

TEXT FOR PAPER PRESENTATION AT THE 19TH JAHRESKONGRESS DER GESELLSCHAFT FÜR MUSIKTHEORIE 2019 IN ZÜRICH, OCTOBER 2019

Thank you for this invitation and opportunity to present at the Jahreskongress, and to share with you some of the work that is being created in Quebec using tools developed in Australia. Thank you also to the TENOR Network and its funding from the Social Sciences and Humanities Research Council's Partnership Development Grant. As the title and abstract of my presentation suggest, today I will be discussing a particular software tool, the Decibel Score Player, and its use in the context of a project involving 4 new works created in April 2019 for improvising ensemble.

[SLIDE] The Decibel Score Player is developed by the members of the Decibel New Music Ensemble, originally based in Perth, Western Australia, though now two of its key members are in Melbourne. Decibel have commissioned over eighty Australian works since their inception. A large proportion of these works are from composers within the group, but many are from significant Australian composers, electronic artists and songwriters. There is also an international aspect in their repertoire, with the group having presented monograph concerts of works by US composers Alvin Lucier and John Cage, as well as works by the late Italian composer Giacinto Scelsi and French musique concrete artist Lionel Marchetti. All Decibel commissions feature acoustic and electronic elements and sources, and the group perform these works without a standard amplification set up or live engineer, mixing, as it were, onstage.

It is the performer-composers of Decibel that develop and maintain the Decibel ScorePlayer, which is described in the App store as: an iPad application that enables network-synchronized scrolling of proportional colour music scores on multiple tablet computers. It is designed to facilitate the reading of scores featuring predominantly graphic notation in rehearsal and performance. The ScorePlayer App provides a new, more accurate and reliable way to coordinate performances of music where harmony and pulse are not the primary elements described by notation. The app is also designed for synchronized networking, communication with external computers via OSC, audiofile playback, cross-fading of layers, random playback of score layers and the nesting of scoreplayer types (Hope et al 2015). The synchronization possible through the combination of audio and visual representations with various live electronics creates a controllable work environment, that might previously only have been possible in the studio with the tools of fixed media. Lindsay Vickery calls this a "computer-controlled performance environment."

My own feeling when using the tool is that at least the commercially available version, which does not offer all of the possibilities for mobile and interactive features yet, is decidedly a tool aimed at performers rather than at composers or analysts. There are other software tools that have allowed combinations of analysis and sound visualization tools such as spectrograms, waveforms, various audio descriptors--two of the best ones still maintained are developed by Pierre Couprie who we just heard from, i and eanalysis--with the possibility to draw and create graphics with the primary purpose of analysis or annotation.

On the surface, the Decibel ScorePlayer has far fewer features--in fact it has hardly any, because it is not a tool for analysis or for composition, it is a tool for performers to read scores, to have real-time updates on where they might be in a score, whether it has a linear progress or exists in a layered or interconnected way. In that sense, it is not unlike various other score players for staff notation in eurological traditions that have a feature that "turns" pages at a set time so that the player does not even have to press a pedal. What is particular is that here performers are able to synchronize exactly with each other and without a conductor, through the networking possibilities of their tablets, and they can also be synchronized with any fixed audio or visual media, without having to rely on a timer or clicktrack. It may not seem that different to follow chronometric time than to follow a playhead moving across an image (the playhead being the name given to the coloured line that indicates the present moment in the score), but the sensation is completely different, since the performer is not required to rationalize the sensation of time in second (or sometimes even millisecond) increments. I would say that chronometers quantize the sensation of time whereas the playhead acts as a conductor might. Vickery writes: The digital format offers a range of possibilities to develop graphic notation practice - through the incorporation of aspects such as colour, real time generation, video and interactivity.

It is a 'reading mechanism' for performance, rather than a score generation tool. In fact, the score generation part of the Decibel ScorePlayer is an open source software called the Decibel Score Creator, which is very simple -- again making it accessible to just about any performer -- and allows for basic information (composer/title) to be added to the chosen graphic. The important choice is a duration for the scrolling to occur--this too is very practical for the performer(s) who may want to practice or try out a graphic at different speeds. Of course, this does not work if there is a soundfile to synchronize. There is also the possibility to make a full score and parts, which is a feature that can be used in various inventive ways, [SLIDE] such as the score based on lichen by Ciaran Frame entitled Thallus. Let's take a moment to look at the nice documentation that was made of a performance of this piece by Ensemble Supermusique at the TENOR conference in 2018. [PLAY] Here is a short excerpt with the full score projected. [SLIDE] while we look at the flute part here. As you can see, small parts of the image can be used for each instrument to complete the "whole" of the work. There are a number of papers written by Cat Hope and Lindsay Vickery on the Decibel Score Player that go into more details about all these current and future functions and the thinking behind them, which I encourage you to consult.

