

AERO- SOL- NAUTS

TRAVELLING TIME:
AEROSOL WORMHOLES
[POTUJOČI ČAS:
AEROSOLNE ČRVINE]

Ljubljana, junij 2021



avoklinska



DEMON- OLOGY- GY OF A WILD PIG

February 2014 – First cases of *Pestis africana suum* (African swine fever, ASF) registered in Poland.

January 2019 – Massive “reduction” of the wild pig population in order to prevent cross-contaminating and spreading the ASF virus to farm animals.

July 2019 – A 14.7 km section of the express road connecting the southern part of Olsztyn, Poland with the eastern part.

January 2020 – First cases of coronavirus (SARS-CoV-2) registered in France.

March 2020 – All territorial borders in Poland are closed down due to quarantine.

May 2020 – “Wild pigs conquer the city of Olsztyn.”

I have seen her passing by my usual spot where we grab some snacks after dinner. It was just a glimpse, I remember her well, as it was rare that my eyes met with theirs in mutual curiosity. Sometimes I doubt if she ever existed, maybe it was just my imagination, maybe what is left is just my memory of a comfortably tensed co-existence with a stranger. I wonder if she is still alive, whether she survived.

Now, after the great virus which led many of us to be killed, and rumour had it that we would be wiped out completely, it seems that centuries have passed since I last saw her. The traces of who we were seem so fragile, almost irrelevant now. Some of us managed to run to the small forest in their lands just before they made a mechanic river of many streams impossible to control and keep up with.

I escaped with Sofia. She did not want to leave our nest that is filled with all our memories and the stuff that kept us who we were. Sofia is proud and stubborn, but I love her. She is my secret escape to the comfort of security, and despite her seeming detachment from the materiality of life, she is gentle and can guide you with her tingled murmur.

So here we are, there are dozens of us.

Day after day, we move further into the stones, the smell is too good not to. I read somewhere that if you melt with others and you do not say a word, you become as them. So it felt as a perfect weapon of survival at the time.

But through these silent meltings, our many memories of our untold stories started to scream even louder. Stories are a powerful tool for keeping memories, but they also hide the unwanted ones and create those that we desire. They all followed 11 principles, [1] which I wove into a fable that I tell to youngsters now. I tell it as a song for all to sing before their bedtime, to make it part of their daily rhythm:

- (1) They may scream at us, chase us or worship us, but we are beyond their moral judgment.
- (2) We are all different, just like they have different furs.
- (3) We feed on them each time they bite our flesh.
- (4) We have different powers, but we all have our roles to play.
- (5) We can hide, transform and mutate
- (6) and we live among many others.
- (7) We can kill their gods and bring justice to earth,
- (8) but we can also destroy and plunder.
- (9) We are powerful but never seek attention for our deeds.
- (10) We can make you sing in excitement,
- (11) revealing our wisdom that tells the story now, please sing with us before we go silent.

So we learned how to keep quiet in hope to be accepted as them. We murmur our songs before we go to sleep to keep remembering the strategies of survival. But with each day, our silence and mutations into one started to give a result we did not anticipate. We became silent, and they do not see us. We stopped talking and they do not know that we even exist.

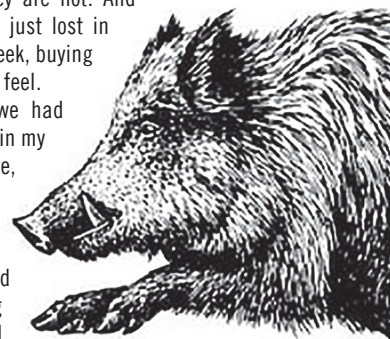
At least these were our thoughts ...

They pass by us, sometimes stop in front of us, but seem to look right through us without a sign of recognition. At first, I was afraid for Sofia as she seemed too detached to be careful. She kept on reciting all the maps back home, even though we all knew all the roads were long gone.

By that time, there were already hundreds of us, among them, we merged with the stones. Sometimes I see the curious looks, as if it was looking straight into my soul that I can feel through the shivers deep down under my skin, constituting my every cell. Sometimes I think they are like us, also hoping not to be seen for who they are not. And sometimes that we are just lost in this game of hide and seek, buying time before we cease to feel.

One afternoon, when we had a nap, I heard her voice in my dream, which is strange, as I have never heard how she sounds. Her eyes were big and sharp, her high-pitched voice almost irritating and yet welcoming. I imagine she knows what

it feels like being finite, when all can change and mutate,

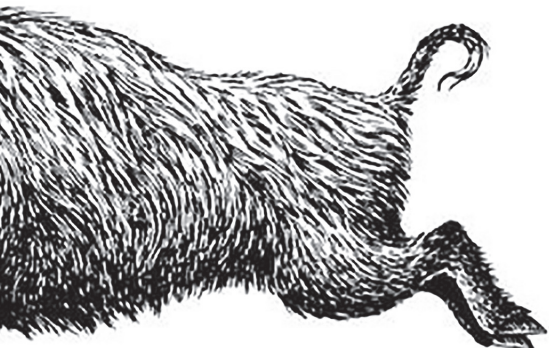


only you are penalised when you do. In dreams, I can travel backwards, against all logic and laws, to that moment when I saw her. My belly was empty and I could feel how hers was too. Is she multiple? Can she resist the destiny? I wonder how great it would be to not be afraid to be seen, for it to be possible to mutate with them, to feast as multiple among them.

But I know it is a dream, I know we're just buying time by making us appear as one, and they will soon notice us, because the speed of our change that conditions us is accelerating. But even though I think it is a dream, I surely cannot have doubts that I could see her!

So maybe it is travel to the future? I remember a scientist preaching that "at the precise moment when heat is produced, the process is irreversible: the past differs from the future. It is always heat and only heat that distinguishes the past from the future," [2] and it makes me realise that each night I see her, I wake up with sweat under my pits and on my neck. At first I did not make much of it, but the sweat of the dreams would indicate that heat was released from my body with unusual speed, as during the day my skin is dry and cold as sandstone ... Is that possible? Did I travel to the future to see her?

During one of these travels, instead of looking away, I kept on staring at her so that I could tell her my story, and my voice was merging with hers, and my eyes started to see what she was seeing, and together we became the constellation of changing bodies, neither one nor many. I became with her a little, and she became with me a little, and our bodies became a little smoother, and a little stronger, and a little more porous, and a little more hairy, and a little more more, and ...



[1] Based on the characteristics of a demon in Jason Bahbak Mohaghegh's 'PlaguePod Bonus: Principles of Coronademonology', Urbanomic, accessed 13 May 2020, <https://www.urbanomic.com/podcast/plaguepod-bonus-principles-of-coronademonology/>.

[2] Carlo Rovelli, *Reality Is Not What It Seems: The Journey to Quantum Gravity*, trans. Simon Carnell and Erica Segre, First American Edition edition (New York: Riverhead Books, 2017), 221.

Wamidat.

Die...
Tadub...
mit...

Grüner...
am...
Sünder...
aber...

Grüner...
am...



Agnieszka

She walked through the forest quickly, even though she knew it will not shorten the distance. A path has to be walked, the travel has to be felt, no matter how you will define time and space now.

The sweat on her skin was sticky and she already felt the warm coolness of the lake, imagining its crystal surface behind the trees. The sand floating from the ground was already irritating her skin, scratching the surface of her feet.

A sweet smell of rotting fruits started to become nauseating. By now she assessed the same stones, marked by the same curves of little fingers.

Am I lost? she asked herself out loud, but with disbelief, as she had memorized the path hundreds of times.

But when the trees started to bow and the grass danced into the pulsating rhythm of a song never sung, she gained her confidence: "It has begun!" she thought.

It was breathing loudly now and she felt their presence in every pore.

Am I going to faint? she asked them, looking for a safe place to stop before her eyes filled up with the purple spots indicating the passage was close.

She stopped her breath; her eyes froze until they were filled with dry needles, forcing her to blink. The shimmering voice started to whisper:

"There is no adiaphoria although we can imagine it. And indeed, we fail to understand the eternal return if we make it a consequence or an application of identity. We fail to understand the eternal return if we do not oppose it to identity in a particular way. The eternal return is not the permanence of the same, the equilibrium state or the resting place of the identical. It is not the 'same' or the 'one' which comes back in the eternal return but return is itself the one which ought to belong to diversity and to that which differs." [3]

She began to murmur:

Am I in adiaphoria or in the eternal return of my imaginings? If adiaphoria is only an imagining, can imagining its return be considered reality? Does double negation make something true?

Lestie

Could this be a case of algorithmic truth?

A myriad of possibilities true/false.

Would it be worth evaluating my imaginings from a boolean perspective?

To run a series of commands until the computer is no longer able to continue evaluating this reality?

Reason for failure: -lack of memory- of course.

It is due to a lack of memory that we find ourselves unable to reach the confines of the truth?

