Visceral Systems

I am a media artist and educator, part of the weise7 studio in Berlin. I am interested in systems, radio waves, computer networks and sculpture.

I have an arts practice with networking technology as my medium, and a teaching practice that works to promote Internet literacy, cracking open the black box known as ‘The Cloud’, bringing awareness that there are alternatives to commercial providers if we want to for example host a web site or run our own community network.

I think it’s of vital importance to have a basic understanding of how the Internet works so we can ourselves be creators and not just passive consumers.

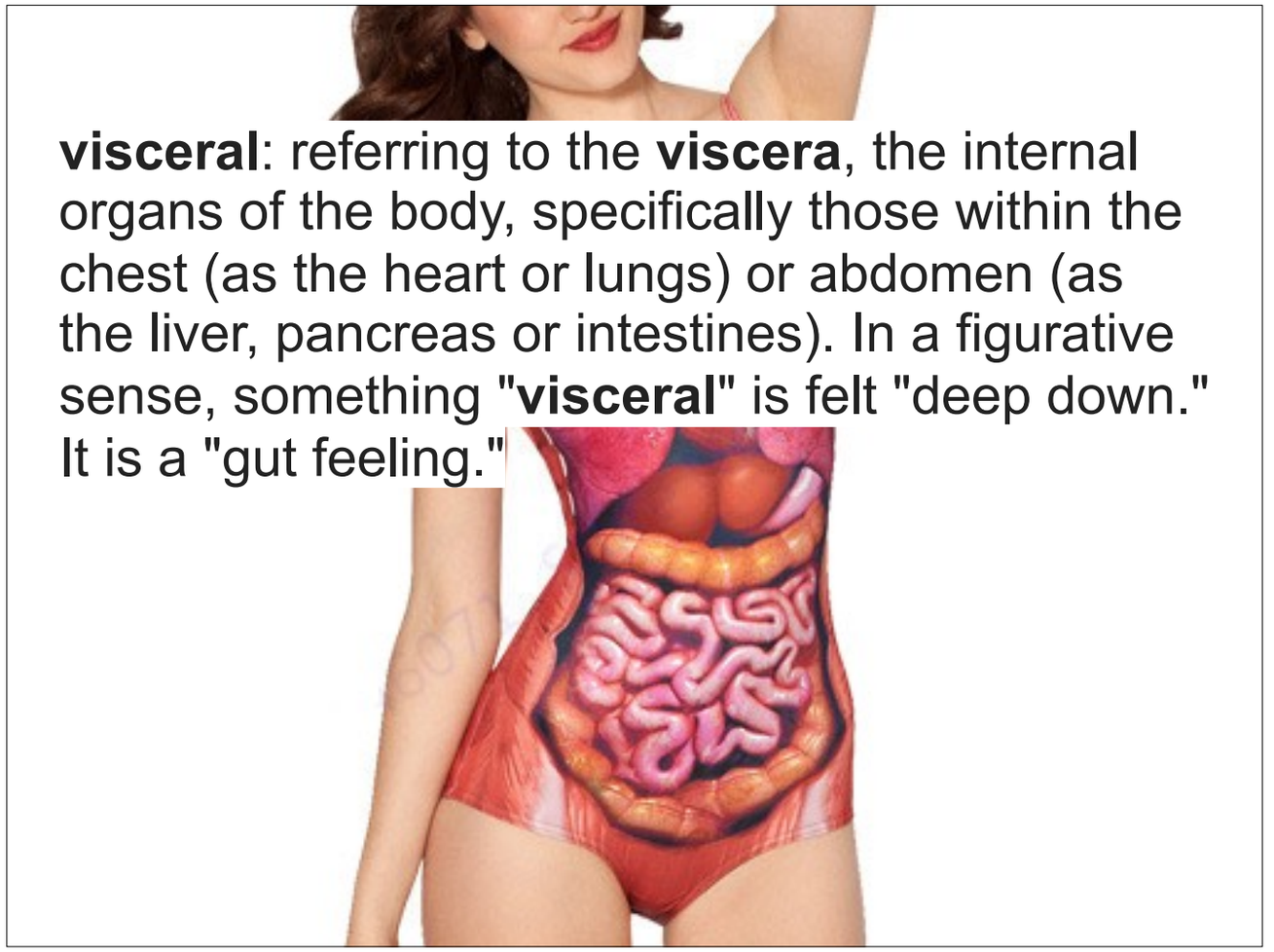
I also organize the Radical Networks conference in Brooklyn NY with my colleague Erica Kermani. It is a 4 day event that has talks, workshops, and an exhibition featuring critical investigations and applications of Internet and radio technology. The spirit of the event is to give beginners and the community a safe place to come learn about and discuss issues such as surveillance, ownership of personal data, and to dismantle this opaque notion of ‘the cloud.’

Visceral Systems?

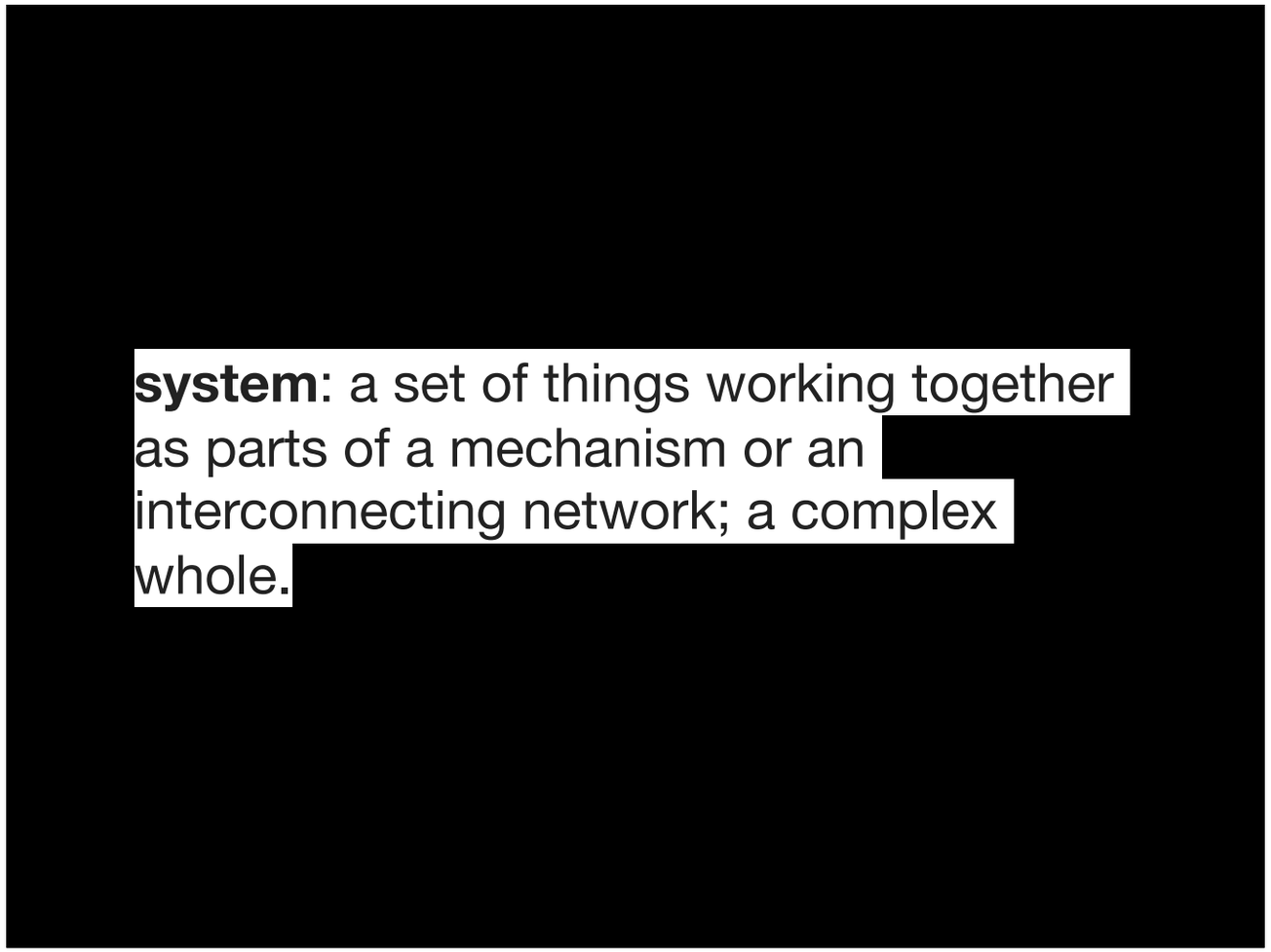
Today I want to talk about something which i’ve spent a long time feeling, but have only recently started publicly talking about, this idea of visceral systems as applied to sound composition and computer networks given the following framework

1/ my background and past influences
2/ my relationship to sound and then networking technology

But first some definitions to lay a groundwork, with the caveat that I’m going to be bending these definitions quite a bit



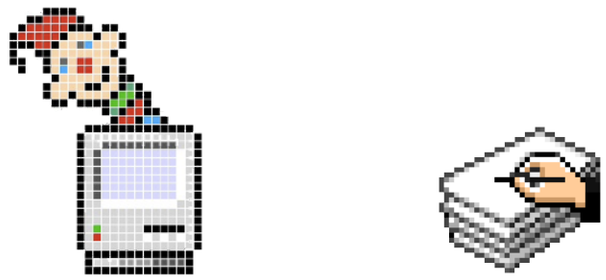
From MedicineNet, **visceral** typically refers to the viscera, the internal organs of the body, specifically those within the chest (as the heart or lungs) or abdomen (as the liver, pancreas or intestines). In a figurative sense, something “visceral” is felt “deep down.” It is a “gut feeling.”



