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RESEARCH ARTICLE

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# Architecture's Allagmatics

Andrej Radman 



## Abstract

The chapter addresses the topic of architectural intelligence whose sole purpose is to create affordances and make experience 'stand on its own', apart from architecture and distinct from the architect. The principles of sensation constitute the principles of composition of an existential niche whose structure reveals the genetic conditions of real experience. The argument is unpacked across three sections by reference to the Simondonian concept of allagmatics defined as the theory of operations. The first section 'Ticks and Cats' argues in favour of inserting an interval between the input and output, with the aim of debunking the mechanistic allegiance to linearity and promoting the concept of quasi-causality. In the second section 'Ducks and Rabbits' the affordance theory meets contemporary neurosciences to revamp the concept of metastability and plasticity. Its goal is to reframe the subject as the effect of (architectural) affect. The concluding radical empiricist section 'Zebras and Flies' revisits the lesson of the Leibnizian *Monadology* to tie sense to sensibility and matter to manner. The overall ambition of the chapter is to contest the philosophy of representation through the concept of difference and multiplicity.

**Keywords** Ethico-aesthetics, Machinic desire, Radical perspectivism, Schizoanalytic cartography

The name allagmatic could be given to such a genetic method that seeks to grasp individuated beings as the development of a singularity that unifies (on an intermediate order of magnitude) the overall energetic conditions and material conditions; in fact, we should note that this method does not involve a pure causal determinism through which a being would be explained when its genesis in the past would have to be accounted for. In fact, the being extends in time the meeting of the two groups of conditions that it expresses; it is not just the result but also the agent, both the milieu of this meeting and the extension of this realized compatibility. In terms of time, the individual is not in the past but in the present, for it only continues to conserve its individuality to the extent that this constitutive combination of conditions persists in and is extended by the individual itself (Simondon, 2020, p. 74).

*I noticed, one fine day, that in all theory time serves*

*no purpose, if it does nothing. Yet I said to myself, time is something. Therefore it acts. What can it do? Simple good sense responds: time what prevents that everything be given at once. It delays, or rather it is delay. It must therefore be a kind of elaboration. Is it not then the vehicle of creation and choice? Does the existence of time not prove that there is indeterminacy in things? Isn't time itself this indeterminacy? (Bergson, 2007).*

*'Culture' is everything we don't have to do. We have to eat, but we don't have to have 'cuisines' [...]. We have to cover ourselves against the weather, but we don't have to be so concerned as we are about whether we put on Levi's or Yves Saint-Laurent. We have to move [...], but we don't have to dance. [...] I call the 'have-to' activities functional and the 'don't have to's stylistic. [...] The first thing to note is that the whole bundle of stylistic activities is exactly what we would describe as 'a culture' [...] (Eno, 1996, p. 317).*

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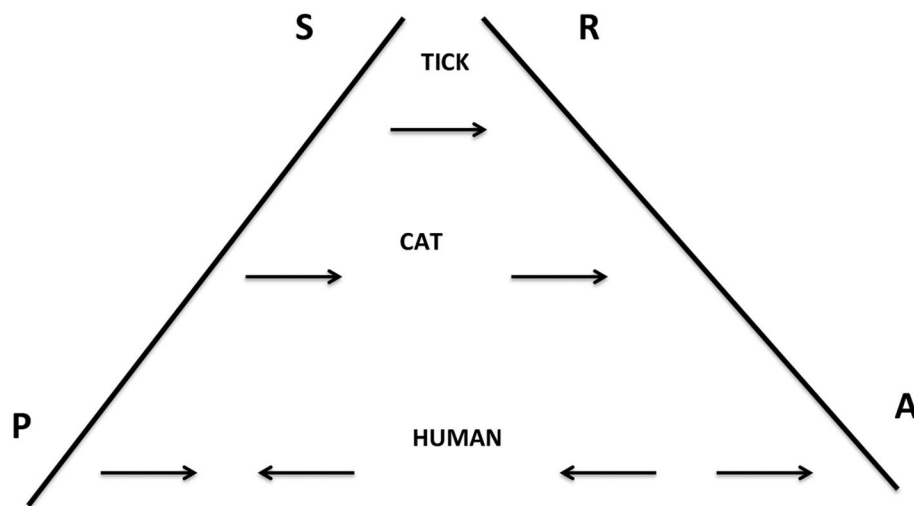
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**Fig. 1** Inserting the interval between stimulus **S** and response **R**. The degree of mnemonic detachability is measured by the width between the two poles and the 'direction' of causality. The recursive causality designates the cause / perception **P** coming into being with the effect / action **A**. In the words of Simondon, this is "a [neofinalist] conditioning of the present by the future, or by what up to now does not exist (Simondon, 2017, p. 62)." Source: Author

## 1 Ticks and cats

The three-partite chapter draws on the anti-substantivist and anti-hylomorphic legacy of two significant Deleuze and Guattari's interlocutors: Raymond Ruyer and Gilbert Simondon. Ruyer vehemently opposed the logic of mechanism without regressing to (active) vitalism. He concurred with Alfred North Whitehead who famously dismissed the concept of 'simple location' as a bias in favour of the tangible and self-presence (Whitehead, 1948). Ruyer's masterpiece *Neofinalism*, yet to be fully appreciated in architectural circles, is an ode to multiplicity or 'absolute form' (Ruyer, 2016). The title is to be read as a challenge to the hegemony of the step-by-step causation and partes-extra-partes mereology. According to Ruyer, non-locality is the key, not only to the question of subjectivity, but to the problem of life itself (p. 94).<sup>1</sup> Simondon too shies away from the metaphysics of presence. For him, the process of individuation cannot be grasped on the basis of the fully formed individual. In other words, the knowledge of individuation is the individuation of knowledge (Simondon, 1992). Simondon's highest ambition in *On the Mode of Existence of Technical Objects* was to integrate culture and technics (*tekhne*). The conviction that culture need not be antagonistic to technology is particularly pertinent to architectural intelligence. To paraphrase Marshall McLuhan, ecology starts where nature ends: "Ecological' thinking became

inevitable as soon as the planet moved up into the status of a work of art (McLuhan, 1974, p. 49)." Simondon opposed structuralism with the theory of operations that he named *allagmatics* (Adkins, 2007; Radman, 2023).<sup>2</sup> The transition from operation to structure is machinic rather than structural insofar as it is system-making rather than systematic. The 'machinic' conception of consistency is thus determined neither by the naïve 'organic' autonomy of the vitalist whole, nor by the crude reductionist expression of the whole in the sum of its mechanical parts. While structures are by definition balanced, the thought must venture beyond the given – far from the equilibrium. The term 'plane of consistency' is in itself a sufficient clue to what is primarily at stake in the thought, namely the reality of abstraction. Tessellation (*planification*) of the Planomenon is an abstraction without being an achievement of reason (Deleuze & Guattari, 2005b, p. 507).<sup>3</sup> Consequently, architectural intelligence may be defined by the (unconscious and impersonal) capacity to insert an interval between the cause and effect – a margin of indetermination related to the non-entailment of open systems.

