

Soul-assemblages--from your body to the cosmos
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Boundedness, or ensouled matter

What is the cosmos made of? It's made of us: us living beings.

And what is alive? Anything that feels, acts, or communicates. To do so, it must have some kind of internal consistency, some provisional boundedness. A living being is a temporary fold in the cosmos that brings together a point of view. Such a being can be a person, a molecule, a spoon, a supermarket, a star. It can also be a gathering or a coalition.

In the common division between the organic and the non-organic, life is thought to be an attribute of organs. Biosemiotics defines what is alive as something bounded by a membrane. This makes it capable to make signs, argues Jesper Hoffmeyer, specifically to act as a Peircean interpretant, as for example a cell interprets and responds to the electrochemical information that passes through its cell walls.

A soul, I suggest, is anything that is bounded and thus can have an interior. In the philosophy of folds, that interior is a little bit of the cosmos that the monad enfolds and makes its own, while remaining connected to the cosmos as a whole. It may be possible to unfold some of the relations that constitute the soul of another being. But we need also to know when to respect that privacy and not pry into those souls.

Leibniz, enjoying the then-new technology of microscopy, perceived the universe as packed tight with nested souls. "Each portion of matter may be conceived like a garden full of plants and like a pond full of fishes. But each branch of every plant, each member of every animal, each drop of its liquid parts is also some such garden or pond. And though the earth and the air which are between the plants of the garden, or the water which is between the fish of the pond, be neither plant nor fish; yet they also contain plants and fishes, but mostly so minute as to be imperceptible to us." Ensouled matter is everywhere, and souls recombine into larger, more fleeting souls. Matter, in short, is composed of souls.

Here's a diagram of a six-monad cosmos, closed as in Leibniz's model.



And another, six monads in an open cosmos.



I continue to find Leibniz's folded dualism attractive, for it proposes that matter consists of bodies and is packed with spirits. Each fold has matter on one side and soul on the other. For example, the veins in marble, he wrote, constitute the souls of creatures fossilized there. What is oil, then, but the liquid body of fossilized souls of animals and plants, indentured by humans millions of years later?

This conception that matter is composed of souls—or if you like, matter is responsive and active—means that matter contributes its activity to the act of in-forming. Here enfolding-unfolding aesthetics is in tune with many contemporary thinkers from Gilbert Simondon to Jane Bennett and Karen Barad. Rocks breathe, exhaling carbon dioxide. We animals share with limestone the calcium carbonate that firms our bones.

Human souls intertwine with the souls of matter. The miners who mine the iron, and the smelters and ironmongers; the pickers who harvest the cotton, and the weavers, form soul-assemblages with the materials they work on. Beings individuate or modulate in the context of contrasts in their environment, folding in elements of their neighbors.

In Leibniz's system, monads are folded from within, matter from without, as rocks are shaped by wind and water rocks. This would mean that matter—rocks, as well as molecules, electrons, and solar systems without carbon-based life forms—is not alive, because it does not possess a membrane that can encompass a soul. It might contain things that are alive, but matter itself is dead. Like my vital-materialist friends, I cannot accept this! But there are a couple of solutions.

In one of Deleuze's adjustments to Leibniz's cosmology, *perception* is expanded to *prehension*, Whitehead's term for the feeling that every entity has of the data that surround it. This adjustment obviates the difference between thought and sensation. Everything prehends and responds to its environment. Things that don't "do" anything still have experience, as a chip of stone packed side by side with others experiences their pressure upon it, the passage of air and water, the changes in

temperature, and registers these in changes to itself. "If life has a soul, it is because it perceives, distinguishes, or discriminates," Deleuze writes. Passion, feeling while being unable to act, is a soulful way to be. Rocks, I contend, are passionate.

Changing perception to prehension also obviates the difference between immaterial and material, making everything, including thought, an organism. Since the soul of a thing is what it can do, ideas have souls. An idea is a monad, too, a microcosm of all ideas, as Walter Benjamin writes. Words and phrases have souls that are born anew with each utterance. Works of art have souls, too, because they do things.

