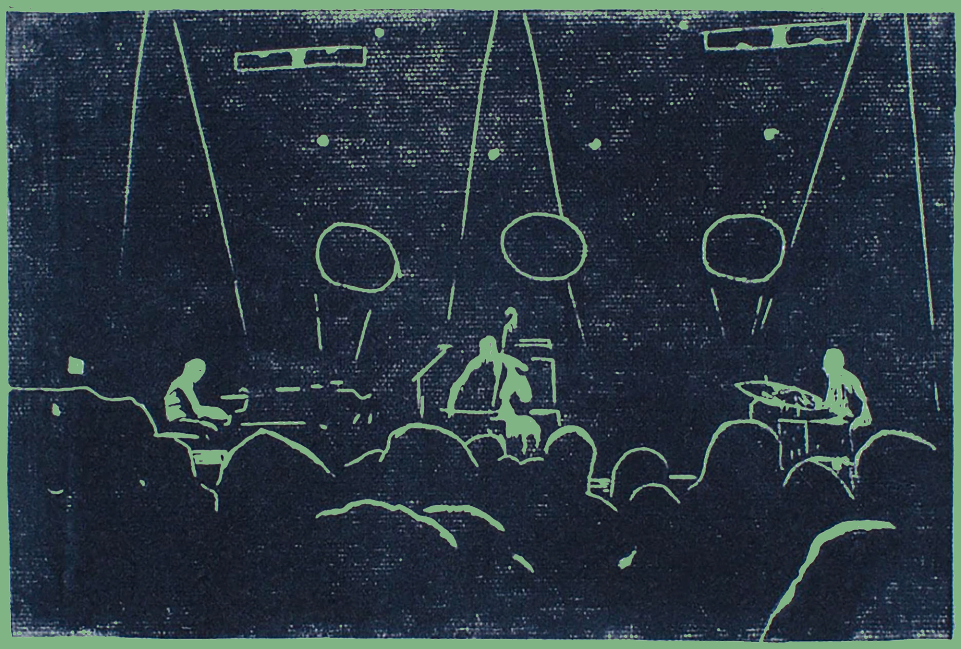
NOETICS WITHOUT A MIND

Stavros Kousoulas, Andrej Radman, and Heidi Sohn, editors



Ecologies of Architecture Book Series

TU Delft OPEN

JAP SAM BOOKS

Noetics Without A Mind

Colophon
Noetics Without a Mind

Open Book Series
Ecologies of Architecture

Series Editors
Stavros Kousoulas, Andrej Radman, Heidi Sohn
Department of Architecture, Faculty of Architecture and the Built Environment, TU Delft

Volume Editors
Stavros Kousoulas
Andrej Radman
Heidi Sohn

Copy Editor
Heleen Schröder
Layout Editor
Lena Galanopoulou
Text and Illustrations

Cover Illustration
Ivan Radman

Electronic version of this book is available at https://books.open.tudelft.nl/home/catalog/series/ecologies-of-architecture

The *Ecologies of Architecture* Book Series is published by TU Delft OPEN Publishing and Jap Sam Books in collaboration with the Architecture Philosophy and Theory Group, Faculty of Architecture and the Built Environment, TU Delft, PO Box 5043, 2600 GA Delft, The Netherlands
ecologiesofarchitecture@gmail.com

The hard copies, back issues and subscriptions are published and arranged by Jap Sam Books at
www.japsambooks.nl
Copyright clearance made by the TU Delft Library copyright team

DOI: https://doi.org/10.59490/mg.120
ISBN: 978-94-93329-24-9
www.japsambooks.nl

Book Abstract
Addressing the intricate socio-techno-environmental dimension of noesis within the current climate of social and urban challenges necessitates a transdisciplinary approach. In pursuit of this objective, NWM incorporates contributions that delve into sense-making processes involved in the individuation of humans, technologies, and their affective environments. These contributions offer diverse perspectives that critically examine the production of sense and its heterogeneous potentials for transindividuation. Key questions include: What transductive relations emerge in the entanglements between technology, affects, and the production of our (offloaded) memories and desires? How do these relations shape the sensible apprehension of our lives and the lives of our milieus? In what ways can they be expressed beyond the conventional, Western, ocularcentric, and annotational fixations of generic sciences? What new senses are required to navigate the complexity of the present? And, collectively and technologically, how do we sense the effects of our actions? Drawing inspiration from Gregory Bateson, how can we cultivate a different sensory perspective to foster a transformative mode of thinking?

NWM provides a platform for thinkers who boldly traverse disciplinary boundaries, encompassing a diverse range of fields. These include, but are not limited to, affect and affordance theories, architecture, art and cultural studies, philosophy and philosophy of technology, (digital) media studies, feminist theories, film theory, social sciences, and literature.

Keywords: Architecture, Affordances, Technicities, Philosophy, Pedagogies

Series Abstract
The *Ecologies of Architecture* Book Series promotes a transdisciplinary approach to architectural thinking and doing by extending its interest to topics that bring together the three ecological registers, namely the environment, the social and the individual. Such an approach accounts for what the built environment will come to be, and speculates about who will become alongside it. The series focuses not only on the why, what and how of architecture, but also on the who, who with and for whom.

Noetics Without a Mind

Table of Contents

Transduction: An Essay on Fire

Heidi Sohn

Noetics without a Mind is primarily about relations: human, nonhuman, inhuman and more than human; organic and inorganic; relations of location; of interiority and exteriority; of proximity and distance; relations that give rise to thoughts, ideas, and minds; relations that, like vectors, crisscross the domains and plains of potential; relations that always precede individuals, identities, unities, and relata; relations of intensity; relations of magnitude; relations that define the terms and conditions for conviviality, that set the rules and the tone for toolmaking and tool use. Power relations; technological relations; environmental relations; biological relations; physical relations; psychic relations; social relations. Relations that connect, divide, cut, intersect, select, produce, create. Relations that entangle, knot, fragment, transform, transmute, subtract, multiply, add, reduce. Relations that augment, extend, exteriorise, prolong, change and transcend the conditions that gave rise to them. Relations between humans and machines, between nature and culture, between mind and body, between meaning and matter, between the raw and the cooked; relations between psychic, mental, personal inner worlds, and collective, social, exteriorised environments and worlds. Difference as relational.

The book deals with different perspectives that look at how relations pre-exist and co-constitute the very terms and properties that they connect, or which emerge from that connection. In this way, a relation is ontological, systemic *and* technical: through it, previously non-existent things, properties, phenomena, relata, and processes are brought forth, pushed forward, they are e*xpressed*, forced out into the open fields of reality and experience. New relations are formed,

relations that will connect and reconfigure subjectivities, objects and systems into environments (or milieus) where individuation occurs as a collective becoming with our technical objects.[1] In this collection, what is interesting is precisely the relation that gives rise to a world constituted by technics, ethics and aesthetics, and the processes that hold this world together: modes and means of existence, varying degrees of sustainability and (sporadic) episodes of extinction. In short, it lays out a relational ontology of human and cosmic orders and the evolutionary accounts of their technicities as mutually constitutive, mediated by a milieu within a system of systems, or ecology. In this ecology, different forms of interaction occur between technical objects, and their emplacement and activation in the world. Such an 'associated milieu' –understood as a radically relational and creative environment, a milieu 'at the same time natural and technical,'[2] develops, unfolds and evolves not only biologically, but also technologically, that is, by means 'other than life.'[3] Here, as in all creative milieus, ideas find fertile ground to flourish and produce and reproduce; or they encounter the dry sand of arid deserts to wither and dissolve. In this radical relationality of processes and systems, the phrase 'everything is connected to everything else' is more than a truism:[4] it forces us to discern what is relevant, and significant, from what it is not, and this is a question of onto-epistemological import: how do we know the difference?

To acknowledge this question, this collection is also about perception, apprehension and awareness and the ways in which different forms of thinking, knowing, learning and understanding occur, in short, about noesis. It investigates other 'post-classic' perspectives to the cluster of conventional approaches to the etymologies of *noema*, *noesis* and *noetics* ('thinking and knowing about thinking and knowing'), moving beyond stifling definitions and reductive views that bracket these processes as exclusively cognitive, intellectual and mental functions of a hegemonic form of consciousness (and intelligence) reserved for the mind of the human being alone. A mind, it must be said, that is not only a representational mind, but also a 'category mistake.'[5] There are other profoundly noetic modes and means that involve dreaming, perceiving, sensing, desiring, imagining, remembering, forgetting and feeling, in short, a noetics *otherwise*, that is, thinking outside, next, or with/out the *rational* human mind. Several vectors are revealed in this equation. The first and most important trajectory abandons the (false) suggestion that the 'mind' is reduced to a non-localisable consciousness somehow hidden and trapped – like a genie in a walnut – inside the self, the soul, the subject, the ego, an identity or some other esoteric essence of disembodied exceptional individualism. Instead, the 'mind' is seen as a biological and neurological phenomenon, tied to the functions of the brain and the nervous system as anchored in the (human) body, and thus, the noetic is embodied and embedded as an organic process.

While this vector recognises the workings of the mind-brain as bodily functions, it nonetheless retains the insistence of the hegemony of thought and rationality over other sense organs. Does this make sense?

The challenge then is to make sense, to give meaning, and to think beyond (and without) the hegemony of the neurological brain to open it up to other truly embodied, enacted, extended, embedded, *empowered* and affective modes ('*5*EA') that reconfigure the sense-making abilities of organs beyond the mental. This involves the development of a theory of mind that sees it as an entanglement of thoughts in process and tentative ideas that fold and unfold like the recesses of our brain. In this sense, noetics *otherwise* is a mode of thinking, knowing and understanding that is emergent, contingent, open, systemic, radically relational, processual (albeit cybernetic, and thus goal-oriented), creative, and above all, shared. It follows a rather simple idea that instead of a mind-centric, ego-centric, individualist and isolated (hermetic, monadic) model ('the walnut'), noetics *otherwise* encompasses other forms of intelligence that are above all social and collective, and thus, techno-environmental ('the rhizome'). The intelligence implied in this operation leans towards intuition and attends keenly to pattern recognition, in*formation*, and the observing of the processes that generate change and transformation within systems. In other words, it pays real attention to those bits and pieces of information as 'differences that make a difference.'[6]

As an operation, noetics otherwise rethinks and supersedes the individual to include the collective and the world. There is no individual mind or intelligence exclusively *in* the self, nor in the subject, not even in the body. Instead, all interiority is always already involved in intricate relations with an explicit, pre-existing form of exteriority. This outside, the exterior, is the collective thinking of the world: the world thinks a collective mind, and a collective mind thinks the world in constituting and affective reciprocity. This thought brings forth not only the world in a series of nested layers – 'geosphere', 'biosphere', 'ecosphere', 'noosphere', 'technosphere', in other words, the planetary dimension – but also the cosmos is involved in this perspective. While apparently disembodied, such a noetics weaves together intellectual *and* intuitive abilities with cognitive *and* bodily forms of perception, sensing, and sense-making along human and non-human spacetimes and (trans) contexts into collective minds where mind and nature are seen as interconnected systems. In grossly summarised terms, a collective mind always already participates in complex systems and their environments that unfold as an 'ecology of ideas', to borrow Gregory Bateson's famous theory.[7] These ideas, as we know, and as we will read further on in the twenty entries that give this book shape, may be creative and productive, or on the contrary, dangerous, barren or unproductive, pretty much like an 'ecology of weeds.'[8]

It is in the intersection or overlapping of the 'biosphere', 'noosphere' and the 'technosphere', however, that a third type of noetics otherwise takes shape, a more sinister modality that answers quite literally to the title of the book: noetics *without* a mind. A noetics without a mind is not dumb, senseless chatter or an endless flow of random thinking per se. It is not an unintelligent or cognitively impaired mode of thought. It is not stupid, although it might be thought of as 'idiotic', that is, self-centred, egotistically private. Noetics without a mind refers to thinking as happening literally *without* representation, without human intervention and agency, and thus suggests a separation of cognitive processes and effectively, action. But it also involves the externalisation of sensation and affect, as well as the exteriorisation and extension of many cognitive functions of the (human) brain and the nervous system (consciousness, thought, memory, understanding, knowledge, desire, the oneiric, etcetera) and their transference to exosomatic technical objects and other prosthetics and instruments that function as protractions and externalised organs that compute, store, record and memorise. Further, it implies surrendering agency, labour, data, information, knowledge and cognitive power in general to the operating systems of these technologies, engaging, perhaps unwittingly, in deadly relations of serfdom.

If we consider that human evolution is irremediably tied to the evolution of technical objects, as well as to the history of technonature,[9] the consequences of such a noetics without a mind are significant, and without a doubt tied to the present and impending transformations of the environment. The ways in which we relate to our (social, cultural, political and biological) technologies reflect how we relate to our lives, our world, our planet, our cosmos: how we live, how we work, what we produce, how we think, what we desire. Our mode of existence is dependent on the way we apply ourselves in thinking and knowing (noesis) and how we use our knowledge *as* technology.

