Thinking through the guitar : the sound-cell-texture chain
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Chapter 3 Theory

Contents

Chapter 3 Theory

In this chapter, the theoretical framework of the dissertation is discussed. Five aspects are considered: the relevant previous studies, voids in the current state of knowledge on the subject, the concepts developed in this study, the way in which this study aims to contribute to filling voids in the current state of knowledge and, finally, the definition and significance of the notion of idiomatic scoring in this study.

3.1 Previous studies

The previous studies on composing for the guitar may be divided into three categories: studies concerned with guitar scoring, studies concerned with contemporary guitar instrumentation and the, usually rather short, presentation of the scoring possibilities of the guitar in general orchestration guides.

3.1.1 Guitar scoring studies

There are but few studies explicitly dedicated to the topic of classical guitar scoring. Chris Kachian, classical guitarist and Professor of Music at St. Thomas University in Minnesota, primarily discusses traditional repertoire in his *Composer's Desk Reference for the Classic Guitar*. It briefly addresses scoring questions particular to the electric guitar and introduces the concept of viewing the guitar potential through textures (Kachian, 2006). Angelo Gilardino, classical guitarist, composer, musicologist and holder of a professorship at the Antonio Vivaldi Conservatory in Alessandria from 1981 until 2004, similarly focuses on traditional repertoire in *La Grammatica della Chitarra*. This work systematically relates guitar technique to combinations of notes and gives an account of possible interval and chord combinations (Gilardino, 1994). In his article *How to Write for the Guitar*, Julian Bream, one of the foremost classical guitarists of the twentieth century, gives a concise but clear and informative overview of the guitar scoring potential as employed in the more traditional repertoire (Bream, 1957).

3.1.2 Contemporary guitar instrumentation

Jean-Luc Mas, classical guitarist and composer, gives an expose of contemporary guitar techniques and effects with the use of self-composed examples and samples from scores in *Sonorités nouvelles pour guitares* (Mas, 1986). John Schneider, classical guitarist and Professor of Music at Los Angeles Pierce College, discusses at length the acoustical measurements of sounds on acoustic and electric guitars, and goes on to present an expose of contemporary guitar sounds as found in a number of well-known and lesser known compositions in his study *The Contemporary Guitar* (Schneider, 1985). *La Chitarra Nella Musica del '900* by Patrizia Rebizzi, classical guitarist and Ruggero Tajè, composer and professor at the Giuseppe Verdi Academy of Music in Milan, is a study that directs its attention to a limited number of techniques, among which harmonics, tremolo, rubbing sounds and percussive sounds (Rebizzi & Tajè). These techniques are then discussed in depth; the reader is served with information on a range of

variations on each technique and an account of its sonic consequences. Next to the categorization of sounds according to the technique used to produce them (such as tremolo, tambora sounds), Rebizzi and Tajè reserve a section for different kinds of oscillating sounds, produced with different techniques.

Just recently in 2010, another work on contemporary guitar instrumentation was authored by Robert Allan Lunn, guitarist and composer, who submitted his work *Extended Techniques for the Classical Guitar: A Guide for Composers* as his dissertation at Ohio State University in 2010 (Lunn, 2010). Lunn gives a systematic account of the available extended techniques on the guitar, and supplies this account with examples from compositions that have been "professionally published". In his discussion of extended techniques, Lunn pays particular attention to the practical consequences for the performer of the various techniques that are discussed. *How to write for the guitar – an explanation for non guitarist composers* by Rafael Andia, classical guitarist, composer and teacher at the Ecole Normale de Musique in Paris, is an unpublished article written in 1983 that is available on his website (Andia, 1983). The article consists of an exposition of general starting points, such as fingerings and range, and continues to discuss "new sounds". The discussion of new sounds relies primarily on written explanations and a number of self-prepared examples. A short practical study, *Prepared Guitar Techniques* by Matthew Elgart and Peter Yates is a guide to performers on how to prepare the guitar with various objects (Yates & Elgart, 1990). The study describes a variety of techniques, gives tips on avoiding pitfalls and makes suggestions for notation.

