

Initial idea?

THE HUMAN BRAIN

The image is a complex collage centered around a stylized brain. The brain is depicted with red and purple colors, showing the cerebral cortex and some internal structures. Surrounding the brain are various mathematical and scientific elements:

- Mathematical Formulas:**
 - Top center: $1 + \sin 2x$, $S_{\Delta} = \sqrt{p(p-a) \cdot (p-b) \cdot (p-c)}$
 - Top right: $S_{\Delta} = \cos \frac{\alpha - \beta}{2}$
 - Right side: $1 - \text{tg}^2 \alpha$
 - Bottom center: $S_{\Delta} = \cos \frac{\alpha - \beta}{2}$, $S = \cos \frac{\beta \alpha}{2^2}$
 - Bottom left: $S_{\Delta} = \cos \frac{\alpha - \beta}{2}$
 - Bottom right: $f(x) = \lim_{x \rightarrow 0} (\sin x + \cos x)^2$, $f'(x) = \lim_{x \rightarrow 0} (\sin 2x)$
 - Left side: $1 - \text{tg}^2 \alpha \left(\frac{f(x)}{g(x)} \right)$, $f(x) = \lim_{x \rightarrow 0} \frac{\sin 2x}{x}$
 - Top left: $S_{\Delta} = \sqrt{p(p-a)}$, $(p-c) \sin 2x$
 - Center: $S_{\Delta} = \sqrt{p(p-a)}$, $\frac{f(x)}{g(x)}$, $S_{\Delta} = \sqrt{p(p-a) \cdot (p-b) \cdot (p-c)}$
- Chemical Structures:**
 - Top left: A complex organic molecule with a benzene ring and a carboxylic acid group.
 - Top right: A nucleobase-like structure with a nitrogenous ring and a hydrogen atom.
 - Bottom left: A flask containing a liquid, with a chemical structure $\text{C}_6\text{H}_5\text{OH}$ (phenol) nearby.
- Mechanical Diagrams:**
 - Left side: Two interlocking gears.
 - Right side: Three interlocking gears of different sizes.
- Geometric Figures:**
 - Top center: A right-angled triangle with sides $p-a$, $p-b$, and $p-c$.
 - Bottom center: A circle with a horizontal diameter and a vertical radius.

On average, the human brain has about **100 billion** of neurons. Each neurons fires (on average) about **200 times per second**. And each neuron connects to about **1,000 other neurons**.

Let's multiply:

$$\begin{array}{r} 100 \text{ billion neurons} \\ \times \\ 200 \text{ firings per second} \\ \times \\ 1,000 \text{ connections each} \\ = \\ 20,000,000,000,000,000 \end{array}$$

20 million billion bits of information move around your brain **every second**.

Researching?

THE DIFFERENCE BETWEEN MIND AND BRAIN?

- Your brain is part of the visible, tangible world of the body.
- Your mind is part of the invisible, transcendent world of thought, feeling, attitude, belief and imagination.
- The intelligence of your mind permeates every cell of your body, not just brain cells. Your mind has tremendous power over all bodily systems.

www.stanecare.com

THE MIND IS THE AWARENESS OF CONSCIOUSNESS WE KNOW, THE ABILITY TO CONTROL WHAT WE DO, AND KNOW WHAT WE ARE DOING, AND HOW.

- The ability to understand (machines don't have that)
- Animals are able to interpret their environments, but not understand them, unless humans are able to understand what happens around them.
- Logic
- Ability to analyze
- Developing solutions — seeing things we can't see by designing instruments to do so.

"Our emotional and unexplained 'upliftations' have given way to 'knowledge'."

www.mentalhealth.org

WITHOUT A MIND YOU CANNOT BE CONSIDERED MEANINGFULLY ALIVE.

It is impossible to completely disentangle our subjective view of the world from our interactions.

Small input leads to large and difficult to predict results.

Dr. Dan Siegel

The system really is the entire system. These linkers are made in a system.

Thoughtfulness is a fundamental way of transforming identity.

Where do our thoughts come from?

- Collective mind of humanity. Any thinking that takes possession of your mind is not really personal. There is not personal thought. Emotion generated from that.
- Many humans live virtually with a mind that has taken possession of them. Beliefs to be transmitted.
- Urban collective thought forms can take possession of entire country, communism, Maoism in China.

Cognitive science — the study of thought, learning, and mental organization, which draws on aspects of psychology, linguistics, philosophy, and computer modeling.

Human brain Anatomy

www.wikipedia.com

- One of the largest and most complex organs in the human body.
- Made up of more than 100 billion nerve cells communicable in trillions of connections called synapses.

THE BRAIN IS MADE OF:

- THE CORTEX — outermost layer of brain cells. Thinking and voluntary movements begin in the cortex.
- THE BRAIN STEM — is between the spinal cord and the rest of the brain, basic functions like breathing and sleeping controlled here.
- THE BASAL GANGLIA — center of structures in the center of the brain. It coordinates movement between multiple other brain areas.
- THE CEREBELLUM — is at the base and back of the brain. It is responsible for coordination and balance.

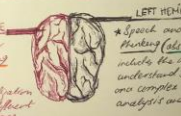
DIVIDED INTO SEVERAL LOBES:

- The frontal lobes are responsible for problem solving and judgement and motor functions.
- The parietal lobes manage sensation, touch, hearing, and body position.
- The temporal lobes are involved with memory and learning.
- The occipital lobes contain the brain's visual processing system.

The brain controls and coordinates all actions and reactions, allows us to think and feel, and enables us to have memories and feelings — ALL THE THINGS THAT MAKE US HUMANS.

The brain works like a big computer. However humans think and experience emotions with their brain — and it is the root of human intelligence.

CAN EMOTIONS BE CREATED??



RIGHT HEMISPHERE

- Responsible for spatial thinking or imagery.
- (navigation, visualization of objects from different angles and space)

LEFT HEMISPHERE

- Speech and abstract thinking (abstract reasoning) which is the ability to understand subjects one complex level through analysis and evaluation.

By the time you finish reading this sentence, 50 million of your cells will have died and been replaced.

EMOTIONS AND FEELINGS

Q: Can you recognise emotions?

The physiology of emotional response in terms of the structures and systems involved.

- The limbic system, autonomic nervous system, and reticular activating system all interact in the physiological process of emotion.
- The limbic system categorises human emotional experiences as either pleasant or unpleasant mental states.

Q: What part of the brain affects personality?

- The largest section of the brain located in the front of the head, the frontal lobe is involved in personality characteristics and movements.

Q: What part of the brain controls self identity?

The human perception of self. The prefrontal cortex is a part of the brain located at the front of the frontal lobe.

Q: Where is identity in the brain? IDENTITY IS NOT LOCATED IN THE BRAIN

Q: Neuroticism?

It's a long-term tendency to be in a negative or unwelcome emotional state. It's not a medical condition, but personality trait.

www.wikipedia.com

SO CALLED — BIG FIVE

- 1) NEUROTICISM (HOW MOODY A PERSON IS)
- 2) EXTRAVERSION (HOW ENTHUSIASTIC A PERSON IS)
- 3) OPENNESS (HOW OPEN MINDED A PERSON IS)
- 4) ~~EXTROVERSION~~ (HOW ENTHUSIASTIC A PERSON IS)
- 5) AGREEABLENESS (A MEASURE OF EMPATHY) Selfless concern for the well-being of others.
- 5) CONSCIENTIOUSNESS (A MEASURE OF SELF-CONTROL) Links between brain structure and behavior. We are continuously shaped by our experiences and environment but the fact that we see clear differences in brain structure, which are linked with differences in personality, really suggests that there will almost certainly be an element of genetic involvement. — Professor Nicola Tinelli — www.comauk.com

Linking how brain structure is related to basic personality traits is a crucial step to improving our understanding of the link between brain morphology (study of the structural morphology of the brain) and particular mood, cognition, or behavior of disorders. — Dr. Raymond

- Brains of teenagers with serious antisocial behavior problems differ significantly in structure to those of their peers.

**“I keep losing
focus and my
mind is
preoccupied
with my own
thoughts.”**

What's wrong
with me?

The Neuroscience of Creativity: Why Daydreaming Matters

- This article states, we do our best work when our minds are wandering:

<https://www.americanexpress.com/en-us/business/trends-and-insights/articles/the-neuroscience-of-creativity-why-daydreaming-matters/>

Then came the idea,

“DOCUMENTING MY THOUGHTS & EMOTIONS!”

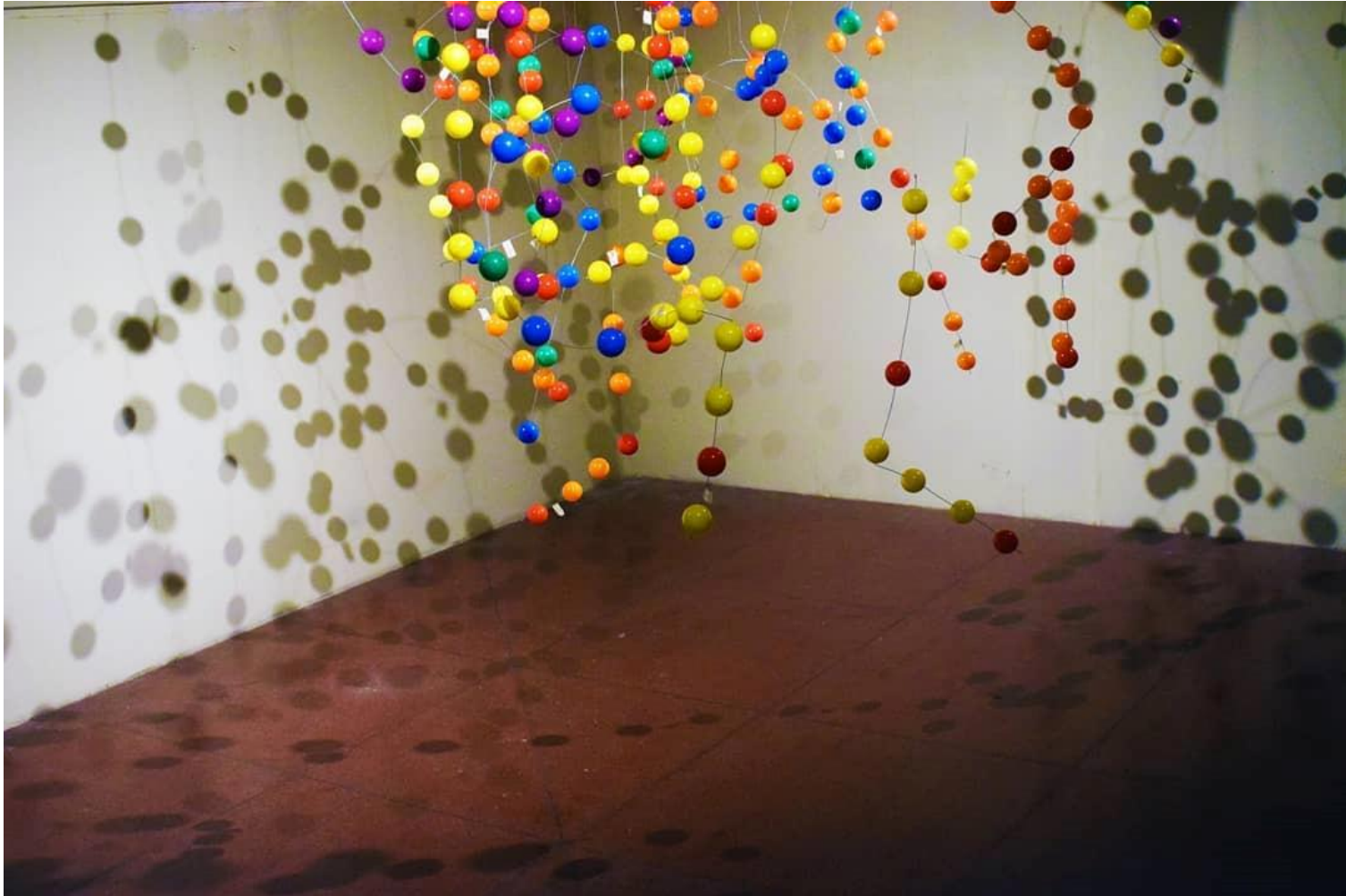
Collecting Data;

- 21st October 2019,**
- 9:30 am - feeling sad because the new week started and it's already Monday
 - 10:10 - feeling happy - laughed a lot because of my friends.
 - 11:42 - mixed feelings, feeling nostalgic and missing W. feeling sad, want to leave.
 - 2:36 pm - feeling stressed because not doing any work for thesis, and the day is almost over.
 - 4:02 - listening to upbeat songs (drake, post Malone) thinking about nothing and just feeling the beat, feeling happy want to dance.
 - 5:52 pm - W seems to be on my mind a lot, thinking if they ever think about me - feeling sad, want to cry.
 - 7:08 pm - feeling refreshed and happy because went out for fresh air and played with O.
 - 7:43 pm - feeling confused because wondering about what I'm actually doing with my life - I think it will go away.
 - 8:03 pm - distracting myself with John Mayer playlist. It's working, enjoying the music again.
 - 10:12 pm - feeling impatient, want like night to come quick because maybe W will think about me at when it's night time. I should enjoy the moment.
 - 12:45 am - feeling happy because had a pop talk with R and F, feeling confident and happy. Very happy with me came in the world.
 - 1:32 am - danced to my favorite beats for an hour, I feel so refreshed and happy.
 - 2:52 am - feeling calm and at peace, content, now going to sleep.
- 22nd October 2019,**
- 1:01 pm - feeling sad because W is not replying to my message of over 24h's ago. I feel so unwanted - I want to cry.
 - 2:00 pm - feeling happy because I met N and talked about it.
 - 4:03 pm - C and G are laughing really hard because my friends are funny.
 - 5:18 pm - feeling confused because reading and is hard to learn.
- 23rd October 2019,**
- 7:23 pm - off to my grandma's place, fake face on because have to small talk, feeling mad.
 - 8:45 pm - feeling really happy because talked to fan and ordered pizza. Plus the small things matter in life - feeling great, grateful and stressed.
 - 11:34 pm - feeling sad and want to cry because those confused thoughts about Y keep bothering me.
 - 1:34 am - danced to upbeat music, feeling happy and ready to conquer the world.
 - 3:52 am - feeling hopeful because Y will not at all mess up. It makes me happy.
- 26th October 2019,**
- 11:12 am - feeling excited and nervous for the Halloween party today. Thought about it.
 - 12:45 pm - feeling excited that N is coming. Need abstract.
 - 2:55 pm - feeling super happy and excited because N and I look super nice. Listening to upbeat music together.
 - 4:34 pm - feeling sad and stressed because Y isn't here.
 - 6:21 pm - feeling sad/angry because Y is sitting all alone. Maybe I should go talk to them.
 - 7:31 pm - talked to Y and felt even worse because they are playing the game of pretending and that makes me want to cry.
 - 7:45 pm - Y wants to leave. I went after their car but was left ignored.
 - 8:24 pm - feeling sad but maybe dancing might help. Want to listen to some upbeat tunes.
 - 9:32 pm - dancing didn't help but M helped. Had them after so long and asked them to stay so I can hang myself distracted.
 - 11:45 pm - Distraction was good. Feel so much better talking about life with M. Still thinking if Y loves me or not (WITH).
 - 2:03 am - feeling happy because W viewed my insta story and messaged.
- 24th September 2019**
- 5:44 pm - mind is healing up literally because I just exist in a room very carefully - feeling mentally & back beautiful memories and that feeling.
 - 6:02 pm - feel like crying because Y gave me a hug and back beautiful memories and that feeling.
 - 11:04 pm - I feel really happy and positive and I don't give a shit about anything!
 - 12:29 am - feeling down because having severe anxiety.
 - 2:00 am - feel like shit, trying to sleep without my mind. All these unwanted thoughts.
- 28th September 2019,**
- 8:07 am - woke up feeling happy and ready for the day. Little trust.
 - 9:34 am - feeling stressed because getting late.
 - 10:50 am - had a fight with Y and feel like crying because it hurt really bad. Can't focus now. I need to listen to songs.
 - 11:34 am - escaped a little by listening to music. It's a little, still want to talk and cry - want to.
 - 3:21 pm - met N. Talked about it for ages and feeling mad and happy again. Want to listen to upbeat music.
 - 5:00 pm - solved things with Y and now jamming, beats in the air. want to dance.
 - 8:40 pm - C and G laughing like crazy at my friends jokes. Stomach hurts from laughing - don't want this to end.
 - 9:56 pm - dancing to upbeat music and dancing in my room because I feel GOOD!!
 - 11:45 pm - feeling confused and sad because W is playing with my heart.
 - 1:23 am - heavy heart again, want to cry again. I should go to sleep.
- 24th September 2019**
- 10:20 am - feeling a little down listening to sad songs.
 - 12:44 pm - feeling annoyed, don't feel like talking to anyone.
 - 1:26 pm - feeling nervous because I haven't done work for interaction discussion.
 - 2:42 pm - I feel sad and I want to cry, I even smoked, I hated the taste.
 - 4:33 pm - feeling happy because my discussion went good and long weekend ahead!
 - 6:15 pm - feeling low and angry because my medicine is not in a good mood and I just got my period.
 - 9:19 pm - W is talking again but having mixed feelings, feeling meh about them now. feeling sad.
 - 11:45 pm - Dance to good music and let it all out. You got this!
 - 2:00 am - thinking about what I'm doing with my life, really want to escape, missing London. feeling sad.
 - 2:52 am - feeling sad still but getting better because patience is key.
 - 3:06 am - feeling stressed about the thesis.
- 30th September 2019,**
- 11:43 am - Just got up, heart beat is super fast, feeling really nervous, and not that great!
 - 2:04 pm - feeling lazy and dizzy because I just had a lot of food. feeling happy but don't want to talk.
 - 3:23 pm - waiting for W to message me. I think they are not interested. Makes me sad.
 - 5:24 pm - feeling confused as to what they think about me. Want to leave the house and go for a swim. Listening to sad songs.
 - 7:01 pm - feeling nostalgic and sad because missing Y because just crossed a place that brought back a lot of memories.

