

# MaLaKuLa : stories inside “magical” seashells

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## ABSTRACT

MaLaKuLa is an art installation to be discovered by people walking along the beach. It explores familiar nature elements in their natural context to build a poetical digital experience where the nature elements become interfaces for unexpected narratives.

In this installation, curious spectators surprised by the sounds of two “magical” sea shells, explore them to find that they are being taken through a journey of mysterious soundscapes: the sounds of Malakula, telling stories of a lost island in the Pacific Ocean. The narrative takes the listener to an imaginary magical place where one hears the call of the spirits of the land and sea.

## Categories and Subject Descriptors

H5.2. User Interfaces. J.5. Arts and Humanities.

## General Terms

Design, Experimentation.

## Keywords

Environmental Art, Experimental Design, Tangible interfaces, Soundscapes, shells, beach.

## 1. INTRODUCTION



Figure 1. “magical” shell

Over the past years, the increasing evolution of digital technology has enabled new computational approaches to digital art. In particular the low cost and availability of hardware devices,

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programmable through free software platforms allows hobbyists and artists to widen the set of available tools that they can work with to create digital based interactive experiences. The miniaturization of the hardware devices enables us to embed electronics sensors and actuators within a wide range of objects, potentially transforming them into alternative mediums for a narrative. Two examples of previous work are provided by the work of [1] and [2]. Other examples of related sonic tangible interfaces, where the object appearance and affordances suggest the interaction, can be seen in [3] [4].

We are particularly interested in exploring objects present in nature and augment their properties in such way they become “magical”. With such approach we intend to provide spectators with a surprising narrative, inspiring them to appreciate the world beyond what they commonly see. MaLaKuLa promotes the contact with natural objects found along a beach walk, objects that might have a life, a history. Two conch shells were placed along a beach serving as an interface to a soundscape narrative. Curious walkers, willing to explore those shells are rewarded with a voyage through mysterious soundscapes narratives. Those narratives are created to highlight and emphasize the natural affordances of the objects themselves.

## 2. DESIGN OF THE EXPERIENCE

We developed an initial scenario that set the reference for the design of the experience that we describe next:

People walking along the beach ear mysterious calls and cries that seem to come from a nearby conch shell. Moved by curiosity, they approach, hesitating and keeping some distance at first. A shell is a familiar element on the beach but this one is larger than any other around and it seems is trying to communicate. Breaking the initial fear they hold the shell trying to identify the source of those sounds. As the shell is grabbed the sound seems to change; it starts to narrate its own story while calling other shells around.



Figure 2. Narrative storyboard

Those will answer with their other calls seeking attention and creating an interactive melody between the user and the shells.

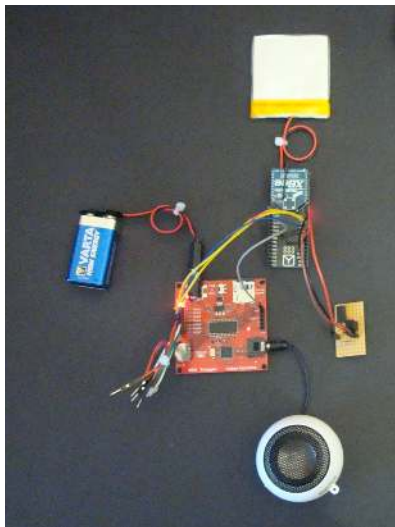
## 2.1 Narrative Content

The “magical” shells behold the secret sounds of Malakula, a lost island in the Pacific Ocean and, transport us to the dreamtime, the moment where all fantasies seems possible. Each shell tells its own story. One tells the story of a young woman who walks along the beach. She uncovers a magic object lost in the sand and holds it, takes it and dives into the waves. She begins to communicate with cetaceans and through the story she metamorphoses into a siren. A second sea shell tells the story of a spirit living within the forest of the tropical island of Malakula. The story starts within a small creek, refugee to a few frogs. The spirit makes a journey to reunite with its body, down waterfalls and through the forest canopy, followed by the singing of paradise birds, meeting apes along the way and finding its way into the body of a primate. The primate is lead near the shore where metamorphoses occurs and it transforms itself into a human.

The narrative is communicated through a sequence of audio compositions where one ears the sounds of the natural elements, animals and environment, leaving the interpretation up to the user. The aesthetic of that narrative was chosen to follow closely what one might have experience as a kid, holding a seashell up to the ear and hear the roar of the waves.

## 3. IMPLEMENTATION

This project was implemented with an Arduino Funnel<sup>1</sup>, a MP3 player board<sup>2</sup> with memory card, mini speakers, a tilt-sensor<sup>3</sup>, Xbee radio<sup>4</sup>, all powered by a 9v battery and a lithium-battery.



**Figure 3. inside each shell: 9V battery, MP3 player board, a lithium-battery, Arduino Funnel, Xbee radio, mini speakers, tilt-sensor**

All the electronics fitted inside both African conch shells, hidden from the view. While this type of shell is not at all typical within

the geographic region the system was developed, they were used as they were large enough to fit the hardware. Its unusual dimensions also played an important role raising the attention to them when placed on the beach next to other shells.

The Arduino was programmed to identify different states from the tilt sensor input: idle, calling or listening. Each state corresponds to a different shell behavior: idling or playing a different mp3 track. The sound compositions were created in Audacity<sup>5</sup> from a variety of sound samples.

## 4. A WINDY AFTERNOON

The shells were placed late afternoon on a beach in the town of Esposende, Portugal. Despite the presence of video recording equipment the shells attracted the curiosity of two girls passing by. The surfers avoided the cameras apologizing for any inconvenience of being there. The girls picked up the shells and tried to identify the sounds they were hearing. They described forest and ocean sounds and each elaborated on their own interpretation of the soundscapes, and the different sounds they could identify. They placed the shells back in the sand, which then started a melody with each other. A video of that experience can be watched in: <http://vimeo.com/25548818/>.



**Figure 4. Casual beach walkers exploring MaLaKuLa**

## 5. ACKNOWLEDGMENTS

Our thanks to the two anonymous participants willing to be recorded.

## 6. REFERENCES

- [1] Mazalek, A., Wood, A. and Ishii, H. 2001. genieBottles: An Interactive Narrative in Bottles, in Conference Abstracts and Applications of SIGGRAPH '01, Los Angeles, California.
- [2] Hudon, C. Babbling/Sounding/Noising Cubes. [http://www.becharthudon.com/becharthudon\\_Cubes\\_en.htm](http://www.becharthudon.com/becharthudon_Cubes_en.htm) l. Last accessed in 7 Sep. 2011.
- [3] Merrill, D. and Raffle, H. 2007. The Sound of Touch. In the Extended Abstracts of CHI 2007, San Jose, CA.
- [4] Hauenstein, M, T. Jenkins, 2006. Audio Shaker. NIME, Paris France, 2006.

<sup>1</sup> <http://funnel.cc>.

<sup>2</sup> Sparkfun. MP3 Trigger v2. <http://www.sparkfun.com>

<sup>3</sup> Oncque. Sensor Switch. <http://www.oncque.com>

<sup>4</sup> Xbee OEM RF Modules. <http://www.digi.com>

<sup>5</sup> <http://audacity.sourceforge.net/>.