3.1.3 General orchestration guides

In his *Traité general d'instrumentation* (1837), the composer Jean-Georges Kastner briefly discusses the chordal possibilities of the guitar. Hector Berlioz, the renowned 19th century composer who was in possession of some guitar skills, dedicates considerable attention to the guitar in his *Grand traité d'instrumentation et d'orchestration* (Berlioz, 1843?). Berlioz informs the reader that "it is almost impossible to write well for the guitar unless one is a player oneself", and points out that most composers who write for the instrument fail to achieve much in terms of sonority and effect. An overview is given of the guitar's potential for accompaniment with an outline of possible chords, followed by an account of possible harmonics. The guitar is discussed very briefly in a standard work on orchestration written by Samuel Adler, who is composer and Professor of Composition at Julliard in New York. *The Study of Orchestration* provides an account of the guitar's tuning, its range and the types of scoring it can accommodate, and includes a score sample from Stravinsky's *Tango* (Adler, 1989). Although still concise, the guitar receives a more in-depth discussion in *Instrumentation and Orchestration* by Alfred Blatter, composer and member of the faculty of the Curtis Institute of Music in Philadelphia. The study contains an account of various types of guitars, tunings, harmonics, vibrato, pitch bends, barré and capodastro[12], as well as some typical guitar scorings with four score samples by Bach, Smith-Brindle, Boulez and Crumb (Blatter, 1997).

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[12] For barré and capodastro: see *Reading Guide.*

3.2 Voids in the literature

One of the issues in the problematic relationship between the guitar, the performer and the composer in the history of the guitar has been the dearth of information on how to write for the guitar. The context and origins of this problematic relationship are explored in more detail in Chapter 4. The current chapter section is dedicated to a discussion of the aspects that are missing in previous studies on guitar scoring. In section 3.4, the ways in which this study intends to fill these voids are discussed.

Various aspects are missing in the previous studies that appeared on the subject of guitar scoring: an account of how to use and combine individual sounds as building blocks in scoring, an account of scoring that includes an extensive discussion of sounds other than regular plucked notes, attention for textures that are not made up of plucked notes, a presentation model that is relevant for composers, an overview of the intervals and chords that may be scored, and, in some cases, accurate information about notation and technical difficulties.

3.2.1 Guitar sounds as building blocks in scoring

The studies concerned with contemporary guitar instrumentation all give an overview of a variety of sounds that can be created on the guitar. What is insufficiently addressed in these works is the way in which the composer can use and combine these individual sounds to create a musical fabric ideally suited for the guitar. Without such information, the sound overviews tend to be an anecdotal collection of sounds. Similar criticism on the studies by Schneider and Mas is raised by Brill in his *Die Gitarre in der Musik des 20. Jahrhunderts*. Brill considers Schneider's work as "[eine] aufzählende Darstellung der einzelnen Klangphänomene" and the study by Mas as no more than "ein technischer Leitfaden zur Tonproduktion auf der Gitarre" (Brill, 1994, p. 4).

3.2.2 Scoring guides discussing scoring of contemporary sounds

Where contemporary guitar instrumentation studies are primarily concerned with contemporary sounds, guitar scoring guides by Gilardino, Kachian and Bream are more concerned with scoring (Kachian, 2006; Gilardino, 1994; Bream, 1957). In these works, the scoring of regular plucked notes takes a prominent position. However, this focus on traditional scoring has as its result that sounds employed in contemporary music are discussed only marginally (in Gilardino and Kachian), or not at all (Bream). When sounds used in contemporary music are discussed, they are addressed in the same manner as in contemporary guitar instrumentation studies: as a miscellaneous collection of sounds.

3.2.3 Textures made up of sounds other than regular plucked sounds

In his work *Composer's Desk Reference for the Classic Guitar*, Kachian introduces the idea that one could consider the guitar through the perspective of the textures that can be created on the instrument (Kachian, 2006). In his discussion of these textures, Kachian relies on traditional voice leading principles in naming his textures (monophony, arpeggio, homophony, chord voicing, and polyphony). Kachian only

considers textures consisting of plucked sounds, but not those that can be created with the multitude of other sounds available on the guitar, such as rasgueado, percussive sounds and tambora. The literature is thus lacking a broad vocabulary of textures suitable for the guitar, and lacking an account of the types of textures that are created with sounds other than regular plucked notes.

3.2.4 Vertical cell range overview

In the relevant studies, no clear overviews of the possibilities to create vertical cells (introduced and defined in this study as "vertical combinations of sounds"; see also next chapter section and the *Reading Guide*) are provided that account for the changing possibilities in various playing positions on the guitar. Considering the complexity of the guitar's fretboard, and the widespread practice of scoring impossible vertical cells in scores of non-guitarist composers, such an overview and explanation would be a great step forward toward informing these composers on the way in which vertical cells can be combined, as well as toward a general understanding of this phenomenon.

