

Auricle v1.1

for berimbau and live processing

by Jeremy Muller

Instructions to accompany software.
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Concept:

The goal of this piece is to get to the center of the maze. But this is no ordinary maze. Each step along the way presents you with unexpected challenges. Each turn will be a hallway that interacts with you, strangely altering your sound the closer you get to the center. Sometimes you will make a wrong turn and you won't be able to see the difference, but you will hear the difference. Fortunately, when you hit a dead end, time will rewind itself and let you correct your mistake. The piece is over when you finally reach the center. Stay strong, focused, and you will complete your quest. Godspeed.

Hardware & Software:

The hardware for this piece is quite common for many electro-acoustic works. You'll need a computer, audio interface, one microphone, and at least two speakers. The software needed is Processing (<https://processing.org>) and Pure Data extended (<http://puredata.info>) – both are available free open source and should work for any system. When you download Processing, you'll need to install two libraries to ensure everything will work correctly. The libraries are *ControlP5* and *oscP5*. When you run the Pd patch and the Processing sketch, you'll need to open the Pd patch and set the audio preferences according to your hardware. Then open the Processing sketch and click the “Run” button (it looks like a play button). As long as you aren’t getting any errors in the Processing console window, everything should work. If you have any questions about technical support, please contact me: <http://jeremymuller.com/contact> or jeremy[at]jeremymuller[dot]com.

Score & Notation:

A new excerpt of the score is shown at the beginning of each cycle of 20 seconds. Since each excerpt is chosen at random in real-time, the order will most likely be different for each performance. An element of “sight reading” will be applied here, but only to a small degree. Once you understand the symbology it will become more of an effort of interpretation. Figure 1 explains the symbols that are used as the notation. The gourd movement is moving the instrument towards and away from your body. This gives the sound a “wah-wah” effect. Note size is proportional to volume and spacing is proportional to rhythm.

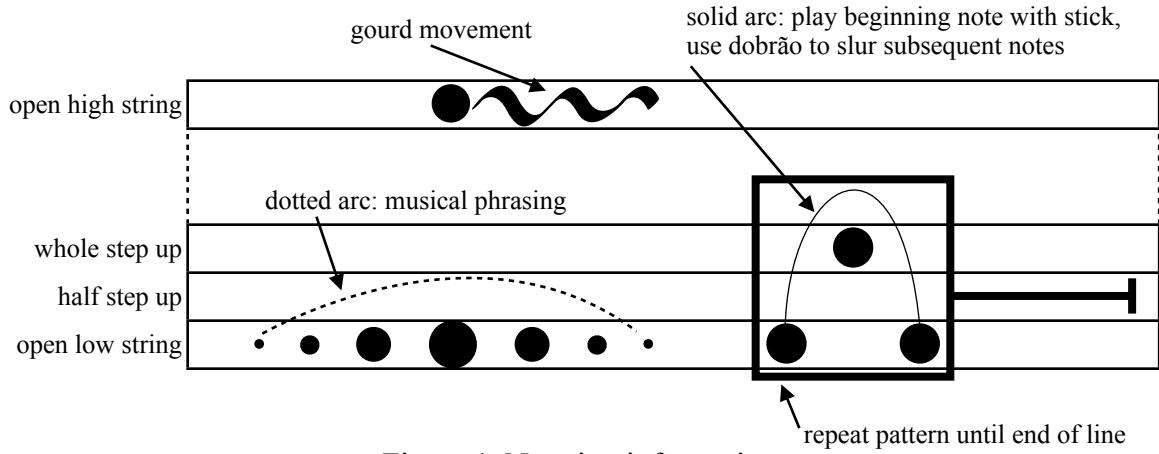


Figure 1. Notation information.

Additionally, you will need to play the gourd & staff to choose a direction during the piece. The microphone picks up your sound and the computer analyzes what you played to determine the direction you chose. This is the only time you use the gourd & staff in the piece. See figure 1.1 for the specific notation.

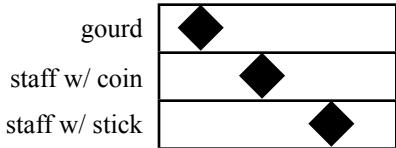


Figure 1.1. Notation information.

Instrument:

This piece is written specifically for the afro-Brazilian instrument known as the *berimbau*. Typically, this instrument is performed while holding it vertical with the gourd close to the torso and balancing on the little finger. It can easily produce three pitches with the large string while using a stone or coin: open string fundamental, a half step above, and a whole step above the fundamental. *Auricle* makes use of glissandi between these pitches, as well another pitch from the high string. I suggest trying different ratios between the high and low strings by positioning the gourd on different areas of the staff. One of my favorite ratios to use on this piece is 7:4.

Controls:

Set up your display so you can see the audio interface (figure 2) and the graphic interface (figure 3) at the same time on your screen. During the piece you will need to pay close attention to the timer shown in figure 3. This will let you know how much time is left in the current timeline. Additionally, the top of the window contains an orange progress bar that decreases as time runs out. This may be the preferred visual cue for some performers. In order to practice getting used to the symbology, you can use the rehearse button to cycle through the excerpts and the timer will not advance. To perform the

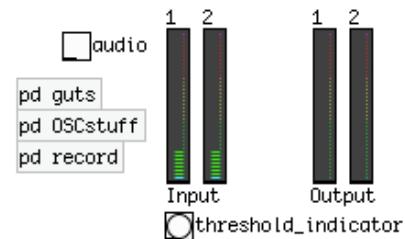


Figure 2. PD Audio interface.

piece, be sure to turn the audio button on (otherwise nothing you won't hear anything). The thumb is to let you know if you have chosen the correct path during the piece – thumbs up if you're on the correct path, thumbs down if you're on the wrong path. Everything else should be self-explanatory.