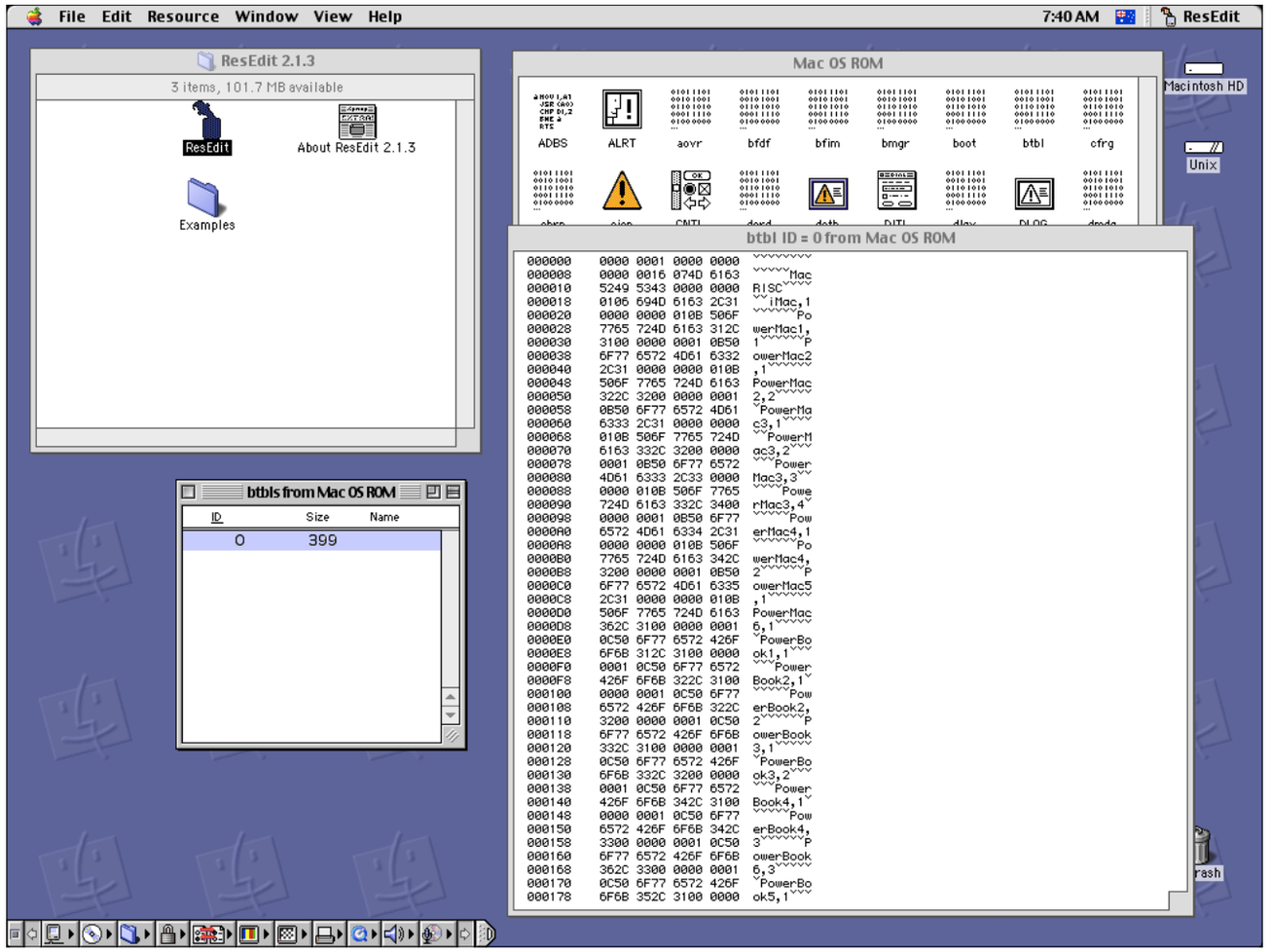
From the Oxford Dictionary

So, while a visceral system usually refers to the system of the body, I am bending the term to mean a system which evokes a visceral feeling - feelings of textures, colors, dimension, and mass - to sound compositions and communication systems, two systems that I didn't so much as intentionally choose, but who in a way chose me.

But first I'd like to back up about 30 years and show how i think i ended up here -

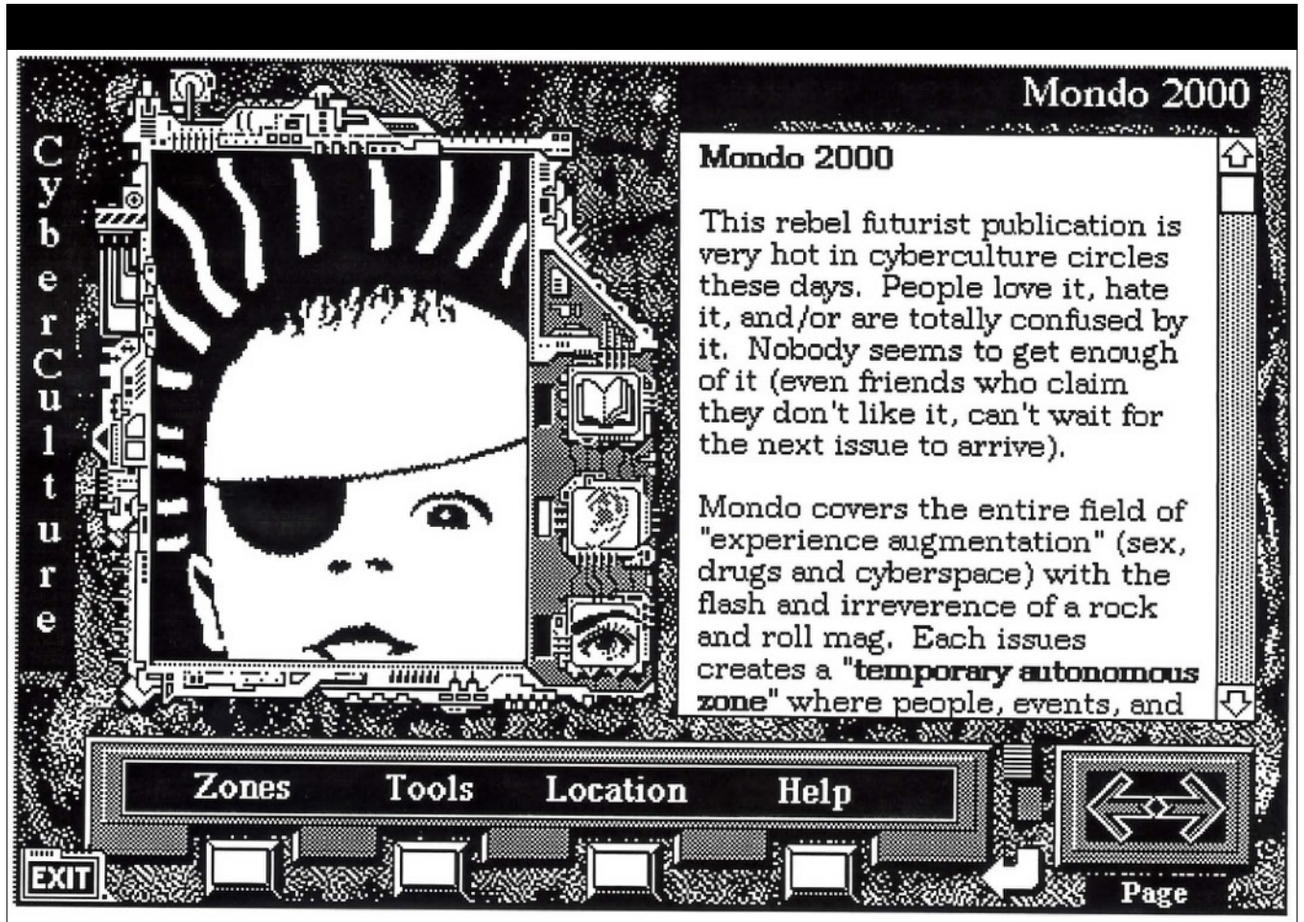


One of the defining influences in my life was discovering two software applications called ResEdit and HyperCard when i was about 10 years old.



ResEdit was an application that was used to create and edit application resources, like icon bitmaps, the shapes of windows, definitions of menus and their contents, and application code.

The first time I was able to open up a piece of software and watch it disassemble into a collection of ions and hex code made a major impression on me. The code made no sense to me of course - i had no idea how to parse what i had stumbled into - so instead of looking at it rationally as a computer program, my child's mind connected to it visually, viscerally even. Instead of software, I noticed the texture of the black and white characters. I saw lines and shapes come forward from how the code was arranged on the screen. I didn't actually know what I was looking at, but I knew it was controlling what happened up front in the interface. And i felt a huge excitement at seeing the guts, the organs of what i previously thought was a black box that I was only allowed to take at face value.