Let us draw an ethological diagram consisting of two diverging lines (resembling an image of a rail track in central linear perspective) (Fig. 1). The top part **S-R**

<sup>1</sup> The self-contained, sovereign subject is but a 'zombie concept'. Such concepts "carry a presuppositional force of such staying power that they tend to return no matter how many times you slay them (Massumi, 2019, p. 502)."

<sup>2</sup> Simondon defines an operation as a conversion of a structure in another structure.

<sup>3</sup> "The abstract machine exists enveloped in each stratum, whose Ecu-menon or unity of composition it defines, and developed on the plane of consistency, whose destratification it performs (the Planomenon) (p. 73)."

(close to the ‘vanishing point’) draws the stimulus (**S**) and response (**R**) close together as in the deterministic, i.e. mechanical mode of operation. The ‘conceptual persona’ dwelling in this range is a simple organism that cannot afford to break away from linear causality, such as a tick (von Uexküll, 1957; Bateson, 1977). The further apart the two lines the more severed the (linear) causal chain. Before we reach the bottom of the diagram where the stimulus **S** transforms into perception **P** and the response **R** into action **A**, the gap is sufficiently wide to be occupied by a more complex organism capable of play, like a cat. As Gregory Bateson rightly insists, a cat’s nip is very different from its bite (Bateson, 1972, pp. 141–46; Erlich, 2020). It does not conform to the (functional) if-then logic: *if* a tick smells a warm-blooded animal *then* it latches onto it. Rather, the nip is pretense or acting *as-if*, i.e. doing what it doesn’t *have* to do (Eno, 1996, p. 317). According to the third epigraph, play may qualify as (proto)culture, a style. Finally, at the base of the diagram **P—A**, a more complex non-mechanical (recurrent) causality pushes perception **P** and action **A** further apart. Its ‘telos’ is not subject merely to the material-energetic constraints but also to the informational or epistemic semiosis. In other words, ends and means here may come to be reversed. Take Hannah Arendt’s reference to the profoundly paradoxical Christian concept of ‘turning the other cheek’, which radically disrupts the cause-and-effect inevitability (Arendt, 1998, pp. 74–5). In doing so, one steps out of simple determinism towards Ruyerian *neofinalism* by way of Simondonian *technicity* defined as a force of psycho-social invention and cultural transformation. It may be argued that the diagram runs from the Spinozian *natura naturata* at the top towards *natura naturans* at its ever-widening bottom (Spinoza, 1963, pp. 56–57).<sup>4</sup> It brings to mind the apex-base relation from the famous Bergsonian cone of (pure) memory (Bergson, 2004, p. 197).<sup>5</sup> The divergence of lines effectively measures the (degree of) detachability of virtual wholes from the actual parts, memory from matter (time from space). Yes, there is isomorphism between the two, but without resemblance. This means that we can happily leave behind the skyhook category of the ‘imaginary’. Contrary to our deepest prejudice, the visible is no more real than

the invisible and memory is not a property of bodies. For Ruyer, bodies may be said to be properties of memory:

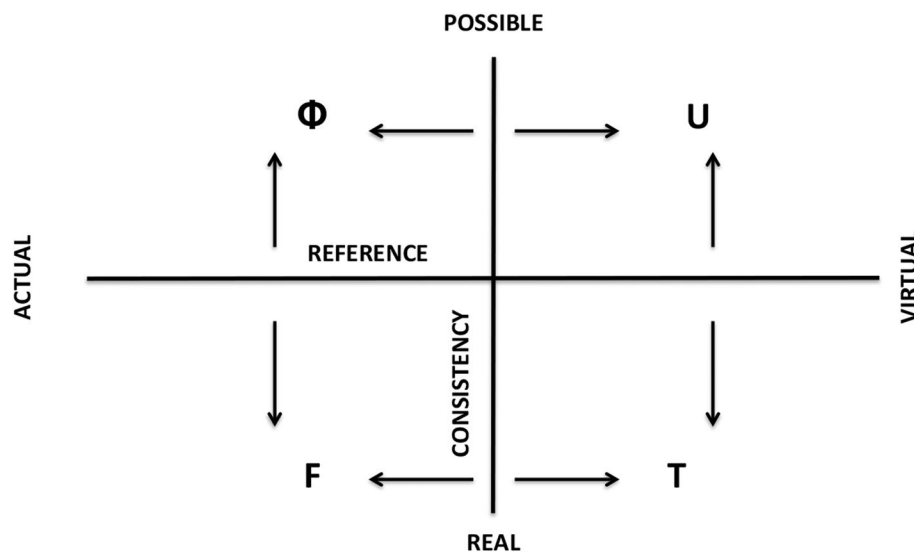
*The main difference between physical beings and the most complex organisms does not probably derive from the instantaneity or the absence of memory in the former but from a lack of detachment of this memory, which in physical beings is always inherent to the rhythm of activity, which is only ever ‘the form in time’ and does not constitute a transspatial ‘reserve’ clearly detached from the actual (Ruyer, 2016, p. 149).*

The co-determination of the actual and the virtual has been a life-long occupation of Guattari’s. His neologism *ethico-aesthetics* aptly dramatises the entanglement of action **A** and perception **P**. Putting experience first relegates the sciences to the second order of expression. The collective architectural enunciation (wrongly attributed to the will of the architect) renders the full coincidence of the body and its territory (as a simple location) impossible and undesirable. Guattari went on to develop a ‘schizoanalytic cartography’ where heterogeneous ontological domains – actuality, virtuality, possibility and reality – had to be thought together (Guattari, 2013) (Fig. 2). Metamodelling was his strategy to prevent things from becoming systemic and thus stratified (closed systems). The four ‘unconsciousnesses’ are: existential territory (**T**), universes of value (**U**), energetic and semiotic flows (**F**), and the machinic phylum (**Φ**). The ‘purposeless purpose’ of **Φ** is to draw the endo-referential and endo-consistent body ever further away from itself in the direction of exo-referentiality and exo-consistency. The fourfold offered a way out of the deadlock between the ostensible immediacy of the subject **T**, and the constitutive distance of the system **Φ**.

