## Seven Secular Sermons

Parts 1 to 3

These are the first three parts of a series of poetic meditations.

They are best enjoyed when read aloud among friends.

Each of them will typically take about 15 minutes to read aloud.

As meditations, they benefit greatly from an absence of distractions.

A very relaxed, dreamy mindset is conducive to a deep experience.

The best settings to do this are quiet, safe, undisturbed places.



Copyright license **CC0** creativecommons.org/publicdomain/zero/1.0/

To the extent possible under law, Daniel Böttger has waived all copyright and related or neighboring rights to Seven Secular Sermons. This work is published from: Germany.

This means you may freely copy, modify and use these Sermons any way you like, even without attribution. You could even set them to music (the melodies of "House of the Rising Sun", "Amazing Grace", "The Rains of Castamere" and various other songs work with it), sell them or sample parts of them and put them to entirely different uses.

Title image CC-BY ESO / B. Tafreshi

www.sevensecularsermons.org

### Sermon One: Adrift in Space and Time

Now this is going to be fun! It truly does feel great to realize we all are one. So we shall meditate.

This meditation's rhyming verse describes a paradigm of us inside this universe, adrift in space and time.

It's nice that we can simply start by recognizing how a check of every body part can help us be here now.

We feel our bellies and our heads and just become aware how arms and hands and feet and legs <u>are feeling</u> everywhere.

Between and through them circulate our blood-streams to refresh the oxygen that activates awareness in our flesh.

And as we slowly breathe we find that doing so can draw us into a more present mind to feel the moment raw.

With every breath we take and leave, we clear our inner eyes and fully, lucidly perceive each second passing by.

Our mindful meditative selves grow out of living meat and help our bodies stay in health by finding what we need.

So let's do that now. Let's explore and see what's to be found. Outside our bodies, there is more. Let's take a look around!

Unless we're blind we're free to see, unless we're deaf, to hear and realize we're utterly surrounded by what's here. This place surrounding us here now where we consider this, is just as present, anyhow, as our breathing is.

Our breaths connect within the air, within the atmosphere. The envelope of sky we share is also part of here.

We also share what rests beneath: Our bodies' place of birth from which came all who now here breathe as children of the Earth.

Of course there's more than senses show around us near and far. The sky above, the Earth below; there's more to where we are.

To North and South, to West and East, the world goes on and on, the planet every plant and beast and we now breathe upon.

Of all the Earth, we barely know the surface we begrime, upon the spinning rock below, adrift in space and time.

Our calm and meditating minds can feel this easily. Imagination goes behind all things our eyes can see.

To find, as further out we go, whichever way we face, to left, to right, above, below, the solar system. Space.

It's blacker than the night of cours and bigger than the sky and it is hard to see because it was not made for eyes.

It effortlessly overwhelms imagination. Still and everywhere around this realm extends and always will. Around us all and everyone we've met or ever can, extends the system of the Sun that dwarfs all realms of man.

Out there, all human joy and strife and knowledge matter not. Out there, this fragile ball of life is just a pale blue dot.

And there are other, bigger dots and countless asteroids. This Earth is one among a lot around us in the void.

Yet all of them combined appear like specks of dust compared to one enormous blazing sphere, the center that they share.

A thousand times as ponderous as all that circles it, it radiates splendiferous and indiscriminate.

It weighs three-hundred-thirty-three times thousand times as much as Earth, which seems like mere debris, a tiny circling smudge.

There's hydrogen inside the Sun that lets it shine so bright by burning up: Four million tons per second fuse to light.

This fusion forges helium and other specks of dust that constitute the medium from which grows life like us.

But near the Sun, its gamma rays and heat do not allow life smart enough to be amazed at what is true here now.

And further out, it stays too cold for molecules to toy with games of entropy that mold the life that we enjoy. While outermost, in blackest night, drift frozen rocks so far, to them our splendid sphere of light looks like another star.

We're lucky Earth is temperate or life could not have spawned. This planet would stay desolate and all of us unborn.

As fully as we do depend on Earth that we live on, we also clearly understand we're children of the Sun.

And yet the Sun, though all must spin around it, merely is a rare domain of light within a yawning black abyss.

