to place a superscript number behind the roman numeral of all half-barres indicating how many strings are to be held.

Example 2.4: Barres and half-barres in *Sonatina for guitar solo* (1st movement) by Jonathan Godfrey (mm. 18-19)

Note that when the scope of the barre is relatively small – i.e. it spans a somewhat compact interval and is held only briefly – many composers opt to simply place a bracket between the barred notes and omit the roman numeral altogether.

Example 2.5: Brackets as half-barres, *Sonatina for guitar solo* (1st movement) by Jonathan Godfrey (m. 70)

Issues of Sustain and Notation

Predictable issues in notation arise from the guitar being an attack-and-decay instrument with ample sustain in that the composer must counterbalance the virtue of notating the most accurate aural information possible with the reality that guitar music would be horribly littered with cumbersome and ultimately futile ties and rests if each note represented its literal duration. In mediating these factors, the composer should be

aware that some textures may have their own specific conventions of notation. Generally

speaking, however, if the composer has a specific rhythmic value in mind for any note in

which its duration is *audibly salient*, he or she should feel free to notate it literally.

Conversely, for less prominent notes that may be allowed to decay or be muted naturally,

the composer should utilize the simplest appropriate notation from a visual standpoint: It

is understood that the guitarist will interpret these notes' sustain depending on technical

feasibility and musical context. These principles are at work in example 2.6A, which is

clearly much more desirable than the "literal" notation of 2.6B.

Example 2.6: Written notation versus sounding result in *Etude in A Minor* (Op. 6, No. 19) by Dionisio Aguado (mm. 1–4); ◎ Track 1

A. How it is written

B. How it is intended to sound

For passages in which sustain is explicitly desired, the composer need only write "l.v."

Example 2.7: An "l.v." passage in the Divertimento from *Aquarelle* by Sergio Assad (mm.1-5); ⊚ Track 2

Chapter III. Fundamental Mechanics in Guitar Writing

Dynamics, Amplitude, and Amplification

The guitar is exceptionally quiet compared to any orchestral instrument, but relative to itself it has a very functional dynamic range that is of no special concern in solo writing. In ensemble settings, the choice of dynamics can be somewhat more perplexing; despite what many modern cleverly engineered recordings might lead one to believe, the guitar will have to play quite forcefully to even exceed what many instruments consider the *piano* range, much less come close to matching their *fortes.* Even so, the composer should associate guitar dynamics in ensemble settings not so much with a set decibel level as opposed to a general feeling and character. For instance, if there is a passage in a guitar and violin duet that should be somewhat subdued, the composer need not write a *fortissimo* dynamic in the guitar for fear of it not being heard over the violin's *mezzo piano*. On the contrary, an appropriate soft dynamic should be notated in the guitar to imply the delicacy the music requires. In this case, it is the not the composer but the performer who should be concerned with the projection of sound while simultaneously preserving the integrity of the intended mood.

Amplification is an obvious solution to the small sound of the guitar, and though the potential for diminished purity of tone leads many guitarists to prefer not to use it, the reality is that it is often a necessity for ensembles even as small as some duos and trios. Even so, the composer should avoid writing ensemble music under the pretense that amplification will completely alleviate the guitar's balance issues: Writing that assumes the guitar will be able to match the volume of naturally louder instruments through amplification fails to grasp the organic relationship and nuances of the ensemble. Rather,

even if the guitar ends up being amplified in the performance, the composer should compose and orchestrate almost as if it had to be performed without amplification. A few basic ways this might be accomplished include featuring the guitar mostly when the accompanying instruments are quiet, texturally sparse, and/or registrally distinct. The choice of specific guitar textures will be important too: Perhaps the guitar could feature strummed chords during loud moments, or perhaps its most important melodies could be saved for solo passages. Obviously these are highly generalized solutions, but it is through this type of sensitivity that the composer shows a better awareness of the guitar's distinctive sound and innately soft-spoken character in his or her writing. For further study, the reader is strongly encouraged to use Rodrigo's works for guitar and orchestra as a model of how this can be accomplished, as Rodrigo is keen not only to work around the guitars limited volume but actually *exploit it* as a source of stirring dynamic contrast.

Tone Colors: *Sul Tasto* and *Sul Ponticello*

Though it is only one of several variables that go into the quality of tone a guitarist produces, the positioning of the right hand and its potential to play either **sul tasto** (over the neck) or **sul ponticello** (over the bridge) is the one the composer has the most control over. These positions afford the composer extraordinary contrasts in color. The guitarist may also produce such colors based on the composer's description of the sound desired; for instance, "dolce" and "dark" are often synonymous with tasto, while "bright" and "metallic" clearly indicate ponticello. The ordinario position is roughly midway between the soundhole and the bridge (slightly more toward the soundhole). This halfway division between dark and bright right-hand placements aptly provides a

moderate balance between warmth and clarity. Audio track 3 provides an example of the third string performed at the ordinario position, contrasted by sul ponticello and then sul tasto.

An especially warm sul tasto effect can be achieved when plucking at a node twelve frets directly above a fretted note. The richness of this effect coupled by the relative roundness of its onset is such that it has been dubbed the "clarinet tone," a name that is not unwarranted: As Schneider notes, "…theoretically a mid-string pluck produces only odd harmonics, like the tone of a clarinet." [5] Coincidentally, this technique is most feasible with monophonic textures since the right hand will need to gauge its position by one specific fret; when used in chords or polyphonic textures, it will likely be assumed that the soprano note is the one by which the nodal point is gauged. Be aware that it is impractical to use it in rapid passages containing a moving soprano voice because of the coordination required between both hands. To notate it, simply write "12 tasto" in the score with a memorandum clarifying its intention.

Some authors have rightfully indicated that tone color plays a role in the production of dynamics, i.e., guitarists may play brighter to mimic a louder dynamic or choose a darker color to add dimension to softer passages.[6] While this may be true to an extent, dynamics and colors hardly share a symbiotic relationship. In other

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[5] John Schneider, *The Contemporary Guitar* (University of California Press: Berkeley, 1985), 112.
[6] Schneider, 108.

Example 3.1: Contrasts in tone-color in *Sonatina for guitar solo* (2nd movement) by Jonathan Godfrey (ending); ◎ Track 4
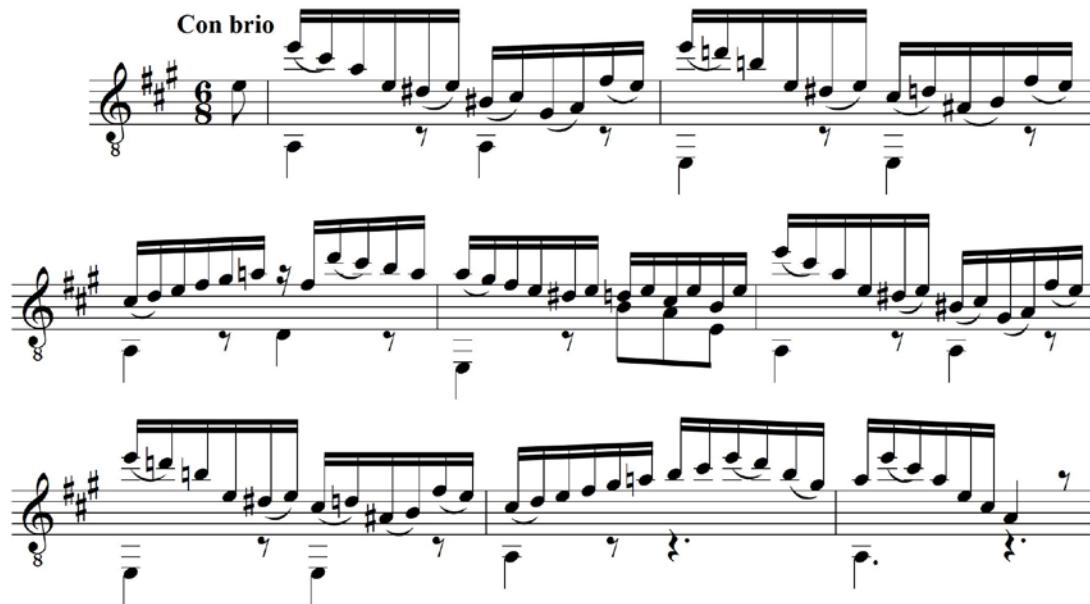
words, a very loud dynamic and even a bright sound can be achieved without playing sul ponticello, and sul ponticello by no stretch of the imagination *has* to be played loud. As such, while it is tempting for the composer to think he or she has supplementary control over the guitar's marginal dynamic range by emphasizing certain tone colors, in most cases the performer is in a much better position to maximize the effectiveness of a dynamic. The composer is thus advised to insert tone colors only when they are desired for the sake of their own musical effect.

Slurs

Among the most idiomatic techniques the composer can utilize is the slur. A slur is performed by an initial note being plucked with the right hand and the left hand fingers pulling-off or hammering-on to a different fret of the same string. Slurs are generally easy for a competent guitarist to execute and can facilitate very quick passages. Consider the virtuosic final variation of Mauro Giuliani's Theme and Variations Op. 101 seen in

example 3.2: It would be extraordinarily difficult to perform at the recorded tempo if all

the notes were plucked (if not impossible for most guitarists). However, while by no

means a novice passage, its impressive sound is in opposition to how naturally it actually

lays under the fingers thanks largely to a few well-placed slurs.

Example 3.2: Fast scalar material made possible by slurs in Theme and Variations on "*De! Calme o ciel,*" Op. 101 by Mauro Giuliani (variation four); ⊚ Track 5

The musical effect of the guitar slur is unique in that it is in many ways just as

associated with accent as it is legato. This is chiefly because the first "momentum-

providing" note of a slur group almost invariably has more presence than the notes that

are slurred to, which, since they are not plucked with the right hand, have a tendency to

sound rather subdued. Accordingly, certain issues with the placement of slurs within a

phrase arise. As Charles Duncan notes,

> Since slurs emphasize certain notes at the expense of others, their place in melodic phrasing may be likened to that of syllable stress in speech. Some patterns of stress are required for clarity, others for rhetorical effect, and there is scope for individual preference.[7]

Generally speaking, **the composer should place (though not necessarily *interpret*) the first note of a slur group as if it is implicitly accented.** Notes that bear a notated accent, strong metrical placement, or motivic significance are ideal for initiating slurs. Consider the slurring of the following Bach excerpt.

Here slurs are placed on the downbeats of both measures, thus clearly aligning with strong beats; the slurs in the second half of each measure are by contrast on a weak beat, but their placement is appropriate because they correspond to the implicit accent of a higher pitch (a "tonic accent") and the beginning of a new line on the offbeat that so commonly occurs in the music of Bach.
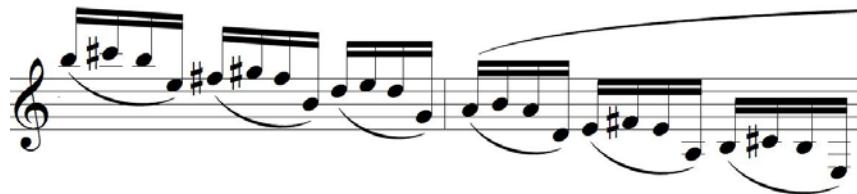
Notes that the composer slurs *to* should naturally have less emphasis than the initial plucked notes they are slurred *from*; moreover, slurring onto "accented" notes is typically not desired because the weakness of the slur deemphasizes the notes' strength.

There are three key guidelines for writing idiomatic slurs:

1.   Slur groups are only possible on a single string and should generally be kept within the range of a single position (a minor third between the highest and lowest notes of the slur group; see page 32). The exception to this range is a slur to or from an open string, in which case any interval available on that string is technically possible.

