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‘Research Through Composition – A Special Case Of Practice-Based-Research’

After periods of time filled with highly specialized work, I occasionally like to remind myself of the more fundamental principles that form the basis of my work as a composer. It frequently takes people by surprise to learn that one of these principles can be found in the notion that the art of composition relies substantially on different concepts of research. When briefly examining the term ‘composition’ which is derived from the Latin verb ‘componere’, ‘to put together’, one cannot help but wonder what exactly is being put together and where this material that constitutes a composition actually comes from. These questions inevitably lead to the topic of what role research holds for the work of a composer.

In this presentation I would like to begin with an examination of two basic models of research that are relevant to the art of composition. This will be followed by a discussion of the composer’s inner relationship between creative artist and researcher. I will then conclude with a reflection on some issues concerning the evaluation of research through composition. I am aware that the significance of particular research methods depends highly on the epoch a composer lived in as well as on the specific working methods of each individual. Since I wanted to include an outlook on the current and future potential of research through composition I decided to adopt a contemporary perspective on this issue and, to provide an insider’s view, one based on personal experience.

Generally speaking, there exist two different types of research that are fundamentally relevant to a composer’s work: on the one hand, there is historical (‘historical’ in the broadest sense) and on the other hand, there is practice-based research.

The building of a comprehensive historical knowledge is of great importance as it provides the necessary awareness of the stage of development concerning aesthetic and technical issues. The building of this ‘historical’ knowledge, the comprehension of what has been done and achieved before by past and present composers, and the acquisition of a basic compositional craft, is necessary to be truly prepared for authentic composing. However, before this can happen there is a vast amount of knowledge that has to be obtained and reflected upon. This is mainly due to the situation a composer finds himself in at present: We look back on centuries of development of (art-)music, with much of this knowledge now available to us through a wide range of different media. The highly diverse and pluralistic threads of development, local and global, in the 20th Century have also added to the complexity of the current situation. Before a composer can concern himself meaningfully with his own compositional voice he must first achieve many tasks: he has to acquire an understanding of musical-historical contexts, get to know works of the past and the present, learn about diverse aesthetical

positions, study the functionality of musical semantics in different epochs, and gain knowledge about concepts of notation, instrumental playing techniques, performance traditions, current trends, and so forth. This 'research into established knowledge' enables a composer to define his own position within a historical context; in addition, it provides musical concepts that can serve as a starting-point for the actual composing. Consequently these concepts have to be critically questioned, altered, or negated. It is at this point where a blurring of historical and practice-based research takes place.

Considering the implicitness of a composer's ongoing historical research, I will now focus predominantly on the aspect of 'practice-based research' - research as part of a progressive and creative composition process where the composer is 'discovering the unknown'.

The aims and methods of practice-based research in composition are manifold: Its results should ideally provide individual compositional ideas and a unique set of material to work with. This type of research therefore often includes attempts to consider new perspectives on a technical level of musical material. One could mention the discovery and development of new sounds, the invention of extended instrumental playing techniques, the creation of new formal and structural concepts, the development of pitch systems, research into communication and perception models, invention of notation systems, and the redefinition of other musical categories and parameters that have previously existed.

On a superordinate level practice-based research in composition stands for the creation of works exhibiting an authentic and personal musical language that is driven by necessity and defined by permeating sense and far-reaching expressivity. Ideally, an artistic indispensability to the art-form will be achieved.

The methodology for practice-based research through composition is extensive, and again, is dependent on the working methods of each individual. Before exploring details of my own research work, I would nevertheless like to give a brief general overview of methods of practice-based research that are most likely applicable to a wide range of composers today. A typical process of research through composition could be divided into six main stages:

- Definition of goals and requirements
- Experimentation
- Development of compositional systems
- Projection
- Writing of the music
- Revision

I will now demonstrate what role practice-based research holds for my own work followed by a discussion about some of the problems and conflicts that can arise from this working method.

