



In an electric field every shape is smooth. Rocks, stumps, legs, threat, prey, mate, obstacle, vegetation are all smooth. The electric field senses in all directions at the same time. Only a contorted body deliberately concentrates signals wherever desired, intensely feeling this or that murky corner. Electric fish are members of the knifefish family or Gymnotiformes and are capable of producing electric fields for orientation and communication. Their electric field is a territorial call and it is a mating call. About 10 meters wide and loud, this electric call varies in discharge frequency, size, waveforms and timing pattern. Those variations in frequency are classified as chirp, ping, rise, burst or rasp. Gymnotiformes increase, decrease and maintain distance to each other navigating their environment with electric signals. Most popular among these creatures is the electric eel whose electric discharge can even be a defensive or an aggressive weapon. In a time before commercial electricity use, these creatures were an enigmatic spectacle as well as a mystic healing force.

In the late 18th century, when experimentation with electricity was on the rise, electric eels were brought to Europe from South America by Alexander von Humboldt¹ and were seen as magical creatures, as well as being subject to scientific research and performances. Lightning, the discharge of electric fish and amber attracting particles are all essentially caused by electricity, but they are not connected to a common origin until experiments reveal the existence of biological electricity during the 18th century. The discovery of electric fish inspires further research into electricity and ideas beyond scientific thinking.

Despite a general shift in scientific language towards a more rational and therefore progressive thinking, the electric eels persist as inspiration and aspiration for the discovery of a mystic universal life force. In a time when vague, meaningless terms such as virtues, qualities, and affections are banned from a sharpening scientific vocabulary, the language around electric eels and their characteristics stays interlaced with magical thinking.

Bodies are excellent electric conductors: amputated frog legs twist and turn when exposed to an electric discharge and so do freshly amputated human limbs, at times delivered from the guillotine to the laboratory in under 20 minutes. Twitching calf muscles where flesh should be motionless reinforce the belief in electricity as a universal healing force, the same energy that shocks Frankenstein's monster to life.

A fascination for those alien, snake-like, slimy creatures that can take down large animals such as mules and horses, captivates not only the field of natural science, but a more general public beyond: audiences in royal courts as well as anatomical theatres were delighted by the displays of sparks, the electric fire and the experience of physical shocks from these exotic creatures. The first of those electric performances was invented by the English scientist Stephen Gray and premiered 1730 in London: an 8 year-old boy was suspended from the ceiling while being electrically charged. Those electric currents flowing through his body were not painful and allowed him to, seemingly,

1) Kenneth C. Catania, *Leaping eels electrify threats, supporting Humboldt's account of a battle with Horses* in "Proceedings of the National Academy of Sciences of the United States of America", 113 (2016), pp. 6979-6984 Published by: National Academy of Science.

magically attract small particles such as brass leaf with his hands without physically touching them. In another popular performance *The Electric Kiss, Venus Electrificata or the Electric Venus* invented by Georg Mathias Bose, an attractive female would secretly be electrically charged. The men in the room would then be invited to approach said woman with a kiss, only to be greeted with an electrical discharge.²

The display of the intersection between the apparently innocent and the dangerous and mysterious unleashed a multitude of pornographic literature with electricity and even the electric eel itself as their center. An electric experiment initiated by Joseph-Aignan Sigaud de la Fond was aimed specifically at the sexual connotation of the electric power: a group of 20 participants was holding hands while being electrically charged as one body. In order to verify the belief that electricity would only flow through the sexual fluids of the body three of these 20 people were replaced by castrati in the expectation of a disturbance in the transmission of the electric power. This turned out not to be the case. The electric charge flowed through the human chain and the last member was able to attract light particles, similarly to the suspended child mentioned before, despite the presence or absence of sexual fluids.³

Among other electrical healing devices, the so-called electric belt was a popular item until the 1920s. Those belts, mainly sold to male consumers but also not uncommonly to women, were designed to surround the sexual organs with a light electric current and thus enhance the energy levels of its bearer. This device was thought to restore (sexual) energy lost through excessive (or, really, any) masturbation.⁴

Eventually electricity lost its magical properties. It turned out to be quite commonplace and rather useful on the way to today's technological standard. With the (fictional, for now) return of electricity as a biological, mystical strength, a force that in Naomi Alderman's novel *the Power* awakens in teenage girls, those technological standards are finally reversed, become undone, or are turned upside down – and all other standards with them. With the electrostatic power as a defensive or an aggressive weapon, women are physically stronger than men, and within a few years all social and gender-related norms have brutally changed. These women's electrostatic power is an enigmatic spectacle and a mystic healing force in a time of commercial electricity use; it is not unlike the way electric fish were regarded as wondrous creatures in the 18th century. Not long after its emergence the electric power is used for sexual stimulation, virtually acting out the pornographic literature emerging from the first discovery of electricity. In a way these women perceive the world as smooth, since in an electric field every shape is smooth. Electricity is one example of perception and orientation and therefore an alternative way to see (smell, hear, taste, feel) one's surroundings and a reminder that human language even lacks the vocabulary to describe outside of see, smell, hear, taste, feel.

2) Paola Bertucci, *Sparks in the Dark: the Attraction of Electricity in the Eighteenth Century* in „Endeavour“, 31 (2007), pp. 88-93.

3) Arthur Elsenar & Remko Scha, *Electric Body Manipulation as Performance Art: A Historical Perspective* in „Leonardo Music Journal“, 12 (2002), pp. 17-28 Published by: The MIT Press.

4) Carolyn Thomas de la Peña, *Designing the Electric Body* in “Journal of Design History”, 14 (2001), pp.275-289, Oxford University Press.

Nina Kuttler is an artist and writer based in Hamburg, Germany. Her multi-disciplinary practice revolves around ecological awareness and a sense of interconnectedness between species, time, self and others. In her work cultural knowledge and mythologies are entangled with historic approaches to natural science as well as contemporary methods of research.