Everything is $*g^heh_2$-

Our Ouroboral/Arboreal Origins

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Shuffle the deck for an extra
adventurous reading experience.

1 + 1 + 3 + 3 + 3

5 + 7 + 18 + 43 = 84
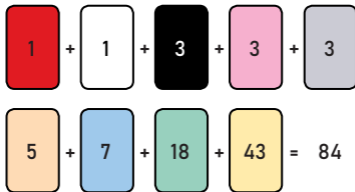
Abstract

A local paleolithic tribe started to use a different mode of transportation and now the Indo-European language family is spoken by a majority of the world's population. My 17th century ancestor was involved in a dispute involving several bags of rye and now I exist. The origin of the word origin is the word $*h_3er$-, which means *to rise* or *to fight*. An iron representation of me as an infant failed to give me superpowers. And on the edges of the solar system, thousands of icy rocks are still unable to coalesce into a planet.

This text is about humanity's quest for the origin. As an example, some physicists try to unravel the fabric of the universe through simple mathematical games. Similarly, the proposed Boreal language family attempts to unify all the world's languages into one systematic model. I sometimes rummage through city archives to find something ancient about my genealogy. Why do people do this? Why do *I* do this? I wonder what the goal of this origin drive is. Maybe our conception of the origin could be informed by the way our language and culture have developed.

In *Everything is *gʰeh₂-*, I examine and challenge the notion of the origin — envisioned as a primordial point from which everything expanded. What interconnected shapes are created when languages, cultures, people and cells spread throughout the universe?

How are systems of centralized power upheld through the way chaotic structures are interpreted? Using the fields of linguistics, history, astronomy, as well as the work of Caribbean thinker Édouard Glissant and his conceptions of Relation, chaos and poetics, I investigate the many possible forms that our imaginary can take: trees, reversed trees, circular ouroboroi, scattered archipelagos, interdependent rhizomes. Maybe the universe, dispersed and disorganized as it is, can still be made sense of — but in a radically different way.

An empty chasm. The Cartesian coordinate system. Established by two infinite axes, x and y that intersect each other at the point (0,0) — which is called the origin. I find this space weirdly comfortable. I want to take a long walk and then come back to rest at (0,0).
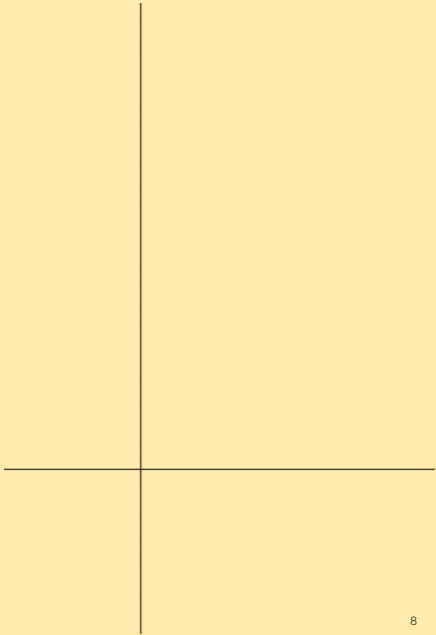
On the first day, you are gifted an infinite sheet of square grid paper. Every square in this grid is called a *cell*. A cell can either be colored (also known as *alive*) or empty (*dead*). One or more cells are chosen to be alive. The following days, every cell — living or dead — will interact with its eight closest neighboring cells (two horizontal, two vertical and four diagonal). With a pencil and an eraser, you change the state of the grid according to the following four rules:

I: A live cell with fewer than 2 live neighbors dies (starvation).
II: A live cell with 2 or 3 live neighbors survives (conservation).
III: A live cell with over 3 neighbors dies (overpopulation).
IV: A dead cell with exactly 3 live neighbors becomes a live cell (reproduction).

Watch how the primordial pattern changes every day. Some starting configurations – for example only one live cell – will disappear quickly by starvation, others will not change due to conservation, or oscillate from one pattern to the other and back again, forever. But start with five filled cells shaped like and over the days it will explode into a huge chaos. A mess of thousands of cells interacting with each other, growing in size, spawning several "spaceships" that will fly off to infinity. This pattern will keep expanding and morphing for over three years.