Perhaps the adiaphora in which I am immersed is the proof that my entire environment is a simulation.

Every time I name myself, every time I name something ... I make it exist.

So maybe it's time to be silent, shut down the computer and stop executing commands.

me \$ sudo shutdown -h now

-bash: command not found

Spela

But there was no silence. The fans kept purring. A glass marble that had been teetering at the edge of the desk gave in to a gust of wind and fell to the ground, producing a string of chimes as it bounced off the worn-down limestone tiles. Just as the creature slumped into the comforting embrace of the oversized leather armchair, anticipating the afternoon daze when the body floats in unreflected materiality, the marble and the breeze entangled to jerk her to attention. The creature tensed and without hesitation dropped to the floor, eyeing the unruly object. The marble rolled lazily out of reach and came to a stop beneath the commode. She pressed her cheek to the dusty ground. Of all the worlds she had called into existence, this one still felt the grittiest. Here most elements had imaginations of their own. The marble was marble-ing, the dust was dust-ful, the floor was floor-some and the wind wind-ly.

She lay there, transfixed

on the glass ball,

desiring to touch

it, to keep it

close, in her

hands, her

mouth, atop

her eyeball. She

wanted it to

take its position in

her throat, to lodge itself

in her belly button, to travel

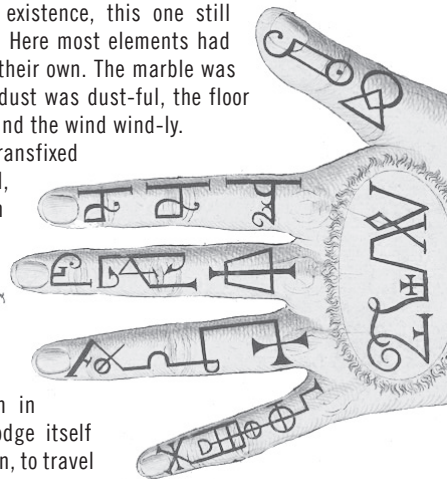
down her spine and nestle in

the pelvis. She was practicing connection; after all, it was

her world. She had spent three months training and was by

now getting good at what she called shimmering in digital

realms. Shimmering in material scapes would, however,



require a rare type of attunement, more of a happenstance, a synchronology. A persistence.

She lay there, bleeding heat into the old house until she could barely feel herself, or think herself.

...

Like a tired rubber band the erotic snaps, creating something like a groove, an inclination, though the ground remains unchanged. The marble grasps the pull. It rolls down the groove, licking it ever faster, towards the beating flesh. But then the forces shift. It follows them through a curve. There is air, there is surface, there is movement, there is spinning. There is an orchestra of crackles as it twirls. It makes its way to the stairs, through the door.

As the marble takes the path of the shimmer traveller, we leave the solipsistic space of the creature behind. It is time for the glass ball to name everything, to make it exist.



Adriana

Before it could do so, it needed operators to act on it: contorting, stretching, squeezing, splaying, twisting, modulating. The operators smothered, waited, supported, ganged up, caressed. These were acts that transformed seeming individuals, such as the demarcated and comprehensible marble, into a more diffuse, yet localizable, packet of matterwaves. The packet slunk towards the horizon, its motion governed by the field that was itself transmogrified by the packet's existence. Relations that might have been forgettable began to leave marks on the packet's form as it was attracted to the horizon and the inky, dripping point infinitely beyond. Here everything began to brake down becoming both more compressed aaaaaaassssssssss weeeelllllllll aassssssssssssss mmmmmmmoooooerrrrreeeeeeee eeeexxxxxxxxxxtttttttttteeeeeeeeeennnnnnnnn-ddddddd and the packet found itself in a state of rest. Taking up the same space there were billions more of itself. This co-presentness caused the packets to vibrate a bit out of sync, like billions of violinists trying to play the same note. Each packet, while spatially co-present, was temporally out of joint. A bit before, a bit later, eons ago, thousands of years from now. Here the packet would remain hidden with the others in the thick, sticky, lugubrious darkness. Soon, relatively, an entity in the light out there would move in the just right way and thus meld with the packet to wring it into the vastness beyond.

Ingrid

Through this motion, a drop would form suspended in the cold dark. A drop that holds all the possibilities of becoming. Asking to be drunk, or just tasted. Igniting all potential in this sensuous moment where touch is returned to its rightful experience.

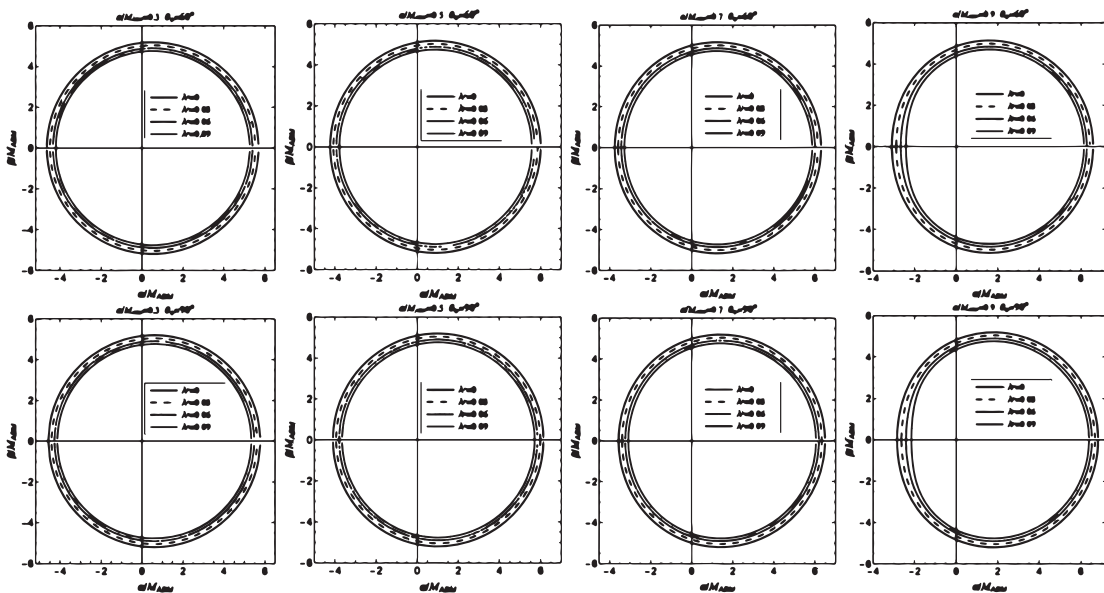
And when she was moving her limbs through the bulbous field of made-up reality, the profundity of her own thoughts ceased to die.

She opened her eyes to find herself already in the cesspool of passages. In the turmoil she could not catch their breath, even though their hearts were steady and loud: we are them, as them, as the shimmering return of the multiplicity of times.





CY-
CLING
(ANOTH-
ER PER-
CEP-
TION OF
TIME)



This is what I mean when I say I would like to swim against the stream of time: I would like to erase the consequences of certain events and restore an initial condition.

—Italo Calvino, *If on a Winter's Night a Traveller*

“I would like to talk about time.”

With a freshly brewed tea in his hands, she looked at me and replied,

“So, are you one of those who believe in linear time? Right now while I’m talking to you, everything you hear happens in the past, I speak in the present, but you listen to me in the past, and this is simply because your brain takes time to receive the already processed signal from my voice into electrical impulses. You see, reality exists in multiple dimensions, multiple speeds, you know as an object moves closer to the speed of light, everything is perceived much slower ... time and space are closely linked.”

The tea had the smell of the earth, of the summer afternoon when the rain flooded the gardens of all the houses, a smell that reminded me of my grandmother, sitting in her chair while I ate the dirt from her garden.

“We are now going to perceive time in a different way, the way of the psilocybe,” she says.

Hearing her words brought me back to this reality, somehow only the smell of that tea that I have not yet consumed led me to a temporary journey back in time, back to my childhood. My brain was already rewired by a chemical influence created by the scent of that brew.

I started drinking while she was explaining to me.

“Psilocybes are a very special family of mushrooms, all mushrooms are special, but these are portals, they are capable of transforming the chemical materiality of our brain and putting it in a state of high perception and learning; it’s a bit like serotonin, only stronger and more immediate. Our ancestors dedicated their lives to observing reality, to understanding how portals operated. They found out that all that is alive is in a state of perception, we all have different sensorial systems, which allow us to collect different types of experience, everything that is alive is, observing, interacting, and gathering knowledge. So the point is that all this experience of the other is there for us.

“When life developed on the planet, it was all microorganisms, there were bacteria, fungi and viruses, all newcomers from space. But now I want to focus on the fungi. Imagine the moment in which their evolution became rhizomatic, mycelium began to create small networks, to transfer energy from one point to another, it is as if the blueprints for creating wormholes are stored in the epigenetic memory of these fungi, they may have learned it on their journey through space.”

