The Hidden Track

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Emily Rosamond

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with Kristoffer Ørum and Emily Rosamond
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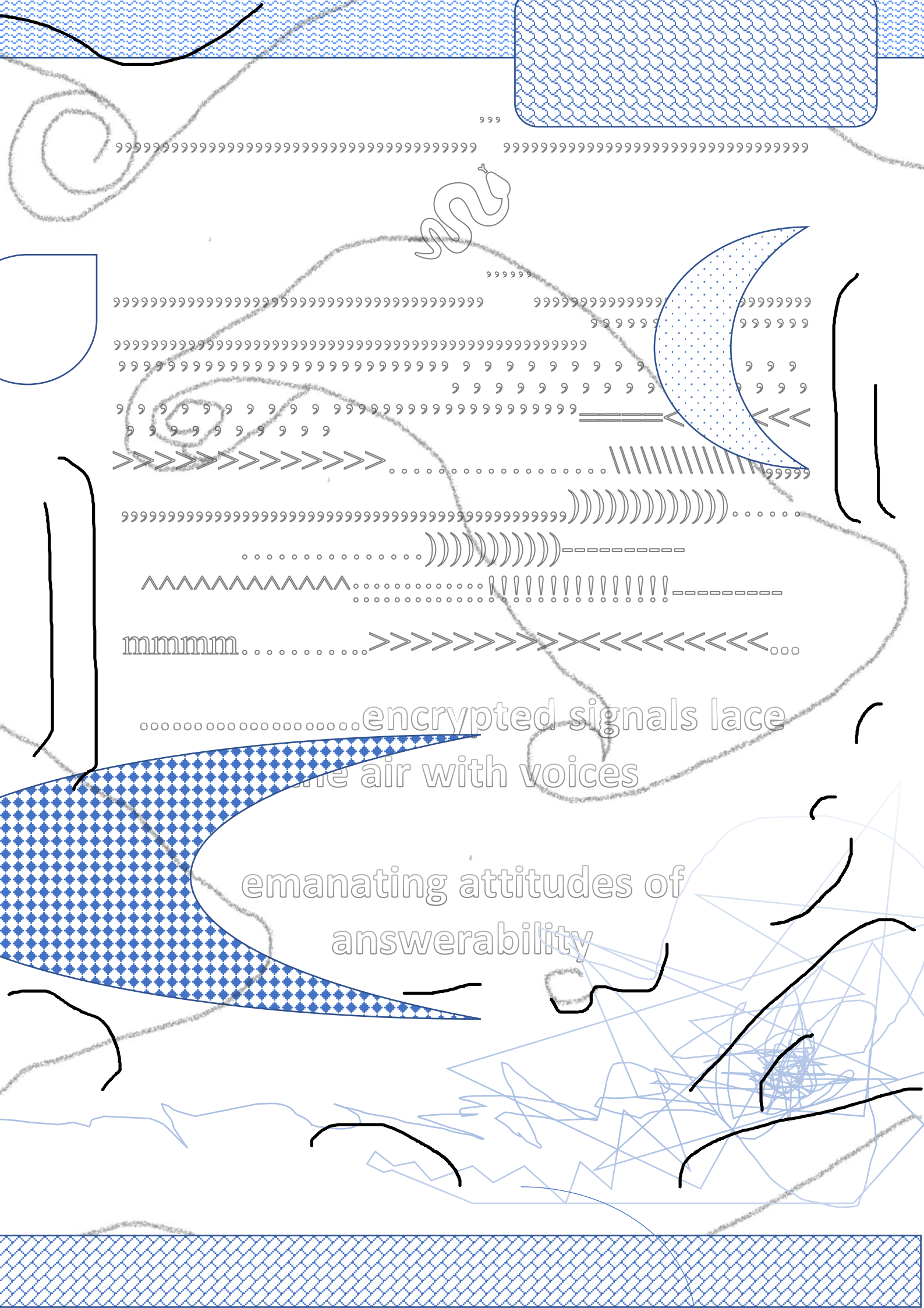
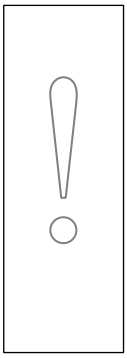

encrypted signals lace
the air with voices
emanating attitudes of
answerability

Hidden Track.

1. A mechanism that can't be seen or sensed, but nonetheless organizes the flow of information in the background, like invisible train tracks slotting everything into place
2. An extra piece of music hidden within a recording medium, such as a bonus track on a Compact Disc album. A surfeit of musicality not heard, yet still present within a scene.



Listen to the Infrastructure

Hum, drum. Layers of low hums. Extending the ears – listening into the distance – the sound of a thousand infrastructures:

> crates offloading, laptops whirring, trains screeching, water pipes and air-con cooling, corporations merging, cells dividing, wind turbines dotting the distance, beds creaking with couples getting up for work in the morning, power stations gathering, bamboo harvests growing, restaurant refrigerators keeping the enterprise going, cell towers sending out the signals, gassing stations ripening bananas after shipment, wind rustling treetops, credit scoring algorithms crunching numbers, harvesters scything wheat, cars purring down the highway, distant hotdesk banter, data storage

facilities, dishwashers humming, sewage treatment plants smartening their juices, Wi-Fi signals blaring, tar sands, fracking quakes and protests…

Airplane engines mid-flight, emitting separate siren calls: a loud, low rumble, tuned out by row on row of passengers and cabin crew; a melancholic, waxing-waning whine to streets below; and a residue, a stain on future skies, a nodding cry to pock-marked icebergs below.

