Performer vs Electronics: performing music for instrument and electronics

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ABSTRACT
This paper investigates the challenges which face a performer when he/she has to practise a composition for instrument and electronics at home alone and then perform it in a concert hall. Analysis of a survey of performers identified a mixture of high marks on practical aspects but at the same time an incapability of playing a work with electronics. In the second part of the paper, I propose a paradigm for performance material that could provide the necessary information for the performer. It could work as a reference for a composer and as a guide for the performer to know what to expect and how to be prepared.

Keywords: mixed music, electroacoustic music, live electronics, performance, composition

1. Introduction

More and more performers today are asked to perform compositions for instrument plus electronics. Are they ready to do so? What should a performer know in order to be able to accomplish such a project, and what help should the composer provide? How far can a performer go and how much can a composer ask? A great deal of knowledge is required, and the problem looks initially to be very far from what a performer usually knows [1].

2. The Survey

At the beginning of this research study, professional performers of new music who were under forty years of age were contacted by email and asked to complete a simple questionnaire. The questionnaire described a scenario in which a performer receives performance material in order to practise a piece for solo instrument and electronics at home alone, and then perform it in public. Questions were asked: 1) about their level in music technology and sound engineering (novice, intermediate or expert), 2) about the equipment they owned (laptop computer, external sound card, speakers, and microphone), 3) about their interest and desire to programme a work including electronics and finally, 4) whether they had any experience of playing such a work and, if so, what their most recent experience was. Analysis of the survey revealed a mixture of high scores on the practical questions and at the same time a lack of ability to play a work with electronics. Question four was intended for those respondents who answered 'yes'. In brief, starting with the responses to question three, the selected participants were positive about studying and programming a piece including electronics. Also, 100% of the respondents answered question two by saying that they owned three of the four listed items of equipment. The most disappointing result came from question one: 86% of the participants described their level in music technology and sound engineering as 'novice' and the rest described themselves as 'intermediate'. These findings result in two conclusions. On the one hand, their education had not offered them modules on music technology and sound engineering. On the other hand, the performance material which they received from composers had not helped them sufficiently to enable them to complete the preparation of the piece and go through the performance of the piece. These two major issues raised from the survey will be discussed in the following paragraphs.

3. Performance notes as a protocol

First, I shall take as a case study four works of my own for one instrument and electronics. These works are *Slide* for guitar and electronics, *Shatter Cone* for violin and electronics, *West Pole* for piano and electronics, and *Jet* for recorder and electronics [4]. I shall propose a paradigm for the performance material that will provide sufficient information to enable a performer to practice and play a piece alone. This could work as a reference for a composer and as a guide for the performer to know what to expect and how to prepare a work for performance. Finally, some ideas will be outlined to encourage current musicians and prepare future musicians to play properly and with no frustration works for instrument and electronics.

The four works listed above were written for one amplified instrument and electronics. The electronic part combines fixed electronics in the form of pre-recorded electroacoustic sounds and live electronics that come to life as a response to the performed part. The performance material includes:

1) the score,
2) the performance notes,
3) a stereo track of the fixed electronics,
4) a mono click track audio file,
5) a folder with the extra plugins, and
6) a folder with the preset settings of the plugins.

Finally, it is useful to provide a full version of the piece as a reference. The performance notes, apart from the instrument's performance and notational instructions, should provide information about: 1) the live electronics and the notation on the score, 2) hardware, signal diagram and stage layout, 3) amplification instructions, 4) fixed electronics and the notation. These four elements will be explained in more detail in the following paragraphs.

3.1 Live Electronics

The Live Electronics section should provide instructions on the main application needed and how to use its session for the piece, which are the hot keys, and what are their functions. Moreover, there should be displayed screenshots of the plugins to make sure that the settings of the vst effects are loaded properly in the first instance. This section should also explain the way that the live electronics is going to be notated on the score. It is of vital importance that the composer should provide a sort of notation for the live processing. The performer should, by reading the score, be able to anticipate the when, what and how of the way in which the live electronics contributes to the piece. Finally, to make sure that the real time processing produces the expected result, some sound samples should be provided with each of the effects applied separately. Thus, it would be easy to compare the example sound with the performer's sound and to figure out possible incompatibilities [2].

3.2 Hardware Set up

To study such a piece, the performer should be equipped with some hardware, primarily consisting of: 1) a laptop, 2) a sound card (at least three outputs, one input), 3) a microphone, and 4) a pair of speakers. A signal diagram is useful to show the way the signal is traveling through the devices and the software. The stage layout should clearly show the position of the speakers, the performer and the microphone, as well as the way to connect the devices. In addition, information should be provided about the Audio Preferences menu of the software used and how to make sure that it has the right setting.

3.3 Amplification

Once the software and the hardware are up and running, it is time to give some emphasis to the amplification of the instrument. The microphone should be placed close to the instrument. According to the composition's needs, it is recommended to have the microphone placed on an adjustable stand so as to be able to control which part of the instrument will be closest to the microphone. In addition, it should be made clear that the idea of the amplification many times is not just to make the sound louder but to create a supernatural sound which results in the loss of the neutrality of the classic known instrumental sound.

3.4 Fixed Electronics

The fixed electronics (or taped part of the composition) should be automatically loaded in the software session and should have a dedicated track which should be equal balanced with the live electronic sound. The notation of the fixed electronics is important because the musician should always be able to follow it and be in sync with it. It should be placed in a form of sonogram staff below the live electronics staff line. The sonogram works as a visual representation of the tape part to help the performer to follow it accurately. The sonogram can be enhanced by the composer or the performer with extra shapes, words and rhythmic motives. At the left top corner of every staff, the time of the pre-recorded material is displayed. In the fixed electronics sections, there is also the click track which is useful not only during the practice but also for the concert performance. It should be appropriately arranged according to the tempo and time signature changes of the piece.

It might be thought that not all of the elements described above are necessary, but some of them might be proven to be necessary in some cases. Therefore, the more complete the range of information provided, the more confident will be the performer and the composer alike. Note that because the information provided goes as deep as in the settings of a program, it is the composer's responsibility to update this information when new software versions come out or migration to software is necessary. Another issue which should be clarified in the performance material is the distinction between the rehearsal and concert situation. In the concert, the click track should be routed to the headphones only. In the rehearsal, the session should be flexible enough to start at any point [5].

4. Conclusion

All the above described information will considerably increase the possibilities of a performer playing a piece with electronics successfully and repeatedly. It remains in the hands of the educational institutions to include it in their courses or improve their curriculums with opportunities to enable students to acquire the necessary knowledge to be able to carry out such projects. Music conservatory performance students should be able to follow classes with the focus on the performance of electronic music, and should have close collaboration opportunities with fellow composers, and the inclusion of compositions for instrument and electronics should be encouraged by teachers and included in the examinations concert programmes [3].

REFERENCES

1. Jamie Bullock & Lamberto Coccioli, "Towards a humane graphical user interface for live electronic music" in Proceedings NIME (Carnegie Mellon, 2009).
2. Simon Emmerson, "Losing touch?: the human performer and electronics", in *Music, Electronic Media and Culture,* ed. Simon Emmerson (Ashgate, 2000), 194-216.
3. Mari Kimura, "Creative process and performance practice of interactive computer music: a performer's tale", *Organised Sound 8(3)* (2003): 289–296.
4. Panayiotis Kokoras's official Website, "Works", June 2011, http://www.panayiotiskokoras.com/ (accessed June 0, 2011).
5. Elizabeth McNutt, "Performing electroacoustic music: a wider view of interactivity", *Organised Sound 8(3)* (2003): 297–304.