

**THOM KUBLI** BLACK HOLE HORIZON

English

## INSIGHTS INTO THE UNKNOWN: THOM KUBLI'S *BLACK HOLE HORIZON*

by Marcel René Marburger

Thom Kubli confronts us here with a rather unusual installation: in its idle state, we see three large black horns and two black-painted metal barrels as well as plastic tubes, air pumps and a black-coated computer stack. Already at first glance, the ensemble can be identified as a sonic experimental setup. Far more complex, however, are the non-visible processes within the multipart equipment, which require a brief explanation: three air pressure valves as well as the flap mechanisms located at the flares of the three differently sized horns are operated by an Arduino microcontroller. The controller is fed by the software MAX/MSP that provides a built-in *random factor*. At the same time, a pneumatic pump presses bubble fluid from the barrels into three tubes whose ends are also located on the funnel's front opening. As a result of the air circulation in the horn canal, sounds with varying duration and intensity emerge. Further soap bubbles are created by the fusion of air and liquid.

Due to the not entirely predictable controlling algorithm, the two components air and liquid are being merged more or less randomly. This leads to an unlikely, ephemeral and fleeting state in which no soap bubble is like the other, no two bubbles have the same volume, no two bubbles exist for the same length of time, no two bubbles have the same trajectory in space and each bubble bursts in its own way. The same applies to the resulting sounds. All tones emerging from the horns are different and unpredictable in their formation. Each horn produces its own randomly-generated duration and intensity in sound. In addition, the horns' interaction is constantly varying, because each horn is being played according to its own randomly determined parameters.

Thus we are dealing with a complicated technical process, which results in unpredictable and unique visual and auditory events. From the perspective of media theory, this is already remarkable, because normally, technically complex operations do not lead to such ephemeral results, but aim at functionality and efficiency. The machines we are using since the so-called industrial revolution are meant to function, and their modes of operation are supposed to be as predictable as the standardized results of their work. The same applies to the electronic devices that increasingly determine our everyday life: pressing a key, we want to know exactly what will happen next. It is a downright characteristic of devices that they hold no surprises for us, but that they function according to regulations by predetermined instructions—namely by being programmed.

In a way, this also applies to musical compositions. Once written, a score should be implemented as true to the original as possible. When fixed in notation, the components that still were flexible and liberal during the creative act of composing turn into a kind of provision. Notably this is the case in electronic music, where the music programs utilized during production already form a limiting, corset-like condition. In its concretized form as a recording medium, a composition's information content then continuously decreases with each playback. The initial sensation of surprise and innovation becomes redundant with each listening—the unusual becomes a habit, it turns into something usual.

In physics, this phenomenon is described with the concept of entropy. For example, if hot and cold water are being mixed, the result is warm water. Thus, a levelling and a loss of information take place, because the physically unlikely and widely differing conditions of hot and cold turn into the likely and therefore redundant state of lukewarm. With some limitations, this phenomenon can be applied to our society, which is all too frequently called information society. While the mass of information that surrounds us is constantly increasing, the kind of information actually circulating is also becoming increasingly redundant and often was not very innovative in the first place. Simultaneously, our behavior is becoming more and more predictable, because we are all using the same computing machines and programs and are involved in the same social networks in a similar manner.

By contrast, it is art's objective to counteract this tendency towards redundancy. By definition, art must not follow instructions, but has to be innovative and surprising—as already formulated in 1947 by Willi Baumeister. In his book *The Unknown in Art*, Baumeister writes that art becomes more innovative the more it exceeds already known and experienced knowledge. This approach presupposes that also the artists surprise themselves by the result of their artistic work. Artists can indeed start artistic projects with the intention to pursue a certain goal, but the result has to be different from that intention. Baumeister calls the difference between intention and result the “creative angle”. The further the two axes of this angle diverge and the more unexpected the result is, the more creative is the artistic act. In order to avoid redundancy, artists have to leave familiar territory and move into previously unknown realms.

This approach also matches the title of Thom Kubli's work *Black Hole Horizon*. In astronomy, this term refers to an area which cannot be exactly determined. Physicists refer to this area as a transition zone, in which matter is still barely measurable, yet already being absorbed by black holes and thus eluding measurability. *Black Hole Horizon*, the event horizon, designates the limits of the physical ability of experience, or, to be more precise, the limits of scientific cognition. This leads to a condition that becomes intangible the moment it enters a different state. Of course this does not mean that these places actually exist somewhere in the universe. Instead, these assumed transitional areas are only completing a model with missing links that are not accessible with our measurement methods. In places where something is no longer measurable and where probability is missing, speculation begins. And the speculative is actually the field of other scientific fields, such as theology or art.