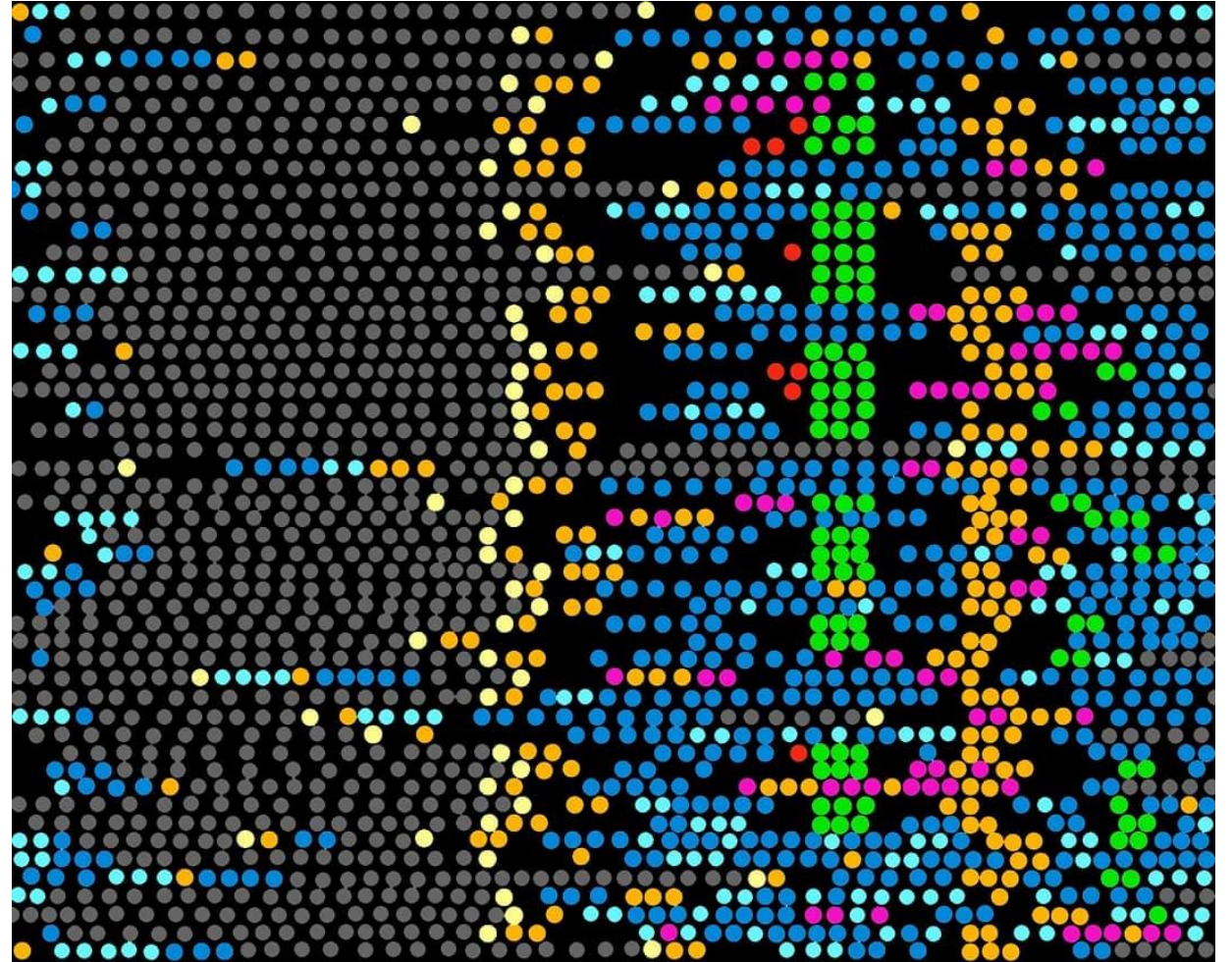
Research on Data Collection?

The process of emotion begins with a stimulus, to which our brain and body processes, and then gives us an impulse to react.

Sana Waqar Khan,

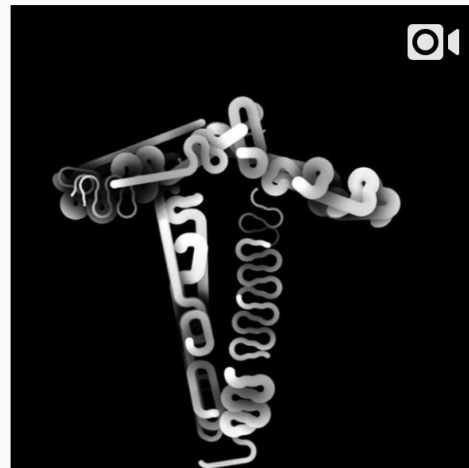
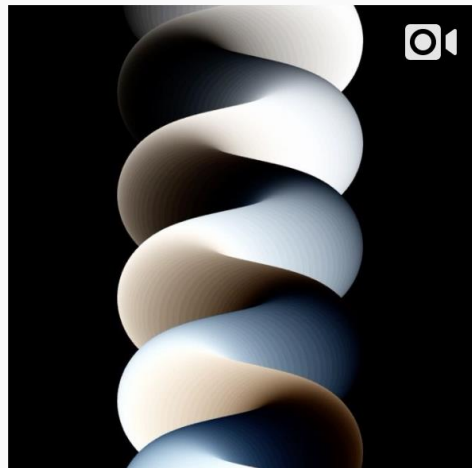
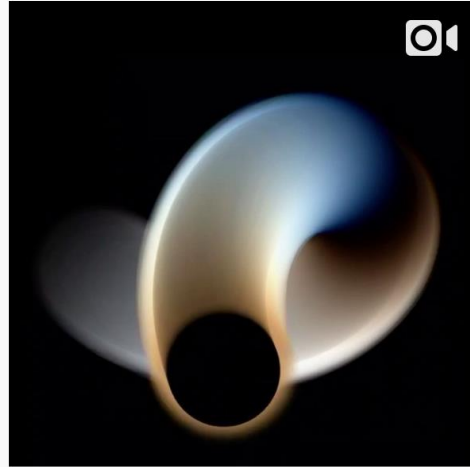


"My practice deals with the notion of Abstraction as a form of coded language where pictorial (of or expressed in pictures) devices like line, shape, color, size and composition are used to create meanings and perceptions. I use the strategy of repetition to collect data from my everyday life in the form of travelling routes, activity and sleep patterns, fluctuations in emotional states, exercise and health routines. I transform this indexical data into other forms of sensory experiences that alter perception and create a new understanding of the un-eventful lived experience. I try to capture the intangible (not having physical presence) experiences of sight, sound, motion, time, memories and emotions along with tremors of internal body like a fourth dimension, hidden from our visual perception and conscious awareness. Though I work with precise recorded information, I still like to add my intuitive human touch, hence there is always a combination of logic and chance in my work."



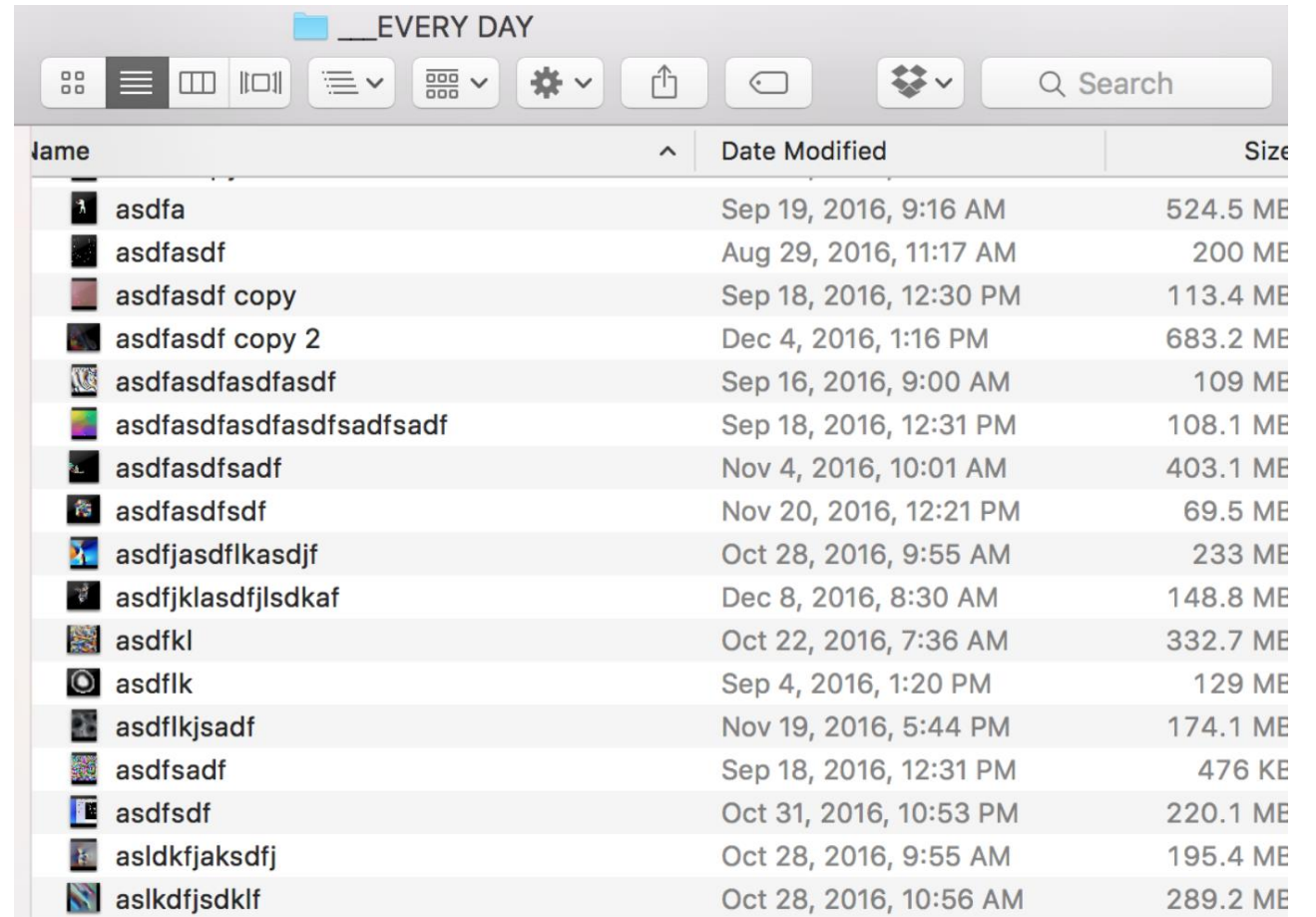
https://web.facebook.com/svad.bnu.edu/posts/sana-waqar-khanma-ads-swipe-to-see-more-and-read-her-statement-belowmy-practice-/2315472378510943/?_rdc=1&_rdr

Zach Lieberman,



In 2016 I started an experiment of doing daily sketches in the form of short animations posted on instagram. In these sketches I tried out different visual ideas involving geometry, animation, gesture and graphic form. I had no idea what to expect but it felt like a good new years resolution and nice way to experiment with some ideas I had been thinking about. I was inspired by folks like [Reza Ali](#) who were doing daily sketches at the time and thought, *I should do this*.

My step-daughter was having trouble falling asleep by herself at the time and so I would hang out in her room, read some books and then as she tried to sleep, I'd code a sketch and in the morning show it to her. At the beginning of the year she was really positive, "that's hypnotizing me!" but after a while she started to offer more criticism, "you should try color" or "that looks a little too crazy to me" She pushed me in different directions. I was happy to show her that art making is daily work and small discoveries.