The same region on the first day and after two years.
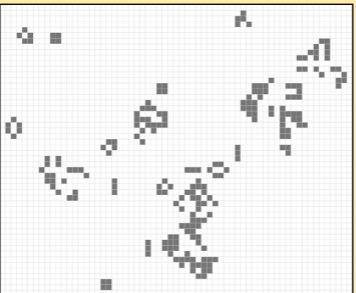
How is ▪ different from the apparent chaos it creates? In a way, there is no difference. The universe that these rules establish is completely deterministic: an initial state will always evolve in the exact same way.

The information for a human body is already stored in the DNA of its first cell. Euclidean geometry is built on only five axioms from which all other knowledge is derived. Newton's theories of gravitation will neatly describe what will happen when you launch an object of M mass with F force from a planet with G gravitational pull.
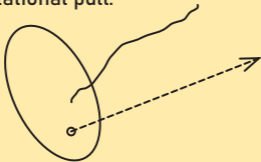
When I followed an introduction course on quantum physics several years ago, I was surprised, but not really surprised, that even this field — although its uncertainty principle radically challenges the idea of a deterministic universe — still tries to uncover its mechanisms as much as possible in order to make predictions about the world, and even harness its power (e.g. in quantum computing).

After countless examples in years of scientific education, the idea has solidified firmly in my brain: *the origin is all you need to know to explain the present.*

Art is for me a kind of scientific practice, an attempt at getting closer to some truth. This is why I feel justified in using the origin when I'm working on some art or writing project. Not only as a starting point for my research, but also as an envisioned goal. In my quest for the origin, I hope to find a sense of completion, control, understanding. Something I have been craving for a long time.

In 2018 I made an object where I took the measurements I had when I was born (3380 g and 51 cm) and made an iron bar with the exact same dimensions. I spent days grinding down the material, weighing again and again, to exactly approach the magical numbers. Once the bar was at the precise weight and also perfectly polished, I took it from the lathe and held it in my arms. This was the moment I had been waiting for, the moment I would connect with a perfect distillation of myself at birth.

Nothing. Grabbing the rod didn't feel much different from grabbing the metal pole in the metro I took on my way there. I could maybe use it to scratch an itch on my back, but the existential itch remained completely out of reach. The fact that this systematically fundamental object — somehow perfect — meant nothing to me, was very irritating. Making a meaningful artwork turned out to be a very opaque activity.

At lunch I was sitting outside, eating an expensive sandwich and enjoying the late autumn sunshine. The iron bar sat in a tote bag next to me on the ground. Suddenly, at what I suspect must have been 12AM precisely, the bar started to produce a 432Hz humming noise. In a rapid course of events, the bag disintegrated and the bar flew to 2 meters above the ground, rotating quickly along its primary axis and emitting a blueish light. Startled but fascinated, I felt extremely compelled to touch the object. As my finger entered the aquamarine halo, the bar branched into infinity. I was shuttled off this planet into a glowing tubular cushioned interstellar passageway. Falling through eras and dimensions, I felt reality unfold itself before me, through me. The bar had imbued me with the power to fully understand the fundamental nature of existence.

I get a vision of an old man with a 19th century mutton chop beard, demurely sitting in a dark wood room. A ghoulish lemur fetus in a jar is sitting on his desk. The man declares, seemingly to no-one:

"The scientific method demands *an origin. Whatever the exact nature of this* origin*, it will explain a lot about ourselves. Where we come from, where we are going. It will explain what is in one's nature, and what is not. The origin will reveal one's purpose, one's destiny. The origin may even indicate what is the* right *thing to do. Origin. Ooooorrrrrrrrrrrigin."*

Oooooooooooorrrrrrrriguhhhhhmm
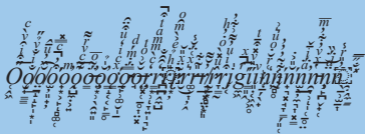
The word echoes back and forth in the space. With each reflection, the resonant frequencies of the infinite passageway reinforce themselves, until a shrill ringing remains.

The word *origin* comes from the Middle English word *origyne*, which comes from the Old French *origine*, which comes from the Latin *origo*, which comes from the Latin *orior*, which comes from the Proto-Italic *$orj\bar{o}r$*, which comes from the Proto-Indo-European *h_3er-*.

So often when I trace the origins of a word, I end up at the mysterious Proto-Indo-European language. The echoes of this primordial tongue are everywhere.

Proto-Indo-European is an ancient language that was spoken somewhere between 6500 and 4500 years ago. Little is actually known about it — there is no archeological or historical evidence that supports its existence — but striking similarities between modern Indo-European languages demonstrate the existence of a common ancestor.