This is the Mondo 2000 card from the Beyond Cyberpunk hypercard stack, a compendium of cyberpunk sci-fi and guide to cyberculture released in 1990.

HyperCard is an application that lets you create stacks of so-called cards containing text and interactive images, buttons, text fields, and other GUI elements.

It’s considered one of the first successful hypermedia systems before the web and was therefore a precursor to the web in the way that you could use it to create non-linear narratives, jumping between “cards” of text and interactive media content. Being able to move in this non-linear way creates the feeling of traversing space - document space - adding a dimensionality to what was otherwise a very flat landscape in digital media.

Interacting with software in this way via these programs gave digital media a shape and a form in my mind and established the synesthetic relationship I began to take with media.

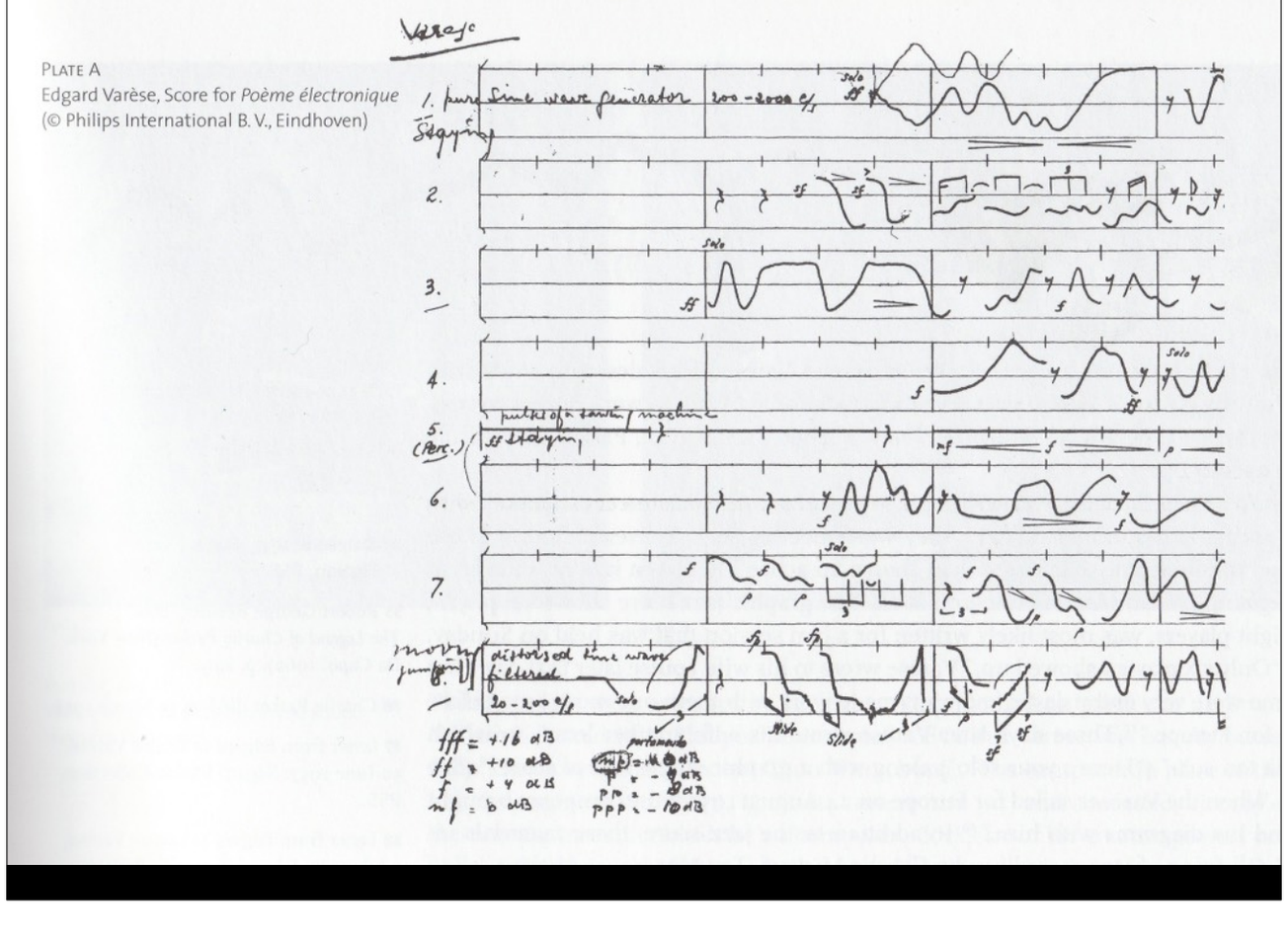
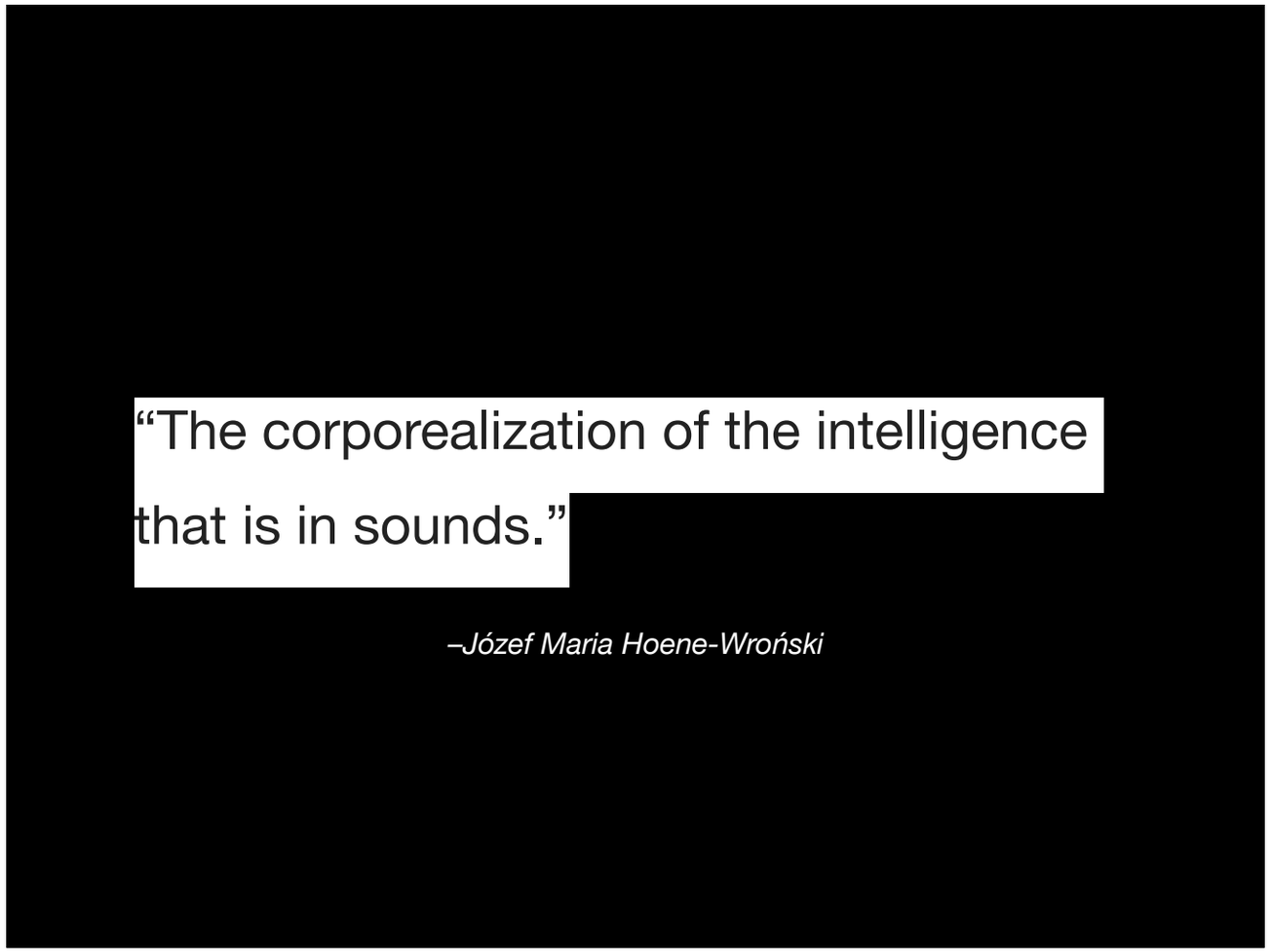


PLATE A
Edgard Varèse, Score for *Poème électronique*
(© Philips International B. V., Eindhoven)

Let’s talk about sound for a minute.

