

SOME NOTES ON
WRITING *for the* GUITAR

Jonathan Leathwood

Topics

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Introduction

If the following study of guitar writing is longer than I first intended, it is because it seemed to me essential to proceed as much as possible by example—to introduce to the composer a few of the landmarks of the guitar’s recent repertoire, alongside the occasional snapshot of its earlier traditions. All of the examples are successes: if there is one arguable exception (a passage from George Rochberg), I mean in no way to disparage either the composer or the richly expressive work from which it is taken.

I have tried throughout to be descriptive rather than prescriptive, to set guidelines rather than rules. But in a few places I have suggested that a particular texture or type of sonority might be worth exploring more than it has been. Inevitably, I will have made aesthetic assumptions that others will not share. I would like to think that a composer could proceed as much in opposition to these recommendations (and the musical examples that prompt them) as in compliance, if the musical vision should demand it.

None of the composers I have worked with have had the use of these notes. By and large they have made intelligent guesses about what is and is not possible and we have collaborated on successive versions, making discoveries that have surprised me as much as them. But I have always given composers some of the works mentioned to look at. Quite possibly one could glean all the necessary information by ignoring the text and reading the musical examples alone, pursuing those that seem of most interest by looking up the entire composition. Much depends on how willing one is to work closely with the guitarist and go through multiple drafts: certainly, these notes are not intended to supplant a collaborative process but to enhance it.

When Hector Berlioz came to the guitar in his *Grand traité d’instrumentation et d’orchestration modernes*, his advice was not encouraging: ‘It is almost impossible to write for the guitar unless one is a player oneself. Yet most composers who use it are far from familiar with it and write things of unnecessary difficulty with no sonority or effect.’ That was in 1843; over the past century, most significant modern guitar works have come from composers who do not themselves play the instrument. By reimagining the guitar’s sonorities and idioms, these composers have profoundly influenced the development of guitar technique and musicianship.

I would like to thank Julian Bream for his valuable suggestions.

—Jonathan Leathwood, August 2010

As with any string instrument, all but the highest and lowest pitches can be played on different strings. The higher notes on each string possess an extra intensity and a greater range of vibrato, offering a wealth of expressive and colouristic choices.

The guitar's range is three octaves and a perfect fifth. The upper limit can be raised by around nine semitones by the use of harmonics (refer below to the sections on harmonics and on chords); the lower limit can be extended by lowering the sixth string by up to three (more rarely four) semitones.

Tessitura

Absolute pitch, as given by the piano, may not be the best standard by which to judge the guitar's tessitura. On paper, the guitar's low E is only a major third higher than the lowest note of the cello, yet to the ear, its colour suggests a higher register altogether. This discrepancy between written and apparent register sometimes leads composers (especially composers working at the piano) to adopt a tessitura that is too high for the instrument. What seems to lie comfortably within the piano's middle to upper register can sound like mountaineering on the guitar. When transcribing piano music to the guitar, I find that I may have to transpose the original down by around four to seven semitones to get a sense of equivalent registers.

Because the guitar's natural idioms and tessitura are so dependent on the low positions on the fingerboard (the first few frets) and the open strings, it is more or less inevitable that the lowest range will be used as a matter of course – so at least one observes in the repertoire. Unlike the piano, the guitar does not possess reserves of low register that can be called on at an exceptional moment. It is common for a guitar piece to start either from the low E or a chord that includes it, just as Bach begins his cycle for solo violin with a G minor chord above the violin's lowest note.

Then again, one of the pleasures of the guitar repertoire is the sensitivity one so often encounters towards the low register. In this study for beginners by Fernando Sor, as the bass notes drop in and out of the texture, they take on so much weight as to sound lower than they really are:

Fernando Sor, Study in B minor, op. 35 no. 22 (1828), bars 17–48

The image shows a musical score for a guitar study by Fernando Sor. It consists of five staves of music in B minor, starting at bar 17 and ending at bar 48. The key signature has two sharps (F# and C#). The music is written in a single melodic line on a treble clef. The notation includes various rhythmic values such as quarter notes, eighth notes, and sixteenth notes, along with rests. There are several dynamic markings, including *p* (piano) and *ff* (fortissimo), and some phrasing slurs. The piece concludes with a double bar line and repeat dots.

At the beginning of Henze's *Royal Winter Music* Sonata, the difference between the opening F and the low E it leads to is especially telling on the guitar, because of the contrast between the vibrant fretted F and the plain but resonant E.

Hans Werner Henze, *Royal Winter Music: First Sonata* (1975–6): i, 'Gloucester', bars 1–4

The image shows the beginning of a musical score for Hans Werner Henze's *Royal Winter Music: First Sonata*. The tempo/mood is marked 'Majestically'. The music is in 2/4 time and starts with a *fff* (fortississimo) dynamic. The first measure features a low F note (fretted) followed by a low E note (open string). The second measure has a *p* (piano) dynamic. The third measure has a *f* (forte) dynamic, and the fourth measure has a *ff* (fortissimo) dynamic. The notation includes various rhythmic values and phrasing slurs.

Finally, an example by Dodgson which opens with the low E, but in such a voicing that it creates a distinctive 'stark' effect, before the entire range of the instrument unfolds:

Stephen Dodgson, Partita no. 4 (1990): i, bars 1–6

Slow: moody and capricious (♩ = 50)

p stark

flaring up

p

Slurs

In modern guitar notation, composers should use the slur sign just as they would when writing for piano: to designate legato groups of notes that form a single gesture. Often, though, the slur (or sometimes a dotted slur) can be an invitation to the guitarist to use one of its most characteristic idioms: the left-hand slur.

This study by guitarist-composer Leo Brouwer demonstrates the technique:

Leo Brouwer, *Estudio sencillo* no. 8 (1960), bars 1–6

Lo más rápido posible

The notes in the slurred pairs are played on the same string. The right hand plucks only the first note in each slurred group; the second note is sounded by the left hand alone (hammering onto the string for an ascending interval or plucking it for a descending interval). The use of repeated notes in association with the slurs is particularly idiomatic. In passages such as this, or the following passage from Britten's *Nocturnal*, left-hand slurs project a very strong articulation.

Benjamin Britten, *Nocturnal after John Dowland*, op. 70 (1963): iv, 'Uneasy', bars 5–6

Britten, of course, likely chose this articulation without considering what technique the guitarist would use. The following passage from a Villa-Lobos study shows a more consciously idiomatic use of left-hand slurs: only the first of each four-note group is plucked, while the left hand takes care of the rest. It is important that the big leaps at the end of some groups fall onto open strings, since one can only slur as far as one can stretch: between fretted notes it is best to keep slurs within a major third's distance.

Heitor Villa-Lobos, *Étude* no. 10 (1928 version): second episode

Agustín Barrios Mangoré, Estudio no. 4, 'Arabescos' [with string 6 tuned to D]



More ambitiously, one can attempt to alternate the two hands in patterns such as this, where the lower voice is played with the left hand alone. Note that the other voice consists of open strings.

Chris Malloy, *Millions of Mischiefs* (2005): iii, 'Primitive Contraptions' (for ten-string guitar)

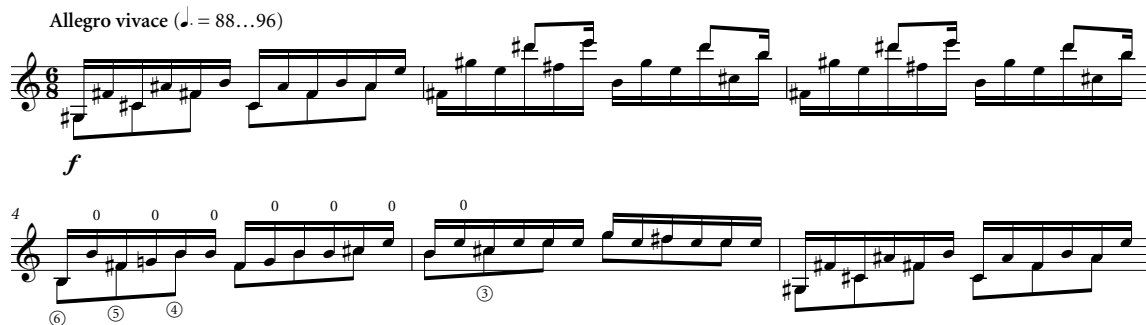


A double stop within an arpeggio pattern can have an exciting effect but can be very awkward. I recommend either (1) using the top two notes in the pattern or (2) making the one of the two notes low enough to be taken with the thumb, although other patterns may well be possible.

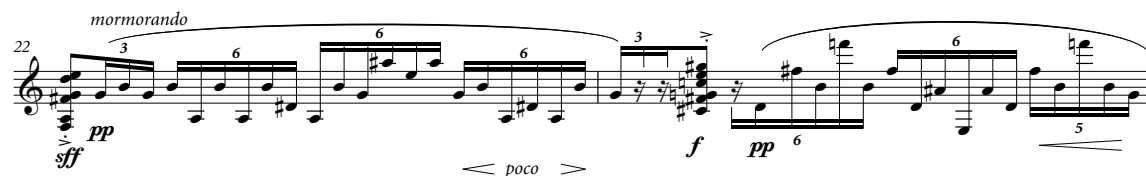


Finally, three modern examples from outside the pedagogical repertoire. The first, from Leo Brouwer's Sonata, features alternation of fretted notes with open strings in bars 4 and 5 (the bowed instruments' *bariolage*). This technique has wide application on the guitar, because several open strings can be in play within a single figure.