Under the technological conditions of today, it is paramount to generate awareness and highlight the understanding that these processes of mutual transformation are always more than the result of simple, natural change (or 'flukes') produced by the emergence of 'new technologies' or seemingly trivial tech-gadgets. They encompass intricate relations, often asymmetrical ones, between signification, information, data-processing or encoding, meaning and affect, and the bodily and material impact that such encounters frequently have. If we understand technology as capable of arranging and aligning all this informational material into organisational and systemic principles, it is possible to see how it triggers transformation at the level of *transduction*.[10] This term is to my mind the core thematic of the book, and thus also the ignition point for this first essay, which is not intended as a prolegomenon, foreword, or introduction. I do not wish it to lead

in and show the way, but instead to set off a process and express some ideas. From hominids and fires and redwoods, and the not mentioned but tacit pulp and paper and ink of books and printing, and the acts of faith that burnt those books, the very brief story of fire that here follows, serves as a relational dynamic of technical objects. But it is also my excuse to short-circuit any pretensions of introductory authority over the ideas that fired and sparked the other twenty entries that give shape and volume to this collection.

I momentarily return to Bateson and his 'ecology of ideas' understood as an entanglement of propositions that, while shaping patterns – together and on their own– need not to be figured out, because they are complex, interactive systems, continuously changing, transmuting somehow into something else, into new patterns. In the same way, the twenty entries participate in an ecology of ideas of their own, and thus need not to be introduced, prefigured or explained against the book's general theme as if they were building a jigsaw puzzle with a 'bigger picture' to which each entry has something to add. They do contain the genes that together produce the connections of such an ecology. They are occasions to think and challenge the limitations of an enclosed, hermetic noesis, generating associations and articulations through which emergent connections are made or discovered. Readers can expect at least twenty-one ideas that will fire up whole sets of neurons and synapses in their brains and spark the imagination in – what I think are – transductive ways. Speaking of sparks, allow me then to talk about fire, that strange element that is also our primordial technology.

Δ

To write about fire insinuates the sudden irruption of celestial bodies in the spheres of the planet. Meteorites that enter as fireballs that strike the tip of the top of a gigantic redwood. It cracks in half like a toothpick and within seconds flames engulf it. Thousands upon thousands of sparks lift and fly into the night sky, momentarily competing with fireflies against the impenetrable darkness of prehistory. It is the night before humans. The fire consumes the wood all night, leaving nothing but embers and the charred bodies of a small mammal and a lizard. Not far from there, in the depths of a cave, a tale is born in grunts and growls. It finds form in a vowel and a digit dipped in ashes. It is a tale told with the spores of a sentient-sapient species, a people 'yet to come': humans, the thinkers, the knowers, the social and technological animals. They, who understand the workings of fire and harness its power.

They approach the pit, charcoal smothered in white heat, still smouldering and smoky; they snatch the roast and taste the meat, tender and sweet. They arrange a circle around it and wait till night to ignite the flames again and gather

and sit together. Around the fire they exchange impressions, their experiences of the day: of their hunts, their prey, the deep ravine guarded by fierce wolves. They share insights on the meaning of signs in the sky or in the river; on the best way to shape a stone into a tiger-killing spear or arrowhead, or of where to find the driest tinder to kindle another fire. The moon orbits above. They yawn and lie down on their flanks next to the fire. The predators that kept them awake at night in their caves or on the high branches of trees are now kept at bay by the crackling flames. The night is infinite. While their bodies are partially paralyzed by deep sleep, they dream.

A mind is born, a mind that acknowledges signs as information, and learns how to decode it; how to mind these signs and crack the codes, how to pay attention, to notice, to sense and to understand. The divination of signs and information is useful not only to forecast and predict, but to make sense and give meaning to life and to a world that thinks. It is an interesting, dynamic, complex world that demands mindful regimes of attention capable of noticing minutiae, like the batting of a delicate wing, and the ability to care about things that matter. This attentive mind is also a thinking mind: knowledge is power when it is transformed into theories about how to produce something useful, like a catapult, or language, or a printer, or a telescope. Fire ignites an ecology of ideas and catalyses it as an ecology of practice: from thinking to organised action and participation. But it does more: it fuels the thirst for experimentation and the invention of instruments – or technical objects – that augment the sensory and cognitive powers of humans: to see better, to hear better, to think more and remember more precisely; to calculate, to count, to predict. A people with another organology.[11]

A world opens with the harnessing of fire, and the development of techniques that augment its power. It is the dawn of humans, the announcement of the arrival of a people that learns to forget to remember. A people that exchanges information, ideas, thoughts about how it imagines its own version of people 'yet to come': scavengers, hunters, weavers, crafts(wo)men, farmers, alchemists, sorcerers, philosophers, scientists, astronauts, engineers; makers of technical objects that will coevolve with them – organism, tool, and environment. They anticipate an impending cosmological bifurcation with political ramifications. The separation of natural and human orders – the cosmic and the moral,[12] will disconnect the logics of endemic (or indigenous) technics and the world it brings forth, from another form of logics, which will regard the world as a container full of resources ready to be exploited, extracted, consumed. But they relegate the cognitive discomfort they feel when confronted with that knowledge and assign to it the meaning of an omen of bad things yet to come, like the lonely comet of death. Not all conditions lead to the same outcome.

What is left at dawn is perhaps a heap of stones arranged around the first campfire, a few fossilised bones of hominid jaws. Unlike tales and stories, all organic material is burnt, pulverised. Turned and returned to carbon, ashes to ashes. Forgotten. But stone as crystals and fossils remains as the unique evidence of our paleolithic past, as a telling of stories of origin, myths of our ontogenesis as a people emerged from stone, with rock-hard memories: epiphylogenesis as mute lithic memory.[13] A stone axe designed as a weapon to kill an animal, or a granite boulder adapted as a mortar and a pestle mechanism used to pulverise acorns into meal act as mnemonic objects: they are residue and evidence of an exteriorised collective memory of a people whose elemental origin is said to be lithic, aquatic, earthen, terrestrial: soil and water. A (false) memory that forgets that the earth is a fire planet.[14] Such a planet doesn't care about ontogenesis, nor transgenerational memory, nor techno-aesthetics, only about transduction. Fire consumes it all, except its technological genetics. Fire, the forerunner of modern technology.

The day progresses with experiments of fake gold and fake news that, like wildfires, spread over plains and glaciers. The idea of fire that fires the idea of technology is the leftover desire of a form of thinking that makes humans hungry. It triggers a techno*logics* of instrumentalised knowledge as technology, and technology as power. It is a power that fragments and reticulates the territory, isolating and relating tendencies that run via regimes of distraction, and an insatiable appetite for war, destruction and control. The war machine of techno-capitalism and the societies of control it produces, consumes it all: the planet's biomass as starter. The dizzying acceleration of the technological order, the arrival of artificial intelligence, the obsession with digits and proxies, eclipse an environmental fire of unthinkable magnitude. The metastability, the precarious balance, necessary for the continued transformation and individuation of all provisional beings and their living environments is under threat. One by one, signs of impending catastrophes line up, forecasting rapidly approaching thresholds, tipping points, moments when all bodies, organic, artificial, docile and agential will reach their thresholds of sustainability. The afternoon sun disappears behind slate-coloured clouds. A black sky punctured by rolling thunder announces a storm of cosmic proportions. The air smells of overheated copper cables and planetary short-circuits. A lightning bolt strikes. It hits the tip of the top of a sequoia. For an instant the world is more alive than ever. The tree implodes, cracking open in halves. The redwood burns again, this time the energy of its fire is symbolically captured, recorded, deciphered, transmitted, controlled, while the earth around it is consumed by flames. It is the dusk of humanity. They identify as we.

We gather around the campfire again, but the fires that prolonged the day, and offered early humans the gift of safety, deep sleep and dreams, have been

replaced by the paralysing effect of blue light screens that distract us from the fires burning around us, robbing us of our sleep and extinguishing our dreams. In perpetual slumber and pumped up with dopamine-soaked brains, we wonder about the future of our planet, and of our young: of a people already here. But we shake off the worries thinking about the thermal death of the universe many aeons away, as we scroll through the newest life-hack on TikTok. Elsewhere, beetles, birds, marsupials, reptiles, bushes, trees, mushrooms, lichens and all sorts of beings slowly adapt and develop techniques to survive the Pyrocene.

Notes

1 Gilbert Simondon, *Du mode d'existence des objets techniques* (Paris: Aubier-Montaigne, 1969).
2 Ibid., 56–57.
3 Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford: University Press, 1989), 17.
4 This aphorism is often referred to as the first law of ecology, geography and environmental sciences.
5 Gilbert Ryle, *The Concept of Mind* (London: Hutchinson,1949).
6 Gregory Bateson, *Steps to an Ecology of Mind* (New Jersey: Jason Aronson, 1972), 460.
7 Ibid., 2.
8 Ibid., 489.
9 Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991).
10 Gilbert Simondon, *On the Mode of Existence of Technical Objects*, trans. by Cecile Malaspina and John Rogove (Minneapolis: University of Minnesota Press, 2017).
11 Bernard Stiegler, 'Elements for a General Organology' *Derrida Today* 13, no.1 (May 2020): 72–94.
12 Yuk Hui, 'Cosmotechnics', in *Cosmotechnics: For a Renewed Concept of Technology in the Anthropocene*, ed. Yuk Hui and Pieter Lemmens (London: Routledge, 2021), 1–4.
13 Ibid., 3. See also: Andrej Radman and Robert Gorny's editorial introduction 'From Epiphylogenesis to General Organology' in *Footprint Delft Architecture Theory Journal* 16, no.1, issue 30 (2022): 3–19, https://doi.org/10.7480/footprint.16.1.6291.
14 Stephen J. Pyne, *The Pyrocene: How We Created an Age of Fire, and What Happens Ne* (Oakland, CA: University of California Press, 2021).

In/Side/Out

Stavros Kousoulas

In the early pages of his seminal *Individuation in Light of Notions of Form and Information*, Gilbert Simondon makes a straightforward but challenging claim: the physical individual has no veritable interiority; only the living individual has an interior.[1] It is this claim that I will expand upon, while attempting (the audacity!) to problematise it by underlining its relativity; in the meantime, a few points that address issues of architectural concern should become apparent.

To unpack Simondon's provocative claim, we need to figure out the difference between what he terms physical and vital individuation. For Simondon, individuation (the genesis of an individual) is played out and expressed on a dimensional level; in other words, there is a certain topology and a certain chronology of individuation; below this level, reality is what Simondon calls pre-individual: an unindividuated field of energetic and informational potentials. For Simondon, individuation appears as an operation of this pre-individual field that can then be termed 1) physical individuation, when the individual can receive information from a single input and amplify it in a non-self-limited (homogeneous) manner or 2) vital, when the individual can simultaneously receive multiple inputs of information and render them compatible in its own self-limited (heterogeneous) individuation.[2] This is an extremely dense definition and needs further examination.

Simondon is explicit when claiming that above information as quantity (data) and information as quality (narrative) there is information as *intensity*.[3] This intensive understanding of information is one that equates it with meaning: information is the intensive difference that can provoke an intensive difference,

which in its own right is meaningful to an individual and can cause it to individuate further. The intensive capacities of information act as a significative potential, producing what is of significance for an individual while simultaneously affirming the individual. Simondon claims that what distinguishes a physical from a vital individual is what occurs right after the informational encounter. If an individual finds and establishes meaningful intensities that are nonetheless meaningful only to its own individuation, then we are dealing with a physical individual; if an individual encounters intensities that catalyse heterogeneity in a manner that is informative – meaningful – for more than its own individuation, then we are dealing with a vital individual, an individual that is *alive*.