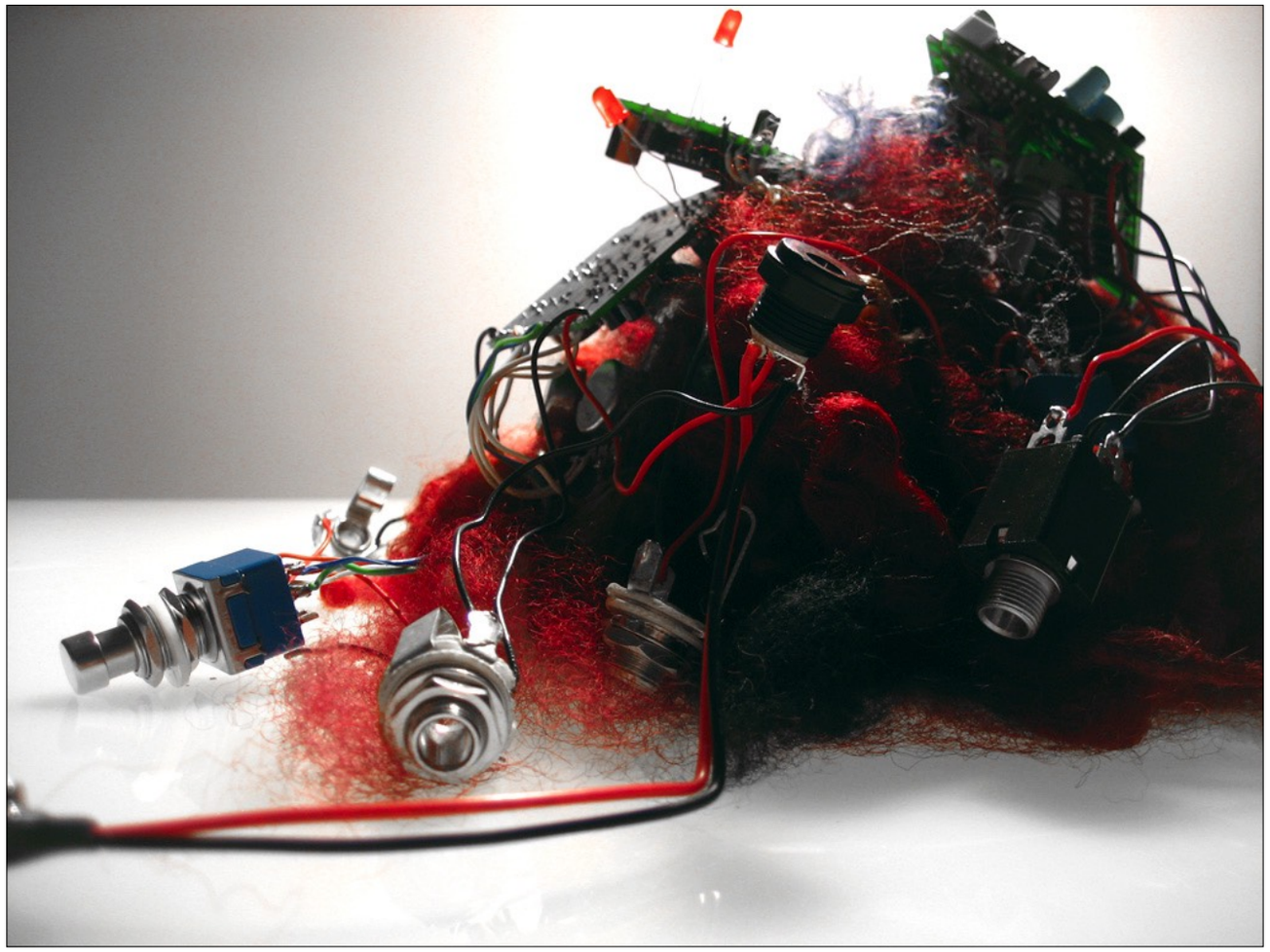
A great inspiration for me is Edgar Varèse and his idea of sound objects. That sound occupies space as forms with mass. Varèse was a french-born composer working in the first half of the 20th century and he conceived of music as “sound as living matter” with the elements in his music as “sound masses" organized as crystalline structures.



“When I was about twenty, I came across a definition of music that seemed suddenly to throw light on my gropings toward music I sensed could exist. Józef Maria Hoene-Wroński, the Polish physicist, chemist, musicologist and philosopher of the first half of the nineteenth century, defined music as 'the corporealization of the intelligence that is in sounds.' It was a new and exciting conception and to me the first that started me thinking of music as spatial—as moving bodies of sound in space, a conception I gradually made my own."

This encouraged me to develop a project called Felted Signal Processing, something i continued to work on for a number of years with my sister Lara Grant, who continues to work as a wearable electronics and textile designer. Together, we developed conductive soft interfaces out of regular wool and metal wool to work as components in guitar pedals, synths, and home grown sound circuits (shout out to Nicolas Collins and Handmade Electronic Music).

My goal with FSP was to take something else that I had a visceral connection to - sound - and try to create an emotional connection to it through an interface that i thought was closer to the texture of the sounds as i experienced them than hard, discrete knobs, sliders, and buttons.



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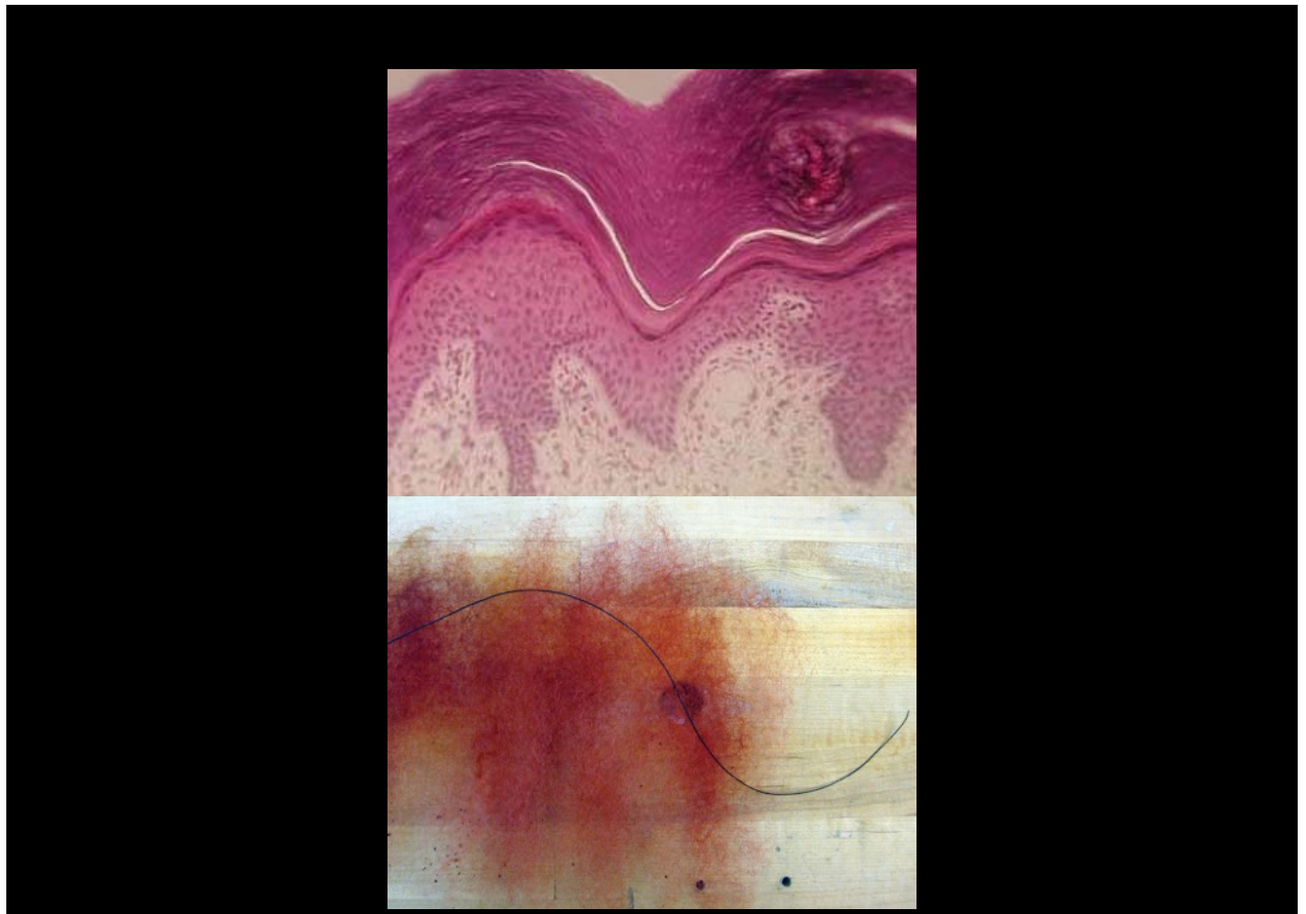

