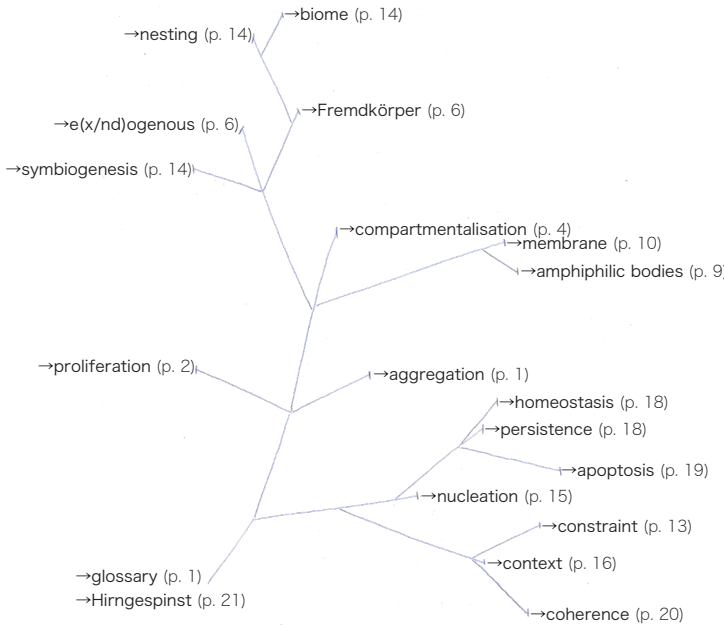
(a →glos·sa·ry of thought) [eɪ/→ˈglɒs.ᵊr.i/əv/θɔːt]

2024 / Rietveld Fine Arts / Adriane Bastiaens

To the person who stumbles upon this piece of writing.[1]

[1] This silent, listening eye that seems to be the recipient of my thoughts.

contents (con·tents) [ˌkɑn.tents], n. (pl.)



Thought is a proliferating (→proliferation) existence that blooms and withers in front of our eyes. This proliferating existence emerges and subsides on a plane which is stretched out by specific terms. Taking shape in the form of a →glossary, this text contemplates the texture of thought by adopting biochemical and -physical concepts as a model of thinking.

Staged on this once blank page, my words court your attention, they lure you in with an amplified intention inherent to this rigid form of non-vocal verbalisation. As black letters on white pages, my voice becomes a voice deprived of its own sonorous materiality. Becoming as alien to me, as it inherently is to you. In search of a receiver, this voiceless voice fleetingly nests (→nesting) in your head, sometimes even appropriating the sound of your own phone[2]. A cuckoo's child that is either recognised and rejected or taken in as one's own.

Is it not interesting how we humans try to make sense of the world that we are constantly failing to fully understand? All these orders of magnitude that our minds can never reach, that we can never imagine or perceive. We try to see much further ahead, into realms that are beyond our reach, which allow us only a glimpse or a hint of themselves. Which we can only perceive with tools that present a very specific imagery. And as we learnt, objects of interest can display different measurement-dependent properties. We cannot be fooled that a measurement does not influence the outcome: The "→context leaks into the observed"[3] as "the descriptions presented by science can no longer be disentangled from our questioning activity [···]."[4]

All these constructs try to make sense, or puzzle together, these sometimes distorted glimpses that we get. Equations, functions, graphs, models. We build theories on theories chiselled in stone until proven wrong - A parallel, constructed world that bears fascination, but which nonetheless remains alien. Which will always remain abstract, a shared construct of human fantasy.[5]

As Nikolaus Gansterer asks in his book Drawing a Hypothesis: Figure of Thought, I am wondering what narratives can be reinforced by these human created explanatory

[2] The Greek word phone is only trying to refer to the sound of a voice, see Adriana Cavarero, For More than One Voice: Toward a Philosophy of Vocal Expression, trans. Paul A. Kottman (Stanford, California: Stanford University Press, 2005), p. 19

[3] Alicia Juarrero, Context Changes Everything: How Constraints Create Coherence (Cambridge, London: The MIT Press, 2023), p. 35

[4] Ilya Prigogine, Isabelle Stengers, Order out of Chaos: Man's new Dialogue with Nature (Toronto, New York: Bantam Books, Inc., 1984), p. 55

[5] Referring to the quote "A cancerous tumor irresponsibly growing [(→proliferation)] on a substrate society." Prigogine, Stengers, Order out of Chaos, p. 22

scenes and models – through their sequences and textures.[6] The biochemical and -physical concepts discussed in this piece of writing deal with borders, exchange and growth - Fundamental processes that can be decontextualised (→context).[7] I invite you to follow me into these constructed, alienated realms: From vesicles forming through invagination at the phospholipid bilayer (→amphiphilic bodies) of a →membrane, or the self-organisation of aggregating (→aggregation) crystals in highly concentrated solutions, to mussels creating iridescent, shimmering cyst by enclosing intruding particles in mother of pearl (→Fremdkörper). "What happens when these figures are removed from their original context? What poetic, performative and speculative action potential is then liberated?"[8] Is it possible to find a resonance with more subjective narratives, to find a mutual amplification?[9] What happens if these constructs are appropriated, carried from one realm to the other? I invite you to roam around in this collection of words that, picked out of their original context, proliferate (→proliferation) to new subjective meanings.

[6] Referring to Nikolaus Gansterer, Drawing a Hypothesis: Figure of Thought (Vienna: Springer-Verlag, 2011), p. 21

[7] Referring to Gansterer, Drawing a Hypothesis, p. 21

[8] Gansterer, Drawing a Hypothesis, p. 21

[9] Prigogine, Stengers, Order out of Chaos, p. 46

glossary (glos·sa·ry) ['glɒs.ə.r.i], n.
Don't judge a book by its cover, they say. But what about judging a book by its glossary? This list of subjective definitions at the end of an argumentation? Introducing aggregated (→aggregation) glosses or terms that the author weaved into the writing regardless of their need to be systemised and explained. Stretching open the plane of interest and expression by introducing the reader to crucial junctions of the used vocabulary. As to create a →membrane of →amphiphilic bodies on the skin of the reader in order to soften the first steps into this foreign world. To outline the threshold through which one enters the text. A backbone of the text on which to lean on to when fearing to lose grip.

aggregation (ag·gre·ga·tion) [ˌæg.rɪ'geɪ.ʃə n], n. Thinking about aggregation, I sense a pulling force. It is an attractive force, a force directed to the inside, the core, coming from a place where the aggregate has not even formed yet (→nucleation). What an intriguing image: Against the arrow of time a future entity seems to have an influence on the now. Entity? Is an aggregate an entity? Or as Alicia Juarrero puts it in her book Context Changes Everything: How Constraints Create Coherence: "Are wholes different from aggregates? [···] Do interactions among individual entities create real novelty in the form of coherent wholes?"[10]