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[7] Charles Duncan, *The Art of Classical Guitar Playing* (Sunny Birchard Music: Miami, 1980), 87.
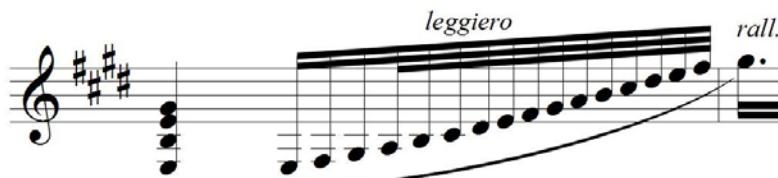
Example 3.3: Slurs onto open strings in Etude No. 10 from *Douze Études* by Heitor Villa-Lobos (mm.46.2-47.3); ◉ Track 6

2. Since the sonic momentum of an attack decays very rapidly, slur groups should mostly be limited to two notes (counting the initial strike). Three or four-note groupings should be reserved for extremely quick figurations such as ornamentations or rapid passages (such as in example 3.3). Anything above four notes is rarely used except in the cases of left hand trills and other ornamental figures.

3. By the same token, slurs are most effective in moderate to fast gestures. Slurs in slow figurations can often sound unnatural and thin due to the lack of sound supporting them.

If a slur is notated but one or more of these guidelines is violated – i.e. the slur traverses multiple strings, is an extended length, or is used in a slow passage – the guitarist will likely interpret it not as a technical slur but as a *phrase* or *legato marking*. The scale in the below Villa-Lobos examples crosses all six-strings and is rather long; as such, the guitarist will interpret the slur as a phrase marking, though the specific manner in which it is to be performed technically is indeterminate.

Example 3.4: Phrase marking in Prelude No. 2 from *Cinq Préludes* by Heitor Villa-Lobos (m.9); ◉ Track 7: each note plucked; ◉ Track 8: three-note slur for each string change

While phrase markings are acceptable in guitar music, they are infrequently found in the standard repertoire and the composer is by no means expected to include them. A guitarist will generally have no problem distinguishing a phrase marking from a technical slur, though for additional clarification many contemporary composers have adopted the practice of indicating the slur *technique* with dashed slurs and phrases with whole slurs.

"Double-slurs" containing two simultaneously slurred notes are possible but seldom encountered in the literature. To outline their comprehensive idiomatic parameters would require a more complex explanation than their atypical usage and relatively meager musical effect warrants. However, they are generally feasible for basic use provided that 1) the slurs do not extend beyond a minor third (with the obvious exception of slurs to or from open strings), and 2) the slur group is kept to just two dyads (the struck dyad and the dyad slurred to). If the group extends beyond this, the simultaneous slurs should be in the same direction (either ascending or descending) and should generally only be a trill-like alternation between the first two dyads. Slur types exceeding a double (i.e. a "triple" or "quadruple") are mostly impractical and should not be used.
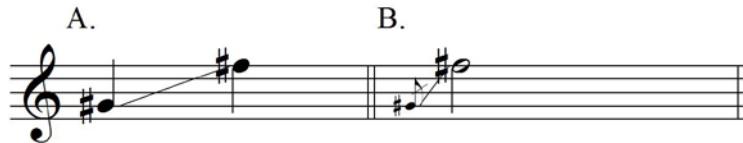
Note that descending slurs almost always have more speaking power than ascending slurs.

Sliding Techniques

The guitar can make effective use of two sliding techniques: The *glissando* and a sort of faux *portamento*. Both are performed by dragging a left hand finger up or down a string; the principle technical difference between the two is that in a glissando the finger

is pressed firmly and dragged intently against the fretboard in order for every fret to sound, whereas a portamento is held lightly and performed quicker so as to avoid any single fret standing out. Distinguishing between a glissando and portamento in the score is not always necessary for the performer's sake – the defining line between them can be blurry anyway. While the composer should specify when one is very specifically desired, if a sliding line is written between two notes without any verbal description the performer will usually choose one simply based on the context of the slide. In many such cases the speed with which the slide is to be performed will be the determining factor, with slower slides becoming glissandi and quicker slides becoming portamenti.

Figure 3.1: A. A slower slide likely to be interpreted as a glissando; B. A quicker slide likely to be interpreted as a portamento. ⊚ Track 9

Example 3.5: Glissandi in the Scherzo from *Sonata for Guitar*, Op. 47 by Alberto Ginastera (mm. 37– 39); ⊚ Track 10

Example 3.6: Expressive portamenti in *Marieta (Mazurka)* by Francisco Tárrega (mm. 1–10); ⊚ Track 11

Though very valuable as a swift lyrical effect between two notes, the guitar "portamento" does not provide the sensation of an indiscrete slide as one might expect from a trombone portamento, for instance. To achieve such a result, the guitarist would have to use a *slide*, a cylindrical metal or glass object that stops the string without applying pressure to the neck (and hence is also special for its ability to produce microtones and sound the pitches that lie in the range between the highest fret and the bridge). However, note that while slides are very common in popular styles of playing, they are rarely found in the classical guitar repertoire and their use should be approached as an extended technique.

It is possible to slide multiple notes at a time so as long as they are being slid in the same direction.

Effective Keys for Tonal Writing

While their exclusive use is hardly a requirement, the most effective keys for tonal music of any texture are those in which the usage of open strings can be maximized. The two basic criteria for such keys considered by the present author are that 1) at least

one of the three open bass strings serves as the root of I, IV, or V, and 2) over half of all

open strings lie within the key signature. Based on this method, the best keys for tonal

writing are (in alphabetical order):

Major: A, D, E, G
Minor: Am, Bm, Dm, Em

Indeed, the prominence of open strings in these keys not only significantly opens up the

guitar's registral limitations but adds a noticeable sense of sustain to the writing. From a

technical point of view, these keys will also be considerably easier to play in since open

strings require no effort from the left hand to play or sustain.
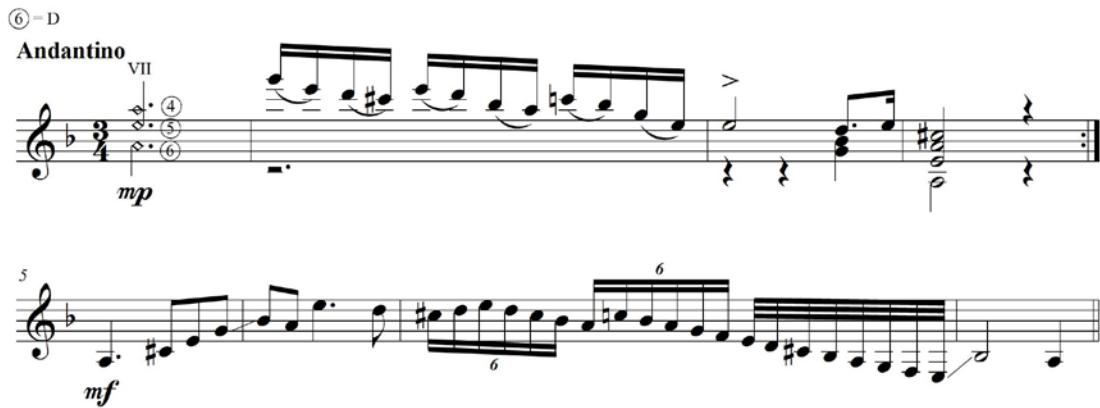
Chapter IV. Textures in Guitar Writing

The following discussion covers an array of commonly used textures in guitar writing, noting their general musical effect and notational conventions. The reader should bear in mind that the isolated presentation of each texture coupled with the sometimes meticulous guidelines for idiomatic writing that accompanies them might belie how freely and fluidly the composition process should actually be. For instance, the composer is told in the section on arpeggios not to successively repeat strings in an arpeggio pattern. Does this mean that he or she should not immediately follow an arpeggio pattern with a scale that *does* repeat strings? Hardly: The composer should feel free to move fluently between textures to satisfy whatever musical result is desired. Yet whether focusing on only one or rapidly changing between them, the composer should aspire to use the following textures with an inventiveness and artistic prudence that first and foremost compliments his or her musical intuition. After all, the goal by discussing these textures is not for the composer to blindly reproduce them, but to synthesize them into well-formed musical results.

Monophonic Writing: Single-line Melodies and Scales

Being one of the few that can exploit such expressive effects as vibrato and genuine slurs and slides, it could certainly be argued that the guitar is the most lyrical of the major attack-and-decay instruments. Indeed, the guitar's capacity to utilize these techniques allows its melodic lines and scales to sing even in spite of the instrument's overall lack of volume. Perhaps one of the most telling proofs of this is the melodic lyricism at the forefront of the Spanish repertoire the guitar so readily champions.

Example 4.1: The lyrical opening of *Capricho Arabe* by Francisco Tárrega; ⊚ Track 12

Few single-line melodies ever impose technical concerns for the guitarist when they are moderately paced. However, faster linear or scalar passages can very easily present challenges that require the utmost virtuosity depending on how they are approached by both the composer and the performer. In order to avoid problems with quicker scales, the composer should consider the two ways in which they can be played: by plucking with the right hand or slurring with the left.

Plucking is considerably more articulate than slurring; moreover, there is an increased sense of virtuosity that is conveyed when scales are entirely plucked. This virtuosity is rightfully perceived since playing quick, entirely plucked scales requires considerable dexterity and coordination between both hands. As such, it is very risky for the average guitarist to play an all-plucked scale of substantial length (for instance, an ascending two-octave major scale or longer) at speeds that exceed the range of quarter note = c. 126 where the note values are straight sixteenth notes. There is some leeway in this guideline however, particularly in that:

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- This tempo mainly pertains to uninterrupted scales of invariant rhythm. Scales in which rests or longer rhythmic durations are interspersed allow the hands to better coordinate with each other and as such are usually more forgiving.

- Some guitarists are more likely to be able to exceed this speed if the scale is played in a soft or *leggiero* manner.

- A guitarist's "speed ceiling" will vary considerably from one performer to the next. If writing for a specific guitarist, it would be beneficial to consult with him or her on this point.

Any scale that does not include a slur is typically assumed to be all-plucked. Some composers have also used staccato markings to further specify plucked notes, though one must obviously exercise caution when using them in less agile passages or over longer rhythmic durations so as to not unintentionally suggest that these notes be cut short.

The use of left hand slurs substantially raises the limit on how fast a guitarist is able to play a scale, though the composer must be keen to know when their use is appropriate. Because slurs bear the unique accentual properties discussed in the previous chapter, some care must be taken with their placement (see page 22). Additionally, the composer should also be mindful of their distribution: Slurs in rapid succession have their own unique character that may or may not be desirable by the composer.

Example 4.2: Slurs facilitating a fast passage in Estudio XX from *Estudios sencillos* by Leo Brouwer (final measure); ◎ Track 13

What constitutes "rapid succession" will depend upon the context in which they are used, but in many cases even two slurs back-to-back can significantly alter the effect of a scale. Speaking very broadly, slurs sound the most natural within a scale when they alternate with a series of plucks and can be very technically advantageous even if the ratio of slurred to plucked notes is rather low (whether it be one for every two or one for every ten). In example 4.3, even having only one slur per measure greatly alleviates the passage's technical strain.

Example 4.3: Scale in the first movement of *Concierto de Aranjuez* by Joaquín Rodrigo (RN. 12.6–7) containing a low ratio of slurred to plucked notes; ◎ Track 14

Note that on occasion a guitarist may add slurs into a scale even if they are not in the score simply for the sake of ease, though this should by no means hinder the composer from notating them when desired.