In outer space surrounding us lie distances too great for us to easily discuss or even contemplate.

For space is mostly nothingness around us everywhere, the freezing dark is limitless in empty space out there.

Of course there is some gravity that massive things impart and maybe some dark energy that pushes them apart.

But nothing's there to hear or see or smell or taste or touch and trying to imagine, we can think of nothing much.

And still we feel, for what that's worth, beyond the seen and near the vastness outside planet Earth that's real now and here.

In meditation, we somehow expand our minds to try to feel the system we are now and here surrounded by. The moons and planets we can see, as far as we have found, are lifeless. Earth now seems to be the only game in town.

Yet all these places we could go and cultivate and fill, are merely specks in what we know remains much bigger still.

The stars, these many tiny lights, each are a blazing sun and circling them, caught in their might, are planets being spun.

Yet humans cannot see that far. The pixels of our eyes are just too few, which is why stars look like they're equal-sized.

Through telescopes, we understood. The stars all shine so bright that only monstrous distance could dilute them into night.

These distances define the space that all stars occupy and make a single, real place that we're surrounded by.

The stars that shine all night and day within or out of sight are what our home, the Milky Way, appears like from inside.

Our Milky Way contains at least one hundred billion suns. Through gravity, they all are pieced together into one.

Around this place, where we now feel what we are breathing in, these suns form one tremendous wheel with one tremendous spin.

And all these suns are shining clear, enormous and sublime. They all are real here where we're adrift in space and time. Unmoved by beings such as we on Earth, our small enclave, the stars around us now will be the stars around our graves.

Except for those which have gone through their hydrogen supply and end as all things someday do, for even stars must die.

And some, much bigger than our Sun, burn brighter still and must explode one day, when they are done with making light and dust.

These supernovas, as we call them, burst stupendously. Some can outshine the sum of all stars in the galaxy.

With their magnetic fields unfurled, their yields annihilate or sterilize abundant worlds that life might populate.

Yet all we breathe and eat and drink comes from these massive bombs. We're supernova-dust that thinks about where it came from.

And since the stars have made the clay that led to our birth, we're children of the Milky Way, as are the Sun and Earth.

But supernovas are quite rare. Three times per century does one of them explode somewhere within our galaxy.

Yet many supernovas do each second detonate in all the galaxies whereto we now shall escalate!

A million times much further out than all the Milky Way, more galaxies are shining proud around us here today. These galaxies, each huge and wide, much like the one we're in, outnumber all the stars inside our home and origin.

Around where we consider this, whichever way we face, drift billions of these galaxies right now, right here, in space.

We realize with utter awe and know beyond all doubt: Beyond this world are trillions more that we could learn about.

And almost all of them must be absurdly far away in ultimate reality beyond the Milky Way.

From here where our bodies stay, imagination climbs through further outer Milky Ways adrift in space and time.

And through the emptiness between in almost all of space, where not a single star is seen in almost every place.

And meditation does allow our minds to feel it all. To feel the Universe that now surrounds us as a whole.

Despite all suns that intersperse this dark continuum, most places in this Universe are total vacuum.

And therefore, atoms are quite rare. Yet trillions of them have condensed into the flesh we wear that draws this very breath.

Two thirds of atoms in us are still hydrogen which sprang into existence not in stars but back in the Big Bang. For all the time since time began, as entropy made space, each travelled an enormous span to meet here face to face.

Through vacuum and solar flame, they found their way somehow. And we as that which they became, thus came to meet here now.

Through all we breathe and drink and eat, they travel and endow with nutrients the living meat in which we meet here now.

The atoms that we are traverse all space and time, which means we're children of the Universe and we have always been.

The atoms in us met before and they will meet again, compelled by universal law out in the there and then.

One endless cosmic maelstrom, age-old and ever new, is where we all are coming from and where we're going to.

The knowledge we are made of dust compels us to admit the Universe is in us just as we are within it.

From here we may arise to see and claim as our own the secrets of reality just waiting to be known.

And so we know the infinite is absolutely real. It's here, it's now, it's intimate, this vastness that we feel.

Whatever else is true for us, we'll always know this rhyme. We'll always know we're made of dust adrift in space and time.