My research essentially deals with the creation and development of strategies of microtonal pitch hierarchies through the means of composition. (The official title of my project is “Microtonality in the Post-Spectral Era: The Development of Pitch Organization at the Beginning of the 21st Century”). Within this extensive topic I am particularly interested in the following aspects:

- The development of tuning systems that are not based on equal temperament
- Continuously fluent and acoustically logical pitch progressions
- A linkage of harmony and form (this includes fractal concepts)
- Microtonal tuning systems as dynamic parameters
- Precision of intonation and its realization in performance

I will now take the beginning of my piece “Into the Dream” for amplified string quartet and electronics, which I wrote in 2007, as an example to demonstrate the aspects I just mentioned. In addition, I will attempt to trace the underlying process of practice-based research in accordance with the list of work methods I introduced previously.

My main intention for the piece was the realization of various processes of departure from a previously defined origin, followed by transformations of this origin into a new (imaginary) existence – hence the title “Into the Dream”. The inspiration for this idea originated from my research into the works of the poets Hilde Domin and Rose Ausländer (the title is derived from the poem of the same name by Rose Ausländer). Both lyric poets frequently broached the issue of ‘departure’ (and the multiple ways this can be interpreted) in their works.

After having chosen the idea of departure as the fundamental theme of the piece I applied stepwise processes of sketching and experimenting, both mutually enriching themselves. One aspect of the composition I was naturally focusing on in particular was that of pitch organization. After careful consideration of various harmonic departure concepts (these included, for instance, modulation and transposition systems) I decided to take the idea significantly further by creating a system which would feature the metamorphosis of tone systems. Up to this point my research was of an entirely intellectual nature as I was creatively researching my imagination, which included to a great degree the research into possibilities based on existing knowledge. Once I had reached the point of having created a basic aesthetical concept, the element of practical experimentation set in. With the term practical experimentation I am referring to the organization of the actual musical material. Before commencing my experiments with pitch systems I had decided that the main harmonic idea for the first movement

should feature the metamorphosis of poly-spectral harmonic fields into harmonics based on only one fundamental – in other words to execute a shift from harmonic density to harmonic clarity. It was at this point that the real composing (or practice-based research) began. I then started experimenting with poly-spectral harmonic fields: This included research into possible relations between fundamentals and their respective spectra as well as research into horizontal progressions. This work featured intensive analytical study of the overtone series, a vast amount of calculation of frequencies, the disquisition of modulation possibilities, and finally the testing of the potential material I had gathered through my work in the electronic studio. While narrowing down the choices (and thereby gradually approaching the invention of a rigorous harmonic system), the playing techniques of the four string instruments always had to be kept in mind in terms of organizing the disposition of the musical material between acoustic and electro-acoustic instruments.

The next step of the composition process – in my opinion one of the most significant – was marked by the assembly of all material components to finally form a compositional system that would mastermind the piece's processes on various levels. In this particular case my chosen hierarchy of categories for the system were as follows: At first I would determine the basic dramaturgy and structure of the piece followed by the organization of the formal proportions and their linkage to the harmonic progressions. These systematic logical processes of determining the progression of harmony in time were an absolutely critical factor for achieving organization principles that were characteristic for the overall piece. The next step was the configuration of timbre in relation to texture including aspects of orchestration. This was followed by the creation of a first 'paper version' of the piece; I then would try out a few particular elements of the string parts with the performers before starting work in the electronic studio for the creation of the electro-acoustic part. Even though many musical parameters for the electronic part had already been determined (e.g., pitches, durations, rhythms, dynamics etc) a new set of extensive experimentation sessions followed, in which I was mainly concerned with choosing source material, editing this material and defining the relationship between the acoustic and electro-acoustic components of the piece. I have a tendency to work in a comparably much more improvised way when writing electro-acoustic music as the working methods of the two disciplines are notably different. I therefore frequently came up with rather unexpected results in the electronic part which required occasional changes or revisions to the string part. Once the actual composition was completed and a final version created, a few further processes had to be completed for the actual performance (in this case this meant the recording of click-tracks, rehearsing the piece and developing a musical interpretation with the performers, and finally completing a sound-check on the day of the performance to find the right acoustic mix for the performance venue). Eventually the piece was performed and recorded. After this, I returned to the studio to edit the recording to my liking, which these days has become an increasingly important part of the composition process, especially if electro-acoustic components are involved. The next, and for now, final step occurred when I had gained

