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Thinking through the guitar : the sound-cell-texture chain

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Chapter 9 Percussion Sounds

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Chapter 9 Percussion Sounds

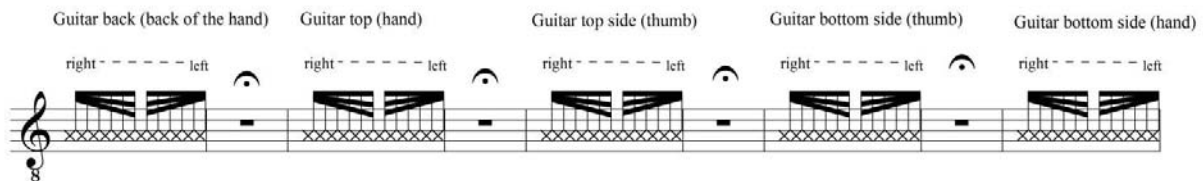
Percussion sounds emerge when the performer strikes a part of the guitar in a percussive manner. In this chapter, percussion of the guitar body is discussed. Percussive striking of the strings is discussed in the chapter on tambora sounds. This chapter shows ways in which the composer can handle the characteristics of the percussion sound, use it to build horizontal as well as vertical cells, and finally, how these cells can be creatively combined to form musical textures playable on the guitar.

9.1 Sound

9.1.1 Percussion range

The full surface of the guitar can be used as a percussion object. Most commonly, guitar percussion is performed on the body of the instrument; such percussion sounds are dynamically stronger than the rest of the guitar surface due to the resonant properties of the guitar body.

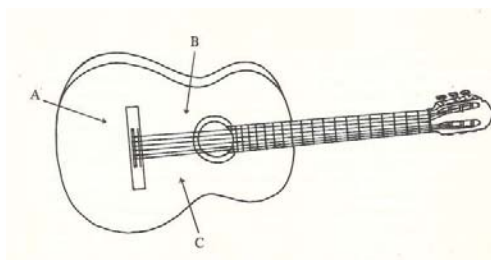
Figure 9.1 Guitar body percussion



The parts of the guitar body that provide the most sonorous percussion sounds are the top, back, and sides of the guitar body (Figure 9.1)⁵¹. Percussion sounds can be produced with either hand, with the tip of the fingers, palm of the hand, back of the hand and the nails. The disadvantage of using nails on the guitar is that they can damage the body. Some guitarists play on instruments with very thin and fragile guitar tops, such as the guitars by Greg Smallman that John Williams uses, making guitar top percussion impossible on such guitars as this would destroy the guitar top. Percussion sounds are notated in various ways; apart from a general preference in the guitar repertoire for percussion noteheads, there is no standardized notation. It is recommended here that percussion sounds are notated with percussion noteheads and a verbal indication as to where the percussion sound is to be produced, and, if this indication is desired, with which part of the hand. In pieces where percussion is widely used it is wise to include a detailed legend. When using individual fingers of the right hand in percussion, the usual indications (p,c,a,m and i) are to be used (Figure 9.3).

⁵¹ For the locations of the various parts of the guitar: see *Reading Guide*.

Figure 9.2 Image of percussion locations



(ROYAL WINTER MUSIC SONATA, HENZE)

Kampela uses pictures explaining the way in which the percussion sounds are to be performed (Kampela, 1993a), while Henze uses drawings to identify the various playing locations used for percussion sounds in his first *Royal winter music sonata* (Figure 9.2).

Figure 9.3 Two-staff notation

(PERCUSSION STUDY NO. 1, KAMPELA)

When the percussion sounds are used alongside other sounds, it is helpful for notational clarity to use two staves to distinguish the percussion sounds from pitched sounds. If one staff is reserved for percussion only, a percussion clef and staff are ideally used for that staff (Figure 9.3).

9.1.2 Timbre possibilities

The timbre of percussion sounds can be altered by changing the playing location and the playing method.

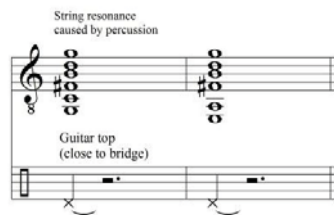
Playing location

String resonance

Figure 9.4 String resonance

All percussion sounds produce string resonance when the strings are not intentionally damped. Percussion sounds performed on the guitar top close to the bridge produce the highest degree of string resonance. Percussion sounds performed closer to the edges of the guitar top produce a lower degree of string resonance, percussion sounds produced at the back of the guitar an even lower degree of string resonance, while percussion sounds produced on the sides of the guitar produce the lowest amount of string resonance (Figure 9.4).