In the end we humans are nothing more than an aggregate of trillions of cells (an aggregate? Or a →proliferation?) that perceives itself as a whole. At every moment we are exposed to constant change. →Apoptosis, mitosis, mutation in and around us, fluctuations without end.[11]

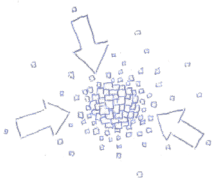
The field we are entering with these thoughts is the discipline of mereology. It questions the relations of parts to wholes and vice versa. Let me refer to a paradox to illustrate the contradictions contained in this relationship. Imagine the following setting: To honour the victory of Theseus over King Minos and his minotaur, the Athenians are embarking on their yearly journey of pilgrimage to Delos in his ship. After several hundreds of years of pilgrimages and countless maintenances, does the ship still remain "the ship of Theseus", even if all the planks were replaced and no original ones remained? "How is change compatible with remaining the same? What does the same mean, in this →context or any other?"[12]
How can parts create a whole whose properties go beyond the mere sum of the properties of the parts? Are

[10] Juarrero, How Constraints Create Coherence, p. 3

[11] Referring to Jean Tinguely's quote: "The only stable thing is movement" and Lewis Carroll, Alice in Wonderland: "And who are you?" "I – I hardly know, sir, just at present – at least I know who I was when I got up this morning, but I think I must have been changed several times since then."

[12] Juarrero, How Constraints Create Coherence, p. 3

systemwide dynamics and interdependences created by →coherence through →constraints a possible way to approach mereology? Where do we decide to draw the borders (→compartmentalisation) of a whole?



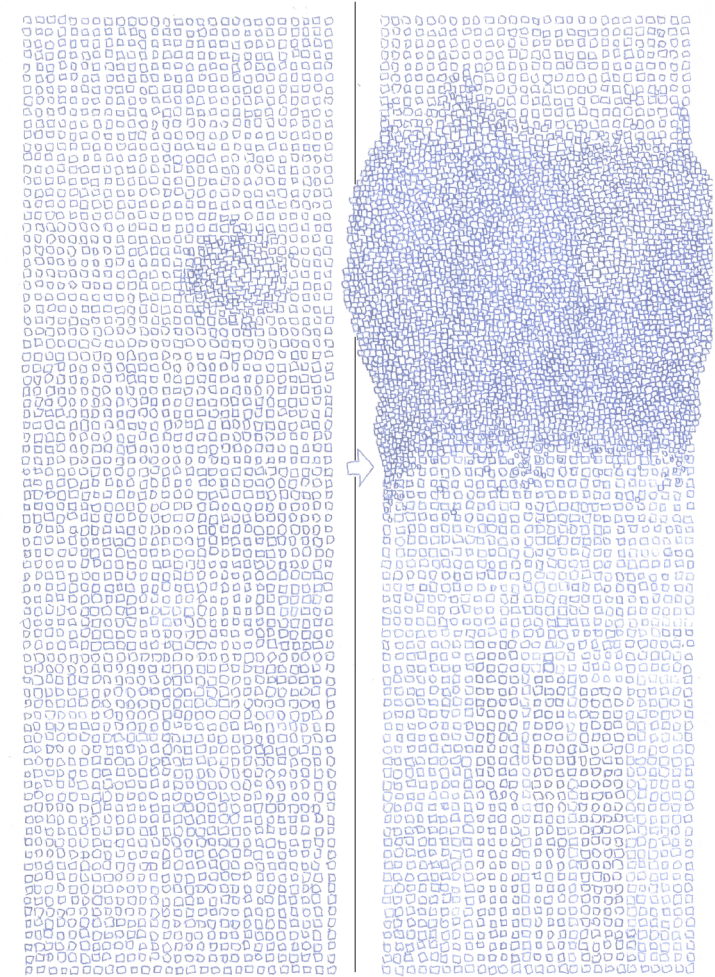
proliferation (pro·lif·er·a·tion) [prəˌlɪf.ərˈeɪ. ʃən], n. Proliferation describes a drastic increase of parts creating a whole, which if regulated, sustains the whole (→persistence). However, should it elude regulation, as it happens in cancerous tumours, the whole is jeopardised. An unregulated growth of the known becomes unknown. The familiar becomes strange (→Fremdkörper). Often resulting from weakened immunity,[13] this unregulated growth occurs inside an enclosing structure, following a force that is directed away from the core of the proliferation. It is a destructive force that claims more and more territory, leading to the exhaustion of its own origin, which has been reduced to a mere host. The →coherence of these systems, that once were one, is diminished until they become Fremdkörper to each other. Even in cases where a proliferating growth converges to a steady size and is endured by the host, it remains a Fremdkörper.

It is so easy to look at us humans as an unregulated proliferation on the earth's surface. Take a plane in the night, secure a seat by the window, and look down. It cannot be denied anymore: The infected areas glow in yellow as if activated by some diagnostic imaging procedure. It is even possible to see the fine blood vessels feeding the proliferating growth, reaching outwards into the darkness and forming a dense net inside.

Does not the pattern of excessive growth, like the human proliferation, repeat on all scales in nature? Consider an ecology where the interdependence of competing lifeforms is out of balance. Here an overabundance of nutrient or energy opens a window for a part of that ecology to proliferate and outcompete others. And on a different scale: Growth, division, survival and death (→apoptosis) of cells are secured by coordinated transmissions of intracellular signals. These can be amplified or diminished as the result of specific cell gene mutations which promote unregulated cell division and growth.[14] In

[13] Referring to Jean-Luc Nancy, Der Eindringling: Das fremde Herz (The Intruder), trans. by the author (Berlin: Merve Verlag, 2000), p. 35

[14] Referring to Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter: Lehrbuch der Molekularen Zellbiologie 4. Auflage (original title: The Molecular Biology of the Cell), trans. Bärbel Häcker, Claudia Horstmann, Martina Bronold, Petra Jacoby, Roswitha Kraft, Eva-Maria Miller (Weinheim: WILEY-VCH Verlag GmbH & Co. KGaA, 2012 (1999)), p. 688 - 690



a sense the human proliferation is one of many, but one which reflects back on its own destructiveness. Jean Luc Nancy describes the human condition as a "conatus at an excrescent infinity."[15] Instead of looking at humans as the proliferating growth, the proliferation becomes the environment around us, in which we occurred and in which we are trying to persist (→persistence).[16]

Unregulated proliferation changes the shape of a known entity. Passing a tree with bulky excrescences, its familiar solid shape becomes fluid.

Does proliferation always have to contain the antithesis of a destructive growth? Destructive in a sense that it threatens the identity of the surrounding space, of its former whole? And how does proliferation influence differentiation?[17]

Sometimes I perceive producing an Artwork as catalysing or cultivating proliferations of the reality around us.

compartmentalisation (com·part·men·tal·i·sa·tion) [kɒm.pɑːtˌmen.tˈəl.aɪˈzeɪ.ʃən], n.

