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

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Chapter 18 Discussion

In the present chapter, the theoretical and artistic outcomes of the research trajectory are discussed. The theoretical outcomes consist of a set of sound-cell-texture chains that may be employed in the composition process, and a set of additional tools, consisting of an overview of the vertical cell range, a harmonics fingering chart, an overview of the relative dynamics, and an overview of the use of various scordaturas. The artistic outcomes consist of a set of guitar etudes created with the help of the tools developed in the research process. This chapter consists of an account of the scope and limitations of the research, an account of the role of tacit and embodied knowledge in the research process and its implications, an evaluation of the sound-cell-texture chain as a theory, an examination of the outcomes with the help of the evaluative framework proposed in *The Artistic turn* (Coessens et al., 2009), and finally, an account of the contribution of the outcomes to the discussion on artistic research.

18.1 Scope and limitations

In this section, the scope and limitations of the research are discussed. The following questions concerning scope and limitations are responded to: how may the findings be employed by composers in the creative process? Are the findings intended to inspire, or serve as a technical tool? How were the various sound-cell-textures identified? Are the findings universally relevant for the guitar, or only in the specific guitar community in which the research was conducted? What are the inherent limitations of the research given what has been executed methodologically?

18.1.1 Scoring technique and inspiration

One cannot be sure that every composer will be inspired by the technical account of guitar scoring presented in this study. Next to the importance of inspiration in the creative process, there is a long tradition of placing preparation and technique alongside inspiration as an important and essential factor in the creative process, researched and described in detail by the composer Jonathan Harvey (Harvey & Downes, 1999, pp. 15-25; 71-77). It is in the creative project that “the composer’s ‘innate’ inspiration collides with his ‘learned’ technique. Each of these elements in the process makes its own demands on the composer, but it is only if he can satisfy the requirements of both that a truly profound piece can be created” (Harvey & Downes, 1999, p. 71). Technique may even be the most demanding part of this undertaking, as “[f]or many composers, the hard part of their job is not finding the initial idea...but harnessing the technical resources necessary to convert the initial vision into the finished work” (Harvey & Downes, 1999, p. 72). The importance of technical artistic knowledge as a tool in creativity can be compared to the importance for the guitar player to develop her technical skills. After all, the development of technical skills allows her to further her artistry on the guitar. On the other hand, there are examples of influential guitarists (such as Agustin Barrios) and composers (such as John Cage) that

developed their artistry without extensive technical instruction, or by defying technical instruction instead. It appears that there is no absolute truth in these matters, and that composing is located on a continuum ranging from intuition on the one hand, to the application of pre-defined theories and techniques on the other hand, leading to wide range of different outcomes. The view professed in this work is that for those composers who wish to write for the guitar, it can be helpful to know more about its scoring potential, and have more intimate knowledge of the possibilities of nuanced use of the guitar's versatility. It is then up to the composer in question to decide whether the information provided in this work is valuable for her individual compositional process.

This study aims to contribute to the development of artistic knowledge. It is not intended as a recipe for successful compositions, as it does not supply musical material or even compositional techniques. The sound-cell-texture chain is a model that emerges out of a re-thinking of the guitar potential. It is one possible approach to the guitar potential, next to others, and one in which the sound-cell-texture chain serves as an adequately layered platform for explicating scoring-technical issues from a large perspective (e.g. textures) down to its intricacies (e.g. sounds). It is at the point where the composer generates the nascent musical idea that this study can guide her in providing this idea with a viable shape that allows effective performance on the guitar.

18.1.2 Various points of discussion

The reality of scoring does not easily subject itself to a model. This quickly becomes apparent when one glances in many of the previous studies on guitar scoring. In these studies, writers struggle with ways to present the potential of the guitar, evidenced by the various presentation structures they invent. In some of these structures, various aspects of scoring are so intermixed that they are hard to distinguish, making it difficult to see how they may be used in practice. A case in point of such a confusing presentation structure is the scoring guide by Kachian (Kachian, 2006). The present study is not free from such risks. In the following discussion the nature of these risks will be explained, as is the way in which they have been approached.