My attention was becoming more and more defined, it was as if nothing existed outside this room, only she and I, we were immersed in this sphere, breathing in circles. Little by little I began to feel my collective and unified body, each cell, each particle, I could feel its existence in me, the gravity of my body, the gravity of the earth, I was there.

“Humanity cannot understand all of reality, not if it seeks to do so with its western tools, that’s where things collapse and the forces they call supernatural surpass them. For us, everything has intelligence, everything talks and dances around us. The agency of the material. Then we start to understand that life is a form of expression, so matter can also express itself in language, movements, forms of what is alive.”

She looked at me and with a very gentle voice continued to explain ...

“I have been trying to understand viruses outside the biological framework for a long time, mainly due to the temporary restrictions of life, for them, things work on a different scale, they can survive thousands of years in a dormant state. You could say that they are our original ancestors ‘Ex Virus Omnia’ (from virus everything).

“Viruses can exist independently of genetics, solely in the symbolic dimension of evolution. A virus is nothing more than an idea until it finds a host within which it can replicate itself. You see, for them time is nothing more than an execution state, the switch is on, the task is to propagate the genetic information, the concept of which they are made of. After that, they become part of the narrative of the biological, they become us, sometimes as features, other times just as ecosystemic marks. But now in a different time and a different dimension.

At that time I remembered something I read long ago about memory as some sort of a viral feature, there are some scientific suggestions about epigenetic modifications in viruses in the early stages of life on the planet that made it possible for more complex organisms to acquire the ability to store and remember information.

“But let’s go back to the main question,” she said, “even if you don’t really formulate what time is, we can try to explore this from the philosophical perspective, or perhaps try to understand those physics theories that surround this concept. For the ancestors, time was the result of the cosmic dance, time was cyclical and circular. In this vision of the future, the things that we cannot perceive because they haven’t happened yet were located at the end of the circle, in the past, while the ones that we know and can see are the ones in the front. Events repeat themselves, as the sun comes out every day, the planet rotates around it, the rivers flow, and we breathe, events have an unalterable order, they are part of an infinite sequence of consecutive cycles. Nothing is created and nothing is lost, the changes are rather manifestations of these cycles in which events are made, undone and remade in a perpetual way.

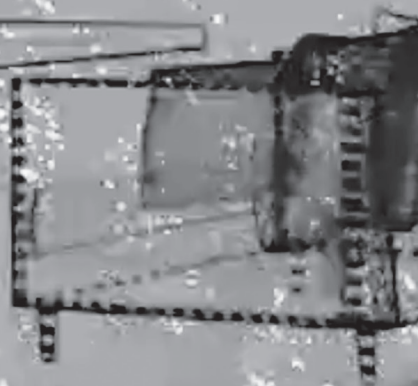
“But there are other ways to perceive time. In western culture, time is irreversible, unique and unrepeatable; it has

a beginning and an end. Events happen in a linear order, a chronological expression that is embedded in the progress narrative.

“In the end our definitions of time rely on the way we organize all of humanity’s events; for example, the second was defined as one-sixtieth of a sixtieth of a twenty-fourth of the time it takes the Earth to complete one revolution around its axis, and this definition was useful until we discovered that the Earth is slowing down, one second every few years, but this messes up the precision. So all atoms of Cesium always radiate light that has a frequency of 9,192,631,770 cycles per second; they are quite precise so we can say we move from a mechanical perception of time to an atomic one, or as scientists call it, coordinated universal time.”

Time is a complex and beautiful invention to encompass reality in an almost musical quality. Sometimes when I dream, everything happens at once, I’m here, I’m there, and time is a dense crystalline medium. Years happen in seconds.

PHYSICAL- ICAL METH- ODS TO GET IN SYNC





[This lecture includes a PD patch “EnergyFieldResonator” to play the frequencies.]

Synchronization is the coordination of events to operate a system in unison.

Systems that operate with all parts in synchrony are said to be **synchronous** or in *sync* – and those that are not are *asynchronous*.

Time synchronization can occur between systems around the world through satellite navigation signals that depend on the oscillatory features of Cesium atoms that radiate light at a frequency of 9,192,631,770 cycles per second. We live in a time of atomic synchronization.

Oscillation refers to any Periodic Motion moving about an equilibrium position that repeats itself over and over for a period of time; for example, the Earth behaves like a gigantic electric circuit. Its electromagnetic field surrounds and protects all living things with an oscillatory frequency of 7.83 hertz on average – the so-called “Schumann resonance”, named after physicist Dr. Winfried Otto Schumann, who predicted it mathematically in 1952.

According to Dr. Konstantin Korotkov’s electro photonic analysis study, the human body is capable of emitting oscillatory radiant energy that is in the range between 380 and 750 nm in wavelength. Electrophotography has revealed 7 main points from which this energy is emitted, and they are located in the following glands:

1. Adrenocortical
2. Gonads
3. Pancreas
4. Supracardiac Paraganglia/Thymus
5. Thyroid/Parathyroid
6. Pituitary
7. Pineal

These sources of biophotonic energy coincide with the points known as chakras in the worldviews of Hinduism, Theosophy and Gnosticism, or kora (spiral) in the Mayan tradition. The term Chakra means “wheel” in Sanskrit and it was used in the Vedas to refer to the energy centers of the human body.

These findings were made possible by the use of bioelectrography, a technique for diagnosing and monitoring the informational state of human energy that uses computerized gas discharge (GDV) visualization. With this technique, the emissions of these glands as a source of radiant energy can be grouped into wavelength and hertz ranges.

Using this information I developed an application programmed in PureData that attempts to synchronize each of these points using the resonance principle. The patch is made up of 7 oscillators with a range of variation in hertz and wavelength. It is a well-known phenomenon that sound does not only affect us on an

emotional level, but can also modify the physical conformation of matter.

For this exercise it is important to use headphones or audio monitors, sit in a comfortable position and be prepared to oscillate as a **synchronous** system.

1. Pineal: Note C, nm (750–650) Hz (90–104)

The **pineal gland**, **conarium** or **epiphysis cerebri** is a small endocrine gland in the brain of most vertebrates. The pineal gland produces melatonin, a serotonin-derived hormone that modulates sleep patterns in both circadian and seasonal cycles.

2. Pituitary: Note D, nm (640–590) Hz (106–115)

The **pituitary gland** or **hypophysis** is an endocrine gland about the size of a pea and weighing 0.5 grams (0.018 oz) in humans. It is a protrusion off the bottom of the hypothalamus at the base of the brain. Hormones secreted from the pituitary gland help to control growth, blood pressure, energy management, all functions of the sex organs, thyroid glands and metabolism.

3. Thyroid: Note E, nm (580–550) Hz (117–124)

The **thyroid** is a butterfly-shaped gland that sits low on the front of the neck. The thyroid secretes several hormones, collectively called thyroid hormones. The main hormone is thyroxine, also called T4. Thyroid hormones act throughout the body, influencing metabolism, growth and development.

4. Paraganglion: Note F, nm (520–490) Hz (128–139)

The nerves of the autonomic nervous system are not under conscious control. They innervate the heart, adrenal medulla, vascular smooth muscle, and smooth muscle in visceral organs, and control cardiac rate and output.

5. Pancreas: Note G, nm (480–460) Hz (142–148)

The **pancreas** has both an endocrine and a digestive exocrine function. As an endocrine gland, it functions mostly to regulate blood sugar levels, secreting the hormones insulin, glucagon, somatostatin and pancreatic polypeptide. As a part of the digestive system, it functions as an exocrine gland secreting pancreatic juice into the duodenum through the pancreatic duct.

6. Gonads: Note A, nm (430–390) Hz (158–174)

A **gonad** is a mixed gland that produces the gametes (sex cells) and sex hormones of an organism.

7. Adrenal glands: Note B, nm (380–280) Hz (179–243)

The **adrenal glands** (also known as **suprarenal glands**) are endocrine glands that produce a variety of hormones including adrenaline and the steroids aldosterone and cortisol.

With the same ability you have to imagine and perceive time, try to imagine and perceive yourself in sync with your own oscillations, with the others, with the planet. Consider this as a fine tuning: as a musician tunes their instrument, we must tune our own bodies.

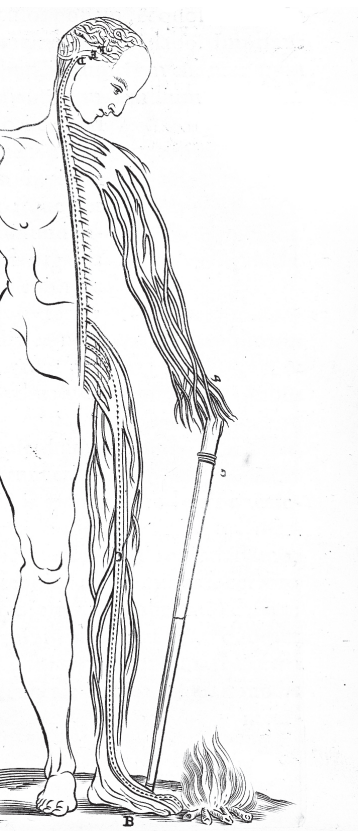
In computer science, **synchronization** refers to one of two distinct but related concepts: synchronization of processes and synchronization of data. *Process synchronization* refers to the idea that multiple processes are to join up or handshake at a certain point, in order to reach an agreement or commit to a certain sequence of action. *Data synchronization* refers to the idea of keeping multiple copies of a dataset in coherence with one another or to maintain data integrity. Process synchronization primitives are commonly used to implement data synchronization.