Let us return to the smallest unit that we consist of. The cell, right? You and I, we enter its cytoplasm through its phospholipid bilayer (→amphiphilic bodies, →membrane). What a strange space we would experience if we were shrunk to this scale.[18] We would be constantly pushed and pulled by molecules, which would now appear to us in perceptible sizes, while we would be serendipitously carried to all regions of the space. After some time, we would realise that it does not matter where we are taken, to venture deeper we must trespass membranes. Enclosed units over enclosed units. Everywhere we would encounter the same phospholipid bilayers as the one through which we would have entered. Like a fractal, on all scales borders and membranes are redefined inside each other. Does not the word unit carry within itself the promise of an enclosure?

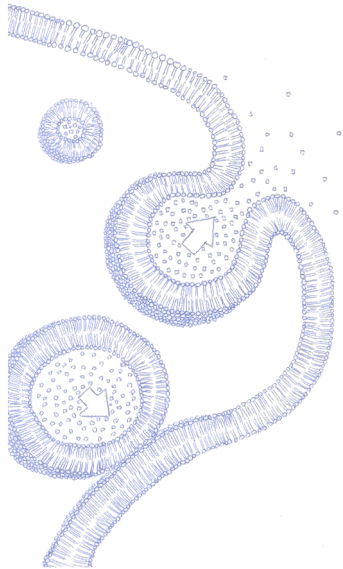
[15] Nancy, Der Eindringling (The Intruder), p. 49
Conatus is a term originating in Spinozism and referring to the inclination of each thing to preserve in its being (→homeostasis).

[16] Allusion to "persistence [···] as the temporal form of stability", Juarrero, How Constraints Create Coherence, p. 22

[17] Differentiation as a process in which parts that create a whole are adopting site specific, →context-dependent functions and forms.
As an example: Every cell in our body contains the same genetic information. Nevertheless, is it possible for them to develop into a variety of cell types such as muscle, nerve and blood cells during embryogenesis. This differentiation occurs through the expression of different genes, and thus the production and accumulation of different proteins and RNA-molecules.
Referring to Alberts et al., Molekulare Zellbiologie (Molecular Biology of the Cell), p. 288

[18] What an intriguing thought experiment it is to envision the cytoplasm on such a scale, this seething soup of macro-molecules, vesicular bodies and water. Being shrunk to this scale, molecules would appear to us in perceptible sizes. How strange would it be to observe the water, its form perceptibly granular, its to us known macroscopic properties melted away? At this scale, what does wetness even mean? What does pressure mean?
But simultaneous to molecules becoming perceptible, we would become aware of their extremely high velocities. What would it feel like to move through water where individual molecules would shoot around us at incredible speed? We would be simply bombarded from all directions, helplessly restricted in our movements. And even without moving, our position would be governed by constant fluctuation.

Enclosure, or compartmentalisation, is one of the features which is considered crucial to form living systems. In cells, the need for it exceeds the simple unit of transportation. It creates the possibility of different reaction spaces, of spaces that maintain the adequate conditions for specific chemical processes to happen. These different reaction spaces secure the independence and thus simultaneous occurrence of different processes and reactions. Each one of these spaces can form a different milieu, a different present. The exchange with the surrounding becomes more targeted, as only certain molecules can trespass the phospholipid bilayer (→amphiphilic bodies).



While I continue pressing down key after key, my thoughts are enclosed within the white cytoplasm of the page, becoming a →Fremdkörper in my own body of thought. Given the right preparation and care, they undergo exocytosis[19] and exist independently of me. Secured in their own present on this page, this enclosed entity is able to wander around, entering and exiting different bodies – remaining existent as long as it manages to avoid complete digestion.

Language itself is a construct which I see based on the concept of compartmentalisation. Like a cell it is a living organism. It encloses new constructs, reshapes its borders, forms vesicles in existing definitions. The logical conclusion of generalisation in language is a preceding compartmentalisation.

These thoughts lead me to the case of Funes the Memorious described by Jorge Luis Borges. Ireneo Funes is gifted with infallible perception and memory, allowing him to perceive and memorise the immensity of details in every moment. Under the sheer immeasurable amount of information that he receives, the →coherence between parts is lost. Wholes that we understand as a given, generalisations that we make, for him fall apart to

[19] Exocytosis describes the process in cells by which intracellular vesicles fuse with the cell membrane and release their contents into the external, surrounding space.

pieces. "Not only was it difficult for him to see that the generic symbol 'dog' took in all the dissimilar individuals of all shapes and sizes, it irritated him that the 'dog' at three-fourteen in the afternoon, seen in profile, should be indicated by the same noun as the dog at three-fifteen, seen frontally."[20]

e(x/nd)ogenous (e(x/n)·(/d)o·gen·ous) [ɪk 's/en'dɒdʒ.ɪ.nəs], a. If you look at the skin of your body as the borders of your system, my words entering your mind are exogenous, they originated from outside of you. But what if we decide to draw the outline of a system around us both, around the whole situation of me consciously leaving these words behind for you to pick them up. You, me, this text, we become a closed system in which there is no exogenous entity. All flows of thought and information stay purely endogenous, resulting from the inside. Like vesicles floating around in the cytoplasm of a cell. The distinction of e(x/nd)ogenous entails defining which →membranes we perceive as the definitive border, with all interior enclosed units thus becoming fluctuating agents. This distinction also necessitates defining to which extent we are willing to look back in time. Is there even something like a closed system? Looking again at our exchange through this text, enclosing this system would mean to neglect the →biome of outside thoughts influencing both your and my thought milieu. It entered and shaped us, but when does it become endogenous to our systems? When is it enclosed by enough membranes, altered enough, to make it originate from within (→symbiogenesis)? When does a →Fremdkörper lose its foreignness? When does its arrival cease?[21]

Fremdkörper (Fremd·kör·per) ['fʁɛmtˌkœʁpɐ], n., (German: foreign body/ies (both sg. and pl.)) When words are inserted that do not belong to the language used, when two languages collide, these words become transplants (→context). They disrupt the reading, we stumble over them, are unsure of their sounds, their meaning. A Fremdkörper is a foreign body. And although it is composed out of the same Latin letters as the body of text, our knowledge about the boundaries or identities of languages makes it embody the foreignness it describes.[22]

There are these moments in which "the present stretches and stretches beyond the present, suddenly and violently ceases to be present, ceases to be, ceases to resemble itself, a motionless trajectory that does not move forward."[23] These are the moments in which the feeling of

[20] "Funes, His Memory" In: Jorge Luis Borges, Collected Fictions, trans. Andrew Hurley (London: Penguin Books, 1999), p. 136 and referring to Cavarero, Towards a Philosophy of Vocal Expression, p. 47 - 53