The crucial point, if we are to take Simondon's argument to its logical conclusion, is that by such an account of physical and vital individuation we end in an extremely potent and destabilising (pun intended, as we will soon see) definition of life itself. More specifically, I will claim that Simondon, perhaps unwillingly, proposes a definition of life that is based on a radical understanding of the relation between interiority and exteriority, and by doing so – given that interiority and exteriority are not limited to what we traditionally call animate individuals – he proposes an understanding of life beyond life itself. It is crucial to understand here that the main characteristic of a vital individual is that its individuation remains incomplete, as opposed, for example, to the individuation of a crystal, a typical example of a physical individual. A complete individuation would correspond to the absorption of all the energetic and informational potentials of a system, leading to a stable state that no longer has any contact whatsoever with the pre-individual field. On the other hand, an incomplete individuation corresponds to a structuration that is still in contact with the pre-individual, not having absorbed all the energetic and informational potentials of its initial non-structured state; an incomplete individuation leads to a metastable state.[4] Why would one equate stability with physical individuation and metastability with vital individuation? Precisely because a system of stable equilibrium that has absorbed all potentials and therefore reached the highest degree of homogeneity is a system that cannot act, a system that cannot transform, a dead system.[5] To speak of action, we must examine systems that are metastable; systems that remain sensitive to unexhausted energetic and informational potentials, attempting to render them compatible with their own individuation and action, resulting in precisely this effort of compatibilising (to use a peculiar neologism from the English translation of *Individuation*).[6]

In short, information is produced by actions that attempt to render compatible what Simondon would call disparate potentials. Information is the meaning that will emerge when a continuing line of individuation would discover – or, better,

would invent – the dimension according to which two disparates can become compatible.[7] Transduction, a beloved term of Simondon's, describes precisely this compatibilising action. In an intuitive state, an individual encounters disparates that can potentially be meaningful to it. In bringing them together through action, matter and energy relate otherwise, therefore introducing new information. Transduction is literally the discovery of dimensions that make disparates communicate, so that each disparate can eventually become organised in new emergent dimensions but without any reduction or loss;[8] in that sense, transduction is a truly intensive approach to information, miles ahead of mere quantitative or qualitative accounts of it. Much like dialectics, transduction integrates opposites (disparates) but unlike dialectics, transduction does not suppose any a priori temporal framework in which ontogenesis occurs. Crucially, time is produced by individuating action, and does not pre-exist that action as a framing device; transduction then, as the manner in which the compatibilising action is expressed, intensifies the temporal constraints that individuation produces. Becoming, a term easier to digest than individuation, is *transduction on the present*.[9] As Simondon writes in a rare lyrical outburst, from the infinity of before to the one after, from the indeterminacy of before to the one after, from the first to the last dust, an operation is carried out that does not itself break into dust, making life *be* in its resolution, in its present and not in what remains of it.[10]

How then does this life-evoking transductive compatibilising action occur? Perhaps it's better to slightly rephrase: where does this compatibilising action occur? Simondon is once again straightforward and challenging to equal degrees: it happens on the limit, on the membrane, on the *side*. The individual, the being in the present of the disparate-resolving-individuating action is the active relation and exchange between the interior and the exterior; it individuates and is individuated before and despite any a posteriori distinction of interiority and exteriority. Moreover, the environment – or in Simondonian terms, the associated milieu – is not merely the place *in* which individuation unfolds. This would simply reintroduce a binary understanding of interiority and exteriority, as the very act of placing individuation *in* an environment-container implies. On the contrary, the milieu is the constituted active field of the relation between the interior and the exterior, the reality of the relation between two orders that communicate across a singularity – the individual.[11]

In this sense, individuation is the process where a metastable system encounters energetic and informational potentials – what Simondon abbreviates in the use of the single term *germ* – that disrupt it and force it to invent new dimensions that would compatibilise the newly relevant disparates. However, Simondon underlines, the relative nature of interiority and exteriority is

continuously modified in the germinal encounters themselves. As he claims, using the example of crystallisation, at the moment when a crystal is not yet constituted, the germinal conditions that energised its individuation can be considered exterior to the crystal, while when the crystal grows, it has incorporated, it has interiorised certain amounts of energy and information that constituted the basis of the initial encounter.[12] A germ is only provisionally exterior and provisionally interior, the individual constituting itself precisely on the way in which this provisional relation between interiority and exteriority is regulated. The germ – the energy and information that initially disrupted metastability – is not distinct from the individual; it remains included in the individual, who becomes an extensive germ: the *soma* is coextensive with the *germen*, and the *germen* is coextensive with the *soma*, the one becoming the other on the limit of the developing individual.[13]

That membranic limit is the present of the individual, the limit that expresses the ontogenetic dynamism, or what one could call the radically immanent identity of a being: the manner in which it is able to change with consistency and without dissolving. The individual is therefore a limited being in the sense that it is a polarising being, possessing an indeterminate dynamism in its individuation, only to be determined through resolving disparate potentials and in doing so, constituting itself and its milieu.[14] The degree of indeterminacy is precisely what distinguishes between a physical and a vital individual, since it determines the amount of heterogeneity that an individuation can both *interiorise* and *exteriorise*, implicate and explicate. The field of this complicating (and compatibilising) action is the limit, no longer the material boundary of an individual, but that which produces the individual itself.[15] An individual is determined by the energetic and informational intensity that the limit complicates, since as Simondon claims, it is the energetic and informational speed in relation to the duration of the act or event to which this energy and information are relative that define divergent degrees of individuality.[16] In other words, the individual is the expression of the synaptic energetic and informational complications that it itself as a limit is capable of. The membranic limit, what Simondon calls the heterogeneously continuous, will also eventually determine whether individuation remains physical – and therefore, self-referential – or vital: able to complicate matter and energy in a manner that introduces new information that can potentially be transduced.[17] Crucially, the membrane of a vital individual is selective, since it establishes such a transductive relation between interiorities and exteriorities, going from an absolute interiority to an absolute exteriority through different gradations of relative interiorities and exteriorities.[18]

It is at this point that Simondon's radical approach to a life beyond the animate appears. The whole mass of 'living' matter in the interior space is *actively*

present to the exterior world at the limit of the 'living' being, since all the products of past individuation are expressed immediately and without any distance whatsoever. Belonging to the interior milieu does not signify 'being inside' in the Euclidean sense, but being on the interior side of the limit without any delay in functional efficacy, without isolation, without inertia.[19] The vital individual does not interiorise by simply assimilating; it rather condenses and expresses everything that has been elaborated in its individuation: there is a particular topology and chronology in vital individuation, distinct from both Euclidean space and metric time.[20] However, and this is where Simondon can be further problematised, there is perhaps a single term that brings together space and time in a radically non-Euclidean manner: experience. Experience is the only thing that survives any reductionist abstraction, since it eliminates any distinction between space and time. Therefore, and for the remainder of this short text, I propose that we understand interiority and exteriority as purely experiential terms. Experience that has informed the vital individual belongs within the interior of the selective polarised membrane, in the condensed past; experience that can be informative belongs to the milieu of exteriority and it can come forth, potentially be assimilated, breach, harm or amplify the metastable living system: it belongs to the future. Interiorised experience and exteriorised futural experience confront each other at the polarised limit, producing the present of the living being, formed by both the synaptic passages and obstructions between past information and information yet to come. Put succinctly, the exterior is exterior, and the interior is interior relative to this mutual activity of presence;[21] in experiencing, time and space both as interiority and exteriority are produced.

When a predator hunts its prey, when a child eats an apple, when an author types on a keyboard, when the moon rotates around the earth, a heterogeneously continuous experience that now constitutes an all-encompassing membrane is produced: predator-prey, child-apple, fingers-keyboard, earth-moon, all these are relative interiorities and exteriorities that introduce novel metastable vital individuals as *being-in-relation*. The predator-prey is a living system, composed of two vital individuals that in the experiential action of their heterogeneous presents, simultaneously try to resist or provoke the reversal of their respective experiential interiority and exteriority; the moon-rotating-around-the-earth is a living metastable system composed of two physical individuals that similarly try to resist or provoke the reversal of their respective experiential interiority and exteriority, each from the disparate present of its heterogeneous activity. In other words, if being-in-relation is the simplest definition of a vital individual, then life is not merely the result of relationality but rather life *is* relationality; and, counterintuitive as it may seem, if the simplest definition of architecture could be

that of introducing new manners in which matter and energy can relate by allowing distinct presents to seduce one another – a window in a wall, a staircase on a floor, a division where there was none – then architecture not only produces, sustains or opposes the informational potential for novel vital individuations. Architecture, and this should not come as a surprise, is very much alive itself.

Notes

1 Gilbert Simondon, Individuation in Light of Notions of Form and Information, trans. Taylor Adkins (Minneapolis: The University of Minnesota Press, 2020), 8.
2 Ibid., 163.
3 Ibid., 267.
4 Ibid., 71.
5 Ibid., 235.
6 Ibid., 160.
7 Ibid., 11.
8 Ibid., 15.
9 Ibid., 363.
10 Ibid., 237.
11 Ibid., 50.
12 Ibid., 80.
13 Ibid., 84.
14 Ibid., 88.
15 Ibid., 132.
16 Ibid., 211.
17 Ibid., 225.
18 Ibid., 252.
19 Ibid., 254.
20 Ibid.
21 Ibid.

From Energy Humanities to Human Energetics: The Noetics of Approximate Knowledge in the work of Gilbert Simondon

Christoph Brunner and Jonas Fritsch

The notion of energy has gained much traction as a concept and guiding principle to understand major processes of anthropocentric shifts of terrestrial life. While energy as *energeia* already appeared in Aristotle's work, it is the historical conjuncture of 'fossil fuels, steam engines, global capitalism, human terraforming, the slave trade, climate systems, empires' – that is, Victorian thermodynamics since the 1840s – which inform this re-focusing of energy today.[1] In relation to the genealogies of petrocultures and carbon imaginaries, the energy humanities has emerged as a field of study taking shape over the last decade or so.[2] Principally, scholarship in the energy humanities seeks to contribute to the natural sciences through methods and concerns predominantly associated with the human and social sciences. In the following, we briefly outline some key concerns of the field of energy humanities, while contrasting the duality upheld between the human/social and natural sciences with a different approach, that of a 'human energetics.' Gilbert Simondon developed the latter in the 1960 talk 'Form, Information, and Potentials.'[3] Therein, he entertains the physics concept of 'potential energy' and suggests that a new 'human Science' should be founded, eliding the division between the human and natural sciences. More radically, his transductive approach proposes a rethinking of the human-technology-ecology nexus as the general relational principle of existence. It is in this general shift in problematising disciplinary divides and modes of thought where Simondon's valuable contribution to a noetics without a mind resides.

Following the Concept of Energy in the Energy Humanities

A starting point for the core onto-epistemological and transdisciplinary concerns opened in the energy humanities is the forcefully simple articulation by Imre Szeman that 'energy matters' – also for the humanities.[4] In their 2014 article 'The Rise of Energy Humanities: Breaking the Impasse', Dominic Boyer and Imre Szeman further situate the necessity for a humanistic take on current energy dilemmas in a time of widespread ecological crisis: '"Energy humanities" is an emerging field of scholarship that overcomes boundaries between disciplines and between academic and applied research. Like its predecessors, energy humanities highlights the essential contribution that the insights and methods of the human sciences can make to areas of study and analysis that were once thought best left to the natural sciences.'[5] They continue: 'today's energy and environmental dilemmas are fundamentally problems of *ethics, habits, imagination, values, institutions, belief, and power* – all traditional areas of expertise of the humanities and humanistic social sciences', and identify this as an absolutely central starting point for accentuating and revitalising humanist perspectives in rethinking energy across disciplines.[6]

According to Szeman and Jeff Diamanti, 'what is truly at stake in the energy humanities is the need to remap everything with an awareness of the enormous import of energy in mind.'[7] Whereas the authors mention different forms of energy in the article (such as wind, solar power), the main point driving energy humanities is a critique of the pervasive hegemony of oil, or the 'energy of fossil fuels' or 'a fossil-fuelled energetics.'[8]

In their introduction to the 2020 anthology *Energy Humanities: Current State and Future Directions*, Matúš Mišík and Nada Kujundžić argue that 'energy humanities… can provide insights into the different (social, cultural, political, ideological, etc.) factors hindering or supporting an energy transition, thus promoting our understanding of the transition towards a future post-carbon energy system necessary to mitigate climate change.'[9] They emphasise three central points that characterise the main objectives of energy humanities: the first is to trace our 'destructive attachment' to oil and other fossil fuels; the second is to 'study the degree to which it [energy] permeates our daily life and shapes our current culture, society, political system and even interpersonal relations'; and the third is to 'identify the social, cultural, and political changes necessary to facilitate a full-scale energy transition, anticipate their consequences, and imagine possible scenarios for a future "after oil".'[10]

Here, again, energy is simultaneously positioned as something 'outside' that folds into our, that is, human, very existential fabric, but without clearly articulating what we might term 'human energetics' – an energetics undermining

the split between human and natural sciences. In the more classic transfers between humanities and social sciences and the natural sciences, energy remains at the resource level, reinscribing a separation between a quanitative conception of the term and the need to account for its qualitative effects on human or cultural domains. In this entry we are trying to highlight that Simondon's notions of energy and potential energy move beyond this understanding of energy as a resource. Energy is also the capacity to change, which resonates with the third point made by Mišík and Kujundžić, and is further accentuated by Diamanti and Szeman: 'A critical theory of energy, like a critical theory of anything, needs to work in the service of emancipating social life from the impediments to being otherwise in relation to energy, of defining a different rhythm to what could come next in light of how we got here, and of unsettling the given that got us into this mess.'[11]

Importantly, energy humanities comes with a critique of capitalist extractivism and related phenomena such as colonialism – and is also 'fuelled' (pardon!) by eco-feminist thinking.[12] It further engages with the consequences of colonisation and the effects of energy by putting the (enslaved) body to work.[13] In addition to naming the major processes and devastating projects of modernisation, the step of moving away from our current dependency on fossil-based energetics necessitates the crafting of new experiential spacetimes and worldings: 'The transition away from fossil fuels will demand the development of new relations to time and space – not a return to what once was, but time and space reimagined in the wake of the experience of the expanded, extended selves of fossil fuel modernity.'[14]