Leo Brouwer, Sonata (1990): iii, 'La Toccata de Pasquini', bars 1–6



Elliott Carter, *Changes* (1983), bars 22–24 (for an explanation of how these chords are fingered, see p 20)



[cont.]

[Elliott Carter, *Changes*, continued from previous page]

Musical score for Elliott Carter's *Changes*, measures 24-30. The score is written in treble clef with a key signature of one flat. It features complex rhythmic patterns with various note values and rests. Dynamic markings include *sf* (sforzando) and *f* (forte). A *mf* (mezzo-forte) marking is also present. The score includes several slurs and fingering numbers (5, 7) indicating specific techniques.

Param Vir, *Clear Light, Magic Body* (1993): i, 'Shamvar I', bars 39-40

Musical score for Param Vir's *Clear Light, Magic Body*, bars 39-40. The tempo is marked *Meno mosso* with a quarter note equal to 64 (♩ = 64). The score is written in treble clef with a key signature of one flat. It features a dense, arpeggiated texture with many sixteenth notes. Dynamic markings include *p* (piano), *mf* (mezzo-forte), *f* (forte), and *ff* (fortissimo). A *poco a poco cresc.* (poco a poco crescendo) marking is present. The score includes several slurs and fingering numbers (7, 9) indicating specific techniques.

In the next section, on passagework, we will extend some of these ideas to see how an arpeggio figure can be elaborated to incorporate jumps from the lowest to the highest reaches of the finger-board, and how a stepwise line can be fingered using arpeggio technique.

Passagework

For all the rich sonority of its chords, the guitar is not an instrument that thrives on a thick texture. The subtle overlaps of sound that emerge easily as one moves from string to string, as well as the instrument's sympathetic resonance, can make a simple monody very compelling, whether in a lyrical line or in fast passagework.

Richard Rodney Bennett, Sonata (1983): i, bars 1–12

Allegro (♩ = 132)

f sonore, legato

(*f* sempre)

Covering the fingerboard

Fast flourishes that leap from one extreme of register to another become much easier to perform if there is an open string somewhere in the figure. The open string gives the left hand time to jump between opposite ends of the fingerboard. Here is Villa-Lobos demonstrating the principle in a concert study (the open strings are marked o):

Heitor Villa-Lobos, Étude no. 2 (1928), bars 1–2

Carter exploits the same idea in *Changes*: the two flourishes shown below would become more or less impractical without the internal open-string Bs.

Elliott Carter, *Changes* (1983), bars 90 and 105

legg. sempre

mf *p* *mf* *ff* *ff*

Campanellas

By fingering all possible notes in a pattern as open strings or natural harmonics one can achieve a harp-like effect full of overlapping resonances. The Baroque guitarists who developed this technique called it *campanellas* ('little bells'). Such figures are not hard to devise in principle but the

exact details of fingering may need to be entrusted to the guitarist. At any rate, in a single line there is usually a way of getting at least a few notes to ring over. In this cadential flourish by Ohana, only the notes A and A# are played on the same string; all other notes resonate together.

Maurice Ohana, *Tiento* (1957), bar 53

Cadenza

près du chevalet (métallique)

ff violent

In a memorable passage in the Scherzo from his Sonata, Ginastera combines the open string ① (the E) with notes on strings ② and ③. In order to give an idea of how pervasive the overlapping resonances are, all strings are labelled in this excerpt.

Alberto Ginastera, Sonata op. 47 (1976): ii, Scherzo, bars 60–69

f

cresc.

Slurs

We have already discussed left-hand slurs, in which the right hand plucks only the first of a group of notes lying on a single string. It is worth mentioning them again because they make for such a distinctive texture and can be performed very rapidly:

Chris Malloy, *Duel* for cello and guitar (2008), bars 41–43 (guitar part only)

p

There is a certain kinship between the subtle overlaps of *campanellas* and the seamless legato of left-hand slurs. To some extent this is evident in the music of the Baroque guitarists and lutenists (who specified how their music would be played by notating it in tablature): stepwise movement is often rendered as *campanellas*, and three successive notes rarely lie on a single string without a slur being applied. On the modern guitar, too, this is a natural way to play.

The example opposite reproduces the first page of Brouwer's *La espiral eterna* (1971). It presents a series of transformations of an opening cluster in very rapid *campanellas* figures, adding slurs when two notes must be played on a single string: a seventeenth-century principle in avant-garde dress.

I have focused on slurs and *campanellas* because they are such valuable resources. But of course there is no reason why passagework cannot be played with all notes plucked, whatever the intervals in play, if that is the desired articulation. And the example above from Britten's *Nocturnal* is a reminder that staccato is always possible except at virtuoso speeds.

La Espiral Eterna

Leo Brouwer
(1971)

Lo mas rapido posible
As fast as possible
So schnell wie möglich

A

1 p m i
3 0 2

2 4 0 1 3
3 2

3

4 3 4 0 1
3 2

5 3 0 1 4
3 2

6 3 0 b
3 2

7 4 0 1 2
3 2

8 4 1 2 1 3
3 2

9 2 4 0
3 2

10 4 0 1 3
3 2

11 0
3 2

12 2 4 0 1
3 2

13 2 0 1
3 2

14 2 0 1
3 2

15 2 1
3 2

16 4 0 0 1 2
3 3 2

17 4 0 1 1 3
4 2 3 4 3

18 4 0 1 0
4 3

19 2 0 1 0 0 1
4 3

20 0 1
2 3

21 4 0 1 1 0 4 0 0 1
4 3 4 3

22 4 0 1
4 2 3

23 4 0 1
4 3

24 4 0 1
4 2 3

dos Versions
two versions
zwei Versionen
1. Vers. ppp G.P.
2. Vers. sfffz

dejar vibrar siempre
let it vibrate
klingen lassen

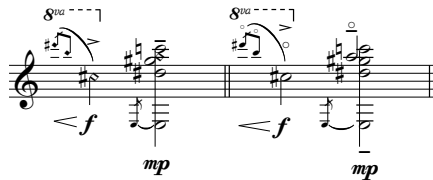
ppp pp p > pp poco mp p > pp mp pp mp p > pp poco mf p poco p poco ppp G.P. sfffz

molto
duración: } 2 Min.
duration: }
Spieldauer. }

Harmonics

No instrument is richer than the guitar in its harmonics, with their bell-like sonority and sustain. Harmonics extend the range of the guitar by about nine semitones.

Many ways of notating harmonics have been tried, but either a diamond-shaped notehead or a note with a circle are standard. I prefer diamonds because they reduce the need for extra symbols in guitar notation, which is so prone to clutter. It is important to write the intended pitch unambiguously in the desired octave, as one would any other note in the score.



Harmonics are of two kinds: *natural* and *artificial*. There is no need to distinguish between them in notation, since guitarists will sometimes prefer a way of realising the harmonic that is different from the one foreseen.

Natural harmonics

A natural harmonic is produced by plucking the string while lightly and momentarily touching it at a simple fraction of the string's length: $\frac{1}{2}$, $\frac{1}{3}$ (or $\frac{2}{3}$), $\frac{1}{4}$ (or $\frac{3}{4}$), etc (these are called *nodal points*). As a result, some harmonics are available at more than one place on the guitar. Figure 1 lists the harmonics available on each string while figure 2 lists them in ascending order (assuming standard tuning).

Figure 1 Natural harmonics available on each string: roman numerals denote fret numbers

| | open | XII | VII | V | IV | III |
|--|------|-----|-----|---|-----|-----|
| | | | XIX | | IX | |
| | | | | | XVI | |

Figure 2 Natural harmonics in ascending order. Duplicates are indicated by string numbers

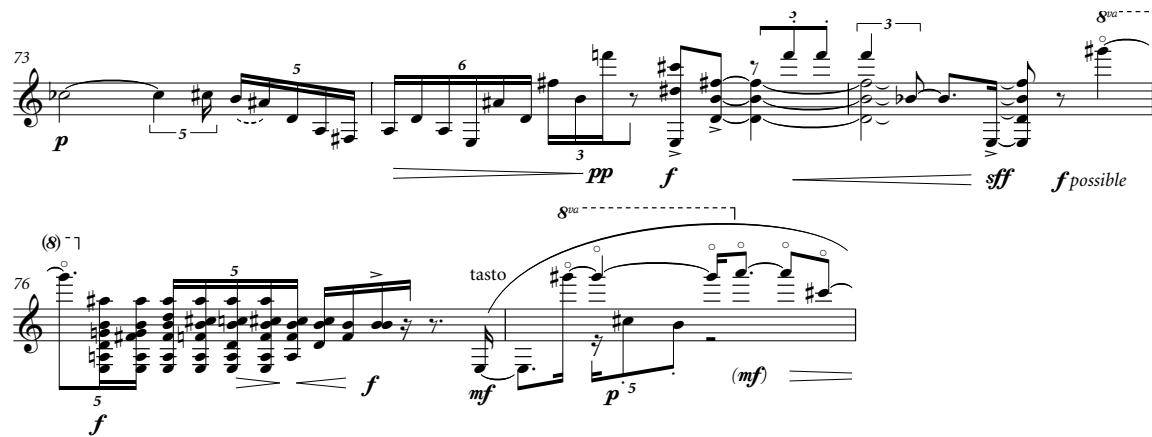


Register of natural harmonics

The higher the harmonic on a given string, the more the initial plucking sound obtrudes and the less the harmonic sustains. Harmonics on frets 4 and 3 are strong enough on strings ④ to ⑥, but become increasingly indistinct on the higher strings. I have accordingly put the high harmonics in parentheses for strings ② and ①, and omitted altogether the final harmonic on string ①.