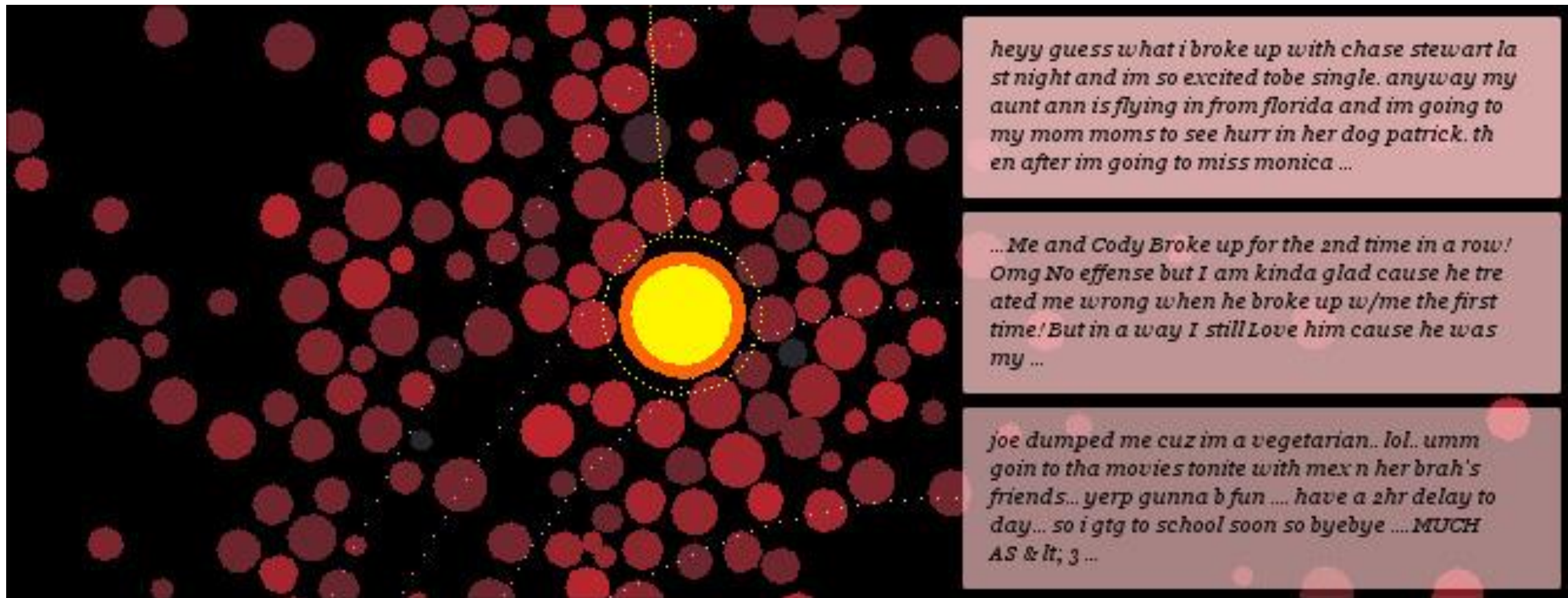


name	Date Modified	Size
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asdfasdf	Aug 29, 2016, 11:17 AM	200 ME
asdfasdf copy	Sep 18, 2016, 12:30 PM	113.4 ME
asdfasdf copy 2	Dec 4, 2016, 1:16 PM	683.2 ME
asdfasdfasdf	Sep 16, 2016, 9:00 AM	109 ME
asdfasdfasdfasdfsadfsadf	Sep 18, 2016, 12:31 PM	108.1 ME
asdfasdfsadf	Nov 4, 2016, 10:01 AM	403.1 ME
asdfasdfsdf	Nov 20, 2016, 12:21 PM	69.5 ME
asdfjasdfklsdjf	Oct 28, 2016, 9:55 AM	233 ME
asdfjklasdfjlsdkaf	Dec 8, 2016, 8:30 AM	148.8 ME
asdfkl	Oct 22, 2016, 7:36 AM	332.7 ME
asdfkl	Sep 4, 2016, 1:20 PM	129 ME
asdfklksadf	Nov 19, 2016, 5:44 PM	174.1 ME
asdfsadf	Sep 18, 2016, 12:31 PM	476 KE
asdfsdf	Oct 31, 2016, 10:53 PM	220.1 ME
asldkfjksdfj	Oct 28, 2016, 9:55 AM	195.4 ME
asldkfjksdklf	Oct 28, 2016, 10:56 AM	289.2 ME

<https://medium.com/@zachlieberman/daily-sketches-2016-28586d8f008e>

These sketches are like diary entries. When I think back to a sketch, I sometimes remember the specific day, where I was, what the temperature was like, what I was thinking about at the time. I get nostalgic just poking through them. They mark my moods and capture all kinds of things in them — it's really surprising.

Golan Levin,

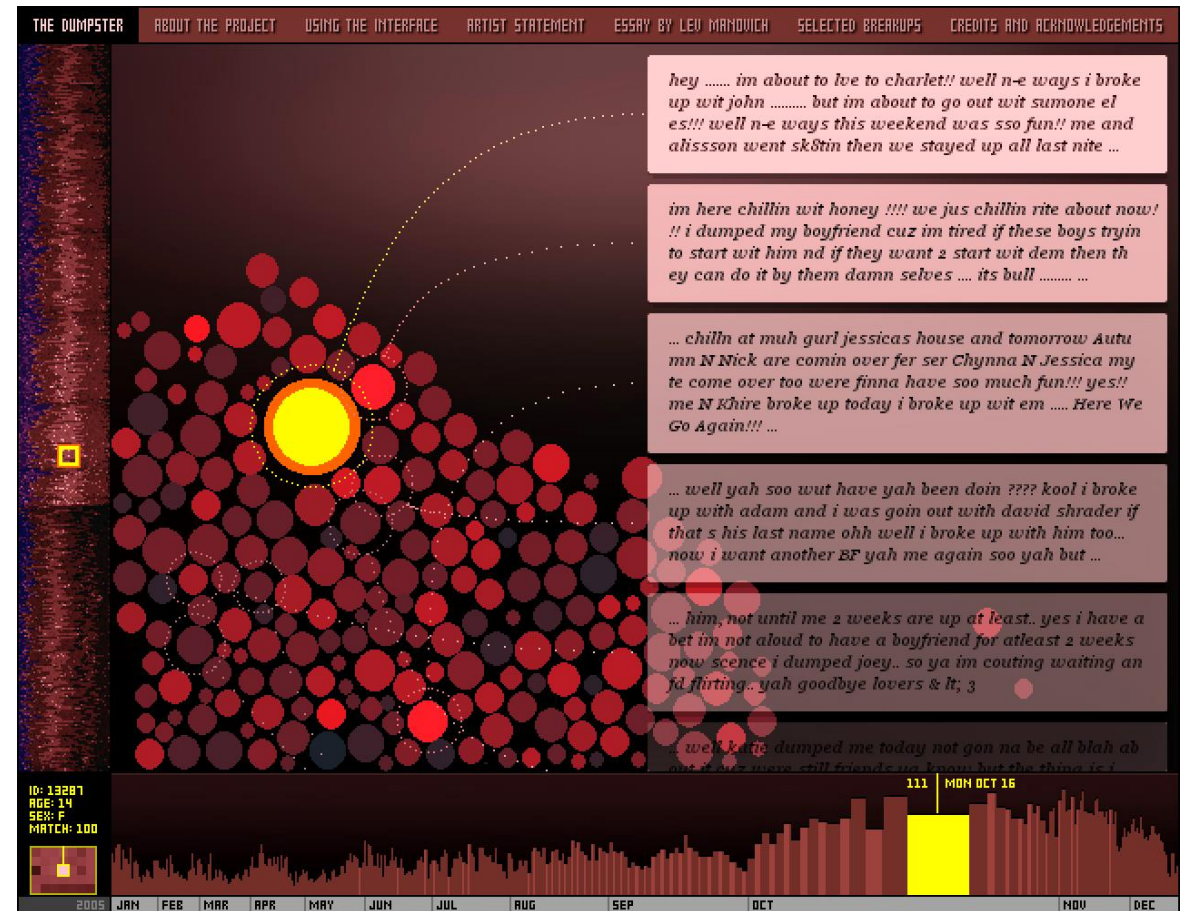


hey guess what i broke up with chase stewart last night and im so excited to be single. anyway my aunt ann is flying in from florida and im going to my mom moms to see hurr in her dog patrick. then after im going to miss monica ...

...Me and Cody Broke up for the 2nd time in a row! Omg No offense but I am kinda glad cause he treated me wrong when he broke up w/me the first time! But in a way I still Love him cause he was my ...

joe dumped me cuz im a vegetarian.. lol.. umm goin to tha movies tonite with mex n her brah's friends... yerp gunna b fun have a 2hr delay to day... so i gtg to school soon so byebye MUCH AS & lt; 3 ...

The Dumpster (2006: Golan Levin, Kamal Nigam and Jonathan Feinberg) is an interactive online visualization that attempts to depict a slice through the romantic lives of American teenagers. Using real postings extracted from millions of online blogs, visitors to the project can surf through tens of thousands of specific romantic relationships in which one person has "dumped" another. The project's graphical tools reveal the astonishing similarities, unique differences, and underlying patterns of these failed relationships, providing both peculiarly analytic and sympathetically intimate perspectives onto the diversity of global romantic pain.



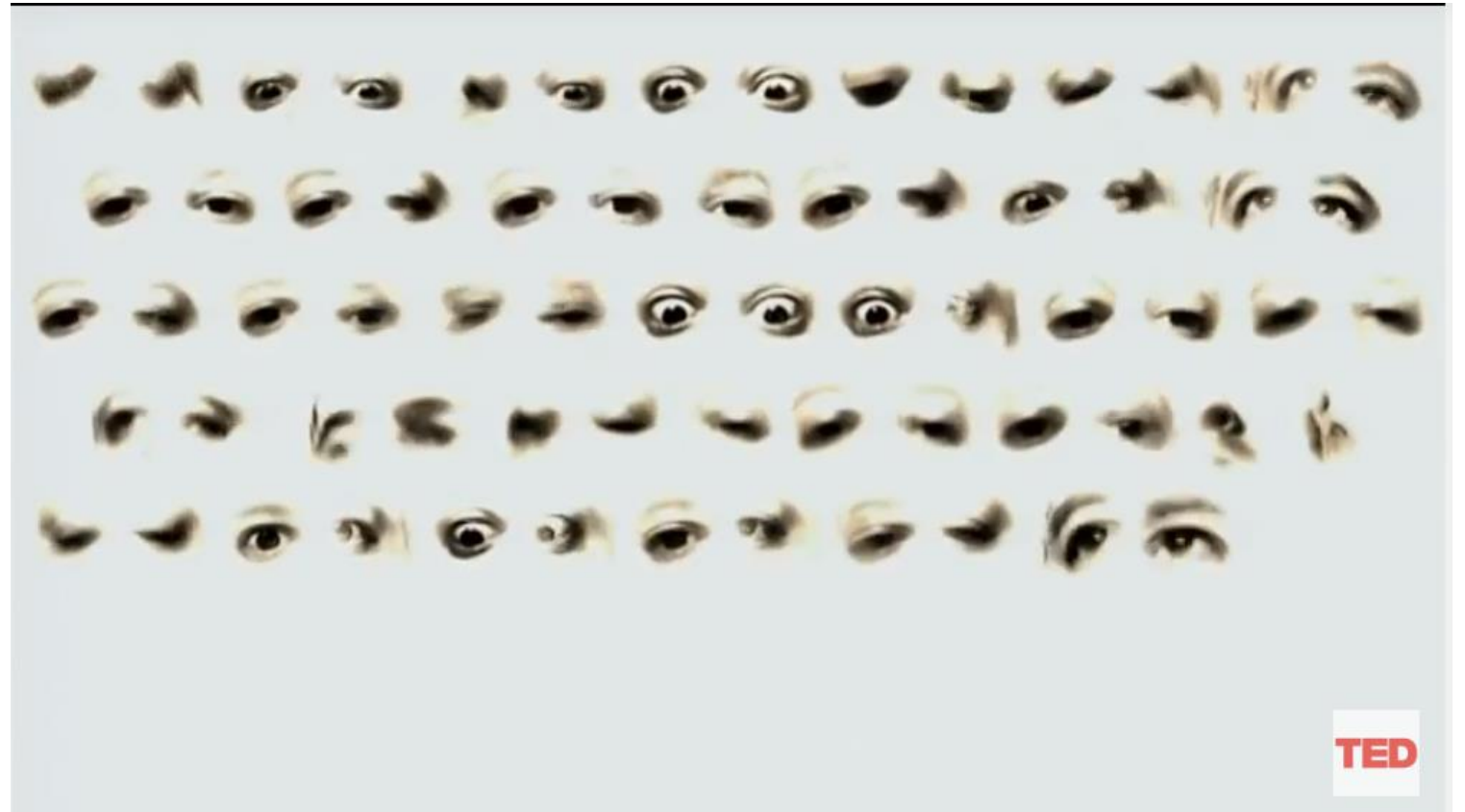
<http://www.flong.com/projects/dumpster/>

EYE CODE – INTERACTIVE INSTALLATION.

The trace left by the looking of the previous observer looks at the trace left by the looking of the previous observer. The idea is that its an image wholly constructed by its previous history of being viewed by different people in an installation.

It records eyes and every time someone blinks it tracks it.

“Typing with your eyes.”
Recursive observation system.

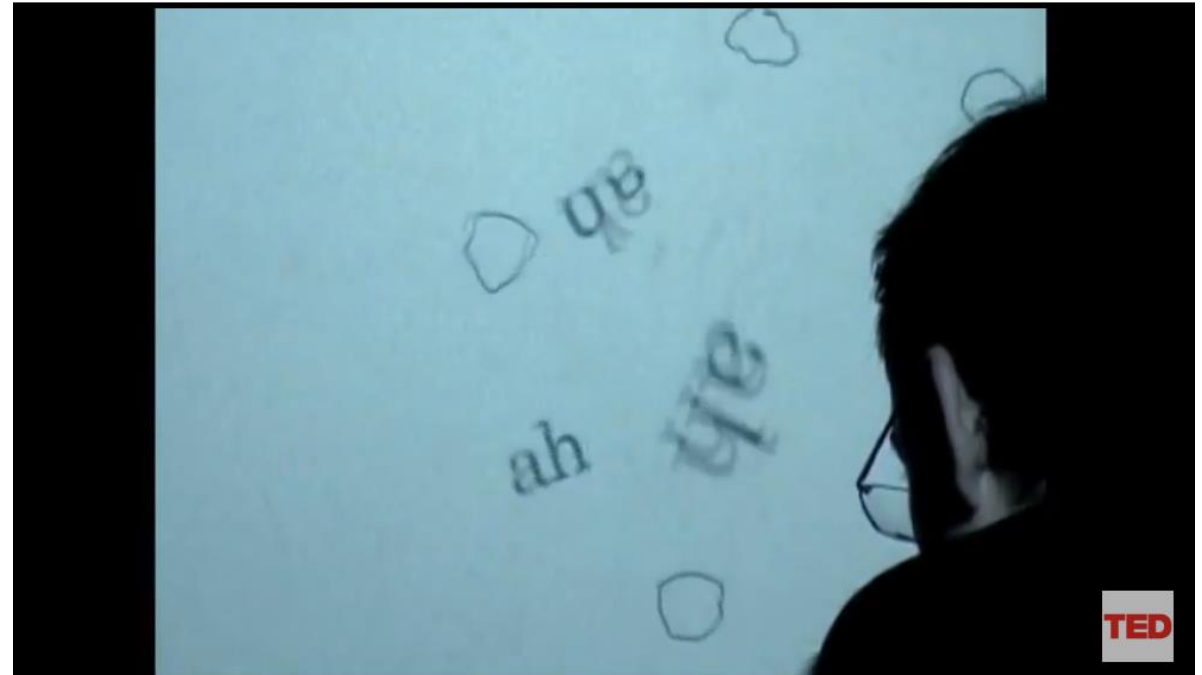
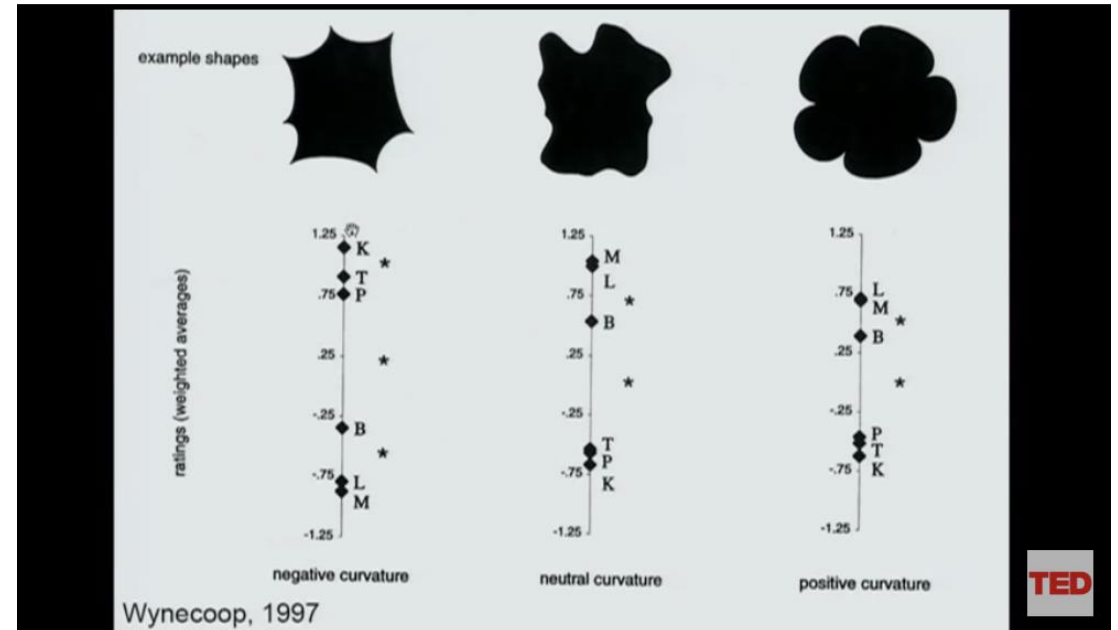


<https://youtu.be/1G0MzlfMPuM>

REMARK – INTERACTIVE INSTALLATION.