Most crucially, this has consequences not only for how we conceive of and use energy, but for what constitutes subjectivity and sensoria: 'Subject formation amidst these mediated extensions into a world means that fossil fuels condition the subject's naturalized experience of sensoria, not because any one individual suddenly gains the capacity to globally think, feel, act and buy, but because the apparatus of energy becomes sedimented into the sensoria in which the subject feels out the world both directly and indirectly.'[15] This line of thinking suggests that whereas we might be 'subjects of energy,' we are also energetic subjects – in ever-changing processes of subjectivation.[16] Arriving at a deep and transformative critique means that engaging with these existential conditions requires a re-formation at an infrastructural level: 'A critical theory attentive to the historicity and materiality of energy sifts through infrastructure, because it is in infrastructure where one encounters the dusty, bloody, and sedimented archive of capitalism's longue durée over the bodies and resources of the planet.'[17]

The title of our entry hints at the need for a replacement or conceptual disciplinary move 'from' something 'to' something. While we still acknowledge this conceptual move, we are actually aiming at expanding the meaning of energy in the energy humanities. Again, this is not to subsume or reduce the importance of the work carried out, but rather to point towards some of the imaginaries called for. Perhaps we need to rethink not just the fossil-fuelled energetic foundation of modernity, but the entire notion of energy to be able to imagine more liveable futures today. This work was signalled some time ago by Howard Caygill in his short essay 'Life and Energy', which addresses some of the rationalistic principles coming out of Victorian thermodynamics in relation to both, industrialisation and Darwinian evolutionary theory.[18] The concepts of work and heat are crucial here, something that is put to work to reveal energy, that is, matter as fuel, and the organic body which constantly produces heat (as energy) and thus delivers a definition for the notion of life. Caygill and, more recently, Cara New Daggett signal the long history of energy and the impact of its scientific framing during the Victorian era, which gave birth to the domains addressed by energy humanities: infrastructure, subjectivity, sensoria, colonisation, and extraction. While these domains tend towards critical analyses of the shift in thinking energy as (fossil) fuel, the general question of energy as an overall principle oscillating between life and matter, activity and dissipation, is often an undercurrent in these debates. However, Daggett cautions us that energy is a northern European concept which was and is deployed as universalising principle.[19] If we turn to Simondon's ideas about a human energetics and general energetics we have to keep in mind that his project is not a universalist or humanist one, but one built on a new conception of science as a practice engaged with the formation of approximative knowledge beyond the nature-culture divide.

Rather than looking at what the human sciences can bring to the natural sciences, Simondon emphasises the ways in which these fields of research are deeply entangled and enmeshed within one another – energetically. Only by acknowledging this general condition (he speaks of a 'general energetics') can we arrive at radically repositioning energy beyond disciplinary foreclosure. We therefore see the proposed human energetics as traversed by a heterogeneous and diverse understanding of different kinds of energies across a number of (more-than-human) domains.

Simondon: Human Energetics and Human Science

Simondon writes, 'In any case, we would arrive at the idea according to which a human Science must be founded on a human energetics and not just on a morphology; a morphology is quite important, but an energetics is necessary.'[20] He argues for the need to develop a common axiomatics or human Science combining the efforts of the plural human sciences or humanities and the natural sciences in a joint discovery. What seems at first glance like a classic enlightened remodelling of the humanities is actually a fundamental critique of their disciplinary separation and potential mutual exclusion. Simondon carries out this reworking of humanist axiomatics in resonance with advancements in the (natural) sciences, and emphasises the introduction of the concept of potential and potentiality into psychology – his original disciplinary training. He carves out a conceptual genealogy moving from early nineteenth-century chemistry over Gestalt psychology and first generation cybernetics and information theory to rethink the notions of form, information and potential in the light of what Simondon calls the 'transductive operation.'[21] A transductive operation allows for an individual to individuate as a quasi-structuration that occurs through the continuous work of active relations, the constitutive elements of reality. Active relations are energetic and structuring.[22] They differentiate while not disrupting the interplay between individuals and their milieu.[23] Through his rethinking of the intimacies of form, information, and potential, Simondon outlines a new conception of knowledge and science. He terms this knowledge an 'approximate knowledge' which 'is not completely different from exact knowledge [but] is merely less stable.'[24] We conceive of Simondon's approximate knowledge as a way to understand his postulate for *a* human Science. Based on the principle of the transductive operation, such a science embraces knowledge as a relational process that needs to be thought through the conditions of its emergence (potential energy) and its capacity to differentiate (process of structuration). Both, emergence and differentiation, that is, individuation, can only occur when they *belong* to a system, where reciprocity is given and heterogeneity is not subsumed under an equalising universality (homogeneity).

The transductive operation, a rather technical and scientific term, pertains directly to what Simondon calls a field. With the term field he describes the constitutive ground from which an interplay between form and content can take place. The concept of the field is not a description for some aspects of phenomena, whether social or technical. Instead, it points at implicit orders that cannot be attached to fixed agents but are constantly produced and reproduced through transductive operations. Fields, Simondon argues, are abundant with potential for change and invention, since they are inherently metastable. The constitutive

field becomes a system – Simondon's broad term for dynamic processes of individuation across different energetic or energiseable strata – when two aspects are given: an active relation and reciprocity.[25] To achieve this new axiomatics of *a* human Science, Simondon turns towards energy and more concretely the physical notion of potential energy. This move overcomes the classic split between natural science and the humanities, and also demands from the human sciences to think in energetic terms – a human energetics – exceeding the merely quantitative casting of energy as magnitude while refraining from a mere qualitative understanding of the humanities.

Simondon explores the concept of energy as that which makes form-taking and change possible in processes of individuation across organic, physiological, social, technical, and psychological systems. Energy, and more precisely 'potential energy,' as an analytical category allows Simondon to conceptualise processes of individuation that occur through a system. In this quasi-cybernetic move, the system is not closed but a necessary ground from which the activity of energy becomes engaged with a potential process of individuation. Crucially, potential energy as the driving force of individuation 'always seems to be *bound to a system's state of dissymmetry*' and heterogeneity.[26] Accordingly, this dissymmetric state of a system reveals the central role of potential energy. It is potential energy that marks a constant (minor) destabilisation in the individuating process of a system. In this far-from-equilibrium logic of individuation, potential energy points at the relational ground of existence at the heart of Simondon's ontogenetic philosophy. Through continuous and minor destabilisation a system can be defined by its very mode of self-differentiation (through destabilisation). The axiomatic outlook of Simondon's human Science builds on the relational quality and quantity of potential energy, tying its potentiating capacities to the concrete material operations of a system.[27]

Simondon's interest in engaging the axiomatics of the natural sciences, cross-pollinating different scientific disciplines, leads him to outline a new programme for the humanities: with the notion of a human energetics, he shifts the focus from thinking the human along disciplinary differences towards the possibilities of a shared sensibility, and towards the emergence, continuation and potential dissolving of constellations that take shape across material, organic, and mental domains. Such a transductive programme is the very foundation of *Individuation in Light of Notions of Form and Information*. Simondon's proposition of a human energetics is astute, because it does away with the presumption of the natural sciences as quantitative and the human sciences as qualitative. For Simondon, potential energy 'corresponds to a real transformation in a system,' which operates by adhering to a 'virtual reciprocity of action between terms of a system.'[28] A transductive outline would allow us to embrace the system-based

view through the presence or absence of potential energy as a circumvention of the problematic binary between the natural and the human and social sciences. The physics concept of potential energy actually exceeds the quantitative, as much as its capacity to shape transductive operations exceed its qualitative, that is, cognitive or imaginary, state.

The implications of Simondon's human Science ought not to be underestimated. Thinking about human Science as a field rather than an inter- or transdisciplinary combination of methods and truths, we move toward an emergent conception of science. To understand this new field-oriented notion of science, the principle of potential energy is crucial. As outlined above and in all brevity, potential energy occurs when a field is traversed by heterogeneous elements and resides in a state of dissymmetry. Human Science as a dissymmetric system generates approximate knowledges that are situated and genealogical while also challenging assumed truths. In relation to the urgent field of the energy humanities, we consider such a conception of potential energy a valuable addition to the already perceivable entanglements of subjects, sensoria, infrastructures, time and space. A human Science conceived through human energetics addresses potential energy as the relational realism through which transductive operations occur and become effective. Through the transductive processing a new kind of sense-making emerges, for which the human Science Simondon had in mind sheds new light on a more general energetics and how its mode of approximate knowledge operates.

Notes

We would like to thank Thomas Jellis for his insightful commentary on a first iteration of this text and the hints to Deleuze and Guattari's writings on the 'anexact yet rigorous.'

1 Cara New Daggett, *The Birth of Energy: Fossil Fuels, Thermodynamics, and the Politics of Work, Elements* (Durham, NC: Duke University Press, 2019), 16.

2 On petrocultures, see Sheena Wilson, Adam Carlson and Imre Szeman, eds., *Petrocultures: Oil, Politics, Culture* (Montreal: McGill-Queen's University Press, 2017); on carbon imaginaries, see Elizabeth A. Povinelli, *Geontologies: A Requiem to Late Liberalism* (Durham, NC: Duke University Press, 2016).

3 Transcribed in Gilbert Simondon, *Individuation in Light of Notions of Form and Information. Volume 1,* trans. Taylor Adkins (Minneapolis: Minnesota Press, 2020), 672–97.

4 Imre Szeman, 'Towards a Critical Theory of Energy', in *Energy Humanities: Current State and Future Directions*, ed. Matúš Mišík and Nada Kujundžić (Cham: Springer International Publishing, 2021), 23–36.

5 Dominic Boyer and Imre Szeman, 'The Rise of Energy Humanities Breaking the Impasse', *University Affairs* (blog), 12 February 2014, https://www.universityaffairs.ca/opinion/in-

my-opinion/the-rise-of-energy-humanities/.

6 Imre Szeman and Dominic Boyer, eds., *Energy Humanities: An Anthology* (Baltimore: Johns Hopkins University Press, 2017), 40, our emphasis.

7 Jeff Diamanti and Imre Szeman, 'Nine Principles for a Critical Theory of Energy,' *Polygraph: An International Journal of Culture & Politics* 28 (August 2020): 137.

8 Ibid.

9 Matúš Mišík and Nada Kujundžić, 'Introduction,' in *Energy Humanities*, ed. Mišík and Kujundžić, 6.

10 Ibid., 10.

11 Diamanti and Szeman, 'Nine Principles,' 137.

12 Szeman and Boyer, *Energy Humanities*.

13 Daggett, *The Birth of Energy*, 5–8; Nicholas Fiori, 'Plantation Energy: From Slave Labor to Machine Discipline,' *American Quarterly* 72, no. 3 (2020): 559–79.

14 Diamanti and Szeman, 'Nine Principles,' 141.

15 Ibid., 142.

16 Szeman, 'Towards a Critical Theory of Energy,' 26.

17 Diamanti and Szeman, 'Nine Principles,' 154.

18 Howard Caygill, 'Life and Energy,' *Theory, Culture & Society* 24, no. 6 (November 2007): 19–27; Daggett, *The Birth of Energy*.

19 Daggett, *The Birth of Energy,* 7.

20 Simondon, *Individuation*, 696.

21 Ibid., 676.

22 Ibid., 67.

23 Ibid., 62.

24 Ibid., 76.

25 Ibid., 62.

26 Ibid., 60, emphasis in the original.

27 The resonances with Gilles Deleuze and Félix Guattari's conceptions of 'intensive magnitudes' are more than apparent, but could not be further developed in this context. The same accounts for Simondon's concept of approximate knowledge and Deleuze and Guattari's elaborations of a minor science as 'anexact yet rigorous.' See Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia II*, trans. By Brian Massumi (Minneapolis: University of Minnesota Press 1987), 153 and 367.

28 Ibid., 56.

Society Must Be Ecologised

Andrej Radman

Let us imagine that you have invited a group of friends to dinner, and they are not vegetarians. The example is borrowed from N. Katherine Hayles (who in turn borrowed it from Hans Moravec, whose written source could not be traced). So, you find yourself in a supermarket in front of a meat refrigerator, realising that your choice essentially boils down to poultry, pork, veal, and beef. Who decided to reduce the infinity of possibilities to these four choices? Nobody did, or perhaps everybody did to some extent. Better still, not everybody, but everything. However, even this is not quite right because it keeps us firmly locked in a reified world. So, *what* has decided? The answer is *ecologies*, always plural. It is at least three ecologies – mental, social, and environmental – that have conjointly modulated the attractor landscape to produce the four basins of attraction, while simultaneously 'pushing alternatives up the hill.'[1]

Let us consider some of the repelling ridges.[2] The choice of carnivore meat is repelled because carnivores feed on carnivores and as such do not present a viable choice. Some choices are strongly repelled on account of social codes (halal, kosher and so on). Vegetarianism strives to remove any meat attractors. There are also those non-carnivore choices that are simply too difficult to breed, as they may be too aggressive or scarce. In any case, the four choices of meat are not logically necessary but only ever contingently obligatory. The emergent yet constructed morphogenetic field is not the cause, but the quasi-cause by virtue of its static genesis. Static genesis, as opposed to dynamic genesis, starts from virtuality, where time is no longer a measurement of movement. The

attractor landscape reverses the subordination of time to movement. As such, it draws ecologies towards the realm of metastability and plasticity, away from mechanicism and facile finalism.