In one of the main climaxes of *Changes*, Carter takes a substantial risk for the sake of the musical design: he asks for the highest practicable harmonic at full volume, confronted with the guitar's lowest note. As the next episode of the piece begins, the high harmonic is gently echoed and the guitarist's task becomes much easier.

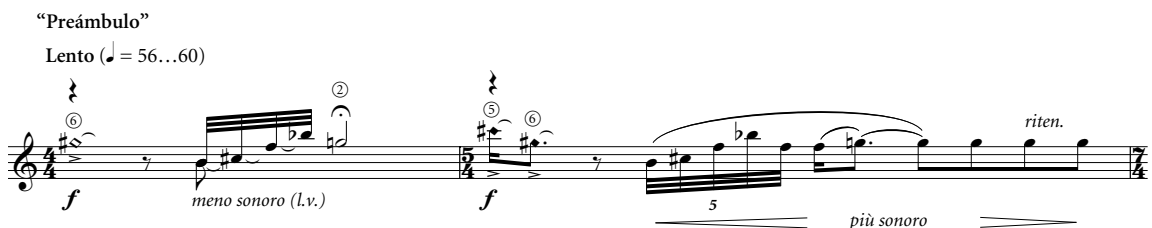
Elliott Carter, *Changes* (1983), bars 73–77



Intonation of natural harmonics

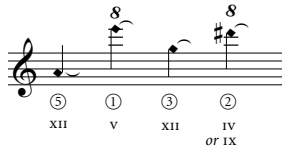
Harmonics of the fifth partial (sounding two octaves and a major third above the open string and found on frets 4, 9 and 16) are perceptibly flatter than their equal-tempered counterparts. Their discrepant pitch can be disturbing in combination with ordinary notes at the unison or octave, but it can also be exploited. Brouwer opens his Sonata with fifth-partial harmonics on the open E and A strings. As these harmonics mingle with ordinary notes in the same register, their strange intonation makes for an intriguingly sour resonance.

Leo Brouwer, Sonata (1990): i, *Fandangos y Boleros*, bars 1–3 (harmonics notated to clarify sounding pitches)



Sustain of natural harmonics

To play a natural harmonic on the guitar, the left-hand finger has to touch the nodal point at only the very moment of attack. The left hand is then free to jump to another part of the fingerboard while the harmonic continues to sustain. In the example below, the harmonics have to be obtained at widely separated frets, but because they are all on different strings, they will ring together:



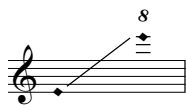
In the next example, a chord of natural harmonics on strings ③–⑥ rings against normal notes on the upper two strings. The chord is played in the area of the fingerboard spanning frets 7–12, while the normal notes are played in the span of frets 1–4. This is an idiom that composers have not explored as much as one might expect (but see the example above from Brouwer's Sonata).



Another useful feature of natural harmonics is that there is more than one technique of producing them. Instead of using the left hand to touch the nodal point, the guitarist can use a spare finger of the right hand, so that the task of playing the harmonic is taken by the right hand alone. This means that the composer should not have to worry about impossible stretches when combining harmonics into chords: one has only to make sure that the different harmonics lie on different strings.

Artificial harmonics

The technique just described for playing a natural harmonic with the right hand alone is essentially the same for 'artificial' harmonics: one frets a note with the left hand, touches the string with the index finger of the right hand an octave away (or rarely, at another nodal point), and plucks the string with another right-hand digit. Artificial harmonics extend the range of pitches available, starting an octave above the open sixth string and spanning up to three octaves:



As a rule, artificial harmonics sound fairly strong and clear, not easily distinguished from natural harmonics; but it is difficult to play them very loudly, and as with natural harmonics, the higher they are, the weaker the sound. Thus it is sensible to avoid artificial harmonics at a climax, except perhaps in the lowest possible register.

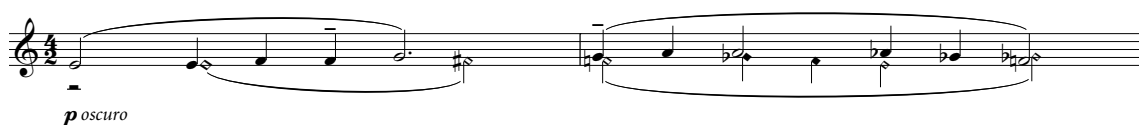
The technique of producing artificial harmonics is so laborious that when they first came into practice in the nineteenth century, as resourceful a guitarist as Fernando Sor believed them to be quite useless. Modern players would laugh at that suggestion, but it remains true that artificial harmonics are not the most flexible of techniques. It is hard to play them at all fast except in short bursts, hard to play them staccato, and hard to incorporate them into a busy texture. They are very effective, however, in a lightly accompanied texture, and have been used traditionally for contrast

in presenting melodies, as in this example from a transcription of a Granados dance made early in the twentieth century:

Enrique Granados, *Danza Española v*, 'Andaluza', op. 37/v (1890), trans. Miguel Llobet



Artificial harmonics can be played in other voices than the highest. Indeed, the counterpoint of artificial harmonics in the lowest register and another voice makes for a striking colour – albeit one not yet found in the repertoire. In this example, the lower-voice harmonics are all played on string ⑥, the lowest:



Harmonics and tone colour

To get a clear natural harmonic – in particular, the ones based on the high partials – one generally has to pluck close to the bridge. It may be counterproductive, therefore, to ask the guitarist to vary the timbre by plucking closer to the fingerboard (as Carter does with his indication *tasto* in the excerpt above). As for artificial harmonics, since the right hand is fixed in its position it is impossible to vary their timbre.

For these reasons, do not ask for harmonics with different tone colours, except in the case of natural harmonics at the octave, which are hardly affected by different plucking positions.

Multiphonic harmonics

Fascinating sounds emerge when one attempts to play a natural harmonic somewhere other than a simple fraction of the string's length, sounds that combine more than one pitch with a healthy dose of percussive noise. Striking the low E string at the sixth fret, for example, produces a blend of the 3rd and 7th partials along with the attack of the nail on the string (the example below represents the percussive noise and the two most prominent partials, all produced on the E string):



Of course, one can obtain chords of harmonics in the normal way; the only reason to resort to a multiphonic harmonic is for its impure and noisy timbre. Like multiphonics on wind instruments, these sounds stand quite apart from the conventional range of timbres, more complex and difficult for the ear to analyse than a simple double stop. Still, their component pitches become easily apparent to the ear when played alongside normal sounds and harmonics. My own experiments suggest that multiphonic harmonics work best on the wound bass strings (strings ④–⑥), at a loud enough dynamic to excite the partials. As yet, composers have hardly taken them up.

Recommended repertoire for harmonics

Benjamin Britten (1913–1976)

Nocturnal after John Dowland, op. 70 (1963): ‘Dreaming’

Leo Brouwer (b. 1939)

Sonata (1990)

Hans Werner Henze (b. 1926)

Royal Winter Music: First Sonata on Shakespearean Characters for Guitar (1975–6)

Royal Winter Music: Second Sonata on Shakespearean Characters for Guitar (1979)

Evis Sammoutis (b. 1979)

Raindrops (2004)

Tōru Takemitsu (1930–96)

Folios (1974)

All in Twilight (1987)

Equinox (1993)

In the Woods (1995)

Michael Tippett (1905–88)

The Blue Guitar (1982–3)

Heitor Villa-Lobos (1887–1959)¹

Prelude no. 4

Param Vir (b. 1952)

Clear Light, Magic Body (1993)

¹ Villa-Lobos uses an idiosyncratic notation of harmonics, in which the diamond-headed pitch shows the location of the harmonic on the string rather than the sounding pitch.

Chords I

For all its intricacies, the guitar offers a huge array of fingering possibilities. A seemingly impossible combination of pitches may offer an unexpected solution, or at least prompt imaginative ideas for revoicing from a resourceful guitarist. As a result, some composers prefer not to become embroiled in the details of devising playable chords, making sensible guesses in the first draft and trusting in subsequent dialogue with a guitarist. This section is for them, offering as it does a few rules of thumb. The next section provides much more detail, pointing to a few important types of sonority along the way. But first the basic information.