[21] Referring to Nancy, Der Eindringling (The Intruder), p. 7

[22] An important reference regarding the usage of different languages in one piece of writing is Gloria Anzaldua's Borderlands/La Frontera

estrangement settles back into my heart. Do you recognize what I am describing? This feeling resting right there, in your heart, sometimes asleep sometimes awake, but always present even though you perceived and learnt about this world for many years. Even though you are able to make predictions of how it will behave, even though you are able to navigate within it. You know that the sun feels hot on your skin, that you cannot hold your breath for too long. You know that you have to eat, that you cannot continue to think, that your existence gets blurry with too little sleep over too many days. That you have to satisfy society to be able to live comfortably (→coherence). That losing the things you constructed to give meaning to all this, will set you adrift –
One day without you realising it, this feeling crept in. And since then, it seems like "a general law of intrusion [emerged]: There is not a single intrusion because it multiplies, identifying itself in its renewed internal differences."[24]

A seed enters a mind. No, a seed bears too much of a promise. Maybe it is not a seed. Maybe it is a grain of sand. Enclosed by the soft tissue of the brain, it irritates. It rubs, it scrapes, it wounds, and as a reaction the body responds.
How does a body respond? It is an immune response. A response tailored by previous experiences, encounters - by an identity.[25] The stimuli, the Fremdkörper, is either decomposed or it remains and is enclosed. It is changed. Stays foreign to the body and yet is its own. Develops on the outside as well as on the inside. And even though its foreignness is combatted, even though it is constantly being appropriated, what it becomes stays a disturbing presence. And when it is extracted, what remains is a wound, a negative space, still reminiscent of the once present cyst.

Immunity seems to be inevitably linked to the concept of Fremdkörper, to a body being foreign to a system. Foreignness can only settle in, firstly, if there is a →compartmentalisation of the self and the other, but secondly, only if there is an immune response reacting to it or repelling it. As I was previously referring to, Jean-Luc Nancy connects identity to immunity: "Here is what happens: Identity applies to immunity, one identifies in the other. One cannot reduce one without lowering the other."[26]
In order to define another body as foreign, there must be a compartmentalisation of the identity, of the self. The skin of our body is such a clear boundary of our being, but it encloses an unimagined scope of foreignness.

[23] Jean-Luc Nancy, "Ex Nihilo" In: Der Eindringling: Das fremde Herz (The Intruder), trans. by the author (Berlin: Merve Verlag, 2000), p. 55

[24] Nancy, Der Eindringling (The Intruder), p. 5

[25] Again, referring to the connection of immunity and identity described by Jean-Luc Nancy, see footnote 13

[26] Nancy, Der Eindringling (The Intruder), p. 35

Microbiota reside on our skin, in our saliva, in our lungs and in our gastro-intestinal tract.[27] "To understand what creates the unity of a living being consists of determining how it is the unity of a plurality."[28] In this sense, distinguishing between self and not-self is not a distinction between →e(x/nd)ogenous. What then are the criteria for the immune system to perform this discrimination? An especially challenging endeavour, as the self exists in symbiosis with numerous extraneous organisms, while endogenous units can develop to proliferating (→proliferation) threats. Particularly autoimmunity itself, the constant reactions on endogenous antigens, appears to be crucial for an organism's →homeostasis.[29]

The site of interactions with the immune system is the surface. Here cells, bacteria and viruses display specific antigens on which the immune system interacts. What is synthesised in the cells of our body is even directly reflected back in what is presented on the cell surfaces. In this way viral infected and tumour cells can be differentiated from regular ones.[30] Linking this thought back to compartmentalisation, enclosures become a site of identification, of representation of what occurs inside.

Thomas Pradeu, in his book The Limits of the Self: Immunology and Biological Identity, steps away from the discrimination of (non-/)self and proposes another approach: As the immune system constantly has to interact with e(x/nd)ogenous units as part of the organism, threats are recognized by the unusuality of their antigenic patterns. Units are distinguished as belonging to the organism by their continuous interaction with it, rather via a direct recognition of their surface patterns as (non-/)self.[31]

The feeling of estrangement I was describing at the beginning of this section now becomes a moment of refusing to continue the constant interaction with the outside. An introspection that changes one's interfaces to the surrounding. The feeling of estrangement makes one a Fremdkörper. And even when disappearing, when one is forced to turn outside again, the primordium that once appeared remains, waiting for the next moment to erupt.

[27] Most interestingly these are all sites that are located on the interfaces in our organism (→compartmentalisation).

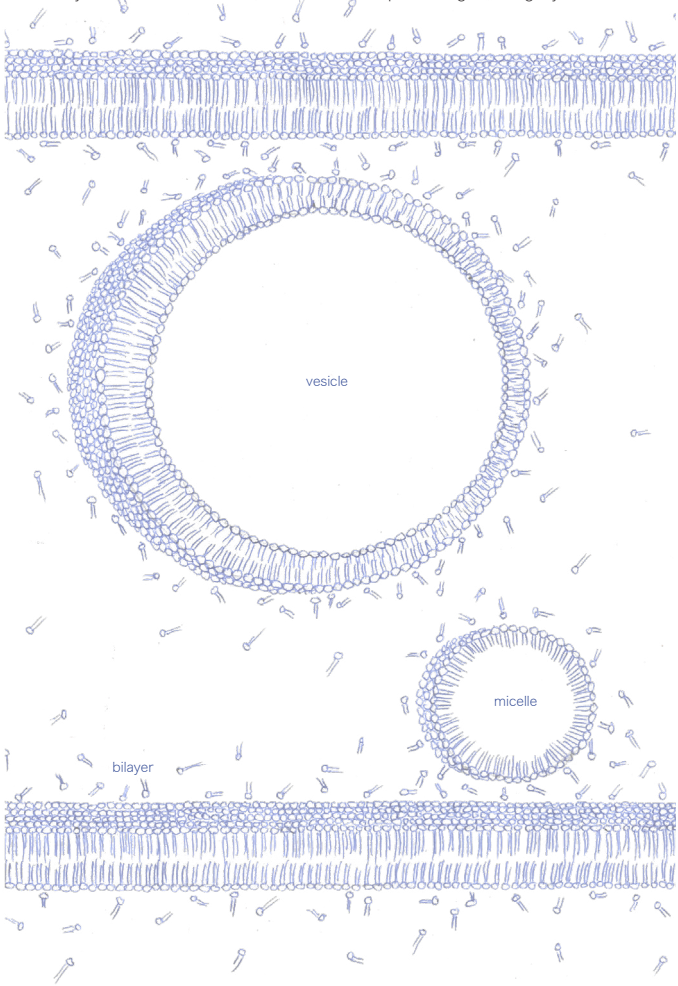
[28] Thomas Pradeu, The Limits of the Self: Immunology and Biological Identity, trans. Elizabeth Vitanza (New York: Oxford University Press, 2012), p.2

[29] Referring to Pradeu, Immunology and Biological Identity, p. 85

[30] Referring to Pradeu, Immunology and Biological Identity, p. 88

[31] Referring to Pradeu, Immunology and Biological Identity, p. 132

amphiphilic bodies (am·phi·phi·lic bod·ies) [æmfɪˈfɪlɪk ˈbɒdiz], n. Aggregate (→aggregation) on my skin, enclose me. Can you soften the harsh transition between me and the surrounding space? Can you filter what enters my mind? What is trespassing this protecting, blurring layer?