The four basins of attraction are neither eternal nor essential. It could have been otherwise. They are not arbitrary either. This means that the bad ego-logical habit of looking for the doer behind the deed has to be jettisoned in favour of the eco-logical non-entailment. Every singular basin of attraction is to be related to the variables that determine its mutations. The choice of the observables becomes crucial. This is a matter of granularity. Ecologies operate between too-abstract empty generalisations and not-abstract-enough idiosyncratic particulars. It would be utterly uninteresting to subsume all the supermarkets under a universal concept, just as it would make no sense to theorise a unique case from one's own neighbourhood.

Ecologies operate without concern for origins or ultimate goals, instead functioning from the milieu. The four basins of attraction are a result of this process of 'middling', generated by multiple forces acting upon each other to create a temporary resolution within a charged zoe-geo-techno field.[3] This process involves both practical and theoretical actions relaying between the form of content (livestock farming), the substance of content (animals), the substance of expression (logistics) and the form of expression (an unfashionable carnivorous lifestyle). The three ecologies at work across the four ontological domains are mutually determining and irreducible. Félix Guattari's fourfold diagram, developed in *Schizoanalytic Cartographies*, offers a nuanced approach to maintaining the heterogeneity of the assemblage along the horizontal axis of reference and vertical axis of consistency.[4] In the example provided, the endo-referential and endo-consistent nutrient is separated from the exo-referential and exo-consistent style by the ontic relay of distribution and refrigeration, as well as the pathic relay of animal rearing and dismemberment. Assigning blame or praise for the limited selection of meat in supermarkets is an ego-logical moralising attitude that fails to address the complexity of the eco-logical system. A woke attitude is similarly insufficient, as reacting against constraints simply reinforces them. To act eco-logically and ethico-aesthetically, one must be attuned to the event in its singularities.

It should be evident that ecologies need to be rescued from the superficiality of greenwashing. It is important to recognise that ecologies are not solely natural or cultural, but both. In the meat diagram, the expressive domains are really distinct from the content domains, not just modally. Most notably, the virtual pathic domains hold a degree of indeterminacy, which in turn allows for novelty. The actual rule and virtual value in material-discursive assemblages are linked by the

process of progressive differentiation. They qualify as 'machinic' because of their productive character that escapes representational mediation – assemblages are like factories rather than theatres. This implies that ecologies have always been machinic, even before the development of advanced digital technologies. To be machinic is not to conflate data with information or collapse values into rules or content into expression. Despite advocating for untainted objectivity, some proponents of artificial intelligence continue to operate on flawed epistemological and ego-logical assumptions. For instance, they may claim that a computer could have discovered Kepler's laws from Tycho Brahe's data.[5] However, what is conveniently overlooked is the shift from the geocentric point of view (Ptolemy) to the heliocentric (Copernicus), facilitated by the geometry of perspective invented by Italian painting. In other words, data alone is insufficient. A change of perspective is a difference that made the difference. The emergent patterns of big data could not have brought about the paradigm shift. Why would someone decide to take the sun's point of view or to become a vegetarian, contrary to lived experience and all previous knowledge? This is inexplicable unless we consider the eco-logical perspective, which changes the framework of understanding by retaining the irreducibility of the ontic and pathic dimensions of existence, the vital asymmetry of the actual and the virtual. It is naive to believe that the workings of ecologies can be formalised and automated, reduced to concrete effects by rule-based thinking grounded on logical deduction mechanisms that can be processed anonymously and objectively.

The heterogeneity of ecologies is a matter of space and time. In the example of the limited meat choices at a supermarket, none of it would be possible without 'instituting', which refers to everything that is invented or artificial in contrast to what is given or natural. 'Instinct' and 'institution' thus essentially refer to different modes of gratification.[6] While an organism instinctively responds to external stimuli, extracting from the environment the elements that will satisfy its tendencies and needs, it may also institute an original world between its tendencies and the external environment, thus developing artificial means of satisfaction. Such evolution through means other than natural liberates an organism from a reactive (and thus reactionary) state, and subjects it to a different mode of existence and a novel environment; for instance, livestock farming frees us from (ad hoc) hunting. Every experience presupposes the existence of a milieu in which that experience is conducted: a species-specific milieu or an institutional milieu. Instinct and institution are thus two distinct modes of possible satisfaction: instant and deferred gratification. Institution is always given as an organised system of mnemonic means. Its operation could thus be further recast as a quasi-subjectivity of flows and their interruption in the quasi-objective forms of a collective, and that is why instituting will be joined at the hip with archiving.

It is essential to emphasise the distinction between institution and law. While law imposes limits on actions, institutions provide a positive model for action. In summary, a tyranny is a regime where there are many laws and few institutions, while a democracy is a regime with many institutions and few laws. Once again, when referring to institutions we are in fact discussing procedures of satisfaction. However, the tendencies satisfied by these procedures do not trigger or determine the procedures themselves. Simply put, tendencies are satisfied through means that are not dependent on them. Therefore, no tendency exists in isolation; all tendencies are constrained, for better or worse.

Consider the catalysis of pictorial perspective mentioned above, which resulted in the creation of trans-spatial and trans-generational enabling constraints as an eco-logical 'remedy' to counteract the negative impacts of ego-logical stupidity and the associated disabling constraints. It is through a speculative pragmatist approach that we can address the issue of how an invention – which offers a tendency a suitable object of satisfaction – can be achieved when its realisation requires a period that exceeds our biological lifespan. In the words of Gilbert Simondon:

> The process of invention may be formalized more comprehensively when it produces a detachable object, or a work independent from the subject, that is transmissible, that can be communalized, and that constitutes the basis of a relation of cumulative participation. Without wishing to negate the theoretical possibility or actual existence of cultures within certain animal species, we should note that the main limit of these cultures devolves from the paucity of means of successive transmission, the lack of an object that is constituted as detachable from the living beings that produced it, yet interpretable by other living beings that reuse it by taking the results of the terminal effort of their predecessors as a starting point. In other words, it is not so much the capacity of organizing spontaneity that animal societies lack but the power to create objects, if by creation we mean the constitution of a thing that can exist and have a meaning in a way that is independent from the living activity that made it.

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 transindividuation.[7] Simondon continues:

> The creation of objects enables progress, which is a web of inventions one resting on another, with the latest subsuming the earliest. The organization of a nest or a territory vanishes with the couple or group that formed it; it is, at least, in the most elementary organic forms that the preservation of the object created or secreted by previous generations is the most effective as an organized support for later generations (coral, forest humus, etc.); these effects of cumulative causality resurface after that, in a clear and decisive way, only within the human species in the form of created objects having a meaning for a culture. There is no guaranteed progress so long as culture, on the one hand, and the production of objects, on the other, remain independent of each other; the created object is precisely an element of organized reality that is detachable because it was produced according to a code belonging to a culture enabling it to be used far from the time and place of its creation.[8]

The key lies in conceptualising eco-logical intelligence as something more social than individual and realising that it finds its intermediate milieu in the exo-somatic sphere. This (annexed) milieu, along with the knower and the known, is the third term that makes intelligence possible. The transversal relationship between instituting as protention and archiving as retention is based on integrating circumstances into a system of anticipation and internal factors into a non-anthropic mnemonic system that regulates their appearance. Transversality bridges the gap between desire and power, understood in terms of capacity or potentiality. Night occurs because we sleep, not the other way around. There are no social tendencies as such, only social means – the 'how', or style – that satisfy tendencies. The ontogenetic entanglements of finite matter and unlimited manner are transindividual.

Every institution or archive imposes constraints, even in its involuntary structures, and thus impacts our knowledge. While we may have lost instincts, we can still build democratic institutions and continue to create sustainable modes of existence. The eco-logical theme of artifice will provide an opening for collectives not to repeat past events identically, but to embrace the transformational possibilities of the present, also known as 'futurity'.

Notes

1 Félix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London: Continuum, 2008).

2 Conrad Waddington's epigenetic landscape (a.k.a attractor landscape), later to become the Chreod, is a 'figure of time.' As Sanford Kwinter explains, a Chreod refers to an invisible but not imaginary feature in an invisible but not imaginary landscape (with valleys and ridges) on which a developing form gathers the information and influence necessary for it to make itself what it is. See: Sanford Kwinter, 'A Discourse on Method (For the Proper Conduct of Reason and the Search for Efficacity in Design)', in *Explorations in Architecture: Teaching, Design, Research*, ed. Reto Geiser (Basel: Birkhäuser, 2008), 34–47 (40–5). Cf. Conrad Hal Waddington, *The Strategy of the Genes* (New York and London: Routledge, 2014 [1957]), 29.

3 Rosi Braidotti, *Posthuman Feminism* (Cambridge: Polity Press, 2022).

4 Félix Guattari, *Schizoanalytic Cartographies*, trans. Andrew Goffey (London: Bloomsbury, 2013).

5 Andrea Angelini, 'Comparing Artificial, Animal and Scientific Intelligence: A Dialogue with Giuseppe Longo', *Theory, Culture & Society* 39, no. 7–8 (2022): 71–97.

6 Gilles Deleuze, 'Instincts and Institutions', in *Desert Islands and Other Texts 1953–1974*, ed. David Lapoujade, trans. Michael Taormina (Los Angeles: Semiotext(e), 2024), 19–21.

7 Jean-Hugues Barthélémy, 'Glossary: Fifty key terms in the works of Gilbert Simondon', in *Gilbert Simondon: Being and Technology*, eds. A. De Boever, A. Murray, J. Roffe, & A. Woodward (Edinburgh: Edinburgh University Press, 2012), 203–31). Cf. Andrej Radman and Robert A. Gorny, 'From Epiphylogenesis to Generalised Organology', *Footprint* 16, no.1 (Issue 30, ed. R.A. Gorny and A. Radman) (2022): 3–19, https://doi.org/10.7480/footprint.16.1.6291.

8 Gilbert Simondon, *Imagination and Invention*, trans. Joe Hughes and Christophe Wall-Romana (Minneapolis: Minnesota University Press, 2023), 163.

Ethology, Ontological Perspectives, and Encounters

Halbe Hessel Kuipers

Jacob von Uexküll's work on ethology, notably *A Foray into the World of Animals and Humans* (1934), has been of great interest to numerous prominent philosophers, among them Martin Heidegger, Maurice Merleau-Ponty, Gilles Deleuze and Félix Guattari, Giorgio Agamben and Elisabeth Grosz, not to mention a wealth of secondary literature on these different interpretations.[1] In the extraordinary observations Uexküll makes on animal behaviour and their lived worlds, or what he calls their *Umwelt*, there is not just an inquiry into the nature of beings, but also a problematisation of the nature of things**.** While Uexküll's most remarkable accomplishment is certainly an opening to the perspectives of animals akin to humans, their being in the world by virtue of these Umwelten – Agamben calls Uexküll's work 'the height of modern anti-humanism as such' – ethology is not limited to or by the beings, or being more generally. Here I mean to tease out the possibility for seeing what can be called the 'more-than human' in Uexküll's work in terms of perspectives.

My starting point is the perspectivism nascent in ethology: what there is depends on the perspective in accordance with an Umwelt. As Elisabeth Grosz affirms, 'Uexküll advocates an extreme perspectivism in which objects are not autonomous or independent sets of qualities and quantities, but opportunities for engagement that offer themselves in particular ways to particular organs and remain otherwise indiscernible.'[2] The crux of perspectivism in ethology is that it will foreground the encounter of different Umwelten to show that one perspective cannot be reduced to another in presupposing a common base. It makes clear

that these perspectives entail entirely different logics of sense, that is, different ontologies. Or as Deleuze puts it, 'A thing has as many senses as there are forces capable of taking possession of it.'[3] If a thing can indeed be a different thing ontologically, then nothing limits a thing that is in one perspective inanimate, to be animate in another. In the same way non-physical entities, such as spirits and ghosts, can also be real. This allows me to align ethology with what the Brazilian anthropologist Eduardo Viveiros de Castro, a doctrine learnt from the Amerindian cosmology, calls 'ontological perspectivism.' As such, the encounter here staged is the not only between the human and non-human entities, but also between the modern ontology and non-modern ontologies. In these encounters, the more than human becomes prominent and the science of ethology becomes cosmological.