3.2.5 Accurate practical information

Some of the relevant studies contain notorious inaccuracies, misinforming the target audience on the possibilities of the instrument. A number of the chords in Berlioz's *Treatise* that are marked as difficult are in fact not very difficult, and commonplace in the guitar repertoire (Berlioz, 1843?, p. 84). Even at the time the *Treatise* was published, the chords mentioned as difficult are on a technical level commonplace in the works of composers as Mauro Giuliani and Johann Kaspar Mertz.
The orchestration guides by Adler and Alfred Blatter contain mistakes and oversights in their respective chapters on the guitar: Adler in misrepresenting the guitar's range and giving his literature example in bass clef (Adler, 1989, p. 105), while Blatter, in his appendix on guitar instrumentation misrepresents the range of the first string by an octave in his fingering chart (Blatter, 1997, p. 446).

3.2.6 Presentation model relevant for composers

In many of the relevant studies, a categorization is chosen that makes sense from the guitarist's view, but less from the perspective of a non-guitarist composer. Lunn, for instance, divides his findings into chapters: the left hand, the right hand, percussive sounds, with objects, borrowed from other traditions and miscellaneous techniques, while harmonics are an appendix. For composers wishing to know which sounds can be produced on the guitar, and how one can score with these sounds, some of these categories (such as left hand, right hand) are not their primary concern and can turn using these studies into a hide-and-seek game for the composer. The categorizations into left hand and right hand only start to make sense, once the composer has more intimate knowledge of how to score for the guitar.
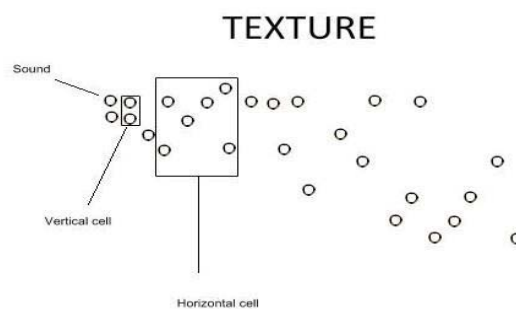
3.3 The sound-cell-texture chain

The sound-cell-texture chain is a set of constructs developed during the research process to re-think the

scoring potential of the guitar and fill the voids in the literature on guitar scoring.[13] In this section, an account is provided of the constructs discussed in this study, the sound categories they relate to and the variables of the constructs.

3.3.1 Overview of constructs

This study aims to contribute to the body of knowledge on guitar scoring by filling the gaps described in the preceding chapter section with the use of a number of constructs: the *sound* construct, the *cell* construct, the *texture* construct, and the *chain* construct that refers to the hierarchic relationship between the first three constructs. The underlying assumption of this research is that the sound-cell-texture chain gives the composer access to the scoring potential of the guitar.

Figure 3.1 Texture construct

The *sound-cell-texture chain* is a set of constructs developed during the research process to investigate the scoring potential of the guitar. The *sound* construct captures the properties and characteristics of individual notes played on the guitar. The c*ell* construct captures the idiomatic ways in which *sounds* can be combined in intervals and chords (*vertical cell*) or short sequences (*horizontal cell*). The *texture* construct captures the way in which musical activity develops over time (a number of bars) and, through its timbral properties, density of intervals, number of voices, combination of *sounds*, temporal development and tempo, creates a musical fabric that is generic for the guitar. Figure 3.1 provides a visual representation of the relationship between sounds, vertical cells, horizontal cells and texture. The hierarchical relation between above constructs is captured in the *chain* construct. This construct indicates that all constructs are related; the characteristics of the larger constructs (e.g. texture) are dependent on the characteristics of the smaller constructs that are incorporated into them (e.g. sounds, cells). For instance, when one considers the texture level of a composition, the possibilities and

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[13] The term "construct" is derived from the discussion of theories by Bacharach (1989). In his work, Bacharach distinguishes between theories, concepts, constructs and variables. A theory is defined by Bacharach as a "statement of relations among concepts within a set of boundary assumptions and constraints" (Bacharach, 1989, p. 496). Concepts may be approximated into constructs as they may not be observed directly. In such case, observable and measurable units of constructs are derived; they are called variables. The discussion of this matter in the work of Bacharach was useful in my research, as it allowed me to give a structured outline of the constructs and variables used in my study.

limitations of the sound and cell levels that contribute to the texture still apply. For each sound category available on the guitar, a *sound-cell-texture* chain is presented in this study.