[SLIDE] So the variable instrumentation Ensemble Supermusique has extensive experience playing graphic, extended, scripted, and audio scores. In April 2019, the project Spationautes brought together 5 composers (two were working as a duo) with a group of 10 performers (3 of the composers were also performing). The commission involved creating electroacoustic works using the Decibel Score Player, since Supermusique had recently acquired a large number of iPads for its performances and outreach activities. The project offered several sessions in studio a few months before the performance rehearsals to collect materials for the piece from all of the performers, individually and, if the composers wanted, in groups. Each composer responded to the affordances of the Score Player and the opportunity to collect sounds from specific performers differently.

[SLIDE] Although there was no official framework or protocol in place to collect research data, as both a composer and performer, I was immediately experiencing the project as a way to explore

- how performer-composers use the Score Player to vehicle their ideas
- how the tool influences their choices and process
- how performers experience the interface
- how the tool affects the sensation of agency

Naturally these considerations spring from my own now longish-standing interest in creating videoscores (using various digital tools) and extensive experience performing various kinds of screen scores, scrolling scores and variously interactive scores.

Busy as I was with the composition and rehearsals, and with limited human and financial resources, I was not able to set up an elaborate research protocol. What I was able to do is to collect some short answers to a survey for both the performers and the composers that addressed the questions here.

As well as asking whether it was their first time using the ScorePlayer, I asked the following of the composers:

How is this score different?	Did the Score Player change your approach?	Did the score work as you had expected?	What was the relationship between the and the electronics
------------------------------	--	---	---

And of the performers:

What did you to focus on the most?	How did you perceive the overall sound?	What are the challenges presented by Decibel Score Player?
------------------------------------	---	--

[SLIDE] Maxime Corbeil-Perron presented the ensemble with Phosphènes, a work for ensemble, electronics and 3D video. Corbeil-Perron is primarily an acousmatic and videomusic composer, working in the development of 3D video. Maxime does not work regularly with instrumental performers, and his practice does not include western European notation. His score reminds me of a DAW visualisation, with automation curves for volume. The content to be played is then given in words.

Maxime had used the recordings sessions to choose the sounds he wanted us to make in performance, and had essentially created a score that replicated how he placed these in his editing software sequencer. His answers to the survey reflected that. He reported that the tool did not change his way of composing and that it worked as he had anticipated. He found it to be "really easy to write something very precise and in sync with the electroacoustic tape," though the "musicians can't really study it beforehand so the instructions needed to be extremely clear."

Performers reported a wide range of answers [SLIDE] about what the score led them to focus on. Several reported on the intensity of the work--indeed the electronics of Maxime's piece were very

loud, and required a high level of amplification from all instruments. It was not possible for the performers to have a mix onstage that corresponded to what was being heard in the hall [SLIDE] (or even in the ensemble) so the score was the only cue as to what to do. This was reflected in the comments about how they perceived the mix of elements and sound in the space.

Maxime's piece was performed with the performers onstage under the screen facing the audience. The second piece performed in this manner was [SLIDE] Cléo Palacio-Quintin's *Spationautes*. Although Cléo reported that she had never used the ScorePlayer as a composer, she had used it many times as a performer, had organized the tech for performances and workshops using ScorePlayer. As the director of the overall project, it had been her idea to use the tool for the show and make it part of everyone's commission. Her work is a perfect example of the tool inspiring its creative use: Cléo created drawings for each of the parts, which integrated with each other by using numbered doors. Here I will play [PLAY] the full score (this is a very fast motion through, the actual speed was much slower), but the parts had just one of these colours at a time. For example, someone (or in our case we were working in groups) starting on the part called Éther, could switch, by swiping up, to the part called Paysage at the "portal" number one, then continue down to Jungle at portal 3. This way, the player's screen only has the one world displayed at a time, and as the playhead moves forward, they can move from one world to another at appropriate times. Each world was then described in another text, though there were no instructions about how to interpret these images specifically. Cléo reported that she made the work from the beginning with the ScorePlayer in mind, not only in terms of its functionality--especially the way it could switch between parts by swiping--but also in the nature of the images, which were drawn to work with the interface in their size--especially their length. The integration with the variable electronics, which were originally meant to be linked with the score as well, were done manually since the connections between the choices the performers made and the patch controlling the diffusion did not work as anticipated with the 8-channel setup.