The Tick and the Umwelt

Ethology provides a rigourous yet anexact science of animal behaviour. Its rigour lies in the minute observing and tracing of the different modes of perception that make up an animal's Umwelt and afford its kinetic movements. The anexact lies in how different affects in an Umwelt engender a dynamism that is relational in terms of how they constitute the interiority of the creature while composing with the outside via a 'counterpoint.'[4] By ways of encounters, Umwelten come into relation with one another, interpenetrate, and even end up entirely in sync. The affects are thus not limited to the interiority of a creature, but rather foreground the potential to generate novel relations exceeding their terms. It is in this sense that Uexküll continuously speaks of the Umwelten as composing a music with specific tonalities and harmonies. I will return to this below. Looking more closely at one of Uexküll's prime examples, the Umwelt of the tick, allows me to unfold this. Uexküll describes how a female tick, after having copulated, has three different modes of perception. He writes:

> Once the female [tick] has copulated, she climbs with her full count of eight legs to the tip of a protruding branch of any shrub in order either to fall onto small mammals who run by underneath or to let herself be brushed off the branch by larger ones. The eyeless creature finds the way to its lookout with the help of a general sensitivity to light in the skin. The blind and deaf bandit becomes aware of the approach of its prey through the sense of smell. The odour of butyric acid, which is given off by the skin glands of all mammals, gives the tick the signal to leave its watch post and leap off. If it then falls onto something warm – which its fine sense of temperature will tell it – then it has reached its prey, the

> warm-blooded animal, and needs only use its sense of touch to find a spot as free of hair as possible in order to bore past its own head into the skin tissue of the prey. Now, the tick pumps a stream of warm blood slowly into itself. [5]

The description is exemplary of the meticulous observation ethology deploys, seeing the most minute detail in the lived world of the tick. While the tick is deaf, blind and mute, there are nonetheless ample sensations across the three modes of perception: a sensitivity to light allows her to find a spot on a branch, a sensitivity to odour allows her to track her prey, a sensitivity to warmth allows her to home in on her prey and to infer when it is close enough to drop onto, and finally a sensitivity to touch allows her to find a spot free from hair on the skin and start sucking. In turn, the modes of perception, Deleuze argues, need to be understood in terms of a longitudinal and a latitudinal pole.[6] The longitudinal pole concerns speeds and slownesses, or motions and rests, and is thus kinetic. The latitudinal on the other hand concerns the affects – as Grosz summarises for the tick, 'the smell of butyric acid, the warmth of the sun and the mammal's skin, and the taste of blood' – and is dynamic. Together these continuously compose a body that is the tick.

> In the first place, a body, however small it may be, is composed of an infinite number of particles; it is the relations of motion and rest, of speeds and slownesses between particles, that define a body, the individuality of a body. Secondly, a body affects other bodies, or is affected by other bodies; it is this capacity for affecting and being affected that also defines a body *in* its individuality ... one is kinetic and the other, dynamic.[7]

The Umwelt, Deleuze argues, is a kinetic dynamism with as its locus a body whose individuality is defined by the speeds and slownesses, as well as defined *in* its individuality by the capacities to affect and be affected. As with the tick, the individuality of its body is defined in the sense of the tick moving onto the branch, dropping itself, and then searching for a spot free of hair: from stillness in waiting to motion in dropping. But it is also composed between the different affects, defining a body *in* its individuality. Here the affects gain a sense in relation to another body: first the branch and its tip, then a mammal's body and its temperature, and finally again, if successful, the skin, hairs, and warmth of the mammal's blood. In this way, ethology is about, to use Spinoza's adage, 'what a body can do.'[8] The potential of what a body can do is here not a mere physical capacity, precisely because it composes the interiority as well. In other words, something else between what

is inside and outside, interior and exterior, comes into play that exceeds what is afforded in the milieu.

The body that is thus composed, that is the locus of these potentials, is also more than simply a physical container that responds in terms of causal impulses.[9] A body is nothing but that which can be determined as actant, that is, *responds* to specific signs in the environment out of many, not that which harbours causal impulses. This is crucial because it means we must treat a body as something more than merely that which is considered a sentient being, such as the animal or human. If a body is defined between these poles, then anything that affectively acts, is a body: a cloud bodies as much as a human, as much as a tree. But even the character in your favourite television show bodies in this sense. Whether material or immaterial, corporeal or incorporeal, abstract or concrete, all things potentially body – where the noun 'body' thus becomes a verb in its activity. Bodies truly become something supernatural.[10] This is of interest because it unearths what otherwise remains hidden as the ground or base of acting, and by extension of being: what in the modern perspective has been designated as a mind, but before was referred to as the soul. Whether a cloud has a soul is not a strange question for perspectivism, as Viveiros de Castro affirms.[11]

Ontological Perspectivism

The perspectivism in ethology can be seen to problematise the nature of things, as Grosz had remarked. This is evident when Uexküll writes that

> every object becomes something completely different on entering a different Umwelt. A flower stem that in our Umwelt is a support for a flower, becomes a pipe full of liquid for the meadow spittlebug (*Philaenus spumarius*) who sucks the liquid to build its foamy nest. The same flower stem becomes an upward path for the ant, connecting its nest with its hunting ground in the flower. For the grazing cow the flower stem becomes part of a tasty morsel of food for her to chew in her big mouth.[12]

With Uexküll's observation that a thing is not the same thing from a different perspective, we are within the regions of what Viveiros de Castro calls 'ontological perspectivism.' He has learned this doctrine from the Amerindians he studies with as anthropologist. It departs precisely from the proposition that 'the thing we see, might not be the same thing, ontologically.' It sounds strange, yet it is also deceptively simple. Viveiros de Castro often cites Amerindian examples, such as: what is blood for us, is manioc-beer for the jaguar; what is but a muddy waterhole

for us, is a great ceremonial house for the tapir; what are maggots for us, are grilled fish for the vultures; or what is soaking manioc to us, is a rotting corpse for the souls of the dead. The first thing to notice is that, while animals certainly play a vital role in the Amerindian cosmologies, as much indeed involves the relations with animals, the perspectives are certainly not limited to sentient beings as the only non-human actants: the souls of the dead equally take on a perspective and see things differently. For that matter, other non-human things such as trees, plants, mountains or clouds might also engender perspectives. All for the simple reason that they body.

The locus of difference between the Amerindian cosmology and Western thought, is precisely the body. For perspectivism, it is bodily difference in its affective capacity that makes a difference. As Viveiros de Castro says, the point of view is always in the body. He summarises the difference as follows:

> Amerindian thought proposes the opposite: a representational or phenomenological unity that is purely pronominal or deictic, indifferently applied to a radically objective diversity. *One culture, multiple natures – one epistemology, multiple ontologies*. Perspectivism implies multinaturalism, for a perspective is not a representation. A perspective is not a representation because representations are a property of the mind or spirit, whereas the point of view is located in the body. The ability to adopt a point of view is undoubtedly a power of the soul, and nonhumans are subjects in so far as they have (or are) spirit; but the differences between viewpoints (and a viewpoint is nothing if not a difference) lies not in the soul. Since the soul is formally identical in all species, it can only perceive the same things everywhere. The difference is given in the specificity of bodies.[13]

That everything has a soul is the animism found in Amerindian cosmology.[14] But such animism is non-generic from the point of view of the body. Things that are alive for one perspective, might not be so for another. Perspectivism involves seeing the same way, but seeing a different world because the eyes with which we see the world are not the same: 'Whatever possesses a soul is capable of having a point of view, and every being to whom a point of view is attributed is a subject; or better, wherever there is a point of view, there is a "subject position".'[15] Moreover, these bodies, on account of the affects in play, are always involved in singular encounters. What Viveiros de Castro calls above 'a representational or phenomenological unity' is nothing but the event. With such a conception of both soul and body in relation to the event, we can then grasp the profundity of the encounters of different Umwelten in a more-than-human sense.

A Counterpoint is an Encounter

In line with ontological perspectivism, Uexküll's perspectival ethology might be even more radical than Grosz acknowledges. In view of a thing being different per Umwelt, she notes that the 'Umwelt of the organism is precisely as complex as the organs of that organism.'[16] While this may certainly be true, at the same time, if a different perspective is indeed ontologically different by virtue of the body, then the Umwelten need to be seen as going beyond the complexity of the sense organs. Or to be more precise, an Umwelt may well be constituted by such complexity, yet the encounters necessarily go beyond it. Uexküll says as much when he affirms that what is important with the Umwelt is precisely how it relates to others via counterpoints. For instance, he notes that the world of the spider is non-communicable with that of the fly, and yet they are always composing a music together.[17] The web, we can say, transversally connects these two worlds as counterpoint: what is for the spider essential to its practice of preying, is for the fly practically 'indiscernible.'[18] It is also precisely this transversality that Viveiros de Castro considers essential to ontological perspectivism, exemplified by shamanism.[19]

The tick must be seen in the same manner. When the tick's Umwelt comes into contact with another Umwelt, like with that of a human when it lets itself fall on a human body from its branch, true complexity takes place. While the tick's affects may indeed be limited to the smell, the warmth and the taste, its encounter with the human in striving to reproduce creates novel relations and possibilities. Perhaps because the human perceives the tick as dangerous, and thus reacts to remove the tick once landed on its body, something novel is brought into the world of the tick. Or perhaps the human a priori takes measures to prevent the tick from properly landing, such as wearing a raincoat. The tick's landing on clothes may be seen as constituting a novel sensation of the same affect: the raincoat changes the pace of the tick's search for an open spot, with its rubbery surface and almost sticky quality no doubt slowing down the tick's movement.

This brings me to my final point. Bringing ethology and perspectivism together is to highlight that, first, there are multiple natures as ontologies in accordance with ontological perspectivism. Seen this way, an Umwelt is a nature in itself, with its logic of sense proper. These are constituted by the affects in relation to the bodies that populate it. Second, there is but one culture, which is relation, but these are effectively relations of non-relation, or transversal, insofar as they emerge in the encounter of different Umwelten and ontologies: what is dangerous for the human, does not only make no sense in the tick's universe, but it has no sense at all. If for a jaguar blood might be manioc-beer, we can imagine that in the case of the tick, blood is also nothing but a drink, a nectar of life even,

perhaps even wine as it literally gets drunk on it and eventually kills itself by over-consuming it. But for us it is blood, and we need it to survive, hence there is danger in it being drunk; not to mention that we need to keep our blood 'pure.' The real risk does not lie in the blood being sucked so much as in the Lyme disease with which we might get infected. Note how the affected is here an infection as effect, cutting across ontologies by injecting itself. This means that for us humans the tick is a threat even before its actual landing and sucking; humans, on the other hand, are perhaps nothing but very large vessel of wine, the nectar for the tick that strives to reproduce.

All the same, we might envision the same encounter of the tick with the branch it seeks the tip of. This branch is bodying in terms of affects as much as the human is, though of course we can speak of entirely different complexities in their logics of sense. But that it is possible means that ethology opens up to entirely different non-human actants as well: indeed, a tree as much as a cloud as much as an evil spirit. The more than human, via the encounters, is primarily what shapes each Umwelt, as a sort of membrane that, while constituting its own little bubble, remains continuously open, albeit for a communication that is nonsensical from its own perspective.

Notes

1 Martin Heidegger, *The Fundamental Concepts of Metaphysics: World, Finitude, Solitude*, trans. William McNeill and Nicholas Walker (Bloomington: Indiana University Press, 1995 [1929]); Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Donald A. Landes (New York: Routledge, 2010 [1945]); Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987); Giorgio Agamben, *The Open: Man and Animal*, trans. Kevin Attell, (Stanford: Stanford University Press, 2004 [2002]); Elizabeth Grosz, *Chaos, Territory, Art: Deleuze and the Framing of the Earth* (New York: Columbia University Press, 2008).

2 Grosz, *Chaos, Territory, Art,* 41.

3 Gilles Deleuze, *Nietzsche and Philosophy,* trans. Hugh Tomlison (New York: European Perspectives, 2006), 4.

4 Jakob von Uexküll, *A Foray into the Worlds of Animals and Humans: With A Theory of Meaning*, trans. Joseph D. O'Neil (Minneapolis: University of Minnesota Press, 2010 [1934]), 172

5 Ibid., 44–45.

6 Gilles Deleuze, *Spinoza: Practical Philosophy*, trans. Robert Hurley (San Francisco: City Light Books: 1988), 127.

7 Ibid., 123.

8 Ibid., 60.

9 Grosz, *Chaos, Territory, Art* , 42.

10 Eduardo Viveiros de Castro, *The Relative Native: Essays on Indigenous Conceptual World* (Chicago: HAU Books, 2015), 182.
11 Ibid., 28.
12 Jakob von Uexküll, 'The New Concept of Umwelt: A Link between Science and the Humanities', *Semiotica* 2001 no. 134 (2006): 108.
13 Eduardo Viveiros de Castro, 'Exchanging Perspectives: The Transformation of Objects into Subjects in Amerindian Ontologies', *Common Knowledge* 10, no. 3 (2004): 473; original emphasis.
14 Viveiros de Castro, *The Relative Native*, 58.
15 Viveiros de Castro, 'Exchanging Perspectives', 467.
16 Grosz, *Chaos, Territory, Art* , 41.
17 Uexküll, *A Foray*, 158–61; Grosz, *Chaos, Territory, Art* , 44.
18 Grosz, *Chaos, Territory, Art* , 41.
19 Eduardo Viveiros de Castro, *Cannibal Metaphysics* (Minneapolis: University of Minnesota Press, 2014), 151.