In contrast to the evolutionary mechanism of passive adaptation, the quasi-Lamarckian machinism is ‘accelerationist’, i.e. guided by positive feedback (Radman, 2019). It is as cultural as it is natural given the ideality and materiality of its flows that reach far beyond the anthropic. We may have too easily dismissed an early naturalist who anticipated modern epigenetics and whom Darwinists have long disparaged. Jean-Baptiste Lamarck (1744–1829) argued that evolution could occur within a generation or two. According to Philip Steadman, the theory of Darwin is an ‘elective’ theory of evolution, where the environment chooses appropriate changes in organism from the range offered by variation. By contrast, Lamarckism is an ‘instructive’ theory where the environment is imagined to be able to exercise a direct effect on organisms and ‘teach’ them to change themselves in appropriate ways (Steadman, 2008). This revelation is paramount for the ‘niche constructionists’ or those in the business of associating milieus: architects and urbanists.

<sup>4</sup> For Spinoza, *natura naturans* refers to the self-causing activity of nature, while *natura naturata*, meaning ‘nature natured’, refers to nature considered as a passive product of an infinite causal chain.

<sup>5</sup> It is no coincidence that if we were to rotate Fig. 1 around the vertical axis and turn it upside down it would fit the Bergsonian cone of ‘pure memory’. Bergson’s ‘pure memory’ (rhythms and frequencies of duration) is opposed to the most relaxed level of duration, that is, space or matter in the most condensed contraction of the whole (of time) into the present of understanding. The leap into a virtual or pure past (not psychological) is an ontological and not a chronological move.



**Fig. 2** Any architectural collective enunciation worthy of its ecological attribute can be said to consist of quadruple ontological domains: efficient Territory **T** and final Universes of Value **U** as non-discursive, and material energetic and semiotic Flows **F** and formal machinic Phylum **Φ** as discursive. These are four quasi-causes of the assemblages that are always articulated together. *Source: Author*

**T** is an ethological concept that designates vital familiar space, the ground, an individual or collective body. **U** are nascent quasi-subjective ideas before they are objectified or expressed. **T** and **U** belong to the *virtual* (giving) half of the fourfold diagram. **T-U** may be said to be quasi-subjective and *pathic* in comparison to their *ontic* counterpart of **F-Φ**. The former *non-discursive* and the latter *representational*. From the point of view of psychopathologies, neurosis is associated with the actual and psychosis with the virtual pole of the horizontal axis of reference (Deleuze, 1990, p. 93). The vertical axis of consistency stretches from the *real* (**F** and **T**) to the *possible* (**Φ** and **U**). Guattari's urge to substitute schizoanalysis for psychoanalysis originates from the necessity to expand the operation beyond the real to the realm of the possible. It is important to underscore that Guattari's 'possible' is not to be mistaken for the retroactive hypostatisation of the real. It simply designates that which is further from the equilibria (the real) where genuine modulation of territorialisation occurs. Ethological plasticity would not be possible without the *ritornello*. Paradoxically, while **U** provides for the rhythm (repetition and difference), **F** is segmented. As already stated, the ever-proliferating rhizome **Φ** (quasi-objective ideas) opens up the possibility of resingularisation of desire and values. Qua Deleuze's ventriloquism, Michel Foucault offers a helpful architectural example: the prison (machine), as an endo-referential and exo-consistent form of *contentU*, is inconceivable without the prisoner as its substance **T**. On the side of *expression*, the exo-referential and endo-consistent concept of 'delinquency' is its substance **F** and penal law

its form **Φ** (Deleuze, 1988b, pp. 23–44). According to Foucault, environments enunciate, just as enunciations determine environments, but they remain heterogeneous with no direct causality, no common totalising form. "The *diagram* is no longer an [...] archive but a map, a cartography that is coextensive with the whole social field. It is an abstract machine (p. 34)." Deleuze explains:

*[E]very diagram is intersocial and constantly evolving. It never functions in order to represent a persisting world but produces a new kind of reality, a new model of truth. It is neither the subject of history, nor does it survey history. It makes history by unmaking preceding realities and significations, constituting hundreds of points of emergence or creativity, unexpected conjunctions or improbable continuums. It doubles history with a sense of continual evolution (p. 35).*

The focus on singularities in Guattari's *Schizoanalytic Cartographies* should not come as a surprise given their inbuilt resistance to calculation or instrumental use of representation. The shortcoming of binary systems such as linguistic semiology is that, like capitalism, they render everything translatable according to the standard of general equivalence (Hauptmann & Radman, 2014). If the asignifying process of decoding **F** > **Φ** and deterritorialisation **T** > **U** were not possible, the diagram would be reducible to discrete calculable quantities that could be assigned a place in a pre-ordered transcendent structure. Thanks to the non-programmable immanent movement of de-re-stratification, the fourfold remains sufficiently



unstable and open to the multiple (multiplicity as a critique of structuralism). The diagram is ‘emancipatory’ for as long as it sustains the ‘rhythm,’ but it might as well become a map of discipline and control if the movement is arrested and its domains petrified: “There are two basic diagrams [...]: that of regulation by negative feedback which suppresses difference and seeks equilibrium, or that of guidance by positive feedback which reinforces difference and escapes equilibrium.” (Land, 1993, p. 475). By the same token, and in conjunction with the first epigraph, there is a way to circumvent the ready-made Oedipal structure and instead engage in the cartography of subjectification:

*I consider that it is the architect who finds he is in the position of having to analyse certain specific functions of subjectification himself. In this way and in the company of numerous other social and cultural operators, he could constitute an essential relay at the heart of multiple-headed Assemblages of enunciation, able to take analytic and pragmatic responsibility for contemporary productions of subjectivity. As a consequence, one really is a long way here from only seeing the architect in the simple position of critical observer (Guattari, 2013, p. 232)!*

This is an account that grants ontological priority to the machinic desire and is of utmost political, social, and existential importance.<sup>6</sup> In the present condition of the digital turn, it has become necessary to resist the self-fulfilling prophecy of reducing the world to the (socially constructed) code. The Simondonian material-discursive concept of technicity taught us that nature did not exist prior to the machine. Evoking the latest discoveries in evolutionary biology – it is better to biologise than to structuralise – Guattari referred to the worlding technicity as the ‘machinic phylum’. Crucially, machines speak to machines before they speak to humans (Guattari, 1993, p. 22). In other words, they are social before they are technical (Deleuze, 1988b, p. 39).