Phonosthesia (Oliver Sax) – The extent to which letters are associated with shapes!

You see the shadows of your own speech. If the system recognizes what you're saying then it spells it out and if it doesn't it creates a shape that is phonosthetically coupled.



Nathalie Miebach,



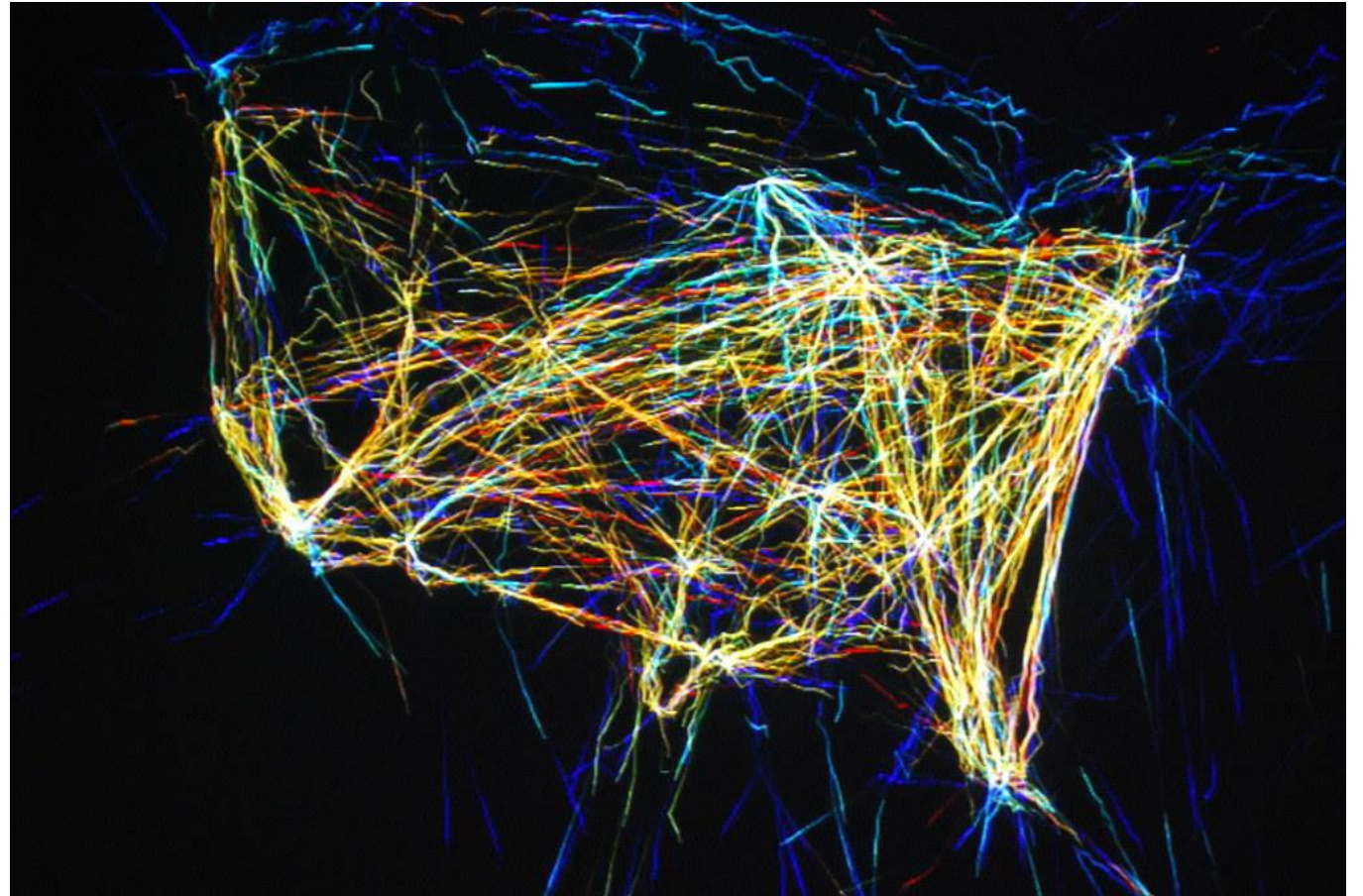
Artist [Nathalie Miebach](#) takes weather data from massive storms and turns it into elaborate visualized sculptures made of wicker and colored beads. These sculptures, accurately based on weather temperatures, wind speeds, and water patterns, then become musical scores for a string quartet to play. She uses art and music to make data both tactile and audible.



https://www.ted.com/talks/nathalie_miebach?language=en#t-98539

Aaron Koblin

Aaron Koblin is an artist specializing in data and digital technologies. Koblin is best known for his innovative use of data visualization and his pioneering work in crowdsourcing and interactive film. He believes data can make us more human. He is famous for his project 'Flight Patterns' which visualizes every airline flight over North America in a 24-hour period.



<https://youtu.be/ystkKXzt9Wk>

What I have in mind?

- Emotions + Days
- Emotions + Hours
- Emotions + Music
- Emotions + Sequence of events
- Emotions + Geographical
- Emotions + Movement
- Emotions + SOUNDS
- Emotions + Water
- Emotions + Heartbeat

Analyzing my collected Data,

- SADNESS (emotion)
- NOSTALGIC (feeling)
- STRESSED (feeling of nervousness)
- HAPPY (emotion)
- CONFUSION (feeling)
- IMPATIENT (feeling)
- CALM (mental state)
- EXHAUSTED (feeling)
- CONFIDENT (feeling)
- ANNOYED (mental state)
- NERVOUS (feeling)
- ANXIOUS ((feeling)
- HOPEFUL (mental state)
- EXCITED (feeling)
- ANGRY (emotion)

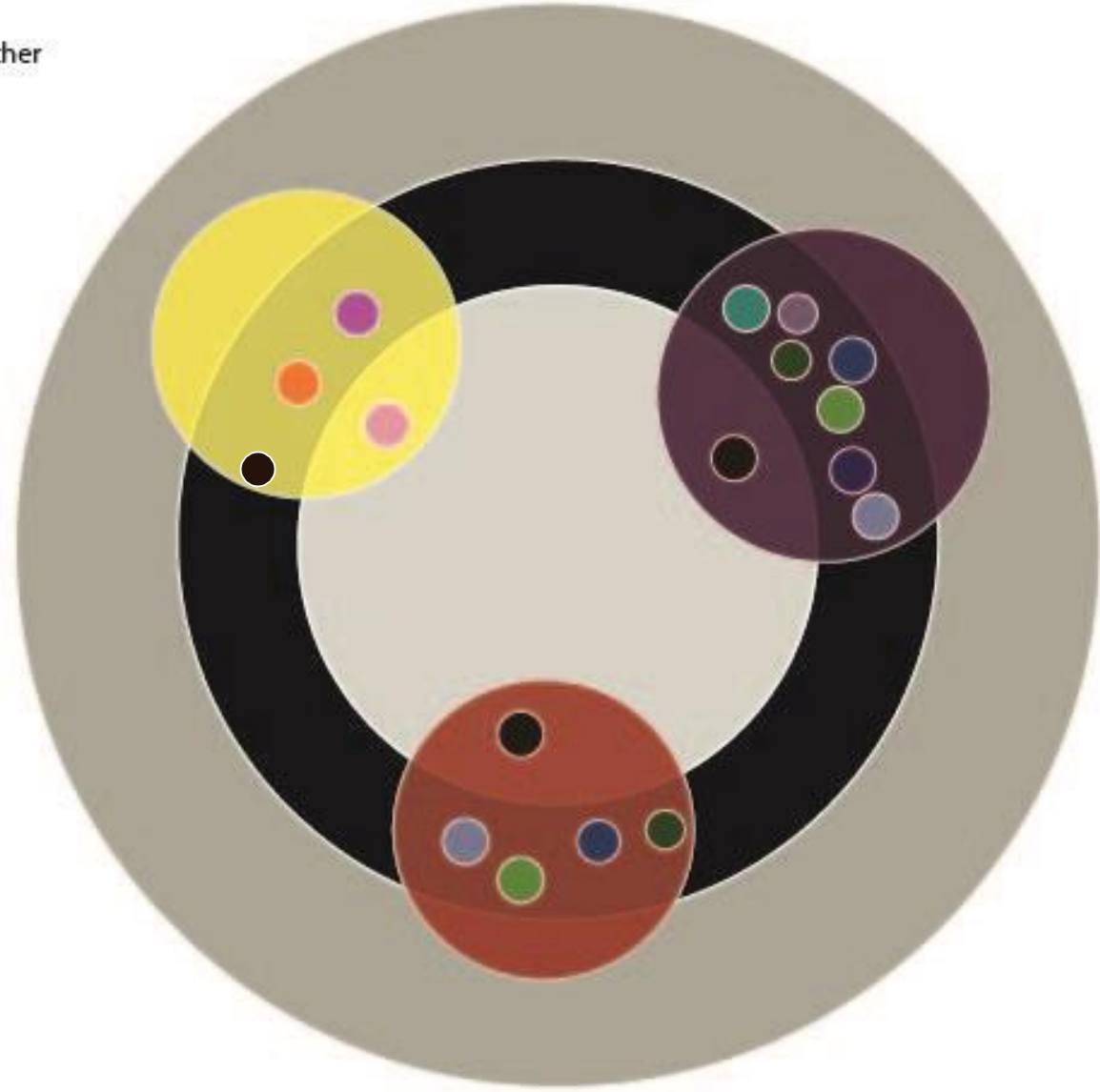
EMOTIONS	FEELINGS	MENTAL STATE
HAPPINESS	NOSTALGIC	HOPEFUL
SADNESS	STRESSED	ANNOYED
ANGER	CONFUSION	
	IMPATIENCE	
	EXHAUSTION	
	CONFIDENCE	
	ANNOYANCE	
	NERVOUSNESS	
	EXICTEMENT	

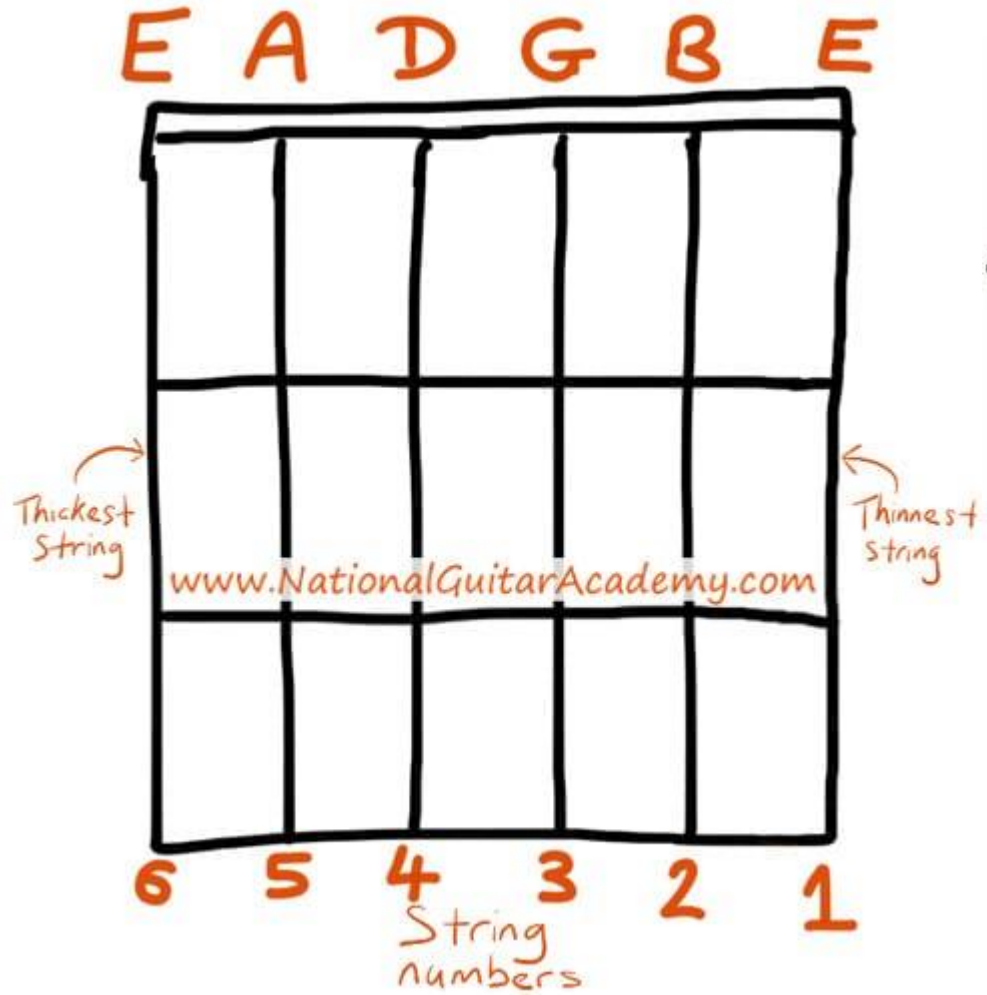
This is going to be rotating.
Can also be in a physical form.
On water with things that float around in them
because emotions can never be ignored.
Giving these circles energies like how atoms flow.
(Energetic atoms move kinectly and bounce off eachother
while atoms with low energy move slowly)

- HAPPINESS
- SANDNESS
- ANGER

- NOSTALGIC
- STRESS
- CONFUSION
- IMPATIENCE
- EXHAUSTION
- CONFIDENCE
- ANNOYANCE
- NERVOUSNESS
- EXCITEMENT

- HOPEFUL
- ANNOYED





Happy sounds are, High pitched, loud & fast
 Sad Sounds are Low pitched, soft & slow
 Angry sounds are Low pitched, loud & fast

Open String is for when I was not feeling anything
 Behind this melody will be a constant drum beat
 that will signify TIME.



<https://www.youtube.com/watch?v=ia8bhFoqkVE>

Crystallization,

Chemists always want pure chemicals and a good way is to make crystals of them.

When they are in the solution they have a lot of impurities. But when they form crystals they create a much purer form of chemical and the impurities are left in the solution.

You need to give the crystal a nucleus to form around.





Sound is 3 dimensional.
Ripples on the high frequency
are more densely packed
together and much smaller.

<https://www.youtube.com/watch?v=THUMdTohWkl>

Music & How It Impacts Your Brain, Emotions

The overall phenomenon still retains a certain level of mystery; the reasons behind the ‘thrill’ of listening to music is strongly tied in with various theories based on **synesthesia**.

When we are born, our brain has not yet differentiated itself into different components for different senses – this differentiation occurs much later in life. So as babies, it is theorized that we view the world as a large, pulsing combination of colors and sounds and feelings, all melded into one experience – ultimate synesthesia. As our brains develop, certain areas become specialized in vision, speech, hearing, and so forth.

Professor Daniel Levitin, a neuroscientist and composer, unpacks the mystery of the emotion in music by explaining how the brain’s emotional, language and memory centers are connected during the processing of music – providing what is essentially a synesthetic experience. The extent of this connection is seemingly variable among individuals, which is how certain musicians have the ability to create pieces of music which are brimming with emotional quality, and others simply cannot.

<https://psychcentral.com/lib/music-how-it-impacts-your-brain-emotions/>

How is it possible that something that is basically organized sound can bring us to tears, move us, and convey deep emotional messages within its very structure?