The "Polyphonic Range"

Despite being an intrinsic precept of the classical guitar idiom, polyphonic

writing can be quite challenging for the non-guitarist composer to make both idiomatic

and effective. A central component of this difficulty is that of range. Consider that in the

opening chapter it was stated that the guitar's range spanned from E_2 to B_5. While this is

true in terms of its entire spectrum of playable notes, imagine if a guitarist had to perform

the following:
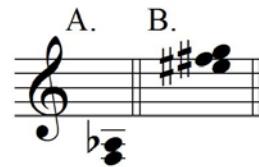
To play these pitches simultaneously would require a stretch of seventeen frets! Such a

dyad is clearly far from possible, though problematic intervals are not always so blatant.

To avoid writing them, a polyphonic "sub-range" that can account for the left hand's

limitations and ergo the range in which polyphony is achievable should be established.

The "polyphonic range" will be intrinsically tied to the left hand's span within a

single *position*, a stationary point on the neck determined by whichever fret the first

finger is on (e.g. first finger on first fret for first position, first finger on second fret for

second position, and so on). **In any given position, the "resting" left hand stance**

places each of the four fretting fingers on their own adjacent fret, thus providing an

immediate four-fret range of motion. Guitarists are certainly capable of stretches that

exceed this span, especially in higher positions where the space between frets becomes

progressively smaller. Yet while the composer may utilize this flexibility when needed,

because the four-fret range is consistently practical all over the neck, it will be deemed

the extent of a single position in this text. Recognizing this span, one finds that the

intervallic distance from the lowest note to the highest in a given position is **two octaves plus a minor third,** which in turn is the maximum range between the lowest and highest notes in a polyphonic texture. Be aware that one substantial exception to this range occurs when the lowest note is an open bass string (sixth, fifth, or fourth) as this frees the left hand to perform the upper voice(s) in any position; few issues of playability arise when the higher material is itself monophonic (i.e. melodic or linear), though chordal writing that uses an open string to exceed the polyphonic range is less predictable and benefits greatly from having an instrument to experiment with.
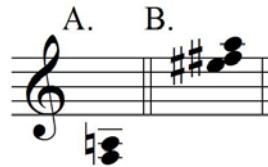
Unfortunately, staying within the appropriate maximum registral limits does not in itself ensure successful polyphonic writing: One must also take into account that **all simultaneously sounding notes <u>must</u> be played on different strings,** a factor that can pose unique concerns all its own. The intervals in figure 4.1, for instance, are well within the range of two octaves plus a minor third, yet are impossible to play. The problem with the dyad in figure 4.1A is that both pitches are only available on the sixth string: To sound them at the same time is simply not possible. Playing the pitches in figure 4.1B simultaneously (and ergo on three different strings) would require an entirely impractical stretch of seven frets between three fingers.

Figure 4.1: Two impossible sonorities

The good news is that such issues can many times be substantially alleviated by simply

opting for wider intervals between voices. Figure 4.2 shows how little figure 4.1 has to be

altered to become playable. Be mindful using wider intervals to increase the likelihood

for playability mostly applies to textures of three sounding notes or more: Small intervals

between dyads are actually hardly ever problematic unless both notes can only be played

on the sixth string like in figure 4.1A.

Figure 4.2: Figure 4.1 intervals expanded to be made possible

More specific details on the matter of pitches being played on different strings will be

addressed in the discussion of each respective texture as relevant.

Lastly, note that since the left hand must continue to hold down fretted pitches

after they are struck in order for them to sustain, the principles of the polyphonic range

apply not just to notes with simultaneous attacks, but to any that sound concurrently

regardless of when their onset occurs.

Arpeggios

The classical guitar arpeggio is one of the most organic and musically effective techniques possible on the instrument. Exceedingly idiomatic, even seemingly intricate arpeggio patterns can often be executed with relative ease. While arpeggiation is obviously not an inherently polyphonic texture in and of itself, the sonorous, the sustained nature of the classical guitar arpeggio much more lends itself to polyphony than the relative linearity of a bowed string instrument's arpeggio. Indeed, a fundamental precept of the classical guitar arpeggio is the over-ring of different strings created by the right-hand plucking different strings in succession. This creates a very attractive sound that can evoke a wide range of musical characteristics: A slower arpeggio pattern can readily suggest a rich, dreamy character, while faster patterns exemplify some of the most mesmerizingly virtuosic writing possible on the instrument. Audio track 15 gives an example of the arpeggio's idiomatic potential in Etude Op. 48, No. 5 by Mauro Giuliani.

To maximize the effectiveness of the guitar arpeggio both physically and sonically, the composer should generally avoid writing two (or more) notes on the same string in immediate succession. While not impossible to perform, placing two successive notes on the same string can cause the arpeggio pattern to feel unnatural for the right hand since the performer will most likely either have to quickly repeat a finger or execute an awkward string crossing to accommodate it. Moreover, when a string is repeated, the first note must obviously end when the second note begins; the overall sustain of the arpeggio is thereby lessened.

Utilizing wider intervals in arpeggio writing is a simple way to raise the probabilities for different strings to be used. The guidelines below show what intervals should be most prevalent.

Interval	Result
PU-m2	Likely played on one string (avoid)
M2-M3	Potentially played on one or two strings (use sparingly in lower registers, moderately in higher registers)
P4-higher	Likely played on different strings (use frequently)

The second class of intervals, M2-M3, is most commonly used in notes higher than E_3 (the first E on the D string) as a result of 1) the m3 tuning interval between the third and second strings, 2) commonly used left hand chord-shapes that make such intervals more prevalent in this range, and 3) the simple fact that smaller intervals are more distinguishable at higher frequencies.

There are two exceptions in which smaller intervals may be used in arpeggios with hardly any reservations. The first is when the interval involves an open string (aside from the open sixth string).

Example 4.4: Ostinato open strings facilitating small intervals in an arpeggio pattern in Prelude No. 1 from *Three Preludes* by Lewis Richmond (mm.54–56); ◎ Track 16

The second is the use of slurs within an arpeggio pattern, the occasional use of which has

the extra benefit of giving the right hand a brief moment of respite in quicker passages.

Example 4.5: Slurs facilitating small intervals in an arpeggio pattern in the first movement of *Concerto elegiaco (Guitar Concerto No. 3)* by Leo Brouwer (RL D.3–6); ⊚ Track 17

Types of Arpeggios

For purposes of this discussion, arpeggios will be divided into three categories:

1. **"Polyphonic Arpeggiation."** A type of polyphonic rendering in which each note of the arpeggio belongs to a distinguishable voice.

2. **"Gestural Arpeggiation."** A figure in which the *texture* of the arpeggio is itself more dominant than any conceivable polyphonic rendering.

3. **"Melodic Arpeggiation."** A combination of 1 and 2 in which at least one clear melodic line (typically in the bass) is played in conjunction with a texture-driven "accompaniment" figuration.

Know that these categories are exceedingly superficial and arpeggios may certainly

exhibit qualities of more than one. Regardless, these groupings will aid in clarifying the

most idiomatic usages of the arpeggio.

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Polyphonic arpeggiation is the basis for numerous solo guitar pieces, ranging from beginning etudes to concert masterworks. An example of the former that is often used to teach beginning players the idea of voice separation (among other concepts) is Matteo Carcassi's Etude Op. 60, No. 3 (example 4.6). Here there is a clear three-voice polyphony embedded within the texture of a moderately paced arpeggio pattern. In the first measure, the low A establishes the bass, the higher A and C-sharp constitute the middle-voice, and the soprano is made up of a "sighing" two-note melody between F-sharp to E. All of this is accomplished through a basic arpeggio pattern in which there is no successive repetition of a string.

Example 4.6: Three voices within a single arpeggio pattern in Etude No. 3 (Op. 60) by Matteo Carcassi (mm. 1–8); ◎ Track 18

Regardless of how many voices are present in a polyphonic arpeggio pattern, the composer is encouraged to clearly notate any melodic lines that are to be brought out of

it. Consider how obscure the polyphonic rendering of the Carcassi excerpt is when written in a single layer.

Example 4.7: Carcassi's Etude No. 3 without stems indicating soprano and bass lines (not advised)

Yet neither is Carcassi himself entirely literal or overly meticulous with his notation. Indeed, it would be something of an eye-sore for the excerpt to be presented as a literal three-voice rendering.
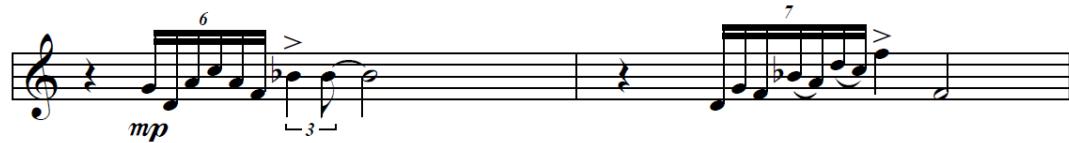
Example 4.8: Carcassi's Etude 3 with each voice distinguished and notated literally (not advised)

Carcassi's actual notation as seen in example 4.6 is such that the middle-voice appears as something of an "arpeggio skeleton" upon which the upper and lower voices are mapped through the use of stems and open note-heads. Such an approach is successful in this case because it clearly delineates the multiple voices at work and shows how the arpeggio pattern undergirds the texture all while being orderly and easy to read. Such a method will not always work ideally in every polyphonic arpeggio texture, but it is certainly favorable in instances where the notation would otherwise appear cluttered with rests or counterintuitive to the simplicity of the pattern. When considering if a rest in such an arpeggio is necessary or not, it seems appropriate to restate the point made on page 13: If the composer has a specific rhythmic value in mind for any note in which its duration is *audibly salient*, he or she should feel free to notate it literally. Conversely, for less prominent notes that may be allowed to decay or be muted naturally, the composer should utilize the simplest appropriate notation.

<p align="center">"Gestural Arpeggiation"</p>

Guitar arpeggios need not always maintain the delicate part-writing of polyphonic arpeggiation and may instead revolve around the contour, shape, or directive motion of the figure itself. While these *gestural* arpeggios may be of a variety of lengths and types, one will often find them occurring as short ornamental bursts.

Example 4.9: Gestural arpeggios in the second movement of *Saudade* by Jonathan Godfrey (mm. 3–4); ⊚ Track 19

Longer gestural arpeggios that span anywhere from several measures to an entire piece are of course possible, though the composer should keep in mind that, in such cases, repeated or predictable right-hand patterns are far easier for the guitarist to play than those that are more arbitrary. Compare examples 4.10A and 4.10B. Despite the fact that A is much faster, longer (this right-hand pattern spans the entire piece), and harmonically diverse than B, it is not difficult to internalize once the right hand is mastered because it is repeated throughout. B, despite being only moderately paced and the left hand remaining stagnant, is far less idiomatic to perform because the right hand is completely unpredictable (note that it might have actually been helpful for the left hand to have been more active so that the right hand could have had some musical and kinesthetic guideposts to help direct the pattern).

Example 4.10:
A. Repeated arpeggio pattern in Etude No. 1 from *Douze Études* by Heitor Villa-Lobos (mm. 1–4)

B. Arbitrary right-hand activity over a stagnant left-hand chord (not advised)

A composer might understandably wince at the redundancy of repeating a single right-hand arpeggio over any extended period of time. One trick to add musical variety is to choose left-hand fingerings that vary the contour without altering the right-pattern. For example, the composer might use a sonority that incorporates a mix of both open and fretted notes and then transpose the fretted notes up or down against the stationary open strings. This technique is in play in Villa-Lobos's Etude 1 as a four-note chord begins at the tenth position and is moved down a half-step each measure over an open sixth and first string.