## 2 Ducks and rabbits

We will now turn from the production of production to the production of recording and, finally, production of consummation (larval subject) (Deleuze & Guattari, 2008, p. 338).<sup>7</sup> The second section of the chapter, where the

affordance theory meets contemporary neurosciences, starts from the (plasticity of) brain that becomes a subject in the ‘absolute survey’ (Bains, 2002). Its near synonym – ‘self-enjoyment’ – does not designate pleasure but an immediacy without immediate objectification.

*[It] was a very important discovery that the brain wasn't entirely determined. Some anatomic structures of the brain are, of course, genetically programmed, but a significant part of the neural organization is open to outside influences and develops itself consequently to these influences or interactions. It means an important part in the structure of your brain depends on the way you're living and on your experience. History is inscribed within the biological. That is what 'plastic' means when applied to the brain (Vahanian, 2008).*

According to the biologist and Nobel Prize laureate Gerald Edelman, the brain is first and foremost a selectionist system (Edelman, 2006). The importance of selectivity as the defining characteristic of knowing cannot be overemphasised (Heft, 2001, p. 28). Perception is context-dependent and adaptive. It is not a Turing process, Edelman insists, because the world is a non-labelled place. *Data does not equal information*. The ecological approach to perception knows no such thing as ‘sense data’. *Ecological*, it must be qualified, stands for reciprocity between the life form and its environment. Their mutual relation is not one of computing but of resonance or affective attunement. The reality is not ‘chunked’ (Manning, 2013). This premise should fundamentally reconfigure the debate on nature and nurture, and on the (im)possibility of ‘carving nature at the joints’.<sup>8</sup> Our categories are retroactively imposed as a result of analytic reflection. Most importantly, our cognition depends utterly on motion, that is, sensori-motor interaction. “Begin in the middle! [...] Don't assume to know in advance how the chunking will resolve! (Manning, 2013, p. 220)”

The famous Hebb rule stipulates that the neurons that *fire* together – *wire* together. As a result, synaptic connections either get strengthened or weakened. Their excitement and inhibition are not ‘decided’ by the genes but at the epi-genetic level. By this we mean that the whole virtual experience is responsive to the significance of the actual stimulus. When a new pattern is selected the ‘attractor landscape’ is rearranged and new basins of attraction are added. There is no ready-made memory

<sup>6</sup> As used by Franz Brentano and then Husserl, ‘intentionality’ means that mental states like perceiving are always *about* something, that is, directed towards something. By contrast, for Deleuze intentionality does exist but it is always multiple. In other words, there is never a single originator of the intention. Desire itself is a multiplicity of competing drives.

<sup>7</sup> The *connective* synthesis of production, the *disjunctive* synthesis of recording, and the *conjunctive* synthesis of consummation, i.e. nothing is given, everything is produced. The larval subject is a residuum or spare part that sits alongside the desiring-machine.

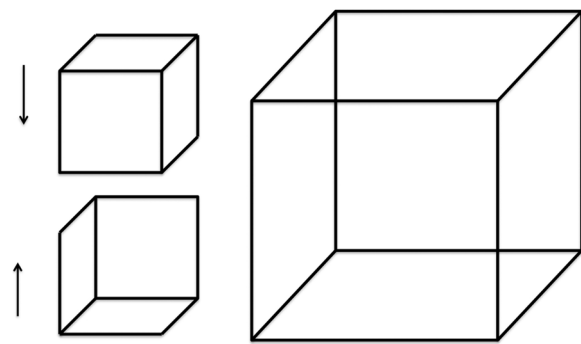
<sup>8</sup> Plato employed the carving metaphor as an analogy for the reality of Forms (*Phaedrus* 265e): like an animal, the world comes to us pre-divided. Ideally, our best theories will be those which “carve nature at its joints.”

storage, no pre-established compartments or clear-cut boundaries. Experience is relational, non-local and perpetually updated. In a word, encephalisation is *machinic*. This is the gist of Edelman's critique of representation. He is not alone in tapping into the resources of topological field theory (Smith, 1994). Yet the habit of *overcoding* is difficult to shake off. In the words of Erin Manning:

*What we perceive is always first a relational field. [...] Still, given the quickness of the morphing from the relational field into the objects and subjects of our perceptions, many of us neurotypicals feel as though the world is 'pre-chunked' into species, into bodies and individuals. This is the shortcoming, as autistics might say, of neurotypical perception (Manning, 2013, p. 219).*

Not only are the neurotypicals *too quick to chunk* compared with the autistics, they are also incapable of self-tickling (Clark, 2016, p. 213). The barrier to self-tickling is akin to the barrier to telling oneself a joke. Unlike schizophrenics, neurotypicals deprive themselves of the ability to self-stimulate in a sufficiently unpredictable fashion by dampening their own sensory responses to the ongoing stimulation. From this perspective it is perhaps true that to (truly) see is indeed to forget the name of the thing one sees (Weschler, 1982).

Building upon the work of the neuroscientist Walter Freeman, his disciple Michael Spivey studies cognition as a self-organising process (auto-affection) that involves phase transitions, criticality and autocatalysis. In this light, *affordances* appear not as the mapping of external features but as a creative form of enacting significance on the basis of the organism's embodied history (Varela et al., 1991, p. 175). They retain ontogenetic independence from the cognitive schema. Consider Spivey's example of the Necker cube (Spivey et al., 2009) (Fig. 3). One cannot instantaneously perceive both implicit depictions that the 'axonometric wireframe' of a cube offers – a box from above *and* from below. The same applies to the rabbit/duck illusion: it is either one or the other. In other words, the ecological view maintains that there exists, in any such (two-dimensional) figure, information about a number of (three-dimensional) shapes. The perceiver merely *selects* one; the perceiver's attention is directed to that information. Spivey's explanation is that the transition between perceptual states (two in the cases of the Necker cube and rabbit/duck) is in fact a phase transition (singularity).<sup>9</sup>



**Fig. 3** The Necker cube is not an illusion but a kinematically-motivated perception. Because the image is one-sided (i.e., no tinkering is possible), the optical information about occlusion (i.e., which overlapping lines are nearer and which are farther) is unavoidably ambiguous. Source: Author