- Many theories on mechanisms that stir up emotions described by scientists are familiar to us all, but some are perhaps more surprising. For instance, the role of memories in music-evoked emotion is quite a familiar to most people: many people have break-up songs - pieces they listened to during that emotional time and that can instantly bring on the emotional state experienced during the break-up even at a later time. But did you know that researchers also speculate that music may convey emotional information by activating the mirror neuron system?
- **MIRROR NEURON SYSTEM:** Also emotions are contagious: according to a study, exposure to pictures of facial expressions of emotions activated the same facial muscles needed to produce a similar expression and led to reports of experiencing similar feelings in the observers. Astonishingly, this happened even if the pictures were shown so quickly that the observers didn't experience a conscious perception of the photo. **Putative human mirror neuron system:** neurons that are active when you produce a certain movement but also when someone else does the same - neurons to which you and other people are the same person.
- It sounds quite incredible, but it is possible that emotional expression in music could also be mirrored by the brain and then give rise to the corresponding emotional state in the listener. For instance, music could be perceived as sad because of the commonalities it has with the prosody of sad speech (low pitch, low volume, slow, dark timbre).

Why is it then that sad music, and the sad feelings that it evokes, are still a pleasurable experience for the listener?

- It has been suggested that this could be due to the fact that similar to the endorphins the body releases in response to physical pain, emotional pain results in the release of a hormone called prolactin, causing feelings of gratification and relaxation. Perhaps the greatest gift of music lies in its capacity allow people to experience emotions without the burden of having to experience the life events that lead to them.
- How people experience music depends strongly on the historical context, habits and fashions, as well as on their social origins and education.
- When people listen to music together, the group influences the individual listening experience.
- Music can be used to intensify the “we feeling” and direct a group, but it can also be used to exclude and even torture.

In a **piano** the **sound** is created by the strings vibrating at a particular frequency which then in turn vibrate the molecules of the air and produce the **sound** while in a **guitar** the vibration from the string is passed into the hollow body of the **guitar** which then transfers these waves into the surroundings and vibrate the molecules of air to produce sound.

Feelings are in no way exclusively internal states that unfold independently of people's environment. The external influence flows inwards and is then expressed publicly.

Which Comes First, Lyrics Or Music?

Poetry Set To Music

- If you're of the mindset that to write a good song you must first start with lyrics, chances are you're a word guy or gal. You like words, ideas, themes, etc. And the greatest expression of all three of those things is in poetry.

Music With Occasional Words

- If you're of the mindset that a great song is clearly a piece of music with potential and occasional words that are sung, chances are you are a music and rhythm nut. **You love riffs, melodies, and inverted chords.**

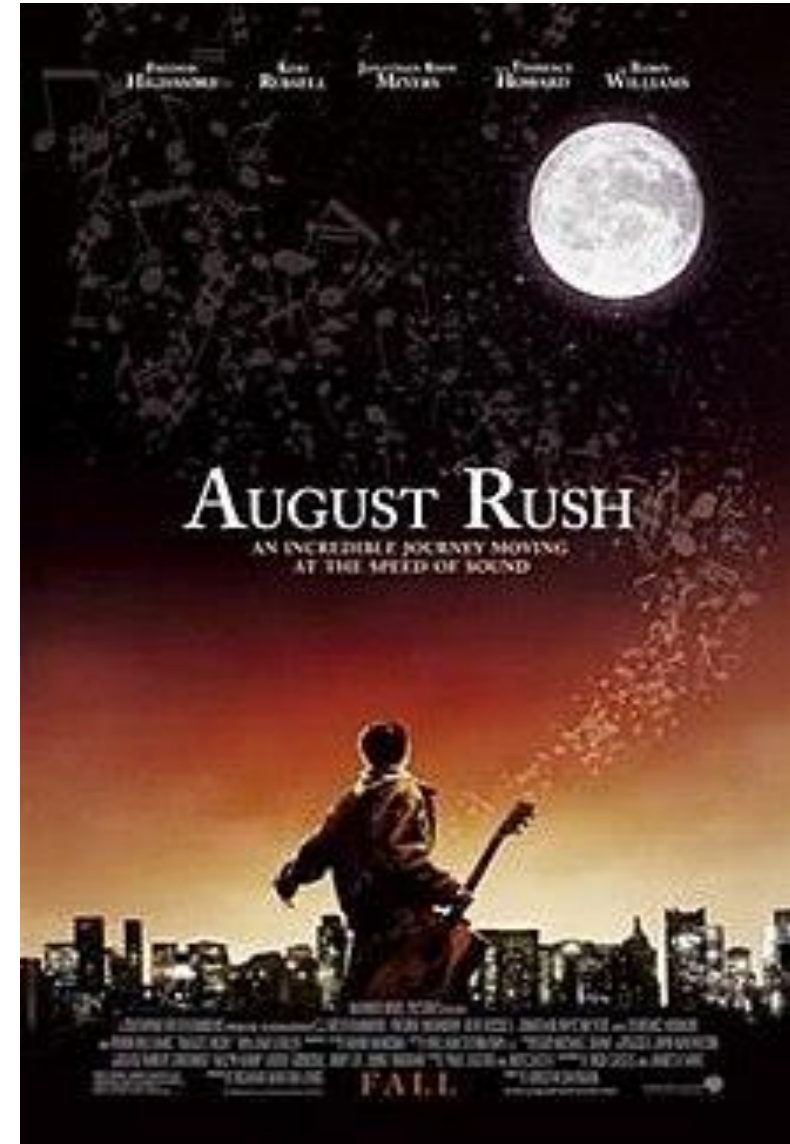
The Concept of Rhythm & Rhyme

“Letting the world around me be my musical instrument.”

August Rush

2007 • Drama/Romance • 1h 54m

“Listen. Can you hear it? The music. I can hear it everywhere. In the wind... in the air... in the light. It’s all around us. All you have to do is open yourself up. All you have to do ... is listen.”



John Cage

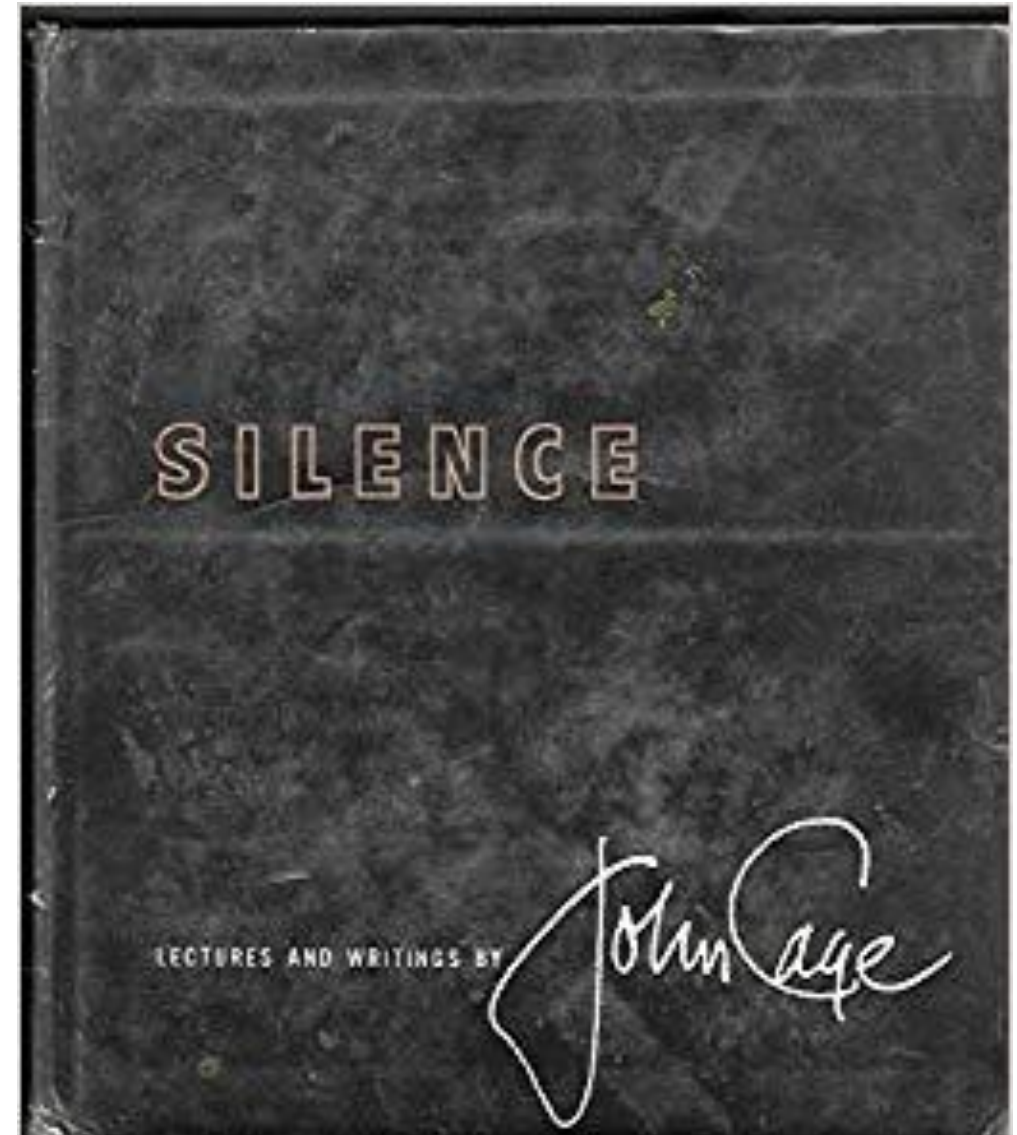
Silence: Lectures and Writings

"There's no such thing as silence. What they thought was silence, because they didn't know how to listen, was full of accidental sounds." —John Cage

“Which is more musical, a truck passing by a factory or a truck passing by a music school? Are the people inside the school musical and the ones outside unmusical?

What if the ones inside can't hear very well, would that change my question?”

“There is no such thing as an empty space or an empty time. There is always something to see, something to hear. In fact, try as we may to make a silence, we cannot.”



Scat Music

So, what is Scat? Simply put, it's the art of singing without lyrics.

The story goes that it was created by Louis Armstrong when he recorded a version of the song *Heebie Jeebies* in 1926. He went beyond the written score of the song and performed a brilliant array of vocal improvisation, using simple syllables.

Scat is not only a technical or theoretical feat. The singer must also be a performer and convey emotions; they must tell a story without relying on words.

Emotions & sounds,

- Happiness - sounds of a lot of people talking (babies) and laughing like crazy
- Sadness - sound of windchimes
- Scared - sound of thunder
- Nostalgia - sound of the indicator or car
- Irritated - sound of constant ticking of clock
- Anger - sound of loud thuds
- Panic - sound of blender
- Stress - vibration of phone
- Excited - sound of a lot of birds chirping
- Confidence - sound of a drum beat
- Confused - sound of no signal on tv

Sounds that I picked up on a daily basis & creating a sequence,



Visualization of my feelings through Unnatural sounds & natural sounds,

1. Completely Natural - Natural Ambient Sounds around us.
2. Instrumental - Sounds from an instrument.
3. Electronic - Electronic Dance Music. (**Electronic dance music (EDM)**, also known as **dance music**, **club music**, or simply **dance**, is a broad range of percussive electronic music genres made largely for nightclubs, raves and festivals. It is generally produced for playback by disc jockeys who create seamless selections of tracks, called a mix, by segueing (move without interruption) from one recording to another. **EDM** stands **for** electronic dance music, which **is** not a particular genre but consists **of** House, Dubstep, **Techno**, Trance, etc. Sometimes combined with **Techno**.)

Why did I choose the piano?

The piano allows you to play **multiple notes at a time** by playing **two parts simultaneously**. This is one of its most unique qualities. You can also produce huge impressive volume of sound when required.

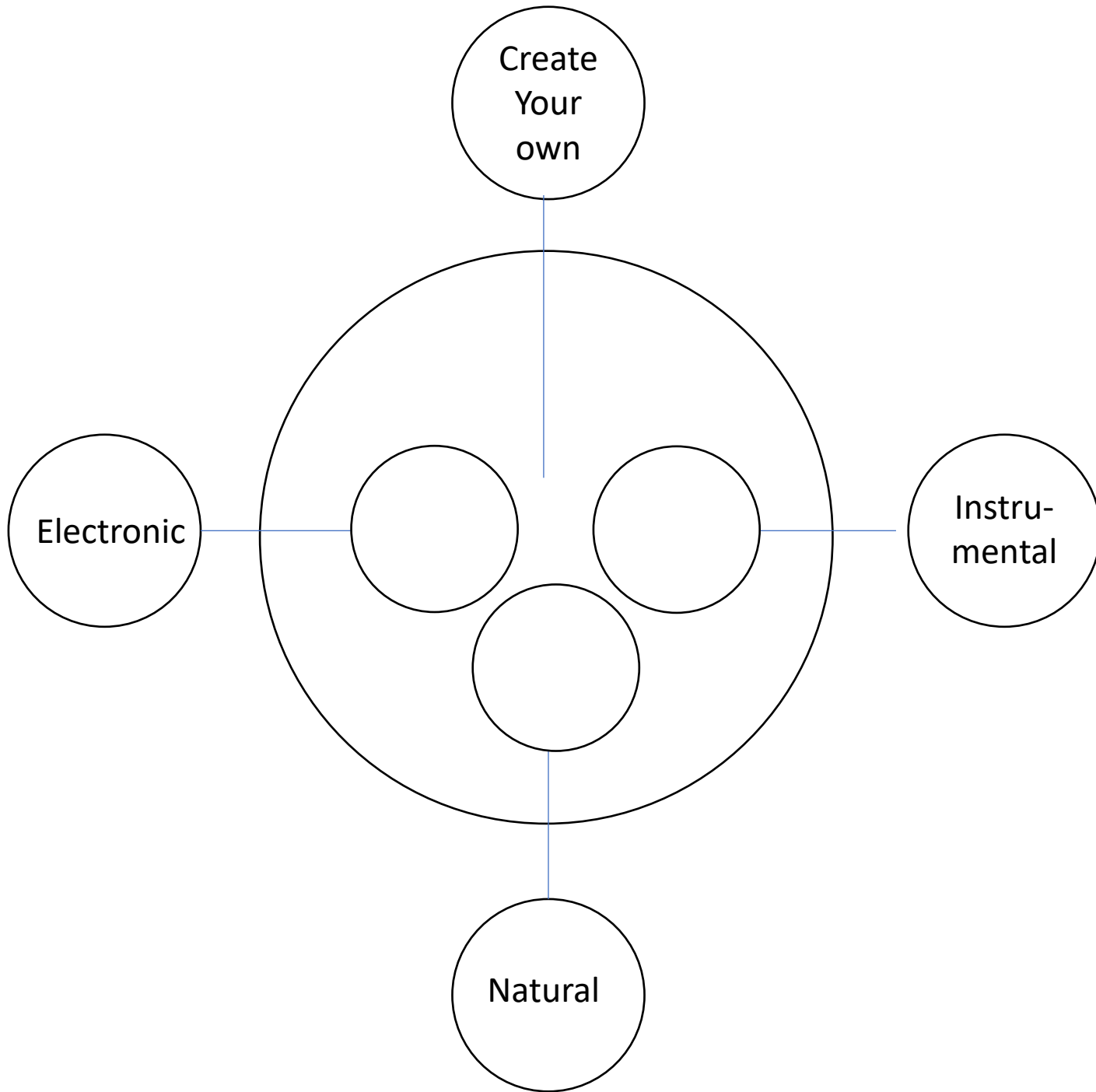
So because of this just like our emotions, the piano has many layers to the sound that you want it to produce. So layering sound on a piano is much more effective.

Why did I choose water as a medium?

1. Scientific studies **have** shown that **water** is able to respond to human **emotion**, thoughts, & words. It not only **has memory** but its structure is affected by the emotions of people. The **water** molecules change their position when they interact with positive or negative emotions.
2. It is considered to be the **universal solvent** for many reasons including its structural, chemical and physical properties.
3. It is very versatile & easily accessible.
4. A personal Connection to it.

Sequence to follow,

1. Introducing the project – my concept & idea.
2. Why this concept/idea – why did I choose myself as a subject in my project?
3. Why Sound & Vibrations? – why am I choosing these sounds?
4. How am I executing it?
 - underlining the recurring emotions.
 - studying the data (data analysis)
 - identifying certain similarities
 - Identifying frequency of emotions
 - Identifying the loud and soft emotions and then their frequency
 - Does time effect my emotions
 - Intrinsic & extrinsic factors that effect my emotions
5. What am I trying to achieve?