#### Sermon Two: The Games of Entropy

So, being dust, what lets us live? What raises us above the countless, mindless, primitive, raw atoms we're made of?

There is no life within this dust: Most specks remain unchanged from back in ancient stars. It must be how they are arranged.

Each human we have ever seen, each beast, each bird, each tree: We all are atoms that have been arranged amazingly.

All these arrangements big and small might well inspire mirth in us surrounded by them all, the greatest show on Earth.

There's more to learn in nature than is found in any book and it appears more alien the closer that we look.

Below the surfaces we see, the skin and scales and bark, the cycles of biology are working in the dark.

Right now our lungs take oxygen out of the air we share, our hearts and bloodstreams take it then and pump it everywhere.

If we zoom closer we can see our lungs to be a place where in a dance of chemistry our breath and blood embrace.

We're built from many works of art, from organs that combine small tissues, each a special part with intricate design.

Now each such tissue then contains innumerable cells and here, inside each cell again, are tiny organelles. Within all forms of life we see there's hidden vastly more bewildering complexity that must inspire awe.

The stars we see through telescopes are big and bright and far, but we find life, through microscopes, yet more spectacular.

In fact, there's more complexity in one small butterfly than we see in the galaxy out there beyond the sky.

All living things we've ever seen are built from living cells; each cell is like a small machine comprised of chemicals.

In all our cells, there's utterly infinitesimal molecular machinery. They're nanotechnical.

Still zooming closer, we just find a multiplicity of ancient atoms that are kind of bouncing randomly.

The static things we think we know are maps. The territory has constant and chaotic flow beneath the shapes we see.

It's here right now, as close to us as anything can be. The movements of the specks of dust shape our reality.

The randomness in what they do we call their entropy and its domain is whereinto our lives have come to be.

It disassembles ordered things unless they can outgrow its ceaseless, blind disordering and spread within its flow. It moves the dust and lets it start to join the game or dance of molecules that fall apart or last a while, by chance.

So hydrogen and oxygen join water which can gain entropic warmth that makes it then play games of cloud and rain.

Where entropy is less intense, these drops will crystallize and dance the longer, slower dance of snowflakes and of ice.

Inside ourselves we feel right now our living, breathing form to be and to remain somehow comparatively warm.

Our atoms lost the stellar heat and left behind the cold of empty space. In warmth we meet, in warmth does life unfold.

For heat destroys all forms and flows that chance may introduce, while cold does not select for those that work and reproduce.

In warmth the growing randomness of entropy can be just right for the profound finesse of biochemistry.

Warmth such as ours makes atoms stay a little restless so they bump into each other's way, react and change and grow.

With carbon in particular, reactions are not rare, but the majority by far do not lead anywhere.

Yet chemical reactions need mere moments to be done and let the dust join games that lead to others further on. So given lots of time, mere chance must sometimes foreordain that specks of dust will start to dance along reaction chains.

Around 4 billion years ago, on Earth, a warm wet sphere, reaction chains began to grow the paths that led us here.

In chains of random chemistry, the molecules that they unite can in their unity join bigger games to play.

In some, the flow of molecules could circle and arrive in lasting cycles that grew tools to multiply and thrive.

In them, the games that entropy forever plays have come to let emerge biology that all of us grew from.

We're built from this, from cyclical and still ongoing games of atoms and of chemicals that do not know our names.

These games take place in everything. In every breath we take are trillions of them happening. All cells in us partake.

A cell is what we call games far too numerous to count sustaining one shared reservoir that holds their whole amount.

Here games that build each other spin a membrane to engulf them all. A greater game begins: A game that builds itself.

Though molecules can't learn or feel, the cells they joined into have learned to sense and eat and heal as in us now they do. The games inside them match and fit each other. They create each other's necessary bits and thus self-replicate.

The largest, DNA, has space like memory to hold stored information – that's a place for new games to unfold.

From codes that cells store in there stem large hosts of proteins that build us here to carry them. We call these codes our genes.

Cells need to harvest energy to fight their slow decay by ever-present entropy and thus keep death at bay.

Some games can help the cells with this. Hence some cells now include microbial photosynthesis that harvests light as food.

Cells work so well that everywhere we look now, they are found: On every surface, in the air and deep within the ground.