Proto-Indo-European grammar and vocabulary can be reconstructed by comparing common lexical properties from different Indo-European language branches.

Today, the Indo-European language family is extremely widespread. Even before colonialism forcefully distributed European languages to all continents, Indo-European languages were already spoken in almost every region in Europe and in large parts of Asia. The well-supported Kurgan hypothesis says that only the expansion of a revolutionarily more productive economy could explain this huge range.

The Kurgan hypothesis, proposed by Lithuanian linguist Marija Gimbutas, tells us something like this: On the steppes north of the Black Sea, a tribe started to use horses for transportation. Land could be roamed five times as fast, thus a small society could suddenly control a much bigger area. This led to clashes with other peoples, and this gradually resulted in a culture with stronger social stratification, stricter rules on ownership and a greater emphasis on warfare. This Proto-Indo-European culture was very patriarchal, expansionist and violent (Marler 55).

Indeed, linguists note that there are remarkably many surviving Proto-Indo-European words relating to conflict and warfare (Mallory and Adams 277). For example, in the relatively small reconstructed vocabulary, there are four words for "harm", five for "destroy" and at least nine for "strike".

Violence is even visible in the Proto-Indo-European origin of the word "origin" *h_3er-, which means "to move", "to rise", "to spring", "to quarrel" or "to fight". A word referring to beginning of any movement directly corresponds to the motion of combat.

Previously stable regional societies in Europe, whose rituals and symbolism centered around female imagery (think of those ancient Venus figures) seem to have been dispersed, conquered, and assimilated over hundreds of years by Indo-Europeans (Marler 56).

If we carefully peel back the layers of history, will we find an ancient lexicon that will explain it all? Will it tell us something fundamental about our modern life? Will we, as individuals and as a species, finally be able to understand each other?

My great-great-great-great-great-great-great-grandfather is Henrik Grondman, a farmer born around 1675 in Lonneker, a small village in The Netherlands near the border with Germany? He is the only person from his generation I could find, due to him being a fully patrilineal ancestor — historical genealogical records place a huge emphasis on fathers and the sons they spawn. I looked into some city archives to find more information about Henrik, but couldn't find birth or death records. I did find a legal proceeding from November 1726:

jan ter Welle nomine proprio
vertoont alhier een Rekeninge
ten laste van Henrik jonge grom-
tman ter somma van elf gulden
$3\frac{1}{2}$ stuiver wegens geleverde en
aen hem verkogte rogge, ingevolg
afrekeninge tot welke betalinge
hij grondman tegens heeden
geciteert sijnde, soo word deselve
nae voorgaende aneisinge
niet gecompareert sijnde, ge-
ontirmaheert en sal voor de
tweedemaal tegens heeden 14
daagen per extract defes worden
geciteert ten fine om te
strecken nae behooren

(Oud Rechterlijk Archief)

Jan ter Welle nomine proprio
vertoont alhier een Bekenninge
ten laste van Henrik Jonge Gron-
tman ter somma van elf gulden
3½ stuiver wegens geleverde en
aan hem verkogte rogge, ingevolg
afrekeninge tot welke betalingen
hij Grondman tegens heeden
geciteert sijnde, soo word deselve
nae voorgeande aeneisinge
niet gecompareerd sijnde, gec-
continuaseert en sal voor de
tweedemaal tegens heeden 14
daagen per extract deser worden
geciteert ten fine om te
strecken nae behooren.

It took me a while to decipher the handwriting and the extremely archaic legal jargon, but it comes down to that Henrik Grondman delivered rye worth 11.18 guilders to Jan ter Welle, who did not pay for it twice over. The local court ordered ter Welle to pay the amount within 14 days.

This is the oldest available piece of information about my origin. Even though it's not very special information, I am activated. *If this humble farmer only knew what he brought forth*, I think.

Some part of my brain — the irrational part — says to me that Henrik Grondman is somehow very important, that his fate is mine, that my ancestry has a fundamental quality. I am destined to eventually move to Lonneker, become a farmer, grow rye myself. The seed that Henrik planted in the 17th century soil will be harvested. Jan ter Welle's debt will finally be collected.

Knowledge of one's origin is correlated with financial and racial privilege: it's the affluent families that have family trees going back for many centuries. Kings have inherited their power from ancient kings. Ancient kings inherited their power from the gods. Bloodlines point from a justifying ancestry into the future like a sharpened arrow. In order to maintain control, the origin must be upheld.