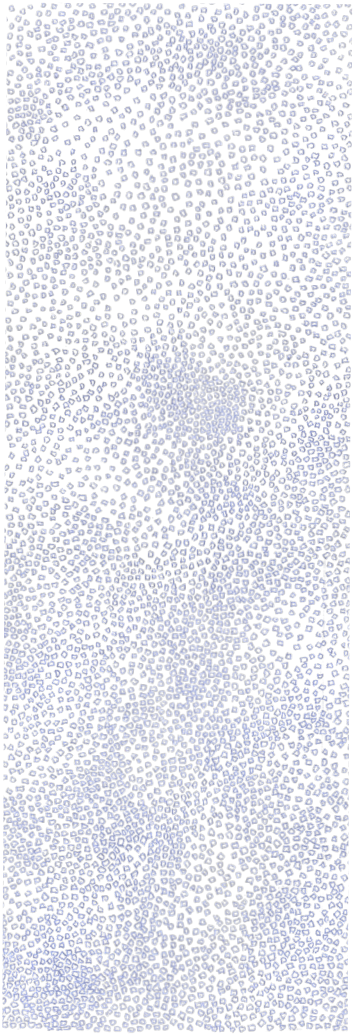
Amphiphiles are molecules that possess both hydro- and lipophilic compounds. Their two ends therefore contain two opposing, mutually exclusive properties at the same time. In nature they occur in various →contexts: they allow the simultaneous existence of opposing substances in a very confined space by aggregating around one of the substances in the form of a micelle. Or in the case of biological →membranes they form bilayers, which function as a filter controlling permeability. To pass through, molecules have to diffuse through both hydro- and lipophilic areas or require membrane-bound transport proteins that secure their path inside.[32]

membrane (mem·brane) ['mem.breɪn], n.
Until here I have only considered writing as an enclosure of already existing matter (→compartmentalisation). The thoughts aggregated (→aggregation) and matured before being enclosed, being frozen in time, before undergoing exocytosis. However, at this point I need to shift my focus: Like an enclosed vesicle that lingers before entering exocytosis, like a writer ponders on and adjusts a piece of work before placing it out of reach - What does it do to the process of thinking to be confronted with one's own captured thoughts? Does not the composition of a written piece arise from the exchange between the membrane-enclosed vesicle, that has just been formed, and the surrounding medium?

What happens if there is an enclosed space of different concentration of dissolved matter, or of thoughts and ideas? The system strives to balance this concentration to that of the surroundings, it wants the space to become a representation of everything that is happening and has happened around it. This tendency is frustrated by the membrane that only permits selective trespass across its boundaries (selective permeability). Only considered ideas manage to enter and the thoughts that accumulate and interact in the vesicle do so in a way that sets them apart from those elsewhere. But the permeability of the membrane is a two-way street and as some ideas enter, some exit, some find their way back from the page into the mind, mingling with and influencing its processes.
And after a considered time, after this enclosed space has been exposed to this equilibrating diffusion in both directions for quite a while, it will enter exocytosis. It will carry with it images and ideas that seem to originate from within but had the opportunity of interacting within an →e(x/nd)ogenous space.

Let us remain a little longer with this idea of diffusion. Imagine an enclosed space that contains gas. Each gas molecule moves randomly. The individual arrangements of the

[32] Alberts et al., Molekulare Zellbiologie (Molecular Biology of the Cell), p. 59, 399



molecules can and will be in disequilibrium, nevertheless the distribution integrated over time is homogeneous.

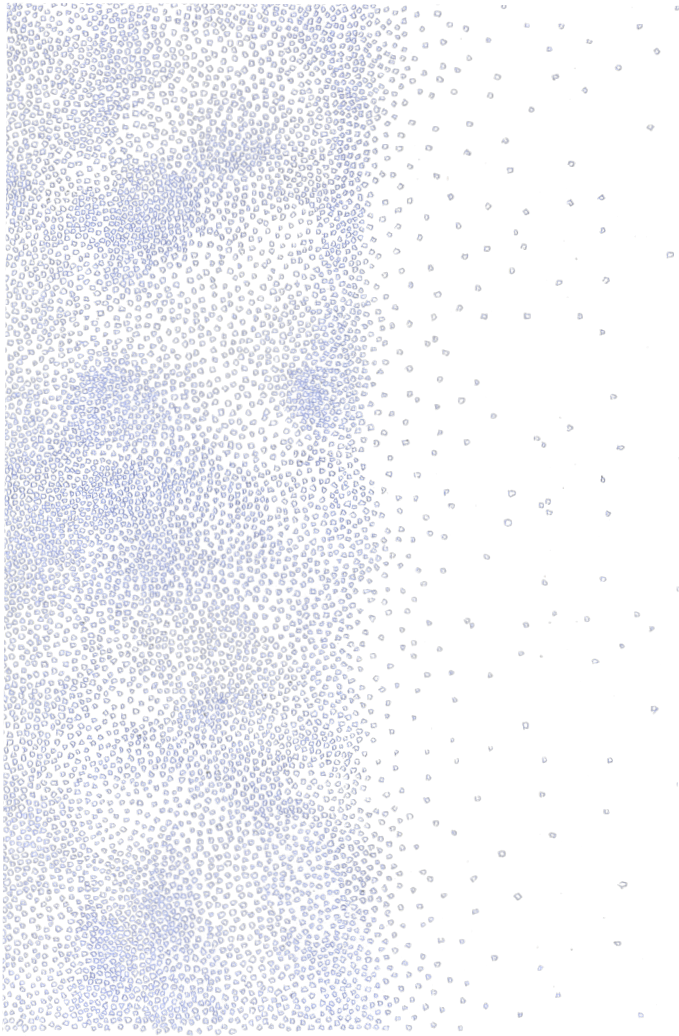
Why is that so? If one would map the possible pathways of arrangements from the moment of removing the enclosure, one would in fact find pathways that are able to maintain their ordered state. Where, for example, the movement of the gas molecules remains solely in the formerly confined space. However, although every pathway is equiprobable, the amount of possible pathways that include the space beyond the confined region are vastly more making the diffusion of molecules into this space so likely as to be certain.

In terms of Boltzmann's Thermodynamics this behaviour is described by introducing the physical quantity entropy. It relates the order of a macroscopic state to the amount of micro configurations that the system can take on. The behaviour of the gas molecules is described by the second law which states the inability of entropy to decrease in a closed system.[33] The second law of Thermodynamics thus assumes that initial conditions will be forgotten over time. Differences will be levelled out.[34]

When applying this law to our surrounding, one cannot help

[33] Referring to David Halliday, Robert Resnick, Jearl Walker: **Halliday Physik 3. Auflage** (original title: Fundamentals of Physics 10th edition), trans. Michael Bär, Matthias Delbrück (Marburg: Wiley-VCH GmbH & Co.KGaA, 2018), p. 696 - 700

[34] Prigogine, Stengers, **Order out of Chaos**, p. 187



but remain wondering how order appeared "out of [···] hypothetically undifferentiated initial environment[s]. Where does the instability of the homogeneous come from? Why does it differentiate spontaneously?"[35] Is the energy contained in microscopic, local inhomogeneities, which emerge and subside in the macroscopic longing for homogeneity, a source of order?