The chatter of channels. Noise becoming sound. Everything's set up a certain way. Set up and ticking: the shape of what's been made prefiguring the shape of what's to come, of what comes easiest. The way things went becomes the way things go. Speaking in the shape of countless habits; working hours; parliamentary floorboards and backroom conversations; corporate takeovers; changed nappies; dinner table conversations; wars that came and went, or failed to materialize; and everywhere, the sounds of dumping, cleaning, shipping, buying, flowing, flooding, braking, listening, silencing, negotiating. Everywhere, a flood of dispositions: the warp and weft of who gets what done, of which materials, sounds and signals flow where. What's in the background? What avoids detection?

the hidden track,
every Wi-Fi signal
medium rare,

applecrumbling
waiting

A dance of frequencies, radio waves played like flutes

In August 11, 1942, Hollywood actress Hedy Kiesler Markey (a.k.a. Hedy Lamarr) and composer George Antheil filed U.S Patent 2,292,387, a “Secret Communication System.” Lamarr had fled the Nazis, leaving Austria for the U.S. in 1937. In Austria, she had been an arms dealer’s wife. Leaving her controlling husband and the Nazi occupation, she jumped ship to America, and became a film star. By night, she was an inventor; furious at the Nazis and full of knowledge of the Austrian munitions trade, she and her composer friend thought of a mechanism that could help the war effort.

In the early 1940s, German U-boats were wreaking havoc in the Atlantic, sinking ships and jamming signals that Allied submarines used to guide radio-controlled torpedoes. These torpedoes could be launched and then continually guided toward their target ship, using radio signals. But the Germans could scan the dials, find the frequency used to communicate between sub and torpedo, and listen in – interfering with the signal and avoiding the hit. Figuring out how to evade enemy detection, while maintaining strong communication between sub and torpedo, was crucial.

Lamarr and Antheil thought of a way the signal could avoid detection. Rather than having torpedo and sub communicate using only *one* frequency, the signals could hop *between* frequencies at synchronized times.

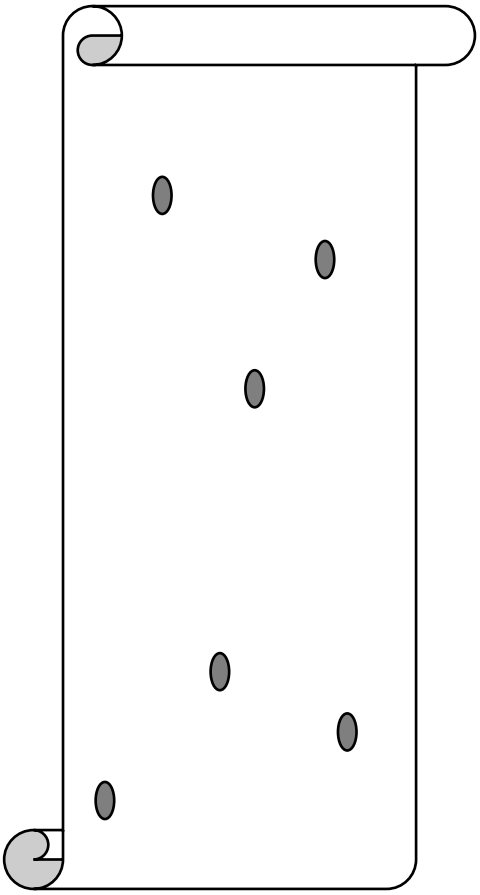
How could torpedo and submarine remain synchronized, if they sent and received signals at on many different frequencies? Drawing on Anthiel's knowledge of player pianos, the pair

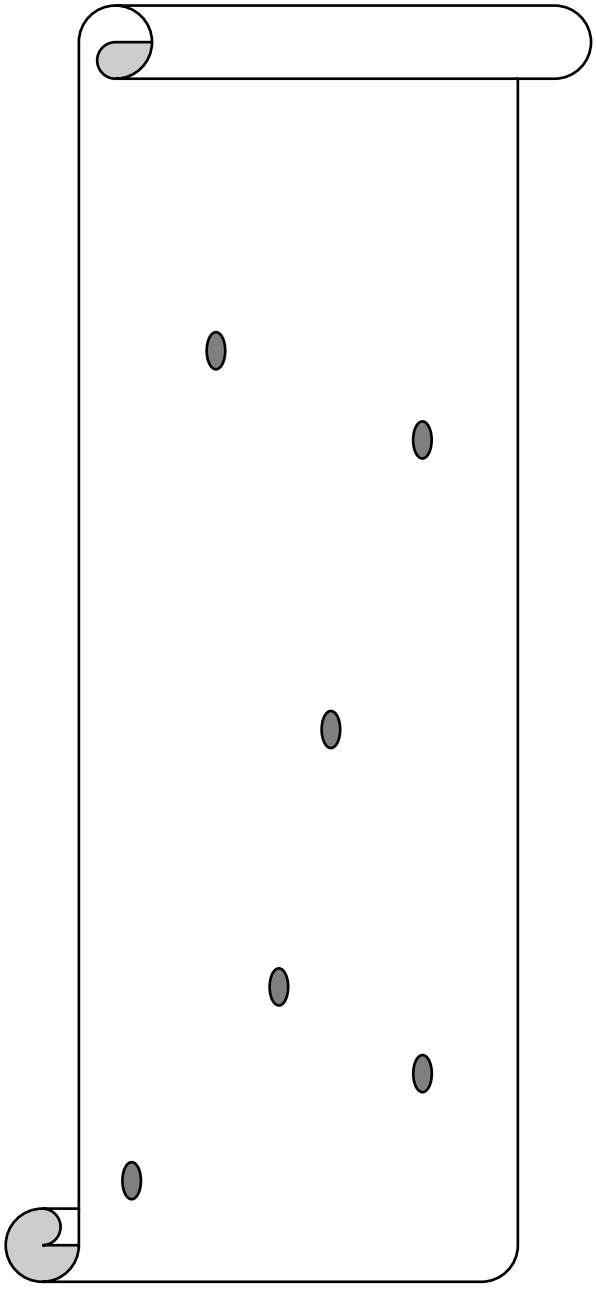
envisaged two identical player piano-like scrolls: one in the submarine, the other in the torpedo. These scrolls would have identical holes, which would choreograph the jump from one frequency to the next – just as a hole in a player piano roll dictates that one key or another will be played. Just like there were 88 keys on a piano, there were 88 frequencies used in the Secret Communication System. The two scrolls would be started in synch and run at the exact same speed. Just as the sending signal in the submarine hopped to a new frequency, the torpedo, informed by its own scroll, would 'know' to hop to that frequency too, and would continue to receive the correct signal without a hitch. That way, even if the Germans managed to track the signal and listen in, they would only get one tiny fragment of the message, before the frequency changed again, and again, and again. Without having access to the scroll itself, they would never get enough information to avoid attack.