Experimental evidence suggests that it takes time for a trajectory across a 'high dimensional phase space' to settle in one or the other attractor, depending on the vicinity to the 'event horizon' – defined as 'the point of no return' – where the actual threshold for overt response is located. The attractor is the box viewed from above *or* from below (rabbit *or* duck). Potentiality is never a fully accrued value. As Francisco Varela explains: "Given the myriad of contending subprocesses in every cognitive act, how are we to understand the moment of negotiation and emergence when one of them takes the lead and constitutes a definitive behavior? (Varela, 1995)." In the field of visual perception, a fraction of a second is a substantial amount of time to spend between two possible perceptual states (as in the case of the Necker cube) afforded by a stimulus:

*These transitions are not instantaneous, but take at least a couple hundred milliseconds. What this reveals is that on the way toward achieving a stable percept, the brain spends a significant amount of time in regions of phase space that do not neatly correspond to any of the labelled categories that language, or the experimenter, or society itself, has laid before it (Spivey et al., 2009, p. 205).<sup>10</sup>*

This proves that sharp transitions in behaviour need not be attributed to formally discrete logical processes, but can emerge instead from nonlinear dynamics in continuous modulations of a machinic assemblage. Such a 'fibrous' approach offers a welcome update to the Gibsonian information theory (Ruyer, 2016, pp.

<sup>9</sup> Phase transition in a broad sense, is a transition of a substance from one phase to another (e.g. solid – liquid – gas) upon a change in external conditions, such as temperature, pressure, etc.; in a narrow sense applied here, it is an *abrupt* change in perceptual states.

<sup>10</sup> See also Spivey, 2007.

140–53)<sup>11</sup>: picking up the invariances to ‘select’ the most advantageous course of action out of the trans-spatial ‘virtual phase space’. To paraphrase Massumi, which came first – the picker or the picked? Which is the chicken and which is the egg? (Massumi, 2002, p. 68). The answer is neither. They both come last. To start with an affordance is to start from the middle by endorsing a theoretical model of decision-making and attention-control at the pre-reflective machinic level (Radman, 2021). To speak of affordance is to break with the stifling notions of culture as representation or as reflection. It is to break with properties for capacities and, finally, to break with signification for the speculative-pragmatist significance. Dare we say, it is to break with C.P. Snow’s Two Cultures – micro-reductionist sciences and macro-reductionist humanities – in favour of an ethics of transversality and experimentation. In the words of Kwinter: “It is a fundamentally bourgeois idea to live the ‘critical’ life, to assess the value of objects and practices when the processes of production are themselves wild and alive and doing their business semi-independently elsewhere (Kwinter, 2003, p. 21).” It amounts to megalomania.

The selectionist approach is fully compatible with evolutionary biology (evo) and developmental systems theory (devo), insofar as the emphasis is on plasticity and adaptation (evo-devo), rather than an already given essence or striving towards some proper form (Oyama, 2015). The Gibsonian theory gives credence to an alternative account of the phenomena of retention and expectation without recourse to memory. Recall how experience ‘consults’ itself when, for example, anticipating the taste of an expected flavour one is surprised to taste an unexpected one. There is neither logical mediation nor interpretation involved in this foreshadowing. Retention leads into and feeds anticipation. Anticipation, in turn, rests and draws upon retention. It is not implausible that the emergence of an immune system owes to the incorporated expectation of injury or risk of potential harm. As implied in the second epigraph, the embodied, enactive cognition, may be best described *not* as a sequence of logical computational states, but as a continuous trajectory through virtual state space – absolute or non-dimensional survey – flirting with ‘meaningful’ attractors but rarely settling into them. This is what architectural intelligence is about at its most elementary. “What exist are processes of change, [emergent] constraints exhibited by those processes, and the statistical smoothing and the attractors (dynamical regularities that form due to

self-organizing processes) that embody the options left by these constraints (Deacon, 2012, p. 197).”

Constraints ‘channel’ broad possibilities into narrow probabilities. Consider the following example. When stringing letters together to form a word (a – ar – arch – architecture), we start from an undifferentiated (flat) attractor landscape where a single letter can lead to anything. Yet, as information builds up, as in ‘arch’, the phase space gets ever more differentiated (constrained) until we end up with a single basin of attraction, that of ‘architecture’. Hide and seek works the same way. If an object is always hidden in one specific place instead of several, the attractor landscape gets rearranged to bear a single basin (Thelen & Smith, 2006). It is arguably for the same reason that typefaces are recognisable despite there being a great variety of them (Kwinter, 2008). The same applies to the invariant facial features in the face of the continuous transformation through the aging process (Kugler & Shaw, 1990).

There is an enormous plasticity in the nervous system, or else it would never be able to handle the complexity and novelty of the ever-changing environment, be it non-organic, artificial or technological. In any case, *activity is dominated more by experience than by stimuli*. It is for this reason that meta-stable affordances are sought out and detected so as to help coordinate behaviour. This is achieved through the operationally specific variability based on the capacity to vary the means to achieve the ends, i.e. flexibility, prospectivity and retrospectivity (Turvey, 2019). Nevertheless, it would be a fatal mistake to break up the task of action-coordination into purely internal neural circuitry. The ethico-aesthetic affordance theory recognises that organisms use *both* internal and external means of coordinating behaviour:

*Moving from place to place is supposed to be ‘physical’ whereas perceiving is supposed to be ‘mental’, but this dichotomy is misleading. Locomotion is guided by visual perception. Not only does it depend on perception but perception depends on locomotion inasmuch as a moving point of observation is necessary for any adequate acquaintance with the environment. So we must perceive in order to move, but we must also move in order to perceive (Gibson, 1986, p. 223).*

We tend to think of the visual content of an image as a representation of the object’s form or, beyond this naïve approach, as an acquired cultural code enabling us to recognise percepts as referencing objective forms. However, neither of these approaches to image-content works in terms of (built) environment. According to Massumi, it is precisely movement and not message that is the

<sup>11</sup> Following the lines of continuity is consistent with the Ruyerian fibrous conception of the universe.



actual content of architecture (Massumi, 2004). Gibson is explicit:

*The visual world is a kind of experience that does not correspond to anything, not any possible picture, not any motion picture, and not even any 'panoramic' motion picture. The visual world is not a projection of the ecological world. How could it be? The visual world is the outcome of the picking up of invariant information in an ambient optic array by an exploring visual system, and the awareness of the observer's own body in the world is a part of the experience (Gibson, 1986, p. 207).*

Having sensations does not simply amount to perceiving. The useful dimensions of sensitivity are those that specify the environment and the observer's relation to the environment (*umwelt*) (von Uexküll, 1957). An infant does not have to learn to convert sensations into lawful perception, both extero- and proprioception. The fault lies, according to Tim Ingold, with understanding cultural production as a number of discrete, finite processes, each with a beginning and an ending: "production, and the meaning of production, must therefore be understood *intransitively*, not as a transitive relation of image to object (Ingold, 1983, p. 15)." This is to say that life cannot be understood mechanistically. According to Ruyer, it has to be understood *axiologically*. The 'axiological subject' values (affordances) rather than knows (objects). The lure of the virtual, towards which all our acts are directed, is the world of values. Yet, tending to the future, which is fibrously connected to the past, always comes with the dynamic potential for divergence from the present.

