

PLAYING PERFORMERS.

IDEAS ABOUT MEDIATED NETWORK MUSIC PERFORMANCE.

Georg Hajdu

Hochschule für Musik und Theater Hamburg

Harvestehuder Weg 12

20148 Hamburg

Germany

georg.hajdu@hfmt-hamburg.de

ABSTRACT

*This paper will lay out some new ideas about the role of a conductor in network music performance. Typically, contemporary live electronic music is encountered in form of laptop performances. Adding a conductor using software to interact with performers increases the complexity of the interaction by treating performers as intermediary agents between him/her and sound creation. In the networked multimedia performance environment *Quintet.net*, this is accomplished by on-the-fly generation of symbolic notation, which will be sight-read by the performers. Hence the metaphor of "playing the performers" (rather than an instrument). This concept is being demonstrated in my piece "Ivresse '84," for which a score by John Cage is re-composed in real time via the interaction of the conductor with a multi-touch surface (with the generated parts being immediately sent to the performers). This strategy relies on novel software modules for *Cycling '74's MaxMSP* created by Nick Didkovsky and Adam Siska on occasion of the "Music in the Global Village" conference.*

1. INTRODUCTION

In this paper, I will discuss the role of a conductor in the networked multimedia performance environment *Quintet.net*, go over the development of a notation format suited for real-time Internet streaming and give a recent example that covers aspects of real-time composition and notation.

2. HISTORY

Traditionally, the role of the conductor consists mainly in synchronizing musicians and sculpting a performance via gestural control. This role can either be taken by a dedicated person or by one of the performers. In more recent music practices such as improvised music (with acoustic instruments), a conductor in large ensembles will occasionally assume the task of sculpting the performance by displaying visual cues such as cardboard signs. The American jazz cornetist, composer and conductor Lawrence D. "Butch" Morris coined the term *conduction* for a type of structured free improvisation where Morris directs and conducts an improvising ensemble with a series of hand and baton gestures (http://en.wikipedia.org/wiki/Butch_Morris).

In electronic music the function of a conductor can go even further since he/she can use analog and/or digital media to interact with the machine, at any distance, via

gestural controllers such as Max Mathew's Radio Baton (Boulanger & Mathews 1997).

3. QUINTET.NET

The networked multimedia performance environment *Quintet.net* was conceived with a conductor in mind (Hajdu 2003), allowing top-down hierarchical musical processes much the same as bottom-up ones (in which the performers control the outcome of the performance as equal partners). A performance with *Quintet.net* is usually a mixture of improvised and composed elements and can take place either on the Net or in local networks. In the latter case, any number of electronic musicians can be replaced by performers on acoustic instruments. In addition to the five performers, a conductor and a video artist can participate in the performance (Hajdu 2004, 2005, 2006).

The architecture of the four components and add-ons (server, client, listener, conductor and viewer) is based on an open plugin structure and allows for complex mapping of all its parameters.

In most compositions written for *Quintet.net* the role of the conductor is to communicate with the performers via chat, load the ensemble of files necessary for each piece, and send parts and messages manually or via a timeline. In the most recent version of the Conductor component, an additional user-created Max patch can be loaded dynamically, thus increasing the complexity of the interaction between the conductor and the *Quintet.net* environment (since any number of controllers and interfaces supported by *MaxMSP* can now be used).

4. REAL-TIME NOTATION

One of *Quintet.net's* features includes the display of music in standard music notation (SMN). For this, I started developing a notation format in 2001 and an editor in 2003. Realizing the complexities of music notation, I recently turned my attention to existing solutions such as *JMSL's JScore* package (Didkovsky & Burk 2004). Recognizing that the Java API of the Java Music Specification Language would lend itself to an integration into *Cycling '74's MaxMSP* programming environment via the *mxj* object, I instigated the development of *MaxScore* by Nick Didkovsky.