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Example 4.11: Shifting contours amidst a repeated right-hand pattern in Etude No. 1 by Villa-Lobos (mm. 12–21); ⊚ Track 20

"Melodic Arpeggiation"

Melodic arpeggiation, in which a melody is coupled with a texture-driven arpeggio pattern, can provide a quite dazzling effect. Example 4.12 offers a barebones example of the most common (though certainly not invariable) formula for this type of arpeggio. Here one finds a uniform rhythmic value (sixteenth triplets) in which the melodic and accompaniment notes are always discrete from one another – in a way, the rhythm of the melody can be perceived as being determined by the number of accompaniment notes separating the melodic notes (two in this case). Additionally

Example 4.12: "Melodic arpeggiation" in the third movement of *Concerto elegiaco* by Leo Brouwer (RL D.7-10); ⊚ Track 21

prototypical of the melodic arpeggio is that the melody is in the bass while the "accompaniment" lies above it. This arrangement makes sense not only in terms of the melody being pronounced and separate from the accompaniment, but physically it is exceedingly natural for the right hand to "lead" with the thumb (see discussion below). Notice also how the open strings play integral roles in the "accompaniment." This is very common in melodic arpeggiation as it frees up the left hand to perform the presumably moving line of the melody while adding a degree of sonorousness to the writing.

Since melodic arpeggios are indeed melody driven, it is reasonable to expect them to be longer than the typical gestural arpeggio. This duration coupled with the fact that melodic arpeggios are often performed rather swiftly suggests once again the value of a predictable right-hand pattern. Notice that while example 4.12 shows repetition on the small scale of three-notes, what constitutes a "repeated pattern" may of course be much longer (perhaps even gauged in number of beats and bars rather than individual notes).

The Role of Bass Notes in Arpeggios

Looking back over the examples used in this discussion on arpeggios, the reader will notice how nearly all of them contain patterns that begin with a bass note and place bass notes on strong beats. This near unanimity was not intended by the author – much harder would it have been to find examples that did *not* have these qualities – and is indicative of the prominent role the right-hand thumb that plays these notes has in an arpeggio pattern. Not only does beginning with a bass note provide something of a harmonic foundation over which the arpeggio can proceed, but the tactile sensation of beginning with *p* is extremely natural for the guitarist. Moreover, since the thumb is the strongest finger in an arpeggio pattern, its alignment with strong beats is only natural; this of course goes hand-in-hand with the idea that, from a purely musical standpoint, bass notes generally lend themselves to strong beat placement anyway.[8] As was the case with the first arpeggio from example 4.9, the most common exceptions for the prominence of bass notes and *p* occur in gestural arpeggios, which can be short and metrically indifferent enough that the placement and emphasis of the bass is less relevant.

Counterpoint

The guitar is extraordinarily capable as a contrapuntal instrument with works as dense as three-voice Bach fugue arrangements commonly programmed on the instrument. The complexity of contrapuntal music can make much of it quite difficult to perform; fortunately for the composer, *writing* playable counterpoint requires that only a few simple guidelines be followed.

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[8]Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (MIT Press: Cambridge, 1983), 88.

Example 4.13: Exposition of the Fugue from BWV 998 by J.S. Bach arranged for guitar (1–8); ⊚ Track 22

1. **Restrict contrapuntal writing to two or three voices**. Compositions in four voices or higher are impractical.

2. **As a general rule, when the voice with the smallest subdivision is fast (enough that it requires more than one right-hand finger to pluck it), avoid exceeding a 2:1 ratio of notes between it and all accompanying voices.** For example, if the most subdivided voice in a given passage of counterpoint in 4/4 where quarter = 92 is constant sixteenth-notes, the accompanying voices can safely sound at the combined rate of an eighth note. Drawing any closer to a 1:1 ratio can occasionally be accommodated in brief instances but is generally too cumbersome to execute outside of slower to moderate tempos.

3. **Maintain the standard polyphonic range of a maximum of two-octaves plus a minor third and a minimum of simultaneous voices being able to be performed on separate strings.** Regarding the latter point, recall that the guitarist is very likely to find a playable solution to almost any small interval when dealing with two-voice counterpoint: It is in writing three-voices in which one will need to be more cautious.

Example 4.14: A. A 2:1 ratio of notes between bass and soprano in the Double from BWV 997 by J.S. Bach (mm. 32–36); B. First two bars of the same example at a 1:1 ratio (not playable at tempo)

A. ⊚ Track 23

B.

Counterpoint should be notated in such a way that every voice is clearly discernible through its stem direction. Moreover, whereas writing out rests for each individual voice was deemed somewhat superfluous in arpeggio writing, it is appropriate and expected for most contrapuntal music. While the result can appear somewhat congested on a single staff when three voices are used, guitarists will be accustomed to this style of writing as long as the pitches and rhythmic values are legible – multiple staffs are otherwise encouraged.

Vertical Chords

Chord playing is an archetypal component of the guitar idiom. Left hand shapes of triadic chords of every quality have been extensively codified since the 17th century and provide a technical vocabulary used mainly by popular and jazz guitarists. Such chords also appear in classical writing, though the nature of classical guitar music intrinsically demands a far more open-ended approach to the left hand. Moreover, whereas the technique of strumming with a plectrum pervades popular styles of chord playing, one will find that vertical sonorities in classical guitar writing will instead favor such fingerstyle conventions as blocked chords, rolled chords, and *rasgueado*.

Before identifying the characteristics of these right-hand techniques, the foundational issues behind left hand chord construction will be addressed.

How Chords are Formed

Following the guidelines of the polyphonic range the composer should encounter little difficulty writing playable chords consisting of three or four notes. Unfortunately, constructing chords of five or six notes can be much more precarious without access to the guitar neck. This is primarily because they simply have more notes than there are available left hand fingers and thus their formation revolves around a few special parameters. Be aware that while five and six-note chords are not inherently necessary for successful guitar composition, neither should they be considered merely peripheral. Indeed, such dense chords are vital to facilitating strumming techniques and sonorous rolls that extend the breadth of the instrument's expressiveness quite significantly. As such, it is important that the composer understand some basic elements of their construction.

Chords can either be **open** or **movable**, indicating respectively the presence or lack thereof of an open string. An intrinsic feature of the open chord is that its shape cannot be moved up or down the neck without the harmonic quality of the chord being changed since the open string or strings will remain stationary. Such parallel movement of open chord shapes can produce the powerful and exceedingly idiomatic effect that was previously seen in examples by Villa-Lobos (example 4.11). Conversely, movable chords contain no open strings and can be transposed anywhere along the neck without altering its harmonic quality.

Figure 4.3: A movable chord shape that can be transposed anywhere between these two sonorities

While five and six-note open chords are by no means abnormally difficult to perform, to verbalize the principles behind their construction from a purely musical standpoint and without extensively referring to the physicality of the instrument would be convoluted at best. Instead, it is strongly recommended that the composer secure a guitar to experiment with the different sonorities possible when mixing stopped with open strings. If a physical instrument is unavailable, the composer may also refer to figure 1.4 and the discussion that concludes this chapter regarding a technique in notation software that may assist in creating idiomatic open chords.

Movable chords made up of five or six notes are fortunately much more formulaic. This is because it is impossible to create a five or six-note movable chord
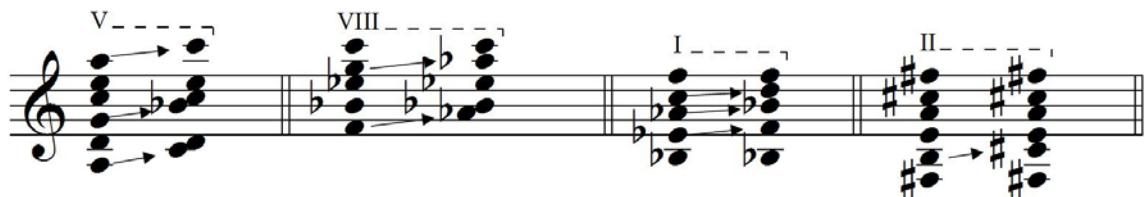
without also employing a *barre*, which the composer can thus use as the starting point for their construction.

Figure 4.4: Full barre on the first fret

Since all of these notes are being held down by the first finger, fingers two, three, and four can be used to alter the members of the barre up to a range of three frets. As a result, **when given a full barre, the composer may elect to *raise* as many as three notes of that barre between one to three half-steps.**

Figure 4.5: Random examples of movable five and six-note chord construction
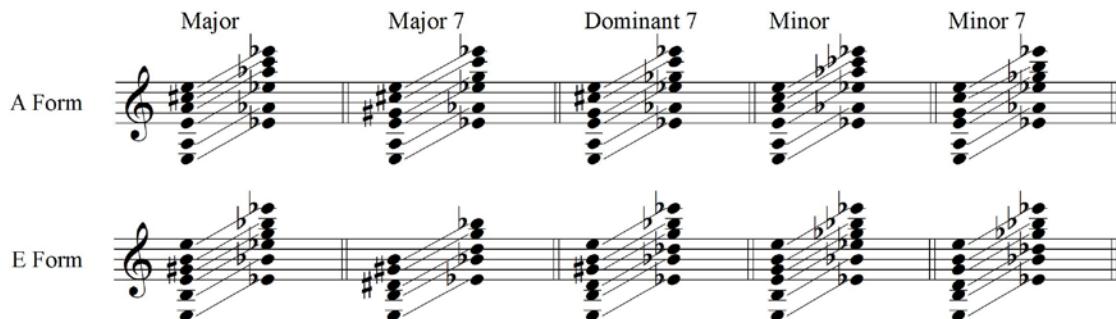
Note that full-barres higher than the eleventh fret are not feasible on the classical guitar because of how the instrument's body joins to the neck at the twelfth fret and thus restricts left hand motion. Five and six-note chords utilizing half-barres are possible in this higher range when the sounding barred strings are adjacent, though they are generally more difficult to perform.

Commonly Used Chord Shapes: E Form and A Form

For composers writing in a tonal idiom, figure 4.6 shows some of the most idiomatic and versatile five and six-note tertian chord shapes on the neck. Colloquially known as "A Form" and "E Form" for the left-hand open chord shapes they represent, notes may be subtracted as needed (the sixth string is often omitted in A form to put the chord in root position, for instance).

Figure 4.6: Common five and six-note tertian chords

How Chords are Played

As mentioned above, a vertical chord on the classical guitar is played one of three ways: a block, a roll, or a rasgueado. The composer can opt to designate which is used at any time; if no designation is given, the guitarist will choose based on the context of the chord and his or her own interpretation of the music.

Block chords are performed by simply plucking each member of the chord simultaneously. Since blocks represent the ordinario manner of playing, it is assumed that three and four-note chords will be plucked this way without any additional descriptor needed. Five-note chords may also be blocked if the two lowest notes are on adjacent strings, as p will have to strike two strings at once. Six-note chords are more readily

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presumed to be rolled instead of blocked without any directive in the score, but may be

played as a block nonetheless by *p* simultaneously plucking three strings. The performer

may elect to block five or six notes whether for interpretive or technical reasons, but if

the composer wants to make his or her intentions unequivocal, "block chord" should be

written (the composer may also want to consider a designated symbol if the blocks are to

be rapidly distinguished).

Example 4.15: Block chords in *Cordoba* by Isaac Albéniz (mm. 1–20); ◎ Track 24

Note that one should avoid writing rapidly plucked block chords above quarter = c. 92

where the chords are in sixteenth notes as it is quite difficult for the right hand to prepare

quickly enough at this speed: Any more than two in a row are likely to be interpreted as a

rasgueado (discussed further below).

