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

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Chapter 1 Methodology

Contents

Chapter 1 Methodology

In this chapter, the methodology of the present study is discussed. Four aspects are considered: the research stages, the characteristics of the open-ended methodology used in this research trajectory, the size and characteristics of the researched set of music scores, as well as the use of triangulation and reflectivity.

1.1 Research stages

The research was conducted in four main stages. In the first, second and third stage, the sound-cell-texture chain, which is the main set of constructs introduced in this study, was developed. The sound-cell-texture chain is introduced and discussed in more depth in the Theory Chapter. In the final stage, the findings of the initial stages were elaborated and used for the composition of a set of new etudes for the guitar. In this section, the research process is described in more detail. It discusses the search for a perspective on discussing guitar scoring, the use of the initial classification as an analytical tool, the development, elaboration and testing of the sound-cell-texture chain, and, finally, the similarity of the adopted research processes to methodology theories.

1.1.1 Finding a perspective

In the initial stage of the research trajectory, the existing body of knowledge on guitar scoring was studied through desk research. Studying guitar scores, reading previous studies and reading interviews with guitarists and composers was an important instrument in exploring the current notions in the field. The challenge at this stage was to find a way to discuss guitar scoring that is more than an enumeration of facts that are new to composers but already known to guitarists; after all, an objective of this research is to add new knowledge to the existing body of knowledge, rather than just reproducing existing knowledge to another audience. The development of a new way of discussing the guitar's scoring potential started out with the plan to collect guitar sounds. The initial plan was to build a library of guitar sounds, but during the research on the sizable corpus of scores (see section 1.3 for more details), it turned out that many musical events that were encountered in scores could not be categorized under the classification "sounds". What to do, for instance, with combinations of sounds, articulations, or particular idiomatic sequences and textures, all of which are relevant for scoring? Longer sequences of music were then categorized as textures, a designation referring to the "sound aspects of a musical structure" (Grove Music Online, 2012g). However, this still left certain musical events uncategorized. For instance, a score sample that consisted of a Bartok pizzicato followed by a glissando could not fit in either the sound or the texture category. A discussion of this sample in the sound category was not possible, as it consisted of multiple, distinct sounds. At the same time, it was too short to be considered a texture. At this stage, the idea arose to create an intermediate size building block that fitted between

the individual sound on the one hand, and texture on the other hand: a cell. As a result, the library of sounds was subjected to re-coding, and it developed into a library of sounds, cells and textures. A typical library entry thus contained a score sample of a particular sound, cell or texture, details concerning the piece it originated from, comments on its characteristics and, if present, its special features. It also became apparent that multiple, sometimes contradictory and confusing, notations are used in the repertoire. These various types of notation were collected and added to the library. Notation turned out to be relevant at the sound, cell and texture level. Therefore, notation evaluations and suggestions were later given throughout the Findings Chapters. A number of pieces that were studied made use of alternative tunings; the tuning used in these pieces and the notation used for their representation were also added to the library. Scordatura functions on a meta-level in this dissertation; a change in the tuning affects the pitch range and vertical cell potential of all sound categories involving pitched string sounds. Scordaturas are therefore addressed separately in Appendix D.

1.1.2 Sounds, cells and textures as an analytical tool

After creating and developing the library of sounds, cells and textures, this classification was used as an analytical tool to explore and demonstrate the scoring characteristics in repertoire pieces. For this analysis, Ponce's *Sonata III* (Ponce, 1928) and Berio's *Sequenza XI* (Berio, 1988) were chosen. These two compositions were selected as I have extensively performed them, due to which I was aware of the musical and sonic characteristics of the pieces, as well as their technical and musical challenges. For the analysis of each piece, I created an overview of the sounds that were employed, with comments on the manner in which they were used, technical challenges for the performer, and notation. For the cells and textures, I followed the same procedure. In order to further assess the technical difficulty of the sounds, cells and textures in the pieces, I performed them on the guitar during the research process.