Often enough, the idea of an origin is kind of impossible to grasp – only structures that are self-replicating and/or expansionist (imagine a tree-shape) have something quite resembling an origin point. And still, this tree is a simplification of more complicated processes. In the case of language, the conquering and expansionist nature of Indo-European provides for a roughly tree-shaped genealogy, thus the suggestion of a single Proto-Indo-European language is still reasonable. But any non-arboreal method of dispersion will not fit this way of thinking. Looking at the indigenous languages of South America for example, there are at least 108 language families (including language isolates), which are all completely unintelligible from each other. To search for the "origin" of the South American languages would be a nonsensical activity.

In my interstellar tunnel,
I get a vision of the 32nd
century. All of the world's
languages and cultures have
fully coalesced. Humans
are living in small domes
homogeneously dispersed
across the entire Earth's
surface. Nature is thriving.
I see one human, at least
three meters tall, with a
body made of soft gold,
standing in a canyon.
They speak:
"guh".

A few linguists attempt to identify an ancestral language family that encompasses even more languages than Indo-European, if not *all* of the world's natural languages. The hypothesized Nostratic family includes — besides Proto-Indo-European — languages as diverse as Arabic, Japanese, Turkish, Finnish, Tamil and Inuktitut. On an even bigger scale, there's a highly disputed Pre-Nostratic language family that encompasses almost every language in the world, except for some southern-hemisphere languages from sub-Saharan Africa and Oceania. This hypothetical language family is therefore named "Borean" or "Boreal" from the ancient Greek word referring to the northern wind (Fleming 57).

At the same time, the word *Boreal* has been used by far-right politicians as an obfuscating term to describe Northern European (white) civilization or people. The word has been used to forge a mythical, insular origin of white people — either in a metaphorical sense or a mind-bendingly concerning literal one.

Indeed, it was the belief of the Thule Society (basically the Proto-Nazi party) that the Aryan race originated from a fabled lost continent in the far north called Hyperborea. A fictional migration map of the Hyperboreans would look almost exactly like the tree-shaped model of expansion. This conspiratorial origin myth is the visual representation of the arboreal expansion model taken to its extreme: a civilization that precisely originated from a single, uppermost point — the north pole.

Many researchers are critical of the Boreal hypothesis. Linguist Lyle Campbell writes: "The search for global etymologies is at best a hopeless waste of time, at worst an embarrassment to linguistics as a discipline, unfortunately confusing and misleading to those who might look to linguistics for understanding in this area" (393).

Despite the recurring desire for a fabled homeland for all people or a group of people, there is never a place that will truly suffice. The origin land is therefore often said to be long lost. Polynesian mythology has the lost homeland of Hawaiki, the Aztecs came from a mythical land called Aztlán. The Christian Bible has many mythical locations from which humanity diverged, be it the garden of Eden, the city of Babel or the mountains of Ararat, where Noah's ark stranded.

Too bad, there is no place that is the central point of the world. The brain becomes slightly warped when trying to imagine a definite place of origin, because, honestly, what would that place actually look like?

Even though the homeland of the Proto-Indo-Europeans has been roughly identified as being somewhere in modern-day Ukraine or Russia — the answer is incomplete, because where did *they* come from? It is neatly described in *The Oxford Introduction to Proto-Indo-European and the Proto-Indo-European World* that even thinking about an origin is a bit absurd: "One of the problems of homeland research is that often those searching for it are not clear what they are looking for or likely to find" (Mallory and Adams 453).

Similarly, in astronomy, the center of the universe was long thought to be the Earth – after which it was demonstrated that the Earth in fact orbits the sun. After that though, came the revelation that the sun is only one of the billions of stars in the Milky Way. Today, we know about the Big Bang, during which everything in the universe was compressed into a single point. It seems at first glance then, that there should indeed be an identifiable location for the center of the universe. However, during the Big Bang *space itself* was compressed into this point, meaning that the universe's origin today is *everywhere* at once.

Reality expands and gets smaller together with my breathing. Colors are fading/ vibrant, lines bifurcate into planes and back again. My breath is getting shallow. I feel a breeze on my dangly legs. The universal truth that I was feeling turns out to be just that: *a feeling*. Feelings fade.

The fist around the space tube
clenches up,

the iron bar plunges into the ground

      (and a mountain forms on
      the other side of the earth),

I am peristaltically catapulted
out of the interstellar passageway,

my body scatters into thousands of seeds.