For this exercise, I would like to use the analogy of the handshake so that we can reach a point of agreement and synchronize ourselves with the ability to perceive and be part of the series of changes the planet is overcoming.

To do this, we will use physical programming techniques based on the mudrā, that is, the “seal”, “mark” or “gesture”, to create our handshakes.

Please follow the gestures of my hands and repeat with me:

We agree to entangle in the complex and sophisticated form of intelligence that is intuition.



Intuition:

We agree to entangle in the complex and sophisticated form of intelligence that is intuition.



Awareness

We agree to gather all information and knowledge to create an awareness.



Dimension

We agree that all that we are perceiving is occurring at a multidimensional level.



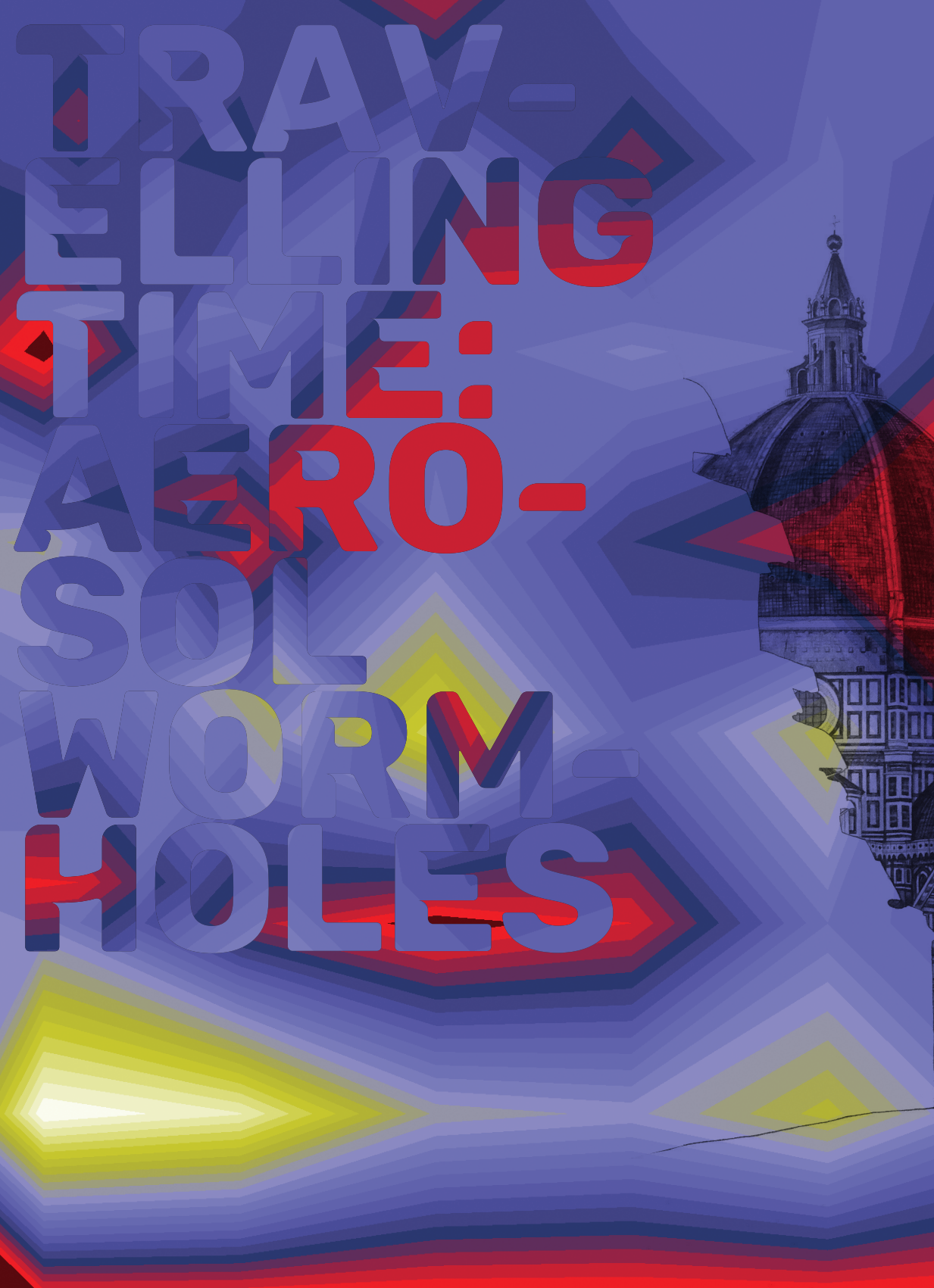
Creation

We agree to work on the creation of the proper conditions that make it possible for us humans to synchronize with the phenomena, matter and otherness that inhabit this planet with us.

Light oscillators

Synchronization of multiple interacting dynamical systems can occur when the systems are autonomous oscillators. For instance, integrate-and-fire oscillators with either two-way (symmetric) or one-way coupling can synchronize when the strength of the coupling (in frequency units) is greater than the differences among the free-running natural oscillator frequencies. Poincare phase oscillators are model systems that can interact and partially synchronize within random or regular networks. Now rest yourself in your newly tuned state.





TRAV- ELLING TIME: AERO- SOL WORM- HOLES



A bubble suspended in glass.

Not half a year ago, we were caught in the infinity mirror that is the status quo. Crisis to crisis, encompassing climate change to surveillance capitalism, the trap drew its power from the unprecedented. With warm pride, we felt our experience severed from that of the people who came before as much as we were powerless to imagine a livable future.

The viral load cuts into the thick now.

Then these parasitic moieties, collectively acting as a pandemic, reframed time and dropped us, rather painfully, on a chronology where the exceptionalism of the present could itself be just another illusion of grandeur.

Divining linkages across timelines.

This research writes tales of curious conjunctions that require attunement to the threads that the virus makes graspable, albeit barely. We construct shortcuts between histories and futures, just as the virus jumps species to share molecular memories between beasts that have long since separated.

Florence Nightingale. Dancing mania. Anarcho-primitivism. Shutting-up. Dynamics of fluids. Dynamics of power. Runners and slipstreams. Plague aesthesis. Shrieks of interregnum resonance. A tower and a nest.



“Time is constituted only in the originary synthesis which operates on the repetition of instants. This synthesis contracts the successive independent instants into one another, thereby constituting the lived, or living present. It is in this present that time is deployed. To it belong both the past and the future: the past in so far as the preceding instants are retained in the contraction; the future because its expectation is anticipated in this same contraction.”[4]

If we want to practice ontologies of processual relations, where bodies are generated through relations of transformation and conditioned by change, we need to accept that time as a universal and given category does not exist. Time is produced by those that move, namely bodies in their relationality. If relations of transformations constitute the onto-epistemological condition of existence, then a timespace is only a characteristic of a body that is already in transition.

From this we can deduce that we are indeed already time traveling, since the past and the future are already enveloped in the present through the relations that condition bodies. In face of this, what is at stake is to accept the travel as not only an inevitable ontology of life, but an epistemo-ethical way of its practice. There is no “yet” to happen, there is no “past” to be lost.

The past and the future collide, determining the present.

Present passes into past, actualising it and transforming yet another present, and making the past eternally fluid.

The future is present in the moment of actualising, initiating the travel of eternal return.

We are in a constant movement of change happening.





TRAV- ELLING TIME: AERO- SOL WORM- HOLES

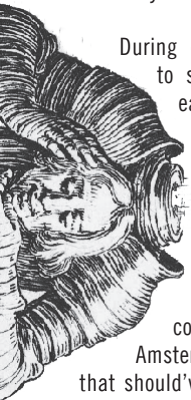
So far, the year of the pandemic has been marked by too many ruptures to think through them and come to some sensible apprehension of events. Instead, Aerosolnauts, as we call ourselves, embrace the opportunity to travel the margins of this experience together. We liken our efforts to observing a shadow in the dark that you can only see moving when you look elsewhere, but are still fully attuned to the periphery of your vision. Because shadows, demons and ghosts can be excellent guides through these times.

As other participants of Braiding with Friction, The Aerosolnauts too are a fascinating group of people so rich with knowledges and accolades that I'll avoid using flattening labels and only introduce us via overly particular details of my choosing.

