

## **BLACK BOX SEMICONDUCTOR**

**Interview with Associate Curator Kelly Gordon  
August 2008**

**Kelly Gordon: How did you meet and when did you first decide to collaborate? What is the origin and significance of your *nom d'art*, Semiconductor?**

**Semiconductor:** Like most artist couples, we met at art school, in the early 1990s, and had quite independent streaks at that time. So it wasn't until we left school that we started to collaborate—initially on music and sound projects, for which we created our name Semiconductor, and then to organise events to bring image and sound artists together in collaborations.

There was a lot of experimentation in digital sound and music going on that we were inspired by. Initially, Semiconductor started releasing music on an English label called Hot Air. It wasn't long until our interest in visual art took over again and we started to apply the same ideas to images. Out of this came moving image works we called Sound Films, in which we explore the relationship between sound and image through landscapes and new media itself.

From the beginning, there was always a fight between us and the computer software because it tried to control the aesthetics or process of a piece. This tension was the origin of our name, Semiconductor, which is also an object in the computer that processes information. We liked the suggestion of half conducting the operation, thereby acknowledging the computer's impact on our work even as we were discovering our own language using the computer software as a medium. With our early pieces, we gave the computer a role, allowing it to enact random processes, or literally using its data language as image or sound.

**KG: To date, how have you determined the range of your artistic practice? Is there some dream commission you have in the back of your minds?**

**S:** Computers offer us a platform of infinite dimensions, such as in 3D software packages, and allow us to explore landscapes and large-scale installations in ways we couldn't have in a studio or gallery. Our limitations are imposed by the scale of the works we want to make; we would love to realise these in the real world, but got pulled into the computer as a new artistic medium and have been on a course to develop our own language ever since.

Over the past ten years, we have stayed focused on moving image works, yet the artistic fields with which we are associated have continually changed. The main development in our work is that we now travel further a field to collect ideas, sounds, and images for our projects. Our greatest fantasy for future work is to access places that are normally reserved exclusively for scientists and explorers.

We always approach each work in a new way, developing our own techniques and processes to work with the materials, often working with sound and image in a sculptural way. Each time we develop a new process or technique, it brings something new to the artistic dialogue in which we are continually engaged, and helps us to understand our previous work.

**KG: As a team, are all aspects and decisions mutual or do you each have particular specialties, such as a division between directing and editing, conceptualizing and actualizing?**

**S:** As an artist couple, we bring different things to each project, usually changing roles on each one, bringing new energy, although it does sometimes complicate things. When you're working in such a visual way, it's often difficult to convey to one another how each of you might envisage the piece. Animating is not an instant process and it involves many elements coming together before it takes shape. You never know for sure whether you're both heading to the same end point.

**KG: How would you characterize the themes that run through your projects to date? Is there a particular recurring perspective, passion, or set of ideas or imagery you favor or discuss but have yet to actualize?**

**S:** In our moving image works, we explore the limits of human perception and experience in the context of familiar constructed and natural environments. Our films are mostly first-person experiences. We are interested in the laws which hold our world in place: process, motion, time. The ways in which these things are bigger and smaller than us, yet we can only experience them from a human scale and within the context of our physical abilities, and our capacity to see and hear. On the one hand, we present these happenings as scientific fact. For example, the force of an earthquake can destroy buildings, but we prefer viewers to experience these phenomena as alternate realities, revealing the world that goes unseen due to our limited abilities, and thereby opening up this world to the realm of viewers' possibilities. We like to call these projects fictional documentaries. We're working a lot with the physics of nature, particularly aspects we can't see or hear. So when we reveal these elements within the landscape, both visually and aurally, it naturally seems quite fantastical.

**KG: Please summarize how *Magnetic Movie* evolved. Did you have any pre-conceptions, or perhaps a proposal, before arriving on-site for this artist residency?**

*The following text is excerpted from an interview with Semiconductor for the forthcoming book Animation in Process, edited by Andrew Selby, published by [Lawrence King, London](#).*

In 2005, Ruth and Joe were awarded an Arts Council international fellowship at NASA's space sciences laboratory. Spending five months there, in the lab every day, the pair roamed corridors to see what was happening, pestered scientists to tell them about their science or attended presentations and meetings to try and get a hold on the science explored there. Ruth explains, "We arrived fairly naive about the particular fields studied but hoped we could use this to our advantage, starting with a blank canvas. It was an experiment on ourselves in many ways and felt quite risky. We were familiar with these feelings of arriving in a new place through previous residency experiences but we couldn't anticipate quite what it would be like in a NASA space sciences lab. We arrived with no preconceived ideas about the art works we might make. Rather we hoped to be guided by the things we would come across and absorb. Of course we have particular interests but we had no idea if these were relevant to the situation or would come out in the work. Through a process of investigation we started to follow varying lines of discovery, being quite freeform about it."