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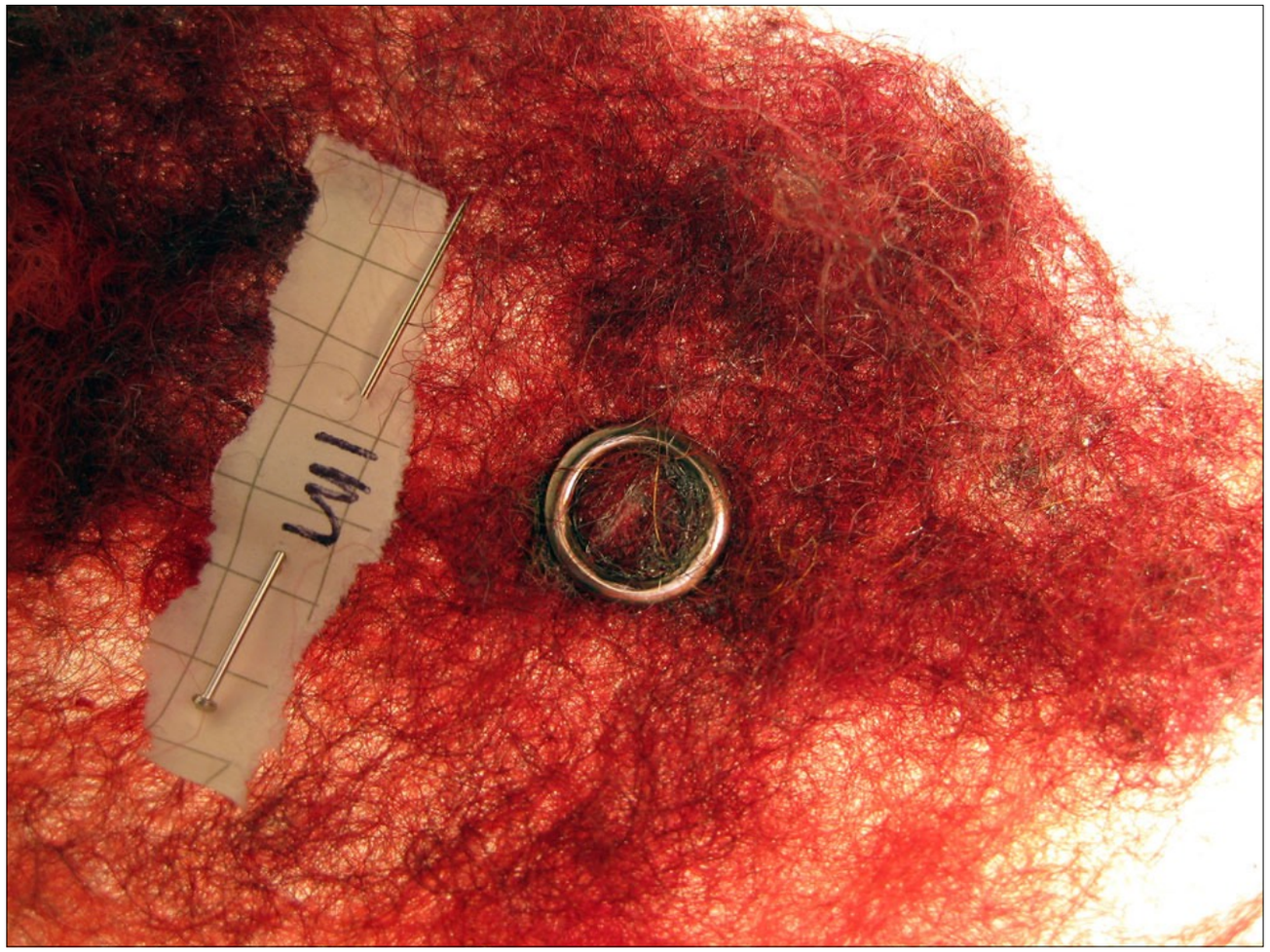

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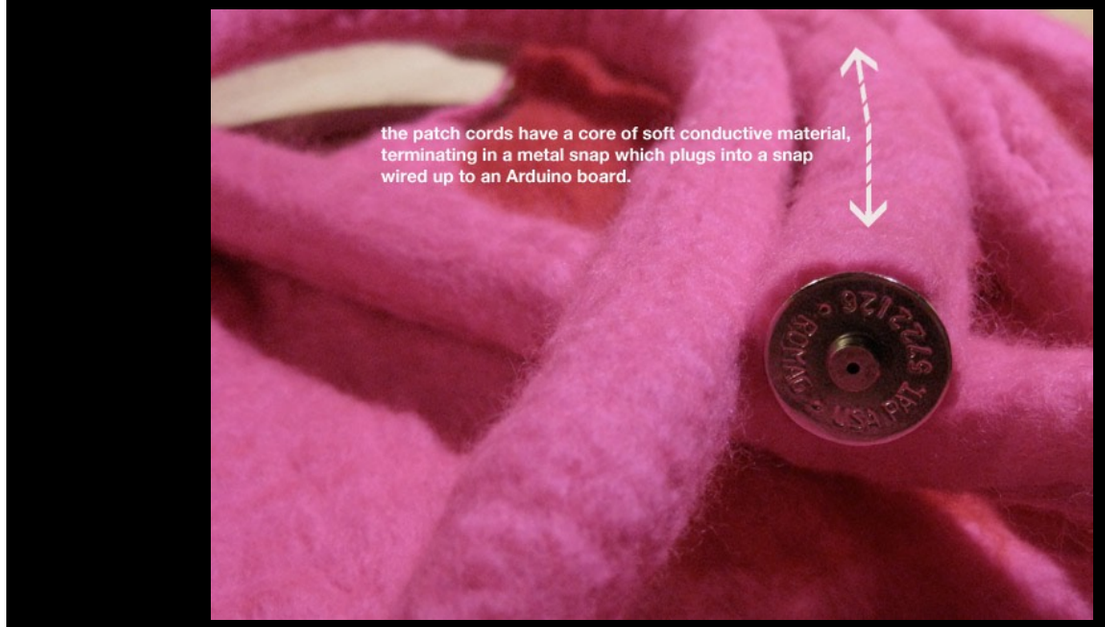

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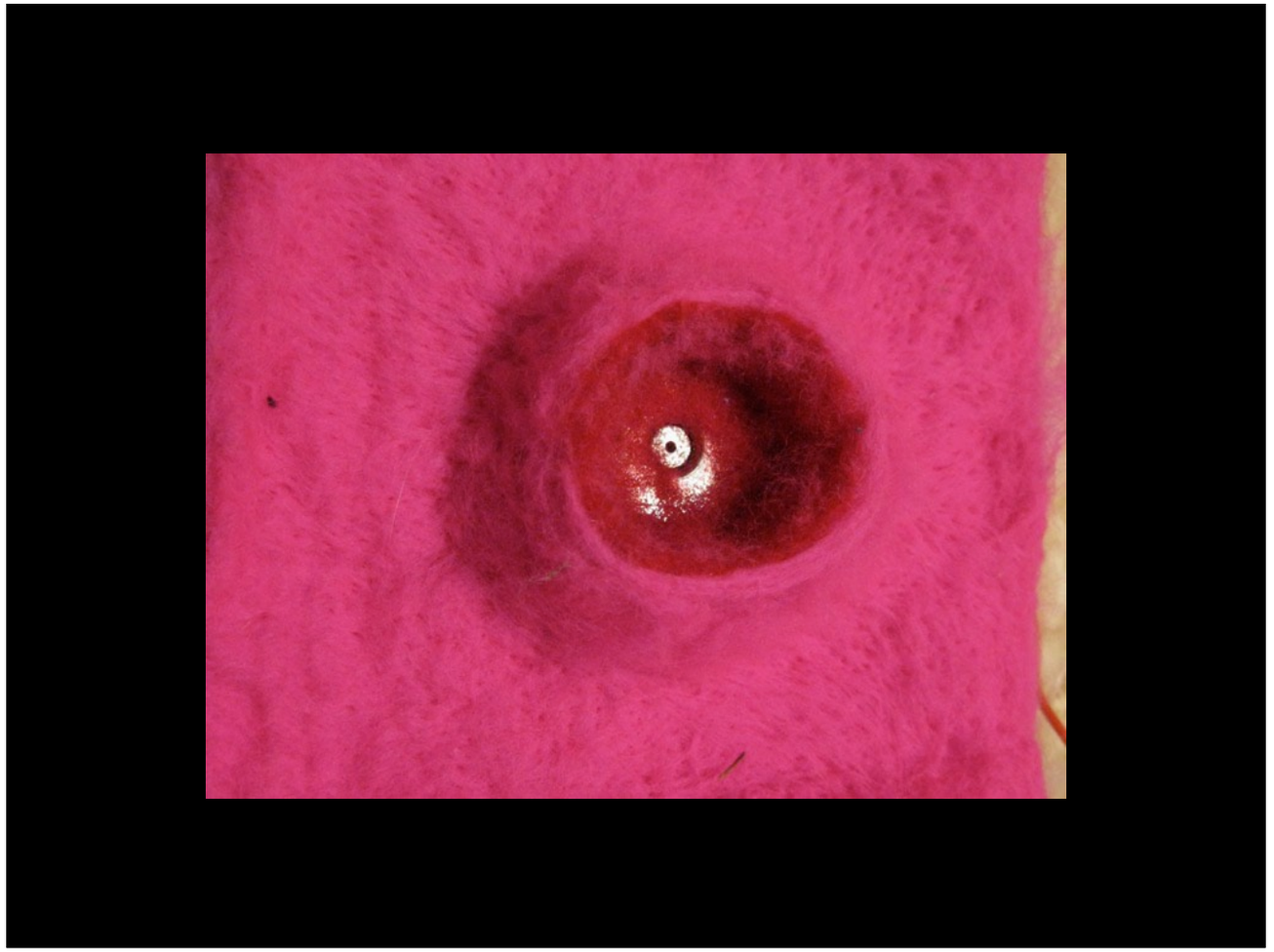