1.1.3 The sound-cell-texture chain: development

After the analysis of the works by Ponce and Berio, the insight arose that the classification of sounds, cells and textures could also be used as a perspective on the contents of a library of sounds, cells and textures, if this classification could identify characteristics that would connect the three levels. In the analysis on the works by Ponce and Berio, sounds, cells and textures had been grouped together in separate chapter sections. These categories were now combined into separate chains based on one particular sound category (functioning as a "core category"), which better illustrated the transition between the sound, cell and texture levels. This was a further advance in relation to the earlier analysis and was implemented in order to promote clarity in the structure of the sound-cell-texture model. As a result, twelve sound-cell-texture chains that can be used in guitar scoring were identified. The analysis on the works by Ponce and Berio also made clear that it was necessary to further explore a number of aspects of the sounds, cells and textures such as speed, dynamics, articulation, and rhythmic possibilities. The analysis also demonstrated that certain aspects could be applied to all sound categories and their related cells and textures, such as dynamic range, while other aspects were only applicable to a limited group of sound categories and their related cells and textures, such as the range of percussion sounds. In

addition, the description cell was split into two designations in order to bring in more nuances: vertical cells for vertical combinations of sounds, and horizontal cells for horizontal combinations of sounds.

1.1.4 The sound-cell-texture chain: establishment, elaboration and testing

With the establishment of the sound-cell-texture chain based on the research, coding and categorization of the data in the library of sounds, the hypothesis was now that this model could be used to classify and describe the guitar scoring potential. At this stage, I researched the characteristics of the sound-cell-texture chains through practical experimentation. For instance, I played the score sample of the Bartok pizzicato followed by the glissando (mentioned in section 1.1.1). I determined that the core of this sample consisted of a Bartok pizzicato note, while the glissando was an articulation applied to this note in order to reach another pitch. It was then categorized as a horizontal cell with a glissando articulation in the Bartok pizzicato sound category. I then continued to see which other types of glissando were possible. By experimenting, I found that it was possible not only to score a glissando on the same string, but also to score a partial glissando followed by a pitch on another string. Additionally, I found that it was possible to create a glissando articulation to a Bartok pizzicato sound by detuning the string after the attack, thus creating a tuning key glissando. The various possibilities of the other aspects of each chain were researched in a similar manner.
The findings presented in this study, which can serve as a practical guide for composers wishing to score for the guitar, are accompanied by video snippets in which the score examples are performed. The findings were tested by applying them to write a set of guitar etudes, where each etude is based on one of the sound-cell-texture chains. Each of the twelve categories formed the motivation, subject matter and technical tool to write a solo guitar composition based on that particular chain, while the findings on the one hand allowed for a wide scope of guitar sounds to be employed and on the other hand provided normative information on the potential values of its variables. The twelve etudes are discussed in more detail in the Etudes Chapter of this dissertation.

1.1.5 Similarity to methodology theories

During the initial stages of this research, scoring methods were extracted from scores, collected, coded, categorized and provided with comments. Sample pieces were analyzed using the initial categorization, the categorization was updated, samples from the various categories were performed on the guitar (as a continuous form of reflection on the previous phase), and categorization and coding were subsequently updated. Various categories were combined into chains based on a core sound, and finally all chains were explored in detail through the described triangular method of measurement for possibilities on each level of the chain. These stages of the research process were similar to methods used in grounded theory[8] and may be compared to the initial coding and categorization (see section 1.1.1), concurrent

[8] Grounded theory is a qualitative research methodology originating in social research, and is defined by its founders as “the discovery of theory from data systematically obtained from social research” (Glaser & Strauss, The Discovery of Grounded Theory, 1967, p. 2). The premise put forward by Glaser and Strauss is that “the theory that emerges from the researcher’s collection and analysis of qualitative data is in one sense equivalent to what he *knows systematically* about his own data” (Glaser & Strauss, 1967, p. 225). This approach, in which the researcher