- 1 The left hand has a stretch of five to seven frets, depending on the position on the fingerboard. The following example shows what can be stretched by the average player from a given low note on the sixth string. Any chord whose fretted notes exceeds these spans is likely unplayable – to increase the span one must make either the lowest note an open string or the top note a harmonic. We will examine those possibilities in the next section.

position: I II III IV V VI VII VIII IX X XI XII

string ①

string ⑥

- 2 Bear in mind the lowest note available on each string. In the example below, the five chords are impossible to play because in each case there are not enough strings available to play all the notes: it would be necessary to play two notes on the same string. For example, the final chord has six notes, but none of them is high enough to be played on the guitar's high E string, leaving only five strings capable of playing the six notes: therefore at least one of the notes will have to be removed from the chord.

open strings

impossible chords

- 3 The same argument applies to high notes. We noted at the outset (see p 1) that each string has a literal limit (a perfect 12th above the open string pitch) and a practical limit, beyond which tone quality suffers – somewhere around the following:

Practical limit of each string: very approximate!

It is obviously impossible to build up chords whose individual notes exceed the literal limit of the individual strings. But the practical limits should be approached or surpassed in chords only when there is no alternative. It is clear at a glance that the following sequence (taken from a flute and guitar work by George Rochberg) represents utterly idealistic writing for the guitar. Even if some of

the chords did not consist of seven notes, the high notes in particular cannot be sustained against one another. It is interesting that the passage was published in this form, tacitly giving guitarists license to make their own versions. There is no doubt a certain integrity to this aesthetic of impossibility: but since in performance it leads to compromise, whenever I play this piece I find myself wishing that composer and dedicatee had searched for chords that can be sustained, and based the figuration on those.

George Rochberg, *Muse of Fire* (1990) for flute and guitar: guitar part, bars 51–57, showing a succession of impossible chords

accelerando gradulamente

51 *f* 5

52 3 6

53 3 6

54 6

55 5

56 6 *piu f*

57 5

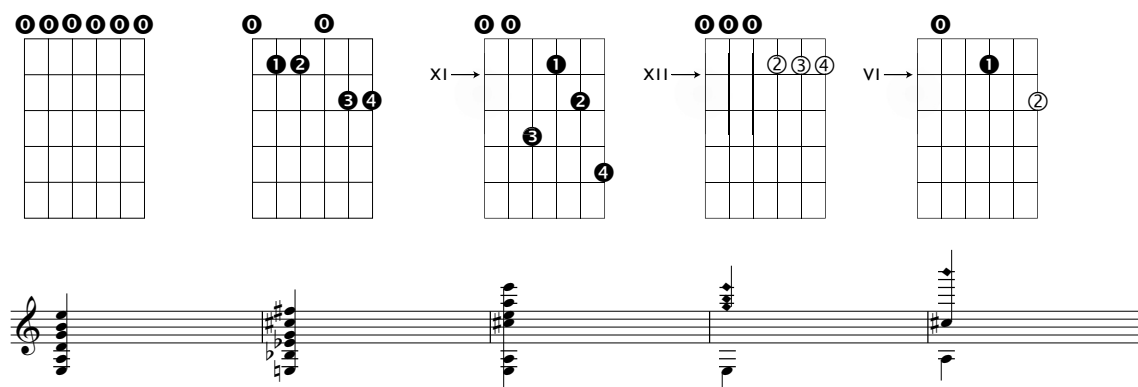
- 4 A chord consisting of notes that approach these limits, even if it is physically playable, has a short sustain and is hard to keep in tune. On the other hand, it may be possible to realise it with the help of harmonics (see part II), with magical results.
- 5 The guitar lacks a sustaining pedal, so it is hard to realise a chain of chords shifting across the fingerboard in a legato manner. If the tempo is relatively slow, then one can create a convincing legato, but when played fast the chords will necessarily sound clipped. I find that composers sometimes write chords that have a vibrant sonority but do not have the impact they would in a piece for piano or ensemble because they lack time to ring. Solutions to this problem include: (a) incorporating plenty of open strings or natural harmonics in the chords and (b) restricting the number of notes in successive chords — it is much easier to connect two- or three-note chords smoothly than chords of four or more notes.

Chords II

This section examines the mechanics of chords in much greater depth. To give a precise picture of how a chord will be fingered with the left hand, we shall use chord diagrams. They can be read as follows:

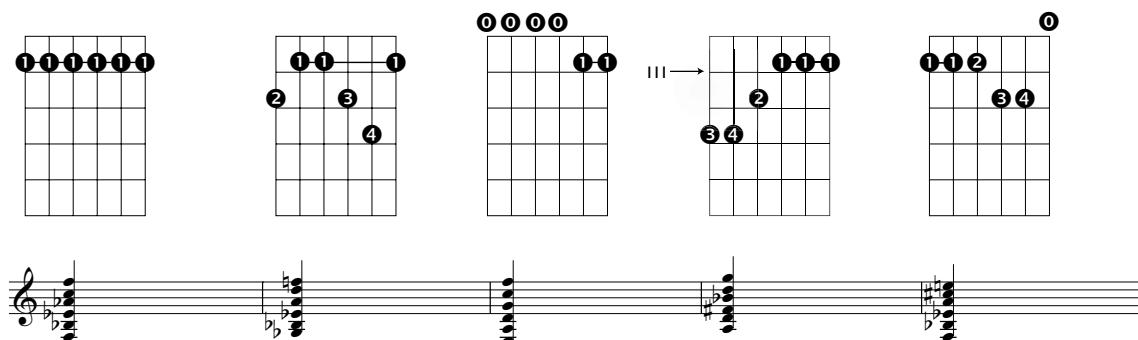
- Vertical lines represent the strings, with string ⑥ (the lowest) on the left.
- The horizontal lines represent frets, with fret 1 the second from the top, unless labelled otherwise with a roman numeral (as in last three chords in the example below).
- Black circles show where the fingers are to be placed, right up against the active fret. The number inside the circle shows which finger stops the note (1 = index, 2 = middle...).
- If a string is to be played open, a zero in a black circle appears above it at the top of the diagram (see the first chord in the example below, which consists of all the open strings).
- White circles show that the finger is lightly touching the string to produce a harmonic (see the last two chords in the example below).

Of course, such diagrams are for explanation only, and need never be used by composers. Here are some simple illustrations:



The barré

Guitarists routinely stretch out the index finger of the left hand in order to stop several notes together: the *barré* (shown in the diagrams by a horizontal bar connecting the dots).



Stopped notes in high positions against open strings

Many — otherwise impracticable — chords can be realised by combining open strings with stopped notes in high position. Elliott Carter's *Changes* contains a number of carefully worked out combinations of this kind. The following three examples are all-trichord hexachords:

Elliott Carter, *Changes* (1983)

open + stopped

a

IX →

open + stopped

b

IX →

open + stopped

c

XI →

This sort of combination is often necessary if the chord is to contain close-spaced intervals.

Extreme spans of register

We have already seen that extreme spans from bottom to top, so important in much modern music, can present impossibilities, because these spans cannot be stretched by the left hand. The easiest way to avoid these difficulties, of course, is to make the bass note an open string:

Tōru Takemitsu, *To the Edge of the Dream* for guitar and orchestra (1983)

(♩ = 60)

poco accel.

poco rall.

(♩ ≈ 60)

freely

poco rall.

sub. f

sub. poco f

mf

But if the low bass note is stopped, the only way to get a high note is to use a harmonic. There is nearly always a way of getting the desired pitch, since so many techniques are available. But any chord of more than four notes may have to be arpeggiated, and it is not easy to generate a lot of volume on the harmonic. The following example by Param Vir uses four-note chords at a gentle dynamic with just enough space around them to give the player time to set up the harmonics (although everything sounds more resonant and legato if the metronome mark is reduced somewhat).

Param Vir, *Clear Light, Magic Body* (1992): ii, 'Clear Light', bars 1–6

Calm and still / expressive and wild ♩ = 46c.

The musical score consists of two staves. The first staff contains bars 1 through 3, and the second staff contains bars 4 through 6. The music is in 3/4 time with a tempo of ♩ = 46c. Dynamics include *mp*, *mf*, *tamb.*, *gl.*, *mp p*, *f*, and *mp sub.*. Techniques include *gl.* (glissando), *tamb.* (tambourine), *(sim.)* (simulazione), *8va* (octave), and *(loco)* (loco). Fingerings are indicated by numbers 1-5. Bar 1 has a *mf* dynamic. Bar 2 has *gl.*, *mf*, *tamb.*, *>gl.*, *gl.*, *(sim.)*, *mp p*. Bar 3 has *(cool)*, *8va*, *5*, *mp p*, *(loco)*, *5*. Bar 4 has *mf*, *3*, *5*, *f*, *3*, *mp sub.*. Bar 5 has *3*, *5*, *3*. Bar 6 has *3*, *5*, *3*.