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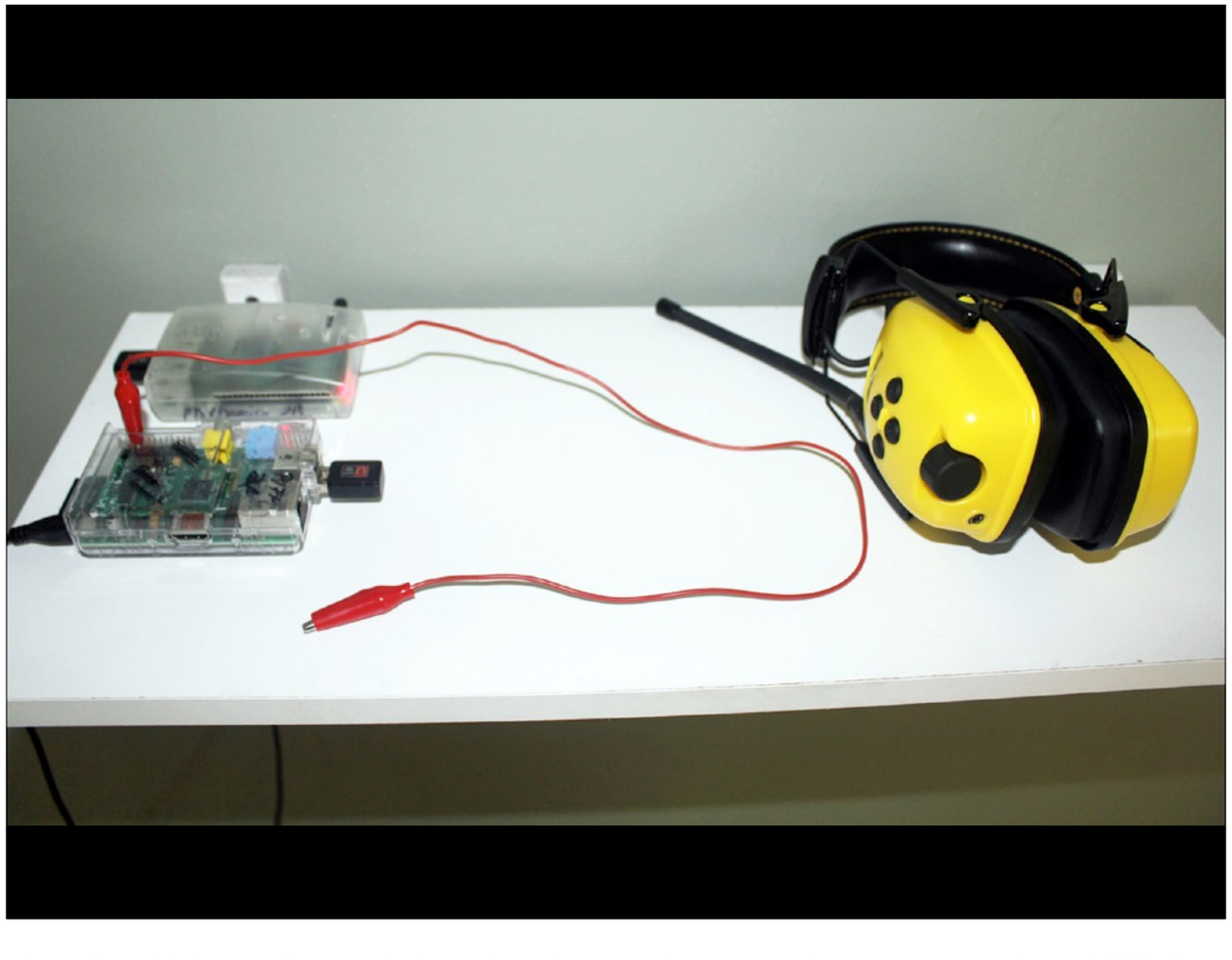
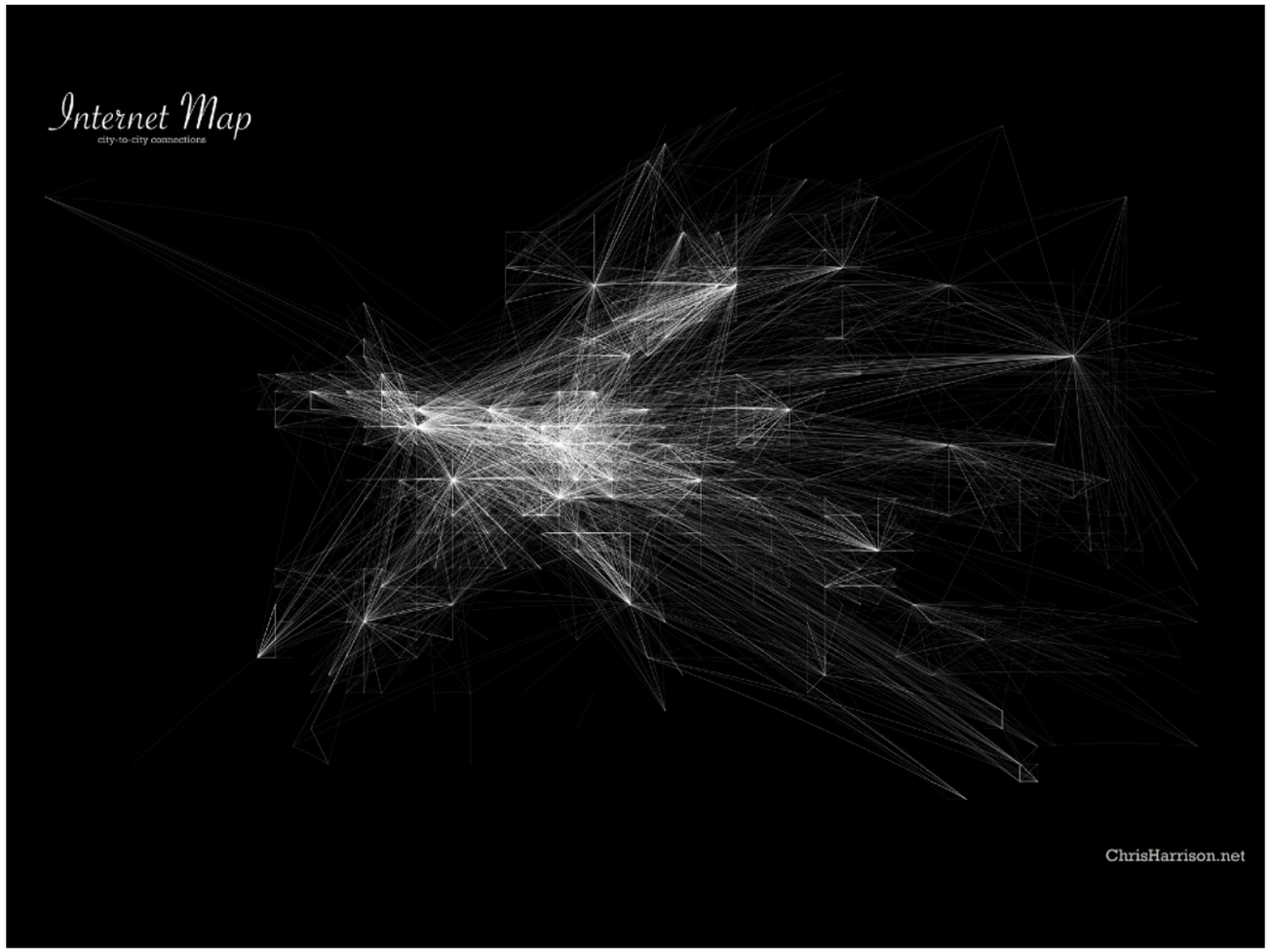
Later I made an installation in collaboration with sound designer Hellyn Teng called HouseFM.