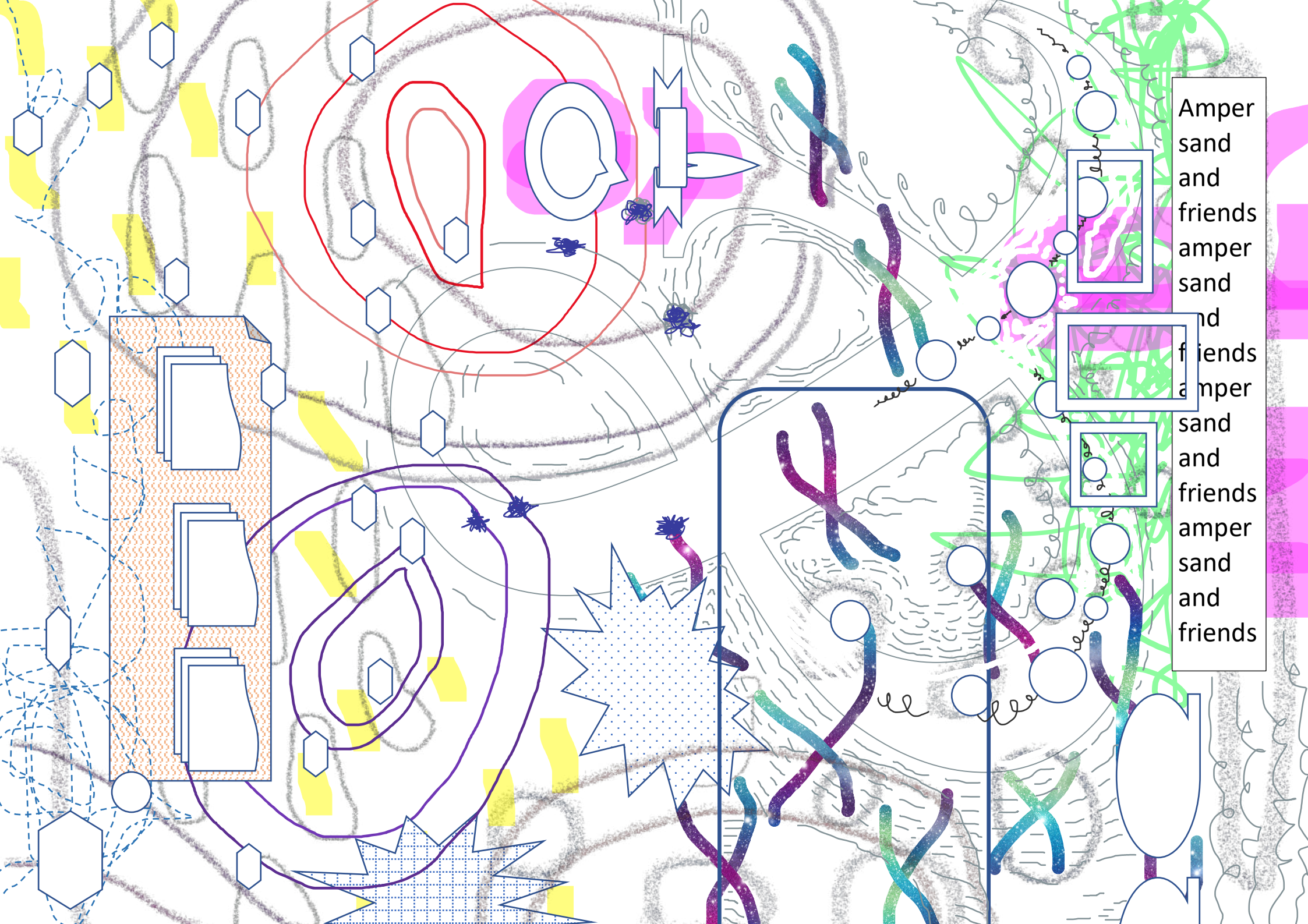
This setup creates a distribution of predictability. Between the missile and sub – informed by their matching scrolls – it was perfectly predictable which way the frequencies would hop next. But to an outside observer, trying to listen in, it would be impossible to tell what was coming. Predictability for Allied mechanisms; unpredictability for foes. Orchestrated by a hidden track:

a player piano scroll playing on silent
a tongue-tied score screaming its time-
    keeping measure
choreographing a dance of frequencies
playing radio waves like flutes
keeping everything on track

At the time, the patent wasn’t used. The U.S. army brass thought it wouldn’t work. This patent, expressing a succinct synchronization by piano-rolls – and a neat militarization of silenced music – was filed away for years, like some sleeping beauty of inventions. It came to much later, in altered form. Now, frequency hopping is used widely, as part of a broad range of spread-spectrum telecommunications technologies. It helps to optimize the bandwidths used by devices such as Wi-Fi and Bluetooth – as well as minimizing the risk of detection, jamming, and natural signal interference. Whispers of the old predicament course through the new configurations.