They interviewed space physicists and explored the visual techniques they use to reveal their discoveries, including actual data from satellites and, using computers, accurate visualisations of their results, rendering the invisible visible. In particular, the physicists use specific methods to represent various measurements, of which they have the shared knowledge to interpret, but most of these are seemingly abstract visual depictions and concepts to the layman, a situation that Ruth and Joe felt they could visually interpret, "We thought it would be interesting to introduce these objects back into the lab, bringing them down to a human scale so we could experience them on our own terms, we were interested in making what we refer to as a fictional documentary; a first person journey where the audience can catch a glimpse of a hidden physical world within our everyday life."

During the fellowship, Ruth and Joe developed the idea for *Magnetic Movie* with a rough idea of the form the film would take. They realised it was a long-term project that would need some funding and applied to the Animate Projects scheme, only to be told that the funding body needed to see the work in much more detail with visualisations of what the work would look like. Ruth explains, "This normally becomes part of an elaborate process in making our work where we experiment with where to take the visual aspect of the work, but here it had to be done first so the structure we normally take was already being thrown on its head. We received the funding eight months after returning from the laboratory and were given a longer deadline than we were used to, a year, which meant we would be able to step back from the work and keep re-evaluating it."

In late 2006, Ruth and Joe returned to the laboratory for two weeks having been in contact with the scientists to check they would be about, planned questions to ask and prepared themselves technically, updating their equipment to make sure they would get high quality recordings of the scientists and the best visual documentation of the laboratory possible. They decided to work from photographs as they had done in a previous work as this allowed better quality than digital video and more flexibility during production and editing. They also liked the idea of a photograph being a still moment in time and that they could reanimate it with time itself.

“During these two weeks we had to be on our toes, searching around the lab to see what might become part of the work, hunting out interesting spaces and objects which would bring context to the work whilst always trying to keep an open mind about the form it might take” explains Joe. “We knew we had one shot to gather everything we needed to make the work and had to trust our instincts and keep evaluating what we needed more of or any creative eventualities that may come out of constructing the work in one way or another. We felt nervous about travelling with all our documentation on us and the advantage of working digitally allowed us to make the decision to leave doubles with friends, just in case.”

Returning home, the pair worked on the dialogue, familiarising themselves with the scientists interviews and started to plot out possible structures. The first one was too linear and was becoming too much of a narrative, so they started looking from a different viewpoint and started to work in scenes where each scientist would be linked to a particular event and location. This offered the viewer possibilities rather than trying to dictate meaning. Editing the dialogue became an intensely rigorous process over two solid weeks, pulling out intriguing descriptions and editing out some of the scientists interviewed completely, ensuring the dialogue created form and rhythm.

The editing process then moved to link the dialogue visually, “Bringing the images to the dialogue was a really fun process. We had pulled together our best images, which formed their own groups, as locations and we started to unite them with parts of the dialogue, imagining the forms that would appear within them. We went through the whole sequence doing this continually shuffling about until it started to come to life and seemed to create meaning in itself. The choice to use photographs was really useful at this stage as we could easily adapt the length or composition of a shot to suit its neighbour or the overall piece” Ruth explains. The invitation to use Stephen P. McGreevy’s natural VLF radio recordings that he had been compiling for many years, mainly from his home in Nevada proved an unmissable opportunity.

Part of the commissioning process included several editorial meetings that gave deadlines for completing various stages of the work and to actually present and talk about the work in progress. It was a very useful device and helped to confirm the direction the work should go including the pace and complexity of the scientists dialogue. Joe says that, “We spent more time here developing the techniques we would use to create the CGI and the way we would go about implementing it. We tried out a couple of shots and we soon realised with the introduction of the CGI into the scenes we had over planned the amount of shots that were necessary and that there needed to be much more time in each shot to take in what you were seeing, so we stripped out a lot of shots.”

The pair worked scene by scene, developing the choreography of the animation and deciding on other techniques that would be used to bring the scenes to life, including the use of the VLF recordings to animate the fields, the camera motion they would introduce to suggest the human present watching, (almost discovering these objects and) the objects’ shadows and various other visual illusory methods. They implemented the animation over a seven-month period, constantly standing back to see how it was working and going back and tweaking various aspects.

The computer generated imagery was all based on actual scientist’s visualisations of magnetic fields. Many of these are formed of manifestations of millions of lines of varying geometries which define the presence of magnetic fields and sometimes multi-coloured lines which bring additional meaning such as open or closed

field lines. The scientists can animate the fields over time with a sequence of images to show how they change shape through external influences. Ruth and Joe took the basic form and motion of these visualisations to create their own elaborations of this visual language. Each scene introduced a different visualisation technique suitable to the forms the scientists were describing.