Naming souls

With these encompassing but I believe well-defined understandings of life as ensouled matter, I try an exercise to name entities according to their souls. I decided to name each soul *Iyad Hallak*, after the severely autistic Palestinian plant lover who was shot and killed by Israeli police on May 30, 2020. I could have named them *George Floyd*, after the African-American man who was strangled to death in Minneapolis five days earlier, by the police officer *Derek Chauvin*. I could have chosen the name of my grandmother, *Gladys Higgins*, for this soul, and memorialized her with this exercise, but I chose *Iyad Hallak*.¹

Iyad Hallak is *Iyad Hallak*. The oxygen molecules clustered around Mr. *Floyd's* face are each *Iyad Hallak*. *Derek Chauvin* is *Iyad Hallak*. I am *Iyad Hallak*. My grandmother is *Iyad Hallak*. My eyes are *Iyad Hallak*, my lungs are *Iyad Hallak*, and my breathing is *Iyad Hallak*. Each of my blood cells is *Iyad Hallak*, and each of their mitochondria is *Iyad Hallak*.

This morning, my cup of coffee is *Iyad Hallak*. Each coffee bean is *Iyad Hallak*, each coffee ground is *Iyad Hallak*, the Ethiopian woman pictured on the coffee bag is *Iyad Hallak*, and the coffee roastery in East Vancouver is *Iyad Hallak*. The process of drinking my coffee is *Iyad Hallak*, and drinking my coffee, I become anew *Iyad Hallak*. My kitchen floor, made of chips of stone, is *Iyad Hallak*, composed of *Iyad Hallaks* pressed shoulder to shoulder, which long ago were part of a mountain *Iyad Hallak*. My cotton shirt—an assemblage that comes together to do something—is *Iyad Hallak*, and each of its threads holds together many *Iyad Hallaks*, the souls of cotton plants.

My wooden chair is *Iyad Hallak*, each of its cellulose fibers is *Iyad Hallak*, and the oak trees felled for the wood are each *Iyad Hallak*. My keyboard is *Iyad Hallak*, each plastic key is *Iyad Hallak*. The plastic is made of an uncountable number of *Iyad Hallaks*, polycarbonate molecules derived from fossil fuels, and thus from the fossilized bodies of planktons millions of years old, each one of which is *Iyad Hallak*. Each pixel in my screen is a soul, as my friend *Azadeh Emadi* loves to point out²; it is *Iyad Hallak*. The computer's processor is *Iyad Hallak*; the Taiwan Semiconductor Manufacturing Company, which made it, is *Iyad Hallak*. Each atom of silicon in one of the processor's chips is *Iyad Hallak*, the chip is *Iyad Hallak*, and the unknown woman who monitored the chip's production is *Iyad Hallak*. The bench in Hsinchu Science Park where she ate her lunch that day is *Iyad Hallak*, and her lunch is *Iyad Hallak*.

Laura, are you saying that a molecule is as valuable as a human being? Are you defending the rights of corporations by saying they have souls? Are you saying that robots have rights, as the debate circulating in AI circles goes? No, I am not saying these things. I am describing a world pressed full of souls, communicating, affecting each other, coming together to become new ensouled matter. I do think it is stupid to worry about the rights of robots and corporations when human beings are treated like

¹ This exercise is inspired by *Somayeh Khakshoor's* project to make a dictionary in which the definition of every word would be *You*.

² *Azadeh Emadi*, "Reconsidering the Substance of Digital Video from a Sadrian Perspective," *Leonardo* 53:1 (2020): 75-80.

things and fossils are not honored as the sarcophagi of our ancestors. But we can analyze technologies as monads that enfold historical processes in order to accomplish tasks.

Soul-assemblages

Since all monads coexist on a surface continuous in space and time, folding this surface creates new monads, new souls. These new souls are assemblages—not random gatherings, but entities defined (after Aristotle and Spinoza) by what they can do.

As well as assert that all entities have experience, I propose that the boundedness of rocks, molecules, etc. lies in processes that bind them internally for some period of time: by habit, Peirce would say. Same for the results of human processes, such as a crowd, a book, a program, or a city. Some of these are assemblages, defined as a group of disparate entities held together by what it does, a process held together by its action. Like an omnibus (“for all”) and its passengers, assemblages are held together by a common experience. “We are a multi-tissue entity,” writes Bronislaw Szernyanski of the bus-assemblage, “—we are made of metal and plastic and glass and flesh and cloth and air.”

You don’t need to be bounded by a membrane to touch or be touched. You just need to be held together provisionally, by a process. To my thinking, that makes you a soul, held together by a body. You are an assemblage of things that come together to feel, act, and communicate, to touch and be touched. You are ensouled matter.