They are the winners that remain; the losers are all dead. Life born to entropy's domain must die if it can't spread.

These cells, competing, growing rife for countless years on end, turned Earth into this ball of life to which we now attend.

Once single cells were all there was, but some of them became much bigger forms of life because they joined still greater games.

In unity they found new ways to gain more energy and grow within the fertile space we humans call the sea. With size, forestalling entropy becomes much more complex but life invented, brilliantly, a game that does it: sex.

Sex tests and recombines the genes that parents contribute, makes novel progeny and screens resulting attributes.

And genes that happen to succeed in making progeny will travel in them and proceed through time and entropy.

In each of us now breathing here are genes that long have gone through many generations – we're built just to pass them on.

And entropy remains at play, All life that it has bred, however complex, must obey its rule that things must spread.

To do this, cells must organize and function as a whole, so they have nerves which harmonize their work on common goals.

One common goal is to explore new places which is why some sea-born creatures left for more, for land and for the sky.

And thus arose the multitude of Earth's whole biosphere that fills us with this gratitude we feel for living here.

Yet now the human species shapes this world – and that transpires because a recent bunch of apes played cooking food on fires.

This gave them much more energy and they could use these gains to breed descendants such as we with big and playful brains. With playful brains, we understand the games of entropy that played us into being and can play them consciously.

With growing knowledge we can trace all aspects of our lives to games that built the mental space wherein this knowledge thrives.

At every scale we see again so many things that draw upon each other. We might then think that's design or law.

And yet, no law or plan exists. Mere chaos has let on each scale some lucky games persist that others built upon.

Now we join into greater games that may outlast us all, including laws and wealth and claims of states that rise and fall.

Great games like science or the arts or cities or machines we hope will help their human parts like bodies help their genes.

And in a sense, we all are one gigantic global game of interplaying games begun without a plan or aim.

That's true and yet one brain can't grasp it all: It's too immense. One can but try and fail and gasp at life's magnificence.

So human brains invented speech and writing to transport what brains would want to share and teach each other: useful thoughts.

By sharing thoughts, we operate like large connected minds that ponder and accumulate the knowledge that we find. The thoughts we share help harmonize our work on common goals and join in ways to organize the knowledge we control.

This knowledge helps us build new games that let us dive and fly and even let us ride on flames to pierce the waiting sky.

We humans know there's so much more surrounding Earth: the stars! We're curious and can't ignore how unexplored they are.

The games of entropy coerce us still. We must diffuse to roam this playground universe and put it all to use.

One day, self-replicating ships will from this Earth be hurled to leave on interstellar trips and spread from world to world.

In but a short few million years such ships can easily spread many daughter biospheres throughout the galaxy.

And yet, no other life comes here. The sky we watch looks still. No life is spreading – maybe we're the only life that will.

But probably, out there we'll meet life stranger than our own, life made of something else than meat by games as yet unknown.

And all we'll find and understand can join in what will be still greater, cosmic, truly grand new games of entropy.

One day, all worlds our ships can reach shall learn to live and care, for we have many games to teach to all the dust out there.

### Sermon Three : One of Us

We're rare among the stars that drift around us, we who live. We hold this strange and special gift this planet has to give.

Let's now unveil this gift and see it unify somehow the many games of entropy and make them one here now.

The gift of life is incarnate in every one of us who now here breathe and meditate between those worlds of dust.

The deepening tranquillity of meditative rest lets us behold the mystery with which we all are blessed.

In all of us, a unity, sustained by games that run in all their multiplicity, makes out of many one.

Within us now, the interplay of games in us gives rise to one uniting process they are part of and comprise.

It's present simultaneously in both our hands and feet and every cell within the three dimensions of our meat.

This process keeps proceeding forth through all the time it thrives, in every moment in the fourth dimension of our lives.

This process, ever-happening until the day we die, propels us onward, travelling through moments passing by.

The Now we now experience is one ephemeral brief point in lives that, in a sense, are four-dimensional. Let's feel our lives stretch out upon our lifespans as they stream past moments we remember on to future ones we dream.

As simply as we breathe, we know this life we now here feel has travelled, some short while ago, through moments just as real.