Rolled chords feel very natural to the right hand – so much so that, for better or

for worse, many guitarists have a tendency to roll chords even when there is no indication

to do so. The effect is akin to a harp and is especially sonorous when five or six-strings

are involved (though any number can be rolled). Five and six-note chords are often presumed to be rolled in slower passages even in the absence of the roll symbol, though the composer should still include it when the effect is specifically desired.

Example 4.16: Rolled chords in alternation with block chords in the third movement of *Sonatina for guitar solo* by Jonathan Godfrey (mm. 72–83); ◎ Track 25

Downward rolls are also possible.

Rasgueado is the blanket term used to describe the classical guitarist's strumming technique with the nails of the right hand. **Chords of any number of notes can be employed when utilizing rasguedo, but it is *strongly* recommended that the composer utilize sonorities of five or six-notes or if less, those that are compactly spaced enough that they lie entirely on adjacent strings.** This is because the strum of the rasgueado traverses all strings between the highest and lowest in the chord, thus raising the possibility of unwanted strings being sounded if wider spacings and fewer strings are used. Avoiding intervals greater than a minor sixth is one way to help avoid this issue; the performer also may occasionally be able to mute unwanted strummed strings with the left hand, though this is not always possible. Be aware also that

playability issues aside, strummed chords with wide registral spacings and fewer than five notes simply do not *sound* as full and natural as their denser counterparts.

Types of Rasgueados

The functions of rasguedo are diverse, though virtually all instances can be categorized as a strumming pattern, an unmeasured tremolo, or a single and often *szforzando* strike.

The use and type of rasgueado is dictated by the speed and character of the music. In the below example, strumming is implicit as the music is far too fast to utilize plucked chords.

Example 4.17: Implicit rasgueado in the opening measure of *Music at 80MPH* by Jonathan Godfrey

In more ambiguous cases, the composer should write the abbreviation *rasg.* to ensure its use. This will be true of all forms of the rasgueado.

Strummed rhythmic patterns utilize a combination of upstrokes and downstrokes. Much like in bowed string instruments, downstrokes carry a degree of accentual weight while upstrokes are considerably weaker. Up-bow (∨) and down-bow (⊓) markings may be used in guitar writing, but a more common and intuitive notation is to simply use up-arrows (↑) for upstrokes and down arrows (↓) for downstrokes. These directional symbols need not appear in every instance of the rasgueado – the guitarist will often follow

metrical placement to make the appropriate choice between strokes – but they should be used when a specific strumming pattern needs to be clarified.

Example 4.18: Arrows clarifying strumming direction in the third movement of *Sonatina for guitar solo* by Jonathan Godfrey (mm. 149–150)

There is virtually no limit to how fast a rasgueado pattern can be, and as such rasgueado can facilitate even an unmeasured chord tremolo; simply use the appropriate tremolo beaming above the chord to indicate such. In the below example, notice especially the effective use of dynamics and crescendos and decrescendos.

Example 4.19: Tremolo rasgueado in *Fight or Flight* by Roger Zare (RL Q.1–13); ◎ Track 26

A much different unmeasured sound can be created by using the flesh of the right-hand

fingers instead of the nails. This creates a very warm tremolo with little attack and little

projection. To notate this effect, in addition using tremolo beams above the desired chord,

writing something to the effect of "soft tremolo (use flesh)" when it is to be used and

"ord." to return to the regular playing position will indicate the correct intentions. In

audio track 27 one can hear the first few bars of the above example performed in this

manner.

Rasgueados exemplify the widest range of dynamics on the guitar: They can be

played as quietly as any plucked note and yet can also produce the loudest sound possible

on the instrument. Regarding the latter point, a single rasgueado is fantastic for producing

a loud, percussive strike, especially when done across five or all six strings. What is

especially unique is that the effect's attack can even give the impression of a slight

envelope as a result of each right-hand finger hitting the strings in rapid (and increasingly

forceful) succession. The guitarist will often times be able to tell if such a rasgueado is

appropriate in the context of the music. A sforzando can often encourage its use, as can a

roll with an accent (though this is generally discouraged since it can potentially be

confused with a simple roll).

Example 4.20: Rasgueado chords punctuating scales in the first movement of *Concierto de Aranjuez* by Joaquín Rodrigo (RN 9.8–10); ⊚ Track 28

Melodic-Accompaniment Writing

A very common texture in guitar writing is that in which there is a clear melody

over, under, or between accompanying block chords. In using this texture, the composer

should follow the polyphonic range and notate the melody in a separate layer from the

accompaniment. In most cases, if the melody extends beyond the position of the chord or

very clearly conflicts in range with a chord member (i.e. if it is within a minor second or

unison), it is reasonable to assume the chord probably cannot be held and either a new

chord in the appropriate range or a rest should be written.

Example 4.21: Melody appearing in soprano, tenor, and bass voices in *Cordoba* by Isaac Albéniz (mm. 57–76)

Tremolo

Tremolo chords played via rasgueado were discussed above, but there two additional manifestations of "tremolo" that the composer should be aware of. They will be labeled here as "monophonic tremolo" and "polyphonic tremolo."

The effect of monophonic or "single-string" tremolo on the classical guitar is reminiscent of mandolin playing and involves using a fingernail (typically *i*) like a plectrum and rapidly moving the forearm up and down.

Example 4.22: Monophonic tremolo in the second movement of *Saudade* by Jonathan Godfrey (mm. 45–48)

If one has heard the infamous miniature *Recuerdos de la Alhambra* by Francisco Tárrega or the conceptually similar *Una limosna por el amor de Dios* by Augustine Barrios, one has heard the technique known by guitarists simply as "tremolo" but what will be regarded in this text as *polyphonic* tremolo. The discrepancy in name is made because the nature of the technique intrinsically generates a two or three-voice polyphonic texture.

Polyphonic tremolo is created through a sequential, rhythmically even *p-a-m-i* right-hand pattern,[9] where *p* plucks a note on any string but the first, and is immediately followed by *a-m-i* on a single higher string. When performed quickly, the effect of *a-m-i* on one string is that of a seemingly seamless tremolo (though perhaps this cannot be considered a true tremolo because of the brief gap that occurs as *p* plays). Underneath the tremolo, the thumb is free to create its own independent line in the bass. In the case of the Tárrega and Barrios examples mentioned above and excerpted in the figures below, something akin to "polyphonic arpeggiation" is created as the first *p* note of each measure establishes a bass voice while the following *p* notes generate a middle voice.

To summarize it from a more musical approach, the polyphonic tremolo consists of a four-note group of the same rhythmic value (i.e. four sixteenth notes, four thirty-second notes, etc.) in which the first note is the bass and the following three are a higher repeated pitch. The only instance when a crossing or unison of voices is allowed is when the tremolo voice is played on an open string. The limitations of the polyphonic range apply, though the composer need not worry much about the use of small intervals and playability on different strings when dealing with a two-voice texture. When attempting

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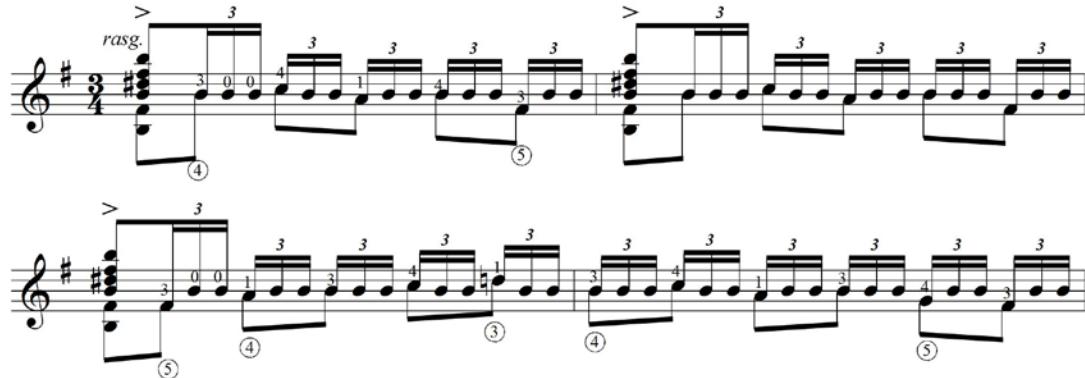
[9] Some guitarists may elect to instead use *p-i-m-a*, *p-i-m-i*, or some other variant, but this is of no consequence to the composer.

to create a three-voice texture as in the above examples, however, the use of wider intervals in the bass notes while maintaining the span of one position are encouraged so that each voice will be assured its own string and conditions for sustain.

Example 4.23: *Recuerdos de la Alhambra* by Francisco Tárrega (mm. 1–8); ◎ Track 29

Polyphonic tremolo patterns in three-note groupings are effective, though the composer should be aware that the increased ratio of bass to treble notes and decreased duration of the overall pattern will likely cause the underlying qualities of harmonic rhythm and phrase length to be accelerated. In the standard repertoire, three-note tremolos are more commonly used in select passages instead of as the basis for entire works.

Example 4.24: A three-note tremolo grouping in *Asturias* from *Suite Española* (Op. 47, No. 5) by Isaac Albéniz (mm. 25–28); ◎ Track 30
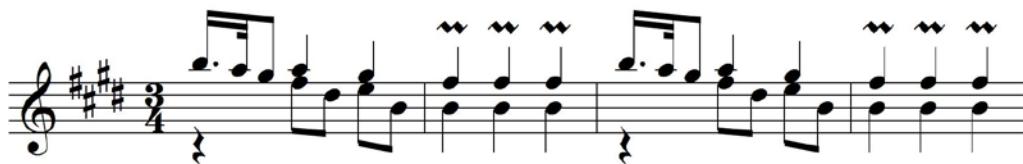
Groups of more than four-notes are possible, though they are mostly ineffective musically and technically as they do not lie naturally in the guitarist's right hand and lack the same fluidity of smaller-scale patterns.

Trills

The guitar is capable of effectively producing both short ornamentive and longer sustained trills. The guitarist may perform trills in one of two ways: As a "left hand trill," in which the trilled notes are slurred on the same string, or as a "right-hand trill," where the trilled notes are rapidly plucked between two different strings. Left hand trills tend to be more legato while right-hand trills have more speaking power. The composer may opt to designate between a left or right-hand trill when the trill is not accompanied by any other notes; however, when other notes are played or sustained beneath or over the trill, the choice between left or right-hand trills will usually be constricted to what is idiomatically possible and will be chosen by the performer.

Example 4.25: Two examples of trills in Sonata K. 380 by Domenico Scarlatti

A. (mm. 1–4) ⊘ Track 31 (left and right-hand trill examples)

B. (mm. 77–78) ⊘ Track 32 (left and right-hand trill examples)

"Digital Intabulation" via Notation Software

Given the intricacies of polyphonic writing that have been detailed in this chapter, it is appropriate to conclude this discussion on textures by mentioning a trick in the two mainstream notation programs, Sibelius and Finale, [10] by which one can see firsthand how any sonority might lie on the guitar neck. This is accomplished by converting material from standard notation to a fingering-based system of notation known as **tablature** (or "tabs") in a process that might best be described as "digital intabulation."

Tablature features a staff of six horizontal lines representing the six strings of the guitar, the top line denoting the first string and the bottom denoting the sixth. On these lines are placed numbers that represent frets; the triangulation of a specific fret and string shows the guitarist where a desired pitch is to be played. For instance, a 1 on the bottom line indicates sixth string first fret (producing a sounding F_2), a 10 on the second highest line indicates second string tenth fret (producing an A_4), a 0 on the third highest line indicates third string open (producing a G_3), and so on.

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[10] Finale 2012 and Sibelius 7 were used for testing in this document.