Defining ensouled matter as a process or an assemblage allows us to overcome the prejudice against human-made things as lacking life. Useful here too is Latour’s definition of a *thing* as a gathering of interests: a group that coalesces around a common concern, thus forming a kind of temporary enclosure. A city has a soul; a political party has a soul. As Afrofuturists emphasize, soul-assemblages not only encompass beings on the same temporal plane but form alliances between present and past, and present and future. Memory makes an assemblage with the past; imagination with the future.

I like to call the beings that come together in this way *soul-assemblages*: a set of heterogeneous but related ensouled entities that make something happen. They are a provisional, bounded fold. Soul-assemblages occupy a piece of local space folded by its own rules: in topology theory, a Riemannian manifold.

Soul-assemblages disperse and reassemble yet maintain consistency, their constituents ever modulating. They are not necessarily “progressive.” Some are conservative, maintaining the status quo, groups of beings that are stuck in place serving an imposed order, like a refrigerator or an academic senate, or, of course, a body. This can be perfectly fine: you want your refrigerator to keep chunking along, your body to hold together. Some deterritorialize a little. Some are capable of massive deterritorialization. In some cases, soul-assemblages chew up the scenery, deterritorializing systems that inhibit their thriving and establishing new territories.

When a soul-assemblage comes together it creates a membrane, a provisional collective skin. Juan Goytisolo describes an encounter in which a mystical seeker approaches a wise teacher. In a few sentences, the elder first annihilates his visitor’s sense of being an individual and then reconstitutes it, now to encompass a multitude.

You are you and I am I, he said.

(I looked at his djellaba’s delicate, slender hood, a perfect symmetry with the point of his beard.)

You are I and I am you.

(He stared at me, his irises like pearls set in glass.)

You are not I and I am not you.

(I looked at him transfixed, drawn by the brilliance of his eyes.)

I am not you and you are not I.

(I felt myself crumbling under his gaze, being reduced to old copper coin.)

You are not you and you are no other but you.

(His gaze sentenced me to extinction, with no possible return to ephemeral contingency.)

We stayed hours and weeks silent and still.... Only the buzzing of the bees maintained the nodular boundaries of the circle encapsulating us, ensured its hesitant continuity.³

I think of the provisional skin that soul-assemblages accrue as like that vibrational boundary of buzzing bees. It allows the beings inside to be undone temporarily in order to become more inclusive: perhaps not with the mystical self-annihilation Goytisolo describes, but in a way that expands each being's potentials in order that they may all create something together.

The soul-assemblage looks like the uncanny surface boundary of a murmuration of starlings, expanding, involuting, unfolding, transforming. The membrane that bounds a soul-assemblage has a very special tensile strength. Reducing its dimensions by one, from a fabric to a thread, Deleuze and Guattari call the shifting boundary of a multiplicity a *fiber*. This fiber stretches "in" across entities at ever smaller scales, solidifying the alliance among them—from humans to animals, molecules, particles, and imperceptibles—and "out" to the universe. "Every fiber is a Universe fiber. A fiber strung across borderlines constitutes a line of flight or of deterritorialization."⁴ You can imagine this pliable, responsive, collective skin reaching from the center of each entity within the soul-assemblage in two directions, "in" to the infinitesimal and "out" to the cosmos. The collective skin that holds us together in this temporary assemblage of souls can reshape in new formations that resist the conventional folds we're usually stuck in. With luck and skill, this assemblage may avoid getting domesticated or annihilated and succeed in creating a line of flight: establishing a new fold.

Disquiet

The monad perceives the cosmos selectively, and in this selective unfolding from the continuum, creates its boundary. Beyond the filter of a given point of view, the infinite appears as chaos. But a small shift of perspective will unfold other aspects of the infinite to that point of view. This unfolding happens in human experience all the time, when we physically change our position, learn, remember, empathize, or imagine: we include new parts of the infinite in ourselves, become a slightly different assemblage. It happens in the experience of all entities.

In the folded cosmos, what appear to be points are really folds. In the mathematics that inspired Leibniz, monads are ratios that are vanishingly small but never equal zero: they cannot be perceived but can be defined in a differential relation. In the monad's world, they take up space, because the monad must have a body.