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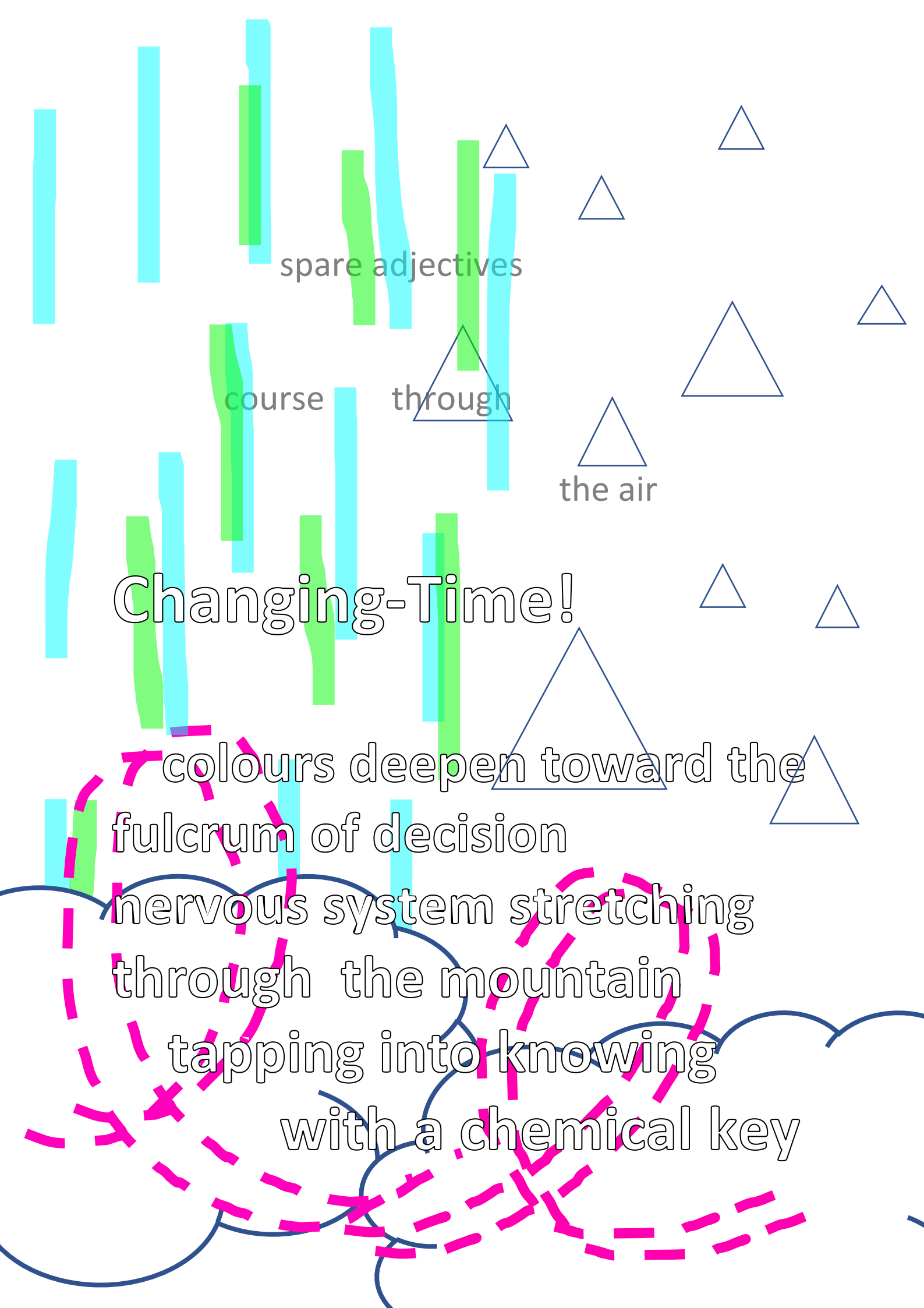

spare adjectives
course
through
the air
Changing-Time!
colours deepen toward the
fulcrum of decision
nervous system stretching
through the mountain
tapping into knowing
with a chemical key

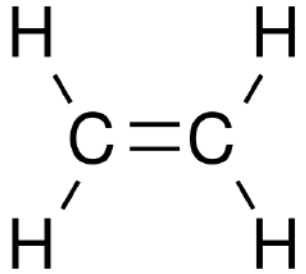
Ethylene Prophecies

For millennia, no one knew what made the ancient Oracles of Delphi see. Between around the 8th and 4th centuries BC, oracles had plunged into underground temple chambers in the mountains, speaking in tongues. Seekers came from far and wide to ask about the future. From their trances, the oracles answered in cryptic turns of phrase.

How did they enter their altered state? The ancient historians claimed that sweet-smelling air seeped from the temple rock, filling its chambers and sending the oracles into a trance. But when modern archaeologists began excavating the site in 1892, they found no evidence to support this. They saw no fissures

in the temple rock, and concluded that the ancient historians couldn’t be trusted.

Many decades later, a chance encounter between an archaeologist and a geologist produced a different story. They discovered that sweet-smelling ethylene gas, escaping from the mountain, once seeped into the temple chambers through micro-fissures in the rock. Earlier archaeologists, who lacked geological expertise, overlooked the many tiny fissures in the temple. In fact, these were the perfect vents for gases to escape.



Ethylene, the modest hydrocarbon gas, is a known sedative. It was briefly hailed as the general anaesthetic of choice in 1920-30s hospitals and medical journals. At the right doses, it can loosen the tongue, and induce a euphoric state. In plants, it serves as a hormone.

Its presence provokes many changes: from losing leaves to ripening fruit.

In Delphi, the mountain fissures have long since run dry. The oracles have fallen silent.

Where is ethylene now?