sufficient distance to the actual composition process: It then included revisions to the piece based on my own reflections but also incorporating feedback from the performers and audience members.

My account of the work methods required to create this piece shows that virtually every relevant procedure during a composition process includes the element of research. An indisputable bonus of this particular type of research is that the composer is free to choose what types of research he wants to use and to what degree he will apply them. This freedom and flexibility that is initially offered by these research methods separates practice-based research through composition from many more 'traditional' research types. However, it also brings a range of responsibilities and problems with it.

One example of this issue is the sometimes controversial 'internal relationship' between the composer being a researcher and the composer being a creative artist.

As I have shown before, it is often the case during the work on a composition that research and creative-intuitive work processes are in accordance with each other. This is owing to the fact that the research element frequently helps to provide tools which realize the creative ideas representing both the basis and the impetus for a composition. There are cases where the creative-intuitive aspects of composition are an entirely integral part of the research process resulting in a piece of music where compositional concepts and the actual work virtually become one. One needs to be aware of the fact though that sometimes situations arise when research results and creative impetus become conflicting forces. The gravity of such conflicts naturally depends on the level of rigor a compositional system inherits – therefore different degrees of conflict and thus resulting consequence can be observed. Such a conflict can occur in a comparatively harmless way, when minor changes to an otherwise rigorous system are permitted due to intuitive decision-making. This would usually happen on a detailed level within one particular isolated situation and could include a change of orchestration, a different spacing of a chord or the addition and/or omission of a note. This type of creative impulse overruling previously obtained research results can certainly be observed in almost any composition. This is due to the fact that many compositional systems allow for this kind of flexibility.

A further, more severe intervention of intuition occurs when changes to pre-determined material occur on a local yet less detailed level. Examples include, for instance, the change of durations of sections within a predetermined form, the notable change of the musical character of the discourse of one particular section and the addition or omission of elements on a macro-level such as the inclusion of harmonies or rhythms that are not integral to the compositional system. Interferences like these can audibly throw a compositional system off-balance.

Finally, there is the intuitive application of major changes, usually occurring in the middle of the compositional process. In this case, the previously defined concept is severely questioned or even opposed which forces a composer to choose from a variety of different options. These include, for

instance, restarting the composition, partially or even completely changing the systems or, on the contrary, permitting the element of contradiction – system vs. intuition/rigor vs. flexibility – to become a dynamic part of the work.

No matter which option the composer eventually chooses to resolve the issue, there remain several general points of interest when it comes to a conflict between the scientific and creative aspects of composition. These conflicts can be beneficial, for instance, when the intuitive questioning of one's material supplies a double-ground for the composition. It would, however, be desirable if this element of intrinsic challenging of one's own material were part of the compositional concept and therefore, at least to a certain degree, based on the results of pre-conception and research. An accidental, unplanned and therefore truly intuitive event as described before could be absolutely hazardous to a work, especially if the conflict between the two forces turns into an ongoing unintentional dichotomy which might eventually result in the loss of control on part of the composer. Naturally, there will be very diverse views on this topic among composers – every aesthetical perspective has its own answers. The questions, however, persist when it comes to the relationship between research, with its tendency to lead to the predetermination of material, and the idea of spur-of-the-moment inspiration. Should the dichotomy become part of the piece to ensure that the characteristic spark of inspiration can be preserved? If yes, how flexible need a system be to allow for the integration of intuition?