My research further develops the perspective Chris Kachian presented in his work when he described the guitar potential through the musical textures that can be created on the guitar (Kachian, 2006, pp. 13-29). The additions and adjustment to his views that are presented in this study are discussed in section 3.4 of this chapter. The assumption in my study is that the examination and subsequent conceptual and practical understanding of *sounds, cells* and *textures* available on the guitar leads to a more informed starting point for composing. Unplayable or ineffective passages in guitar scores may stem from a lack of understanding of the way individual *sounds* become part of cells and textures.

3.3.2 Sound categories

In this study, twelve different sound categories have been identified: plucked sounds, harmonics, rasgueado sounds, strummed sounds, percussive sounds, tambora sounds, hammered sounds, Bartok pizzicato sounds, buzzing string sounds, scratching string sounds, inverted stopping sounds and bottleneck sounds. For each of these sounds, a *sound-cell-texture* chain is presented with findings relevant for scoring.

The first two categories (plucked sounds and harmonics) represent pitched sounds, after which a discussion follows of sounds that are more noise-oriented (rasgueado sounds, strummed sounds, percussive sounds, tambora sounds, hammered sounds, Bartok pizzicato sounds, buzzing string sounds, scratching string sounds). Finally, there is a discussion of sounds that, without detuning, produce microtones (inverted stopping sounds) and those that are produced with the help of a movable external object (bottleneck sounds).

The sound categories are thus based on their core sound, which is pitched or more noise-oriented in character. The parameters timbre, articulation, rhythm or speed, and dynamics are discussed in detail in the chapters on each individual sound category because they are considered to be applied to the core sound in question. A second reason why pitch occupies an important place in this study is because its use on the guitar has traditionally been a stumbling block for non-guitarist composers. Such composers have often struggled to comprehend the possibilities and limitations to ways in which guitar sounds can be combined horizontally and vertically. This has led to the infamous unplayable chords in *Wozzeck* by Alban Berg and *Invocacion y Danza* by Joaquín Rodrigo, and compositions with underdeveloped textures (see Introduction). The emphasis on pitch in this study is therefore also intended to put an end to such confusion and misunderstanding.

3.3.3 Overview of variables

The findings are presented in a way that focuses on the potential of the guitar, rather than its impossibilities. In the following section, an overview will be given of the variables of the sounds, cells and textures that have been researched and presented in the findings. The variables are operationalized constructs: they make the construct observable and measurable. Variables have been researched for the

constructs operating in each of the twelve sound-cell texture chains. When in one of the chapters a certain variable is missing, it is because it is not available for that particular chain. For instance, in the discussion of horizontal cells in the chapter on percussion sounds, slurs are not discussed as an articulation option, as it is not possible to create slurs with percussion sounds. In some chapters, the outline has been adapted to the particular characteristics of the sound category discussed. The chapter on percussion sounds, for instance, contains a discussion about one-hand and two-hand percussion in the vertical cell section, rather than a discussion of chord spacings.

Sound

Figure 3.2 Plucked sound construct and variables
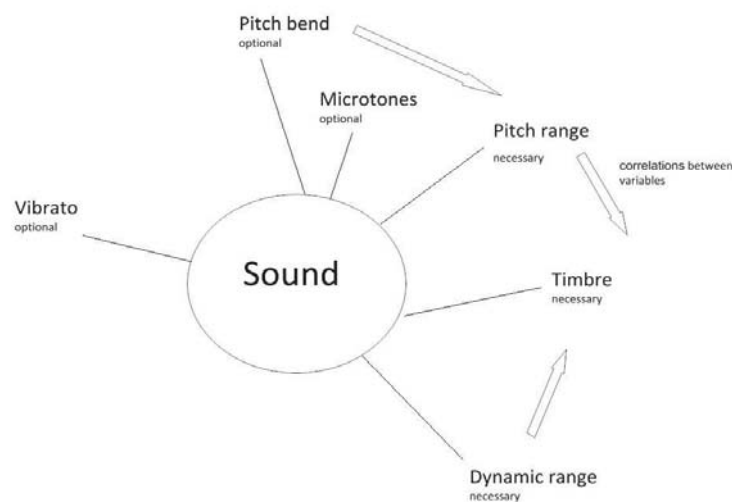
In the sound section, the variables of the individual sound in question are presented. These variables are: pitch range, timbre possibilities, dynamic range, vibrato, pitch bends and microtones. Some of these variables are necessary components of the sound, while others are optional (see Figure 3.2). There are correlations between many of these variables: the stopping position of a high pitched note, for instance, leads to a change in timbre (see section 5.1.2 under the header "Sound color and playing position indications"), and a note of which the pitch is bent has a limited dynamic range because of the decaying resonance of the string. For each of these variables, its relevance for the sound in question is discussed, a notation is proposed and its performance explained. Although timbre is commonly understood as "the quality of sound characteristic of a particular type of instrument or voice, as opposed to its register or pitch" (Bellingham, 2012), thus referring to the characteristics of any sound, in this study, timbre is distinguished from a sound category by the fact that it is considered a tone color variation on a particular sound. This is done in order to make visible the effects of these timbre alterations on the standard range of characteristics of the initial sound, and to demonstrate how such alterations can be achieved across the various sound categories. Etouffé, for instance, is a timbre that may be applied to the majority of the sound categories. Inverted stopping sounds and bottleneck sounds could arguably be seen as timbre