The ancient molecules have many modern cousins. Ethylene is manufactured in a wide range of industries, to make products like polyethylene plastic bags and automotive antifreeze. In a niche application, it is used to artificially ripen bananas. The bananas are picked and shipped green, to avoid bruising. Then, in refrigerated chambers, they are gassed. Their hormone rushes in, in industrial doses. Their ear to the Changing-Time opens.

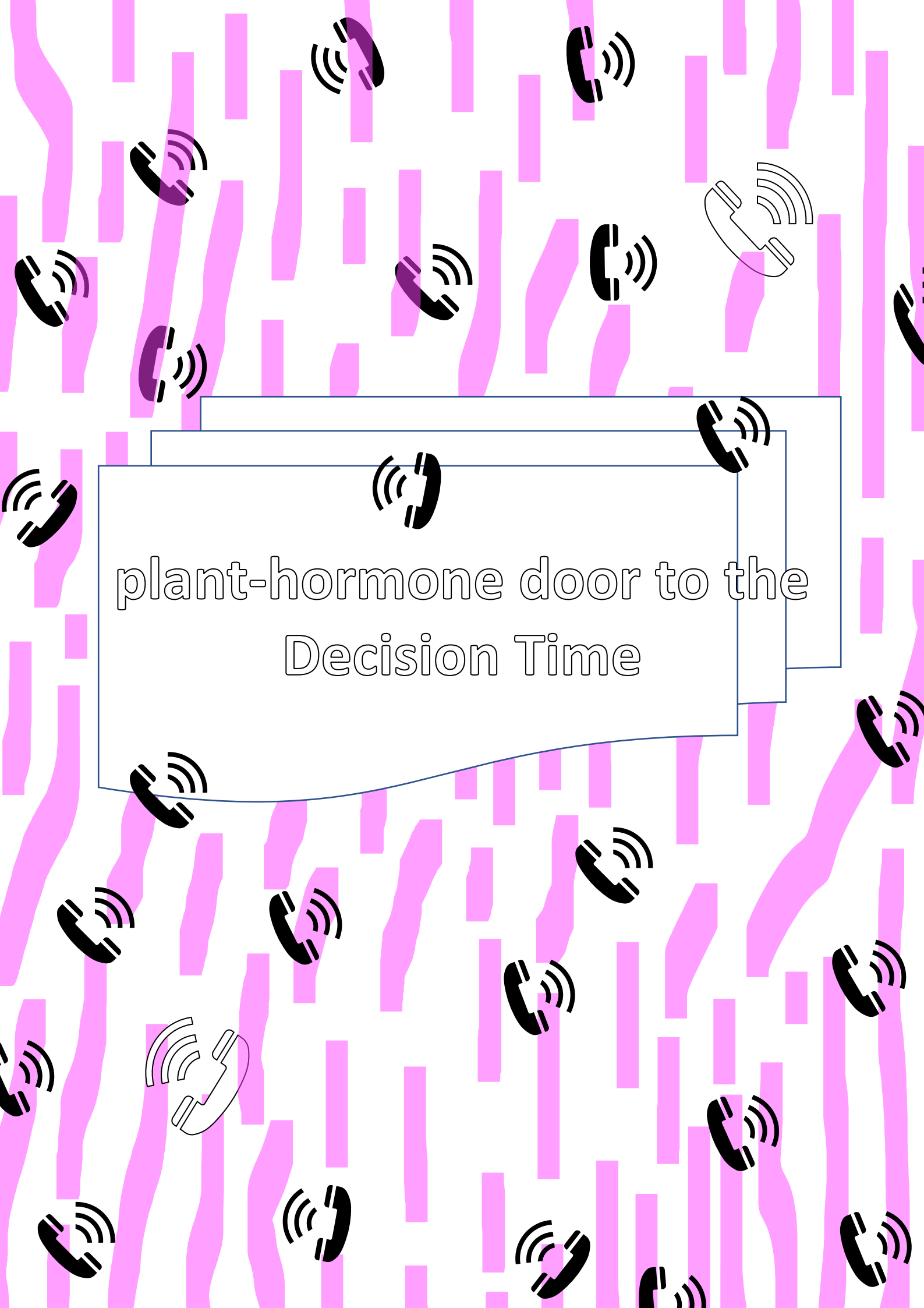
When ethylene whispers, what do they hear?

the creaks and groans of ancient decisions?

the warp and weft of Decision Time rushing in?

the cadence of the ages?

an answer to the seeping and the cracks of our moment, strained to the pages, where eggshells of decision wander in on slicing trays and the air licks its chops and turns it in, turns it in, turns it in?


plant-hormone door to the
Decision Time

Speaking a Garfield Language

For decades, Garfield phones washed up on shore. Plastic heads, phone cradle bodies. Bright orange cat-back keypad receivers. A cool, half-lidded, lazy gaze dispersed along the coastline. Garfield-attitudes cut up, spread out, lapping onto sand.