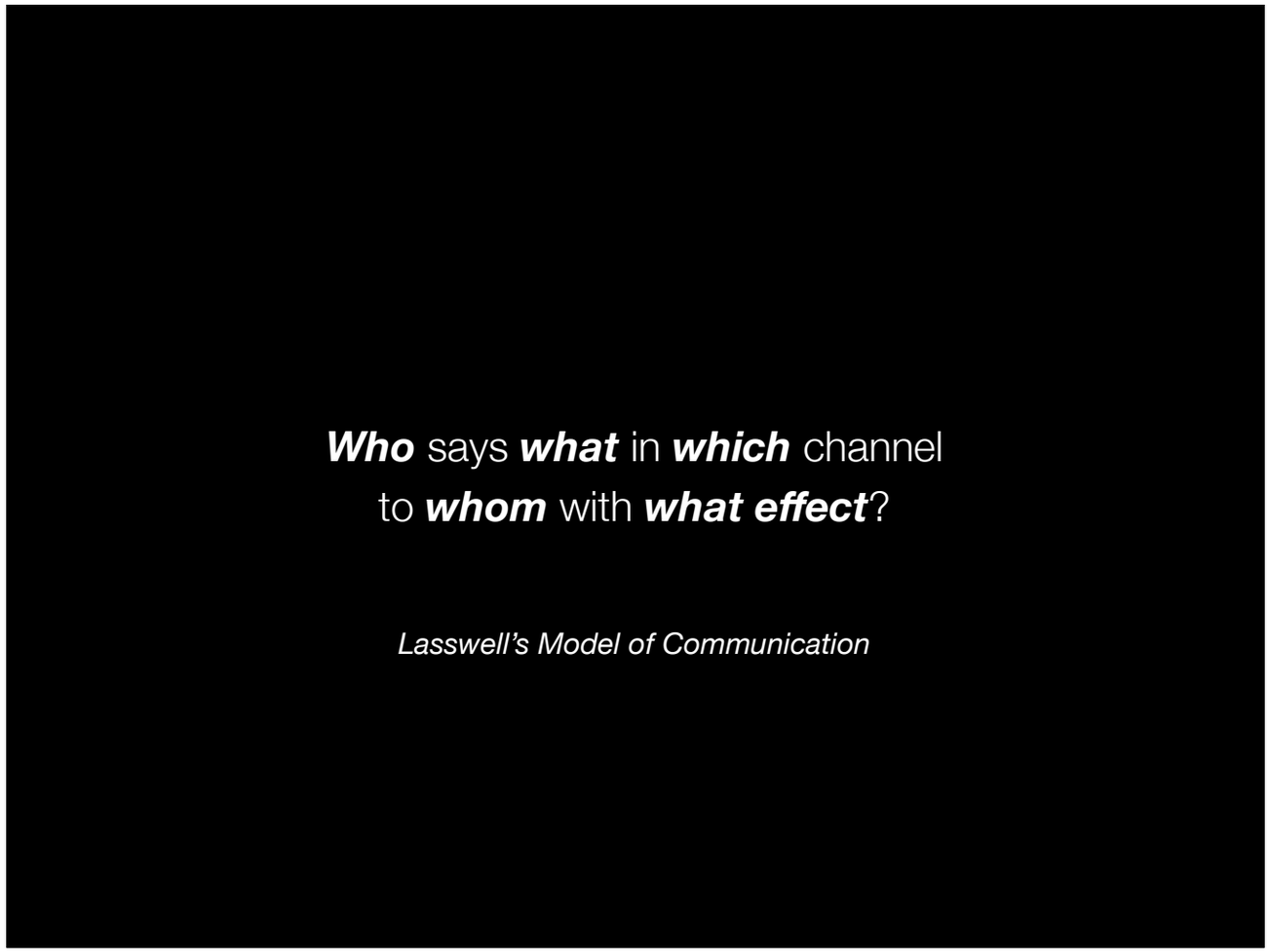
HouseFM is an on-site installation consisting of multiple raspberry pis broadcasting a unique soundscape over a shared FM channel, which was set to 90.1. As participants move throughout the house wearing FM radio enabled headphones, the audible signal from each Raspberry Pi will fade in and out as you move towards and away from each station.

This was an experiment both in trying to pull the color and the texture out of the corners of the house in which the piece was installed, giving a voice and a body to each of these areas as expressed in the sounds designed by Hellyn.



Earlier I stated that my goal was to take something that I had a visceral connection to - sound - and try to create an emotional connection to it through an interface that i thought was closer to the texture of the sounds as i experienced them.

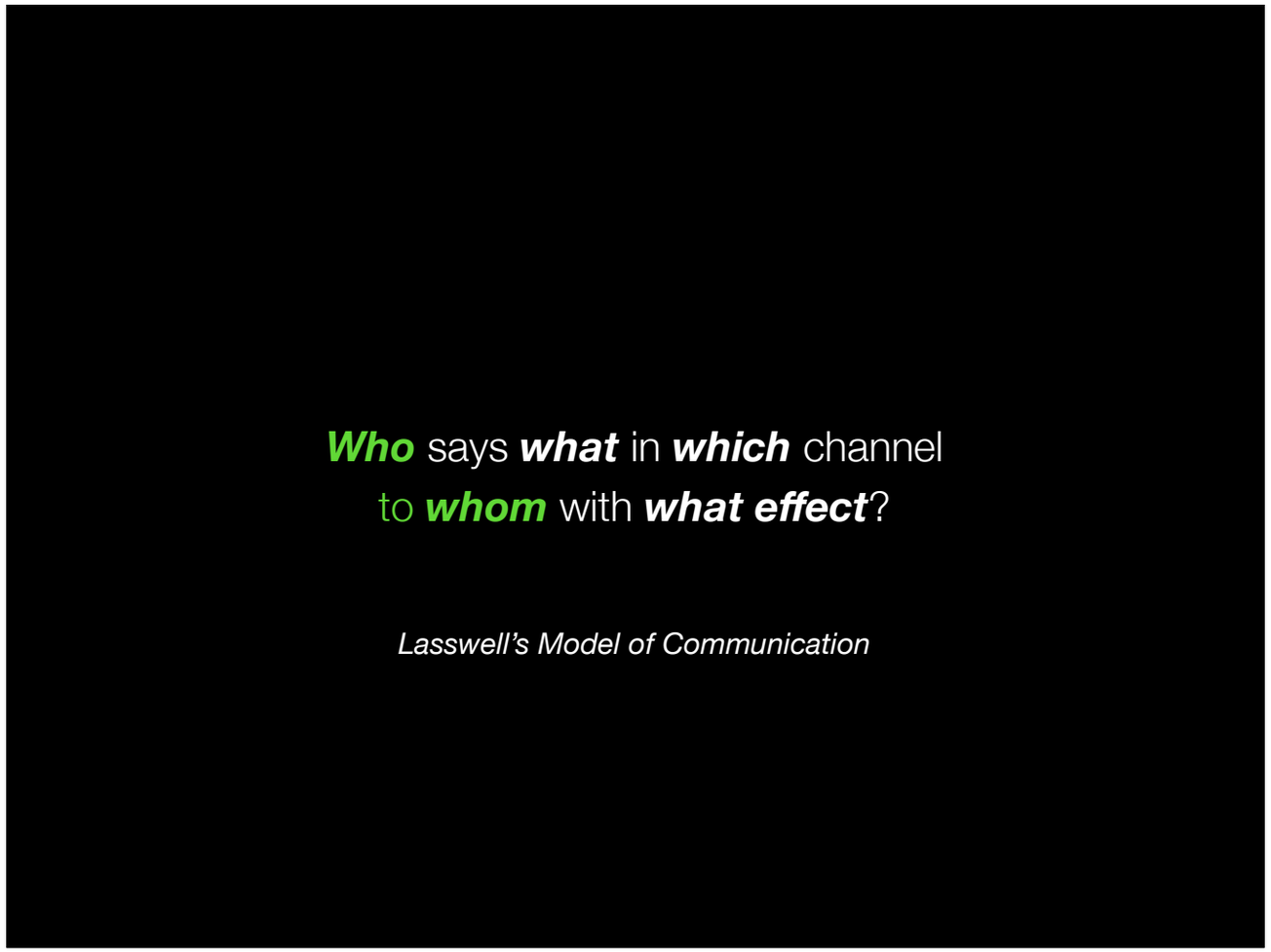
But this goal extended to my relationship to computer networks. I had a visceral relationship to music, art but as well to computer networks. The first couple made more sense, but the second is not so obvious. I wanted to situate networking in the context of sculpture. Design tactile networked systems. And to reference Varèse again, to consider networks, or the signals moving over networks, as living matter. I needed a framework to help guide my experiments and explorations. And this was challenging.