Since it is not possible to directly use *MaxScore* in *Quintet.net* for various reasons (e.g. SMN in *Quintet.net* is based on a music font and uses a low-level representation of score elements), a bridge translating *JScore's* XML-based format to *Quintet.net's* own format was necessary. This bridge was realized by Adam Siska

in form of the Java-based JScoreTranslator, which takes a JScore file or its real-time output, creates an independent representation of the music and adds further descriptors to the data, which can be further processed in MaxMSP and eventually drawn to screen using QuickDraw commands (Siska 2007).

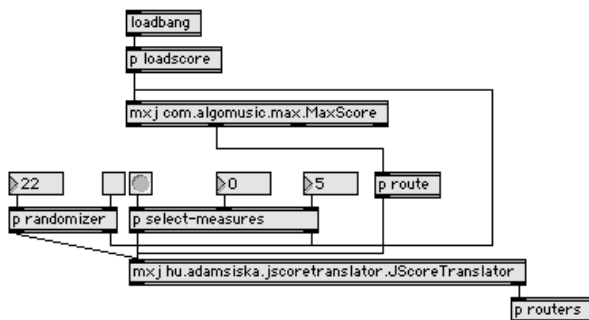


Figure 1: Screen dump of a Max patch with the MaxScore and JScoreTranslator objects. The output is shown in figure 3.

An important question was where in this chain should the transmission over the network take place. Since an Ethernet/WLAN network and, most particularly, the Internet represent a bottleneck in terms of bandwidth, I opted against transmitting the notation in JScore’s XML format. Being the most compact, I decided to modify and expand the existing format I had already developed for Quintet.net. The following table gives an example for 5 measures taken from a transcription of John Cage’s first Freeman etude into SMN in terms of size in bytes.

Format	Size in bytes
JScore	17913
JScoreTranslator XML	36076
JScoreTranslator Max messages	44191
Quintet.net Notation Format	4604
QuickDraw	19311

Table 1. Comparison of packet sizes generated by music notation formats considered for the streaming of Quintet.net parts over the Net.

5. IVRESSE ‘84

Typically, for me a composition is a result of intersecting lines—biographically, aesthetically, technically, historically etc. The creation of Ivresse ’84, which was commissioned by violinist János Négyesy was fueled by my continuous interest in (and sometimes bewilderment by) 20th Century modernism and the notion of Western avant-garde which, despite its claims, has become a historical practice just as any other music practice. I am interested in the moment when modernism and its iconoclastic attitude had lost its impact—a moment representing a paradigmatic change in history and society. I suspect that this could be pinned to John Cage, probably the most influential icon of the

20th Century avant-garde. Fortunately, János had worked very closely with Cage, premiering his four books of the impossibly difficult Freeman etudes and, hence, provided some insights into that very moment in an hour-long interview I conducted with him at his and his wife Päivikki Nykter’s place in Lappeenranta, Finland in April 2007. In this interview, he describes a scandal (the provoked result of iconoclasm and expected byproduct of avant-garde art works) during the premiere of the first two books of the Freeman etudes in 1984 in the Italian city of Ivrea. This was probably among the last scandals Cage’s music could elicit and marks the beginning of his last period, the Number Pieces (on which Cage was said to comment to Morton Feldman: “Morty, I’m writing beautiful music again”).

NOT KNOWING THAT SOON
AFTER I WAS SURE THAT I
HAVE TO CONTINUE, A
SHOE LANDED CLOSE BY,
AND, OF COURSE, IT WAS
TERRIBLY NOISY,

Figure 2: Text from the Interview with János Négyesy to be projected on a screen during the performance of Ivresse ’84. The text uses the Cage font by P22 Type Foundry.

I decided to base my piece on the first Freeman etude and the first 4 minutes of the interview, attempting to create a crossover between a documentary and a real-time interactive composition for violin and four electronic musicians. The music consists of a version of the first Freeman etude, transcribed into SMN, in which the material is rearranged to follow the narrative of the interview. For each of the 20 sections, a stochastic process chooses among a range of measures and recombines them into a new structure, which is sight-read by the performer. (This approach, of course, assumes familiarity with the material.) The soloist will be accompanied by the electronic musicians reacting to his actions as well as reading instructions off their computer screens, while playing audio samples taken from Négyesy’s own CD recording.

