

- Description of the project program notes

Caracoles IV is an installation that uses interactive feedback systems to sonically explore modified conch shells known as a pututus, which are andean musical instruments fashioned out of conch shells. These instruments existed far before colonial occupation in the 15th century and work as a kind of cornet or trumpet, by adding an embouchure to the shell. However, this musical instrument is not created by a human alone, but is also the creation of a large snail which once inhabited it; it is the mollusc's exoskeleton and home and it is shaped by its existence. When the snail dies, the spiral-shaped shell is emptied of its organic body and eventually appropriated by the instrument maker to fashion an instrument out of it. In this installation, a third appropriation takes place: I place a microphone in the embouchure and a speaker at the end of the spiral canal and connect them through a feedback system controlled by a Pure Data (Pd) patch running on a raspberry pi zero, all hidden inside the shell. The system detects resonant feedback frequencies and temporarily cancels them with filters to push the system to find another resonant frequency, and so on, generating in this way a sequence of resonant frequencies of the shell. This installation is also a play on the belief that conch shells are a way to listen to the sea. In fact, the shell acts as a filter and resonant cavity to our own bodies and spaces, thus, its resonant frequencies are activated by the presence of people in the installation space. In this way, each shell is a collaboration between humans, conch-shells and interactive systems, but also an interaction between all of the shells because each of them have their own acoustic properties, but their resonances are audible to each other, thus generating unpredictable sonic landscapes.

		
<p>A pututu.</p>	<p>A pre-Columbian ceramic representation of a pututu.</p>	<p>Picture by Martin Chambi of a person playing the instrument</p>

		
<p>Electret mic at the embouchure</p>	<p>Speaker at the conch shell opening</p>	<p>The shell hanging at the installation.</p>



A simulated view of the installation

- Link to video or audio demonstration of the project

You can find an audio excerpt of one of the shells and a few images here:

<https://drive.google.com/drive/folders/1exrDwm19rqanuBmeV2Qjad5jNOaQPxX1?usp=sharing>

This is an excerpt of a recording of one of the shells and you need to imagine four different shells going at the same time.

- Technical rider of the work

The room for this installation should be empty and preferably black. There should be some control over the lighting and a way of hanging the four shells from the ceiling. Each of the shells has its own raspberry pi inside and the only cable coming out is a power cable. The only technical requirement is that there is an electric outlet (110-240V) to plug the power supply for the whole installation .