There was a moment we arrived at this place here somehow. Since we were there and we survived, our lives include that now.

The lives we lead have streamed right through this day and so we can now trace along them backwards to the time today began.

Our lives extend beyond today, beyond what's now and here. We feel them stretch through yesterday, last week, last month, last year.

Where have we been five years ago? What did we feel and do in all the moments we still know and all the others, too?

Our lives include these moments and yet we are not confined to single moments – we extend and grow through time entwined.

Through every moment we have seen, a single process thrusts. The momentary selves we've been are all just one, just us.

Relaxed, with mindfulness and ease, we effortlessly can go past our oldest memories to where our lives began.

Still tracing back, our lives escape through many days and rooms to when and where we first took shape within our mothers' wombs. Before we could live separately, our lives have all begun protected in a pregnancy when two lives lived as one.

Now even though these months may seem like where we came about, they're only where our mothers' streams of life were branching out.

The life we're feeling presently, our mothers felt themselves. Life flows in continuity. It's older than ourselves.

Now those of us with siblings know them too as branches where the gift of life that lets us grow branched out and grew from there.

Though siblings must grow separately, we also understand they're branches of a single tree, like fingers on a hand.

And here the journey need not end. We might as well bring in our mothers' mothers, cousins and our somewhat further kin.

And they in turn had parents too and families, so they give us more distant cousins who live out there now today.

To know someone is family, that someone's one of us, may stir a sense of loyalty, connectedness or trust.

But families reach deep and wide. The ones we each are in have branches spreading far outside their ancient origin.

Like us, they're branches, other tracks life grows across this Earth since ancestors of us had sex and gifted them with birth. We all have relatives out there that we have never known, who breathe and live their lives somewhere, as real as our own.

In four dimensions, we connect through lines of ancestry. The life within us streams in fact through branches of a tree.

We each have lines of ancestry that reach back far and they include both slaves and royalty, both predators and prey.

Each human ancestry extends through many centuries, through long-forgotten, distant lands on strange and ancient seas.

In tracing back, each separate course eventually must converge in common ancestors of every one of us.

The ancestors all humans share are why humanity is all related – we are their extended family.

These ancient ties of kinship mean that everyone who lives, all humans we have ever seen have been our relatives.

Descended from the same old apes who learned to cook and sing and worked towards the cityscapes we're now inhabiting.

The primates we're descended from were not so erudite, but they are why we all have come to live and walk upright.

And they had other children, too. We've grown apart and thus they're different apes and primates who are relatives of us.

## Fishes

Reptiles

#### Diluy. Amphibia We share with them a lineage to which we owe our use of tools and one shared heritage with monkeys and with shrews.

All that's within the family of four-legged creatures who despite their huge diversity are all our cousins too.

That's still not all: We're free to go still deeper if we wish. Four hundred million years ago, our ancestors were fish.

It truly is astonishing how one unbroken line of life links us with everything out there that has a spine.

Still older ancestors, like worms and squishy things in shells connect us with life's oldest forms, confined to single cells.

We breathe, as all of them have breathed since ancient cells back then invented, savored and bequeathed the use of oxygen.

**Our common DNA confirms** the common ancestries of all of life on Earth, from germs to mushrooms, bugs and trees.

Our tree of life finds root in when, at some primordial spot, the first thing that did live began from something that did not.

That's where reaction chains once curled themselves in cycles so -----(Cvclostoma the root of life could grace this world four billion years ago.

Prochordonia) Since then, its offshoots never ceased to spread and branch. They won this planet every plant and beast and we now breathe upon. Laur. Protozoa)

# Age of Man

Life branched and found a wealth of ways to spread throughout this world that now our meditative gaze reveals to us unfurled.

All life is one big family comprised of everyone, four billion years of history of species come and gone.

So when we meet, we're pretty much just parts of one big form, like branches of a tree that touch each other in a storm.

In four dimensions, life is one forever-branching force, small parts of which have now begun to understand its course.

The present seems to separate life's branches like a knife. Omanimal S Beyond it, we who meditate here now are all one life.

This life that breathes in us just leads far beyond the small hyncocephala lives led by every one of us. Let's try and feel it all.

Life's countless branches can be found within the boundless seas, upon and deep within the ground and flying on the breeze.

