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## The attract-o-tone: a Performance-Oriented Musical Interface

We all know the sound of a guitar, a piano or a trumpet. And with those rather traditional Instruments, the observer easily understands how sounds occur, which are created by. Yet, contrary to a drumkit or a theremin, most of the motion happens hidden in detail. Only the audience physically close to the musician gets to associate the movements of the hands and fingers with the produced notes. Who isn't near, won't be able to do that, simply because of not seeing what the musician is doing. And the more senses are involved in perceiving a situation, the more intensly it will be experienced. Therefore we intended to create an interface that demands exuberant gestures of the musician.

The attract-o-tone is a result of diverse approaches and phenomena, which formed its momentary state through an experimental development. The first thing was playing around with electronic waste. Through tinkering and circuit bending with leftovers from old guitars and RC-vehicles, we discovered the possibility to create very unusual soundscapes. The second step was to take a fixed idea and, through the process of rapid prototyping, rapidly make a prototype. We focused on developing an interface, that would possibly not depend on external power supply or any attached cables. Furthermore we investigated the qualities which the design of an instrument must achieve, which again led to the actual version of the attract-o-tone.

One of the attract-o-tone elements always is the actuator to the other element, which senses its behaviour and forwards the information in order to generate a responding sound. This duality and conversational character determines the shape of the interface. The relation of the objects to each other creates the sound. The relation(ship) between two persons also creates an atmosphere, that lays down the colour of the situations sound. If the persons feel attracted to each other, a certain tension fills the air. If one meets someone one finds repellent, on the other hand, the air can get thick. Those

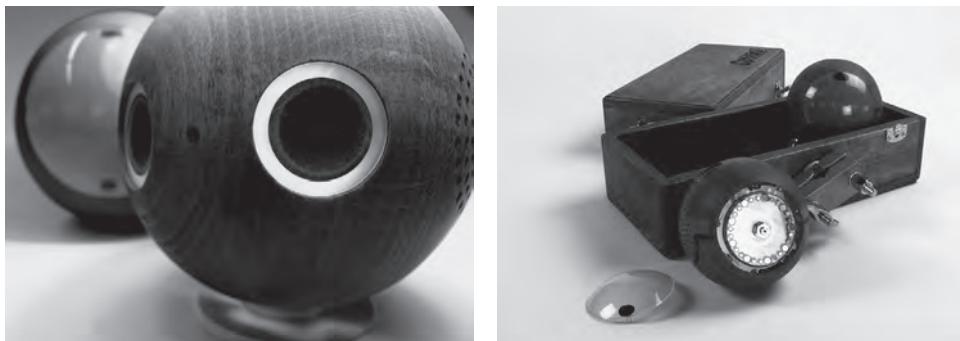


Fig. 1 + 2: The attract-o-tone

analogies are fundamental to the duality of the attract-o-tone. The playful moment of the in-between is most important.

In order to make the handling of the attract-o-tone intuitive, we've given it a visual reference to the sound it brings out. The semitransparent visor and jointings are lit by LEDs from inside, which corresponds to the actions and reactions.

Designing the spheres, we strongly emphasized that each one gets a unique look, that yet visually highlights the togetherness of them. Furthermore, the design had to be reduced to the functional aspects and refer to the way the interface shall be handled. The playability of analog instruments is mostly reduced to pushing buttons, keys or pulling strings. And in most instruments, this is reflected in the design of their bodies, which mainly consist of simple geometrical shapes. Therefore we stayed with a sphere as the body to our instrument. The sphere as a basic shape suits both left- and right-handed persons. And because analog resonators, or bodies of instruments, are in many cases made of wood because of its fine resonating and haptic characteristics (although in our case we didn't need the resonating qualities), we decided to craft the attract-o-tone from two solid wooden balls (beech in the first design prototype). Additional to the haptic value, the solid wood has a great visual quality. The visor gives a direction, as well as it is the access for maintenance.

The stage setting of electronic musicians is dominated by tables for equipment like mixers, controllers, sequencers and so on, while with more analog generated music, tripods, instruments and their racks dictate the scene. The case of the attract-o-tone is designed, for it to serve as a station to fit between the table-equipment, while also charging the batteries of the interface, as well as it can easily be mounted on a tripod with any standard clamp.

We are proud that the attract-o-tone already made 3rd place in the engineering category at the \*diy-festival for mechatronic art in Zürich 2008 and 1st place for best student project at the ICMI-workshop on tangible music interfaces in Berlin, 2009.