We have yet to shake off the 'bad habit' of representationalism in order to rightfully embrace a unity in multiplicity. A beginner's guide to metamodeling worthy of its machinic reputation rests on the following injunctions: 1) Insert an interval between A and P (S and R); 2) Sustain the movement between T, U, Φ and F; 3) Start from the middle! The irreducible triad may be parsed in the three syntheses from *Anti-Oedipus*: the *connective* – partial objects and flows, the *disjunctive* – singularities and chains, and the *conjunctive* – intensities and becomings (Deleuze & Guattari, 2008, p. 338). It is by activating the transversal operations, each time anew, that we may hope to see the parochial culture of hylomorphism (covert idealism) give way to the life-affirming creative environmental, social and psychic teleodynamics (Guattari, 2008).

### 3 Zebras and flies

Let us approach the last section from the point of view of a point of view. According to Deleuze, it was the last living polymath, Gottfried Leibniz, who taught us that the point of view 'has' the subject and not the opposite

(Deleuze, 1980). Yet such perspectivism is not to be confused with relativism. To paraphrase the anthropologist Viveiros de Castro, different life forms do not see the same world in different ways, but rather see different worlds in the same way (Viveiros de Castro, 1998, p. 478). One may even generalise the Leibnizian *Monadology* to include zoology and biology at large (De Meyer, 2018). Monads – as points of view – are not separated from other bodies. They are quite literally in them. In the best tradition of the Batesonian metalogues, one may pose a seemingly naïve yet deeply philosophical question that will help substantiate the claim: why do zebras have stripes (Bateson, 1972)?<sup>12</sup>

The cliché of stripes as the camouflage against predators is to be dismissed on account of the kinaesthetic and multimodal nature of perception (Sheets-Johnstone, 1999). A body is not perceived on static properties such as stripes but as an invariant embedded in change (Gibson, 1986, p. 15).<sup>13</sup> But if the stripes are not meant to confuse lions and hyenas, how did they individuate and why? What may be their causes and 'because's'?<sup>14</sup> The answer is as delightful as it is surprising. It involves a point of view of a completely different 'companion species' so much smaller than zebras (or lions or hyenas) to be easily overlooked: the fly (Caro et al., 2014). These insects are infamously dangerous to mammals because they carry parasites. Flies are not the cause but the 'because' of the stripes that have a strong fly repellent capacity. This particular teleodynamism can be easily put to test. A simple experiment of counting the number of flies trapped by the monochrome or striped 'umwelt parodies' demonstrates that they are overwhelmingly drawn to the former (Gell, 1996, p. 27).<sup>15</sup>

*[The flies] are thus, to speak loosely, 'part and parcel' of the zebra's body. If the flies perceived differently, the zebra stripes – zebras as we know them – wouldn't exist. In the dynamics of evolution, the point of view of the flies entered into the body of the zebras. It's a real 'involution' [...]. And here we are back to our Leibnizian proposition, 'the monad enters into the composites' (De Meyer, 2018, p. 472).*

<sup>12</sup> Gregory Bateson's *Steps to an Ecology of Mind* begins with a series of 'metalogues', which take the form of conversations between father and daughter. The metalogues are mostly thought exercises with titles such as "Why do things have outlines?"

<sup>13</sup> Invariants are patterns of stimulation over time and/or space that are left unchanged by certain transformations.

<sup>14</sup> Because is a conjunction that means "for the reason of" and concerns the 'value' of things. Cause is a noun meaning "the reason something happened" or a verb meaning "to make happen". As such it is associated with the 'fact'.

<sup>15</sup> According to Alfred Gell, traps are "lethal parodies of the animal's Umwelt."

Evolution, in this sense, cannot be separated from involution (Radman, 2019). The author of the above quote does not dwell on the actual cause of the repulsion, but makes a more substantial point: “the monadological proposition is an invitation to think relationally, that is, ecologically (De Meyer, 2018, p. 475).” Monads may have no extension but that does not make them any less real. They are incorporeal yet real. When Leibniz speaks of ‘composites’ he means material bodies, hence the mutual reciprocity of the corporeal and incorporeal. Each monad perceives, though in varying degrees of clarity, all the other monads (Leibniz, 2014).<sup>16</sup> Against all odds, it turns out that the lion’s point of view is less significant for the zebra than that of the fly, regardless of their difference in size. If value is defined as that which (de) motivates action, then monadology qualifies as ecological axiology par excellence (Phemister, 2016).<sup>17</sup> The significance of *appetitions* was not lost on Deleuze and Guattari:

*As a general rule, the problem of the relationships between parts and the whole continues to be rather awkwardly formulated by classic mechanism and vitalism, so long as the whole is considered as a totality derived from the parts, or as an original totality from which the parts emanate, or as a dialectical totalisation. Neither mechanism nor vitalism has really understood the nature of desiring-machines [...] (Deleuze & Guattari, 2008, p. 44).*

The primacy of desire – as a positive force and not as a (Lacanian) lack – can be regarded as the source of the doctrine of perspectivism. This explains Nietzsche’s famous but often misinterpreted dictum that there are no facts, only interpretations. What is often overlooked is that for Nietzsche it is our drives that are perspectival and not our egos (Smith, 2007).<sup>18</sup> To embrace the radical

perspectivism is to renounce the priority of identity and the phenomenological ‘I’. As we have seen, “the subject is second in relation to the point of view (Deleuze, 1980)”. Consequently, there is a way to understand the nature of the world without reducing it to judgement. By contrast to Kant for whom Ideas are regulative concepts, for Deleuze and Guattari they are no longer to be understood in terms of propositions but in terms of problems. This reversal brings forth the importance of Simondonian allagmatics.