Time & Life cannot be ignored so to symbolize these two, I have used the ticking of the clock & the pulse & how they tend to slow down when we feel a certain way.



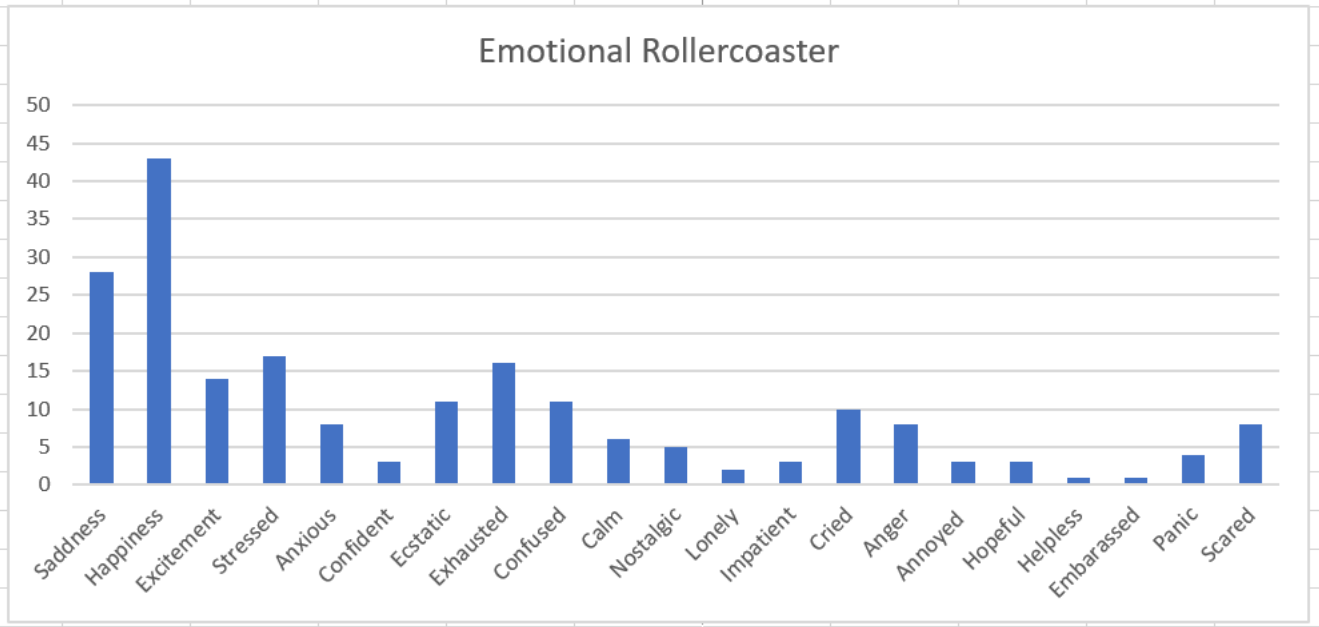
Ambient Sound.

(View in "Presentation videos & Sounds" folder)

Hopeful - 0.24 - 0.30 stories 2
happiness - 0.09 - 0.13 i got all the answers
helpless- stories 6 - 0.07-0.12
excitement - 0.30-0.38 too hot 2
ecstatic - 0.02 - 0.08 I got all the answers 9
saddness - 0.05 - 0.15 beautiful dark 2
stressed - 2.13- 2.20 - beautiful dark 2
anxious 3.01 - 3.09 beautiful dark 2
calm 0.01 - 0.10 this bright feild 2
confident 0.10 - 0.18 everyday holiday 3
scared 0.01 - 0.08 rattlesnake
exhausted 3.50 - 3.56 - beautiful dark 2
confused 0.41 - 0.47 - distance 8
nostalgic 0.01 - 0.05 - long walk 5
lonely 3.50 -3.56 beautiful dark 2
impatient - neuron- 1.34 - 1.40
cried 2.50 - 2.58 - Beautiful dark 2
anger - knuckle duster - 1.21 - 1.28
annoyed 2.51 - 2.59 at your feet
embarassed 1.34 - 1.39 - best clip ressel
panic 0.07-0.14 - survive another day

https://www.audionetwork.com/browse/m/track/stories-2_161047
https://www.audionetwork.com/browse/m/track/stories-6-30_161063
https://www.audionetwork.com/browse/m/track/beautiful-dark-2_153261
https://www.audionetwork.com/browse/m/track/long-walk-5-30_69486
https://www.audionetwork.com/browse/m/track/survive-another-day_138276
https://www.audionetwork.com/browse/m/track/at-your-feet_134485
https://www.audionetwork.com/browse/m/track/i-got-all-the-answers_163850
https://www.audionetwork.com/browse/m/track/too-hot-2_55063
https://www.audionetwork.com/browse/m/track/this-bright-field-2_119883

2	Sadness	28 windchimes
3	Happiness	43 a lot of people talking (baby laugh)
4	Excitement	14 birds chirping
5	Stressed	17 vibration of phone
6	Anxious	8 hurricane
7	Confident	3 crowd applauding
8	Ecstatic	11 bubble sound
9	Exhausted	16 heavy traffic
10	Confused	11 no signal
11	Calm	6 fire burning
12	Nostalgic	5 indicator of car
13	Lonely	2 tip tip water
14	Impatient	3 car reverse sound
15	Cried	10 silent crying
16	Anger	8 loud thuds
17	Annoyed	3 iphone alarm
18	Hopeful	3 mothers voice
19	Helpless	1 plate breaking
20	Embarrassed	1 people wispering
21	Panic	4 blender running
22	Scared	8 scratching wall



Final sounds,



Electronic fully controlled Sound

(View in "Presentation videos
& Sounds" folder)



Instrumental Sound

(View in "Presentation videos &
Sounds" folder)



Ambient Sounds around us.

(View in "Presentation
videos & Sounds" folder)

What is density?

Density is how much matter is contained within a volume. A dense object weighs more than a less dense object that is the same size.

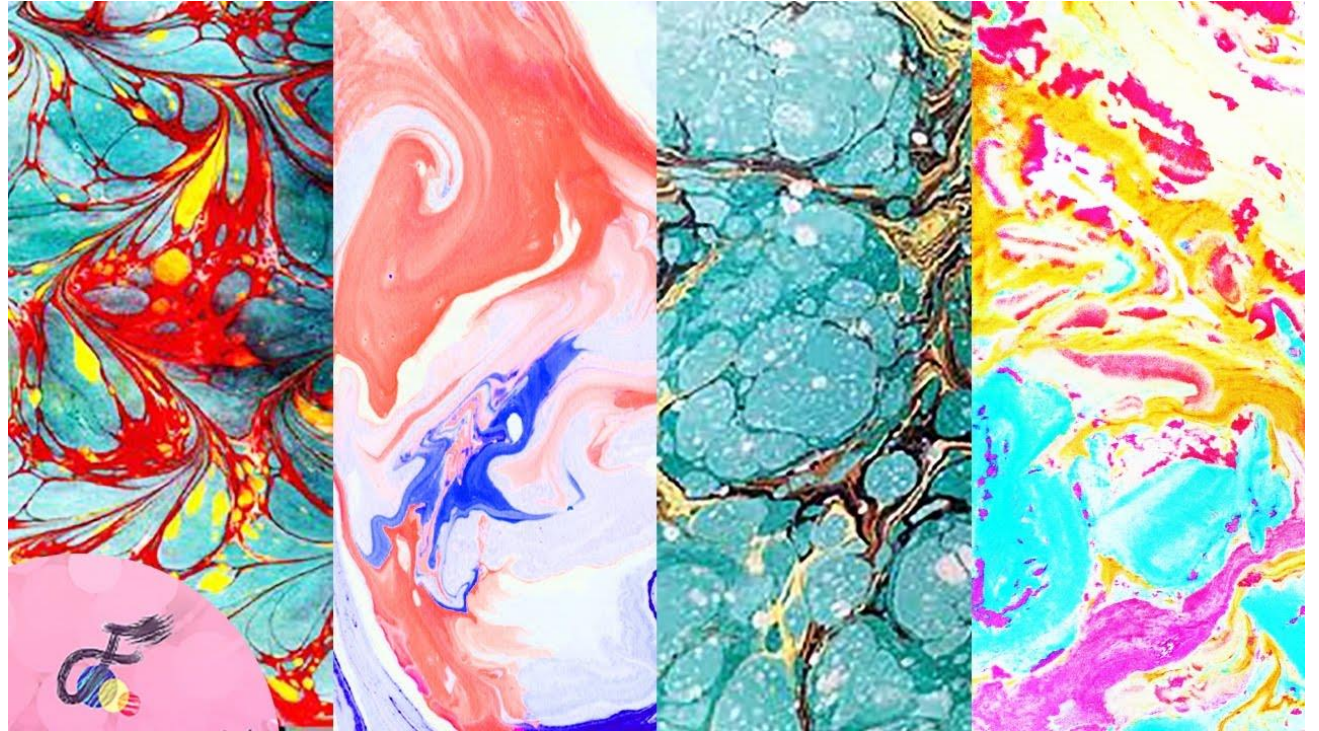
The key difference between density and weight is that weight is a measure of the amount of matter in an object, whereas density measures the amount of matter in a unit volume.

Experimentation with other mediums and diff densities?

1. Water, the temperature & density of different liquids and how they react to difference in vibrations. And how different density liquids react when put together. I used Oil, Alcohol, Water, Dish soap, paints, and food colours. Fabric paints too.
2. Sand, how sand reacts to difference in vibrations.
3. Other solids.

Marbling

Marbling is the process of floating fabric paints on the surface of a thick cellulose solution (called "size"), somewhat like oil on water. The floating paints are swirled into patterns.



Why different densities don't mix?

The density of water is 1.003 kg/m^3 and the density of oil is 0.930 kg/m^3 . Therefore the difference in their density with respect to water is 0.073 kg/m^3 , which proves that **water is more denser than oil**. So when the oil and water are mixed, water sinks and oil floats.



Generation of Sound Waves

Sound waves are generated by any vibrating body. For example, when a violin string vibrates upon being bowed or plucked, its movement in one direction pushes the molecules of the air before it, crowding them together in its path. When it moves back again past its original position and on to the other side, it leaves behind it a nearly empty space, i.e., a space with relatively few molecules in it.

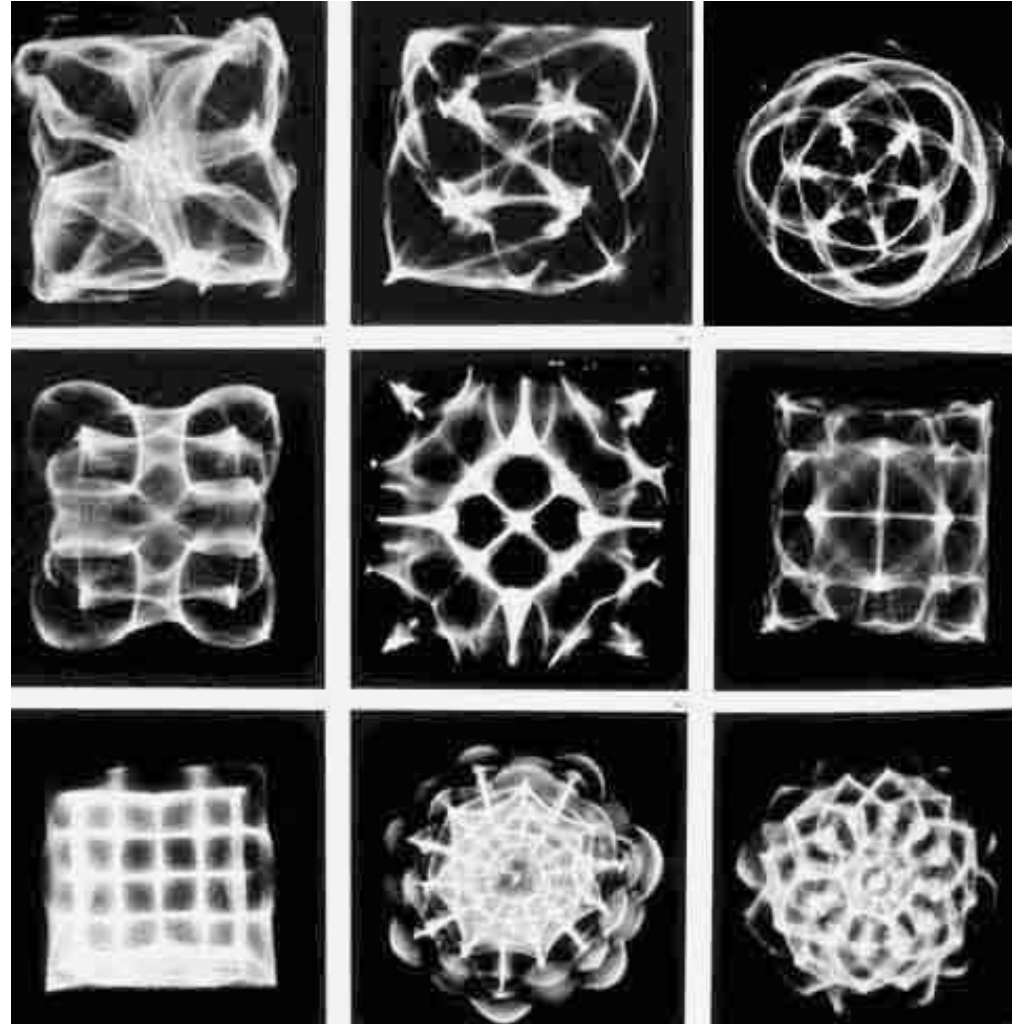
Characteristics of Sound Waves

Sounds are generally audible to the human ear if their frequency (number of vibrations per second) lies between 20 and 20,000 vibrations per second, but the range varies considerably with the individual. Sound waves with **frequencies less than those of audible waves are called subsonic; those with frequencies above the audible range are called ultrasonic.**

Resonance

i.e, the production of a sound as a result of vibration (= shaking) of another object.

First add **sand** to the plate then begin playing a tone. Certain frequencies **vibrate** the metal plate in such a way that it creates areas where there is no **vibration**. The **sand** "falls" into those areas, creating beautiful geometric patterns. As the frequency increases in pitch the patterns become more complex.



What are Binaural Beats?

The science behind binaural beats occurs naturally in the brain. A different sound (tone) frequency is sent to the left and right ears through headphones.

Upon hearing the two different frequencies, the brain responds by interpreting the two different frequencies as one consistent, rhythmic sound frequency, known as a binaural beat(s).

The resulting frequency that the brain interprets and subsequently follows along to (entrained), represents the mathematical difference between the two frequencies of the left and right tones that were initially sent to the left and right ears.

This is known as '**Frequency Following Response' (FFR)**, a naturally occurring science that has been around for centuries.

An auditory "frequency-following response" is defined as a brain-wave (EEG) frequency response that corresponds to the frequency of an auditory stimulus (Smith, Marsh, & Brown 1975).

Characteristics of Musical Sounds

Musical sounds are distinguished from noises in that they are composed of **regular, uniform vibrations**, while noises are **irregular and disordered vibrations**.

One musical tone is distinguished from another on the basis of pitch, intensity, or loudness, and quality, or timbre.

Pitch describes how high or low a tone is and depends upon the rapidity with which a sounding body vibrates, i.e., upon the frequency of vibration. **The higher the frequency of vibration, the higher the tone**; the pitch of a siren gets higher and higher as the frequency of vibration increases.

The apparent change in the pitch of a sound as a source approaches or moves away from an observer is described by the **Doppler effect**.

The intensity or loudness of a sound depends upon the extent to which the sounding body vibrates, i.e., the amplitude of vibration. A sound is louder as the amplitude of vibration is greater, and the intensity decreases as the distance from the source increases. Loudness is measured in units called **decibels**.