data collection, writing memos, theoretical sampling[9], constant comparative analysis, theoretical sensitivity[10], intermediate coding (see section 1.1.2), identifying a core category, advanced coding, theoretical integration and, finally, generating theory (see section 1.1.3), as described in the work of Birks and Mills[11] (2010, pp. 9-12). After the sound-cell-texture chain was established, the research continued with the hypothesis that using the sound-cell-texture chain as a template to view guitar scoring would be an appropriate model to describe its potential. This approach was taken because the generating of theory had been initiated, and it was now necessary to make the theory practically viable through practical testing and composing. The subsequent stage of practical experimentation was similar to "traditional research designs" in which the hypothesis is "put to the test by experimentation in the real world" (Allan, 2003, p. 1). Phases of discovery (such as the development of the designations sound, cell and texture) were followed by phases of hypothesis-led practical experimentation (testing their characteristics), which led to new insights about the practical dimension of these characteristics, which in its turn led to adjustments to the theoretical framework. My research process can thus be characterized as a "sequential procedure", as the findings of one method were elaborated and expanded upon with another method (Creswell, 2003, p. 16). Although Borgdorff claims that "as a rule, artistic research is not hypothesis led, but discovery-led" (Borgdorff, 2010, p. 56), my research trajectory diverged from a purely discovery-led approach. Instead, an iterative process took place in which both discovery and hypothesis played complimentary roles. Consequently, rather than seeing these approaches as two diametrically opposed methods, I consider them both to be helpful tools that can be employed side by side in the artistic research process.

1.2 Open-ended methodology in the research trajectory

One of the discussion points on the nature, status and value of artistic research is the question of its methodology (Borgdorff, 2010; Newbury, 2010; Biggs & Karlsson, 2010a; Coessens et al., 2009; Borgdorff, 2006). In this respect, a number of questions may be posed, for instance: should artistic research adopt a methodology from other academic disciplines, or should it develop its own? If it does develop its own methodology, why is this necessary, and how should outcomes obtained through such a methodology be assessed? Borgdorff convincingly argues for a methodology that is led by the art practice itself, joined by methods borrowed from other disciplines (Borgdorff, 2010). What distinguishes the artistic research methodology from methodologies employed in other disciplines is the ever-presentness of the practice

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discovers hypotheses on the basis of data, may be contrasted with more traditional research methods, in which "preconceived hypotheses" are tested by experimentation (Allan, 2003, p. 1).

[9] Theoretical sampling relates to the decision of the researcher on "what or who will provide the most information-rich source to meet their analytical needs" for the development of categories (Birks & Mills, 2010, p. 11). It is used by researchers to "focus and feed their constant comparative analysis of the data" (Birks & Mills, 2010, p. 10). During this process, researchers get more insight into areas of their theory that are in need of further development.

[10] Theoretical sensitivity refers to the "level of insight" researchers have into "both themselves and the area that they are researching", as well as their "intellectual history, the type of theory that they have read, absorbed and now use in their everyday thought" (Birks & Mills, 2010, p. 11).

[11] Melanie Birks is Professor of Nursing at James Cook University in Queensland (Australia). Jane Mills is Associate Professor of Nursing at the same institution.

itself; this is dictated by the fact that the research is conducted through practice, rather than on practice, as is common in much research on art in the humanities. Borgdorff points out that artistic practice is not only present throughout the artistic research process, but that "art practice is paramount as the subject matter, the method, the context and the outcome of artistic research" (Borgdorff, 2010, p. 46).

The course of my research process was not determined in advance. The creation of the library of sounds, for instance, was originally motivated by the idea that such an overview would benefit composers that are interested in composing with sounds other than regular plucked sounds. During the subsequent collection and categorization of sounds, it gradually turned out that this categorization could be used as a perspective to explain guitar scoring (see section 1.1). As a result, the development of this categorization started to occupy a much more prominent place in the research. Similarly, the creation of new compositions was a process which could not be determined in advance. This absence of a pre-determined course of research can be compared to what Coessens et al. call an "open-ended methodology" (2009, p. 65). Their open-ended methodology is defined as a methodology that leaves room for an open-ended approach, but does give an account of the social, epistemic and ecological situatedness of the research, the reflective aspects of the research, while it aspires to attain artistically relevant outcomes. This type of flexible methodology offers most possibilities for a sound artistic research trajectory, as on the one hand it allows for sufficient space for the individual character of the artistic dimension of the research to flourish, while on the other hand it requires specification of context, application of self-reflection and indication of the artistic value of the outcomes of the trajectory. In addition, Coessens et al. provide a framework for the assessment of the outcomes of artistic research: they should be evaluated on the basis of artistic content, technical approach and historical value (Coessens et al., 2009, p. 72).