Etymologically, the Greek term *allagma* is related to vicissitude (transmutation), but it also refers to that which can be given or taken in exchange (Simondon, 2020, pp. 663–673). The allagmatic is thus concerned with changes of state or the relation exterior to its terms, a ‘reversal’ that not many would welcome. “This exteriority of relations is not a principle,” explains Gilles Deleuze, “it is a vital protest against principles (Deleuze, 1987, p. 55).” After all, empiricists have no principles; they prefer experimenting. So do architects who circumvent the myopic fixation on invariant properties and functional attributes in favour of the genealogical approach that not only accounts for *what* the built environment will come to be, but also speculates on *who* will become alongside it (ethological double bind) (Gorny & Radman, 2022). The allagmatic theory breaks the deadlock between the analytical approach of mechanicism, which assumes that a whole is reducible to the sum of its parts, and the analogical approach of organicism, where the whole is primordial. It allows for grasping the unity which is not based on totality. The concomitant architectural intelligence thus binds sense to sensibility: *without a body there would be no sense*.<sup>19</sup> Put simply, sense is not ready-made, it needs to be produced. This entails our becoming the quasi-cause of what is produced within us. Leibniz’s example of the incommensurability of the sea and its waves is most revealing:

*I like to use the example of the roaring noise of the sea which impresses itself on us when we are standing on the shore. To hear this noise as we do, we must hear the parts which make up this whole, that is the noise of each wave, although each of these little noises makes itself known only when combined confusedly with all the others, and would not be noticed if the wave which made it were by itself (Leibniz, 1996, pp. 54–55).*

Deleuze interprets this passage from Leibniz’s *New Essays on Human Understanding* as presenting ‘two languages’ (Deleuze, 1994, p. 214). On the one hand, there

<sup>16</sup> The perceptions specific to each monad are defined by Leibniz as a relation between the internal unity of the monad and the multitude external to it. The monads have an intimate relationship with the outside, even if it does not occur on a corporeal level, but on an incorporeal one.

<sup>17</sup> “Competing and noncompeting desires (akin to competing motions and resistances of bodies) may be conceived as adding a qualitative dimension to quantitative space, a value dimension that is founded upon the perceptual and appetitive relational qualities belonging to the living things that make up the Leibnizian universe (Phemister, 2016, p. 123).” See also Radman, 2018.

<sup>18</sup> “It is not so much that I have a different perspective on the world than you; it is rather that each of us has multiple perspectives on the world because of the multiplicity of our drives – drives that are often contradictory among themselves. ‘Within ourselves,’ Nietzsche writes, ‘we can be egoistic or altruistic, hard-hearted, magnanimous, just, lenient, insincere, can cause pain or give pleasure’. We all contain such ‘a vast confusion of contradictory drives’ that we are, as Nietzsche liked to say, multiplicities, and not unities. [...] Moreover, these drives are in a constant struggle or combat with each other: my drive to smoke and get my nicotine rush is in combat with (but also coexistent with) my drive to quit. This is where Nietzsche first developed his concept of the will to power – at the level of the drives. ‘Every drive is a kind of lust to rule,’ he writes, ‘each one has its perspective that it would like to compel all the other drives to accept as a norm’ (pp. 66–78).”

<sup>19</sup> ‘Sense’ in French means ‘direction’ in English.

is the roaring of the sea. This is the first language of the ‘clear-confused’. It is *clear* insofar as one is able to recognise the roar of the sea as a whole, but it is also *confused*, insofar as comprehending the sea as an object is dependent upon *not* taking account of the elements – the waves – that jointly determine it as such. On the other hand, we have the second language of the ‘distinct-obscure’: the language of the waves themselves. The waves are perceived *distinctly* thanks to the differential relations that make up their noise. They are also perceived *obscurely* because the focus on particular relations precludes the ‘white noise’ of the sea from being comprehended as a whole. For Deleuze, in clear contrast to Descartes’s notion of clear and distinct ideas, “the clear is confused by itself, in so far as it is clear (p. 254)”.

It is this discrepancy between the two languages of philosophy that makes it possible to map the conditions of the real (not merely possible) experience, without committing the fallacy of tracing and falling into a banal reiteration of the structure of actuality or what Whitehead refers to as the fallacy of ‘simple location’ where “material can be said to be *here* in space and *here* in time, or *here* in space-time, in a perfectly definite sense which does not require for its explanation any reference to other regions of space-time (Whitehead, 1948, p. 50). Yet to reduce architecture to its *ontic* (manifest and calculable) effect is to deprive it of its real-yet-incorporeal *pathic* affect.

The order is not imposed on an undifferentiated world. Sense is the result of bodies and their encounters, an expression of relations. As a condition of real experience, sense cannot be ‘wider’ than the experience itself, as would be the case if it were a condition of possible experience (also known as categories). Categories are “like baggy clothes, [...] much too big (Deleuze, 1988a, p. 44).” The principle of sense is therefore plastic and perspectival, as it changes with the changing experience. Thinking does not go from proposition to proposition. Rather, a genuine *noiesis* is only made possible by tapping into the non-propositional field of problems that engenders propositions. There is a fallacy that is perhaps worse than hypostatisation where the abstract is mistaken for the concrete. Simondon’s theory of *genetic* operations – complementary to the theory of *generic* structures as elaborated by the sciences – becomes an indispensable weapon against the pernicious *retroactive* hypostatisation where, conversely, the concrete is mistaken for the abstract. Deleuze’s allagmatic caveat is as timely as ever: the opposite of the concrete is not the abstract, but the discrete (Deleuze, 1978).