Alicia Juaerrero, in her book Context Changes Everything: How Constraints Create Coherence, coins "→constraints [···] [as] the set-design of [···] [uneven possibility landscapes] within which subsequent events can occur."[36] And at this point, let me guide you back to the concept of membranes. They themselves are interfaces that function as filters and thus as a specific kind of enabling constraint.[37] By using the equalising pressure of diffusion, by using gradients in the concentrations of solutes, they create the possibility for differentiation. The "isolation [provided by membranes] delays the homogenising pressure of the second law by keeping conditions away from equilibrium longer than otherwise."[38] And interestingly enough, they themselves consist of molecules that have gradients incorporated (→amphiphilic bodies).

constraint (con·straint) [kən'streɪnt], n.

Coordination patterns (→coherence) can emerge as soon as the energy flow is no longer homogenous. Molecules that behaved close to equilibrium like "hypnons"[39] – sleepwalkers which are unaware of each other – awake and build up interdependencies and order. Constraints operate precisely in this way: They affect the homogeneity of the energy distribution. "Constraints are entities, processes, events, relations, or conditions that raise or lower barriers to energy flow without directly transferring kinetic energy."[40] These interactions leave marks, they create and transmit information. The interplay of constraints forms a coordination pattern that weaves together separate entities into emergent, coherent wholes. Constraints take shape in different forms: In gradients and polarisations that guide the energy flow, in filters and interfaces (→membrane) that direct and channel it, in catalysts that affect its speed or in feedback loops that react on it according to the response of the environment.[41]

[35] Prigogine, Stengers, Order out of Chaos, p. 38

[36] Juarrero, How Constraints Create Coherence, p. 50

[37] Referring to Juarrero, How Constraints Create Coherence, p. 41

[38] Juarrero, How Constraints Create Coherence, p. 112

[39] Prigogine, Stengers, Order out of Chaos, p. 180 - 181

[40] Juarrero, How Constraints Create Coherence, p. 40

[41] Referring to Juarrero, How Constraints Create Coherence, p. 40 - 41

nesting (nest·ing) ['nes.tɪŋ], n. This word has stuck in my mind since it crept in at the beginning of this text. Maybe our brain doesn't work that differently from our intestines. It seems like my mind is just accumulating a →biome of parasitic or symbiotic thoughts with which to process the incoming information.

I wonder how my thought milieu came into being. With all these vesicles of thought floating around, what is expelled, what nests? With all these voices discovering, whispering, courting,[···] screaming, to which do we listen? Where and why is a →nucleation happening that stimulates a proliferating (→proliferation) →aggregation?

biome (bi·ome) ['baɪ.əʊm], n. Like an organ, a text demands an external processing unit, demands a connection to different other organs to function. As "life [···] does not occupy any particular organ but [···] cannot exist without organs."[42] What does the creation of a body of work – a body of text – imply? Maybe more artificially, as it happens in the making of my own thought milieu, a text demands the introduction of a →biome of parasitic or symbiotic thoughts, even physically finding a way into it. Texere from weaving – to weave one's thoughts into an already existing thought milieu, to weave exogenous thoughts into one's own (→Hirngespinst).

Are your eyes still listening? Did they decide to linger on my words, do your fingers still touch the paper of these pages from time to time? These white, thin, blank sheets, made of interwoven fibres - the text(ure) that holds the traces of someone's proliferating and aggregating thoughts.

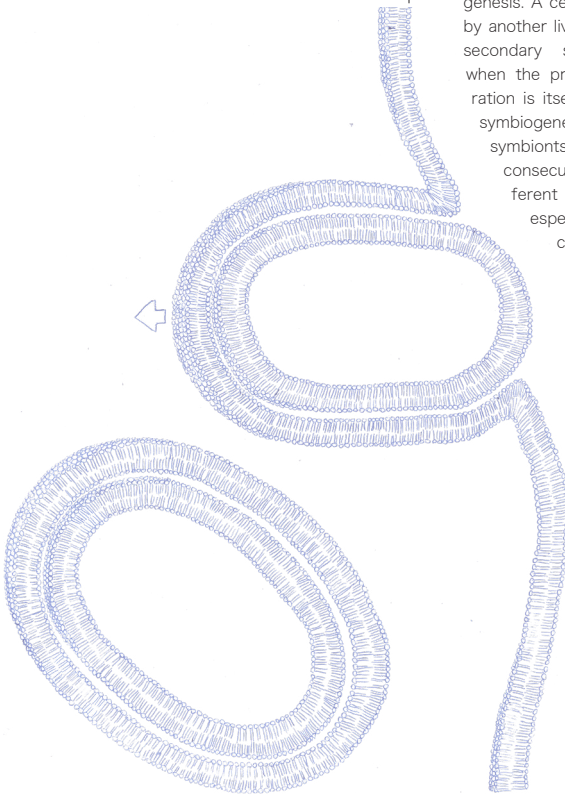
symbiogenesis (sym·bi·o·ge·ne·sis) [ˌsɪm.baɪˈəʊ.ˈdʒen.ə.sɪs], n. A complete organism was swallowed along with its →membrane, but instead of being digested it persisted and integrated into the enclosing system. Its own membrane was enclosed by another. This mere idea of symbiogenesis, the idea of enclosure in enclosure, was the grain of sand that entered my mind and, by its constant irritation, rubbing, scraping, wounding, in the end gave space to this whole agglomeration of thought (→nucleation). The cell organelles that have emerged from this symbiosis, from cells living inside of each other, perform the production of usable, chemical energy for the cells. This energy production takes place at membrane-bound sites, as it utilises gradients that occur across the membranes.[43] Perhaps this is the reason why →compartmentalisation is such an integral part of our way of thinking. Do we, as in cells, use the tension created by different interfaces to generate and support

[42] Nancy, Der Eindringling (The Intruder), p. 29

[43] Referring to mitochondria and plastids (such as chloroplasts), see Alberts et al., Molekulare Zellbiologie (Molecular Biology of the Cell), p. 488 – 487, p. 510 – 515, p. 520 - 521

differentiation?

And on another note, how interesting that, like in our intestines, such a crucial part of the function of an organism, as the production of usable energy, is played by or derived from a →Fremdkörper. A Fremdkörper whose arrival never ceased, that still retains its original membranes, parts of its original DNA, that is able to reproduce itself independently without structural coupling to the host's cell division.