Adriana is a xenologist weathering these times with her queer sister in Wichita, Kansas. She sometimes spends hours watching the shimmer of Midwest storms through a refractive foil on the window. This seems very much in line with her pursuit of the melding of various temporalities, from quantum physics to music to space travel, at their intersection with queer poetics and aesthetics.

On the other hand, as a non-philosopher during *coronatimes*, Agnieszka took up sewing at her abode in Deventer (NL). Perhaps it was the mesmerizing action of the sewing machine that sparked her interest in philosophical storytelling. Or the invasion of wild pigs in her hometown in Poland. Or perhaps simply the comfort of her reading chair.

Leslie has been growing things – at her place in Mexico City, she plays her synths, algos, algae and lived experience to share with us what flourishes when western physics theories meet the cosmological visions of ancestral Latin-American narratives. She showers us with gifts, one of which we will share with you in a bit.



During quarantine, Ingrid's fully committed herself to somatics, which includes dancing to music each evening till she drops from exhaustion. Rituals, she says, are materialist practices that connect us to the here and now, even to the ghosts we can only discern from their traces. Her practice is very much influenced by plants.

And while Ingrid visits her enchanting community gardens in Brussels, I stuff our Amsterdam Red Light District apartment with plants that should've been grown outdoors. I think I might be a plant myself, but while in the process of getting to the bottom of this, I stubbornly keep looking for the silver lining in this situation.

So what have we been doing? We've been exploring what we call a xenomethodology – transient practices that enfold

the without with the within. Meaning the “outside”, the unknown, the mundane, the somatic gets brought into contact and melded with that which is already codified and understood. What we do with the shadows consistently mutates through encounters between us, each already mutated by our own chance encounters, desires and imaginations. Xenomethodology results in storytelling with more than one narration, with interweaving, forking and crosspollination. We practice contamination as an ontoepistemology.

And before we even understood what we were doing, a chance encounter with a paragraph from Deleuze on the eternal return, plants that change our perception of time and quantum foam creating its own spacetime nudged us towards a journey which lead us to write a travel-without-a-guide instructional. Besides the turmoil these potent aerosol agents have triggered, they've opened portals between us – so we've transmogrified Braiding Friction to Braiding with Fiction and finally to the Bulbous Time We Spend Together Till We Meet Again.

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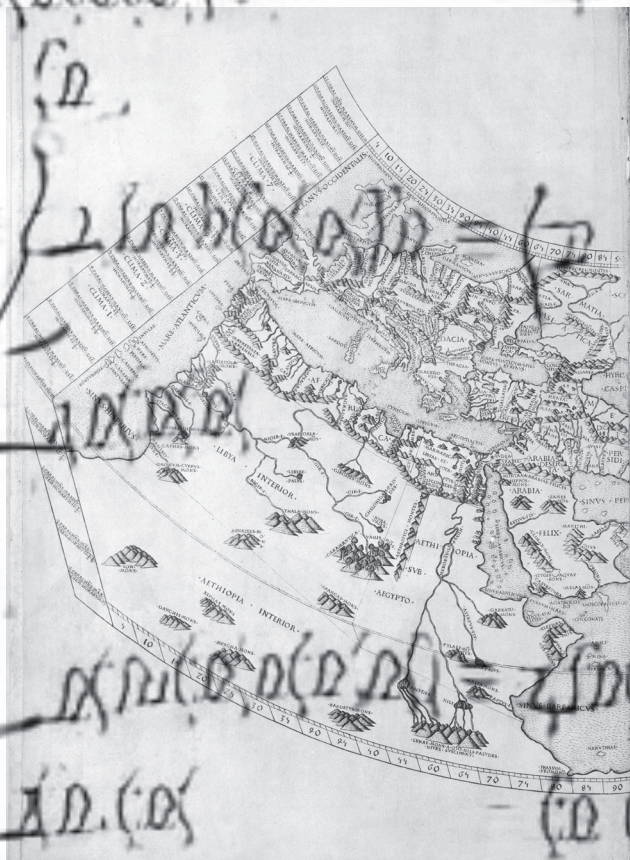
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Someone also sent me this quote by Heiner Müller that I would like to share with you:

"Andererseits ist durch nichts erwiesen, dass der Mensch auf der Erde das herrschende Lebewesen ist. Vielleicht sind es ja die Viren, und wir sind nur Material, eine Art Kneipe für die Viren, Der Mensch als Kneipe, auch das ist nur eine Frage der Optik."
aus: Da trinke ich lieber Benzin zum Frühstück (1989)

A loose translation to English would be:

"On the other hand, there is no proof at all that the human is the ruling lifeform on this earth. Maybe the viruses are, and we are just material, a sort of bar for the viruses, the human as a bar, also that is just a matter of perspective."



HOW TO LIVE IN THE SINGULAR- ITY OF TIME MADE BY THE VIRUS



We,

the aerosol travellers,

declare the virus that made all

to collapse into singularity of the infinite disembodiment

to pass into the demonological bodies of multiplicity.

We, the multiple travellers, take the task to restore the contamination and multiplicity of time, the mutability and pollination of bodies

and generate time-spaces across the planets.

To consider a virus to be a demon might, to a respectable rational mind, be part of a magical thinking, awkwardly naïve and inappropriate in academically professional surroundings. And yet, under the surface of numbers, graphs, analysis and prediction of corona spread, the word that is used to describe contemporary phenomena is no other as this one: PANDEMONIUM. [5]

To understand the curious curiosity of how that word is used, it is imperative to look at its etymology:

According to Oxford English Dictionary:

pandemonium, n.

from ancient Greek DENOTES:

FORMING terms relating to the whole of the universe or mankind, or denoting that the second element exists or operates at the universal level

a demon means Any evil spirit or malevolent supernatural being, a devil

Pandemonium denotes thus the abode of all demons; hell, the infernal regions (a place represented by Milton in *Paradise Lost* as the capital of hell, containing the council chamber of the Evil Spirits).

It can also mean a centre of vice or wickedness; a haunt of evil, a place or state of utter confusion and uproar; a noisy disorderly place. [6]

Th pandemic is thus a state of lack of control, a state of confusion and chaos because what governs the world is not a centralised system of power, but unstoppable relationality and contamination of an entity that is neither one nor many.

If a virus, like a demon, exposed our fear of multiplicity, noise and contamination, making us clustered behind flickering screens of universal time,

a way to not only live but thrive

is through and not against demons.

To quote Deleuze:

“Demons are different from gods, because gods have fixed attributes, properties and functions, territories and codes: they have to do with rails, boundaries and surveys. What demons do is jump across intervals, and from one interval to another.” [7]

We are taught to forget about demons and to be scared of ghosts. We thus belittle demons as medieval fantasy and magical thinking, and tame ghosts by incorporating them into movie entertainment. But here, between demons and ghosts, lies the profound ontological schism. It penetrates our bodies each time we open our mouth and speak in language to describe difference in its demonological change. In differing through our bodies we escape the ghost of an identity.

Demons don't give a damn about morality.

Demons don't care about time, as they make time, collapsing all into a new transformation. They are beyond good and evil but they generate your good and evil actions. Demons cannot be identified as in the moment of capture they are already something else by becoming.

Demonology is thus not of past, but of beyond time-space, because it is

the time-space.

Demons are the relationality of the movements of elements.

Now, close your eyes that habitually were captured by gods in their ocularcentric propaganda.

Close them.

And surrender your multiple selves to the demonological rhythm of change.



[5] Bergquist, R., & Rinaldi, L. "Covid-19: Pandemonium in our time. *Geospatial Health*," 15(1), 2020, accessed 13 May 2020, <https://doi.org/10.4081/gh.2020.880>.

[6] 'Pandemonium, n.', in OED Online (Oxford University Press), accessed 13 May 2020, <http://www.oed.com/view/Entry/136751>.

[7] Gilles Deleuze and Claire Parnet, *Dialogues II*, trans. Hugh Tomlinson and Barbara Habberjam (New York: Columbia University Press, 2007), 40.

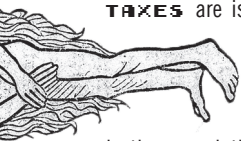


THE
STORY
OF THE
15-18
PLAQUE
OF
STRAS-
BOURG



► **15TH-CENTURY** Strasbourg flourishes as a major agricultural market and transportation center, but the majority of the people are obligated to turn their profits over to their employer or to the Church.

► **1492** For a third consecutive year, **ABNORMAL CLIMATE CHANGE** destroys crops. **FAMINE** strikes. **NEW TAXES** are issued. Those unable to pay the Church's tariffs are threatened with **EXCOMMUNICATION**.



► **1493** Several young men establish **THE BUNDSCHUH**, a clan-

destine association of peasants that plot against the clergy and landlords, who pressure them to cultivate the lands under severe conditions. One of their **OWN BETRAYS** them, most are **BEHEADED OR HUNG** for high treason.