changes, as they may be used as timbre changes in the majority of the sound categories. However, the impact of using this timbre change is so dramatic on range, horizontal and vertical cell possibilities that they are treated as a separate sound. For a detailed evaluation of the employed distinctions between a sound category and timbre, please refer to section 3.3.4.

Vertical cells

In the vertical cell section, the various ways in which sounds can be vertically combined are presented. Vertical cells can be created from one sound, or in combination with other sounds. For the various ways in which vertical cells may be composed, an explanation as to the structure of the vertical cell is presented, a notation is proposed if necessary, and its performance explained.

Horizontal cells

In the horizontal cell section, the various ways in which sounds can be combined horizontally are presented. Horizontal cells can be created from one sound category, or in combination with other sound categories. The types of horizontal cells discussed are: single lines, arpeggios, vertical cell sequences and multiple parts. For each of these types of horizontal cells, the following variables are discussed: horizontal cell design, resonance, harmonic possibilities (used here in the sense of harmony, not in the sense of a harmonic overtone), speed, rhythmic possibilities, articulation (slurs, legato, accents, staccato, and glissando), embellishment and combinations with other sounds. For the combinations with other sounds, particular attention is given to the speed with which the sounds in question can be alternated. Additionally, for each type of horizontal cell, examples are given of non-functional writing.

Textures

The texture section functions as an expose of literature examples of textures that have been created with the sound in question. The textures are divided into two groups: textures as continuations of horizontal cells and textures as combinations of horizontal cells. In the first category, literature examples are presented that repeat a horizontal cell discussed in the horizontal cell section for more than just a few measures, creating a texture in the process. In the second category, literature examples are presented that combine or alternate a variety of horizontal cells; these combinations may consist of various horizontal cells of one type of sound, as in for instance an arpeggio horizontal cell of plucked sounds combined with a single line horizontal cell of plucked sounds, or a combination of various sounds, such as a an arpeggio horizontal cell of plucked sounds combined with a vertical cell sequence of rasgueado sounds.

3.3.4 Identifying the sound-cell-texture chains

In this section, questions as to how the sound-cell-texture chains were identified are addressed. The questions are: how was each chain identified and conceptually separated from other chains? What were the issues in identifying chains and how were they resolved?

Criteria for identifying sound-cell-texture chains

The naming of the twelve different sound-cell-texture chains was conducted on the basis of the characteristics of their core category: sound. During the research trajectory, it became clear that in order to construct an account of the potential of the guitar, the simultaneous presence of two dimensions was relevant: the sonic characteristics of the produced sound, and the technique used to produce the sound. Surely, without the presence of a guitar-technical cohesion between the various sounds in an account of scoring possibilities on the guitar, control over these sounds would prove to be elusive for composers, as guitar-technical aspects have implications in terms of possibilities and impossibilities in terms of scoring. And vice versa, without a sonic cohesion between the various techniques, an account of such guitar techniques would, in musical terms, prove to be a meaningless exercise for composers. Thus, awareness of the interdependence of these two dimensions was an important condition for conducting a meaningful research trajectory that illuminates musical as well as technical matters central to guitar scoring. By extension, sound, as the core category, was separated on the basis of its sonic characteristics as well as the technique used for its production. Plucked sounds, for instance, can be identified on the basis of their sound and a set of techniques pertaining to the production of the plucked sound, and may be distinguished from harmonics due to a difference in sonic characteristics and technique. Similarly, tambora sounds may be distinguished from rasgueado sounds based on differences in their sonic characteristics and technique. This approach, consisting of awareness on the part of the researcher of the interdependence between sound and technique, also made it possible to describe the ways sounds can be combined into larger building blocks, dubbed cells and textures in this study, on the basis of the related technical potential.