I wanted to become a rye farmer? This is what happens when you obsess over the fantasy of the origin. There is no origin. I feel disillusioned, untethered. Henrik Grondman is not my private all-encompassing Borean forefather.

While tracing my ancestry back through generations, I could find less and less information. Data became less complete, less precise, less understandable, and at a certain point in the past, no information was left. Henrik is simply the point where I couldn't go back any further. He is the arbitrary cut-off point — just like how the iron bar of 51 cm is basically an arbitrary cut-off point in my own development that started when I was 0 cm. Henrik's parents, whoever they are, are enjoying the glorious realm of the unreachable unknown. I can't do anything about it.

While information becomes more and more incomplete further back in time, more and more dispersed origin points appear on the map. Since the number of genetic ancestors doubles with every generation, Henrik is only one of the 512 people of his generation who contributed to my DNA. Of course, the genealogical structure can be visualized as an upside-down tree, with Henrik at the top — also known as a *parenteel*. But it could just as well be seen as a tree with the present individual at the trunk and the branches stretching into the past (AKA a *kwartierstaat*), exponentially growing every generation, reaching far beyond Henrik and his peers, the branches eventually intertwining, getting fuzzy and disappearing into a kind of universal world-mess. The inconspicuous kwartierstaat becomes itself intertwined with the Proto-Indo-European expansion, migrations, violence, transformations, cultural and biological evolution.

French-Caribbean philosopher and poet Édouard Glissant talks a lot about this turbulent interrelatedness in his work. In his book *Poetics of Relation*, Glissant describes how cultures and languages develop in an ever-ongoing process he aptly calls Relation. According to Glissant, a culture can manifest its identity in many ways — through a shared language, a shared destiny, a fixed place of origin, a veneration of an ancestry or, exactly, a lack of these things. Glissant grew up on Martinique, a French island colony in the Lesser Antilles, where he experienced with great magnitude the lasting effects of colonization, the forcible erasure of ancestral ties, the complex interaction of different cultures, and the shaping of new languages through creoles and pidgins. The Caribbean archipelago became for Glissant a scattering prism through which he could look at the whole world.

In his own words: "The Caribbean, as far as I am concerned, may be held up as one of the places in the world where Relation presents itself most visibly" (*Poetics of Relation* 33).

Glissant rejects universality and the absolute, suggesting the Deleuzian-Guattarian rhizome as a way of thinking about Relation. Like a tree, a rhizome is connected, growing, rooted — but it lacks the totalitarian root, the single point of origin. In a 2009 documentary by Manthia Diawara, he explains his intuition: "If I were asked to draw a tree, I will never draw a tree. I will draw a forest. I will draw a jungle" (14:38–14:46). Glissant calls the world, in its rhizomatic condition, *chaos-monde* (which could be imperfectly translated as "chaos-world" or "world-chaos"): interrelated, turbulent, impossible to make transparent, impossible to order.

Chaos is not devoid of norms, but these neither constitute a goal nor govern a method there. Chaos-monde *is neither fusion nor confusion: it acknowledges neither the uniform blend — a ravenous integration — nor muddled nothingness. Chaos is not "chaotic." (*Poetics of Relation* 94)*

According to Glissant, chaos can never be systematized. Making the metaphor of a computer virus infecting the "privileged instrument", chaos would repeat itself infinitely if processed by analytic thought. Already an innocent pattern like , subject to only a few simple deterministic rules, will grow into a seeming chaos, oscillating and expanding until the end of time. Actual *chaos-monde*, infinitely more complex than any pattern of cells, would destroy every computational system with its recursions and expansions.

To understand chaos, Glissant writes, "we have to invent a knowledge that would not serve to guarantee its norm in advance but would follow excessively along to keep up with the measurable quantity of its vertiginous variances" (*Poetics of Relation* 102). The way of thinking Glissant proposes will still be structured in some way, but also able to grow along with the chaos of the universe. *Vertiginous*, yes, but still *measurable*, albeit not by a computational system. But the human, with its unique method of perceiving and conceiving of the world, not a solitary individual but part of this chaos-monde itself, can transcend. "It is only the human imaginary that cannot be contaminated by its objects. Because it alone diversifies them infinitely yet brings them back, nonetheless, to a full burst of unity. The highest point of knowledge is always a poetics." (*Poetics of Relation* 140).