Symbiogenesis can occur in multiple ways, on multiple scales. What we have looked at until now is primary symbiogenesis. A cell is being incorporated by another living organism. Whereas secondary symbiogenesis occurs when the product of this incorporation is itself engulfed. Secondary symbiogenesis results in endosymbionts that are enclosed by consecutive membranes of different organisms. And it is especially this image of consecutive enclosures that can be connected back to the process of written communication. Is it not symbiogenesis that occurs when my thoughts, enclosed by textual verbalisation, are re-enclosed as they enter yours?

nucleation (nu·cle·a·tion) [ˌnjuː.kliˈeɪ.ʃən], n. "Events are like crystals, they become and grow only out of edges or on the edge."[44] Did you ever breed crystals? It is a very

simple endeavour: Just supersaturate water by raising its temperature and by dissolving an immense amount of salt or sugar into it. Give it some time to cool down and then you should see it: The first solid structures start emerging, forming, growing. If you want to influence where this growth occurs, hang a piece of cord into the solution before cooling it down. And instead of forming on the bottom of your container, the crystals should claw into the fibres of the string as they slowly advance in both directions of the cord, seizing more and more space while gaining more and more substance.

Nucleation marks the first step of the formation of this phase-transition, forming the site upon which all the future particles will aggregate (→aggregation). The formation of this site is not a one-off process, but a statistical one. In the existing phase, there are constant fluctuations from one phase to another, which emerge and subside again, until such a large transition occurs that it is more favourable for this transition to grow than to fall back into the previous phase (→persistence).

The onset of tumour growth, an unregulated →proliferation, shows a similar behaviour: Individual tumour cells fluctuate, they have to assert themselves against cytotoxic cells that inhibit and destroy their growth.[45] In general, systems close to phase-transitions are subject to "a competition between stabilisation through communication and instability through fluctuations. The outcome of [this] competition determines the threshold of [their] stability."[46] Here again the possibility landscape of the fluctuations is defined by →constraints. Contaminations and edges, such as the inserted cord, function as constraints that hold a higher probability for nucleation.

The generation of ideas is a fluctuating process. When this process becomes the centre of a practice, one becomes exposed to a constant, arbitrary blossom and withering of ideas. Periods of searching alternate regularly with cumulated productivity. The excitement about the emergence of ideas goes hand in hand with the experience of their decay. The insertion of contaminations or edges into a mind to nucleate an aggregating growth, to establish conditions that more easily favour this transition of state, seems to be quite a fitting analogy for the creative process.

context (con·text) [ˌkɒn.tekst], n. "We can isolate a crystal, but cities and cells die when cut off from their environment. They form an integral

[44] Gilles Deleuze, The Logic of Sense, trans. Mark Lester and Charles Stivale (London: The Athlone Press, 1990 (1969)), p. 9

[45] Referring Prigogine, Stengers, Order out of Chaos, p. 188

[46] Prigogine, Stengers, Order out of Chaos, p. 189

part of the world from which they draw sustenance, and they cannot be separated from the fluxus that they incessantly transform."[47] In the cases of entities that are closely intertwined with their surroundings, like cities and cells, separation only becomes possible if the cutting off is connected to a subsequent embedding. Is not transplantation, a decontextualisation, an important process that needs to be looked at more closely when contemplating context?

In his essay Intentional Self-Organisation: Emergence and Reduction, Towards a Physical Theory of Intentionality Henri Atlan locates the appreciation of the meaning of a system to its interface to the environment (→compartmentalisation).[48] Here context emerges as the seam in between them, that can be loosely connected at a few spots or tightly interwoven. Separation and re-embedding – transplantation - is a very fragile, instable endeavour. Instead of ripping out the transplant by force, each seam, that embeds it in its context, has to be found, understood and carefully disconnected. This demands an understanding of both the transplant and the host. What exchanges does the transplant have with its initial environment? What enters its enclosure, what is leaving it? Can preparations be made to mitigate the host's repulsive immune response? Is it possible to establish conditions that converge as closely as possible to the requirements of the transplant? Can all the open seam holes be sewn in again? Can they all be reattached to the unfamiliar environment?

But that is not all: Even if successfully transplanted this forced incorporation will inevitably be of a fragile nature, it will be unable to tend to its own →homeostasis and will demand constant maintenance. By continuously repressing the host's immune response, and thus interfering with its identity, and by constantly responding to the transplants needs.[49]

Earlier I connected producing an Artwork to catalysing or cultivating →proliferations of the reality around us. But maybe it is not only that. After catalysing and cultivating, these proliferations are transplanted under careful protection to different contexts and maintained in them for a long enough period of time to be perceived.[50]

In contrast to the comparison of a work of Art to an artificially regulated proliferation, an unregulated, excessive, cancerous growth tears itself out of its context. It loses its differentiation, its specific and char-

[47] Prigogine, Stengers, Order out of Chaos, p. 127

[48] Referring to Henri Atlan, Selected Writings: On Self-Organization, Philosophy, Bioethics, and Judaism (New York: Fordham University Press, 2011), p. 66

[49] Referring to Nancy, Der Eindringling (The Intruder), p. 33

acteristic functions that it performed in the whole. Through excessive proliferation it forms its own separate whole, with its own context, its own identity and its own need to persist (→persistence). Tumours draw the supply of blood to themselves; they develop their own needs, irrespective of the former whole to which they belonged.[51] They are →Fremdkörper that emerge in their familiar environment. Our ability to repair and renew our body - that we are a "conatus at an excrescent infinity"[52], an infinity that always seeks new forms, never exhausted, never lingering – thus remains an entrypoint for jeopardising mutations.

homeostasis (ho·me·o·sta·sis) [ˌhəʊ.mi.əʊˈsteɪ.sɪs], n. Taking one step further: From a bacterium to cancerous growths to the human body to social structures - the same inclination of established systems to persist (→persistence) becomes observable: "Each thing, as far as it can by its own power, strives to preserve in its being".[53] This conatus doctrine, devised by Benedict de Spinoza, seems to directly reflect on homeostasis. Homeostasis as referring to all processes that maintain a system's metastability. To processes which counter the tendency towards disorder.[54] These processes take shape in very diverse forms over a range of many different scales: At the cellular level, homeostasis already occurs through proteins that maintain gradients at →membranes.[55] Whereas, on the scale of the human body an important mechanism that ensures homeostasis is the immune system.[56] The distinction between →Fremdkörper and self, and with it the identification of the self, thus seems to be crucial to ensure homeostasis.