Sound versus timbre

In some cases, a decision had to be taken as to whether a sound constituted the core category of a separate chain, or rather could be considered as a timbre variation of another sound. The standpoint adopted was that a tone color variation succeeds in altering the characteristics of the sound, but largely or completely leaves the technical production of the sound intact. By extension, this means that a timbre variation can be present in more than one sound-cell-texture chain. As such, the timbre category is, hierarchically speaking, a weaker player and is therefore a category subordinate to the sound level. Examples of timbre alterations are the etouffé playing and the prepared guitar. In etouffé playing, the performer produces a sound, for instance a regular plucked sound, while a part of the hand is used to simultaneously slightly damp the string, thus changing its sonic characteristics. The etouffé timbre is created by a movement that is additional to the regular plucked sound, the slight damping of the string, and may be used across a range of various chains, such as rasgueado sounds, strummed sounds and harmonics. In prepared guitar playing, an object is placed between the strings, altering the sonic characteristics of the sound. During production of the sound, no additional technical movement is necessary; the technical production of the sound thus remains completely intact. The prepared guitar timbre is available across a range of various chains, such as rasgueado sounds, strummed sounds and harmonics.

With the sound-cell-texture chains discussed in the latter two chapters, the inverted stopping sounds and the bottleneck sounds, distinguishing sounds from timbre was a more complex task. One could argue that inverted stopping, and to a lesser extent bottleneck sounds, are in technical terms not far removed from regular plucked notes and could therefore be described as timbres. Indeed, in both cases, the production of the sound may be seen as an addition to, for instance, the regular plucked sound. Even more, both leave the technical production of another sound largely intact, meaning that it is possible to create, for instance, rasgueado inverted stopping sounds, strummed inverted stopping sounds, rasgueado bottleneck sounds and strummed bottleneck sounds. However, both categories contain characteristics so radically different in terms of range, dynamics or notation, with corresponding radically different characteristics on the cell and texture level, that it was decided - in order to accurately and orderly describe their characteristics - that each should be described as a distinctive sound-cell-texture chain.

One could argue that a sound event such as the performance of the Bartok pizzicato sound followed by string resonance with the addition of vibrato and preparation of paper clips should be viewed as a complex sound object, rather than as a sound event belonging to the Bartok pizzicato sound category, as the initial Bartok pizzicato sound is not audible during the complete sonic event. This argument pays attention to the fact that certain sonic events on the guitar evolve, and have different characteristics at their onset than during their resonance. In answer to this point, it should be stated that the vibrato and the preparation can be used to alter both the onset and, in particular, the resonance of the Bartok pizzicato sound. In addition, the vibrato and preparation of paper clips can be applied to most other sound categories. This would, however, not work the other way around: the Bartok pizzicato could not be used to alter a vibrato sound (because the vibrato itself does not create a sound), nor can the Bartok pizzicato sound be used to alter a paper clip preparation sound (the paper clip does not create a sound either). It is true that a vibrato or paper clip preparation adds complexity to the sound object, but the elements in this compound sound can be distinguished hierarchically: the Bartok pizzicato, which sets the sound in motion, is located at a higher hierarchical level than the addition of the vibrato and paper clip preparation. For this reason, sound events are discussed under the header of the sound category that sets the sound in motion.

3.4 Filling the voids

As indicated in chapter section 3.2, the previous studies on guitar scoring exhibit a number of serious voids in their description of the guitar potential. In the current section, the ways in which this research addresses the voids in the current state of knowledge are explained.