► **1495** Europe is introduced to **SYPHILIS**. Preachers view syphilis "as a **PUNISHMENT** for the lusts of the **FLESH**".

► **1496** The **BUBONIC PLAGUE** appears twenty miles south of Strasbourg.

► **1502** **THE BUNDSCHUH** again revolts against the clergy and landlords to restore the rights of the common citizen. The movement is foiled by a member within the group and participants are **EXECUTED**.

► **1503** Bishop Albrecht concludes that Strasbourg is a "**BATTLEGROUND** between the **LORD'S AND SATAN'S FORCES**". However, his **CALLS FOR CHANGE** fall on deaf ears amongst the clergy, who **REFUSE** to leave their **CONCUBINES** behind when the Bishop himself had **INTIMATE AFFAIRS WITH PROSTITUTES** and **FATHERED** bastard children.

► **1517** smallpox sweeps through Strasbourg. The few city's hospitals are **OVERCROWDED** and can't care for those infected.

► **1517** A disease called "**ENGLISH SWEAT**" reaches Strasbourg. The symptoms of **ACUTE ANXIETY** are followed by **EXTREMELY VIOLENT SHIVERS** and fatigue, **SWEAT** begins to **POUR** out of the victim's body in large amounts, and **DEATH** follows soon after.

► The **OPPRESSION OF THE POOR** continues, the Church **RAISES** the peasants' debt.

► The **BUNDSCHUH MOVEMENT** strikes again, **MURDERING** the magistrates and civic leaders. However, the movement is **ONCE AGAIN** betrayed by a fellow conspirator, and the rebels are promptly executed.

THE DREAM OF A UTOPIAN PEASANT SOCIETY VANISHES.

► By 1518, misery within the **PEASANTRY REACHES AN ALL-TIME HIGH**.

A week before the festival of Mary Magdalene, Frau Troffea began awkwardly **DANCING WITHOUT REASON**. Many spread rumours that she was upset with her husband and danced in public to shame him. But even with her husband's pleas, Frau Troffea continued dancing vigorously. A curious crowd surrounded

her and were shocked by her stamina.

As evening set, she **COLLAPSED** into a state of sleep. However, Frau Troffea began her dance early the next morning with renewed energy and continued doing so for six long days. She danced with **HORRENDOUS BRUISING**, bloody sores, and lacerations on her feet. Those who witnessed the occurrence said she was possessed by the Devil or some other evil spirits.

She danced in a **DEEP STATE OF TRANCE** brought forth by extreme levels of stress-anxiety-and-pressures. The trance allowed Frau Troffea to ignore the pain beyond conscious awareness.

Eventually an estimated four hundred citizens joined her in the streets of Strasbourg, exhibiting the same symptoms. They attained extremely high levels of **ENDURANCE** ... and so even the **WEAK** were viewed as **STRONG** due to this phenomenon.

Puzzled, the Council of Strasbourg turned to leading physicians of the time for **ADVICE ON THE MATTER**. They looked into the stars and planets for an explanation, but then resorted to contemporary medical reasoning for the cause of the dancing plague. They stated the "dance is a natural disease, which comes from overheated blood". In fact ... the physicians **ENCOURAGED** the afflicted to **CONTINUE DANCING** so that it may pass. The city created several stage platforms in which those affected could continue their dance accompanied by music. This, however, did not help any of them.

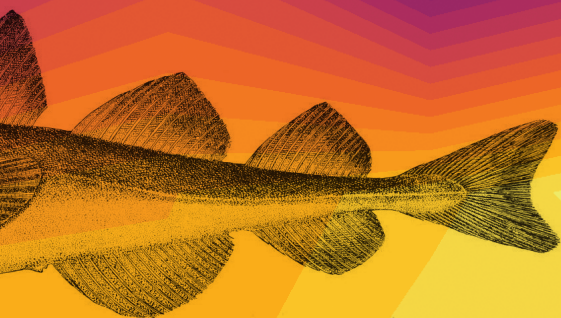
Finally, a pilgrimage to the **TOWN OF SAVERNE** was suggested. This journey gave Strasbourg a glimmer of hope as the medieval church in Saverne aided many of those affected. Because **THE RITUAL** at the church in Saverne spoke specifically and directly to the peasants, replacing the past years of neglect and horrendous experiences with **MONTHS OF ATTENTION** from the **RELIGIOUS AND CIVIC SECTORS** of the city.

SUCH IS THE STORY OF HOW THE STRASBOURG DANCING PLAGUE OF 1518 ACHIEVED CARE FOR THE EXPLOITED CLASSES.





QUANTUM QUEER- NESS



Imagine a universe without time. Or where time isn't the ever present "background" on which existence is played out. How might you live, how might you relate to the plants you take care of, how might you relate to your own dissolution, your supposed beginning, your connection to the actions of your mother, your relationship to the flux of the sun. Does it matter if SARS-CoV-2 came first, or HIV, when death still feels final in a universe without time? Does it matter if you danced at the party in the summer of 2006, or did a glitter makeup tutorial in May 2020, when time does not exist? Does it matter that we believe that July comes after June comes after May comes after April comes after March comes after February comes after January in the year 2020, when time does not exist?

Physicists have endeavored for decades to unify theories of gravity and quantum mechanics. Whether the quest for unification is reasonable or not, let's ignore that for now. But at the quantum level, in the theories of what is called loop quantum gravity, time as we know it does not exist. It is an emergent property of loops of spacetime flitting in and out of existence, creating what physicists call "spinfoams". There is no directionality to time. There is no arrow. Past, present, future: these are convenient fictions for us. What we term the future can exert its influence on what we term the present, and likewise, the past can change the present, and the present can modify the past. Deleuze wrote a bit about this, not exactly like this, but in enough resonance with the physics understanding to be uncanny.

Carlos Rovelli, one of the main people behind loop quantum gravity, has written:

"We must not think of time as if there were a great cosmic clock that marks the life of the universe. We have known for more than a century that we must think of time instead as a localized phenomenon: every object in the universe has its own time running, at a pace determined by the local gravitational field.

But even this notion of a localized time no longer works when we take the quantum nature of the gravitational field into account. Quantum events are no longer ordered by the passage of time at the Planck scale. Time, in a sense, ceases to exist.

What does it mean to say that time does not exist?

First, the absence of the variable time from the fundamental equations does not imply that everything is immobile and that change does not happen. On the contrary, it means that change is ubiquitous. Only: elementary processes cannot be ordered along a common succession of instants. At the extremely small scale of the quanta of space, the dance of nature does not develop to the rhythm kept by the baton of a single orchestral conductor: every process dances independently with its neighbors, following its own rhythm. The passing of time is intrinsic to the world, it is born of the world itself, out of the relations between quantum events which are the world and which themselves generate their own time." [8]

If time does not exist, perhaps we can conjure our world differently. We don't have to think of the past as a precedent to be followed. Perhaps we can be not so tied to old ways of thinking, of making, of doing, of existing in our bodies, and instead manifest possibilities for modulating ourselves into something entirely other.

Perhaps we can think about this as quantum queerness. Recently the drag queen Amrou Al-Kadhi (aka Glamrou) has spoken about the relationships between quantum mechanics and his queer identity: the ways that both can be indeterminate, the flitting in and out of existence of small particles of being, the flux of transitioning from one way of orienting yourself to the world with another.

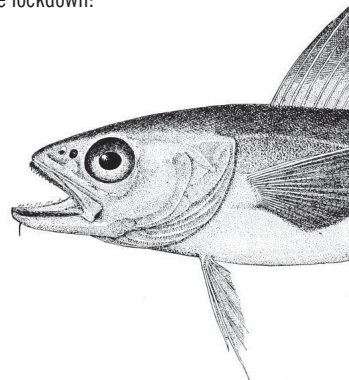
And queers—and the xeno ones too—know that the plague of our moment is also the plague of our past, the virus that destroyed tens of millions of lives. That continues to destroy lives, as that plague intertwines with this plague. But queers and xenos know also the power of living our lives as a big FUCK YOU to the people who see the future as only the extension of the recent past.

So that's why we make ourselves up for battle and for partying. We conjure that which is hidden with these words:

Adorn yourself with the colors of the universe. Color your eyes for travel without time. Make sure they link up with the times you want to create. Realize that the latent vectors of the universe hide the ghosts. The ghosts of the future that the majority lets happen, but also the ghosts of the future that we can create. The ghosts of the past that still haunt us and that we have not made amends to. Project to demonize. Once made material, get to know your nearest neighbor demon, knowing that it might be behind you, beside you, within you.

In the words of the glitter poet CAConrad in his CORONA DAZE 18, written in the early days of the lockdown:

if we are to dream anything
during this plague
let us please
consider
the things
we do not want
to return to normal



[8] Carlo Rovelli, *Reality Is Not What It Seems: The Journey to Quantum Gravity* (New York: Riverhead Books, 2018), 178.