The poetic mode of thinking allows us to move in harmony with reality, notice connections, disperse infinitely. With the iron bar, I wanted to tap into Relation and feel it flowing through me. But unfortunately or fortunately, this feeling can't be hacked into existence with some cosmological cheat code. No artefact will make me feel one with the universe.

The soil takes hold
of the thousands of seeds.

A root system gets a shape.

A forest in a valley grows.

Some seeds never sprout
but remain seeds.

Édouard Glissant mentions the tension between the metropole and its surrounding areas. The peripheries, such as the colonized Caribbean islands, are in many ways subordinate to the European center, where the cultural and linguistic power resides. This way of seeing — the center distributing its language top-down — ignores everything that happens non-hierarchically. Glissant proposes that we think about the world in an "archipelagic" way: as islands with their own language and culture. Distinct, but still interconnected and dependent on each other. He even suggests that modern nation states are currently developing this archipelagic structure (*Introduction to a Poetics of the Diverse* 119-20). Every periphery becomes a center until the notions of periphery and center will dissolve completely.

Far away from the sun, beyond the planet Neptune, on the outer edge of the solar system, is the Kuiper Belt. A dispersed collection of icy rocks and dust, all relatively small and therefore very hard to detect. The first object in the Kuiper Belt to be discovered was Pluto in 1930. It wasn't until 1992 that a second Kuiper Belt Object was found. Since then, hundreds more have been localized. Much is still unknown about this region: for all we know there could be millions of massive rocks, floating in the distant darkness. The Kuiper Belt contains remnants of the birth of the solar system – scrap material that was too far away to ever converge into a planet.

Because Kuiper Belt Objects are basically the building blocks for bigger worlds, they are often associated with creation. This is reflected in the creator deities that Kuiper Belt Objects

are named after. Most of these are anthropomorphic, but there's also the small object *Chaos*. "19521 Chaos" to be precise, discovered in November 1998, is probably the most aptly named Kuiper Belt Object. 19521 Chaos is not named after a person-god, but after the primeval state of existence in Greek mythology. This universal chaos-state preceded all human-like deities, some of them personified in the planets we know — Mercurius, Venus, Mars, Jupiter, Saturn, Uranus and Neptune.

19521 Chaos is unremarkable. Its size, brightness and orbit are very typical for its kind. Like the iron bar, close inspection doesn't yield anything interesting in particular. But exactly this should be an invitation to connect it with its environment. Chaos is not singular. Chaos is part of the chaos of the cosmos. A node in a disorganized space archipelago.

The size of 19521 Chaos compared to Earth, or, perhaps, Chaos-monde.

In the essay collection *Caribbean Discourse*, Glissant extensively discusses oral and written language, noting the fundamental differences between the two. French, a language that asserts and stratifies itself through the written word, is contrasted with Creole languages, which are first and foremost based on sound. Glissant highlights the importance of gesture and tone for the enslaved Creole speakers, describing how the language had to use a full spectrum in order to conceal its meaning, as a matter of survival. As speech on the plantations of Martinique was mostly forbidden, "slaves camouflaged the word under the provocative intensity of the scream" (124).

Sound is infinitely more transformative, expressive, and nuanced than written language. But sound is also a lot more difficult to transmit across centuries. Linguists researching Proto-Indo-European therefore resort almost exclusively to written texts to reconstruct the ancient proto-language. Strangely, it is not even known if Proto-Indo-European was a written language at all, as there are no signs that writing was part of the culture. This leaves us with reconstructed words like $*h_3er-$ and $*wréh_2ds$ — grotesque amalgamations of characters, words of which nobody knows their actual pronunciation. For example, the letters h_1, h_2 and h_3 were all probably pronounced somewhere in the back of the throat, but we can only guess about the details.

If there's anything that Édouard Glissant demonstrates about language, it's that language can and will evolve opaquely. Concealed languages, varying vocalizations, rapid exchanges, non-words, nomadism, creoles, pidgins, diasporas, music, will result in a chaos so complex that nobody could recognize an arboreal shape in it. Linguistic reconstruction necessarily resorts to tree shapes that can be systematically modeled, but in doing so, so much will be lost in time, like tears in rain.

The word Chaos is, through Greek, derived from the Proto-Indo-European *g^heh_2-. No-one knows for certain how to pronounce it, but it wouldn't probably be far off from a sort of animalistic blare, an open-mouthed guttural *guhh*. It's probably no coincidence that *g^heh_2- originally referred to a thing being open or empty. The word *Chaos* shares its root with the modern words *chasm*, *gap* and *hiatus*. The word *Chaos* also shares its root with *yawn* and *gasp*.