Archaea Diaries

Bastian Schleier

After our long stroll through the forest, Martin and I finally arrive at the factory. We crouch to go through an opening in a wall in front of us, making our way into the site. The plot lies between steep slopes, carved by the river in the centre, making its way down towards the plains. To our right, granite rock appears under the building, with the weight of the floor above us resting on the solid rock. Ahead, a narrow path leads to the centre of the plot. Resonating between the buildings, the murmur of water blocks out any other sounds from the surroundings. To our left, the imprints of a torn-down hall define a garden, and old window openings form arcades, allowing for streams of water to enter this *hortus conclusus*. Old machines are now overgrown by moss and lichen. In this garden of discard, an abundance of bodies call these machines their sanctuary.

As we follow the path along the arcades, groups of people in white coats start appearing between the old buildings, while some families enjoy a cold beverage on the terraces among the lush green of the garden. Above our heads, we hear chatter and turn around. Elderly people in bathing robes ascend a slope towards what seems to be a sauna.

'What a strange place,' Martin mumbles. I agree that the space is a little surprising at least. We make our way to a large concrete building at the other end of the garden and a researcher appears in a white lab coat. Curiosity seems to have overtaken Martin and he hobbles towards her with his cane. The researcher at first seems irritated by the approaching old man, but as he asks about the site and the white coats, she responds politely.

'This place was once a paper factory dating back to the 1900s, which unfortunately faced bankruptcy around 2008, a fate shared by many in the valley during that period. Since then, its functions have diversified significantly. Some of the buildings now host laboratories. The building underneath which you entered is a thermal bath, and along the river is a sanatorium. All the buildings stand in a strong relationship with the river, as its waters are used throughout the plot in various ways and entwine the buildings and the plot with each other. For times of severe drought, we can also store water here in different ponds on the plot or filter it through swamp-like reservoirs. That's why the air is so refreshing and humid when you enter.'

'Really an odd sight in the middle of the forest. But if I may, what exactly are you are doing in these laboratories? They're enormous.'

'I can give you a little tour if you like.' Martin and I nod and start following on a narrow path to the entrance. 'What we do here could be described as exploring experimental, collaborative ways of living. The whole plot works as an organic whole. The functions are interwoven, not only through the waterways that connect the buildings but also the social interaction that occurs in between. We aim to enhance the symbiotic nature of ways of being by engaging with matter in various ways, which often brings forth unexpected cultural implications.[1] To induce these moments and events this plot is entirely open to the public. We try to provoke these actions that occur between entities of all sorts, bringing forth new narratives, that we think are desperately needed.'

'But that's more the large-scale goal,' she continued. More specifically in my workplace, the laboratory of knowledge, or LOK as we call it, we investigate the link between recycling and medication. After the age of paper faded, the factory was abandoned for many years. Our society turned towards electronic devices for the exchange of information of all sorts. Here in the valley, there were nine paper factories and all became obsolete. Many people lost their jobs. For the region, this was a dramatic change.

In parallel, this shift towards the digital has led to an immense increase in electronic waste, causing more and more environmental issues, threatening many rivers like this one and the abundance of life forms in them. Paradoxically, the government in the region started extracting lithium down the river in the Rhine Plain, as it is a key component for the batteries in our electronic devices. This extractive practice has already caused several earthquakes, as you may have heard.[2] Here in the LOK, we try to re-steer the trajectory of these materials.'

The building of the LOK reaches up forty metres, a brutalist block of concrete, like an oversized granite boulder itself. Shards of concrete have fallen off the facade, revealing thin brown threads of reinforcement. We enter the structure

Fig. 1: The laboratory, photograph taken by Bastian Schleier, 2022.

through a side entrance and arrive in an imposing hall, with large window fronts towards the slope on the right framing a panoramic view of mossy rock. The light is reflected by the flora, tinting the entire space with a green shade. On the opposite wall, a mural shows an electronic circuit. Like a socialist fresco, it is a reminder of the oft-hidden force behind the process of production. After passing through a small door to our left we look up. Ten floors of metal grid walkways create interfering patterns. The sacral character of the space is underlined by a diffuse light entering through a tall strip of windows and the absence of noise, which Martin and I surely didn't expect in a recycling facility. The only prominent sound that cuts through the silence is that of echoing drops of water making their way down the grids to the ground floor.

'The collected waste is pulverised in these mills close to the entrance. Vapes, phones, car batteries, everything you can imagine. In these tanks, the powder is mixed with water and very small organisms. These bacteria split open the waste particles and extract the alkaline metals such as lithium and cobalt.'

'What are they, these bacteria?'

'Archaea. They are stunning organisms. They can live without any sunlight or oxygen, feeding on metal ores deep in the ground. Ancient beings like these have survived in the Hadean underworlds for millions of years. These entities are far older than any plant cell; they can put our way of being in a new perspective. They are lively reminders of the dawn of worlds, long, long ago, when very different forms of cognition prevailed, without any need for our 'vital' elements.[3] They remind us how human existence is only the small tip of an iceberg that reaches deep into the soil and beyond, where rock forms from static grids into becoming in fluidity.'

The bright, saturated green shimmer of the solution in the tanks gives the room an otherworldly atmosphere. Although the organisms are too small to see with the human eye, they still seem to be there, somehow, as if the colour is a sign of this inherent vibrancy of life. Strange feelings of kinship arise in me, as I knock on the glass.

'It's beautiful in here, somehow,' Martin says as we climb up the stairs towards the upper floors. The entire space is filled with large glass columns containing bubbling liquids; it smells of moss and rotten wood. 'I'm very curious what you would define as nature considering your work here,' he continues. 'For me, there was always a big gap between us and nature, and technology just made that gap bigger. It's like technology makes us think of nature as a resource and nothing else. The sciences, that may once have brought us closer to nature, are now more and more isolated. They draw a picture of nature as this objective entity, that we humans need to grasp by specific means, only to enable us to make use of it.[4]

And while we are searching for the right solutions, every new invention draws us back into this narrow trajectory. It's great to see how you have formed a somewhat beautiful form of relation with these beings. How they teach you new things in return, and how you are listening to them. But what happens next with the gathered materials?'

The researcher holds open a door for us and we step into what seems to be their research laboratory. The yellow afternoon sun enters through the dusty windows, shedding light on various glass apparatuses, diffracting into a colourful spectrum. It is like an alchemist's workshop.

'What we aim to do is to break this linear trajectory of consumption and discarding. In opposition to the isolated scientific practice you mentioned, we combine science with cultural spaces or aspects, to reveal the co-constitutional nature of both. These collaborative ways of living and learning from the many other entities surrounding us are not necessarily new, considering the abundance of entities that live within our human body alone; they are key to any form of life. It is the in-between that counts for survival, not the entity itself, but the potential that unfolds with its relation to another being. What happens in the in-between can enhance the ways of survival for many beings, denying isolated types or forms.'

The researcher points at some schemes on the wall.

'Through the immense increase of electronic technologies, we have reached a certain level of dependency towards these innovations. As we substituted paper with phones, our bodies have adapted and we now extend them increasingly into these devices. But as much as they allow us to extend our minds, they also distort parts of our bodies, which has proven to be potentially harmful.[5] All these websites and media we use, this intense increase in connectivity makes us feel reliant on it. The 'social' media became the prevalent means of communication, for good and bad. But as these media semiotics enter our bodies and we become a part of them, we in return can suffer from disturbed levels of dopamine flows in our bodies. In the long term, this can cause depression and various other psychological diseases, which are heavily on the rise. It is the new techno-dependant suffering of our time.'

'So far I understand, but what does all of this have to do with the recycling?' I ask while looking at my warped reflection in a large column of glass.

'Well, the lithium in the waste has other properties than only being useful for electric storage. What we are investigating is certain effects of lithium on the human body. It has been used as a component in psychological medication as a mood tranquilliser, against bipolar disorder and depression.[6] And this is where we re-steer and change the narrative. We grind the phones and other devices, the archaea help us extract the lithium and then, here in the laboratories we create

medication from the discard. We know the LOK is a small-scale operation, but we think these experiments are crucial to shedding light on these modes of collaboration we can find in this in-between. We can always acquire new knowledge from these other forms of life. But we need to look around us and start searching all these cracks and crevices we have overlooked for too long.[7] The connections to be found are manifold. For example in the second LOK here on the plot, we use a specific fungus to extract rare metals from waste in a similar manner, and as a by-product we acquire penicillin.[8] We've always been interweaving our stories with those of others, and although we might have lost sight of it, this intertwined life is the base note of our way of being.[9] All these infinite worlds extend into each other; this underlying vibrancy of potentials that are there to explore and build upon. Fascinating, isn't it?'

Martin has by now sat down in the chair at the desk and has lit a cigar without asking. At first, the researcher looks irritated, but as the smoke vanishes on the breeze through the window she doesn't seem to mind.

'What an interesting project you are working on,' the old man mumbles through the thick cloud of smoke. 'It is good that you work against this endless enthusiasm for technology that so many people seem to share nowadays. It's such a strange way of looking at the world. We detach ourselves from nature as such, making it solely a reservoir for our advancements. I feel we may have become blind to how others might present themselves to us in this abundance of ways. It is not about our preconceptions, but rather allowing the others to exist as they are.'[10]

I nod. 'But maybe it's also less us on one side and then the rest on the other? I'm unsure if this simplified view of nature ever existed. This concept of dichotomies, in general, is part of this strange narrative of progress. It seems like we have come to the end of a promethean promise. I rather think that the technologies themselves should make us question all these binary pairs that we still try to enforce.[11] I like your thought of embracing the in-between and I agree that everything might emerge from there.'[12]

The researcher walks towards their desk. 'It seems like the start to a longer discussion. I'm actually more or less done with my work for today; can I offer you two a beer?' She opens the fridge and puts three bottles on the table. After our hike through the forest, we are thirsty and say yes.

As we open the bottles, something else seems to be unfolding in the laboratory. As the sun sets, its low warm sun rays hit the glass of one of the tanks and trigger the archaea bacteria. A microscopic dance starts to unfurl, as organic and inorganic matter begin their metabolic unfolding. Mineral grains enter the bodies of ancient organisms of the underworld, a world synthesising itself.

It is matter caught up in transition as discard, digestion, nature, medicine, mind, as meaning;[13] a snapshot of the infinite cosmological cannibalism.[14] Molecular entities teach us the fragility of all binary oppositions – *organic/inorganic, life/death, mind/body, matter/meaning, animate/inanimate.* What they show us is nothing more or less than the symbiotic art of becoming, ancient but always pointing into the future.[15]

Notes

1 Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007), 40.
2 Johannes Wagner, 'Nachhaltigkeit Im Blick,' (Sustainability at a glance), website of the Karlsruher Institut für Technologie, 15 December 2020, https://www.kit.edu/kit/pi_2020_118_nachhaltigkeit-im-blick-lithium-aus-dem-oberrheingraben-fur-batterien.php.
3 Thomas Feuerstein, *Prometheus Delivered* ((Munich, ERES-Stiftung, 2018),144–83.
4 David E. Cooper, 'Heidegger on Nature', *Environmental Values* 14, no. 3 (2005): 339–51.
5 Matt Bluemink, 'Stiegler's Memory: Tertiary Retention and Temporal Objects', *3:AM Magazine*, 23 January 2020, https://www.3ammagazine.com/3am/stieglers-memory-tertiary-retention-and-temporal-objects/.
6 Ute Lewitzka and Robert Haußmann, 'Lithium – ein Update', *InFo Neurologie + Psychiatrie* (19 January 2022): 44–53.
7 Anna L. Tsing, *The Mushroom at the End of the World* (Princeton: University Press, 2015), 22.
8 Zahra Kazemian, Mohaddeseh Larypoor and Reza Marandi, 'Evaluation of myco-leaching potential of valuable metals from spent lithium battery by *Penicillium chrysogenum* and *Aspergillus niger'*, *International Journal of Environmental Analytical Chemistry* 103, no. 3 (2020): 1–14.
9 Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC: Duke University Press, 2006), 59–61.
10 Cooper, 'Heidegger on Nature', 339–51.
11 Donna J. Haraway, *Manifestly Haraway: Cyborg Manifesto* (Minneapolis: University of Minnesota Press, 2016), 67.
12 Barad, *Meeting the Universe Halfway*, 33.
13 Feuerstein, *Prometheus Delivered*,144–83.
14 Wietske Maas and Matteo Pasquinelli, *Manifesto for Urban Cannibalism*, 23 January 2020, https://thecomposingrooms.com/research/reading/2015/Manifesto_Urban_Cannibalism_Berlin.pdf.
15 Gilles Deleuze, *The Fold: Leibniz and the Baroque,* trans. Tom Conley (London: Athlone Press, 1993), 9.

Telos and Technique: Craftsmanship as a Cross-agentic Negotiation

Eric Crevels

American sociologist Richard Sennett's *The Craftsman* is possibly the most influential work on craft and craftsmanship in recent decades. Sennett's arguments, different from previous studies on craft, are constructed with a focus on people. He defends craftsmanship as present not only in the products of craft, but primarily in the way people perform their practice, envisioning an outcome marked by excellence; in his terms, a desire to 'make things well.'[1]

However, the fundamental premise that craftsmanship is related to an innate desire is, philosophically, rather simplistic. The ontological nature of Sennett's claims denote a short-sighted approach to the human condition, and ultimately reduces the question of craftsmanship to an unprovable and almost meritocratic individual entrepreneurship. By associating it with a sort of natural impulse, Sennett loses sight of the material and cultural implications of making things and the epistemological nature of craft. The result is that, despite the eloquence of its definition, his concept of craftsmanship is diminished in explanatory and critical potential.