If we think about black holes from a scientific perspective, our imagination ends at the boundary described by the event horizon, because if we would think beyond this limit, our thoughts would equally fall into the black hole. Therefore it is a point of no return: our thoughts cannot come back, we cannot re-reflect what we experienced and thus we also cannot verify it. For scientists, this is extremely unsatisfactory, but from art's perspective, this state of losing oneself is especially

desirable. For example, we refer to ecstatic musical experience by stating that we lose ourselves in it.

While science ends at the limits of provability, in art it just starts to be exciting beyond this horizon, because art's field of activity is precisely the unexplored and the unknown. At least that is the ideal situation, which is necessarily just a fleeting one—because if a creative artist would lose himself or herself completely in the unknown, no one would be able to know about it and art exhibitions as well as art associations would not exist. Fortunately, the advance into the unknown is mostly communicated in the form of works of art. However, from this moment on, it is no longer unknown. Thus, the artistic experience of transgression is short-lived and with each realized work, the boundary shifts a little bit—in order to once again present a new challenge. Unfazed by this, the unknown expands as quickly as it is being limited, but the boundary itself is in constant motion and extremely fragile.

The soap bubbles we will soon see here are just as fragile as this boundary, because they are in a highly unlikely condition. The ratio of the bubble liquid and the enclosed volume is stable only for a brief moment, until the soap bubble bursts after reaching its most impossible state. Just when the soap bubble changes from one state to another—just when the air escapes, because the liquid loses its chemical bond and follows gravitation—it has reached its optimum limit and thus marked it for a brief moment. The soap bubble does not only visualize the auditory experience of sound, but also refers to the genuinely artistic borderline experience – including the involved failure. Every transgression also determines a loss of transgression, because the boundary no longer exists, but is replaced by a new one in the very same moment. Yet this moment of transgression is—as tragic as it may be—still great, because each time, it is unique.

Just when we are trying to capture this moment that is as unique and fleeting like a soap bubble and want to keep its volatile state, it inevitably escapes—like a soap bubble that bursts if we grab it with our hands. This does not mean that you as the audience should not do that. On the contrary, your interaction is even expressly desired and in fact cannot be avoided anyway, because just by your presence as a resonating body, you change the installation's sound. Additionally, by your breathing and your movement in the exhibition space, you affect the soap bubbles' shape and the trajectory. Their impact is perhaps barely measurable and perceptible, but nevertheless exists. Therefore, please feel free to actively interact—instead of being passively active, here you can be actively active.

In fact, your interaction adds yet another random component to the game, or rather, to this artwork by Thom Kubli. This aspect is not an undesirable side effect, but quite intended by the artist. Starting with the randomly controlled electronic impulses, we are dealing with a chain of coin-

cidences in which we are all representing the last link. With each random factor, the work will become even more unlikely, and thus—as defined by Willi Baumeister—even more innovative. Even inside the horn, countless random events are taking place at a micro level. The currents of air are channeled by the tubes located inside the horns, but at the same time they are also unchanneled by being bounced off the tube walls. Air atoms collide, sound is caused by compression in an almost impossible way and vibration produces a sound inside the ear. Our ear, but actually our brain, turns this sensation into a sensory impression, which is first of all an unconscious and not a deliberately produced experience. Our perceptual and cognitive capacity cannot be planned and is therefore just as random and fleeting as the soap bubbles.

The same applies for the reception of art and for reception and communication in general. We always perceive only a part of the information that surrounds and affects us. But even if we do not perceive and understand everything, we can adapt to it. We can decide how we behave according to and in our environment, which incessantly has an impact on us.

Therefore, in the best case, artworks must provide a framework in which the unlikely can happen. This applies in particular to apparatus art, which first of all has to overcome its own programmed and hence determined structure. As a matter of course, the task of art to integrate chance and to allow the unlikely relates not only to its production, but also to its exhibition—because if a work of art is exhibited, it is to some extent becoming a regulation. Normally, I—the viewer—can only receive the information a work of art holds, but I cannot become a sender, least affect the work. The communication is thus biased and degrades me to a state of passive irresponsibility. But here, you can participate actively by interacting with the work—that is, by interacting with the sound and the soap bubbles. For it is not the apparatus of the sound sculpture itself that produces the sounds, but it is the soap bubbles momentarily filled with volume that were created by and with sound. Therefore, when we interact with the soap bubbles, we interact with the work of art itself and not only with its output. When we interact with the artwork and with each other, we are thus becoming part of it: we are informed, but at the same time, we are also informing.