It's the gasp, the yawn, which is the chaotic basis of human language and culture. It starts with the emptiness created by the opening of the mouth.
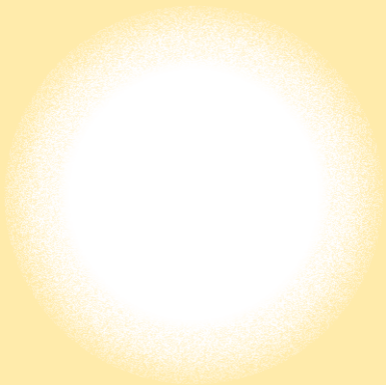
I'm starting to realize why I'm so fascinated with going back into the past, even though I was already disillusioned with the deceptive nature of the origin. Maybe I'm not trying to answer the ultimate question of life, the universe, and everything. Maybe I am enjoying the process itself, the wandering path, the relational web that emerges. The intersections and the dead ends. The roads that ouroborally return to themselves. The quest for the origin might not ever get us to the origin, but it could allow us to find everything else.

I feel like I have walked through the desert and came across my own footprints. Is it disappointing that I end up at this emptiness I started with? There's no origin in sight, no original revelation. There is just a web of little steps in the sand. The footprints I made are not even made of anything. But still they are here.

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Appendix: The Network

We can look at this text as a web of interconnected nodes, referring to each other in many ways. If we allow the linear chain of text (where each paragraph is only connected to its direct preceding and succeeding neighbors) to make connections to other locations that are thematically overlapping, we can get a structure like the following.

(Note: these lines are drawn subjectively, according to how I experience the interconnectedness of this text. Other people may have different, unmapped associations).
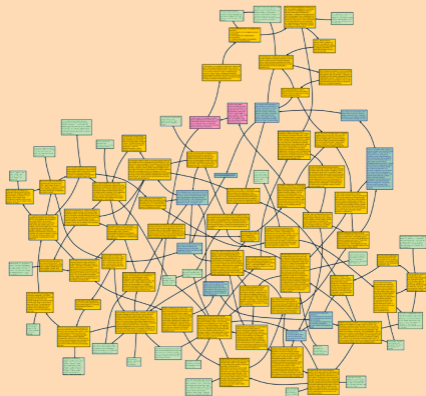
(Yellow = "regular" text; pink = first and last paragraphs; blue = "space tube" text; green = footnotes).

The rhizomatic network has been untangled as much as possible by a computer algorithm, displaying a 2D version of this web where all nodes are placed so that the tension on their connecting edges is minimal. This allows connected paragraphs to gravitate towards each other.

It is fascinating to see what happens: the dreamy interludes create a crescent in the center of the landscape; the footnotes, being mostly tangentially related, find their way towards the edges. The first and last paragraphs have met each other in a cavity, comfortably separate from the bulk of the text.

We can thematically highlight the regions that emerge:

Game of Life

Science

Emptiness

Chaos

Iron bar

Boreal

Power

Poetics

Homeland

Sound

Proto-
Indo-
European

Trees

Genealogy

Henrik
Grondman

Voice

Glissant

Archipelagos

Outer space
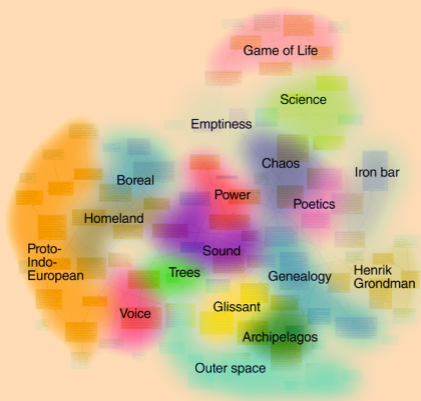
Parts that are relatively "dry" in terms of content, such as information on Proto-Indo-European language, Henrik Grondman, the cellular game and the Kuiper Belt, reside on the outside of the network. The more interpretive and subjective parts of the text, such as Édouard Glissant's writing, chaos/poetics and tree-shapes, are pulled towards the middle, connecting the distant regions with each other. But in the end, there is still no identifiable center — there is no origin.