External objects

There is a wide array of external objects one may use to produce some type of sound on the guitar; in theory the range of external objects is endless. In the present study, the discussion on external objects has been limited to bottleneck sounds and paper clip preparation. Bottleneck sounds are the most widely used external object and, in addition to radically changing range and sonority, offer reliable possibilities for the creation of vertical cells. In a small number of researched pieces, a spoon, greatly resembling the sound of the bottleneck, was used as an external object. There is a degree of overlap between the spoon and the bottleneck in terms of sound, but the spoon does not allow for the creation of a wide range of vertical cells in the same way the bottleneck does. A separate chapter for the sound of the spoon would therefore be an option, but would add very little new information. The range of discussed sounds over the whole is thus limited to sounds that are widely used, sounds that can clearly be distinguished from other sounds and to timbre variations that are derived from a specific sound (for

instance prepared guitar rasgueados). These were decisions made in this research trajectory for the abovementioned reasons, and it is therefore not inconceivable that further research in this field identifies more chains.

Idiomatic scoring

The described field of idiomatic uses in this study is limited to those that are achieved through the use of one or more of the twelve identified sound-cell-texture chains. This could lead to the following questions: is the use of a bottleneck idiomatic? Is the use of percussion sounds idiomatic? Are sound categories that are included in this study by definition suitable and those that are excluded not suitable? These questions cannot be answered on their own terms, as they contain the false assumption that sound categories can be idiomatic or non-idiomatic in their own right. This is not the case. There are ways in which one can use the bottleneck in scoring that, in the hands of a trained guitarist, are idiomatic, and there are ways to use the bottleneck that are not. Likewise, there are ways in which one can score percussion sounds that are idiomatic to perform for a professional guitarist, and there are ways to score percussion sounds that are not idiomatic. It is in their use that sound categories find their idiomatic and non-idiomatic dimension. With the possible identification of additional chains in further research, the description of their idiomatic use can extend the body of knowledge on the potential of idiomatic use of the guitar. Similarly, if new technical means are discovered within the identified sound-cell-texture chains for additional idiomatic use, the body of knowledge of idiomatic use will be extended accordingly.

Appendices

Not every aspect of guitar scoring is most easily explained in the chapters dedicated to the sound-cell-texture chains, for instance because they are relevant for multiple chains (Appendix A), or because they form an account that compares aspects of various chains (Appendix C). Although presented as an appendix, Appendix A on the vertical cell range is a particularly important component of this study, on the one hand because of the complexity of the matter and its relevance in guitar scoring, and on the other hand due to the fact that this issue has not been addressed in the existing literature.

Relevance for other guitar communities

The research findings are relevant for the classical guitar community and artists wishing to write for the classical guitar. The differences in technical playing styles between the classical guitar and other guitars, such as the electric guitar and the jazz guitar, are so serious, particularly due to their divergent use of the right hand and the construction of the instrument, that part of the findings of the current research cannot directly be applied to these instruments without further research particularly directed at these types of guitars.

Benefits for composers

It remains to be seen to which extent composers can benefit from the findings presented in this

research. In this respect, it is relevant to note that this study contains a sizeable element of tacit knowledge, notoriously hard to articulate, transferred into explicit knowledge through capturing it in a model. It has been attempted to counter the risk of losing knowledge in this transition by giving artistic practice an important role in the research trajectory, by adding video materials that convey the musical examples in the context of their practice and by linking up with existing models for the explication of scoring potential (for this last aspect, see Theory Chapter). It may now be tested in practice to which extent composers can benefit from the findings of the study.

18.2 Tacit and embodied knowledge in the research process

As may be seen in the Methodology Chapter, the role of tacit knowledge and embodied knowledge is a prominent feature of discussions on artistic research. In the following section, the role of tacit and embodied knowledge in this research trajectory is explained. This explication is an especially relevant outcome of the artistic research process, as it demonstrates how tacit knowledge may be articulated, how it may be used hand in hand with explicit knowledge, how research decisions may be based on tacit knowledge and how tacit knowledge may play a role in the development of an artistic model, such as the sound-cell-texture chain and, finally, how tacit knowledge plays an important and binding role between the artistic and theoretical dimensions of the research.

18.2.1 Role and examples

Tacit and embodied knowing permeated the research process. The tacit and embodied knowledge applied in hearing, playing, experimenting and searching for cohesion during the process of identifying the various sound-cell-texture chains, played a pivotal and leading role in the research trajectory. The ability to differentiate between sonic characteristics by hearing and playing, to differentiate between technical aspect by playing, feeling and touching, the ability to hierarchically group them, subject them to analysis, code them with the help of newly defined categories on the basis of experience and experiment.