[SLIDE] Performer feedback, however, though not unanimously enthusiastic about the playful use of the interface, showed that the main focus of attention was on the interplay within the small 3-4 person teams. I had anticipated that the performers would remark on the nature of the drawings and how they chose to "perform" them, but this didn't actually seem to strike anyone as particular.

[SLIDE] In terms of what they were able to perceive, there were more references to the drawings, with some remarking that they did not offer enough interpretive information. At the same time, there was so much to pay attention to, that the overall feeling of the piece seemed not to be possible to sense for some. This may, as one player remarked, be true of many large improv situations.

During the performance, the audience followed the score on the screen above the performers. For the second half of the concert, the audience sat in a formation around the main mixing console which was in the centre of the room, and there was no projection.

The score for my work, Manhattan Bridge, tries to use the image file to show something about the layering of the fixed electroacoustic part. What appears here as a superposition of sonograms attempts to show the various layers of sounds, which are not perceived in a flat stereo, but are spatialized in 8-channels and move dramatically in the space. While the score worked well as a way to give performers cues about the material--either "passages" or "suspensions", with occasional sounding of horns, to fit with the theme of the landmark in New York that has 4 subway lines crossing it, and while it uses sonograms which are a kind of sound visualisation, I don't find that the score represents much of the experience of the work. It was effective and fast to implement, and allowed me to communicate important information about the movement and proximity to the centre of the performers within this circular setup.

The only sound example I have from the concert is of this piece, since we have just received the mix recorded at the console and I was able to quickly make a mix with the electronics. Sound documentation of the other works will soon be available on the Supermusique website. Let's just see how the recording lines up with the score for a moment.

[SLIDE]The performers reported that the score helped them focus on space, their relationship to the group and the overall density. None of the performers were much interested in the layering of the sonograms, so I'm not entirely sure if this communicates much to the performer who doesn't spend much time looking at such visualizations. [SLIDE]

Similar responses came in with regards to perception. The space and spatialization were the most salient features.

[SLIDE] Ana Dall'ara Majek and Ida Toninato, the Jane/KIN duo, wrote the work that used the most symbolic notation, which did not surprise me, considering that Ana Dall'ara is a long-time user of the GRM Acousmographe --and possibly now eAnalysis--software that allows for a repertoire of symbols to be used for specific sounds. [play] We were once again around the centre, this time in three groups or constellations. On the score, colours indicated instrument type, of which there was one per group, and purple was the colour of the turntablist, Martin Tétrault, whose world we were exploring, la Tétronie. These boxes of material were explained to us by the composers and by the legend in the beginning and there were many more specific markings here in terms of dynamics. Considering the amplification, and return on the monitors, it was difficult to perform these dynamics by listening. When cues become black, we exchange our instrumental groups for playing by constellations.

Ana reported that her scores were usually hand-written (despite the fact that she has made elaborate acousmatic analysis scores), and that ScorePlayer was an occasion to create a digital score. She also suggested that the tool brought her to a more sequencer-like style of composition where it was easier to have an overview over time. She became much more aware of the visual space of time, as opposed to writing instrumental music where these proportions are less strict. The downside was that none of the performers could take notes on the score, and she realized that their duo process relied heavily on oral transmission and that the performers had to rely on their memories rather than be able to take notes. The score, however, did not have an electronics part for launching the electronics, which, thought acting as both composer and electronics performer, she did not think to integrate before rehearsals.

[SLIDE] Performers reported focusing most attention to trying to hear their instrumental group, to the dynamics and techniques demanded, and to their organization in response other parts.

[SLIDE] On the perceptive side, performers still focused more on the small groups than the sound in the room--perhaps because our monitors did not give us a very good idea of that (we only heard our own and the turntable's sound in the monitors facing us).

[SLIDE] So I conclude with feedback about the ScorePlayer in general. Feelings were quite mixed and polarized, from not useful at all and a waste of resources, to stimulating and a good representation of how the music felt.

My own experience was that the different scores and ways of using the Score Player -- and I agree with many comments, especially about annotation, and disagree with others, because I don't think stopwatches and looking at chronometric time is the same as a playhead -- is that it doesn't make much clearer the definition of what a score might be in instrumental electroacoustic music. Instrumentalists are presented with mostly prescriptive scores that give little feedback about sounding results or electronic elements. The interface allows performers to synchronize without having to listen. I'm not entirely sure I'm OK with that, even if it's a common thing in much Western European music since conductors became the masterminds and master listeners for music. However, in forms that rely heavily on improvisation, improvisation, or teamwork, how do we create the right kinds of tools? I finish my wishlist for future versions of this tool on this open question of how to best combine instruction with real-time feedback.