If a solution with harmonics does not provide the desired colour, or is not sufficiently powerful or resonant, then the chord will have to be revoiced.

It is a strength of natural harmonics that as soon as they have been set into vibration, the left hand no longer has to touch the string. Thus it is free to move elsewhere while the harmonics continue to ring, just as if a sustaining pedal were depressed. As a result, wide-spaced voicings can be achieved by overlapping harmonics with stopped notes. In the example below, bar 1, three harmonics are set ringing at fret XII; as they ring, the left hand shifts to a low position to sound the F and A. In the second bar, I have changed the middle note of the three-note chord to a B \flat , which cannot be played as a harmonic and therefore does not literally sustain over two beats: because the outer notes sustain, however, a very acceptable compromise results, typical of guitar writing (we shall note other such compromises when we come to discuss counterpoint, pp 23–26).

The diagram shows a guitar neck with frets I, II, IV, and XII. At fret XII, notes 1, 2, 4, and 6 are indicated. At fret IV, note 5 is indicated. At frets I and II, notes 3 and 6 are indicated.

Harmonics in combination with stopped notes

One kind of sonority that has perhaps not been explored in the guitar repertoire as much as it might be features natural harmonics in the middle of a chord to achieve a close spacing and a subtle blend of sounds.

The first diagram shows a VI chord with notes 1, 2, 4, 5, 6. The second diagram shows an IV chord with notes 1, 2, 3, 4, 4, 4. The musical notation shows the chords in a key with one sharp.

Particularly in the high registers, sonorities such as these take on a wonderful sheen, suggesting orchestral sonorities tinted with mallet percussion.

Param Vir, *Clear Light, Magic Body* (1992): i, 'Shamvar I', bars 62–64

♩ = 76c.

[1] [2] [3] [4]

VII → XII → IX → IV →

The left-hand thumb

It is possible to bring the thumb from behind the neck to stop a note: this technique is almost unknown but may become more common as guitar technique evolves. It is best to bring the thumb into play only if there is a little time to position it; it might possibly be used to hold a pedal tone or to create a chord with very close spacing. But if such a chord is going to be so central to the music that it cannot be revoiced later then it would be wise to consult a guitarist first!

Takemitsu, *Folios* (1974): i (τ = thumb)

v →

Texture, Counterpoint and Voicing

The guitar excels at monody. Since all but the lowest and highest pitches are available in more than one place on the fingerboard, the guitarist can explore the possibilities of playing ‘violinistically’ on one string, drawing on portamento and the expressivity of the high positions – or ‘pianistically’, playing across several strings to create subtle overlappings of sound. In the middle and high registers, the sympathetic resonance of the bass strings compensates for the guitar’s fast decay, giving the sound a subtle aura.

Michael Tippett, *The Blue Guitar* (1982–3): ii, ‘Dreaming’, bars 9–18

9 rhetorical recitative

12 *ten.*

15

At the same time, the guitar has a rich contrapuntal tradition, stemming in the first place from the Renaissance lute and vihuela, whose repertoire lends itself readily to the guitar on account of the very similar tunings of the three instruments.² There could be no better introduction to the guitar’s contrapuntal possibilities than Luys de Narváez’s vihuela music – his fourteen fantasias (at least one for each mode) or his six variations on *O gloriosa Domina*, a series of counterpoints over a cantus firmus. In this extract from the penultimate variation of *O gloriosa Domina* (notated originally in tablature) I have labelled the cantus firmus with an additional staff to help clarify its entrance, as it makes an extraordinary stretto overlap with the false entry in bar 13.

Luys de Narváez, *Seis diferencias sobre O gloriosa Domina* (1538): variation 5, bars 1–33

[cont.]

- 2 To play vihuela music on the guitar, one has only to retune string ③ to F# and play from the original tablature: the result is a minor third lower than on the vihuela (before taking into account differences in pitch standards of our two eras).

Johann Sebastian Bach, Suite BWV 997: II, Fuga, bars 59–67

Bach's lute works, alongside the contrapuntal masterworks of Dowland and his contemporaries, may well have encouraged the intense contrapuntal build-ups of Davies's *Hill Runes* and Maw's *Music of Memory*. Yet it is worth remembering that Bach's solo violin sonatas and partitas are frequently played on the guitar with only the merest thickening of the texture, if any – even the single-line movements such as the doubles of the Second Partita. Bach's own transcription for the lute of his Fifth Cello Suite, BWV 1011 (as the Suite BWV 995) is still relatively modest in its elaborations, but sounds very active and sonorous on the guitar. The following extract compares the cello and lute versions, adding a guitar realisation:

Johann Sebastian Bach, Gigue from Suites BWV 1011 (Cello) and BWV 995 (Lute), bars 1–24

Gigue

Cello Suite in C minor, BWV 1011

Lute Suite in G minor, BWV 995

Lute Suite BWV 995, as conventionally played on the guitar in A minor

When writing in a less strictly polyphonic context, it is worth remembering that the guitarists of Beethoven's generation (when the six-string guitar became standard) established two to three voices as a comfortable norm, with the texture often thinning out in moments of high activity

(thus enabling quicker note values), and thickening out wherever needed, especially cadences. Sor's music, the richest of its time in its voicing, adopts this flexible principle. In the following example, as with his B minor Study quoted above, it is worth noting Sor's telling use of the lowest register.

Fernando Sor, *Variations on a Theme of Mozart*, op. 9 (1821): Variation 3

Recommended repertoire for contrapuntal textures

Johann Sebastian Bach (1685–1750)

Lute Works, BWV 995–1000, 1006a

Benjamin Britten (1913–1976)

Nocturnal after John Dowland, op. 70 (1963)

Peter Maxwell Davies (b. 1934)

Hill Runes, op. 96 (1981)

Sonata, op. 117 (1984)

Hans Werner Henze (b. 1926)

Royal Winter Music: First Sonata on Shakespearean Characters (1975–6): ii, 'Romeo and Juliet'

Ricardo Iznaola (b. 1949)

Daedalus: Sonata for Guitar (2003): ii, 'Icarus'

Nicholas Maw

Music of Memory (1989)

Luys de Narváez (fl. 1526–49)

From *Los seys libros del delphín* (1538):

Fantasias I–XIV (*Los seys libros*, books 1–2)

Seis diferencias sobre *O gloriosa Domina* (*Los seys libros*, book 4)

Bayan Northcott (b. 1940)

Fantasia, op. 3 (1981–2)

Fernando Sor (1778–1839)

Fantaisie, op. 7

Variations on a Theme of Mozart, op. 9 (1821)

Michael Tippett (1905–88)

The Blue Guitar (1982–3)

Trills

Passages involving various kinds of trills or tremolando are idiomatic to the guitar, but tend to be ‘high in cost’ — meaning that tremolando figures are hard to use in contrapuntal contexts and may require a little time to prepare and get away from.

To perform a trill in the traditional way, one plucks the first note and slurs the rest of the pattern with the left hand (see the section on slurs, p 5). This is a particularly flexible way of achieving a trill, since it requires no time to prepare or release.

Heitor Villa-Lobos, Étude no. 7 (1928), bars 48–56

48

52

56

p

sfz

gliss.

sfz

sfz

sfz

sfz

sfz

allarg.

allarg.

The disadvantage of this slurring technique is that the sound dies too rapidly for any kind of prolonged trill (in the late eighteenth century, guitarists had trouble achieving the long cadential trills typical of the concertante style). In recent times guitarists have been exploring the additional possibility of playing long trills on two strings, plucking every note. This technique allows trills (and other oscillations of two notes) of sustained intensity. But it is also limited in its usefulness, occupying as it does all four plucking digits of the right hand: the first note of the trill can be combined with a chord, but once the trill is underway, sounding other notes will entail interrupting it momentarily.

My advice is to use loud, sustained trills with caution: one can write any kind of figuration at the start of the pattern but one should avoid complex counterpoint as the trill continues (except perhaps figurations to be played with the left hand alone, as in the violin’s left-hand pizzicato).

Tremolando

In the following excerpt from Britten's *Nocturnal*, rapidly repeated notes are produced by alternating the fingers of the right hand: light accompaniment is possible, generally with single notes, as here.

Benjamin Britten, *Nocturnal after John Dowland*, op. 70 (1963): vii, 'Gently rocking', bars 1–4

VII Gently rocking
(cullante)

pp murmuring; quasi tremolando simile

pp

A particularly idiomatic tremolando technique entails interrupting the repeated notes with the accompaniment, creating the illusion of a continuous tremolando. Here is the traditional Spanish pattern:

Francisco Tárrega, *Recuerdos de la Alhambra* (c. 1899)

Andante

Britten draws on the same pattern in his folk-song setting *The Shooting of his Dear*, to dramatise the appearance of Polly's ghost in the final verse. The use of double stops and chords in the accompaniment is a tricky but still practical elaboration of the tremolo principle.

Benjamin Britten, *The Shooting of his Dear* (folk song from Norfolk, from *Folk Song Arrangements*, vol. 6, 1956–8, publ. 1961), bars 60–80

60 *f* *rall.*

So the tri - al came on and pret - ty Pol - ly did ap -

ff *sim.* *p*

Slower

65 *pp*

pear, Say - ing, "Un - cle, dear

(murmuring)

pp

[cont.]