If the composer decides to alter his systems, he will be facing the question of how the consequences of these alterations will be dealt with. Can they even be foreseen? What about the uneasy feeling that tends to remain when it comes to changing or abandoning a concept initially believed to be successful? Any change to a system caused by inspiration puts the validity of a system into question, but it is this uneasy feeling that can also suggest the questioning of one's intuition.

Ideally, this problem would best be solved if ample evidence for the validity of the systematic research could be found. It lies in the nature of things, that research through composition, like research in any other discipline, can fail. It is, however, not always easy to tell whether it actually does or not, let alone to find valid reasons to argue one or the other point. Successful research through composition proves itself through musical effectiveness and artistic truth. Both these parameters, however, as we are all aware of, are of a very subjective nature and so must be many research decisions a composer makes. The difficulty (or even impossibility) to provide indisputable fact and evidence is an important factor where research through composition differs significantly from other research types. This not only causes great problems to the actual research work but also to the way it will be presented for evaluation.

In the case of a composer who undertakes a practice-based research project, the results are usually presented through the compositions themselves accompanied by a commentary explaining the

intentions and methods behind each composition. Ideally, at least from an academic perspective, the results will be evaluated with the utmost clarity both in the written thesis and the compositions. While the written thesis should fulfill this requirement without difficulty, again, a conflict between the composer's creative and academic conscience can easily arise when it comes to the actual composition: on the one hand, clear evidence has to be presented to meet any given academic requirements while on the other hand, it lies in the composer's interest to achieve and explore artistic subtlety and sophistication. In other words, when practice-based research through composition deals with the invention of principles and systems determining the discourse of musical material in a piece then it should not be forgotten that in the process of turning concepts into (art-) music composers frequently wish to disguise the path that marks the genesis of a composition. Quite often, it is a composer's intention to render a piece's formula unrecognizable to immediate and obvious analysis – the sense of construction underlying a piece should be sensually experienced rather than analytically understood. These extra layers of artistic complexification that superimpose the actual bare-bone research results as well as those elements that are based on intuitive decisions can have a tendency to get in the way of a clear and concise evaluation of exactly those results. The researching composer is therefore, to use an English idiom, stuck between a rock and a hard place: should he not discuss the “artistic layers” of a piece at all and instead focus on the systematic facts behind a composition, or should he, on the contrary, integrate them in his evaluation while simultaneously endangering the conciseness of his presentation? I believe that both aspects have to be considered since both of them are not only indispensable components of a composition but also inseparably connected – it is therefore important not to lose track of the creative-intuitive element even if the evaluation focuses on the research aspects, as there will always be factors that cannot be explained through scientific means.

I hope I have been able to illustrate some facets of this indeed very particular form of research. To conclude, I would like to emphasize the importance of what I would call ‘rigorous practice-based research through composition’. There are many reasons for making this statement, but to me at this very moment, the most decisive factor is of an aesthetic nature. I am referring to the issue of how a contemporary composer can artistically respond to the epoch of post-modernism.

One purpose of post-modernist aesthetics was to re-address the importance and value of intuitive decision-making on part of the composer – a clear reaction to the often highly intellectualized and system-oriented composition methods of the post-war avant-garde. This post-modernist attitude seemed very appropriate from the perspective of the 1970s. I do believe, however, that the situation today is different: We now look back at several decades that were increasingly dominated by post-modernist trends leading to a large amount of music based on comparatively low amounts of systematic research. This issue has been thoroughly addressed in recent years; one outcome of this debate is the consideration of the concept of “Second Modernism”, an epoch term introduced by

Heinrich Klotz in the early 1990s. This concept resents the post-modernist assumption of the “end of history”, and renders new progress possible in multiple areas of society.

If one applies this concept to the art of composition, as composer and musicologist Claus-Steffen Mahnkopf and many others have done recently, it becomes clear how important the parameter of research can once again become: Rigorous research through composition is a research into possibilities, and most importantly, a research into possibilities beyond one’s own imagination; this is where its true potential and achievements lie.

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