This thesis has been printed as a deck of cards to emphasize the potential for destructured order and circularity. Re-organize or even shuffle for an extra adventurous reading experience.

This set of rules is known as "Conway's Game of Life" and is invented by English mathematician John Horton Conway in 1970, who was born in 1938 and died in 2020 of covid-19. The Game of Life is one of the first "cellular automata", a concept that has been applied in physics, computer science and theoretical biology. As proposed by computer scientist Stephen Wolfram, the complete physical universe could be structured according to the simple rules of an as-of-yet undiscovered cellular automaton.

This configuration is called an R-Pentomino. It has an exact lifespan of 1103 iterations, leaving behind a scattered pattern of live cells that keep oscillating forever ("R-pentomino").

Including, but not limited to Albanian, Bengali, Czech, Dutch, English, French, Greek, Hindi, Icelandic, Judesmo, Kurdish, Latvian, Macedonian, Nepali, Ossetian, Punjabi, Quebecois, Russian, Spanish, Tocharian, Ukrainian, Venetian, Welsh, (couldn't find one starting with an X though), Yiddish and Zemiaki.

—⊙

46 percent of the world population speaks an Indo-European language as their first language.

✎

*keh₂u-, *gʷhen-, *wen-, *bher-, *wedh-, *per-, *kreu(-s)-, *bheih₂-, *pyek- (Mallory and Adams 278).

✕
Some other English words that originate from *h_3er- are "earnest", "to run", the name of the river Rhine, and "orient" (since the sun rises in the east).

The *only* still surviving Western European language that precedes the Indo-European expansion is Basque. Coincidentally or not coincidentally, the Basque people have also been able to maintain a society with a lot of gender equality (women occupying high government positions, owning and inheriting property) all the way up until the French Revolution.

In the 17th century, those countries were known as the United Provinces and the Holy Roman Empire, respectively.

That's approximately 116 euros in today's money. For reference, 11.18 guilders in east-Netherlands in the 1720s could buy you approximately 225 to 240 kilos of unprocessed rye. Cheerfully calculated using data tables by van Zanden (315) and Holtman (67).

"Tree-shaped" is usually called *arboreal* by scientists, which comes from Latin and means "tree-shaped".

It is by the way not unlikely that Europe before the Indo-European expansion had a similar amount of linguistic diversity.

⤴

And also that all other races were from somewhere else, and thus fundamentally different.

↰

Although etymologically unrelated, the word *arboreal* does kind of have an *Ur-Boreal* vibe.

Mathematically, the geographical center of the Earth's landmasses — its center of gravity projected onto the earth's surface, so to say — is located a few miles north of İskilip, an unassuming town in Turkey ("Geographical Centre of Earth").

Henrik's name is spelled both Grontman and Grondman in the same little paragraph, for example.

In fact, after a re-interpretation of the puzzling court verdict I'm not so sure if it was Jan ter Welle who didn't pay for Henrik's rye. I'm now more inclined to say the situation was the other way around — I think Henrik was the rye embezzler. I'm sure a judicial paleographer could someday clear up the confusion.

That's the Dutch word for a family tree that displays all descendants of a person – there is no equivalent English word for this specific kind of family tree.

English uses *ahnentafel*, the German name, to describe this specific arboreal structure.

Ironically, the word *rhizome* has a Proto-Indo-European kinship with the word *root*, both derived from $*wréh_2ds$-, meaning root. The former ended up in the English vocabulary through Ancient Greek, the latter through Old Norse.

Impossible to order, but, as we see from science and imperialism, not for a lack of trying.

Kuiper Belt Objects that have been found range from ~1km to ~2400km in diameter.

For decades, Pluto was thought to be one of its kind. This why it was first classified as a planet, but lost this title once it became clear that Pluto was one of many.

Kuiper Belt Objects *Makemake*, *Haumea*, *Quaoar*, *Teharonhiawako*, *Sila–Nunam*, *Altjira*, *Praamzius*, *Varuna*, *Varda*, *Albion* and *Borasisi* are all named after deities who originated life and/or earth and/or the sky (in respectively Rapa Nui, Hawaiian, Tongva, Iroquois, Inuit, Arrernte, Lithuanian, Hindu, Gnostic, Tolkienian, Blakeian and Vonnegutian mythology).

By the way, the asterisk * signals that the word is a reconstruction.

♪

I can't believe I didn't mention music until now! It's often thought that music is at least as old as oral language — and that there used to be no distinction between the two (Barnard 92–3).