Figure 9.5 Determined pitches of string resonance



When the composer wishes to choose a pitch combination for the vertical cell of string resonance, it is helpful for notational clarity to use an additional staff to specify the pitches (Figure 9.5).

Pitch

Figure 9.6 Percussion with the finger tips and the hand palm

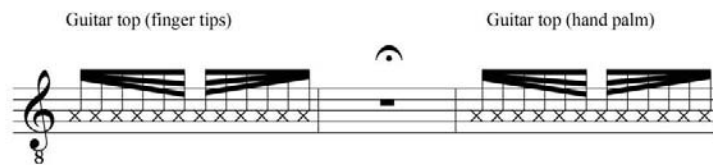


The location where the percussion sound is produced in part determines its pitch, together with the playing method (see following section). When notated in relative pitch heights, the pitch of the percussion sound rises when first played close to the bridge, then at the back of the guitar, subsequently at the edges of the guitar top and finally on the side of the guitar (Figure 9.6).

Playing method

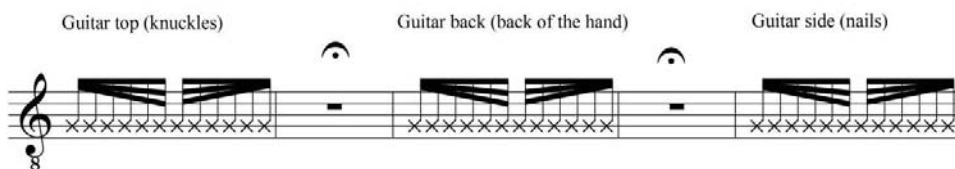
Percussion sounds can be produced with the finger tips, the palm, the back of the hand, the nails or the knuckles.

Figure 9.7 Finger tips and hand palm percussion



Percussion sounds produced with the tip of the fingers have a round sound quality, while sounds produced with the palm of the hand have a round sound quality with a more bass-like undertone (Figure 9.7). Percussion produced with the fingertips and the hand palm can be used on all parts of the guitar body.

Figure 9.8 Percussion with the knuckles, back of the hand and nails



Percussion sounds produced with the knuckles and back of the hand have a sharper sound, as in both cases the knuckles of the fingers strike the wood. Percussion sounds produced with the nails have a brittle, clicking sound quality (Figure 9.8).

Finger tips, the palm of the hand and the nails work particularly well on the guitar top and sides. The back of the guitar is not so easy to perform on with these parts of the hand, as this requires a large movement of the arm or a change of position of the instrument in order to make the guitar lean forward and expose its back.

The back of the hand works particularly well for the back of the guitar, as this part of the guitar is easy to reach with the back of the hand. It is not so easy to perform on the guitar top with the back of the hand, as this requires large movement of the arm or a change of position of the instrument in order to make the guitar lean backward to allow the back of the hand to strike the top with more ease.

9.1.3 Dynamic range

Figure 9.9 Percussion dynamics



Percussion sounds can be performed at very low as well as high dynamic levels, and can be scored from *pp* to about *ff-fff* (Figure 9.9). High dynamic levels for percussion sounds are used with caution by guitarists, as they can damage the instrument, particularly when performing on the guitar top. The thumb, combined fingers, hand palm and knuckles are able to produce sounds up to *ff-fff*, while the nails and individual finger tips have a more limited dynamic range; they go up to about *mf*.

9.2 Vertical cells

Percussion sounds can be combined into vertical cells when two hands are used for the performance of the percussion sounds.

9.2.1 Two-hand percussion combinations

Figure 9.10 Vertical percussion cells



When scoring for two percussion sounds at the same time, the guitarist will play each sound with a different hand. The left hand can easily reach the edge of the guitar top and the side of the guitar, while the right hand can reach the area around the bridge on the guitar top, the side and the back. Two staves are ideally used in order to achieve notational clarity; one for the left hand and one for the right hand (Figure 9.10).

9.2.2 Combinations with other sounds

Right hand percussion

When scoring percussion sounds for the right hand, it is possible to create vertical cells of percussion sounds combined with other sounds performed with the left hand alone. Sounds that can be performed with the left hand alone in such combinations are plucked open strings, natural harmonics, strummed open strings, open string and natural harmonics tambora, percussion tambora, hammered sounds, open string Bartok pizzicato sounds, buzzing string sounds, scratched string sounds, and sounds produced by plucking behind the nut.