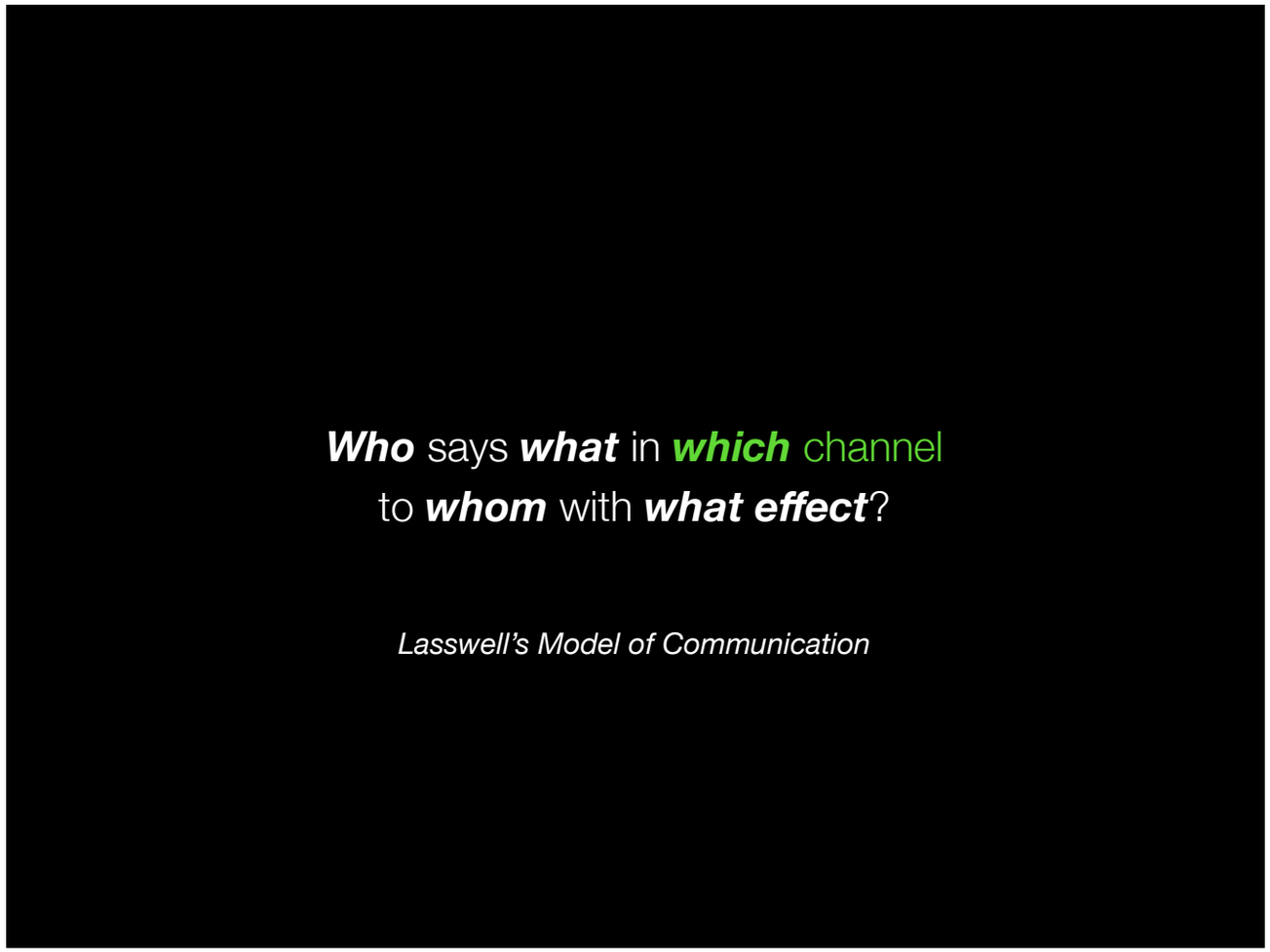
I think that framework is this modified version of Harold Lasswell's model of communication as a template for my thinking going forward as I grope my way towards the sculpture i sense could exist, to again paraphrase Varèse

According to Lasswell, this phrase is designed to describe an act of communication. It asks:

Who
Says What
In Which Channel
To Whom
With What Effect?



In the context of sculpture, the Who and To Whom are straightforward to answer - these are the artist and the audience

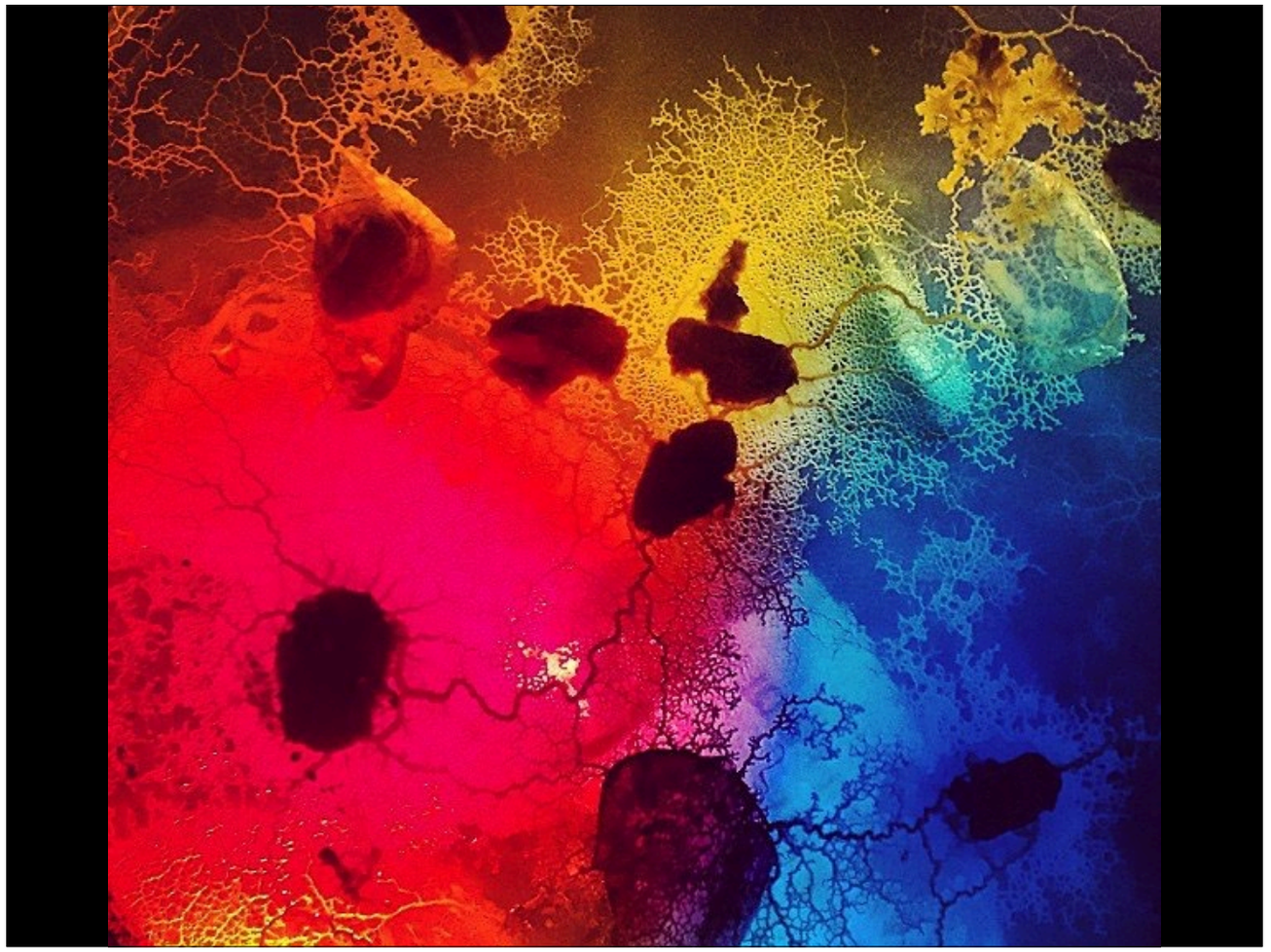


Which Channel refers to the medium - felt? slime mould? cement? paper? What is the physical medium that will be used to link the intangible to something that can be physically sensed?

Says What is the message. To me, the “what” is wanting to give the intangible a physical presence, a real world avatar.

And finally - with what effect? This is the feedback from the audience. How will it make the viewer feel? I hope it will impart a sense of tangible experience with something that is otherwise unnoticed.

One of the first experiments involve the slime mould Physarum polycephalum.



Physarum polycephalum is a single cell amoeba and fungus like creature.

Since about 2010 it’s been the focus of interesting research that has taken note of the fact that for being such a simple creature, it tends to display complex and indeed sophisticated behavior, and has been used to model various systems from transportation networks to how blood vessels form.

It’s particularly noted for its ability to quickly find the most efficient path between food sources, creating efficient transport interconnections for ferrying nutrients from oat flake to oat flake.

It’s basically a decentralized, adaptable network that is able to change in response to a changing environment. and you can clearly see how it takes on the shape of a network. In this particular experiment, i was seeing if i could make a color mixer by dying different oat flakes with primary colors. as the slime mould ingests the flakes, its broken down and then streamed through the plasmodium tubes in a tidal fashion.

I wanted to also see if i could create color-coded tags that would move throughout the system, in the hopes of designating data packets. I wanted to see how data could move through this slime net. This is an on-going experiment.

QFM is a collection of FM transceivers embedded in cast cement cubes, worked on in collaboration with my partner Danja Vasiliev.

Together they form a network of mini-radio devices for modeling network topologies and travel paths of data from one device to other. Each mini-radio device has an antenna, button, and LED. Each device has a push button to trigger packet transmission across the network and an LED to indicate when data has been received.

The point of this was to provide a visual tool for modeling simple data traversal over a network of devices.

One of the greatest challenges of working with networks as an artistic medium, or using networks as material, to use a phrase coined by my studio mate Julian Oliver, is the fact that computer networks aren't inherently tactile. You can't see them, taste them, smell them, feel them. So how do you create works that engage an audience out of computer networks, if they can't experience it with their senses? And does a person fully appreciate what's happening over a computer network if they can't experience it with their senses?

I was hesitant to put this slide in here, even though it's a good question to ask, because i didn't want to focus too much on why one should pursue artistic experiments. However it's still a question that keeps me up at night.

I think it's about changing our relationship to something that is usually considered purely a utility. Networking is thought of as a very utilitarian thing. It's about getting a message from A to B.

It's about exploring how networking can manifest itself in other contexts. Where can parallels be found and is there meaning to that?

By giving something tangible forms, will it make us think more about what happens over those invisible tubes?

The thoughts presented here are open to discussion and if this has evoked any thoughts or questions, I would love to hear what you had to say.

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