A TAROT- READING- TIME



A tarot reading on time. Read on the 14th of July 2020 about an ongoing future that is also a repetition of the past.

Using my Rider-Waite tarot deck, I ask the following questions in search of tools for time travel:

What do we need to remember from the past? What do we learn from the future? What do we mix into the now? What do we spread around as noise?

How to jump into a different timeline?

What do we need to remember from the past?

I draw JUDGEMENT.

On the card we see people rising from their coffins, arms held up to the sky where an angel is playing a trumpet. There is something both morbid and joyful about this card, I always find it difficult to place. The card of Judgement speaks of “listening to the call”. A moment of transformation is announcing itself; the futures we are working towards can already be heard from afar. Relating this card to the question “What to remember from the past?” makes me wonder whether the calls we are hearing are those of the future or of the past? If time is not linear, if when we tell stories we are simultaneously recalling the past, living the story in the present, and making predictions about the future, then Judgement might be telling us to listen closely to the songs of transformation, change, rebuilding, death and rebirth that have already been sung in the past. Maybe those songs of death and rebirth are not memories, but predictions. Not fiction, but visions.

Re-membling, bringing all the lost members back together. I am sitting under a tree and all my limbs come flying back to me in the form of black crows. For a moment, the figure under the tree is a black, vibrating blob. I am being put together again. From memories that are mine and not mine, the molecules of animals, mountains, plants, oceans. They all find each other again. Chattering away in my body, telling stories. Re-membling themselves into a new constellation. I get up and walk through the forest. Still pulsing with the black-green glow of feathers.

What can we learn from the future?

I draw KNIGHT OF WANDS.

A knight on a staggering horse is holding a wand in their stretched arm. In the background we can see a desert, and pyramids.

Wands are generally understood to be a symbol of fire and long-term projects. The fire that keeps us going, that keeps us thinking about the future. The knight is considered an adolescent figure. There is a wildness to the knight, there is fearlessness to the knight, there is also naivety to the knight. We can see that the knight is wearing a cloak with fire-salamanders. The salamander – being a creature that lives both on land and in water – often signifies transformation. But the salamander here is not yet biting its own tail – the transformation has not yet come full circle. If wands represent fire, projects and action, then the knight of wands represents the action of action. Maybe what the future

is trying to tell us is to take action now. Even if we do not yet fully know where our actions lead, even if our transformation is not yet complete. The future is asking us to fight. To embrace our wild side. But also to remain aware that there is much we do not know yet.

I came across these notes in my notebook, I think it is something Adriana said:

Time

*time as a characteristic of a body
a body having multiple times
retrocausal quantum theory*

I am reshaping my past with the energy of the future

Reoccurring dream: I am stuck in a building, and I know something terrible is going to happen. There are other people here, and I am wondering if they are the terrible thing that will happen. It is uncertain if they are also trapped, or if they are trying to kill me. I try to remain unsuspecting. I smile, I make small talk, I do my best to seem unsuspecting of the fact that we are in deep, deep trouble. I start to sweat, I need to get out. I wander off, in search of an exit. I start running through the hallways of the building. I open doors, I crawl through windows, I hide in a closet when I hear someone arriving. But I cannot find an exit. And then I feel them, the keys in my pocket. And I know that if I turn the key, the door will suddenly open to the outside and I will be saved from this ominous, invisible threat. I take the keys in my hand, but I notice that I can no longer see clearly. The keys are a blur, my eyes keep falling shut, keep failing me. I hold the keys so close to my eyes they almost poke them. I still can't see. I can't see and therefore I cannot figure out which key fits. I can't see and I can't figure out how to get the keys to fit the lock. I can feel the danger, but I can't see the way out yet. I hold the keys in between my fingers as a weapon, like I would walking home alone at night. I start running through the building, eyes closed, keys charged in front of me.

What do we mix into the now?

I draw KING OF CUPS.

A king is sitting on a stone throne, holding a cup in one hand and his scepter in the other. The heavy throne is floating on a stormy sea. The cups are considered the suit of emotions, creativity and intuition, they hold the element of water. The king is typically seen as the master of the suit, representing the suit in terms of social responsibility, accomplishments and maturity. They have managed to



master the powers of creation, and orient them to social goals. But the wild sea underneath the throne reminds us that water always flows, and cannot be contained. Too much suppression of dreams and creativity can lead to aggression or resentment. The king of cups is a hopeful sign of both accomplishment and focus, but warns us to stay in touch with our intuition, and allow our creativity to flow in unexpected directions in order to navigate the now.

Reoccurring dream: I need to get someone to the hospital quick, but I don't have a driver's license. We step into the car, and somehow I have learned how to drive. The car floats over the roads, the wheels don't even touch the ground. We lift up and fly over the landscape. I see trees and fields, the sunset, but no hospital in sight. I realize I am flying, and all of a sudden we are catapulted, both flying and falling towards an unknown destination. We never land.

What do we spread around as noise or as creation?

I draw THE MOON.

We see a dog and a coyote howling at the moon. Behind them a lobster emerges from the water. Two towers in the distance create a frame through which we see the face of the moon, its troubled expression looking downwards. The moon points towards visions, myths and images. But these are the images seen in the shadows of the night. The myths that have been distorted and manipulated, speaking to our collective fears, anxieties and demons. The moon shows us our nightmares. They are very real, and inform our actions. We have to face these nightmares, invite the demons for a tea, in order to transform.

Inviting your demon for tea: Close your eyes and take a couple of deep, conscious breaths. Imagine yourself in a protective circle of light, hold this image of you inside the circle as strongly as you can. Now set the table in front of you, and call your demons' name. They will appear seated in front of you at the other side of the table. Observe what they look like. Now ask your demons what they are doing, what they want from you, and what they want you to learn from them. Listen carefully to their answers. Now thank them for their knowledge and tell them to go away. Now change position, go sit where the demons used to sit, and call out to see your protectors. See them appear across the table from you. What do they look like? Ask them what they want you to learn from them. Now ask them how you can find them again.

How do we jump into a different timeline?

I draw THE TOWER.

An image of two people falling from a tower. A crown sits atop the tower and is struck by lightning. The background is black. A cataclysm, or revelation and liberation coming as a sudden lightning bolt. To jump into a different timeline is to experience the world as completely different from one moment to the next. The tower also tells us that this kind of sudden change is inevitable, no matter how strong the towers of our psyche and ego are. To jump into another timeline is to remember these sudden moments where our view of the world and time has been destabilised. To revisit these experiences in order to recognize when we encounter them again.

*Excerpts from our talks in my notebook:
Today we tell each other stories
The dream: The space itself is changing
you return
but never in the same place*

*Time
time as a characteristic of a body
a body having multiple times
retrocausal quantum theory*

I am reshaping my past with the energy of the future

*But we are already traveling in time. We are deferring the destination, not the travel.
Now close your eyes – breathe out – see, feel and know how time is moving in your body. Where does it move? In what directions does it move?*



Xenobitmancy, or how to have an encounter with quantum queerness. We learn from the writings of James Wootten and his machinations within the quantum realm.

```
In [1]:
from qiskit import QuantumCircuit, Aer, execute, IBMQ
from qiskit.visualization import plot_histogram, plot_
bloch_vector
from math import pi
import os, random
import pickle as pickle
import numpy as np
import matplotlib.pyplot as plt
from matplotlib import cm
import scipy.ndimage
from qiskit.providers.aer.noise import NoiseModel
```

Link up with the distant machines and feel for their profiles. If you are unable to make this link, read below for the path you must follow.

```
In [2]:
provider = IBMQ.load_account()
backend = provider.get_backend('ibmq_16_melbourne')
coupling_map = backend.configuration().coupling_map
```

Through the connection, make a copy of their profiles for your own use.

```
In [3]:
# Generate an Aer noise model for device
noise_model = NoiseModel.from_backend(backend)
basis_gates = noise_model.basis_gates
```

Arrange the qubits simply, at first, with no logical ordering.

```
In [4]:
def initialize_qubit_circuit(num = 6):
    qc = QuantumCircuit(num, num)
    # Randomly set qubit to be 0 or 1
    for n in range(num):
        if (random.randint(0, 1) == 1):
            qc.x(n)
        if (random.randint(0, 1) == 0):
            qc.h(n)
    return qc
num = 8
qc = initialize_qubit_circuit(num = num)
qc.draw(output='mpl')
```

Arrange a means of divining the results.

```
In [5]:
meas = QuantumCircuit(num, num)
for j in range(num):
    meas.measure(j,j)
#mqc = qc + meas
#mqc.draw(output = 'mpl')
```

Cast the spell!

```
In [6]:
backend = Aer.get_backend('qasm_simulator')
shots = 1024
counts_normal = execute(qc +
meas,backend,shots=shots).result().get_counts()
counts_noise = execute(qc + meas, backend, shots =
shots,
coupling_map=coupling_map,
noise_model=noise_model,
basis_gates=basis_gates).result().get_counts()
```