Left hand percussion

Figure 9.11 Left hand percussion with right hand strumming



* With the left hand, beat on the lower rim near the fingerboard.

(SONATA, GINASTERA)

When scoring percussion sounds for the left hand, it is possible to create vertical cells of percussion sounds combined with other sounds performed with the right hand alone. Sounds that can be performed with the right hand alone are plucked open strings, natural harmonics, open string rasgueados, strummed open strings (Figure 9.11), open string tambora, percussion tambora hammered sounds, open string Bartok pizzicato, scratching string sounds and sounds produced by plucking behind the nut.

9.3 Horizontal cells

Percussion sounds can be scored into two types of horizontal cells: one-hand percussion horizontal cells and two-hand percussion horizontal cells. In this section, these two types are discussed.

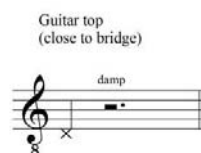
9.3.1 One-hand percussion

Design

A one-hand percussion horizontal cell is a succession of single line notes performed with one hand.

Resonance

Figure 9.12 Damped string resonance



All percussion sounds produce string resonance when the strings are not intentionally damped (Figure 9.12). The percussion sounds themselves have short resonance.

Speed

Figure 9.13 Speed



Horizontal one-hand percussion cells can be performed at very high speeds, particularly when they are performed as an alternation of the thumb and the combined fingers or with the nails (Figure 9.13).

Rhythmic possibilities

When scoring a horizontal cell of percussion sounds that is to be performed with the same part of the hand or the nails, it is possible to create rhythmic patterns that have a consistent timbre throughout the pattern. When scoring a horizontal cell of percussion sounds that is to be performed with an alternation of the thumb and the combined fingers, the rhythmical shape is characterized by a combination of two alternating sounds (Figure 9.13).

Scoring syncopated patterns in horizontal cells of percussion sounds evades the clear impression of the two alternating percussion sounds, as syncopated rhythms can be performed in a way that makes thumb and finger strokes alternate with more strokes in the same direction.

Figure 9.14 Rhythm patterns performed with the nails



When scoring cells that are to be performed with the nails, a wide variety of patterns can be created, for instance patterns of four or five strokes (Figure 9.14).

Horizontal cells of percussion sounds lend themselves well to rhythmic acceleration because of the high speed that can be reached.

Articulation

Horizontal cells of percussion sounds can be scored with a variety of articulations, such as accents, staccato and glissando.

Accents

Figure 9.15 Accent



Because of the wide dynamic range of percussion sounds, the composer can make the percussion sound effectively stand out with an accent (Figure 9.15), particularly with playing methods and at playing locations that have most dynamic potential.

Staccato

Horizontal cells of percussion sounds can be scored with staccato articulation; the performer executes the staccato by performing a short stroke. In the case of percussion sounds that create much string resonance, the performer executes the staccato by performing a short stroke while damping the strings with the hand.

Glissando

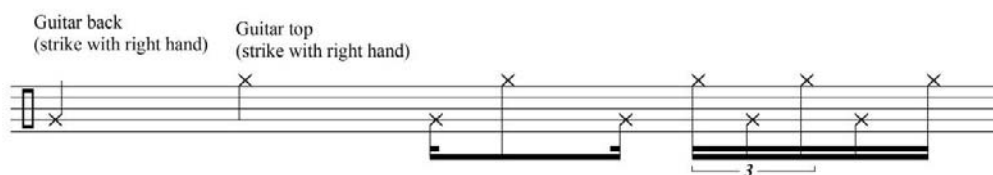
Figure 9.16 Glissando



Horizontal cells of percussion sounds can be scored with glissando: the glissando can be used either to connect percussion strokes, or as a glissando sound by itself not used to connect percussion strokes. The glissando is performed by sliding with a part of the hand or the nail over the guitar body (Figure 9.16). Both types of glissando should be prescribed with a verbal instruction in the score, or a symbol that is specified in a legend.