1.2.1 Adopted research methodology

In the light of the above, an open-ended methodology that gives space to the explorative and experimental nature of artistic practice was adopted for this artistic research trajectory, taking into account the methodological requirements and criteria for the evaluation of research outcomes that Coessens et al. propose. In addition, research processes were used that bear similarities to a number of methodologies (see section 1.1.5). The use of multiple methodologies relates to Borgdorff's suggestion to adopt suitable methods from other fields as complementary forces in the artistic research process (Borgdorff, 2010, p. 46). Borgdorff identifies three types of research in art: research on the arts, research for the arts and research in the arts (Borgdorff, 2006, pp. 6-7). The first is art research as practiced in disciplines such as musicology and art history, in which the researcher is not directly engaged in the production of art. The second is defined as research that "provides insights and instruments that may find their way into concrete practices" (Borgdorff, 2006, p. 6). This type of research "delivers…the tools and the knowledge of materials that are needed during the creative process or in the artistic product". The third is defined as research in which "the artistic practice itself is an essential component of both the research process and the research results" (Borgdorff, 2006, p. 7). The ideal type for artistic research, according to Borgdorff, is the third type, as "methodological pluralism…should be regarded as complementary to the principle that the research takes place in and through the creation of art"

(Borgdorff, 2010, p. 46). With “in and through the creation of art”, Borgdorff refers to the idea that this type of research not only takes place in art, with the artistic practice as an essential component, but also that its results are expressed through a work of art. The current research can be regarded as having taken place in and through art, by including practical experimentation and the composition of new works, as well as for art, by creating tools that can be beneficial to other artists in the composition of new guitar works. It is my belief that artistic research can increase its impact and relevance for the artistic community if, in addition to taking place in and through art, it is carried out for art in that it produces knowledge and tools that are valuable for other artists.

1.2.2 Social, epistemic and ecological situatedness

Both Coessens et al. and Borgdorff point out the importance of the researcher acknowledging the context in which the artistic research is “situated” or “embedded” (Borgdorff, 2010, pp. 56-57; Coessens et al., 2009, pp. 65-74). Coessens et al. provide a framework for the description of this situatedness, consisting of an account of its social, epistemic and ecological aspects. The social situatedness of the research refers to the social context in which the subject of research is located. The epistemic situatedness refers to the state of knowledge on the research subject, while the ecological situatedness refers to the “ecological, physical and perceptual embeddedness of the action – and actor- in the specific context of research” (Coessens et al., 2009, p. 67). These aspects are discussed in the Research Context Chapter of this study.

1.2.3 Reflective research

Coessens et al. stress the importance of reflective research, as it allows the artistic researcher to become “a participatory observer of her or his own research practice and artistic practice” (Coessens et al., 2009, p. 70). Participant observation is a qualitative research method in which a researcher simultaneously observes and acts as participant in the situation that is under research. In artistic research, the practice of the researcher is part of the situation under research, which means that participant observation refers to observation of the self in the research context. Coessens et al. advocate awareness of the important role tacit and embodied knowledge can play in the process of reflective practice by the researcher (Coessens et al., 2009, p. 71). The evaluation of the tacit and embodied dimensions of the reflective practices applied in the trajectory is presented in section 18.2 of the Discussion Chapter.

1.2.4 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 and historical value. This evaluative framework is employed for the evaluation of the research in section 18.4.1 of the Discussion Chapter. Artistic content refers to the artistic aspect of the research outcomes, which in the case of this research consists of a set of new compositions for guitar. 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). Historical value refers to the way the research relates to the body

of knowledge in the field. Both the artistic and the academic 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). This aspect of the framework of Coessens et al. is discussed in more detail in section 18.4.2.