It is difficult, and perhaps impossible, to delineate exactly where my explicit knowledge ended and tacit knowledge began during the research process. However, in many activities carried out during the research, tacit and embodied knowing played a pivotal role. The following examples may serve to illuminate the numerous ways in which this role was fulfilled:

- I engaged my ability to play a wide range of compositions as well as the score samples that were collected and categorized in the research process.
- I engaged my ability to build a chord-interval overview, based on experiential, tacit and embodied knowledge, as well as practical research on the guitar.
- I engaged my ability to create musical examples in order to articulate scoring techniques through scoring as an accompaniment to written explication.

- I approached each sound-cell-texture chain in a general as well as a particular way. The percussion sounds chain required attention to aspects different from the plucked sounds chain: the knowledge of how to approach these chains in different ways was based on my embodied knowledge resulting from years of instrumental training and experience.
- I engaged my experience as composer: through my composing experience, I was at the very least partly and experientially aware of issues relevant to composers in the composing process.
- I engaged my experience as a performer: through my performing experience, I was aware of problematic issues in guitar scoring. Examples of such issues are harmonics notation, harmonic flexibility and vertical cell range. Such aspects were therefore treated with particular attention (for instance in the chapter on harmonics sounds), or separately in an appendix (for instance in Appendix A on the vertical cell range).
- Through previous experience and experiment in the research trajectory, I researched and articulated the speed at which horizontal cells consisting of various sounds can be alternated. Combinations of horizontal cells consisting of various sounds that did not appear in the sound-cell-texture library were researched by trying them out on the instrument, and articulated in the research through language and newly created score examples.
- I used my compositional ability to create new compositions based on findings of the research. Next to my artistic judgment during the composition process, I deployed my playing ability to test and develop the compositions.

Implications

By granting artistic practice an important role in the research process, it takes on its own dynamic and becomes a natural and complementary actor in the trajectory. It does so by bringing tacit knowledge to the surface and by verifying and completing the theoretical tools developed in the research process. This process works both ways, as the theoretical tools can then be used to explore and develop new instrumental techniques and new strategies for composing. The presence of practice in the research process has allowed the sound-cell-texture model to be grounded in practice, rather than being the product of a detached theoretical discourse on guitar scoring. Artistic practice and the associated tacit and embodied knowledge correct and complement theoretical ideas and help in approaching sound-cell-texture chains in a way that is particular to the chain in question. It allows “asymmetric” deviations of the model if necessary. This is meant to say that even though the general structure of the model may work for the majority of its practical applications, practice leads the research in a direction where it accepts that an accurate account that does justice to the complexity of practice allows for deviations when necessary. This is, for instance, the case in the last two chapters of this study on the sound-cell-texture chain.

The combined use of theoretical and artistic practice is a viable route for research aiming to develop tools that must be distilled from practice. The marriage of the two approaches can lead to knowledge building that is truly “grounded” in artistic practice, and, in turn, valuable as a creative tool within that practice.

18.2.2 Communication of tacit and embodied knowledge

The communication of the knowledge acquired through the research trajectory is communicated through written text, musical examples, tables, new compositions for guitar and A/V materials corresponding to the musical examples. The video examples play an important role in this package: in the process of naming the chains, deciding which aspects should be discussed in the chain and which musical examples are to be shown, tacit and embodied knowledge played an important role. In the musical examples, as well as in their performance, tacit and embodied knowledge are incorporated. Language plays a useful role in making explicit the categorization and hierarchy of the various sounds, cells and textures, but the musical event itself, as well as the cohesion and interconnectedness between aspects discussed in the chain, can be communicated through video with preservation of their integrity. This communication can take place without a complex translation of the physical action into language and, in a more broad sense, as a communication that is complementary to the way in which language is necessary to discuss guitar scoring.

Implications

There is no one-size-fits-all recipe for the successful communication of tacit and embodied knowledge: artistic researchers have to find creative ways of expressing the artistic and theoretical dimensions of their research in a way that fits to their subject and findings. In this research trajectory, a dissertation, video examples and new compositions were used to communicate tacit and embodied knowledge.

18.3 Evaluation of the sound-cell-texture chain as a theory

In this section, the sound-cell-texture chain is evaluated as a theory. Constructs, variables, their utility, and their connectivity are discussed.

18.3.1 Constructs and variables

Constructs

The constructs identified in the present study are sounds, cells, textures, and their hierarchical connective construct, the chain. These constructs were created during the course of this trajectory, partly based on existing categories, and partly by giving categories observed in data a new designation. In the initial stages of the research, score samples were collected and used for practical experimentation, out of which constructs were created that were consequently made subject to testing. The value of the distinction between the categories lies in making structured and consistent thinking about the guitar potential possible.