[Britten, *The Shooting of his Dear*, continued from previous page]

67 *always pp*

un - - cle, let Jim - - my go - -

69

clear, For my a - pron was bound

71 *(pp)*

round me and he

72 *slower and slower*

took me for a swan, And his

74

poor heart lay bleed - - ing for

76 *dying away*

Pol - - ly his own.

78 *very slow*

ppp

Davies's implementation of tremolo in *Hill Runes* is still recognisably the traditional pattern with its interruptions, but with irregular durations:

Peter Maxwell Davies, *Hill Runes*, op. 96 (1981), bars 33–38

A quite different way of achieving tremolando is to use a single finger of the right hand as a kind of plectrum, plucking the string in both directions in rapid alternation. This technique is almost always encountered on isolated notes or chords, as it is difficult to do anything else while strumming in this way.

Goffredo Petrassi, *Nunc* (1971): opening

This 'plectrum' technique is the only way one can perform a chord tremolando. A wonderfully shimmering effect can be achieved with dyads and two-part lines, when of course one must remember that a single finger can only sweep across adjacent strings. When applied to chords of four notes or more, the technique becomes increasingly arduous and gives increasingly noisy results, so it is best to avoid it in hushed dynamics.

All the same, there are so many ways of achieving tremolando that some adaptation may be possible. The last example is a tremolando passage from a duo for cello and guitar, first as the composer wrote it, and below on a double staff, how I realised it as a combination of plectrum-style tremolando and slurred two-note trills—an uneven but arguably more interesting texture than tremolando chords.

Chris Malloy, *Duel* for cello and guitar (2008): guitar part only, bars 119–28

[cont.]

[Malloy, *Duel*, continued from previous page]

124

(all trem.)

LH alone

LH alone

rag.

Strums

As a rule, guitarists play chords by plucking with the fingers together: although one plucks generally only with thumb and three fingers (excluding the little finger), it is easy enough to play five- and six-note chords without arpeggiating, by discreetly sweeping across two adjacent strings with a single finger.

But strumming across the strings with the fingers offers a whole set of resources that touch on every gradation of violence and delicacy. One can either strum up and down with a single finger or strum with successive fingers (*rasgueado*). These resources range from the intensification of a single chord with a grace note pattern similar to that of a snare drum —

Maurice Ohana, *Tiento* (1957), bars 1–10

Andante (♩ = 72)

— to rhythmic patterns, which must inevitably be strummed once the chords are repeated quickly enough —

Joaquín Rodrigo, *Concierto de Aranjuez* (1939): i, bars 1–6 (guitar part only)

Allegro con spirito (♩ = 84)

— to a noisy tremolando:

Nicholas Maw, *Music of Memory* (1989): *Tempo giusto*

[Tempo giusto (♩ = 80/84)]

Tempo del tema

Rests can be introduced into strummed patterns by bringing the side of the hand to damp the strings. If the fist is used, as in Latin American folk styles, the result is a percussive slap, memorably used by Ginastera in the Finale of his Sonata:

Alberto Ginastera, Sonata op. 47 (1976): iv, Finale, bars 1–11.³

Presto e foggoso ♩ = 160 (♩ = 320), sempre ♩ = ♩
 rasgueado

pp cresc. p mp cresc. mf f cresc.

To be sure, all of these examples possess a certain Hispanic tint (except perhaps in the example by Maw, who in any case was aiming at maximum richness of allusion), but this need not be inevitable. Strumming patterns, after all, were an integral part of the French Baroque guitar style, with all its elegance and refinement. And continuous *rasgueado*, flamenco style, is central to Tristan Murail's *Tellur* and Berio's *Sequenza XI*. In Berio's piece the allusion to the flamenco guitar, perhaps unavoidable, is so overtly theatrical that it recedes into the background almost immediately; meanwhile, the focus switches to the distinctive harmonies articulated by the strumming and (as in Murail) by the way in which it contributes to a sense of process.

Finally, two principles to bear in mind when writing strummed passages:

- 1 It is only possible to strum on a set of adjacent strings. For strummed passages, then, it may be worthwhile to check the exact fingering of the chord; otherwise, the composer should be prepared to discuss revoicings with the guitarist. It is sometimes possible to mute an unwanted internal string with a left-hand finger on an individual chord, but always at the cost of resonance and technical freedom.
- 2 One can strum with most abandon chords using all six strings: the climax envisioned by Maw in the example above would be harder to achieve if the chords had fewer notes. But one can certainly strum effectively on any subset of the six strings, so long as the strings are adjacent.

3 In this excerpt, I have used x-shaped noteheads to show the slap on the strings with the fist. Ginastera used ordinary noteheads with a special symbol under each slap. The use of precise pitches in the notation of the slaps is misleading: they are used because the guitarist will continue to hold down the strummed chord with the left hand; in fact no pitches will be audible on the slapped chords.

Glissando

As with any string instrument, expressive slides along the string are among the guitar's most precious resources. In the nineteenth and early twentieth centuries it was routine for guitarists to sneak extra pitches into the line in order to slide from them to the most expressive pitches along a single string. Just look at the following two excerpts from Manuel de Falla's 1920 *Homenaje*, first as Falla wrote them down, and beneath, as they were played (and printed) by the dedicatee Miguel Llobet. The extra pitches represent, in effect, a highly idiomatic type of ornament that has never been codified and has long fallen out of favour. Perhaps there are ways of exploring it afresh?

Manuel de Falla, *Homenaje: le tombeau de Claude Debussy* (1920); the second line is from Miguel Llobet's 1926 edition

The image shows two musical staves, labeled 'a)' and 'b)', comparing the original manuscript by Manuel de Falla with Miguel Llobet's 1926 edition. Staff 'a)' is the original manuscript, starting at measure 11, marked 'poco affr.' and 'f'. It features a melodic line with triplets and glissandos, indicated by 'x' marks above notes. Staff 'b)' is Llobet's edition, starting at measure 41, also marked 'poco affr.' and 'f'. It shows the same melodic line but with additional notes and fingerings (circled numbers) added to the glissandos, representing the 'extra pitches' mentioned in the text.

In glissandos such as these only the first note is plucked with the right hand. Large intervals and multiple slides are feasible, but it is important to remember how short the guitar's sustain is. The very act of sliding along the string makes the sound die only the more quickly, so if the interval is large, the glissando slow or delayed, or if the glissando changes direction, the chances of the final note being heard diminish greatly – and the guitarist may have to pluck that note. The sliding *gruppetti* in the 'March-like' section of Britten's *Nocturnal* are perfectly judged:

Benjamin Britten, *Nocturnal after John Dowland*, op.70 (1963): v, 'March-like', bars 5–8

The image shows a musical staff for Benjamin Britten's 'Nocturnal after John Dowland', measures 5–8. The music is in a 'March-like' style, featuring a melodic line with frequent glissandos and *gruppetti* (short, slurred groups of notes). The notation includes various accidentals and dynamic markings.

But to sustain a melodic line that is premised on glissando, it may be best to continually enhance the sonority – in particular the final note – with unisons or near unisons on open strings or harmonics – another technique that has not yet been much explored in the repertoire.

Param Vir, *Clear Light, Magic Body* (1992): ii, 'Clear Light', bars 32–34

The image shows a musical staff for Param Vir's 'Clear Light, Magic Body', measures 32–34. The music is marked 'mp, quasi tranquillo' and '(pp)'. It features a melodic line with glissandos and *gruppetti*, including a triplet and a quintuplet. The notation includes various accidentals and dynamic markings.

Timbre

Guitarists vary the timbre in a number of ways. First, there is the choice of a particular string or strings on which to play a passage. Then there is the point of attack along the string: playing next to the bridge (*sul ponticello*) gives a metallic sound, while playing over the fingerboard (*sul tasto*) gives a dark, veiled sound. The variations in between amount to about four 'primary colours':

pont. → ½ pont. → ord. → tasto

Some usages of these colours are more idiomatic than others:

- 1 Guitarists tend to play half-*ponticello* in fast passagework, because the strings become tenser and easier to control close to the bridge. Beware of asking for *tasto* in virtuoso passages except in short bursts. For similar reasons, it can be problematic to play *tasto* and forcefully: the strings are more liable to buzz when played strongly close to their midpoint.
- 2 A good player varies the tone in subtle, detailed and often highly personal ways almost continuously. It can be more of a hindrance than a help to specify the point of attack on the string unless it is integral to the structure – and even then, it may be just as effective to use descriptive words (*chiaro, brillante, metallico; oscuro, dolce, sonoro*, etc) to prompt the player to look for an appropriate colour.
- 3 Avoid asking for distinctions in colour of harmonics, except maybe for a local effect on one or two natural harmonics.
- 4 A sound rather like the clarinet's *chalmieu* register can be obtained by playing on the bass strings at exactly their midpoint: since every note has to be plucked in its own place, this effect can be used only in slow single lines. To specify this effect, write '12°' and include an explanatory note.