The sound waves given off by different vibrating bodies differ in quality, or timbre. A note from a saxophone, for instance, differs from a note of the same pitch and intensity produced by a violin or a xylophone. Quality is dependent on the number and relative intensity of overtones produced by the vibrating body, and these in turn depend upon the nature of the vibrating body.

What is Ambisonic Audio?

Ambisonics is a method for recording, mixing and playing back three-dimensional 360-degree audio. It was invented in the 1970s but was never commercially adopted until recently with the development of the VR industry which requires 360° audio solutions.

The basic approach of Ambisonics is to treat an audio scene as a full 360-degree sphere of sound coming from different directions around a center point. The center point is where the microphone is placed while recording, or where the listener's 'sweet spot' is located while playing back.

Traditional surround formats can provide good imaging when static; but as the sound field rotates, the sound tends to 'jump' from one speaker to another.

Jaltrang

The **Jal Tarang** is a melodic percussion instrument which originates from the Indian subcontinent. It consists of a set of ceramic or metal bowls filled with water. The bowls are played by striking the edge with beaters, one in each hand.



Reshooting the Video with the professional setup;



Footage collected,



DSC_0343



DSC_0344



DSC_0345



DSC_0346



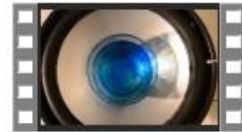
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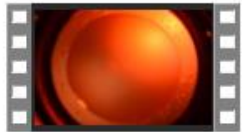
DSC_0350



DSC_0351



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DSC_0355



DSC_0356



DSC_0357



MVI_0078



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MVI_0081



MVI_0082



MVI_0083



MVI_0084



MVI_0085



MVI_0086

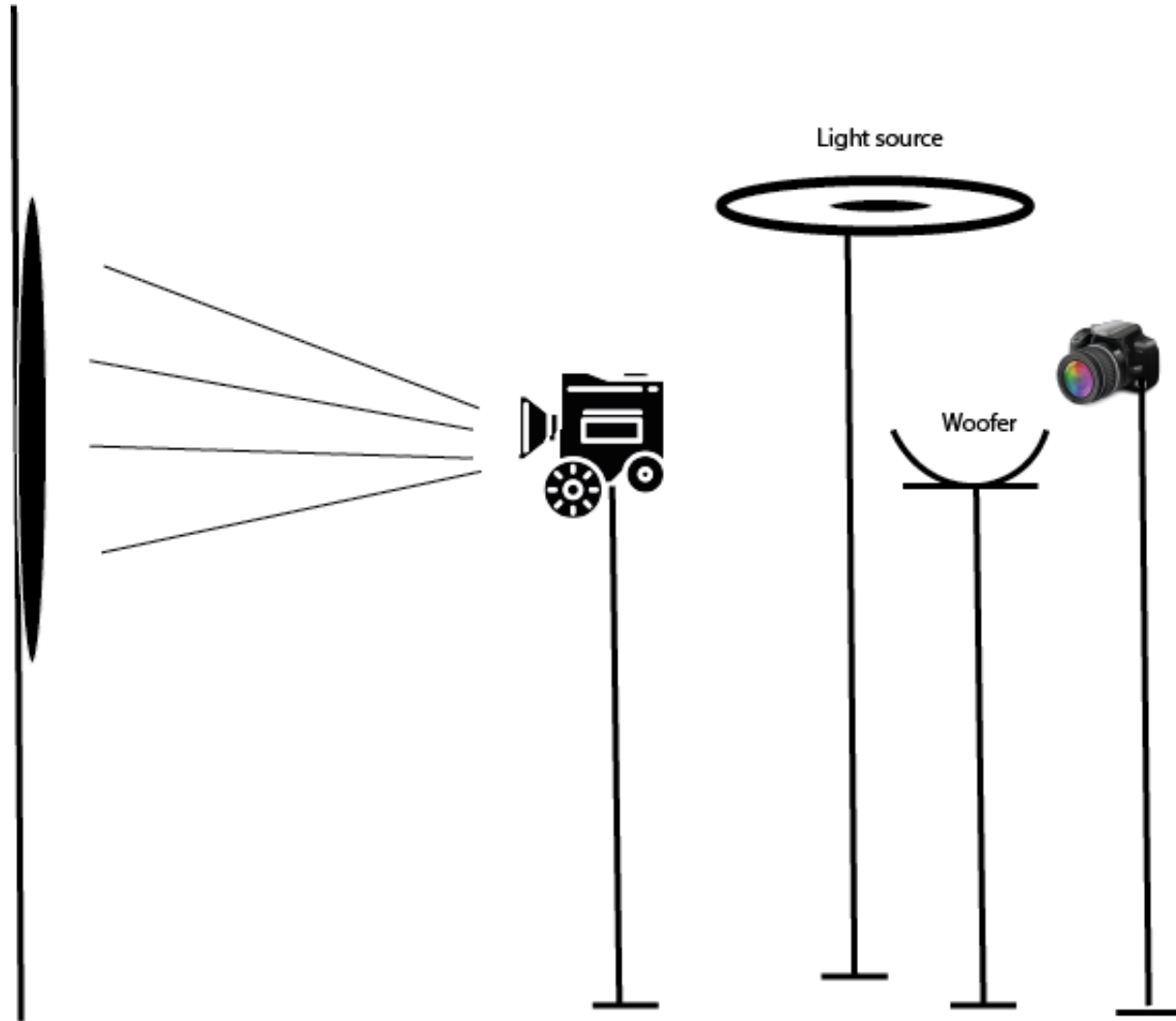


MVI_0089



MVI_0090

How to transfer the ripples onto a larger surface?

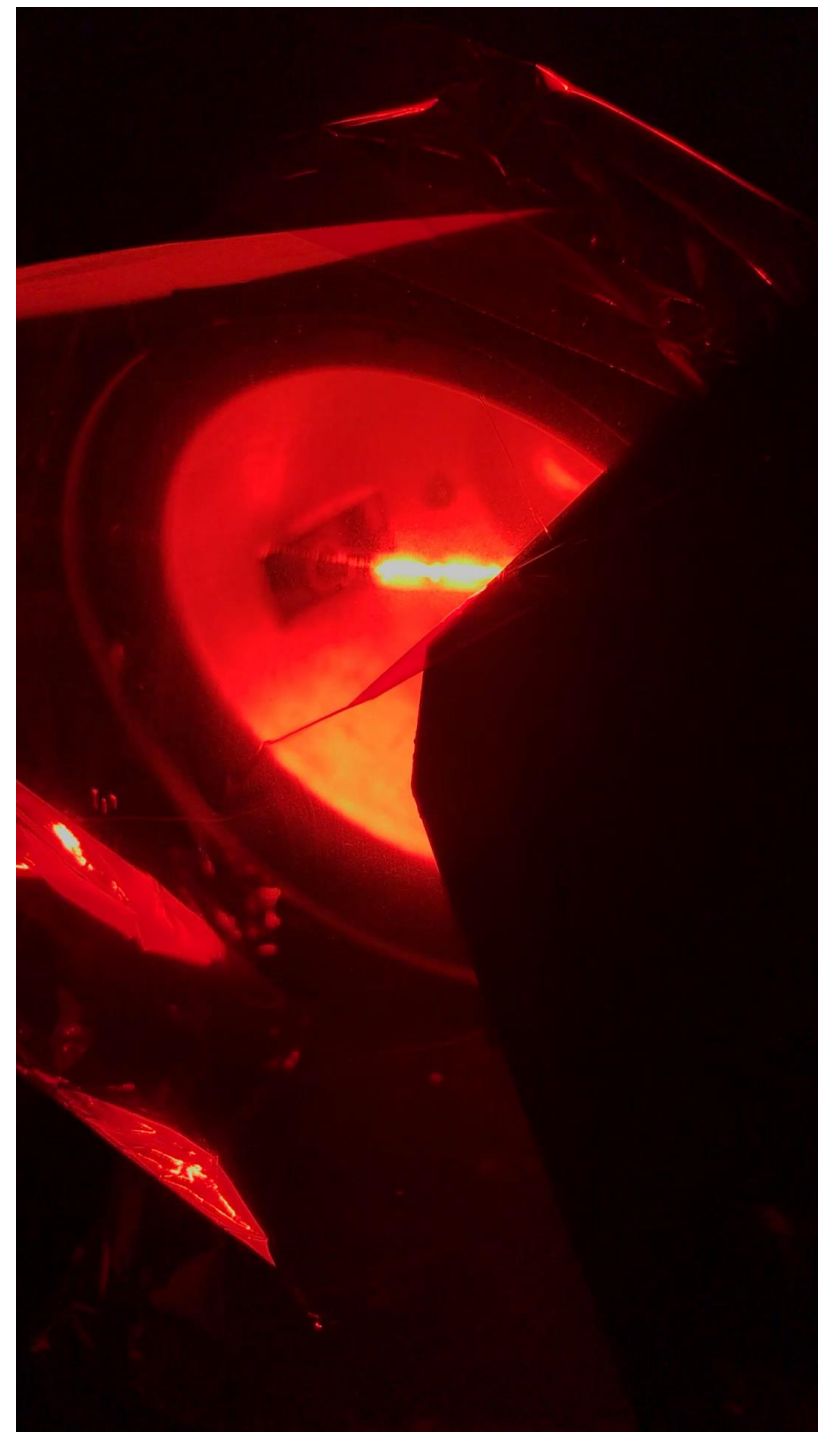


Experimentation with the set up,

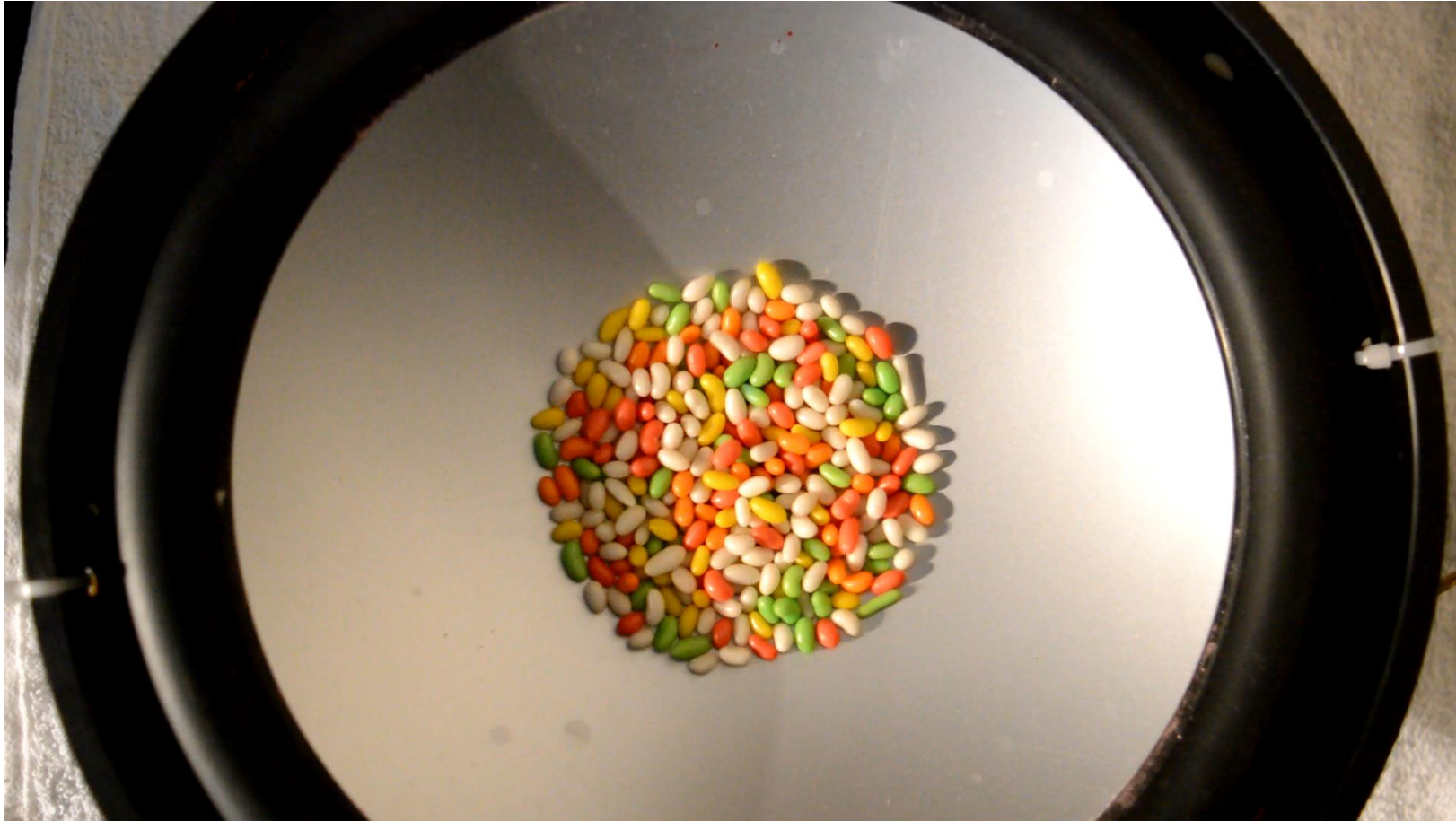
Play video “Set up Video”



(View in “Presentation videos & Sounds” folder)

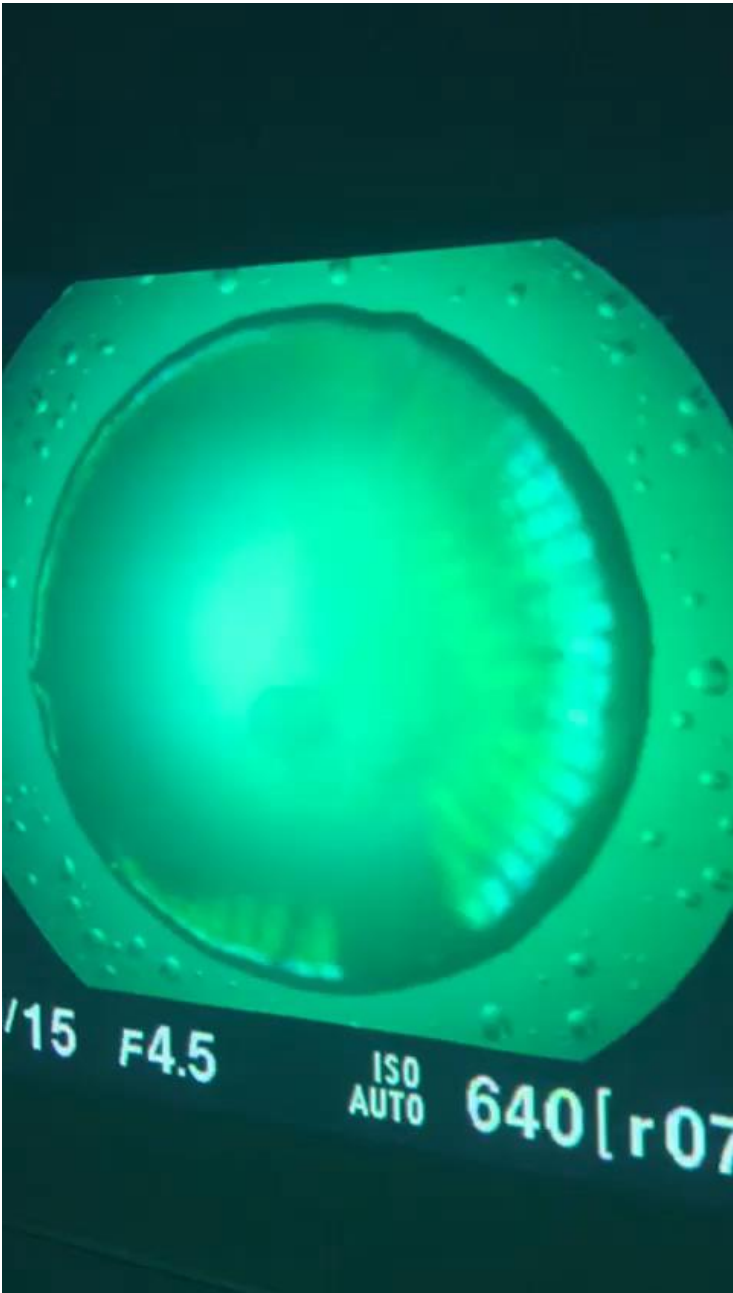


Experimentation with other medium with this setup,



Play video “Other
Medium Video”