Non-functional writing

Figure 9.17 Non-functional writing



Examples of non-functional writing in one-hand horizontal cells of percussion sounds:

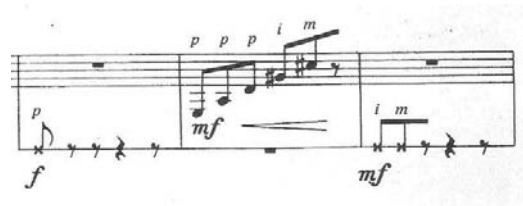
- Rapid changes of playing location, particularly when changing from the guitar top to the back of the guitar (Figure 9.17)
- Rapid changes of playing method, particularly when changing from the inside of the hand to the back of the hand

Combinations with other sounds

One-hand horizontal cells of percussion sounds are often scored in close conjunction with other sounds in the classical guitar repertoire. In this section, common combinations from the literature are discussed.

One-hand percussion alternated with regular plucked notes

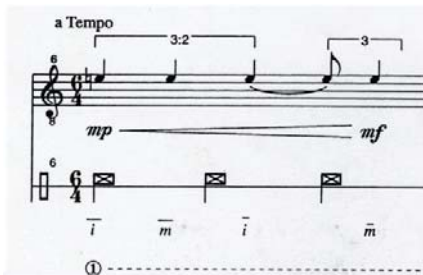
Figure 9.18 Alternation with regular plucked notes



(SONATA, GINASTERA)

Ginastera uses an alternation between regular plucked notes and percussion sounds in his sonata (Figure 9.18). These two sounds can be connected at very high speeds if each sound is performed with a different hand, while the alternation takes more time when performed with the same hand as the hand has to reposition after each alternation.

Figure 9.19 Right hand plucks regular notes, left hand plays percussion



7) (Left Hand 'slap' below the neck), Figure 7. Using fingers 2-3-(4 optional) of the left hand, strike the soundboard below the neck. There is not a specific point to hit, just an indicated area. Notice that the hand is placed horizontally pointing towards the bridge. To improve the fast speed of this gesture, bounce your hand off the guitar immediately after hitting it. It is recommended to slap the guitar using basically the 3rd and 4th fingers of the outstretched hand (counting from the thumb.) Always slap using part of the tip and the middle range of the indicated fingers.

(PERCUSSION STUDY NO. 1, KAMPELA)

Kampela uses the right and left hand at the same time, where the right hand plucks regular notes and the left hand plays guitar top percussion (Figure 9.19).

One-hand percussion alternated with tambora

Figure 9.20 Alternation with tambora



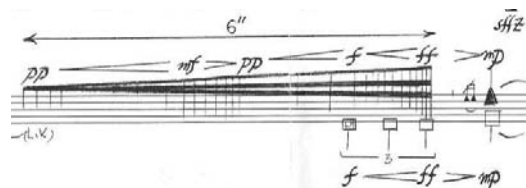
(ROYAL WINTER MUSIC SONATA, HENZE)

Henze uses an alternation between tambora chords and percussion (Figure 9.20). These two sounds can be connected at very high speeds if each sound is performed with a different hand, while the alternation takes more time when performed with the same hand as the hand has to reposition after each alternation. Compared to alternations of percussion sounds and regular plucked sounds, alternations of percussion sounds with tambora performed with the same hand can be performed at higher speeds, as both techniques are performed in a percussive manner and in the same area on the guitar.

9.3.2 Two-hand percussion

Design

Figure 9.21 Two-hand percussion



(SO RI, OH)

A two-hand horizontal cell of percussion sounds is a succession of two separate percussion lines performed with two hands (Figure 9.21). These types of cells are particularly effective when performed on the edge of the guitar top with the left hand, and on the guitar top and the sides with the right hand, as this allows for the playing position to remain stable without position shifts to the instrument.

Resonance

When scoring two-hand horizontal cells of percussion sounds, there tends to be a high degree of string resonance as both hands are involved in producing percussion sounds, as opposed to one hand performing percussion sounds and the other damping the strings.

Speed

Two-hand horizontal cells of percussion sounds can be performed at high speeds; the speed can be

particularly high when both hands are performing an alternation of the thumb and the combined fingers, or when they perform a pattern with the nails.

Rhythmic possibilities

Figure 9.22 Two-hand percussion with strumming and percussion tambora

(PERCUSSION STUDY NO. 1, KAMPELA)

The rhythmic possibilities of two-hand horizontal cells of percussion sounds are very broad, as the guitarist is in a position to perform on the guitar body in the same manner a percussionist may perform on a drum; with two hands. This makes it possible to create fluent rhythms in which two hands cooperate in a percussive manner (Figure 9.22).