Modern guitarists use their nails to pluck the strings (in combination with the flesh of the fingertip), but it is possible to angle the thumb to pluck with the flesh alone (*polpastrella*) to give a dark sound with considerable body, both on single notes and strummed chords. Again, some players will use this sound as part of their palette even if it is not marked.

The snap pizzicato (or Bartók pizzicato) strikingly complements the guitar's sustain. It is produced by lifting the string away from the soundboard and releasing it so that it clatters against the fingerboard at the start of the note. It is a little awkward to produce, so it is wise to give the player an instant to lift up the string.

In an early episode in *Changes*, Carter draws on almost every one of these resources to make a *Klangfarbenmelodie* of two pitches: the A that begins bar 39 and the B at the end of bar 46. As the notes are repeated at varying speeds, Carter constantly varies the choice of string, point of attack and playing technique, including unisons, harmonics and snap pizzicato (♭).

Elliott Carter, *Changes* (1983), bars 39–51

[cont.]

[Carter, *Changes*, continued from previous page]

44 *f* *mf* *p* *f* *mf* *p* *f* *mf*

47 *f* *mf* *p* *pp* *p* *mp*

50 *ff* *f* *mf* *mp* *f* *sf*

To complete this gamut of colours we must mention the pizzicato. The very term ('plucked') is of course a misnomer: it is used because the sound imitates the bowed instruments' pizzicato (or the harpsichord's lute stop). The guitarist muffles the strings with the palm of the right hand against the bridge, and plucks the strings with the thumb and perhaps one or two other fingers. The technique is especially effective for single bass notes or chords of two or three notes, but can be used in any register.

Tōru Takemitsu, *All in Twilight* (1987): iv, bars 22–32

22 *p* *Art. Harm.* *poco sfz* *poco mfz* *p* *pp* pizz.

27 *accel.* *a tempo* *f* *meno f* *f*

Vibrato, Pitch Bends, Microtones

Degrees of vibrato — from none at all to heavily exaggerated — can be exploited on the guitar in all registers, just as on other string instruments.

It is possible to bend any pitch upwards by pulling the string to the side: this effect is best exploited with minimal accompaniment, since the act of pulling the string aside can cause it to interfere with the vibration of the adjacent strings. (Note-bending is much more limited on the classical guitar than on electric or steel-string guitars with their lower tension strings.) Takemitsu's *Folios* ends strikingly with this effect (since this sound comes at the end of the piece, one could even use the tuning peg to change the pitch, particularly if it was an open string and particularly if the pitch was to be lowered instead of raised). Pulling the string aside in this way will shorten its sustain slightly, especially on the upper strings.

Tōru Takemitsu, *Folios* (1974): iii, ending

♩ = 112 *rall.* *a tempo* *mf* *f*

mfpp *p* *p* *pp*

mp *sf* *p* *gliss.*

By bending the string one can produce a precise quarter-tone. In the following chromatically saturated passage by Ohana, (already cited for its use of *campanellas*) the quarter-tones in the third bar are produced by fingering C# and pulling the string sharp by just the right amount. This is not easy to do cleanly and would not be feasible in rapid figuration: indeed, in performance, one often hears the C# bending into the quarter-tone rather than a cleanly struck microtone.

Maurice Ohana, *Tiento* (1957), bars 53–56⁴

Cadenza

près du chevalet (métallique)

0 0 ④ ⑤

53 *ff* (*violent*) *p* *p* *Lento* (♩ = 44)

In his later guitar works Ohana asks for thirds of tones, which although possible require the string to be pulled almost impractically sharp. It is reasonable to say that if microtones are going to be used more than occasionally, some sort of microtonal scordatura should be used, as in Ferneyhough's *Kurze Schatten II*.

4 Ohana's original score notates the two quarter tones in two different ways, including an explanatory note. I have simplified the notation for the sake of this short excerpt.

Percussion

One of the guitar's most intriguing resources is the *tambora*: the guitarist uses the thumb or an outstretched finger as a beater on the strings to create a percussive sound that is pitched.

Nicholas Maw, *Music of Memory* (1989): *Senza rigore; non troppo lento*

The image shows a musical score for guitar. The top staff begins with a melodic line marked 'Più lento' and 'p'. It features a triplet of eighth notes. The bottom staff provides harmonic accompaniment. A section labeled 'Tempo 1°' begins with a 'poco sf' dynamic. This is followed by a 'tambora' section marked 'molto rit.' and 'pp'. The tambora section consists of a series of chords struck with a beater. The score concludes with a natural sign '[nat.]' and a 'p' dynamic.

In the right place, *tambora* can be extraordinarily telling, but some care and experimentation may be called for:

- 1 As with strums, one should aim to write chords that can be fingered on adjacent strings. Often, though, one can find a way of muting an unwanted internal string.
- 2 The clarity of the *tambora* sound is somewhat unpredictable. Even in showpieces, which might feature an entire passage of *tambora*, the harmonies are generally quite static. This sound is best used for its atmosphere: fine shadings of voice-leading tend to get obscured.
- 3 *Tambora* does not rise above *mf*: a single blow to the strings can still enhance a climax, but any extended use of *tambora* is notable above all for its quietness.
- 4 This technique opens up the possibility of using, instead of the flesh and bone of the player's hand, percussionists' beaters: in *Si le jour paraît...* (written in 1963 for the rarely played ten-string guitar) Ohana deploys at times both a metal beater and a felt-covered beater with compelling results. The use of hard wooden or metal beaters makes possible a *tambora* of much greater loudness and clarity. But apart from the time required to pick up the beater and put it down, the price of using one is that of any exotic technique: the effect stands well outside the guitar's natural continuum of sounds, as though all of a sudden one were playing a quite different instrument.

In its relative quietness and lack of clarity, then, *tambora* might be compared with the string player's *col legno* (except that there is no loss of sustain with *tambora*). Maw's use of it in the example above takes no risks: there is almost no harmonic change when the *tambora* starts, so clarity of pitch is not crucial; the dynamic is hushed; the drumming sound is there to create mystery rather than violence.

What then of non-pitched percussion: tapping various parts of the guitar's soundboard or sides? It is true that examples abound in modern guitar works, but I would warn against focusing on these sounds in isolation. Frankly, they tend to lack the depth and interest of real percussion instruments and are as likely to amuse as fascinate an audience. On the other hand, when heard alongside pitched sounds they can become something quite different. There is no better example of

this than Henze's precarious and thrilling medley of plucked sounds, *tambora* and percussion on various parts of the guitar to close 'Gloucester', the first movement of his first *Royal Winter Music Sonata*. Here is the beginning of the passage: the x-shaped noteheads are to be played *tambora*, while the lower staff asks for percussion in three different locations on the soundboard, all slightly different in timbre from one another. Notice again the restrained use of *tambora*: as the dynamic rises, ordinary notes take over.

Hans Werner Henze, *Royal Winter Music: First Sonata* (1975–6): i, 'Gloucester', bars 99–109

The image displays three systems of musical notation for the first movement of Henze's *Royal Winter Music: First Sonata*, specifically the section 'Gloucester' (bars 99–109). The notation is presented in a grand staff format, with the upper staff representing the guitar and the lower staff representing percussion.

- System 1 (Bars 99–102):** The guitar part begins with a *mf* dynamic and features x-shaped noteheads indicating *tambora* sounds. The lower staff has percussive markings labeled 'A' and 'B'. Dynamics range from *pp* to *p*.
- System 2 (Bars 103–105):** The guitar part continues with triplets and reaches a *fff* dynamic. The lower staff has percussive markings labeled 'A' and 'C'. A 'LH' marking is present in the guitar staff.
- System 3 (Bars 106–109):** The guitar part features a *ff* dynamic and includes a 'snap' instruction. The lower staff has percussive markings labeled 'C' and 'B C'. Dynamics range from *ff* to *rsf*.

Scordatura

As far as mere playability is concerned, it is hard to improve on the standard guitar tuning, with its perfect fourths and one major third. Retuning one or more strings usually increases the interval between two adjacent strings to more than a perfect fourth, with the result that close-spaced harmonies involving those strings become harder to achieve.

Still, a good deal of the guitar's tonal repertoire exploits some kind of scordatura. Traditionally, players would retune the guitar to set an open-string to tonic or dominant, making the tonic key lie and resonate better. Every guitarist is familiar with the following possibilities (the retuned strings are shown as black noteheads; numbers in circles refer to strings):

⑥ = D
⑥ = D, ⑤ = G
⑥ = F

Such tunings may be just as effective in less tonal contexts, lending a special resonance to referential sonorities and pedal tones. Northcott uses [⑥ = D] in his *Fantasia*, op. 3; Takemitsu uses [⑥ = D, ⑤ = G] in both *Toward the Sea* (1981, for alto flute and guitar) and *All in Twilight* (1987); the second movement of Brouwer's *Sonata* has [⑥ = F]. Tuning the sixth string to D, of course, extends the range of the guitar; occasionally it is lowered as far as C, although the sonority and intonation of fretted notes can suffer when the string is slackened so much, forcing the composer to use the string with discretion.