From the monad's point of view the infinite is the unconscious; yet even those things that we don't perceive are ever so dimly present to us.

Microperceptions—those unconscious little expressions, those feelings of disquiet that hint at our connections to other bodies—are synonymous with affects. To think of affects as virtual differences that get integrated as perceptions or thoughts helps to emphasize that what affects us (or any being) is not what looms largest in our environment but what makes the most important difference to us. It also emphasizes that most encounters occur not between two bodies but among many bodies, all the micro-elements that are integrated into a perception. The calculus grounding of the concept also entails that integration occurs according to local points. This would explain why no two affective responses are the same, but they can be compared on the basis of the relations that produce them.

³ Juan Goytisolo, *The Garden of Secrets*, trans. Peter Bush (London: Serpent's Tail, 2000), 26.

⁴ *A Thousand Plateaus*, 249.

Since affect is the capacity to enter an assemblage, we can understand that microperceptions open us up. They hint at those non-selves within ourselves, the other ensouled bodies with which we compose.

To illustrate disquiet, or the microperceptions we feel dimly, Deleuze uses the example of a dog sensing that its master is sneaking up to beat it. Disquiet, then, may be the sense that you are not safe: that your boundaries are beyond your control. For example, a sudden awareness, walking on a deserted street at night, that if I don't start running as fast as I can I will be assaulted. A plant's sense of the drying soil. The posture of a police officer approaching your car.

Beings that know they are not safe must be vigilant and expand their clear region. So I run. Plants whose neighbors are suffering from drought thicken their own cellular walls. Indigenous and Black parents train their children how to speak to the police.

The prickling on the back of the neck, intuition (Bergson), non-discursive experience (Sadrā)⁵, are the *taste of the infinite* that we experience before a perception takes shape.

The vinculum, the dominated monad, and the soul-assemblage

There is some hierarchy in the soul-system I am describing, between entities born with souls, like people, cells, and cotton plants, and entities that gain souls by being assembled, like spoons, software, and supermarkets. (And I do put humans at the top.) The folded cosmos is not a completely flat ontology. Some souls are denser and capable of greater connectivity.

Nonetheless, technologies have souls. On February 26, 2021, the Katzie First Nation welcomed the Covid-19 vaccine with a ceremony. Chief Grace George said, "We believe this vaccination has a spirit."⁶ They have souls in part because they encompass the history of human labor, as Marx wrote in the *Grundrisse*. They also concentrate within themselves all the souls that contributed to their formation.

The knowledge that one's life is predicated on—we could say, populated by—other, dominated lives, makes it harder to say "I *have* a body," "I *have* a plantation," or "I *have* an idea." Predication itself, the logical and grammatical presumption that predicates "belong" to a subject, comes into question. Everything that makes us what we are, everything we have, comes from outside us and is only temporarily closed within our membrane.

Leibniz and other Enlightenment philosophers had the leisure to spin their transcendental thought systems because they, their nations, and their patrons were amassing wealth in the Americas by using the labor of enslaved African people and their descendants to cultivate sugarcane, cotton, tobacco, coffee, and other valuable crops and to mine metals and stones. These plantations and mines occupied land expropriated from the Indigenous peoples of these continents, often through mass murder. Therefore, the historical context for this ugly concept of the soul that is not allowed to grow is the slavery and genocide that underwrote the so-called Enlightenment.

In our time the relationships are much the same as in Leibniz's. If we are to maintain the best parts of Leibniz's folded cosmology, some tinkering is necessary. For starters, the soul-assemblage reconfigures the vinculum as a temporary boundary and ownership as temporary appropriation.

The capitalocene, in Françoise Vergès' term, is itself a toxic soul-assemblage that *includes* the coalitions gathered to do battle with it. Aligning ourselves with cosmic powers, we bear witness, struggle, and may need to destroy the soul-assemblages that have given us toxic nurture.

⁵ As Sadrā writes, "That which is experienced is being but that which is understood is quiddity," or discursive experience. Sadr al-Dīn al-Shīrāzī, *Al-Asfār* (the *Four Journeys*), 1:3; cited in Fazlur Rahman, *The Philosophy of Mullā Sadrā* (*Sadr al-Dīn al-Shīrāzī*), (Albany: State University of New York Press, 1975), 114.

⁶ Angela Sterritt, CBC Radio, March 3, 2021.