Figure 4.7: The opening measures of *Recuerdos de la Alhambra* in tablature
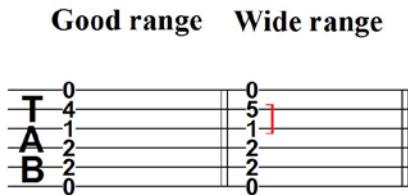
To generate an intabulation in Sibelius or Finale, simply copy material from a notated staff and paste it into a tablature staff. One may also generate standard notation from tablature in the same manner.

Using Digital Intabulation to Create Open Chords

While there is no limit to the kind of sonorities that one can intabulate, the potential of digital intabulation as a reference tool for the non-guitarist composer is most evident in its capacity to assist in the construction of five and six-note open chords. Indeed, though a written explanation of dense open chord construction was deemed to be an ultimately futile effort earlier in this text in the absence of a guitar (see page 49), the visual representation of tablature offers a better understanding of how and why certain chords may or may not be possible.
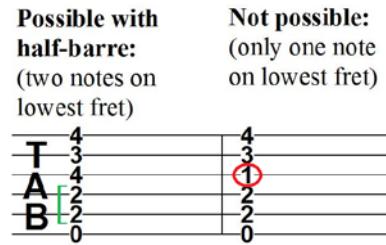
Feasibility can be ascertained very simply in chords in which only four notes are *fretted* by merely following the usual constraints of the polyphonic range and not exceeding the span of three frets total between the fretted notes.

Figure 4.8: Ranges in open chords

Good range   Wide range

Far less common in the repertoire, the only instance in which up to five fretted notes can be used in an open chord is when a half-barre is employed. Unfortunately there are several complex factors that can play into the construction of such a chord to the point that using tabs to discern its feasibility is not nearly as practical as simply having a guitar handy. Even so, gauging by an intabulation the composer should be aware that in order for a half-barre to be present, the **lowest two** (at minimum) fretted notes must be on the same fret so that a half-barre can be facilitated.
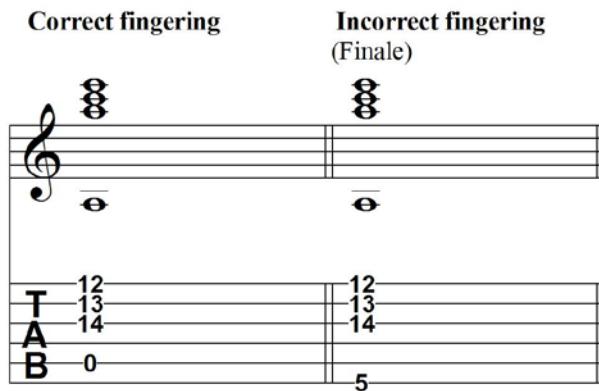
Figure 4.9: Half-barres in open chords with five fretted notes

Unfortunately, when it comes to open chords there is a significant disparity between Sibelius and Finale in the nature and quality of the transfer to tablature. Sibelius's fingerings exhibit a realistic sensibility toward the principles of the polyphonic range that maximizes the use of open strings when they do indeed provide the best option. As such, the composer should feel confident that the tablature Sibelius creates is accurate and reliable. Finale, on the other hand, generates its fingerings on the premise that the overall range of frets be kept as minimal as possible. While this approach seems agreeable in principle (and works fine with movable closed chords), these "compact fingerings" are given regardless of if any notes can or should be played open, any notes must be dropped in the resultant chord shape, or the resultant chord shape is even possible at all. In figure 4.10, clearly the only way that this sonority is remotely playable is for the low *A* to be played on the open fifth string and the upper remaining notes fretted at the fourteenth, thirteenth, and twelfth frets of the third, second, and first strings, respectively. Yet because the *A* on the fifth fret of the sixth string is supposedly "closer" to the higher notes than the open fifth string – to Finale, the location of an open string is at the nonexistent "0" fret below first position – it is the sixth string A that Finale chooses in the intabulation. The resultant fingering is impossible. As such, Finale is not recommended

as a trustworthy resource for the digital intabulation of open chords; at the very least, extreme discretion should be exercised when utilizing it for such.

Figure 4.10: Problems with Finale's tablature conversion

It is important to note that in both Sibelius and Finale, digital intabulations will produce fingerings based on playability in vertical sonorities only. Unlike in real life, fingerings remain unaffected by the material before or after them, including notes sustained through others as the result of a tie or an elongated duration. The default placement for notes which do not share a simultaneous attack with another note is simply the lowest position available; Finale users may additionally choose to specify a minimum fret used.

Chapter V. Advanced and Extended Techniques

Harmonics

With their atmospheric, bell-like tones, harmonics offer one of the guitar's most unique timbres. Their stunning contrast to the instrument's ordinario makes it no surprise that their usage is prolific in the repertoire. There are two basic types of guitar harmonics: **Natural** (also called **"open harmonics"**), which are produced by placing the left hand on a node of an open string, and **artificial** (also called **"right-hand harmonics"**), which are produced by the right hand touching a node relative to where the string is stopped while simultaneously plucking with another finger.

Notation

The notation of guitar harmonics has plagued many a composer, understandably so given its non-uniformity in the repertoire and the vexing nature of some composers' methods. This has been especially true in the case of natural harmonics: Even the system used by Villa-Lobos, one of the foremost guitar composers to ever live, was evidently confusing enough for there to be a number of inconsistencies in his published editions.[11]

One of the most commonly used methods for natural harmonics indicates the pitch of the open string accompanied by the fret the harmonic is to be stopped. This approach is not necessarily problematic for the performer to read but is ultimately flawed because it fails to give the sounding pitch. Consider the following etude by Sor and how different the aural product is from the written notation.

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[11] Frederick Noad, preface to *Villa-Lobos: The Collected Works for Solo Guitar*, (Paris: Editions Max Eschig, 1990), 6

Example 5.1: Harmonic notation where the note placement is represented by the string in Etude Op. 29 No. 9 by Fernando Sor – not recommended (mm. 1–8); ⊚ Track 33

This system ultimately leaves the performer at a disadvantage because visual analysis is obfuscated at best; it leaves the composer at a disadvantage because of how highly esoteric (and hence highly error-prone) it is.

As a solution to this, the present author recommends that **both natural and artificial harmonics be notated at concert pitch with diamond note-heads,** a system that is becoming increasingly common in guitar notation**.** String and fret numbers should also be included when writing natural harmonics (see figure 5.1); such markings are not as essential for artificial. The composer should indicate whether natural or artificial harmonics are desired by writing "*nat. harm.*" or "*art. harm.*" respectively.

Example 5.2 below is a revision of example 5.1 in the proposed way of notation. Again, all harmonics in this example are natural.

Example 5.2: Example 5.1 in pitch-based harmonic notation; ◎ Track 33

The outcome here is admittedly more crowded with the addition of both string and fret numbers, but the ability to analyze the pitch without an additional "sounding" staff will assuredly be welcome by both the composer and performer. While most guitarists will have no problem recognizing this system, it might be helpful for the composer to indicate somewhere in the score or performance notes that harmonics sound at pitch given the non-uniformity of harmonic notation.

Note that the 8VA mark can be used to clarify particularly high notes. In instances where 8VA harmonics are played simultaneously with ordinario notes, notate the ordinario notates at their ord. pitch and not relative to the 8VA. A reminder in the score that states something to the effect of "*ord.* notes at pitch" or "only *harm.* notes 8VA" can help clarify these intentions.
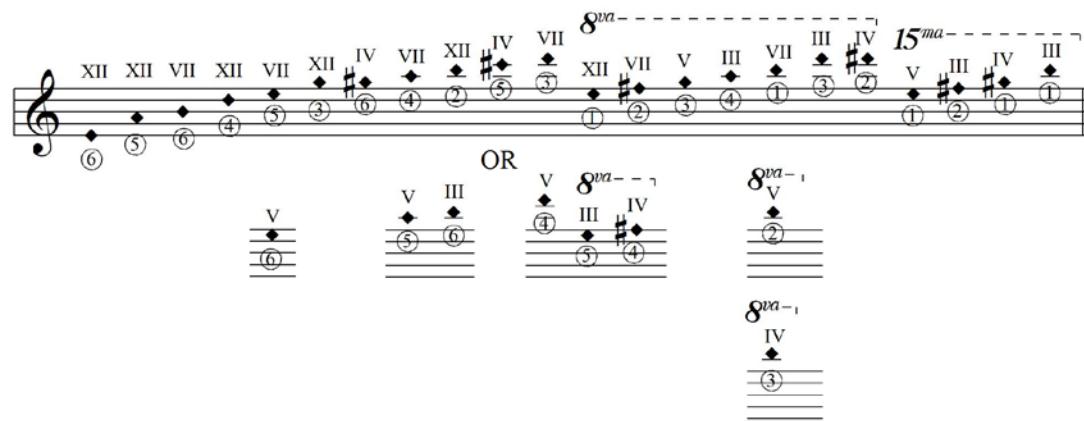
Table of Natural Harmonics

Figure 5.1 below shows all feasible natural guitar harmonics and how they should be notated at sounding pitch. The composer is advised to use harmonics on the top staff when possible, as harmonics of the same pitch tend to sound clearer on higher strings (though the discrepancy is marginal at best in many cases). The use of 8va and 15ma is

flexible. **Note that all harmonics at fret VII can be produced on the same string at fret XIX, and all harmonics at fret IV can be produced on the same string at fret IX.** In this case there is no noticeable change in tone from one fret to the other: Technical context should be the determining factor.

Figure 5.1: Table of natural harmonics

Natural versus Artificial Harmonics

In comparing the sounds of the two harmonic types, one will find that natural harmonics have more presence and sustain (continuing to ring even after the left hand has retracted from the node) while artificial harmonics tend to have a purer tone with more pitch clarity (see audio track 34 for comparison). Choosing between natural or artificial harmonics may occasionally come down to a preference for sound, but idiomatic context is the more common determining factor. The forefront consideration is that of pitch, as natural harmonics are limited to only those pitches produced from partials 1-5 of the overtone series for each open string as listed above. Artificial harmonics, on the other
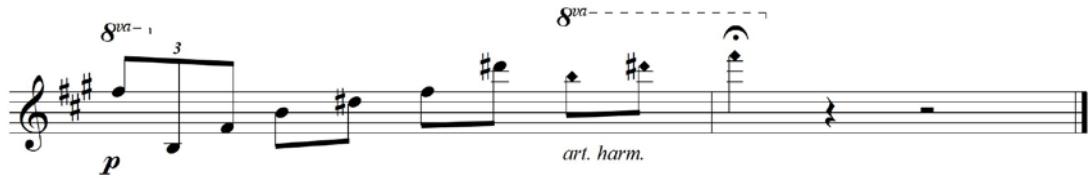
hand, may produce any note of the chromatic scale starting at E_3 (an octave above the low E string).

Secondary to pitch is how the harmonics are to be utilized texturally. Natural harmonics are as texturally versatile as ordinario notes; polyphonic textures such as arpeggios and chords composed entirely of natural harmonics as was seen in examples 5.1 and 5.2 and is further demonstrated in 5.3 can be played so as long as a few parameters are followed (see page 75).

Example 5.3: Arpeggio and chord in harmonics in *Torre bermeja* from *12 Piezas caracteristicas,* Op. 92, No. 12 by Isaac Albéniz (mm. 18–21); ⊚ Track 35

In contrast, artificial harmonics are more texturally restrictive due to the special coordination that is required between both hands and the fact that a single right-hand finger is available to pluck. As a result, there are only three instances in which artificial harmonics are really feasible, all of which must be done at a somewhat slower tempo (generally no faster than quarter = c. 76 where the harmonics are in sixteenth notes). The first context is monophonically, through which artificial harmonics can function very effectively in a variety of settings.