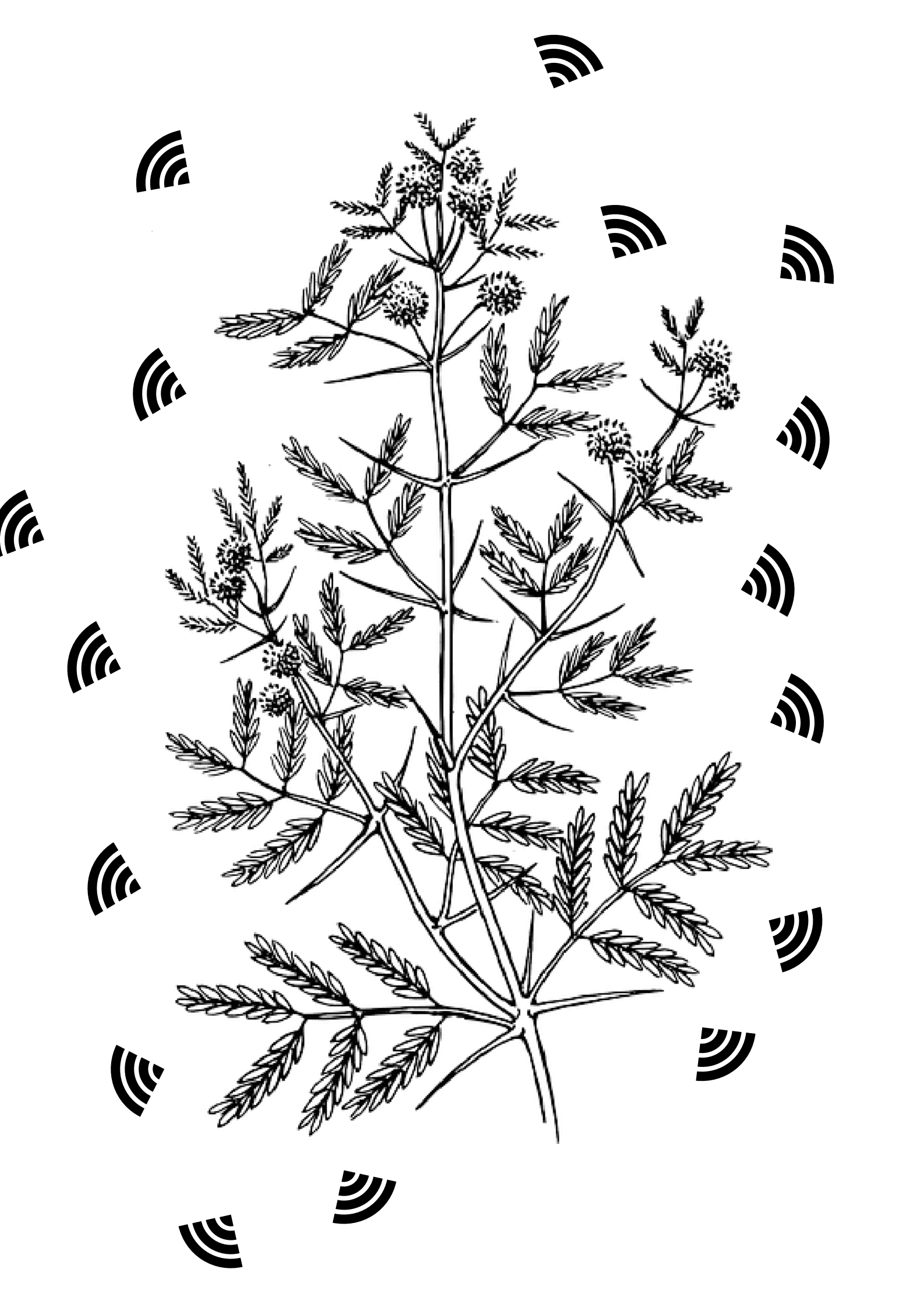
For years, no one knew why. It turned out that a shipping container full of Garfield phones from a sunken freight liner had gotten wedged into a nearby cave during a storm in the 1980s. Pierced by the rocks, it had slowly emitted plastic parts ever since. Speaking a Garfield language: cool cat attitude multiplier, one disinterested dial tone announcing the pull of the tides.

The Acacia's Cry

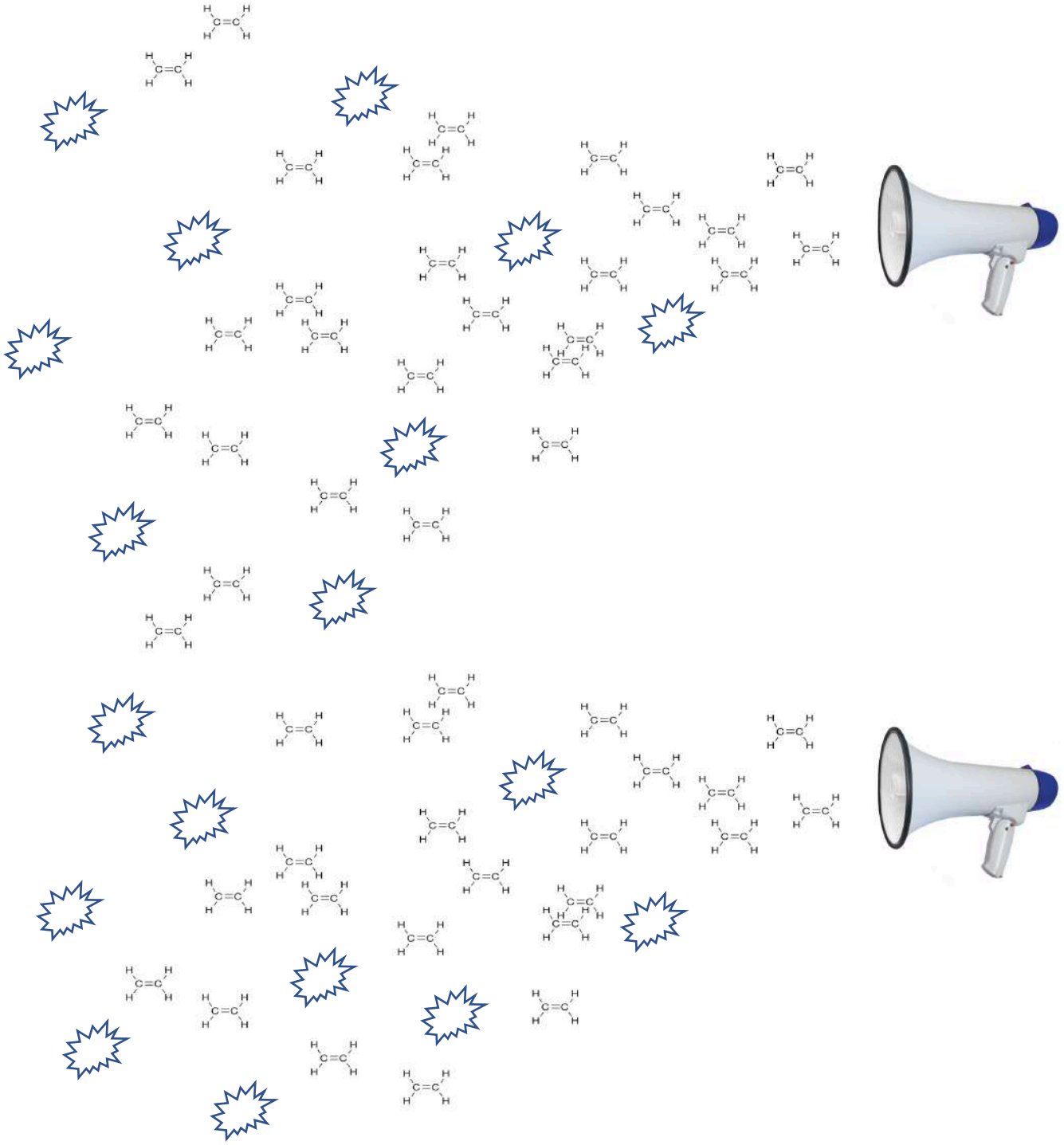
In the late 1980s, a major drought swept South Africa. With water so scarce, many species struggled. Even so, the deaths of large numbers of kudu raised eyebrows. The seemingly healthy herbivores died in droves on the plains. No one could understand why.