Collect the executable words.

```
In [7]:
# Taken from <https://stackoverflow.com/questions/30399534/
shift-elements-in-a-numpy-array>
# use np.roll and np.put by IronManMark20
def shift2(arr, num, default = 0):
    arr=np.roll(arr,num)
    if num<0:
```

```
        np.put(arr, range(len(arr)+num,len(arr)),
default)
    elif num > 0:
        np.put(arr, range(num), default)
    return arr
def populate_array_counts(counts, shots = 4096, num = 4,
offset = 0, log = False):
    a = np.zeros((1, 2**num))
    #print(a)
    if log:
        a += np.log(1/10)
        #print(a)
    for state in counts.keys():
        i = int(state, 2)
        if log:
            a[0, i] = np.log(counts[state]/shots)
    else:
        a[0, i] = counts[state]/shots
    max_a = np.max(np.abs(a))
    #print(max_a)
    a = a/max_a
    if (offset != 0):
        a = shift2(a, offset)
    return np.abs(a)
def plot_array(array_counts,
num = 4,
smooth = False,
cmap_name = 'gray',
save = False,
dpi = 300,
stem = "xenobitmancy",
folder = "graphics"):
    grid_size = int(np.sqrt(2**num))
    b = array_counts.reshape((grid_size, grid_size))
    if smooth: b = scipy.ndimage.zoom(b, 6)
    fig, ax = plt.subplots()
    fig.set_size_inches(8,8)
    cs = ax.contourf(b, 25,vmin=0,vmax=1,cmap=cm.get_
cmap(cmap_name))
    plt.axis('off')
    if save:
        if smooth:
            if folder is not None:
                plt.savefig(os.path.join(folder, "{}_{}_smoothed.
png".format(stem, cmap_name)), dpi = dpi)
            else:
                if folder is not None:
                    plt.savefig(os.path.join(folder, "{}_{}.png".
format(stem, cmap_name)), dpi = dpi)
                else:
                    plt.savefig("{}_{}.png".format(stem, cmap_name),
dpi = dpi)
            plt.show()
def entangle_qc(qc, steps = 5, rate = pi/16., max_factor
= 6):
    num_qbits = qc.num_qubits
    for qbit in range(num_qbits):
        if (steps > 2):
            random_steps = random.randint(steps - 2, steps)
        else:
            print("No steps, returning qc unchanged")
            return qc
        for step in range(random_steps):
            axis = random.randint(0, 2)
            if (axis == 0):
                qc.rx(random.randint(1, max_factor) * random.
choice([-1, 1]) * rate, qc.qregs[0][qbit])
            elif (axis == 1):
                qc.ry(random.randint(1, max_factor) * random.
choice([-1, 1]) * rate, qc.qregs[0][qbit])
            elif (axis == 2):
                qc.rz(random.randint(1, max_factor) * random.
choice([-1, 1]) * rate, qc.qregs[0][qbit])
            # random cnot
```



```

if (random.random() > 0.5):
    random_qbit = random.randint(0, num_qbits - 1)
while(random_qbit == qbit):
    random_qbit = random.randint(0, num_qbits - 1)
qc.qregs[0][qbit]
qc.qregs[0][random_qbit]
qc.cx(qc.qregs[0][qbit], qc.qregs[0][random_
qbit])
    return qc
def save_qc(orig_qc, entangled_qc, noise_model, basis_
gates, run, stem = "xenobitmancy_8xenobits", qcs_dir =
"qcs"):
    qcs = [orig_qc, entangled_qc]
    if qcs_dir is not None:
        with open(os.path.join(qcs_dir, "{}_{:03d}.
pickle".format(stem, run)), "wb") as f:
            pickle.dump(qcs, f)
    else:
        with open("{}_{:03d}.pickle".format(stem, run),
"wb") as f:
            pickle.dump(qcs, f)

```

View the simple conjuring.

```

In [8]:
a = populate_array_counts(counts_noise, num = num, log =
True)
plot_array(a, num)

```

Entangle the simple one beyond our comprehension.

```

In [9]:
entangled_qc = entangle_qc(qc, steps = 32, rate = pi/24)
(entangled_qc + meas).draw(output='mpl')

```

Cast this entangled spell!

```

In [10]:
entangled_counts_normal = execute(entangled_qc +
meas,backend,shots=shots).result().get_counts()
entangled_counts_noise = execute(entangled_qc + meas,
backend, shots = shots,
    coupling_map=coupling_map,
    noise_model=noise_model,
    basis_gates=basis_gates).result().get_counts()

```

Ensure that we can refer to this spell again, if it is deemed interesting.

```

In [11]:
run = 35
#%mkdir -p qcs
save_qc(qc, entangled_qc, noise_model, basis_gates, run,
stem = "xenobitmancy_8xenobits")

```

Prepare things for viewing.

```

In [12]:
entangled_a_noise = populate_array_counts(entangled_counts_
noise, num = num, offset = 9)
entangled_a_normal = populate_array_counts(entangled_
counts_normal, num = num, offset = 9)

```

Examine the nooks and cranies for that which does not want to be felt.

```

In [13]:
diff = np.abs(entangled_a_noise - entangled_a_normal)
diff_normalized = diff/np.max(diff)

```

Show us!

```

In [14]:
plot_array(entangled_a_normal, num, cmap_name="gray")

```

```

In [15]:
plot_array(entangled_a_noise, num)

```

```

In [16]:
# 'afmhot', 'afmhot_r', 'autumn', 'autumn_r', 'binary',
'binary_r', 'bone', 'bone_r', 'brg', 'brg_r', 'bwr',

```

```

'bwr_r',
# 'cividis', 'cividis_r',
# 'cool', 'cool_r', 'coolwarm', 'coolwarm_r', 'copper',
'copper_r', 'cubehelix', 'cubehelix_r', 'flag', 'flag_r',
# 'gist_earth', 'gist_earth_r', 'gist_gray', 'gist_
gray_r', 'gist_heat', 'gist_heat_r', 'gist_ncar', 'gist_
ncar_r',
# 'gist_rainbow', 'gist_rainbow_r', 'gist_stern',
'gist_stern_r', 'gist_yarg', 'gist_yarg_r', 'gnuplot',
'gnuplot2',
# 'gnuplot2_r', 'gnuplot_r', 'gray', 'gray_r', 'hot',
'hot_r', 'hsv', 'hsv_r', 'inferno', 'inferno_r', 'jet',
'jet_r',
# 'magma', 'magma_r', 'nipy_spectral', 'nipy_spectral_r',
'ocean', 'ocean_r', 'pink', 'pink_r', 'plasma',
'plasma_r',
# 'prism', 'prism_r', 'rainbow', 'rainbow_r', 'seismic',
'seismic_r', 'spring', 'spring_r', 'summer', 'summer_r',
# 'tab10', 'tab10_r', 'tab20', 'tab20_r', 'tab20b',
'tab20b_r', 'tab20c', 'tab20c_r', 'terrain', 'terrain_r',
# 'twilight', 'twilight_r', 'twilight_shifted', 'twilight_
shifted_r', 'viridis', 'viridis_r', 'winter', 'winter_r'
)%mkdir -p graphics
plot_array(diff_normalized, num,
    cmap_name="gray",
    smooth = False,
    save = True,
    stem = "xenobitmancy_8xenobits_{:03d}".format(run))

```

How to link up with the machine? Take the secret code you received from the algorithm. Save them close to you. Do this only once, and only if you feel a need to link with the ones who claim to have all the power.

```

In [ ]:
from qiskit import IBMQ
IBMQ.save_account('')

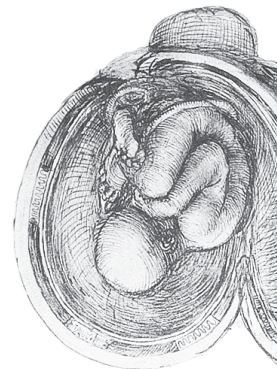
```

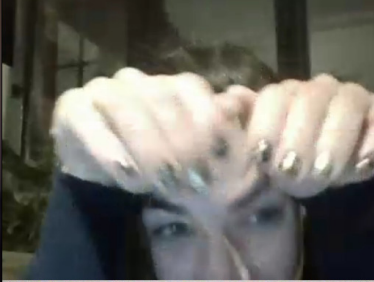
Tallying how the sticks fall

```

In [ ]: plot_histogram(counts_normal)
In [ ]: plot_histogram(counts_noise)
In [ ]: plot_histogram(entangled_counts_normal)
In [ ]: plot_histogram(entangled_counts_noise)

```





AEROSOLNAUTS

TRAVELLING TIME: AEROSOL WORMHOLES

[POTUJOČI ČAS: AEROSOLNE ČRVINE]

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