

Kraakavera: A Tribute to Michel Waisvisz

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ABSTRACT

The Kraakavera (a portmanteau of Kraakdoos—aka the Crackle box, and “calavera”—i.e., skull in Spanish) is an instrument that honours Michel Waisvisz’s memory by tributing one of his classic instruments—an exemplary of circuit bending that originated from STEIM in the 1960s. Inspired by the original design which used six metal contacts as inputs, I have used conductive paint to paint six pads on a ceramic skull which interact with the Kraakdoos circuit (using a uA709 IC). The skull depicts a sugar skull which is a traditional Mexican sweet that is often seen in altars to honour diseased relatives and loved ones during the Day of the Dead, but that is also consumed as a treat by children during these festivities. In this case, I have constructed an altar for Waisvisz, which doubles as an instrument, where the sugar skull—the centrepiece of the altar (below a picture of Waisvisz) serves both as traditional decoration but also the main point of contact with the instrument. Hence, the altar invites the musician to pay their respects by playing the instrument through the sugar skull. The Kraakavera also features a second mode which can be accessed by patching the skull’s inputs to another circuit which features a Trill Craft capacitive sensing board and a Bela board, which processes a secondary sound output consisting of a sample of a ceramic whistle running through a granular synthesizer patched in Pure Data (corresponding to the six pads on the skull). Lastly, the Kraakavera presents a syncretism of Mexican folklore and circuit bending traditions and a juxtaposition of classic and upcoming DMIs.

Author Keywords

Kraakdoos, Crackle Box, LATAM NIME

CCS Concepts

• Applied computing → Sound and music computing

1. CONCEPT

The concept behind the Kraakavera emerged from the idea of harnessing existing elements of Latin American and pre-Columbian material cultures as a resource for designing digital musical instruments (DMIs), as remarkably evidenced in the works of Cadavid [2,4]. Likewise, this instrument juxtaposes and syncretises Mexican folklore and the circuit bending tradition, honouring and visibilising both—a design approach that has been explored by Schedel et al. [6], who juxtapose traditional instruments with domestic tool, so as to visibilise the labour of women. Here my inspiration were a series of iconographic elements of the Day of the Dead—one of the most representative and recognised Mexican traditions—in particular, the home altars that are crafted during this celebration and the decorations that are placed on them, such as sugar skulls, marigold flowers and *pan de muerto*, among other offerings for the departed. Thus, I have built an instrument in the shape of an altar in remembrance of Michel Waisvisz, upon which a “sugar skull” (ceramic, in fact) has been placed as decoration, but also as a tribute to one of his instruments, the Kraakdoos, by harnessing the skull as the main point of contact with the instrument—along with other decorations, like candles and marigold flowers spread across the altar, placed under Waisvisz’s picture (Figure 1).



Figure 1. The Altar Instrument.

Sugar skulls are generally hand-painted with colourful food colouring and decorated with shiny spangles. Hence, I have also painted the ceramic skull with six conductive paint traces which are integrated into a Kraakdoos circuit (Figure 2).



Figure 2. The Ceramic Skull with Conductive Pads.



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2. TECHNICAL DEVELOPMENT

To make the ceramic skull, I 3D-printed a skull from an STL file¹ using a resin 3D printer. Then, I covered the resin model with air dry clay and left it to cure. The cured skull was then hand-painted with conductive silver-based paint and non-conductive acrylic paints, and then varnished.

As seen in Figure 2, the six conductive paint pads each leading into six respective tracks, are then connected to six wires. These wires are connected to six pads on a Crackle Box PCB², which features the classic circuit albeit with a uA709 IC, as seen in most recent implementations of Waiswiz's original design. The speaker outs of the PCB are wired to a headphone jack which is connected to a Bela Board [5] audio in. In addition to the six wires leading to the contact inputs on the skull, four additional wires are also connected to the output socket in order to send signals to two LEDs inserted in the skull's eyes to have audio-reactive lights. In this case, the Bela uses 5V to run a 2 Watt, 8 Ω speaker.

Additionally, a Trill Craft is connected to 18 brass pads positioned to the right of the skull. The pads interface with a Pure Data patch that features a series of modulators (frequency, amplitude, and ring) and five additive oscillators (Figure 3).

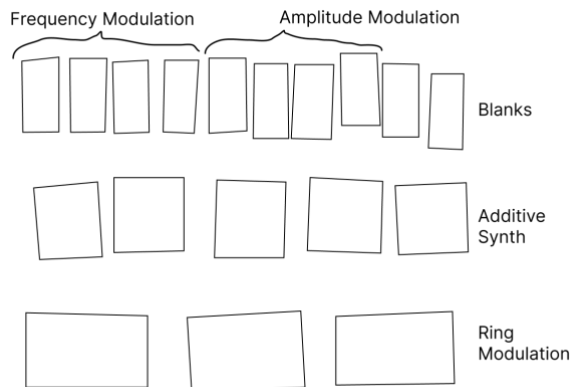


Figure 3. Mappings for the Brass Pads

3. CONCLUSION

The Kraakavera is an instrument that latches on Latin American material culture and harnesses to produce a new instrument (as proposed in [1]), that is inspired by the centuries-old iconography of the Day of the Dead Mexican folklore, and that also pays respects to Michel Waiswiz memory by tributing one of his instruments.

4. REFERENCES

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¹ <https://www.thingiverse.com/thing:36110>

² https://oshpark.com/shared_projects/aPRNA9eQ