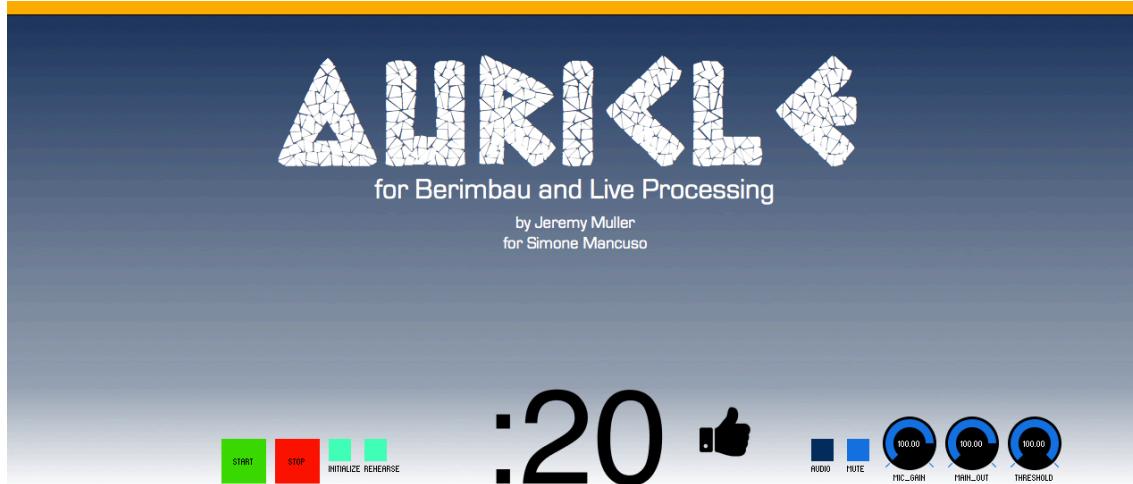
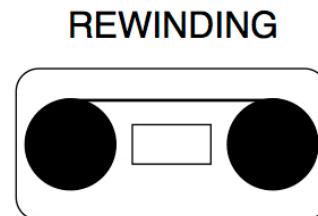


Figure 3. Graphical interface.

Performance:

You can click the start button or hit the spacebar to begin. The piece begins with a 3 second count down in which you wait until an excerpt is chosen before you start playing. You will then get a 20 second count down that corresponds to the length of the timeline in the excerpt. A new score will be drawn several times before coming to a crossroads in the maze. At these crossroads you will need to choose a direction. Here you will see the symbols shown from figure 1.1 and the notes are proportional to their speed. In order for the computer to understand what direction you are selecting, left registers as anything faster than 120 beats per minute and right registers as anything slower than 120 beats per minute. Notice that this is always performed on the gourd or staff, which is the only time in the piece the gourd/staff is used. During these sections the computer will take 3 seconds to listen for your decision and then continue on the 20 second timeline. If you pick the correct direction then you continue successfully through the maze getting closer to the center. However, if you choose the wrong direction you will go down the wrong path with the computer increasingly altering your sound and adding more effects as if it's "malfunctioning." When you hit the dead end after the 20 second cycle, you will hear an audio cue of your sound slowing down. The symbol in figure 4 will appear while the computer is rewinding time. You do not play once you hear the audio cue nor for the duration of the rewinding section. The timer will count back up to 20 seconds at which point you will have a



...because you chose the wrong path

Figure 4. Rewind.

chance to correct your mistake by choosing a new direction again (you will need to remember what you did last time in order to fix it). Finally, when the piece is over the computer will finish up by playing a coda of your last few sounds – this time fast forwarding instead of rewinding. When you hear this you have successfully reached the center of the maze and completed your quest.

Setup:

When you set up your instrument and computer/interface, make sure the computer screen is close enough to read from it. You need at least 1-channel input and 2-channel (or 4-channel) outputs for the interface. The nature of the instrument makes it quite soft compared to most percussion instruments. For this reason, you will need a microphone that is sensitive enough to pick up the instrument but not too sensitive to the point of always feeding back. I would suggest using a condenser microphone over a dynamic microphones for this instrument.

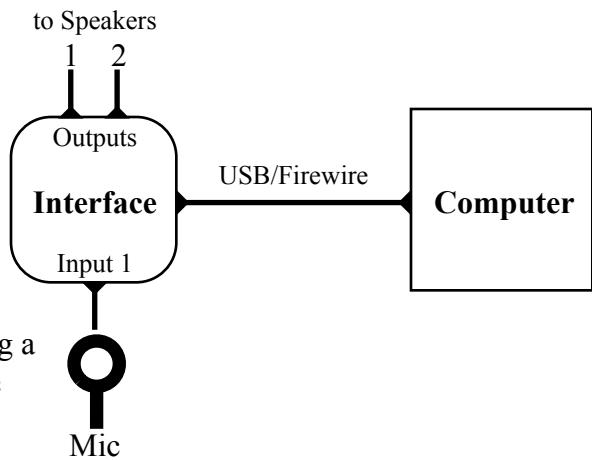


Figure 5. Technical setup.