1.3 Music scores examined during the research trajectory

During the research process, a number of classical guitar scores were examined. In the following section, the number and the type of scores used in the research are described.

1.3.1 Number of scores

The score research corpus consisted of the following scores:

- My personal guitar library, consisting of approximately 600 guitar compositions, containing much of the canonical guitar repertoire.
- A nearly 11,000 page PDF file compiled by Andrey Balalin (Balalin, 2002), containing guitar works by well-known as well as lesser known composers.
- A miscellaneous set of works found in libraries and on the internet.

1.3.2 Types of scores

The research was primarily concerned with scoring for the solo classical guitar. For this reason, scores written for solo classical guitar received most attention. The guitar parts of some chamber music works and concertos were also examined; passages in some of these works contained sounds, cells or textures that were also relevant for solo classical guitar scoring and were therefore included in the findings.

1.4 Triangulation and reflectivity

In the research process, measurements were made through triangulation, which means that data or methods are mixed “so that diverse viewpoints or standpoints cast light upon a topic” (Olsen, 2004, p. 103). Measurements were conducted on constructs through their variables. Constructs are approximated concepts that may not be observed directly. Variables, which are observable and measurable units of constructs, are then used for the measurement of constructs (Bacharach, 1989). In the Theory Chapter, a detailed account of the constructs and variables researched in this study is provided under the header “The sound-cell-texture chain”. In this section, the triangular method of measurement in the research process is discussed, as well as the role it played in reflectivity.

1.4.1 Three approaches

The triangular method of measurement of constructs through their variables in this study consisted of the following three approaches:

- Experiential knowledge
- Research on musical scores
- Practical experimentation

1.4.2 Experiential knowledge

My professional knowledge as a guitarist can also be called experiential knowledge, as it was "gained through direct encounter with a subject" (Burnard, 1999, p. 57). Variables were measured on the basis of my experiential knowledge. During the research on plucked sounds, for instance, maximum speeds for the scoring of single lines and arpeggios were recommended. With my extensive professional training and experience on the guitar, I was able to report the measurement of these variables based on my experience. Taking into account the issue that the use of tacit and embodied knowledge based on experience is considered a key component of artistic research (Coessens et al., 2009, p. 71), this approach had an important place in the measurement process.

1.4.3 Research on musical scores and literature study

In order to widen the potential scope of variables of constructs and their potential values, further study of guitar scores and guitar scoring literature was undertaken during the research process and used as an additional method of collecting data. This was done to complement my existing knowledge of guitar technique and repertoire.

1.4.4 Practical experimentation

When the conceptual categories and their variables were established during the research process, only a number of variables relevant to each conceptual category were available in the music scores that were used for research. At that point, I conducted research on potential values for the missing variables by creating score examples, trying them out on the guitar and reporting the value range of variables. This was necessary because the two approaches mentioned in 1.5.2 and 1.5.3 are bound by the context in which they appear. My experiential knowledge is nurtured by the context of my education, while research on musical scores leads to reports from the specific pieces that are researched. In order to make this knowledge useful in a context of reporting and measuring the guitar potential, practical experimentation was used to complement and verify measurements reported through experiential knowledge, as well as score and literature research. Considering the issue that practical engagement of the artistic researcher is of critical importance to the research trajectory (Borgdorff, 2006, p. 46), the practical experimentation approach was another key component in the measurement process.

1.4.5 Role of Reflectivity

Through the use of triangulation, in which practical experimentation played an important role, the research trajectory took on a reflective character as it allowed me to observe myself as a practitioner on the guitar. During the research process, the data collected through experiential knowledge and research on musical scores was investigated, subjected to experiment and complemented by performing on the classical guitar. In a later stage of the research, the A/V recordings of the score examples were recorded and added to the dissertation to serve as a verification of the analysis presented in the written text. In the final stage, these findings were used as a tool in the creative process of writing new compositions for the classical guitar. Thus, in each stage of the research, reflection on findings of a previous phase took place.