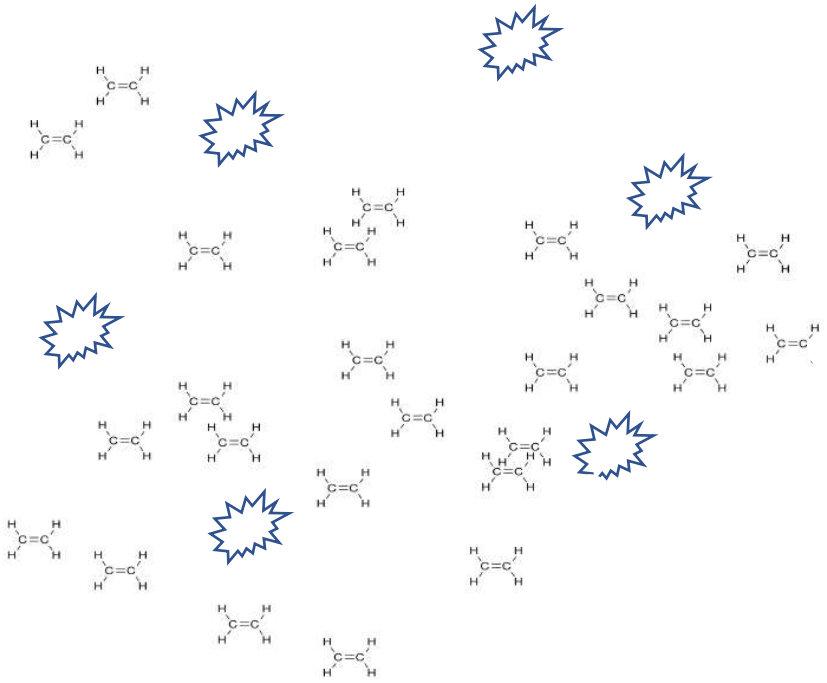
Researchers discovered very high concentrations of tannins in their digestive tracts, and concluded that the kudu had died of tannin poisoning. A class of astringent, tannins naturally occur in many foods. Easily consumed in small does, they can be toxic in large quantities.

Where had all the tannins come from? How had the kudu been poisoned?



To everyone’s surprise, the excess tannin was part of acacia trees’ rich repertoire of defences against overgrazing. Acacia leaves had been one of the few available food sources during the drought. With little else to eat, Kudu on crowded ranches overgrazed it, nimbly chewing around protective spikes to get at the leaves. In the face of this threat to their survival, the trees ramped up tannin production. They also sent distress signals to neighbouring trees: the plant hormone ethylene carried on the breeze, warning others to defend themselves too. Even trees on neighbouring ranches without large kudu populations had elevated tannin levels in their leaves. They’d gotten the message. The acacia’s cry spread silently across the plains like a hidden language.

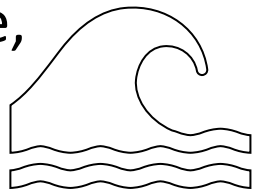




Message in the Coffee Grounds

There’s going to be massively fast progress. Huge success coming really fast, like a lightning bolt. So much so that it wouldn’t be stable if it went straight up, so it has to be stepped. A zigzag.

Five people are protecting and supporting you. Three are especially important. They’re like dolphins swimming beside you. Most of the time they’re hidden, but suddenly they all resurface in your life at the same time, leaping above the water.



A conflict with a person at work. I don’t know if this is from our previous conversation, or whether it’s really what I’m seeing in the coffee grounds. This person has all sorts of negativity emanating from their back. Shards from the conflict are affecting other things.

Wallpaper in the Washing Machine

Once upon a time, there was a wallpaper. White background, with simple, sketchy black line drawings. The motif was a flower, more or less. Drawn quite crudely. In the middle of each flower, a large blue dot. Bright, deep, almost-ultramarine (just a tiny bit more yellowish) – opaque and penetrating like the sound of an airplane passing. Welling up – taking over, almost. Leaking into the flower, enlarging its jurisdiction like a grand ice melt parting the curtains, imposing itself in the middle of what had already been established.