The first void that this study aims to fill is that of the insufficient manner in which other studies address the way in which sounds can be used to create a musical fabric ideally suited for the guitar (see section

3.2.1). An account of such idiomatic possibilities would answer a need on the part of composers.[14]
Among other things, this study informs the reader on how guitar sounds can be used as building blocks in
scoring. The sound-cell-texture chains provide an overview not only of the characteristics of a sound, but
also of the way in which it can be combined horizontally, vertically, and turned into textures. The three
layers of the sound-cell-texture chain, each of which demonstrates the possibilities of idiomatic use on
the level of the layer in question, can be seen as an extension of the two layers many scoring guides use:
namely that of instrumentation, to describe the workings of an instrument, and orchestration, to
describe the way one or more instruments can be used to create a score. Demonstrating the idiomatic
potential of an instrument according to layers is a particularly suitable approach, as it allows for
allocation of idiomatic issues to the appropriate layer, thereby making the presentation of the scoring
potential structured and more readily recognizable. Scoring guides for the classical guitar fall short in
demonstrating the idiomatic possibilities of the instruments according to a layered approach, but some
orchestral guides have answered the composer's need to know how to idiomatically score for one
instrument, or for groups of instruments by taking a layered approach through the separate discussion of
instrumentation and orchestration. Adler (1989) and Blatter (1997), for instance, separate
instrumentation from orchestration, while Hijmans makes a similar distinction in his instrumentation
guide for the electric guitar, separating the first part that explains the machinery of the electric guitar
from part 2 that discusses the way in which the electric guitar is used (Hijmans, 2008). In this study, I also
use a layered approach to the discussion of the scoring potential, in this case for the classical guitar.
The second void that is addressed is that of the failure of scoring guides to discuss scoring of sounds
other than regular plucked sounds (see section 3.2.2). Instead of only discussing the way in which
traditional sounds such as plucked sounds can be used in scoring, this study proposes twelve categories
of sounds and presents ways in which each of these sounds can be used in scoring. Another critical
shortcoming in previous studies is the lack of a detailed and accurate overview of the possibilities to
create vertical cells (see section 3.2.3). In order to fill this third void, Appendix A is provided with an
account of the possibilities to create vertical cells in various positions, with the inclusion of the additional
possibilities the barré offers. Previous studies on guitar scoring have frequently been the source of
inaccurate and misleading information (see section 3.2.5). In order to present the findings of this
research as accurately as possible, the literature examples in this dissertation are accompanied by video
registrations. The video is an appendix to this written dissertation. The A/V materials of the repertoire
examples are also intended to give readers a more complete impression of the sound of these examples
and the manner in which they are performed on the guitar. The inclusion of such materials answers a
need on the part of composers.[15] Other scoring guides, such as those by Blatter, Adler and Hijmans,
similarly include audio materials.

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[14] Authoritative composers writing for the guitar have expressed an interest in writing for the guitar idiomatically:
Crumb expressed hesitation about the way to approach a guitar piece due to his lack of knowledge on how to write
for the guitar idiomatically (Tosone, 2000, p. 171), while Berio was interested in engaging with the idiomatic
characteristics of the instrument and declared that overlooking or ignoring these characteristics would be
"undeniably impoverishing" (Berio, 2006, p. 27).

[15] Composers such as Crumb have also expressed the wish to "hear" the instrument they write for (Tosone, 2000, p.
123). Similarly, guitarist Eliot Fisk, for whom Berio wrote the guitar *Sequenza*, stated that "composers who hear
really well, and can write what they hear, can write successfully for the guitar (Tosone, 2000, p. 44).

In addition to filling the voids described above, this study aims to present its results in a manner that is relevant for composers by using a categorization based on the sonic potential of the guitar rather than its techniques, by demonstrating idiomatic ways to write for the guitar, and by supplying A/V materials of the repertoire examples. In some of the previous studies, a typical guitarist's perspective is apparent in the presentation model, for instance when the scoring potential is categorized according to sounds of the left hand versus sounds of the right hand (see section 3.2.6). Guitar-technical considerations pertaining to the way these sounds can be scored are a fundamental component of a scoring guide, but they should not be an ordering principle for the presentation of the scoring potential. The view propagated in the current study is that a presentation of the guitar's scoring potential through a categorization of types of sounds, rather than guitar techniques, is the most appropriate, as this method of explanation better matches the experiential world of composers than one based on technical details of an instrument they have little familiarity with. The categorization in this study is, therefore, not grouped according to technical issues guitarists deal with, but based on the various sounds the guitar has to offer. We find successful examples of scoring guides that use such a classification: in his scoring guide for percussion, Solomon organizes his guide into different categories of sounds (Solomon, 2002). Similarly, many scoring guides for orchestra answer this to need by organizing their work into different categories of instruments (Berlioz, 2002; Blatter, 1997; Adler, 1989; Rimsky-Korsakov, 1964).