Variables

Each of the constructs has a number of variables assigned to it, which are relevant to the sound the given sound-cell-texture chain is dedicated to. As was outlined in the Theory Chapter, the establishment of the value ranges of variables reported in the Findings Chapters was reached through a triangular method of measurement. In order for fellow researchers to confirm, improve or disprove the statements about construct variables made in this study, the reported values may be verified by performing the music examples provided in this study, by other score examples or by newly composed examples. In all cases, it is good for researchers to keep in mind that potential value range of construct variables depends on the technical skills of individual guitarists. For the present study, the perceived technical proficiency of trained professional players, based on my professional experience, is the point of reference.

18.3.2 Utility of constructs, variables and their relationships

The constructs and their related variables in the present study have been developed to cover the range of musical events encountered in literature during the research trajectory. The variables of the study relate to the constructs, while the constructs relate to the domain in question: classical guitar music and performance. The sound-cell-texture chains have explanatory potential in that they can be employed to explain the nature of the scoring of a guitar piece, ideally and most easily when it is notated, but also when listened to. This explanatory power can be witnessed in its full force in the Findings Chapters of this study. The predictive adequacy of the sound-cell-texture chain lies in its ability to predict whether a piece may be playable or not, based on an evaluation of its constructs and variables, rather than a prediction based on probability.

18.3.3 Connectivity

This study aims to add to the views propagated in the work on guitar scoring by Kachian (2006), who presented textures as a category of interest[54], with that of contemporary guitar scoring guides that are more concerned with the range of sounds the guitar can provide (Mas, 1986; Schneider, 1985) by making use of separate categories for description in order to make structural thinking of scoring possible (Hijmans, 2008; Adler, 1989). This connective aspect of the present study is discussed in more detail in the Theory Chapter.

18.4 Contribution and future research

In this section, the contribution of this study is discussed. First, the contribution will be discussed within the framework of evaluation outcomes for artistic research proposed by Coessens et al. Subsequently,

[54] Despite the shortcomings in the work of Kachian (as discussed in section 3.2.2, 3.2.3 and 18.1.3), his description of the guitar's scoring potential through textures was useful for this research.

the contribution of this study to the academic debate on artistic research will be discussed. In both sections, suggestions for further research will be presented.

18.4.1 Artistic content, technical approach and historical value

Coessens et al. propose that the outcomes of artistic research may be assessed on the basis of three aspects: artistic content, technical approach[55] and historical value. Both the artistic and the theoretical content may be critically examined for their value for artists and art. However, both aspects of the research may be interpreted by the research community in diverging ways. According to Coessens et al., "the artist researcher should be aware of the different and/or complementary impact of both dimensions of his or her artistic research: the art manifestation and the research output" (Coessens et al., 2009, p. 73). Leaving the discussion raised by Coessens et al. in its own right (see section 18.4.2), I want to take my own position.

The artistic content of the present research trajectory consists of compositions that were composed with the help of the tools developed during the research phase. As such, it contributes to the body of works composed for the classical guitar and to the variety of techniques that may be used for creating such works. The theoretical content consists of a set of tools, grouped into sound-cell-texture chains that may be used by other composers in their creative process of writing for the guitar, as well as additional tools presented as appendices. This content contributes to the existing theoretical body of knowledge on how to score for the guitar by offering a new and, in terms of the variety of the examined sounds, extensive approach to this phenomenon.

The technical approach of this research trajectory is clarified in the Theory and Methodology Chapters and discussed in the current chapter. In short, the goal of the research is to re-think the guitar potential in order to create new compositions, while the tools developed in the research process are presented in such a way that they may be employed by other composers. The results of the research are communicated in three ways: a written dissertation, in A/V material and in compositions.

As for its historical value, this research relates to other, historical and contemporary, guitar compositions and studies on guitar scoring. The relation of this study to other studies is explained in the Theory Chapter. The intention of the new pieces composed with the help of the tools developed in this research is that they may be characterized by richness of sonority and effective scoring with a wide range of sounds, due to an informed used of the sound-cell-texture chains.

A suggestion for further research is to conduct an experiment with composition students in which they are asked to write guitar compositions with and without the scoring information contained in this study, in order to assess the effectiveness of the method of communication used to articulate the findings of this research, and the effect of the findings of this research on the guitar scoring abilities of composition students. Another suggestion for further research is to conduct a similar research for another solo-

[55] Technical approach refers to clarity to the research trajectory, as well as a "concise, understandable and scientifically acceptable formulation, elaboration and expression of its results" (Coessens et al., 2009, p. 73). For more details, see 1.2.4.

instrument that can perform a variety of horizontal and vertical cells, such as the harp or the organ, and for ensembles, such as string quartet or brass quintet.