Example 5.4: Artificial harmonics concluding the the second movement of *Concierto de Aranjuez* by Joaquín Rodrigo; ◎ Track 36

The second is as the highest pitch in a two or three-note chord in which the lower pitches are plucked as ordinario notes. Artificial harmonics tend to blend very well with ordinario notes, but the composer should expect the overall sound of the chord to be rather subdued in order for the harmonic to be heard. To create this effect, simply construct a regular two or three note chord and then transpose the soprano pitch up an octave or an octave plus a fifth as desired (remember to also use a diamond notehead to indicate the harmonic).

Example 5.5: Artificial harmonics as the melody note above ordinario notes in *Torre bermeja* by Isaac Albéniz (mm. 80–81); ◎ Track 37

The last context is as a downward roll – an interesting effect, though one that is virtually never seen in the standard repertoire. The only way this technique can be accomplished is with all plucked adjacent strings lying on a single fret (or all strings open), followed by

the guitarist concurrently dragging downward his or her node-holding and string-plucking right-hand fingers.

<p style="text-align:center">The Natural Harmonic Polyphonic Range</p>

Three basic guidelines should be observed when utilizing a polyphonic texture composed of natural harmonics:

1)   For each simultaneous harmonic played, abide by one of the following three ranges:

> Range 1: Frets III-IV-V-VII
> Range 2: Frets V-VII-IX
> Range 3: Frets VII-IX-XII
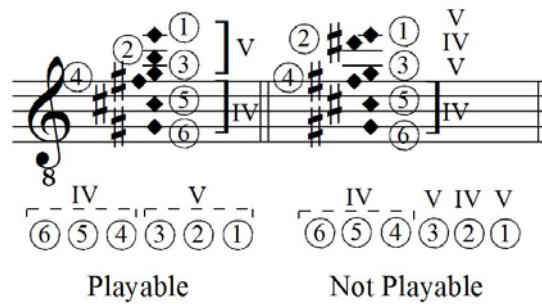
Remember that natural harmonics will sustain like an open string – i.e. without being depressed and until it is muted by either hand. Therefore, "simultaneous" here means specifically simultaneously attacked notes, not necessarily those that are sounding at the same time as the result of over-ring.

2)   If four notes or less are played simultaneously, any frets within range may be used. If five or six notes are played simultaneously, only two frets within a range may be used.

3)   When five or six notes are played simultaneously, there may only be one "switch" between the frets used on adjacent strings for every chord in order to avoid a fingering that may unintentionally mute the strings. For example, a chord that utilizes fret IV on strings 6-4 and fret V on strings 3-1 is playable because there is only one switch in fret (between strings 4 and 3). However, a chord that utilizes fret IV on strings 6, 5, 4 and 2 and fret V on strings 3 and 1 will not be possible because there are switches between strings 4 and 3, 3 and 2, and 2 and 1: The harmonics on higher strings will not properly sound because of the hand positioning that would be required to achieve this fingering.

Figure 5.2: Chords in harmonics' playability gauged by shifts in fret on adjacent strings

Playable   Not Playable

Scordatura

The purpose of *scordatura* or the "re-tuning" of the guitar is to extend the range of the instrument and make possible sonorities and gestures that would be impossible in standard tuning. In classical guitar playing in particular, scordatura frequently portrays a composer's individuality and distinctiveness in his or her approach to harmony and the guitar idiom. As such, the composer of classical guitar music is not often expected to follow any specific alternative tunings – there are few if any that could be considered "universal" to begin with – but rather formulate his or her own tuning based on the qualities of the piece to be written.

When devising a re-tuning, one should stay within the range of approximately a major third lower than the original pitch to a minor second higher. Tuning lower than this will run the risk of causing the string to be too loose to project without snapping against the neck. Tuning higher than this will put significant tension on the string, which can be damaging to the string and possibly to the instrument itself.

For all the benefits of uniqueness that scordatura offers, there are unfortunately numerous pitfalls that are associated with it in the realms of composition. **From a purely**

artistic standpoint, it is extremely difficult to know how to effectively capitalize on a non-standard tuning without an instrument to experiment with. From a purely technical standpoint, it is extremely difficult to know what fingerings will be idiomatic (or even possible) without an instrument to experiment with. Scordatura is an instance in guitar writing in which the physicality of in the instrument will need to accompany (if not guide) the artistic process: It cannot be recommended strongly enough that one has a guitar in-hand when writing in a non-standard tuning.

Scordatura also introduces several notational problems. Reading severe scordatura at concert pitch can be very difficult for guitarists since the association of a note with a specific string and fret is lost. One option to solving this problem is the use of a system of notation in which there are two staffs: one containing the sounding pitch and one containing the notes as they would be fingered in standard tuning. Yet given the already highly involved nature of guitar fingering, expecting a non-guitarist to fill in this second staff is unrealistic at best; moreover, completion by anyone other than an expert guitarist will almost inevitably cause more confusion than it remedies. While such staves are helpful when done correctly, the non-guitarist composer should avoid writing them without the regular consult of a competent performer.

Example 5.6: Two-staff scordatura notation in *blue. night. pools.* by Jonathan Godfrey (opening material); ◉ Track 38

When the scordatura is relatively mild (for instance, one or two strings tuned a half or whole step lower) this secondary staff is superfluous and should not be included. By that same token, recall from the discussion in chapter one that tuning the low E string to D is extremely common and easy for guitarists to read at concert pitch.
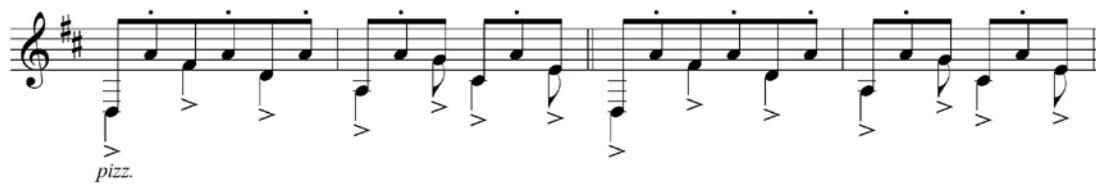
When testing the feasibility of a scordatura chord, note that the "digital intabulation" process in Sibelius and Finale outlined above may be of some assistance as they can both facilitate tabs for customized tunings, though it must be restated that Sibelius's results are typically far more reliable than Finale's.

Pizzicato

Those familiar with bowed string instruments may be curious as to how the guitar can have technique alternative to the ordinario style of playing called pizzicato: Being the Italian word for "plucked," is not *everything* on the guitar "pizzicato?" Yet for guitarists the term is not indicative of the plucking technique but rather the mimicking of the pizzicato sound fashioned by bowed string instruments. The effect is produced by a technique colloquially known as "palm muting" in which the right-hand palm lightly

touches the strings near the bridge. The string is then plucked with the flesh of *p* or

sometimes the nail of *i*. Slurs are also possible in pizzicato and abide by the same

accentual conventions as in ordinario playing. To notate guitar pizzicato, simply write

"pizz." at the point that it should begin and "ord." where it should cease. Note that

chords, counterpoint, and other polyphonic voicings in which notes sound simultaneously

or rapidly should be mostly avoided as they are difficult to perform with the palm

anchored to the strings and are generally ineffective musically.

Example 5.7: Pizzicato in *Guajira* from *Trois Morceaux Espagnols* by Emilio Pujol (mm. 9–12); ◎ Track 39
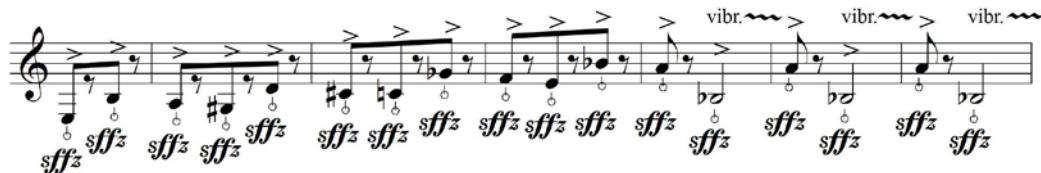
Snap Pizzicato

The snap or Bartók pizzicato in which the guitarist pulls the string upward and

releases (thus allowing the string to "snap" against the fingerboard) is especially jarring

and can make for a very powerful *sforzando*. Because *p* or a combination of *p* and *i* are

used for accomplishing this technique, the composer should only use snap pizzicatos

monophonically. Moreover, in order to allow time for the "snap" effect to be heard, the

composer should not utilize them too quickly in succession (quarter = c. 128 in an eighth-

note subdivision).

Snap pizzicatos may be notated by using the ↻ symbol over the notes desired. Additionally writing "snap pizz." upon the symbol's first presentation can also clarify its meaning.
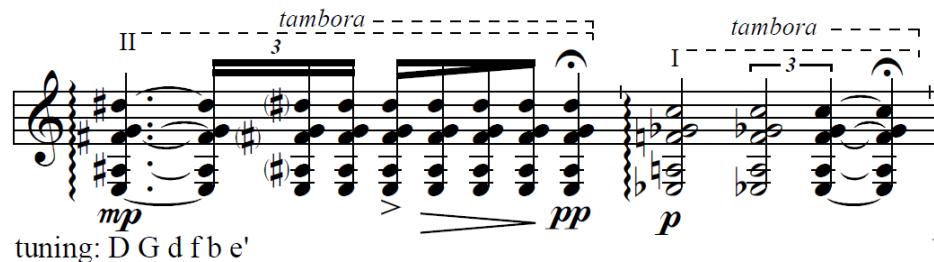
Example 5.8: Snap pizzicato in the *Usher-Valse* by Nikita Koshkin (mm. 272.2–278); ⊚ Track 40

Tambora

Taking its name from the Spanish word for "drum," the *tambora* is an effect in which the guitarist strikes the strings near the bridge while holding down a chord with the left hand. The resulting sound is a deep and subdued percussive strike with the chordal harmony softly resonating behind it. Despite that fact that this is a "percussive" effect, it is certainly not a very loud one and contains none of the "snap" in its onset that is commonly associated with percussively striking strings. Tamboras are very effective when used as a single profound hit but can potentially be performed up to tremolo speeds. Simply notate the word "*tambora*" when the technique is to be used. When several successive tamboras are used, the composer should indicate when to return to ord. or draw a bracket that extends from the beginning of the technique to its end. Some composers have opted to use different noteheads for tambora altogether (see example 5.10).

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Example 5.9: Tamboras in *blue. night. pools.* by Jonathan Godfrey (bars preceding recapitulation at Tempo I); ⊙ Track 41

Tamboras may utilize all six or as few as two strings, but the bass strings should always be taken advantage of to supply depth and sonorousness. Moreover, since the tambora will strike all strings between the highest to lowest note in the chord, wide registral spacings (circa a major sixth and above) should be avoided in an effort to keep all notes on adjacent strings.

Percussive Body Strikes (*Golpe*)

Whether it is a testament to its construction, its sound, or how relatively inexpensive it is compared to other classical instruments, it is more common for the guitar to receive percussive blows to its body with the fingers, nails, or palms of the hands than perhaps any other classical (non-percussion!) instrument. A technique known as *golpe*, perhaps some of this "abuse" historically stems from the guitar's association with flamenco, a genre in which beating on the guitar is a common stylistic trait. While it is far less prevalent in classical playing, many composers have exploited an incredibly wide array of golpe effects ranging from castanet-like nail clicks on the side of the guitar to resonant thuds on the bridge. Audio tracks 42-46 include examples of a number of golpe types.