Articulation

As is the case with one-hand horizontal cells of percussion sounds, two-hand horizontal cells can be scored with a variety of articulations, such as accents, staccato and glissando.

Accents, staccato and glissando

Accents, staccato and glissando are performed in the same manner as with one-hand horizontal cells of percussion sounds.

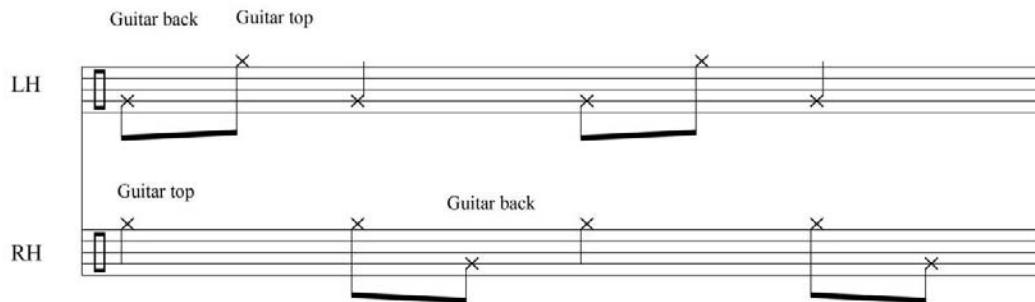
Combination of articulations

Figure 9.23 Combined articulation

It is possible to combine articulations; the left hand performs one articulation while the right hand performs another (Figure 9.23).

Non-functional writing

Figure 9.24 Non-functional writing



Examples of non-functional writing in two-hand horizontal cells of percussion sounds:

- Rapid changes of playing location, for instance when changing from the guitar top to the back of the guitar. Particularly when scoring percussion sounds for two hands, rapid changes in playing location can physically bring the guitar out of balance as the performer has no hand available to hold or support the instrument (Figure 9.24)
- Rapid changes of playing method, particularly when changing from the inside of the hand to the back of the hand.

Combinations with other sounds

In the classical guitar literature, two-hand horizontal cells of percussion sounds are often scored in close conjunction with other sounds. This means that one or both hands are not only involved in guitar body percussion but in the performance of other sounds as well. In this section, common combinations from the repertoire are discussed.

Horizontal percussion cells alternated with tambora sounds

Figure 9.25 Percussion and tambora

PERCUSSION SECTION

*barre only to mute
(do not depress or fret the strings)*
CIX

left hand

right hand

- Slap left palm against the guitar's side (wood sound).
- Slap the strings against the fingerboard with left hand fingers 2, 3, & 4 (keep the barre).
- Slap the right hand fingers against the guitar's top (wood sound).
- Slap the strings against the fingerboard with right hand fingers (keep the barre).
- Slap the right hand fingers against the strings near the bridge (bass sound) (keep the barre).

(JONGO, BELLINATI)

Bellinati uses two-hand percussion in which both hands perform percussion sounds as well as tambora sounds (Figure 9.25).

Horizontal percussion cells alternated with multiple other sounds

Figure 9.26 Combination with multiple other sounds

(PERCUSSION STUDY NO. 1, KAMPELA)

Kampela combines two-hand percussion with a regular plucked note, tambora, a hammered note and Bartok pizzicato (Figure 9.26).

9.4 Textures

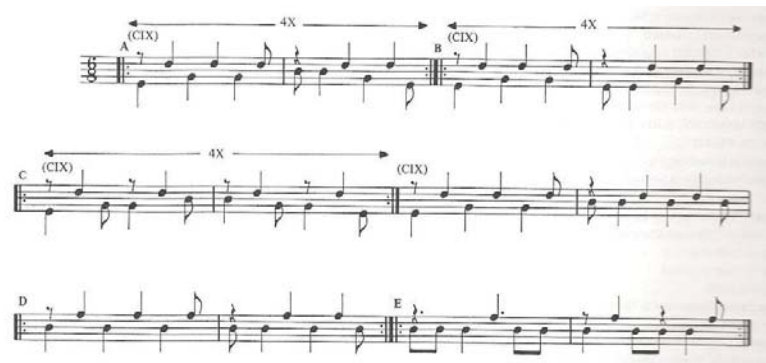
In the guitar repertoire, both continuations and combinations of horizontal cells containing percussion

sounds are found. The following examples are presented primarily for the purpose of illustrating how textures in repertoire pieces have been put together.