18.4.2 Academic contribution

In this section, I will discuss my contribution to the discussion on artistic research. First, I will summarize the research process in order to create the context for this contribution. Subsequently, I will discuss whether making a distinction between the various outcomes of artistic research is meaningful, whether artistic researchers should shy away from conducting hypothesis-led research processes, and whether artistic research should only take place in and through art. Finally, I will present my view on the way forward for artistic research.

At the outset of my research project, the questions that needed to be answered were clear, but the course I had to follow to answer them was not. By collecting sounds that I encountered in the repertoire, I started to see possibilities for their categorization. I tested the categorization by analyzing compositions that I had previously performed, which allowed my practical experience to complement and adjust the developing theoretical framework. After identifying a core category, a number of sound categories, and the sound-cell-texture chain, I engaged in practical exploration and experimentation to find out more about the characteristics of the various sound categories. As a result, the theoretical framework was constantly updated and adjusted. Whenever I found a possibility to create a certain sound or cell that was not found in the repertoire, I deployed my creative skills to produce a new score example. After completing my research on the possibilities of the sound categories, I used the sound-cell-texture chain and the findings of the practical research to create new compositions.

The output of my research trajectory is, despite its range of manifestations, anchored in artistic practice. Although we can make a distinction between the various manifestations of the outcomes, they were the result of the same practice-based approach. Therefore, I no longer view a separation of the research outcomes into an academic and an artistic dimension as a meaningful one. The motivation used by Coessens et al. to separate these dimensions of research is that it remains to be seen whether "articulating the artistic research process will alter the reception of the artwork" (Coessens et al., 2009, p. 73). However, this is the case for all art, as it always remains to be seen whether the articulation of the process leading up to its creation or performance alters its reception, and the motivation used by Coessens et al. thus ignores the fact that critical thinking and reflection are also essential components of artistic practice. In my research, it was the constant and simultaneous engagement of critical thinking, practical experimentation and artistic creation that gave rise to all dimensions of the artistic research output. This will remain the case, whether we try to dissect the output and invent designations for its components, or respect its wholeness and appreciate that it is precisely its many-sidedness and coherence that characterizes it as a product of artistic research.

During my research, both hypothesis-led and discovery-led phases took place. The alternation of these phases was a suitable manner to conduct my artistic research, because it allowed for the development of theoretical views that were nurtured by practical experimentation, and, vice versa, helped improve practical techniques that were developed from related theoretical views. Although Borgdorff states that,

“as a rule, artistic research is not hypothesis led, but discovery-led” (Borgdorff, 2010, p. 56), I think this view is lacking and unnecessarily limiting artistic researchers to one corner of the range of possibilities to conduct research.

My research had artistic practice at its core, but its objective was also to produce outcomes that are useful for other artists. I believe any artistic research project should have this objective: an autonomous experiment that has no relevance for other artists does not make a sufficient contribution to the body of knowledge. Borgdorff separates “research in the arts” from “research for the arts” (Borgdorff, 2006, p. 6) and claims that only research that is based on “the principle that the research takes place in and through the creation of art” (Borgdorff, 2010, p. 46) qualifies as artistic research. It is my view that the exclusion of research for the arts is inappropriate, as both research in and for the arts should be necessary elements of any artistic research project.

As can be concluded from the above, some scholars struggle to find a position for artistic research. Although methodological pluralism is advocated and encouraged, there still is a paradoxical tendency to suddenly embrace one side of the methodological spectrum at the expense of the other. Usually, this embrace reaches into the direction of practical methodologies, even though artistic research already has artistic practice as its starting point. This tendency is based on the implicit and faulty premise that artistic practice is more about playing and trying, than it is about thinking and analyzing. It can be witnessed in the attempted separation of artistic content and academic content, although one, practice-based process underlies both dimensions. It can be heard in the call to place discovery-led research on a pedestal at the expense of using hypotheses, although hypotheses can be formed on the basis of discovery. It can be seen in the attempt to only qualify research that was conducted in the arts as legitimate artistic research, even though it should also make a meaningful contribution. None of this is necessary or even helpful.

It is time for artistic researchers to realize that the pendulum of artistic knowledge swings both ways: from practice to reflection, and back again. From theorizing to experimenting, and back again. Only when we accept that this premise is essential for the artistic experience, can we engage in research that truly does justice to our practice: artistic research.