In the light of the conatus doctrine, every →nucleation that exceeds the threshold of forming a preserving, interlocking →constraint regime thus develops the inherent inclination to persist, to identify and enhance itself.

persistence (per·sist·ence) [pəˈsɪs.tᵊns], n. Organisms last longer than their cells

[50] I am referring here to the following quote even though I am not agreeing to the idea of contextlessness. Even a completely closed off system remains in a context.
"Art, much like any language, operates with symbols to transfer information. And, as in any language, whether natural or artificial (such as a mathematical formula), symbols without context are useless" Andreas Schinner, "Hypotheses Non Fingo or When Symbols Fail" In: Drawing a Hypothesis: Figure of Thought, ed. by Nikolaus Gansterer (Vienna: Springer-Verlag, 2011), p.139

[51] Referring to Alberts et al., Molekulare Zellbiologie (Molecular Biology of the Cell), p. 767 - 771

[52] Nancy, Der Eindringling (The Intruder), p. 49

[53] "Ethics III: Of the Origin and Nature of the Affects" In: Benedict de Spinoza, A Spinoza Reader: The Ethics and other Works, trans. Edwin Curley, (Princeton: Princeton University Press, 1994), p. 159

[54] Referring to Antonio Damasio, The Strange Order of Things (New York: Pantheon Books, 2018), p. 27

[55] Such as the sodium-potassium pump

[56] Referring to Pradeu, Immunology and Biological Identity, p. 164

Lineages longer than their specimens. Art history longer than the endeavours and impulses of individuals longing to express themselves. Organisms, lineages, Art history, →homeostasis – in all [these macro] realisations "what persists [⋯] is not the material substrate of concrete particulars but the stored information embodied in →constraint regimes."[57] Mereological wholes bear in common that they are realisable through a variety of microstates. This variety results in a heightened ability to persist than the ability of individual parts would allow. Simultaneously, it supports the capacity to evolve.[58]

Just like Alicia Juaerrero I am now turning to the article Stability and its Manifestation in the Chemical and Biological Worlds by Robert Pascal and Addy Pross. What they propose is an overarching principle, the persistence principle, that encloses within itself the Thermodynamic second law, while bridging the gap between the behaviour of animate and inanimate systems. Their formulation "Nature seeks persistent forms"[59] includes the two forms of stability: The energetic form in the sense of entropy and the more general, temporal form in the sense of persisting (which does not necessarily presuppose energetic stability). Thermal equilibrium, the heat-death, the absence of constraints, the "no-thing that persists as itself"[60] is contained in it just as zero is part of the numbers. And, more importantly, the persistence principle recognizes sprouts of local, temporal seeds of form as well as self-maintaining dynamics through arising and interlocking constraints as part of the framework. In the end the persistence principle appears as a modified formulation of Spinoza's conatus doctrine (→homeostasis).

apoptosis (ap·op·to·sis) [ˌæpəpˈtəʊsɪs], n.

Within the same framework in which growth can jeopardise identity, programmed death can ensure its →persistence. Apoptosis is programmed cell death, a procedure that happens in our bodies on a much larger scale than we could ever have imagined. It is a counterforce to our constantly renewing systems. A counterforce that keeps →proliferation at bay, which can support differentiation and the development of form. Apoptosis occurs constantly during embryogenesis, shaping the final form like a sculptor's knife. Maturation processes thus seem to be inevitably linked to programmed cell death. In its extreme forms, in embryogenesis it causes the separation of our fingers and toes or leads to an amphiphile's

[57] Juarrero, How Constraints Create Coherence, p. 129

[58] Referring to Juarrero, How Constraints Create Coherence, p. 134

[59] Robert Pascal, Addy Pross, Stability and its Manifestation in the Chemical and Biological Worlds, Chem. Commun., 2015, 51:16160, p.16162

[60] Juarrero, How Constraints Create Coherence, p. 134

metamorphosis from larval stage to adult.[61]

Ideas, like our bodies, are exposed to maturation processes that involve constant readjustment and apoptosis. In a sense, differentiating them, refining their form, involves incessantly neglecting or rejecting other possible pathways.
But not only the shaping of ideas is coloured by apoptosis: On a regular basis, one has to depart from the once nurtured to make space for emerging →nucleations. Lingering too long in an ever-changing environment would decelerate one's exchange with it until it stops altogether. Diminishing one's own cherished, accumulated, carefully interwoven thoughts (→Hirngespinst), letting go of one's attachment to them, is inevitable in striving towards a continuous practice, a whole which is created by the interdependencies of individual parts. And because →context, like the old scars, is functioning as contaminations and edges, the newly emerging will hold traces of the past.

coherence (co·her·ence) [ˌkəʊˈhɪə.rənts], n.
Coherence is a term that is tightly interwoven in this text. In this mapped →Hirngespinst it finds its place at the core; countless threads lead to and from it.

But just as it is tightly interwoven in this Hirngespinst, it is likewise tightly interwoven in different disciplines.[62] This →glossary understands coherence as a unity relation of individual parts[63] created through coordination patterns that are formed by →constraints. These coordination patterns support heterogenous interdependencies which govern the behaviour of the individual parts - welding them together into wholes. In spite of the fact that interactions among individual parts only occur on a local range, they then start behaving in a way that they seem informed about the overall state of the whole.[64]

In our bodies, cells are constantly adapting to the requirements of the entire organism. The interplay between their own interest as individuals and their responsibilities to the whole will steer their behaviour. And in this set of responsibilities, →proliferation and →apoptosis are two counterparts that play into each other's hand to ensure the organism's →persistence.[65]

[61] Referring to Alberts et al., Molekulare Zellbiologie (Molecular Biology of the Cell) p. 683 - 685

[62] In common parlance, it is used for both the ability to form a unified whole as well as to indicate the clear relationship between parts.
In Physics, two waves are coherent if their relative phase is a continuous function of time. Coherent waves are able to form an easily distinguishable, stationary pattern (interference pattern). Again constraints, here in the form of these similar characteristics of the waves that must be fulfilled, lead to an emerging whole.

[63] Juarrero, How Constraints Create Coherence, p. 40

[64] Prigogine, Stengers, Order out of Chaos, p. 171

Local dissolutions of these coordination patterns can endanger the metastability of a whole, as incompatible coordination patterns (→Fremdkörper) may emerge. In these cases, one idea or image can lead to an excessive growth, a growth that can fill out an entire being, a →Hirngespinst that is taking over.

Hirngespinst (Hirn·ge·spinst) [ˈhɪʁngəˌʃpɪnst], n., (German: product of a misguided or overheated imagination; fantastic, mislead, absurd ideas – the word consists of the word for brain (Hirn) and Gespinst, which means a spun, delicate fabric) Ich spinne mich ein in meinen eigenen Gedanken, verheddere mich in ihnen, erwache geborgen in einem Kokon.[66]

And somehow, I ended up entangling you with it as well.

[65] Referring to Alberts et al., Molekulare Zellbiologie (Molecular Biology of the Cell), p. 767

[66] I spin myself into my own thoughts, get tangled up in them, awake safely in a cocoon.

biome of parasitic and symbiotic thoughts (bi·ome of par·a·sit·ic and sym·bi·ot·ic thoughts)['baɪ.əʊm/ əv/ ˌpær.ə'sɪt.ɪk/ ænd/ ˌsɪm.baɪ'bɒt.ɪk/ θɔːt], n.

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