9.4.1 Textures as continuations of horizontal cells

Percussion/tambora texture

Figure 9.27 Percussion/tambora texture



(JONGO, BELLINATI)

Bellinati continues the combination of two hand percussion and tambora for many bars, creating a percussion/tambora texture (Figure 9.27). This example demonstrates how the guitar can be used to create and sustain a texture that exclusively consists of percussive (i.e. percussion and tambora) sounds. The score of *Jongo* comes with a well-specified legend (see Figure 9.25), greatly facilitating reading and performance. The makeup of each pattern is written with consideration for practical performance; the patterns can be performed with ease. When scoring musical patterns that largely consist of percussive sounds, it is advised that the composer try to play the percussive passage herself, in order to test its playability.

9.4.2 Textures as combinations of horizontal cells

Plucked/strummed chord, tambora and percussion texture

Figure 9.28 Chord, tambora and percussion texture

The image shows a musical score for 'Royal Winter Music Sonata' by Henze, consisting of four staves. The first staff begins with a treble clef, a key signature of one flat, and a 4/4 time signature. It features a series of chords marked with 'B' and 'A' below the staff, with a dynamic marking of *fff*. The second staff continues with chords marked 'A' and 'B', and includes a circled 'L' above the staff. The third staff shows chords marked 'A', 'B', and 'C', with a dynamic marking of *fff* and a circled 'L'. The fourth staff features chords marked 'B', 'C', and 'B', with a dynamic marking of *fff*. The score includes various musical notations such as accents, slurs, and dynamic markings.

(ROYAL WINTER MUSIC SONATA, HENZE)

Henze scores a texture of strummed/plucked chords, tambora and percussion (Figure 9.28). In this texture, Henze creates a rich and mysterious sound world, which includes features rarely encountered such as extremely wide spacing of vertical cells, and percussion sounds scored *piano*. Where composers often use percussion sounds to create dynamically compelling spectacles, Henze instead employs guitar body percussion sounds as soft, dark and introverted events in the first two lines of Figure 9.28. A similar reversal of the usual dynamic employment of sounds is seen in the third and fourth lines, where pitch tambora, often reserved for soft and introverted passages or single accents, is continuously scored *fff*. Strumming is not explicitly prescribed in the score, but is a way for the guitarist to perform the chords marked *fff* and the additional accents in the prescribed way and without arpeggiation. Plucking six strings with four fingers of the right hand would, after all, necessitate a degree of arpeggiation, coordinated between four fingers. Strumming, on the other hand, allows for a more rapid and more dynamically potent attack. The score comes accompanied with a clear, visual legend for percussion sounds, pictured in Figure 9.2, facilitating reading and performance.

Texture of plucked sounds, hammered sounds, percussion sounds and Bartok pizzicato sounds

Figure 9.29 Rapid braiding of pitched and percussion sounds

The image shows a musical score for guitar, titled "(PERCUSSION STUDY NO. 1, KAMPELA)". The score is written for a single guitar part, featuring a complex and rapid texture. It begins with a section marked "[approx. 10 times]" and "poco a Tempo". The music is characterized by a dense interweaving of pitched notes, plucked sounds, hammered sounds, and percussion sounds. The score includes various dynamic markings such as *mp*, *f*, *sub. f*, *mf*, *mp < ff*, *f*, *mf*, *mp*, and *f*. There are also indications of articulation like *p*, *i*, *p*, *m*, *m*, *p*, *i*, *p*, and *molto vibrato*. The score is divided into several sections, some of which are repeated: "Repeat 3 times", "Repeat 3 to 4 times", "Repeat 2 to 4 times", and "Repeat 2 to 3 times". The score is numbered 70, 75, 80, and 85. The page number "-7-" is visible at the bottom center.

(PERCUSSION STUDY NO. 1, KAMPELA)

Kampele creates a texture that braids plucked sounds, hammered sounds, left- and right hand percussion sounds, and Bartok pizzicato sounds together at high speeds (Figure 9.29). The texture is hyper-rich in sounds, hyper-functional and hyper-rhythmic at the same time. The passage includes a great number of different sounds in a short span of time. Despite its complexity, it is written with great consideration for playability. In addition, it employs a wide range of rhythmic devices (acceleration, rapid and irregular patterns, coordinated between the two hands) in a short span of time, scored in great detail.