Given the tonal bias of all the standard tunings, it is not surprising that from time to time composers devise tunings that set the open strings to something other than a collection of diatonic pitches, making the instrument less tonal rather than more. An immediate benefit is the greater variety of natural harmonics that arise (as we have seen, the standard tuning yields some duplication of pitches). At the extreme are the quarter-tone scordature of Ferneyhough's *Kurze Schatten II* (1989). Within the chromatic system I have seen tunings such as the following used to great purpose:

| | | | |
|---|--|--|--|
| <p>⑥ = E\flat Bennett, no. 3 from <i>Five Impromptus</i></p> | <p>⑥ = E\flat, ⑤ = A\flat Keeley, no. 3 from <i>Bagatelas das Ondas</i> for flute and guitar</p> | <p>⑥ = E\flat, ② = B\flat Takemitsu, <i>Equinox</i> (1993) Brouwer, <i>Hika</i> (1996)</p> | <p>⑥ = F, ④ = E\flat Murail, <i>Tellur</i> (1977)</p> |
|---|--|--|--|

Adjusting the sixth string to E \flat makes little difference to playability, but transforms the sonority of the guitar so strikingly that it surprises me it has not been used more often. Interesting possibilities also arise when the high E string is lowered to E \flat , although as far as I know there are no pieces written for this tuning.

When devising a scordatura, I recommend that each open string be kept within the following upper and lower limits:

These limits could perhaps be stretched by a semitone either way but at some cost to tone and intonation.

While it is common enough to retune between movements, giving the guitar a little time to settle, it is very difficult to retune silently within a movement or during an *attacca*. Such retuning is occasionally asked for in the repertoire, but I would strongly advise against it unless the sound of the string being retuned — the sliding pitch — is incorporated into the music. In his concerto *Troubadours*, Corigliano more than once asks the soloist to switch string ⑥ quickly and silently between D and E \flat : a risky undertaking. Towards the end of the cadenza, though, the string is retuned to D out loud, echoing the chromatic glissandi that are heard from the outset of the concerto — a much more grateful task for the guitarist.

Extended Techniques

Almost every part of the guitar presents a site for non-standard sounds. Some of these sounds have definite pitches than can be counterpointed with conventionally produced notes. One can pluck the string between the fretting finger and the nut, instead of between the fretting finger and the bridge to produce a weak, high-pitched, tinny sound (but nonetheless effective in Alexandre de Faria's Prelude *Eyes of a Recollection*). Or one can mute the string while attacking it with the nail to make apparent the vestigial pitch always produced when the nail meets the string (as in the *tabula rasa* opening of Murail's *Tellur*).

Other sounds consist of high indeterminate pitches, as when one plucks the strings behind the nut, or stops the strings above the highest fret. Ginastera humorously explores both sounds in the Scherzo of his Sonata.

Still other ways of playing produce unpitched noise. One of the most important involves crossing two strings (usually bass strings) over one another and pressing them down over a fret to produce a sound that guitarists aptly call 'snare drum' (Corigliano uses this sound to begin the cadenza in his concerto *Troubadours*). Other techniques entail scraping the strings with the nails (the first movement of Ginastera's Sonata) or tapping on the soundboard (Petrassi's *Nunc*, the last movement of Tippett's *Blue Guitar*, Scelsi's *Ko-Tha*). What happens when one slides a left-hand finger lightly over the string to pass over nodal points has been explored to fascinating effect by Murail and Sammoutis. Certain left-hand techniques in Murail and Berio may well have been borrowed from the electric guitar. And of course, besides being prepared like Cage's piano, the guitar has been played with all manner of implements from bows (Henze's *El Cimarrón*) to beaters (Ohana's *Si le jour paraît...*).

In the last resort, though, all such effects should surely be explored on a real instrument, rather than in an essay such as this. John Schneider has written a useful guide to extended techniques in his book *The Contemporary Guitar* (Berkeley: University of California Press, 1985), and the following list of works, all of which I believe offer a persuasive musical experience, may help to introduce some of the sounds.

Recommended repertoire

Luciano Berio (1925–2003)

Sequenza XI (1987–8)

Alberto Ginastera (1916–1983)

Sonata, op. 47 (1976)

Alexandre de Faria (b. 1972)

Prelude for Guitar: *Eyes of a Recollection*

Hans Werner Henze (b. 1926)

Memorias de 'El Cimarrón' (adapted by Leo Brouwer: 1973)

Royal Winter Music: First Sonata on Shakespearean Characters for Guitar (1975–6): 'Gloucester'

Tristan Murail (b. 1947)

Tellur (1977)

Maurice Ohana (1913–92)

Si le jour paraît... (1963) for ten-string guitar

Goffredo Petrassi (1904–2003)

Nunc (1971)

Evis Sammoutis (b. 1979)

Raindrops (2004)

Giacinto Scelsi (1905–88)

Ko-Tha: Three Dances of Shiva (1967)

Michael Tippett (1905–88)

The Blue Guitar (1982–3)

Param Vir (b. 1952)

Clear Light, Magic Body (1993)

List of Works Mentioned in the Text

Dionisio Aguado (1784–1849)

Miscellaneous studies from *Nuevo método* (1843)

Johann Sebastian Bach (1685–1750)

Lute Works, BWV 995–1000, 1006a

Agustín Barrios Mangoré (1885–1944)

Estudio no. 4, 'Arabescos'

Richard Rodney Bennett (b. 1936)

Five Impromptus (1968)

Sonata (1983)

Luciano Berio (1925–2003)

Sequenza XI (1987–8)

Benjamin Britten (1913–1976)

Nocturnal after John Dowland, op. 70 (1963)

Folk Song Arrangements, volume 6 (1956–8, publ. 1961)

Leo Brouwer (b. 1939)

Estudios sencillos (1960, 1981)

Sonata (1990)

Hika (1996)

Matteo Carcassi (c. 1793–1853)

25 Études mélodiques et progressives, op. 60 (c. 1836)

John Corigliano (b. 1938)

Troubadours: Variations for Guitar and Chamber Orchestra (1993)

Peter Maxwell Davies (b. 1934)

Hill Runes, op. 96 (1981)

Sonata, op. 117 (1984)

Stephen Dodgson (b. 1924)

Partita no. 4 (1990)

Manuel de Falla (1876–1946)

Homenaje: pour le tombeau de Claude Debussy (1920)

Alexandre de Faria (b. 1972)

Prelude for Guitar: Eyes of a Recollection (1986)

Brian Ferneyhough (b. 1943)

Kurze Schatten II (1989)

Alberto Ginastera (1916–1983)

Sonata, op. 47 (1976)

Mauro Giuliani (1781–1829)

Miscellaneous studies

Enrique Granados (1867–1916), arr. Miguel Llobet (1878–1938)
 Danza española v (*Andaluza*), op. 37/v (1890)

Hans Werner Henze (b. 1926)
 Memorias de ‘El Cimarrón’ (adapted by Leo Brouwer: 1973)
 Royal Winter Music: First Sonata on Shakespearean Characters for Guitar (1975–6)
 Royal Winter Music: Second Sonata on Shakespearean Characters for Guitar (1979)

Ricardo Iznaola (b. 1949)
 Daedalus: Sonata for Guitar (2003)

Robert Keeley (b. 1960)
 Bagatelas das ondas for flute and guitar (2003)

Chris Malloy (b. 1965)
 Duel for cello and guitar (2008)
 Millions of Mischiefs (2005) for ten-string guitar

Nicholas Maw (1935–2009)
 Music of Memory (1989)

Tristan Murail (b. 1947)
 Tellur (1977)

Luys de Narváez (fl. 1526–49)
 from *Los seys libros del delphín* (1538):
 Fantasias I–XIV (*Los seys libros*, books 1–2)
 Seis diferencias sobre *O gloriosa Domina* (*Los seys libros*, book 4)

Bayan Northcott (b. 1940)
 Fantasia, op. 3 (1981–2)

Maurice Ohana (1913–92)
 Si le jour paraît... (1963) for ten-string guitar
 Tiento (1957)

Goffredo Petrassi (1904–2003)
 Nunc (1971)

Joaquín Rodrigo (1901–99)
 Concierto de Aranjuez (1939)

Evis Sammoutis (b. 1979)
 Raindrops (2004)

Fernando Sor (1778–1839)
 Fantaisie, op. 7
 Variations on a Theme of Mozart, op. 9 (1821)
 Miscellaneous studies

Tōru Takemitsu (1930–96)
 Folios (1974)
 To the Edge of Dream for guitar and orchestra (1983)
 All in Twilight (1987)
 Equinox (1993)
 In the Woods (1995)

Francisco Tárrega (1852–1909)
Recuerdos de la Alhambra (c. 1899)
Estudio brillante (after Alard)

Michael Tippett (1905–88)
The Blue Guitar (1982–3)

Heitor Villa-Lobos (1887–1959)
12 Études (1928, rev. 1929)
5 Preludes (1940)

Param Vir (b. 1952)
Clear Light, Magic Body (1993)