The conductor will use JazzMutant’s LEMUR control surface to select the sections, thus sending the parts, the instructions as well as the respective settings to all components of the environment (also triggering playback of the interview and its transcription into text; see figure 2). Although this could have also been accomplished with a timeline, the obvious advantage is that the conductor can now sculpt the musical form in

real-time, extending beautiful moments or condensing sections, if they appear too long.



Figure 3: The first 5 measures of John Cage's first Freeman etude. Cage's score in space notation was mapped by the author; subsequently the data were entered into a text file and translated into standard music notation via JScore's transcriber.

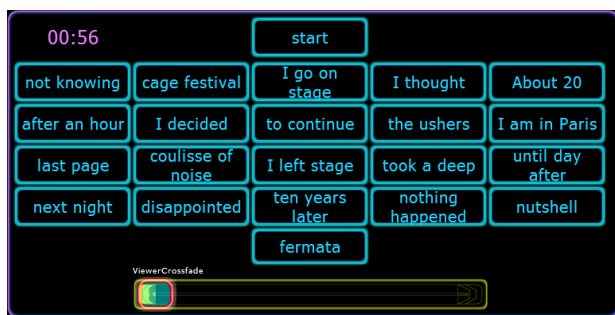


Figure 4: Screen shot of the LEMUR interface used by the conductor to control the performance of Ivresse '84.

Generating music on the fly brings up the question as to how performers actually synchronize to the parts being sent to their computer screens. Several strategies will be taken into consideration:

1. The performers have their own timing; the conductor follows their performance and sends a new set of measures upon each page turn.
2. Like 1. but with the performers using pedals to prompt page turns. The conductor controls the overall form.
3. The performer synchronizes to a metronome, while the system turns the page at a fixed interval. Like in 2. the conductor maintains control of the overall form.

6. CONCLUSION

Ivresse '84 is the start of a series of compositions in which I'd like to explore the role of the conductor in networked performances. Such performances can range from electronic to mixed-media and finally to purely acoustic settings. Displaying scores composed in real-time will eventually open the door to classical musicians that are trained to (sight-)read sheet music. Much will be learned from this interaction.

7. REFERENCES

Cage, J. 1981. The Freeman Etudes. Book 1 & 2. Edition Peters.

Cage, J. 1992. The Freeman Etudes. Book 3 & 4. Edition Peters.

Boulanger R. and Mathews M. 1997. "The 1997 Mathews Radio-Baton and improvisation modes", In Proceedings from the 1997 International Computer Music Conference, 395-398.

Didkovsky, N. and Burk, L.B. 2004. Java Music Specification Language, an introduction and overview. Proceedings from the 2004 International Computer Music Conference.

Hajdu, G. 2003. Quintet.net—Präliminarien zu einer vernetzten, interaktiven Echtzeitkompositionsumgebung," in: Bernd Enders and Joachim Stange-Elbe, eds., Global Village—Global Brain—Global Music. Universitätsverlag Rasch, Osnabrück.

Hajdu, G. 2006. Automatic Composition And Notation In Network Music Environments. Proceedings SMC'06 Conference, Marseille.

Hajdu, G. 2005. Quintet.net: An environment for composing and performing music on the Internet. Leonardo Journal 38(1).

Hajdu, G. 2004. Composition and Improvisation on the Net. Proceedings SMC'04 Conference, Paris.

Siska, A. 2007. Pipelining between JMSL and Quintet.net. Proceedings Music in the Global Village Conference, Budapest.

8. ACKNOWLEDGEMENT

My gratitude goes to Bipolar - German-Hungarian Cultural Projects for their generous support of the Music in the Global Village conference as well as the commission of Ivresse '84. Bipolar is an initiative of the Federal Cultural Foundation of Germany.