Per(sino)ficação

Fábio dos Passos Carvalho, Flávio Luiz Schiavoni , João Teixeira Araújo

[1] Federal University of São João del-Rei
São João del-Rei, MG

fabiopassosarquitetura@gmail.com, fls@ufsj.edu.br, teixeira.araujo@gmail.com

Abstract. *The bell's culture is a secular tradition strongly linked to the religious and social activities of the old Brazilian's villages. In São João del-Rei, where the singular bell tradition composes the soundscape of the city, the bell's ringing created from different rhythmic and timbral patterns, establish a language capable of transmitting varied types of messages to the local population. In this way, the social function of these ringing, added to real or legendary facts related to the bell's culture, were able to produce affections and to constitute a strong relation with the identity of the community. The link of this community with the bells, therefore transcends the man-object relationship, tending to an interpersonal relationship practically. Thus, to emphasize this connection in an artistic way, it is proposed the installation called: PER (SINO) FICAÇÂO. This consists of an environment where users would have their physical attributes collected through the use of computer vision. From the interlocking of these data with timbral attributes of the bells, visitors would be able to sound like these, through mapped bodily attributes capable of performing syntheses based on original samples of the bells. Thus the inverse sense of the personification of the bell is realized, producing the human "bellification".*

1 Introduction

The bell culture is a secular tradition that was and still is strongly linked to the religious and social activities of the old villages of the Brazilian colonial period. The ringing bells, created from different rhythmic and timbral patterns, are semiotic objects by establishing a language capable of transmitting various types of messages to the local population[1].

In São João del-Rei, Minas Gerais, the focus of this work, the unique bell's tradition present in the composition of the soundscape of the city and the strong affective and identity relation of part of the population with these sonorous instruments, conferred to this the nickname of "city of the bells" or "city where the bells speak"[2]. This affection for bells produces, on a certain scale, a personification of these, making them something more than inanimate objects[3].

Different periods in the catholic calendar have different rhythms and every church has a different bell set up, that comes from a single bell to up to three of them that can be combined by the composers to create all the different patterns present in the city. Based on this tradition and as a manner to emphasize this connection in a contemporary artistic way, it is proposed the installation called: PER (SINO) FICAÇÂO.

Figure 1: The vision inside the steeple.

2 The installation

In this piece, the audience is invited to get inside the steeple and be a bell of the church. When coming into the space, some projections of different steeples of the city's churches are projected and the bells are quite. A calm soundscape of the city is the only sound heard in the place. When getting inside the steeple, the bells starts ringing in different patterns and rhythms and the city soundscape is completed by the sound of the bells.

The nature of the composition varies depending o the visitor's features. A camera system using Computer Vision algorithms captures the visitors body and the weight, size, and shape of the visitor's body and these attributes are mapped to a new bell with these personal features. Every visitor inside the chamber can change drastically the sound of the church putting a different bell in the musical pattern and creating a different music. The combination of visitors can create different rhythms and patterns and up to 5 bells can ring together in our steeple.

The sound of the bells are synthesized using the visitors physical attributes and mixed with a background soundscape[4] that can bring the city around the church to the installation creating a more realistic atmosphere based on the day time.

Completing the installation, images from the steeple and along the bell towers are projected and also controlled by the visitors data to create an immersive environment and an unique experience. These images and videos, captured in real steeples of the city's churches, fol-

Figure 2: A Steeple with two bells.

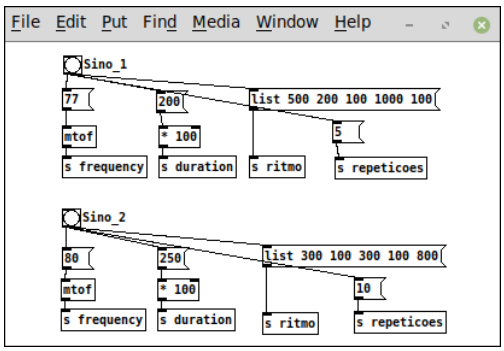

Figure 4: PureData Bells Prototype

low the rhythm defined by the visitor's particulars and can also be influenced by the movement of bodies inside the chamber. In addition to the proposed visual projections, in some moments the absence of visual stimulus inside the cabin will also be explored, with the aim of providing a sound-only experience, where the public is encouraged to concentrate only in the sound it produces and the performance interaction with the other users of the installation. This experience is based on the Accusmatic principles, where only sound is the central musical aspect and, in this case, producer of interaction.

3 Technical Aspects

Regarding the technical aspects used in the installation, this work has two main parts (Figure 3). Initially, information such as audience height and width is collected from a Python based on the OpenCv library to process the image provided from the webcam. Thus, a message of the type -height,width- is sent through the Open Sound Control (OSC) protocol to a Pure Data patch.

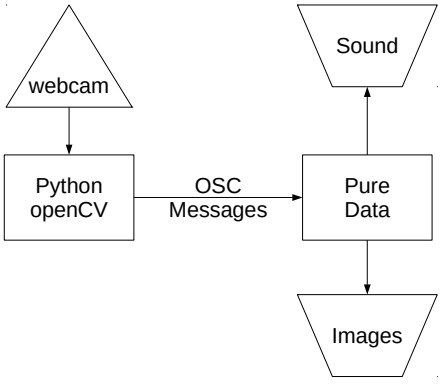

Figure 3: The information flow in our system.

Upon receiving OSC messages, the application implemented in Pure Data is responsible for issuing bell samples (Figure 4). This Pure Data programming merges different layers of sound including samples, soundscapes, the wind in the steeple and the synthesized bells, along with some images and videos .

4 Acknowledgments

Authors would like to thanks to all ALICE members that made this research and development possible. The authors would like also to thank the support of the funding agencies CNPq and FAPEMIG.

References

[1] André Guilherme Dornelles DANGELO and Vanessa Borges BRASILEIRO. Sentinelas sonoras de são joão del rei. *Belo Horizonte: Estúdio*, 43.

[2] Thiago Morandi. Sentinela sonora. `https://www.youtube.com/watch?v=9xPTkbXPAfo`.

[3] Jason Barroso Santa Rosa, Rodolfo Magalhães, and Alessandra Oliveira. Entoados. `https://www.youtube.com/watch?v=sBswNbF3HTc&t=279s`.

[4] R Murray Schafer. *The soundscape: Our sonic environment and the tuning of the world*. Simon and Schuster, 1993.