When sailors wear T-shirts with stripes they do not mimic zebras but become zebras, operationally. The difference in the degree of sunlight absorption/

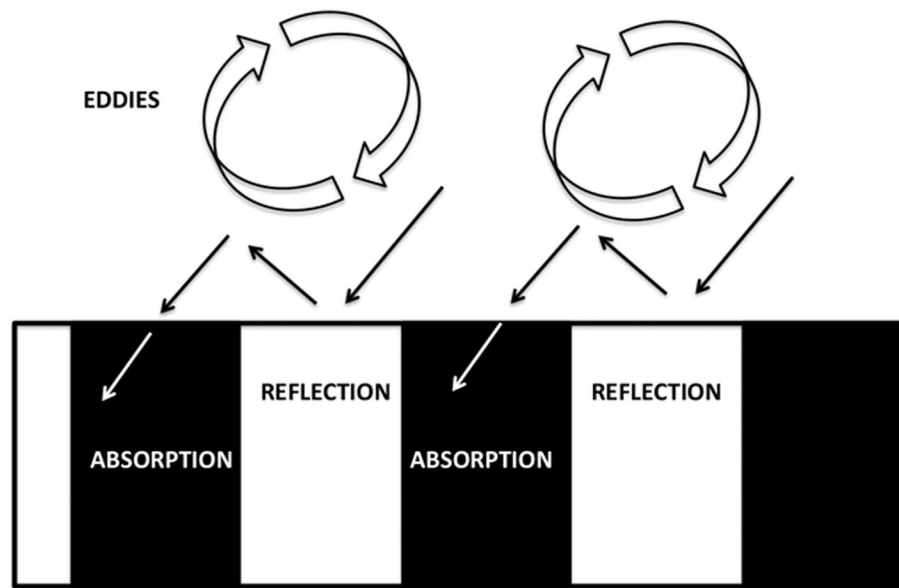
reflection between the adjacent light and dark stripes generates a particular airflow pattern and ‘naturally’ ventilates the surface (Fig. 4). The induced turbulence arguably makes it difficult for flies to land which is why they prefer a monochrome *umwelt*. That is *how* zebras repel flies and *how* sailors keep their temperature down. The ‘how question’ is, of course, the question of style: “A style is not an individual psychological creation but an assemblage of enunciation [...] (Deleuze & Guattari, 2005b, p. 97)”. It is the question of alloplastic *mannerism* (p. 60).<sup>20</sup> In the words of Deleuze and Guattari:

*We think the material or machinic aspect of an assemblage relates not to the production of goods but rather to a precise state of intermingling of bodies in society, including all the attractions and repulsions, sympathies and antipathies, alternations, amalgamations, penetrations, and expansions that affect bodies of all kinds in their relations to one another. [...] Even technology makes the mistake of considering tools in isolation: tools exist only in relation to the interminglings they make possible or that make them possible. The stirrup entails a new man-horse symbiosis that at the same time entails new weapons and instruments. Tools are inseparable from symbioses or amalgamations defining Nature-Society machinic assemblages. They presuppose a social machine that selects them and takes them into its ‘phylum’ (p. 90).*

It is thus technicities that reticularly construct and are constructed by alloplastic strata. By giving primacy to experience and thus opposing causal determinism, radical perspectivism offers a compelling response to the question of why biosphere and technosphere cannot not be thought in isolation: “without techno-diversity, we cannot maintain biodiversity (Hui, 2020).” While *matter* and energy cannot be created or destroyed, the architectural *manners* as modes of existence are virtually unlimited (Deacon, 2012).<sup>21</sup> Mnemotechnology, in the broadest sense of the term – including ‘epigenetics’ (e.g. language) and its sedimentation or ‘epiphylogenetics’ (e.g. architecture) – expands the realm of sensibility (Stiegler, 1998). The auto-affectivity brought about by technicities goes under the name of the *Baldwian*

<sup>20</sup> According to Deleuze and Guattari there are three major groups of Strata. These are inorganic (geology), organic (biological), and alloplastic (social). Thanks to ‘alloplasticity’ rather than ‘homoplasticity’ new modifications are brought about in the external world.

<sup>21</sup> “All these innovative ways of organizing matter and energy, producing unique forms of influence over the events of the world, popped into existence from antecedent forms of organization that entirely lacked such properties (p. 144).”



**Fig. 4** The white colour reflects, and the black absorbs, sunlight. The zebra pattern creates variations in air temperature just above the surface of the skin, thereby creating an air current and a natural cooling system. The so-called micro-eddy convection effect reduces the zebra's body temperature by up to 8 °C (Shon et al., 2017). Source: Author

*Evolution* or evolution by epigenetic means (Smail, 2008, p. 92). The affordances of the environment as enabling constraints are thus both natural and artificial, and every shade in-between. Th.

What humans achieve through accumulation and improvement of cultural artefacts and practices is not short of the ultimate magic trick of 'bootstrapping' (Tomasello et al., 1993). The 'Ratchet Effect' has eventually led to the emergence of epiphylogenetic memory such as the built environment within which the human mind has evolved and continues to develop. Yet, we should beware any 'ridiculous cosmic evolutionism' (Deleuze & Guattari, 2005b, p. 49). This is by no means an argument in favour of human exceptionalism, but a viable account of anthropogenesis (Yusoff, 2016). For example, a bee that has spotted a food source can communicate the message to its fellow bees that do not see it. However, a bee that has not seen it *cannot* pass the message on to others that have not seen it either (Deleuze & Guattari, 2005b, p.77). This means that epigenetic memory can be passed down from the second party to the third, neither of which has been in touch with the first.

Unsurprisingly, the ability of primates to produce artefacts does not prevent 'animal cultures' from stagnating because the production is neither 'detachable enough' (epi-genetic) nor 'cumulative enough' (epi-phylo-genetic) to integrate discontinuous successive discoveries as a major precondition for psycho-social individuation (Barthélémy, 2012, p. 224). Such transindividuation is

not based on the fully individuated 'I' or the inter-individuated 'we' (pp. 230–231). It designates the reciprocity of the psychic and collective individuation facilitated by depositing (exo-somatising) the greatest degree of potential within a preindividual milieu. Consequently, architectural intelligence calls for a radical rethinking of causality in the light of auto-affectivity. As the feminist theorist Sara Ahmed surmised, "what we [collectively] 'do do' affects what we [collectively] 'can do' (Ahmed, 2010, p. 246)."<sup>22</sup> Those accustomed to representational thought – where difference is subordinated to identity and movement to stasis – find the 'ratcheting' argument, a.k.a. irreversibility, rather counterintuitive (Colebrook, 2021).<sup>23</sup> Yet a whole new transcendence opens up *within* the heart of immanence once we learn that the whole is not of the parts, but alongside them (Deleuze & Guattari, 2005a).<sup>24</sup>

<sup>22</sup> "It is important that we think not only about *what* is repeated but also about how the repetition of actions takes us in certain directions [...] (p. 252)."

<sup>23</sup> "It is not that there is time moving forward, and within that trajectory some things occur that cannot be undone; rather, there is irreversible transformation and it is that irreversibility (with entropy increasing) that generates the order of time. Time is not the shifting around of matter that otherwise remains the same; transformations are ongoing alterations of the very composition of the world (p. 276)."

<sup>24</sup> "We want to think transcendence *within* the immanent itself, and it is from immanence that a breach is expected (p. 47)."



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