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The notation of golpes is variable depending on the scope of their use. Simple, single hits may be notated anywhere on the staff with a ✕ notehead and a message clarifying its intention; however, intricate percussion lines in which different parts of the guitar body are hit or different parts of the hand are used benefit from a more detailed system of notation. The extreme lack of non-uniformity in the repertoire leaves how this might materialize up to the composer. In his *Royal Winter Music*, Hans Werner Henze offers a diagram in the program notes of the points on the guitar body that are to be struck, labeling them "A," "B," and "C." In the score he then creates a separate two-line percussion staff and gives each of these points its own space that is roughly representative of the golpes' relative pitch (and additionally clarifies each note with an "A," "B," or "C," though one might argue that this is superfluous). In this example, Henze uses the ○ notehead to indicate the golpes and the ✶ to indicate tambora.

Example 5.10: Golpes and tambora in *Gloucester* from *Royal Winter Music* by Hans Werner Henze (mm. 121–124); ◎ Track 47

In his *Las Seis Cuerdas*, Alvaro Company utilizes an exceedingly complex system in which golpes are placed on a lineless staff with specific noteheads indicating where and

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with what part of the hand to hit the guitar, resulting in several dozen specific sound possibilities.[12] Such a system is probably more intricate than most composers' usage of golpes warrants, but it shows the potential breadth the technique has and the extent to which one can go to into notating the fine details of it in order to achieve a desired sound.

Hitting Behind the Nut

Adding to the arsenal of percussive extended techniques is that of striking the strings behind the nut. Plucked individually, each string produces a very eerie, hollow timbre with a pitch that will vary from guitar to guitar (the only way they can be altered is to tune them differently). Unfortunately, the lack speaking or sustaining power makes the individual notes difficult to successfully utilize. An option found much more readily in the contemporary repertoire is to strike all six strings at once to create a strident, thin percussive effect of indeterminate pitch.

Notation of the effect is highly non-standard. Ginastera uses an arbitrary chord with wide diamond note heads (♯) to show when it is desired in his *Sonata*. Roland Dyens goes so far as to draw the diagram of a headstock within the staff to indicate the effect in his *Libra Sonatine*. Regardless of the notation used, the composer should clarify it in the score or program notes.

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[12] John Schneider, The Contemporary Guitar (University of California Press: Berkeley, 1985), 179

Concluding Thoughts: Guitarists, Sight-Reading, and New Music

In the classical music community, guitarists as a whole have a dubious reputation for being poor sight-readers. Certainly some of this stems from the fact that it is not uncommon for a guitarist to have started playing the instrument through popular genres that make little or no use of written notation. Yet perhaps the players themselves are less to blame for this perception than the difficulties imposed by the instrument itself. After all, the guitar idiom is by no means conceptually simple, and there are certainly very real challenges in reading staff notation that are unique to the guitar among other (orchestral) string instruments. Consider that:

- Because the guitar has more strings and a smaller intervallic distance between them than any other string instrument, there are numerous places on the neck in which the same note can be played.

- The vast majority of guitar textures are undergirded in polyphony, and guitarists are expected to finger chords of up to six notes on a fairly regular basis – more than are even possible on any bowed string instrument.

- Whereas many other instrumentalists practice and internalize scales for their applied utilization in the repertoire, the wide variety of ways a given scale can be fingered on the guitar means that the guitarist will rarely be able to utilize such standardized fingerings.

History itself has shown what a strained relationship standard notation and guitar playing have had: Consider that from the guitar's inception in the 16th century up into the very late 18th century that it was tablature and not pitch-based notation that was the basis for written guitar music.

Does this mean that the composer should inherently temper his or her music for the sake of the performer's sight-reading ability? Hardly, but it does mean that it is an extremely lofty demand to give even a very talented guitarist an intricate piece of music and expect it to be sight-read with the clarity that a violinist or cellist might be expected

to read similarly scaled writing for their instruments. Naturally there are several ways to make guitar music more sight-readable when it must be: Music that is slower, involves few stacked chords, and stays within the range of first position will have a much higher probability for success on first reading. An even better approach, however, is to simply ensure that the guitarist has the score before the first rehearsal or performance to look through the work and prepare fingerings. Especially significant for composers that are new or unfamiliar to the guitar idiom is that this timeframe may provide a chance to meet with the performer and discuss ways that he or she believes the writing can be made more idiomatic – an invaluable resource for the composition process.

The composer should be heartened that whatever the guitar community lacks for in its sight-reading reputation is made up for by the overt warmness and enthusiasm that it has historically shown toward new music. Guitarists are steeped in a tradition that places an exceptionally high value on the collaboration between performer and composer. Consider that much of the guitar's canonical 20th century music can be classified under such monikers as the "Segovia repertoire," "Bream repertoire," or "Tannenbaum repertoire," (among numerous others) so named for the guitarists that commissioned that body of works. Yet the association between the guitar and new music is far from being just a trend of the past: Today's guitarist relies on solo performance as their primary professional avenue like no other instrumentalist, and as such they are often happy to collaborate with composers who may offer them a unique work that may even help distinguish their career in an incredibly over-saturated field of guitarists. Moreover, because the guitar as a classical instrument is in many ways still in its infancy and is also seriously deficient in works from the oft programmed giants of the Classical and

Romantic eras, new music is generally much more readily accepted into regular programming in the guitar community than in the circles of other instruments. Indeed, it is commonplace to see even world renowned guitarists program a recital littered with obscure names from the 20th and 21st centuries – a far cry from the standard Bach, Beethoven, and Brahms diet of most other classical instruments.

"It is almost impossible to write well for the guitar without being a player on the instrument." Is Berlioz right? If the scope of this analysis is any indication, perhaps he is correct insofar as that the guitar is an unusually peculiar if not challenging instrument to write for. However, it is the present author's hope that through this text the reader has come to understand that the guitar's artistic merits and rewards, unique among all other classical instruments, *can* in fact be readily available for even those who do not play the instrument. What is more important is that, as a countless number of non-guitarist composers have now shown, the virtuous composer accesses these merits and rewards in his compositions not through an extensive understanding of the instrument's physicality, but rather an understanding of its *sound* and *character* – the true essence of idiomatic guitar writing. One can only hope that a perpetuated understanding of this concept will sooner rather than later make Berlioz's outlook viewed as nothing more than an antiquated notion from a bygone era.

Bibliography, Books:

Adler, Samuel. *The Study of Orchestration*. 3rd Edition. New York: W.W. Norton &
  Co., 2002.

Berlioz, Hector: *A Treatise on Modern Instruments and Orchestration*. Edited by
  Mary Cowden Clarke and Joseph Bennett. London: Novello, Ewer and Co.,1882.

Damian, Jon: *The Guitarist's Guide to Composing and Improvising*. Boston: Berklee
  Press, 2001.

Duncan, Charles: *The Art of Classical Guitar Playing*. Miami: Sunny-Birchard
  Music, 1980.

Ginastera, Alberto: *Sonata for guitar, Op. 47.* Boosey & Hawkes, 1978

Kachian, Chris. *Composer's Desk Reference: for the Classic Guitar*. Pacific, MO:
  Mel Bay, 2006.

Lerdahl, Fred, and Ray Jackendoff: *A Generative Theory of Tonal Music.* Cambridge:
  MIT Press. 1983.

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

Sherrod, Ronald Jerone. *A Guide to the Fingering of Music for the Guitar*.
  Dissertation, University of Arizona. 1981

Tennant, Scott. *Pumping Nylon: The Classical Guitarist's Technique Handbook*.
  Van Nuys, CA: Alfred Publishing, 2002

Turnbull, Harvey. *The Guitar: from the Renaissance to the Present Day*. Wesport,
  CT: The Bold Strummer,1991.

Wade, Graham. *Traditions of the Classical Guitar*. London: Calder, 1980

Bibliography, Scores:

Aguado, Dionisio. Etude in A Minor, Op. 6, No. 19, ed. Jonathan Godfrey. Bloomington, IN: Jonathan Godfrey Music, 2009.

Albéniz, Isaac. *Cordoba* from *Chants d'Espagne*, Op. 232, No. 4, arr. Jonathan Godfrey. Bloomington, IN: Jonathan Godfrey Music, 2012.

Albéniz, Isaac. *Asturias* from *Suite Española*, Op. 47, No. 5, arr. Jonathan Godfrey. Cleveland: Jonathan Godfrey Music, 2008.

Albéniz, Isaac. *Torre bermeja* from *12 Piezas caracteristicas*, Op. 92 No. 12, arr. Jonathan Godfrey. Bloomington, IN: Jonathan Godfrey Music, 2009.

Assad, Sergio. *Aquarelle*. Paris: Editions Henry Lemoine, 1998.

Bach, Johann Sebastian. Fugue (BWV 997), arr. Jonathan Godfrey. Bloomington, IN: Jonathan Godfrey Music, 2012.

Bach, Johann Sebastian. *The Solo Lute Works*, 2nd ed., arr. Frank Koonce. San Diego: Kjos West, 2002.

Brouwer, Leo. *Concerto elegiaco* (Guitar Concerto No. 3). Paris: Editions Max Eschig, 1989.

Brouwer, Leo. *Estudios sencillos*. Paris: Editions Max Eschig, 1972.

Carcassi, Matteo. Etude Op. 60, No. 3, ed. Jonathan Godfrey. Bloomington, IN: Jonathan Godfrey Music, 2009.

Ginastera, Alberto. *Sonata for guitar*, Op. 47. Boosey & Hawkes, 1978.

Giuliani, Mauro. Theme and Variations on "*De! Calme o ciel*," Op. 101. Vienna: Diabelli e Comp., n.d.

Godfrey, Jonathan. *blue. night. pools*. Bloomington, IN: Jonathan Godfrey Music, 2010.

Godfrey, Jonathan. *Music at 80MPH*. Bloomington, IN: Jonathan Godfrey Music, 2011.

Godfrey, Jonathan. *never odd or even*. Bloomington, IN: Jonathan Godfrey Music, 2012.

Godfrey, Jonathan. *Saudade*. Bloomington, IN: Jonathan Godfrey Music, 2011.

Bibliography, Scores (cont):

Godfrey, Jonathan. *Sonatina for guitar solo*. Bloomington, IN: Jonathan Godfrey Music, 2011.

Henze, Hans Werner. *Royal Winter Music*. Mainz: Schott Musik International, 1976.

Koshkin, Nikita. *Usher-Valse*. Berlin: Editions Margaux, 1993.

Pujol, Emilio. *Trois morceaux espagnols*. Paris: Editions Max Eschig, 1926.

Richmond, L. *Three Preludes*. San Francisco: Guitar Solo Publications, 1993.

Rodrigo, Joaquín. *Concierto de Aranjuez*. Melville, NY: Belwin Mills, 1959.

Scarlatti, Domenico. Sonata K. 380, arr. Jonathan Godfrey. Cleveland: Jonathan Godfrey Music, 2008.

Sor, Fernando. Etude Op. 29, No. 9, arr. Jonathan Godfrey. Bloomington, IN: Jonathan Godfrey Music, 2011.

Tárrega, Francisco. *Capricho arabe*. Berlin: M. Schlesinger, n.d.

Tárrega, Francisco. *Marieta* (Mazurka). Berlin: M. Schlesinger, n.d.

Tárrega, Francisco. *Recuerdos de la Alhambra*. Madrid: Orfeo Tracio, S.A., ca. 1920.

Villa-Lobos, Heitor. *The Collected Works for Solo Guitar*. Paris: Editions Max Eschig, 1990.

Zare, Roger. *Fight or Flight*. Ann Arbor: Roger Zare Music, 2010.