What lives in them is life itself. All plants, all beasts, all swarms of bugs are part of life's great wealth **Cros** of evanescent forms.

> Whatever living things may do, DPALES they all need life to lend its ancient, massive strength unto each talon, claw and hand.

Whatever mouths and snouts and beaks of living things discuss, it's all the same old life that speaks through every one of us.

ertebrates.

heromorpha

gllesozoi

From all our eyes, one life looks out at all the games it plays. On all our feet, life walks about on paths through time and space.

With all our leaves, life drinks the sun, producing nutrients, with all our mouths, it moves them on to their recipients.

So what it means to be alive is being part of this, of life itself that will survive ourselves and live no less.

This meditation may reveal to us now breathing here a sense of awe in which we feel we are this biosphere.

Our selves and all the lives we meet, in friendship or in strife, are parts of something more complete that's us as one as life.

Since we are life, all lives we've known are parts of us and thus if we are one, we're all alone. There's only one of us.

To ever meet another one, we'll need to journey long. This planet Earth where we've begun is not where we belong.

Earth gave all life its place of birth, but it's not built to last. Of all the time life gets on Earth, most has already passed.

In just another billion years, the sun that rules our sky grows bright, Earth's water disappears and all life here will die.

And that means us. We're not distinct from what our growing star will boil to death and force extinct unless life spreads out far. In having felt the family through which we all connect, we know that life is certainly a thing we must protect.

As each of us is one more face of life behind us all, its need to travel out through space is truly personal.

Life must keep sprouting interlinked new branches and disperse from world to world, or go extinct from all this universe.

Just like our ancestors who built the world we know today, we'll have the glory or the guilt of what we leave to stay.

We may destroy ourselves and doom the Earth where we were born to merely be a dreadful tomb with no one left to mourn.

Or rise to meet infinity, as lifeforms that succeed ourselves pervade the galaxy with Earth as their first seed.

And if we help life spread and last, its many future forms will know us as their distant past, like apes and fish and worms.

So many future aeons hence, beneath an alien sun, they might remember Earth as lands of legend long since gone.

How will they see their ancestry? What shall it mean to stem from us and hold the legacy and gifts we give to them?

Whichever paths they choose to go, if ever they discuss the gift of life in them, they'll know they each are one of us.

### About this project

My name is Daniel Böttger. I'm a young scientist who lives in Leipzig, Germany.

I began the Seven Secular Sermons project in 2012, in an attempt to share the intense gratitude I feel towards this marvelous universe we are happening in.



The sermons are (to be) a series of seven guided meditations on aspects of the universe. In verse and rhyme, they invite us into inner journeys towards a more profoundly satisfying appreciation of reality at large.

Due to the complexities of summarizing numerous complex ideas into meditative poetry, and the restrictions of their form, these meditations are being written very slowly. These first three took 4 years, and it seems sensible to assume the following ones will take about the same amount of time.

If you would like to be notified about new sermons, you can follow *@*7SecularSermons on Twitter or subscribe to the Seven Secular Sermons YouTube channel.

Each sermon gives a poetic introduction to a field of knowledge that has something to say about what we are, in the following order.

- 1. Adrift in Space and Time Astrophysics
- 2. The Games of Entropy Molecular Biology
- 3. One of Us Evolutionary Biology
- 4. *(no title yet)* Anthropology
- 5. *(no title yet)* Memetics
- 6. *(no title yet)* Brain Sciences
- 7. United in the Quest for Truth (working title) Philosophy

They are connected in an arrangement loosely inspired by the Open Systems Interaction model of communication systems:

- 1. Physical layer The physical atoms that everything runs on.
- 2. Data link layer The self-replicating patterns of links between atoms.
- 3. Network layer The network of relations between all life on Earth.
- 4. Transport layer The relationships and exchanges between us.
- 5. Session layer The dialogues between individuals that give rise to culture.
- 6. Presentation layer The mental representations that give rise to the mind.
- 7. Application layer The relationship of reason and reality.

Each follows logically from the previous one and each of them has to be present in order for the whole to come together as it does.

## www.sevensecularsermons.org

These sermons are to celebrate in meditative verse the joy of living in our great resplendent universe.