

Stephanie Cheng Smith: An Introduction to Erin Demastes' "Intermittency"

Raw, exposed components, familiar everyday objects and tangles of wire frequent Erin Demastes' work. In *Intermittency*, we come upon a display of shadeless lanterns, exposed wire and a noisy sonic drone. Looking closer, we see that next to each bulb is a battery assembly attached to cables that disappear behind a wall.

Technically, that "battery assembly" is a DIY electromagnet made by wrapping wire around a 9V battery. The long cables it's attached to are audio cables that are feeding through a frequency filter and then terminating at an amplifier. The electrical current drawn by the bulb is interfering with the electromagnetic field generated by the magnet, and by amplifying the signal, we can hear the sonification of that interference. Each lamp is treated this way, yet Erin has chosen to route all signals to a single output source, making ambiguous the discrete sound of each lamp and instead creating a rich, multi-faceted drone. This effectively removes our sonic access to each lamp, allowing us to listen to them only as a sounding group.

Intermittency, the title of the piece, refers to the phenomenon of electrical interference. While this can be the lamps' interference with the electromagnetic fields, it's also possible for intermittency to occur within the circuitry itself, regardless of outside forces. All electrical systems, from novice projects to near perfect designs, can be susceptible to this phenomenon. According to John Briggs and F. David Peat in *Turbulent Mirror*, this intermittency is a sign of inherent chaos, as it "shows how the whole range of order from simple oscillations to the complexity of full chaos can be present in one system."

Erin's amplification of intermittency illuminates the underlying tendency toward chaos within our designed, manufactured and seemingly controllable systems. Reveling in the contrast with the lamps' configuration, which almost makes me feel as if I'm shopping for lamps at Ikea, I find I want the chaos to come out--I want to hear it. I enjoyed when Erin referred to this work as "jerk" art, as it can be a slap in the face with its bright lights and stark reminder of inherent disorder. But I also enjoy listening to the thick drone, wondering if the nuances I'm hearing are from a lamp, interference from my phone, or maybe a blip of chaos putting everything back into perspective.



Erin Demastes is an Experimental Sound Practices and Integrated Media M.F.A. candidate at California Institute of the Arts. Her work deals with repurposed technology and everyday objects to explore sonic phenomena related to acoustics, resonance, electricity, and magnetism. She fosters a sense of play and discovery in both her performances and fixed media.

Project Abstract:

Handmade electromagnets are used to amplify the sonic qualities of the electrical current in lamps. The frequencies of the lamps include a 60 hertz current hum, a mid to high frequency noise floor, and various other frequencies which are then mixed, EQed, run through a low pass filter, and sent to two speakers. The speakers are spatialized in a way that the listener can experience the sounds differently at different points in the room.

Project Description:

The materials used in this project consist of seven lamps each with their own electromagnet that are then plugged into the mixer in separate channels and are EQed differently. Together they are run through the effects pedal and EQed as a unit before being sent to the two speakers.

The seven lamps will be placed against a translucent wall which will accentuate their reflection and also allow for the viewer to experience the installation in a smaller space. The speakers will be on plinths to allow for an accurate listening experience in addition to being aesthetic objects in the installation. The speakers being present in the installation allow for the viewer to deduce that the sound is coming from the lamps.

The wattage and type of light bulbs also affect the sound of the installation. I chose to have varying lamps and wattages because the loudness and type of noise floor vary slightly between each lamp. I discovered that fluorescent bulbs are too quiet, but incandescent ones work well and that some sounds are affected when certain lights are turned on and off. As a result, I've

chosen to accentuate these differences with EQ so as to create a complex collection of sounds for the listener. One could also think of this work as a durational piece since it is possible for the listener to hear the various frequencies and occasional fluctuations in the current if they spend some time listening to the piece.

The inspiration for this installation stems from a concept in chaos theory called intermittency. Intermittency is the idea that in any system, chaos can arise with no external source. This can be found in almost any electrical circuit when unexplained interference occurs where there is no resistance to electrical flow. This project not only acknowledges these interferences but amplifies and reorders them into a sonically complex soundscape.

The exploration of electricity is a common theme in my fixed media work. I recently finished an installation of ten CMOS circuits that are suspended from the ceiling in a small gallery. Each circuit has very long wires connecting each component, small one inch speakers embedded in the wiring, and photoresistors paired with flashlights that allow viewers to affect the sound output. This project plays with the juxtaposition of what we expect synthesizers to look like versus what they *can* look like and still be functional and interactive.

Materials, Installation, and Performance Description:

The materials for this project include shielded 28 gauge copper wire, 7 D cell batteries, 7 steel screw drivers (or 6" iron nails), 7 quarter inch audio jacks, 7 lamps of varying sizes, 2 speakers, 12 quarter inch audio cables, 2 plinths, 3 or 4 power strips, and any available translucent walls.

Production Schedule:

This project will take as little as four weeks to gather materials and fine tune the technology.

Week 1-2: Make electromagnets and gather supplies

Week 3: Experiment with mix, EQ, and effects pedal

Week 4: Optimize placement of objects in the space—speaker, lamp, and walls.