Since our gathering this evening is unique and fleeting as well, we can all counteract the entropy, and thus the loss of information, by allowing the unexpected to happen. In this spirit, I wish you all an exciting evening with many interactions and surprising moments.

*Speech of Dr. Marcel René Marburger on the occasion of Thom Kubli's exhibition  
Black Hole Horizon at Kunstverein Ingolstadt on February 19th, 2015*

## LOG

Thom Kubli, Berlin, April 2015

The representation of sound with another medium, e.g. light or granular matter, is a process that in its physical presence touches me in a strange way. Its mystifying quality stems from its reference to a different kind of perceptibility, which is nevertheless constantly present, and from its reference to regularities and potentialities, which seem to exist solely for the moment. The search for this kind of exceptional state is my driving element in the summer of 2011, when I ponder the idea of transformation of sound into three-dimensional objects.

The preoccupation with “political consequences of weightlessness” is still present from my previous work. The idea of temporarily dissolving the conditioning of one’s own thinking by being confronted with a most unlikely environment leads me to sometimes visit the NASA website. I turn to the antagonists of weightlessness and do research on black holes. To my delight I notice that the scientific representations of “black holes” look like horns. Black holes also have the amazing characteristic of—broadly speaking—withdrawing things from our perception, because gravity prevents the visible light reflection from leaking to the outside. Things are present, but imperceptible to us. I sense a utopian potential. On the subway, I notice three girls blowing giant gum bubbles while talking. The bubbles appear like short-term extensions of the girl’s bodies - extensions that will disappear at the very next moment. I’m thinking about big sound systems in clubs. The movement of the loudspeaker membranes makes the air oscillate according to their vibrations. Wind instruments, on the other hand, produce a constant air flow.

David Jaschik and I start to build maquettes in my Berlin studio. David is a mechatronics engineer. We construct prototypes from flower vases, vuvuzelas or truck horns and create funnels with felt, with black cardboard and pink metal foils. The models are not functioning, but are becoming larger: We assemble several horn-skeletons from wire and attach vacuum hoses or PVC tubes and insert mouthpieces of wind instruments or dog whistles. The linking of sound, air flow, the fragile soap bubble membrane and the final soap bubble proves to be complex. We drive to Kiel in Northern Germany to receive advice from the largest manufacturer of boat horns in Europe. An insanely loud, yet much too small air compressor roars in my studio’s kitchen.

The idea that sound is always the harbinger of a social order—as formulated by the French economist Jacques Attali—lets me think of the installation as an accessible, spectacular

space, where fleeting volumes are produced that the viewers can react to. The space remains in constant change and transformation, as well as the arrangement of sounds. The idea of the horns' size and shape is becoming more concrete. I'm experimenting with probability generators and random generators, which are supposed to control the horns' sound.

In the summer of 2012, David and I travel to the Rensselaer Polytechnic Institute, New York, where the Arts Center EMPAC has invited us to produce the installation. We hope that the University with its US-American smartness can close our information gaps. The colleagues on site however suggest that, as Germans, we have an implanted engineering gene. Together we spend the next weeks working with CAD programs in air-conditioned rooms. We construct the horns in virtual space, turn them around their own axis and reconsider them in order to continuously improve them. First thing in the morning: material research and troubleshooting.

After about four weeks, the first horn, the "test-horn", materializes from PU-block material. Those gray panels are normally used for the construction of architectural models. The milled parts are being assembled overnight. Time is running out. When I enter the open studio's exhibition room the next morning, someone has already connected the horn. It works, spits soap bubbles and is impressingly loud. Visitors enter the room. They look in disbelief at the raucous spectacle and use their bodies to measure the giant soap bubbles. Then they sit down on the floor in front of the installation, contemplate the trajectories of the soap bubbles and stay for an extended time.

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*What is the connection of soap bubbles, black holes and vibrating air? What effect does the sound of horns have on the psyche and why is that sound part of various creation myths? What are the effects of gravity on our social consciousness? Where do spectacle and mental immersion meet?*

*Black Hole Horizon is a cosmological experimental setup and a meditation on a spectacular machine that transforms sound into three-dimensional objects and that keeps the space in constant change. (catalog back cover)*