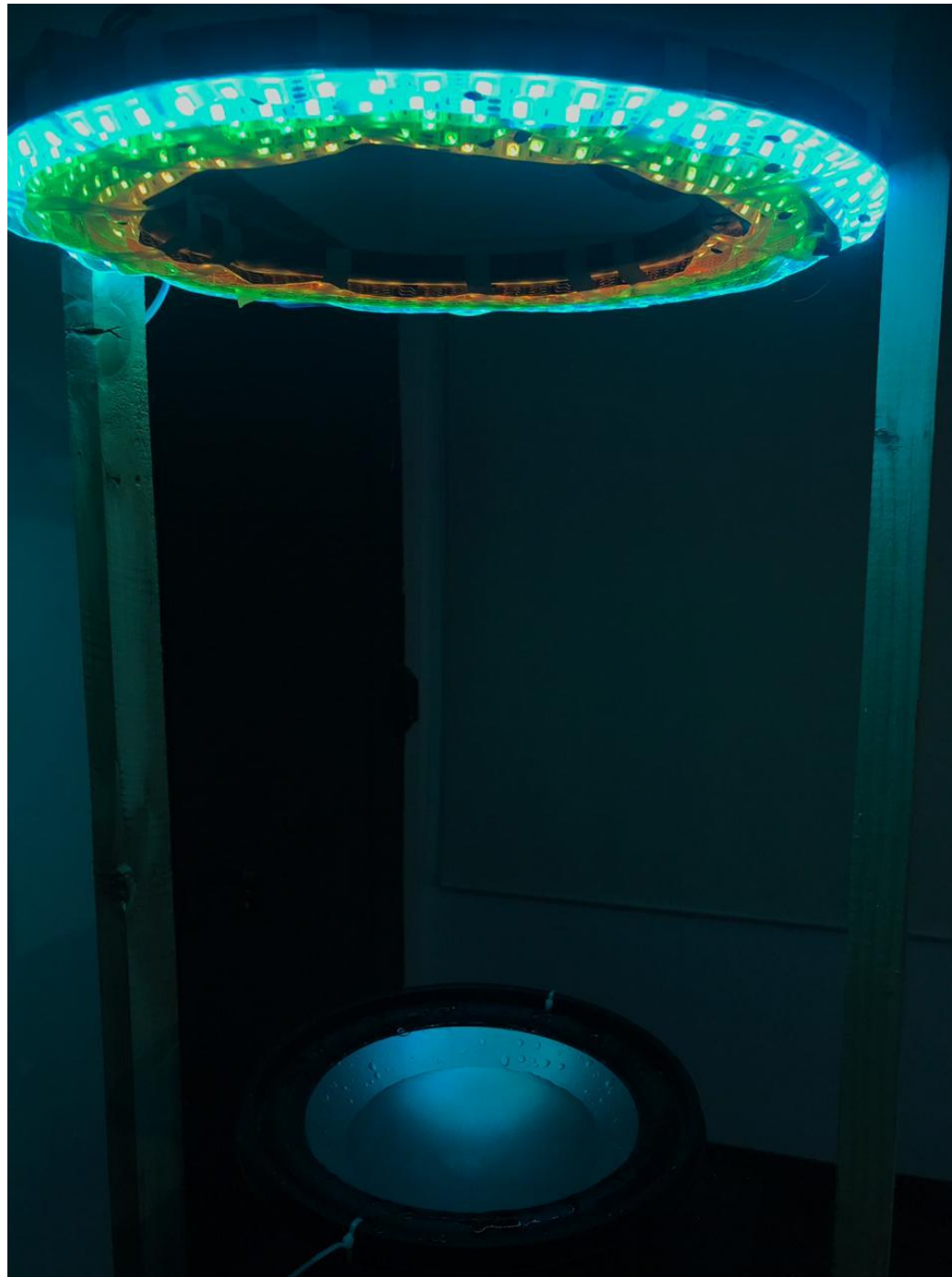
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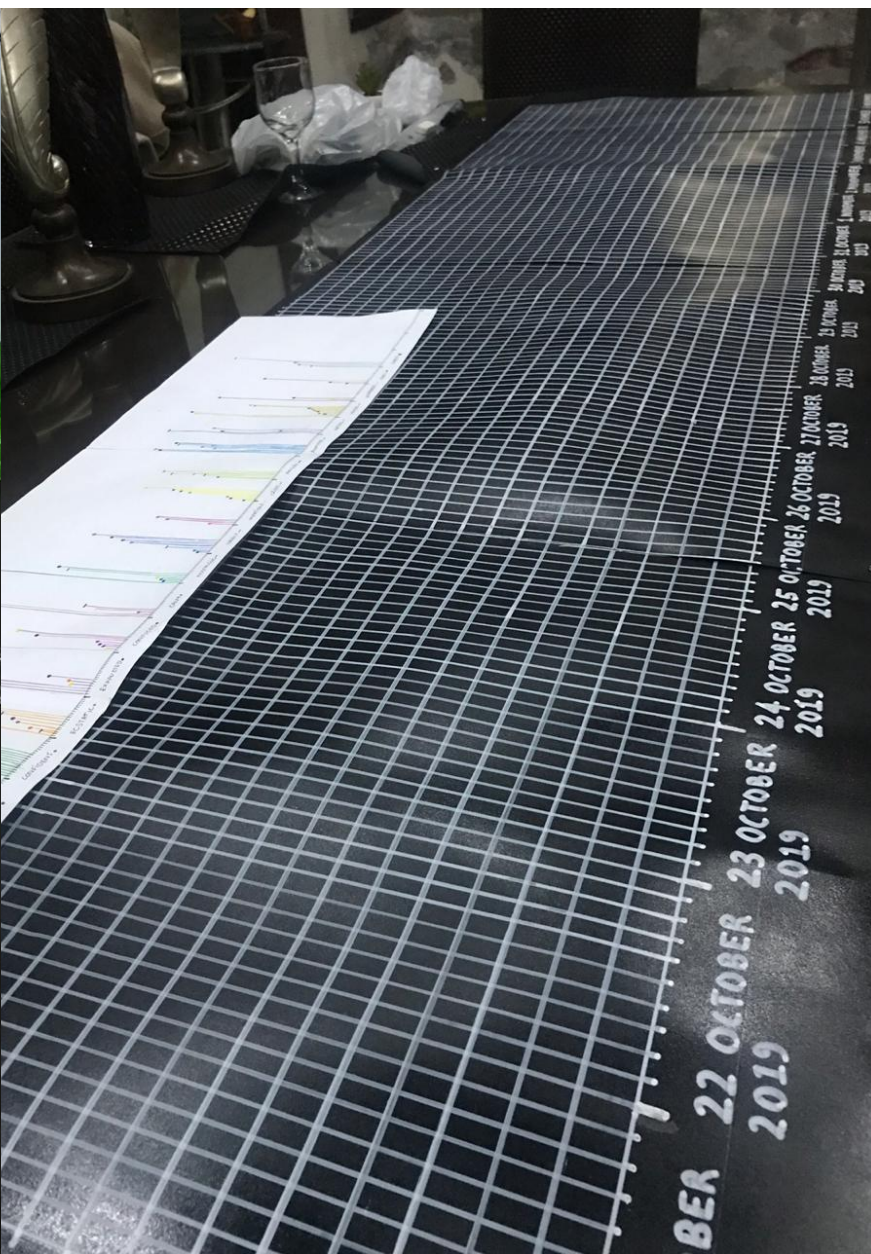
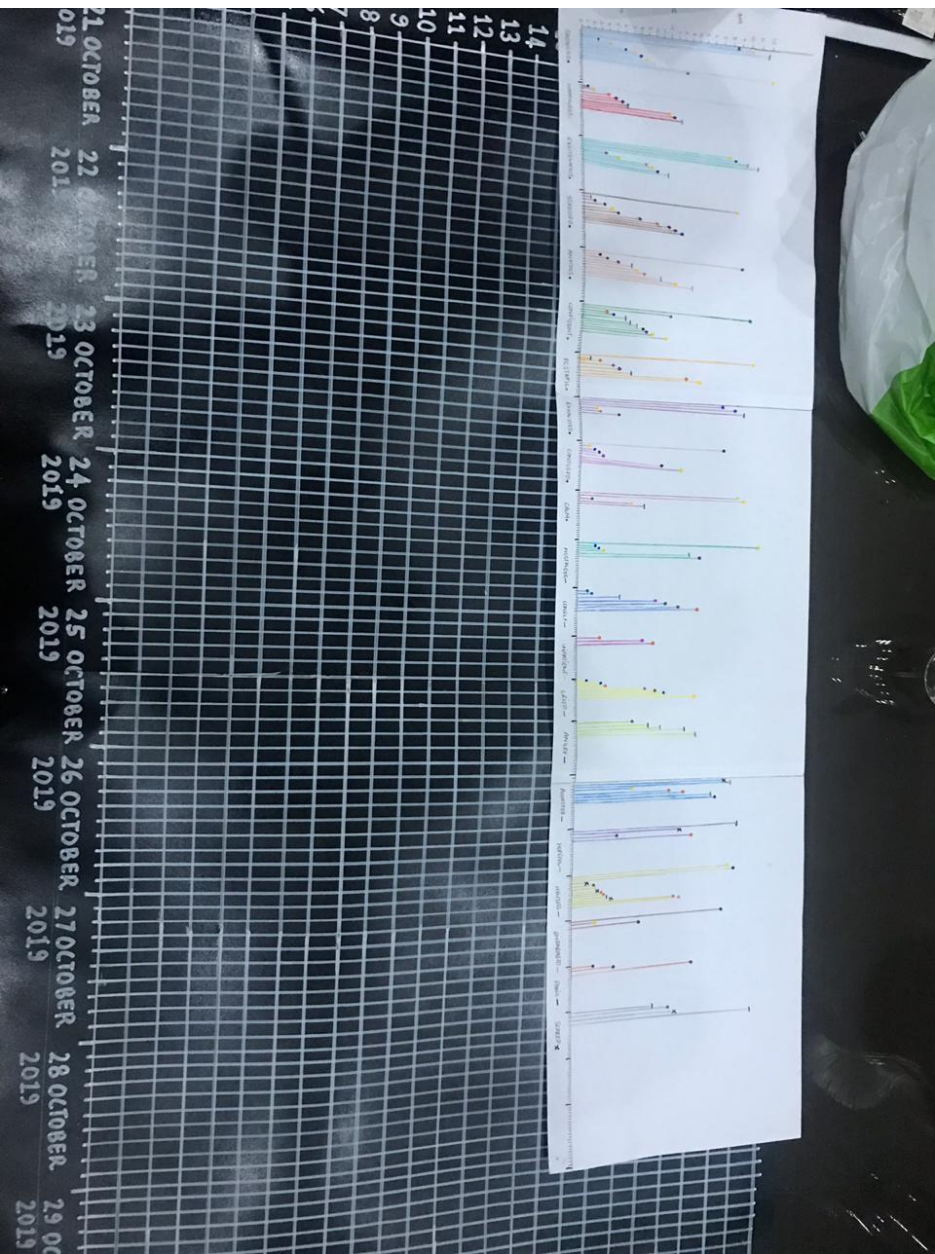


Play video "Set
up 1 & 2"

(View in "Presentation
videos & Sounds" folder)

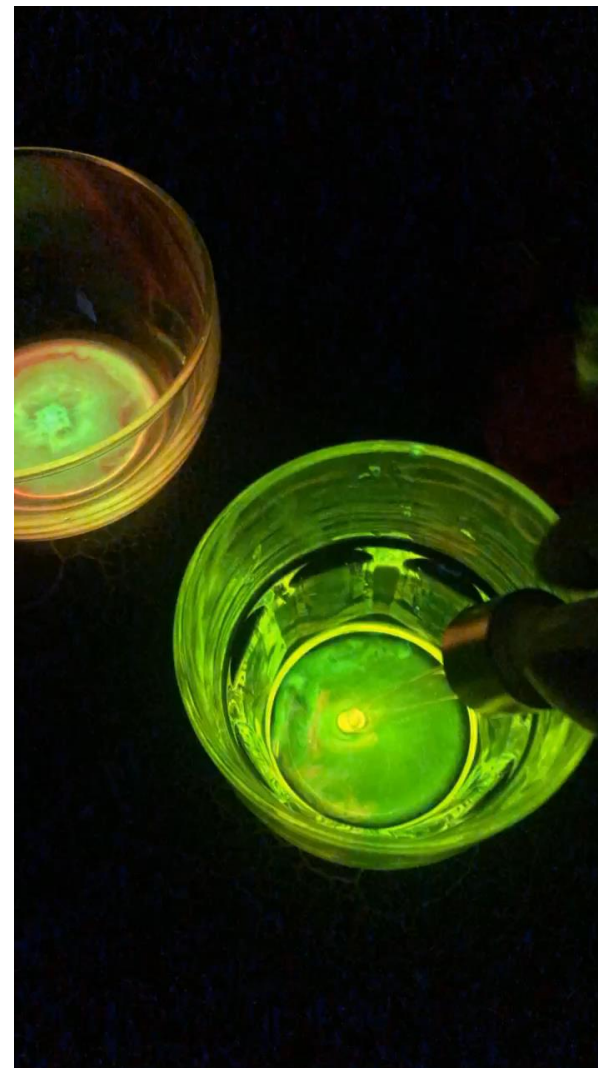
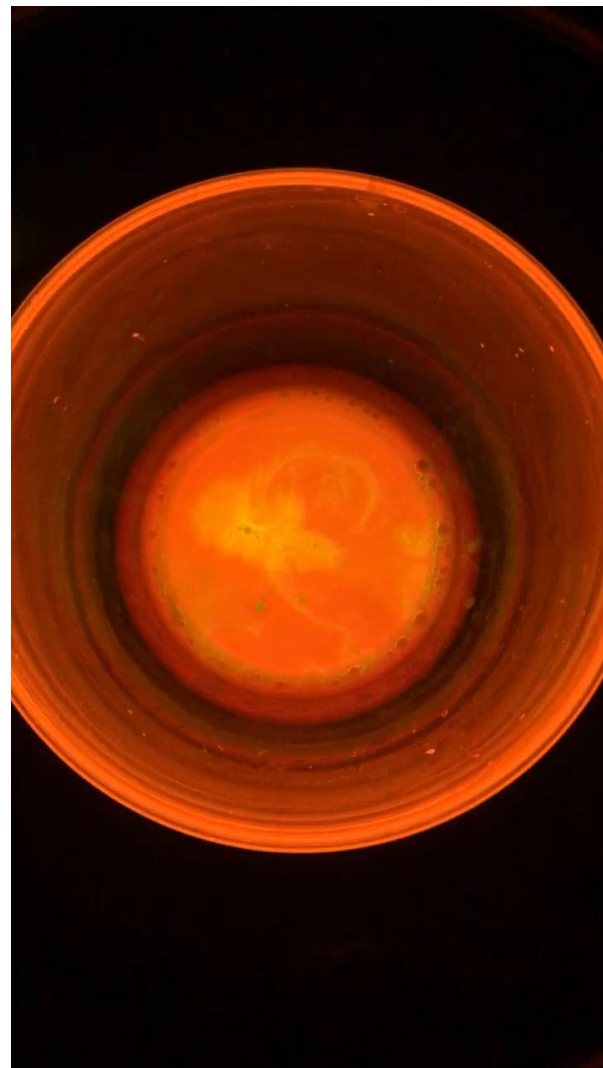






Making a big version of my graph with glow in the dark paint.

Experimentation with chemicals with this setup,



Play videos
“Chemical
Video”

(View in “Presentation
videos & Sounds”
folder)