In response to interests and needs of composers described above, this dissertation thus presents a collection of sounds, categorized into 12 different conventional and less conventional guitar sounds, and demonstrates how each of these sounds can be used idiomatically, alone or in conjunction with other sounds, with the help of repertoire examples and A/V materials.

3.5 Idiomatic scoring

In this section, the notion of idiomatic scoring is discussed. The questions are: what is idiomatic scoring? What is its significance in this study?

3.5.1 Definition

In music literature and music dictionaries, the term "idiomatic" is eagerly and often used, but rarely defined.[16] The meaning of idiomatic scoring is generally understood as scoring that is well-written in technical terms for a particular instrument. The nature of the current work, professing to map out the idiomatic potential of the guitar, requires the author to explain in more detail how the term is used in this study. Two definitions can be used as a starting point. Tanaka (2000) defines idiomatic writing as "the art of writing music that is suited, adapted, and optimized for the instrument". In contrast to the *New Grove Dictionary*, *Wikipedia* does have an entry called "Instrumental Idiom" (2013) that is useful for the current discussion. The *Wikipedia* article defines instrumental idiom as a term referring to how well

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[16] The *Oxford Dictionary of Music*, the *Oxford Companion to Music* and the *Grove Music Online*, for instance, all make extensive use of the terms "idiom" and "idiomatic", particularly in their descriptions of composer's works, without providing a definition of these terms.

musical composition, individual parts in a score and performance are "suited to the specific instrument intended, in terms of both ease of playing and quality of music and the inherent tendencies and limitations of specific instruments". In both definitions, the idea of suitability for the instrument is an important factor. In addition to technical suitability, the *Wikipedia* article also explicitly points to musical suitability. However, what is missing in both definitions is any reference to the relationship between instrument and performer. If we imagine a situation in which an instrumentalist who is not a guitarist, for instance a percussion player or a cellist, is presented with a classical guitar to play on, this player can produce sounds on the guitar that are idiomatic from her perspective, based on her instrument-specific training and relationship to, respectively, percussion instruments, or the cello, but not idiomatic for the guitarist. The notion of idiomatic use of an instrument, therefore, is related to the instrument-specific training of the performer, and does not simply encompass any conceivable possibility of the instrument as an object, isolated from its practical use as a musical instrument. This research includes in its notion of idiomatic use of the guitar the perspective of the professionally trained classical guitarist. Furthermore, this research takes the position that the claim of the *Wikipedia* definition that music written with consideration for the instrumental idiom should be characterized by "ease of playing", is false. Ease of playing is a characterization that greatly depends on the level of the individual performer. Many guitar techniques require serious and professional study before they can be played accurately and with any ease, such as the tremolo technique, but this does not make such techniques any less idiomatic for the guitar.

Idiomatic guitar scoring in this research is thus defined as: scoring that is ideally suited for performance on the guitar by a professionally trained guitarist, and that can be made to sound on the guitar in accordance with the instructions in the score. Idiomatic music may be easy or difficult for a performer, depending on the level, strengths and weaknesses of the individual performer.

3.5.2 Significance

This study presents a wide range of sound categories that can be produced on the guitar, and each chapter on one of the sound categories of the sound-cell-texture chain describes an arena of idiomatic use. This arena of idiomatic use is described by indicating the possibilities and limitations of the various building blocks of scoring identified in this work (sounds, cells and textures) and their associated variables (such as pitch range, resonance and articulation) that are ideally suited for performance on the guitar, based on the technical perspective of the professionally trained guitarist. The technical dimension of instrument suitability determines the borders of the arena of idiomatic use that is described: those variables of sounds, cells and textures that can be realized technically are included in this study, while those that are technically not possible are either excluded or commented upon as being examples of non-functional scoring. The use of techniques that fall outside the range of common use, sometimes called extended techniques, is discussed in the same manner: those variables of sounds, cells and textures produced with the technique in question that can be realized on the guitar are included, while those that cannot be realized are excluded or used as examples of non-functional scoring. Thus, less commonly used sounds (e.g. inverted stopping sounds) receive the same treatment as more commonly used sounds (e.g. plucked sounds). The musical dimension of instrument suitability appears in the form

of extensive commentary on those technical uses of sounds, cells and textures that are possible and suited for the guitar. The twelve sound-cell-texture chains represent a particularly wide range of possible guitar sounds, based on extensive score study and sound selection (see Methodology Chapter). These sound categories all appear in the guitar repertoire and are likely to have been trained by the professional guitarist.