For example, as Janet Lhumann describes the fields as a ‘hairy ball’, Ruth and Joe attempted to manifest this visually, placing it within the laboratory itself rather than on the sun from where it was born. This placed the field within a human scale, emphasising the ‘hairy ball’ as a fantastical object in such a man-made environment, something which was unfamiliar to us yet supposedly existed, and so begging the question, ‘Is this what it would look like if we could see it?’

The pair wanted to use the camera motion to suggest someone witnessing these events occurring, using a very shaky handheld camera so that the film appeared less of a science documentary but more akin to someone coming across these happenings by accident, suggesting depth and motion.

*Magnetic Movie* took two years to complete, but it has already caused a stir at festival screenings. Ruth and Joe are constantly looking for ways to approach subject matter with a dynamism and enthusiasm, often as they rely on human interaction to act as a catalyst for their work, “All our films are very different technically, we challenge ourselves in a new way each time we make a moving image work, and two works are never the same. *Magnetic Movie* has a new approach of using dialogue; our works are normally sound led and we quite surprised ourselves by introducing the possibility of working with recordings of the scientists.”

**KG: For *Magnetic Movie*, how did you partner with the scientists during your residency? Were the voiceovers scripted or drawn from interviews or lectures?**

**S:** The interviews were all free form, but we knew we wanted to ask about magnetic fields, so we pinpointed scientists with whom we had spoken before and who worked in relevant fields. Some of them enthusiastically wanted us to get creative with their work. One of them said, “When are you going to do one of your all-singing, all-dancing pieces?” Although the reaction of scientists to artists in general is varied, and some of them avoid us at all costs, others are eager to talk our ears off. These scientists genuinely described their work to us, even if they had to generalise, dumb down, and employ some pretty funny metaphors in the process.

Previously, we had made a piece solely drawn from the scientists’ interviews, in which we asked if science could understand everything. We had a chance to screen this piece for them, and they all responded by laughing at each other. It was quite tricky to decipher our role while we were there, as often it did feel like we were sociologists or anthropologists. It was quite nerve-racking to show the final work we had made, as we had no idea how it would go over with the scientists. But we realised that they were just excited by what we found, and respected us for our role as artists.

*Magnetic Movie* was posted by someone to several video sharing websites recently and it caused lots of controversy. People argued about whether it was real or not. I spoke to one of the scientists recently and he told me other scientists from NASA labs had been phoning him, asking how they had done the experiment! We never intended people to interpret it as factual documentation, but this has been an interesting outcome, and fascinating to remotely observe these dialogues.

**KG: What was required to complete *Magnetic Movie* that you hope you never to have to attempt again, and what would you like to carry over into future projects ?**

**S:** The main issue with *Magnetic Movie* is the length of the animation compared to the time spent. In the future, we hope to make a longer piece without losing too much of the excitement in the process. It was the first time we had animated with dialogue, and although this takes us into more mainstream territory, we will surely work in this form again.

**KG: What surprised you most about the final version of the film? What pieces have you completed since and what you are working on now?**

**S:** The response to the movie has been a big surprise. There are many blog discussions about whether it is real or not. We never had any intention of making appear to be real, and even the opening title is clearly animated CGI, yet thousands of people have fought it out as to whether the film is art or science or both.

Currently, we are making a floor-based projection installation called *Out of the Light*, a wholly CGI work that explores our experience of time through our relationship with the sun. *Out of the Light* will be exhibited at the Cube, Paris, France, from October 5 to January 17, 2009. Here's our description of the piece: Observing shadows cast by the Sun can reveal the passing of time. By following the Earth's daily cycles, yearly orbits, localised phenomena and occurrences out of this world, we can track their paths on the world around us to reveal a state of perpetual motion. *Out of the Light* is a time-based sculpture that uses CGI to recreate natural shadow phenomena as observed by our vantage point on the Earth to reveal larger processes at work in the universe. We experience a solar eclipse as observed through the branches of a tree, the evolution of a mountain range over millennia and the transit of Venus. Viewing these events with the unaided eye allows for anomalies in the quality and nature of light which are here emphasised, to explore our perceptual limitations.

Other upcoming shows include *Nuit Blanche: Semiconductor Works*, opening on October 4, wherein we will install many of our works on a large scale throughout the entire St. Lazare Station in Paris, France. We are also participating in *Spectropia*, a group show in Riga, Latvia, from October 16 to 18.

Also, *Magnetic Movie* will become part of the Hirshhorn Museum's permanent collection this fall and we will be presenting a free lecture/demonstration in the Hirshhorn's Ring Auditorium on Thursday, November 6 at 7pm.