Report on results and quality criteria

For the project “New creative possibilities through improvisational use of compositional techniques, - a new computer instrument for the performing musician”

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Introduction

The scholarship project deals with a number of fields of expertise. The most important fields are improvisation, composition and computer technology. In this context, the concept of computer technology represents programming, sound synthesis and algorithms for the processing of data. The field that deals with algorithms spreads itself inter-disciplinary to a number of disciplines, for example biology, physics, artificial intelligence, network theory and psychology. These fields of expertise are relevant because the algorithms are developed further in the various areas of exploitation. The scholarship work will be focused within the fields that are designated as important above. Which of these fields will be most prominent in the final work is difficult to determine at this point in the process. This is incorporated in the very nature of the work, as we are talking about development work within an artistic expression. If we knew what the result would be it would not have been artistic development work. This situation complicates the process of determining the result and the quality criteria for the assessment.

What is fair to say is that elements from the fields of composition and improvisation will be indicative for the work. These fields have a lot in common, but are also characterized by clear differences (Dobrian 1991). A basic difference is that composition work is based on the possibility of a non linear process, i.e. that you are able to work with the various parts of the final work in another order than the parts finally will have when the work has been completed. Improvisation, on the other hand, is closely linked to the moment, the instant any part of the work is actually performed. There is a real possibility that one is forced to break with the traditional criteria for one or both of these fields of expertise in order to obtain approximation in which strong sides from both disciplines are exploited within one artistic expression.

In order to make this synthesis of composition and improvisation feasible, Brandtsegg will explore techniques based on simulation of natural processes and artificial intelligence. Such techniques are currently exploited within a number of fields of expertise, for example computer technology, cybernetics, biology, gene technology, chemistry etc. At this point of time, it looks as if Markov chains, Lindenmayer systems, Cellular automata, chaotic systems and possibly autonomous agents are techniques that may be used in the scholarship work. A comprehensive review of techniques and their use within these areas of expertise fall outside the scope of this scholarship work. Nevertheless, it is natural to let techniques from distant fields of expertise form the inspiration for the design of the techniques for use within the artistic development work.

The above mentioned techniques have previously been used within the field of algorithmic composition. In this context, the term algorithmic composition is used in a broad sense which included pure algorithms, stochastic processes, serialism and other techniques of organising. For background information regarding the techniques and their role in composition, I refer to Eduardo Miranda (Miranda 2001), Robert Rowe (Rowe 2004) and David Cope (Cope 2001). It is important to note that there is no objective correct way in which to use the techniques, but that it is the artistic intention that determines the selection of techniques and ways of application. Strictly speaking, the scholarship work is not concerned with pure algorithmic composition; it would rather be correct to define the work as *"algorithmically assisted improvisation".* Even in this context, it is right to think that one is inspired by the field of expertise called algorithmic composition when it comes to techniques and ways of application.

Description of the artistic product

A main component of the artistic end product is improvisation, i.e. a personal expression which manifests itself in the moment. In practical terms, this is documented by means of recordings, and ultimately, a concert will be staged in which the element of improvisation may be assessed directly. The recorded documentation of the improvisation is estimated quantitatively to be at least 2 hours of recorded material.

Another important component of the artistic end product is the organisation of this type of improvisation. That is, the technique which makes the expression feasible in practical terms. This manifests itself through the computer based instrument that is being developed through the project work. In part, the instrument is to have the form of a practical applicable tool for performance, and partly, it must be regarded as a flexible potential, a resource for further development even after the scholarship period has come to en end.

A third component is constituted by productions that have been made during the course of the project, hereunder works that have been composed, as well as studio work. The works that may be listed at the present point of time is ”Hvor i rømmegrøten er melkeveien? ” (Violin/Cello/Piano/Electronics), and ”Flyndre” (sound installation). In these works, composition techniques that will be incorporated in the improvisation routines and in the computer based instrument will be used. Among the studio productions in which Brandtsegg contributes as improviser, it is natural to mention Live Maria Roggen’s solo CD, in production as per this date, with expected release in the autumn of 2005.

In addition, the scholarship work is intended to include the production of at least two articles that deal with professional issues related to the scholarship work. These articles will be sought published in relevant publications, as an example ” Computer Music Journal”, ”Journal of New Music Research”, ”Organized Sound”, or web based specialist forums, for example www.csounds.com and www.ruccas.org. The publications are intended to document aspects related to techniques and technical solutions that have been applied in the project work.

Quality criteria

Criteria for the quality assessment of improvisation depend on the musical genre and the aesthetical framework. As the scholarship work explores the cross-over between composition and improvisation, one may assume that the end result will be difficult to place unambiguously in an established genre. Anyone who is to assess the improvisation is obliged to study the aesthetical framework by means of active listening, because there are instances in which the exploration of new musical territory is not capable of being defined outside of the music proper. The aesthetical framework may, to a certain degree, be included by more general criteria such as the integrity and the internal logic in the music. In this context, these concepts mean that the musical result embody features that justify its own composition, i.e. establishes musical connections that are subsequently maintained.
It will be feasible to compare the musical result with the technical articles that will be written by the research fellow, as well as the project description and the reports. These criteria will assume a predominantly technical nature, as to whether the above composition techniques are employed in the improvisations. That is to which extent one may say that the composition techniques are implemented in the instrument and to which extent this affects the improvisation techniques during a performance.

Objective quality criteria for the computer programme that is developed are easier to specify than the criteria for the improvisation:

- That the programme has a sufficiently flexible construction in order to be developed further without having to be rebuild from the bottom. I.e. that it makes for a solid and modular foundation for further work.
- That the programme has worked as an instrument in various performance situations. The various situations will include performances during concerts, studio work, as well as sound installations that are effected by external input (for example light/temperature/time). The sensor input will, in the sound installation instance, replace input from a performing musician.
- That the programme is of such a nature that it may be used by other performers and composers who work with similar artistic issues that are explored in the scholarship work. Hereunder, written user and installation guides are included. The use of the computer programme assumes a certain level of computer competence, as it is not intended for commercial application, but rather appears as an instrument for use within research and artistic performing activity.

During the course of the scholarship period, Brandtsegg is to have presented certain diversity with reference to expressions relating to musical styles in which the techniques in question have been used in practice. This is to include a genre wise variation in which elements collected from pop/rock, jazz, contemporary music as well as music for installation is included. It goes without saying, that in this context, one is not preoccupied with pure genres, but moves in a musical domain that collects elements from several genres simultaneously.

By means of a written report and/or in the above mentioned scientific articles, the research fellow will explain the new insight that has been gained from the project work.

References:

Dobrian, C. (1991) ”Thoughts on Composition and Improvisation”, available on the Web: http://music.arts.uci.edu/dobrian/CD.comp.improv.htm

Cope, D. (2001) ”Virtual Music: : Computer Synthesis of Musical Style. ” The MIT Press

Miranda, E.R. (2001) “Composing Music with Computers.” Focal Press

Rowe. R (2004) “Machine Musicianship.” MIT Press