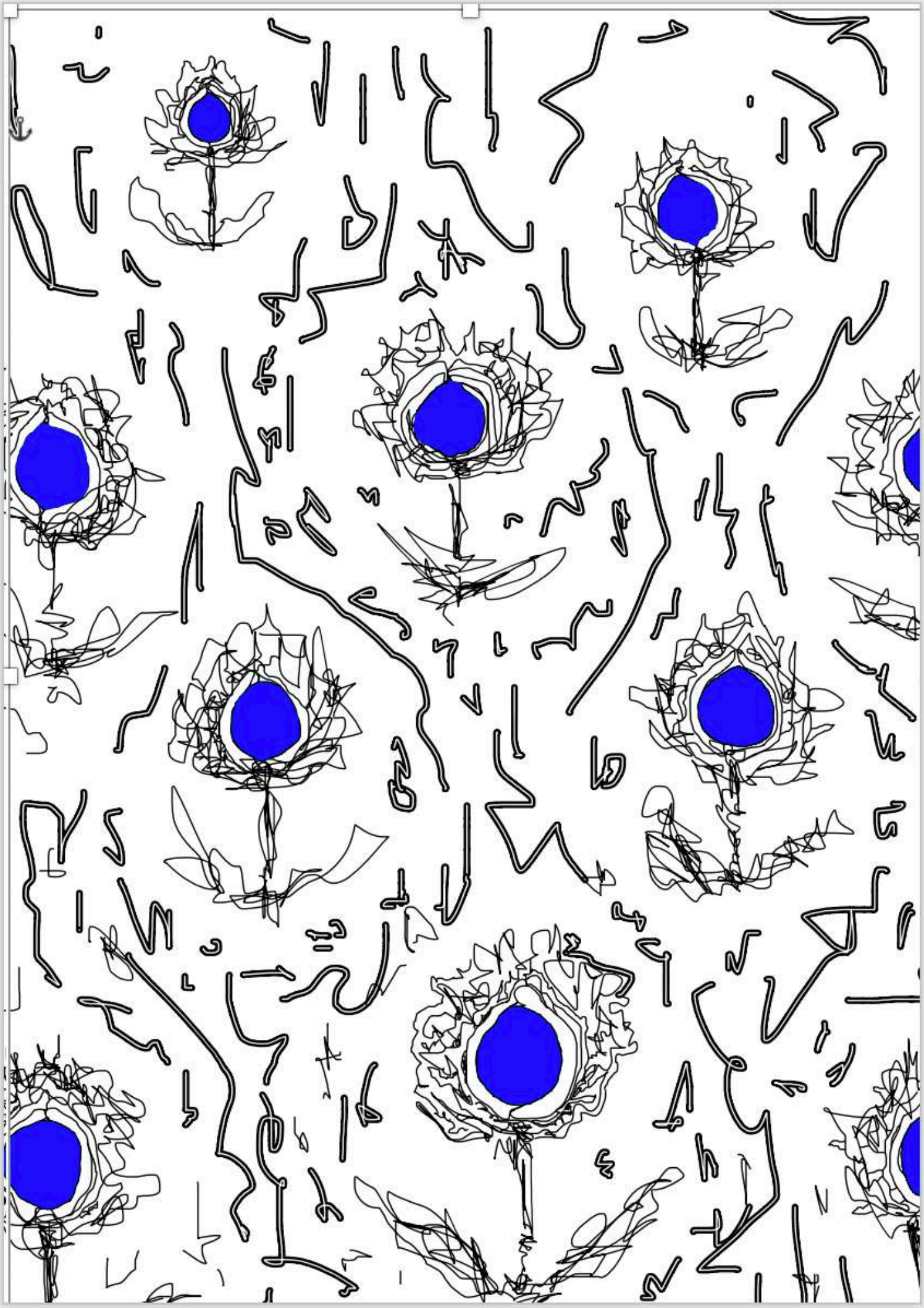
When it was issued, it wasn’t speaking the right language. Families in the houses whose walls it would have solicited didn’t need its spikes of feeling, didn’t need the precise way it processed some peculiar, large-scale trauma creeping into the centre of everything.

It wasn’t popular, this wallpaper – but whenever someone did buy it, it didn’t go well. People had unpleasant conversations in the rooms it adorned. Talk for which it was the background felt dissonant, uphill for no clear reason. As if the pattern were a vaccine for the wrong disease, they needed a different kind of inoculation.

Grossly undersold, the wallpaper was decommissioned.

Many years later, a young designer buys a flat, and removes the old wallpaper: strange, chicken-scratched flowers with bleeding blue floods. She finds it curious, and decides to save it. For some reason, without thinking too much about it, she puts it in the old washing machine they're about to get rid of. And then, for some reason, the look of the washing machine with the wallpaper peeking out through the window appeals to her, and she takes a picture. Later, she makes a collage, with the washing machine picture cut out and pasted on an angle toward the upper right corner of a plain white document.

The wallpaper looks out from the machine, onto the void white scene. Its big blue dots shed tears to melting ice sheets, glacial impasses, the stranglehold of this broken moment. Suddenly, it finds its perfect, papery/watery jurisdiction. Suddenly, it is the perfect texture of tragedy-vaccines, that need to wash in the background.



Wi-Fi Bones

Wi-Fi signals course through the body, biting at bones. Hearts and lungs watch them pass. What are they saying? The telecommunications body – hormones coursing through the veins, sending and receiving signals – meets a completely different set of transmitters. Where do they cross, and how do they meet?

If you rub graphite on certain surfaces, you can get them to act like mini radio receivers. I imagine a similar mechanism for Wi-Fi in the bones. Bones tuning in to emails, Facebook pages, and eBay auctions, but reading these in a different language, a language according to which their addressivity – their sense of to whom and by whom they have been addressed – has been entirely reconfigured.