From your navel to the stars: cosmic soul-assemblages

Soul-assemblages can also be assessed in terms of health, depending on the degree to which their internal monads are able to thrive. If our assemblages do not seek to dominate cosmic elements but to share with them—to co-modulate with the cosmos—they are more likely to be healthy for all parties. Co-modulating with the cosmos is both simple and impossible. It is the ultimate Spinozan ask, isomorphic with Leibniz's sufficient reason: to take into account the entire chain of effects of any action. But it is also something we do all the time and can do more consciously.

Each of us humans participates in many soul-assemblages. As I mentioned, assemblages can conserve a situation or seek to deterritorialize it. The conservative ones might be doing just fine! For example, an organic body is a fairly conservative soul-assemblage. Your own body, as *vinculum*, assembles many souls, from your organs to the food you eat to the air you breathe; it extends to the friends you keep, the media you consume, and, as we've seen, the countless other souls on which you rely. How's everybody doing in your soul-assemblage? Is there anything you (all) can do to augment your collective health?

Moving to soul-assemblages that deterritorialize. Turning the concept of dominated monad inside out, we monads can willfully engender soul-assemblages, enclosing ourselves in a common fold in order to get something done. It is a glorious thing to create a soul—but not easy. We can think of political movements as soul-assemblages, pulling together desires, capacities, physical affordances. Powered by fabulation, bringing dearly desired, imagined futures into existence by enclosing them, drawing a skin around them, giving them a body. Activist soul-assemblages occur at all scales, building alliances across different human and non-human constituencies, from the 2011 Tahrir Uprising to an urban garden.

All of what we commonly call matter connects to the cosmos. "Minor" sciences, those that modulate alongside matter rather than impose abstract form upon it, extend microperceptions into cosmic knowledge. Metals, electricity, and light are what we organic beings have in common with the stars. For example, the Dogon people of West Africa have pursued astronomy and metallurgy for millennia. Dogon astronomers also accurately charted the double star system of Sirius B centuries before European observers. Studying Dogon, Bambara, and other African traditional sciences, Delinda Collier argues that mediation has deep and sophisticated sources in African knowledges of light and electricity. Plants, too, are cosmic: they enfold a whole periodic table of minerals and gases; they feed on the light of our Sun. Responding to singularities in "matter," then, entails cultivating microperceptions that link you to the cosmos. And as I have been emphasizing, human artifacts too condense the cosmos, though sometimes in mutilated form, as with plastic objects smelted from the remains of long-dead creatures.

Our own bodies are detectors of cosmic forces, and we can train our bodies to align with and amplify these forces. Affect is one term for the contact that passes between entities and transforms them: a feel for singularities, the sense of something outside of and prior to us. Deleuze and Guattari use the verb *involute*, to turn inside out, for what an animal does when it joins a pack, as though it is called by a force at once within it and beyond it. "A fearsome involution calling us toward unheard-of becomings." That force is emphatically not genetic memory: "the Universe does not function by filiation." It is a nonhuman force; I would also say it is a dimly felt, enfolded historical condition, like the Commons, or a potential collective beyond current imagination. To involute, then, is to make a fold that connects with allies in other times and places.

Everywhere souls are teeming, adding articulation to existing folds, tentatively making new folds, inviting other entities to join these articulations and bring fugitive spirits into actuality. Some of these indications get taken up, and new unfoldings gain greater actuality and pull. Others don't get the

necessary traction; as in Whitehead's striking definition of evil, they are too strange to be recognized by their community. These failed assemblages remain latent markers, to be enfolded again by the universe, perhaps to be unfolded somewhere or sometime else.

A territory may expand to comprehend ever more beings—plants and fish, sandwiches and small-file movies, electrons and stars, images and memories, supposed terrorists and miniscule souls who mutter "I hate God." Each monad remains a microcosm: it retains the shape of the cosmos, holding the infinite at its heart. The territory takes the fantastical shape of an infinitely inflected soul.

To abandon the known territory on the quasi-instinctual connection to one most distant is the most profound and risky political act. Such a great refusal enacts the most difficult and most powerful actualization. It ignores local data of experience and instead draws out the deepest folds of all. Abandoning unsalubrious earthly routines, the soul-assemblage takes flight, the tensile fiber of its collective skin stretching far from this world. With luck and skill, the soul-assemblage becoming a twinkling archipelago of bodies at home in the cosmos.