Unsurprisingly, Sennett's interpretation has done little to demystify this concept that is so important, and yet remains so mercurial in craft theory.[2] If anything, craftsmanship is uniquely associated with the things of craft, and such a scope puts in question the necessity of a differentiated concept. The specificity of craftsmanship as a 'quality of something skilfully made', noted by dictionary definitions, puts forward a provocative question.[3] What is unique about the

products of skill that warrants the need for a specific quality or character to explain it? To remedy this lack of proper definition and address the above question I believe a better path to conceptualising craftmanship lies neither in people's inner desires, nor in the substance of crafted objects, but in the relationship established between artisan and materials in the act of making.

Trevor Marchand argues that craftwork is centred around problem solving.[4] In craft, he suggests, problems appear 'while learning technique, and alongside experimentation, improvisation, and innovation.'[5] The autobiographical story told by Benvenutto Cellini is a good example of how improvisation is an essential part of craftwork as well as a rational, intentional employment of skill. Showcasing instances where both invention and the knowledge behind it surface in the face of struggle, it makes explicit the kind of awareness and versatility one must perform when actively working with a particular material:

> I noticed that [the bronze] did not flow as rapidly as usual, the reason being probably that the fierce heat of the fire we kindled had consumed its base alloy. Accordingly I sent for all my pewter platters, porringers, and dishes, to the number of some two hundred pieces, and had a portion of them cast, one by one, into the channels, the rest into the furnace. This expedient succeeded, and every one could now perceive that my bronze was in most perfect liquefaction, and my mould was filling.[6]

As Cellini's insightful (and sometimes comical) story makes clear, the tasks of crafts are rich in 'rationality', as Adorno would put it, since 'the means have their own logic, a logic that points beyond them', meaning the connection with an objective, concrete reality that has to be addressed in every instance of making.[7] For Adorno, this is the particular reality of craft, as it cannot be understood only as 'stereotypical formulas' or simply 'practices ... supposed to spare the energies' of the artist, because 'the uniqueness of each concrete task excludes such a formalization.'[8] In other words, craft is not reduceable to a mere mechanical operationality that simply realises conceptual ideas into material forms, because its operations are constantly grounded in a complex reality that cannot afford the kind of simplification the concept implies. Even within a singular process, such as sawing a plank, repetition is a not a simple mechanical reproduction. Ingold compares it to walking, as 'just as no two steps are quite the same, so too, every stroke is a little different.'[9] While driving the handsaw, the carpenter faces slight changes in her perceptive-bodily engagement with the material, and 'the force, amplitude, speed and torque varies, albeit almost imperceptibly, from stroke to stroke, as does the posture of the body and the muscular-skeletal configurations of

tension and compression that keep it in balance."[10] This 'rhythmic' quality, in which movements are 'felt',[11] indicates that, as Viveiros de Castro argues, the 'knowledge of the artisan is in the hand (and the flesh)' rather than coalescing in a set of rules and representations, in the sense that 'the body is the territory and the measure of the process."[12] That is, a process in craft is understood, or 'read', by the 'sensual and sensorial feeling that it provokes."[13] Linking the example of the carpenter with Deleuze and Guattari's theories, Ingold develops a similar interpretation:

> For the carpenter himself, however, who is obliged to follow the material and respond to its singularities, sawing is a matter of engaging 'in a continuous variation of variables, instead of extracting constants from them' (Deleuze and Guattari, 2004, p. 410). The carpenter who has a feel for what he is doing is one who can bring the many concurrent variations with which he must engage more or less into phase with one another. This calls for continual correction, in response to an ongoing perceptual monitoring of the task as it unfolds.[14]

Given their immediacy to the body, materials and things can be understood as having a sort of reaction that does not require intentionality. When engaged, the world has a friction that makers need to deal with, and that can be seen as a form of agency.[15] In other words, the material world, in its very constitution, possesses affordances that influence how is can be perceived, signified, or acted upon.[16] Makers, as Ingold puts it, 'have to work in a world that does not stand still' and with materials that 'are not necessarily predisposed to fall into the shapes required of them."[17]

A good example of how central the question of agency is to craftsmanship is the relationship makers have with tools. For Dutch archaeologist Maikel Kuijpers, tools can be understood as bodily extensions that allow the maker to get a 'sensate understanding' of the material in relation to the intended action.[18] As such, they mediate craftwork by providing a form of perception that is directly linked with the possibility of transformation: a chisel allows one to 'feel' the wood in the way it splits; a hammer, to 'feel' the steel in the way it bends upon a blow.

According to the affordances of the processes in which a tool is active, and the kind of engagement it makes happen, however, tools can also be seen as external elements, to whose subjectivity the craftsperson must relate, or even belong. This expression is present in the relation between a particular group of fishermen from Northern Brazil and their fishing hooks.[19] Contrarily to fishermen in the nearby lakes, to whom the hook is an extension of the arm, coastal fishermen

of Amapá address their own body as a part of a larger technical object – the fishing boat.[20] In it, artifacts such as the hook can work together as 'partners', or 'betray' the fishermen.[21] As Carlos Sautchuk argues, this differential relationship with tools implicates different notions of personhood and agency. Without any change in their function, form or technological formation, the hooks have different meanings according to their mode of action.

Moreover, the relationship with tools exposes the dynamism of a craftsperson's body and agency. Eduardo Viveiros de Castro's maxim that the 'body is a habit' in the accounts of perspectivist and animistic Amazonian indigenous peoples presents a world of agency in which entities are fluid, and bodies are transformed according to the tools employed.[22] The use of animal hides by shamans is perceived as a literal change in their bodily affections and capacities. In this framework, tools perform an activation of powers belonging to realms commonly outside the one defined as human. Entering an activity with tools is an incorporation and activation of different capacities. It allows one to 'function as another', to momentarily become another.[23]

Common to all three interpretations is the idea that the subject-object relationship between workers and tools is not solid, universal or unidirectional. A possible conclusion, nonetheless, is that tools make possible the establishment of a relationship between agencies. In the process of making, agencies are established and a complex inter-subjective relationship is negotiated. In this relationship, perception, as Merleau-Ponty would put it, is organised 'by the characteristic structures of the human world: tools, language, culture, and so on. Not originally encountered as things or ideas, but rather as "significative intentions" embodied within the world.'[24] This interpretation allows an understanding that the experience of the world is contiguous to it, in the sense that it is constructed over and with the categories found there. Moreover, these categories are primarily understood not as objects, 'things', but as potentials. The reflexive constitution of experience is woven from intensities that possess directionality – flows of forces, not solid, fixed entities.

In the reality of material production, these intentions, tendencies, resistances or affordances – here clustered under the umbrella of agency – are indeed real. They are real insofar as craftspeople have to compete with contending forces, when engaging with the materials, tools and other entities of production. From the point of view of the maker, the act of making is a struggle with more or less inertial constellations that are coaxed into a purposeful disarray, and from there into a new state. Materials do not fall neatly into a desired shape; tools and instruments have their own stubbornness and can perform in disagreement with one's intention, in more dramatic cases mauling their operators; and even the

maker's body resists a mechanical regime of movement. As Farleigh phrases it, 'the craftsman is being guided by his medium as much as he is guiding it', but the relationship is not always to the benefit of the maker's intention.[25] Rather, what defines the success of the craft endeavour is precisely the question of how the subjectivity of the material transformation taking place is negotiated; in a manner similar to Viveiros de Castro's theory regarding cosmological predation among Amazonian indigenous people, this is an instance of dispute for the first person pronoun, 'I'.[26] In craft, subjectivities are volatile, and the positions of subject and object can be flipped, to the detriment of the maker's will.

Making is an event of simultaneous merger and tension between the maker and the entities of her world of practice – her craft. Since every craft appears as a particular network of agency, there is not one mode of relationship between maker and what is made, but countless. The craftsmanship of the artisan involves the mediation of this network – which does not mean that craftsmanship is outside it. It is by actualising the dimensions of a socially established production that craftsmanship comes to be. Through the employment of a perceptive and transformative entanglement in the activity itself, craftmanship emerges from the network of agents in a particular morphogenetic assemblage.

Understanding that the production performed in crafts has to respond to a complex reality through the coupling of perception and the possibilities of action, craftsmanship can be understood as the enactment of skill; if skill is what affords action, craftsmanship is the realisation of action in a particular way. In a process of intersubjective encounter, the virtuality of action provided by skill becomes the actual; craftsmanship is the actualisation of this relationship. Therefore, craftsmanship is neither a self-standing thing, nor an autonomous quality or capacity that exists in a latent state prior to its development. It is not located in the subject, as something waiting to be revealed or put into practice, but emerges in the moment of practice, in the encounter of objective and epistemic entities that constitute making, and is actualised there. Craftsmanship is an emerging phenomenon, only real in the moment it is performed, in the actual engagement between the maker and the process.

Notes

1 Richard Sennett, *The Craftsman* (London: Yale University Press, 2008).\" Richard Sennett maintains that the computer programmer, the doctor, the artist, and even the parent and citizen engage in a craftsman's work. Craftsmanship names the basic human impulse to do a job well for its own sake, says the author, and good craftsmanship involves developing skills and focusing on the work rather than ourselves. In this thought-provoking book, one of our most distinguished public intellectuals explores the work of craftsmen past and present, identifies deep connections between material consciousness and ethical values, and challenges received ideas about what constitutes good work in today's world. The Craftsman engages the many dimensions of skill--from the technical demands to the obsessive energy required to do good work. Craftsmanship leads Sennett across time and space, from ancient Roman brickmakers to Renaissance goldsmiths to the printing presses of Enlightenment Paris and the factories of industrial London; in the modern world he explores what experiences of good work are shared by computer programmers, nurses and doctors, musicians, glassblowers, and cooks. Unique in the scope of his thinking, Sennett expands previous notions of crafts and craftsmen and apprises us of the surprising extent to which we can learn about ourselves through the labor of making physical things.",author":[{"dropping-particle":"","family":"Richard","given":"Sennett","non-dropping-particle":"","parse-names":false,"suffix":""}],"id":"ITEM-1","issued":{"date-parts":[["2008"]]},"publisher":"Yale University Press","publisher-place":"London","title":"The Craftsman","type":"book"},"uris":["http://www.mendeley.com/documents/?uuid=ddd7a872-78a1-47c2-9660-f44cd222eec5"]}],"mendeley":{"formattedCitation":"Sennett Richard, The Craftsman (London: Yale University Press, 2008
2 Glenn Adamson, *The Craft Reader* (London: Bloomsbury Visual Arts, 2019).
3 'Craftsmanship', in *Merriam-Webster's Collegiate Dictionary*, https://www.merriam-webster.com/dictionary/craftsmanship.
4 Trevor Marchand, *Craftwork as Problem Solving: Ethnographic Studies of Design and Making* (Farnham: Ashagate Publishing Limited, 2016).
5 Ibid.
6 Benvenuto Cellini, *Autobiography of Benvenuto Cellini*, trans. John Addington Symonds (New York: Collier and Son Corporation, 1938) .
7 Theodor W. Adorno, 'Functionalism Today', in *Rethinking Architecture: A Reader in Cultural Theory,* ed. Neil Leach (London: Routledge, 2005).
8 Ibid.
9 Tim Ingold, 'The Textility of Making', *Cambridge Journal of Economics* 34, no. 1 (2009): 91–102, https://doi.org/10.1093/cje/bep042.by an agent with a design in mind. Against this hylomorphic model of creation, I argue that the forms of things arise within fields of force and flows of material. It is by intervening in these force-fields and following the lines of flow that practitioners make things. In this view, making is a practice of weaving, in which practitioners bind their own pathways or lines of becoming into the texture of material flows comprising the lifeworld. Rather than reading creativity 'backwards', from a finished object to an initial intention in the mind of an agent, this entails reading it forwards, in an ongoing generative movement that is at once itinerant, improvisatory and rhythmic. To illustrate what this means in practice, I compare carpentry and drawing. In both cases, making is a matter of finding the grain of the world's becoming and following its course. Historically, it was the turn from drawing lines to pulling them straight, between predetermined points, which marked the transition from the textilic to the architectonic, debasing the former as craft while elevating the latter as technology. ",author":[{"dropping-particle":"","family

":"Ingold","given":"Tim","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Cambridge Journal of Economics","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2009"]]},"note":"It appears that Ingold is quite a heideggerian himself.\nIn this text, Ingold is a bit lacking - he is not as bright as he usually was. But regardless, it still have some of the important concepts and ideas that i will deal with.\n\nThe problem of both Ingol and Collins is that they try to address their question by simplifying it (although in different and rather opposite ways

10 Ibid.by an agent with a design in mind. Against this hylomorphic model of creation, I argue that the forms of things arise within fields of force and flows of material. It is by intervening in these force-fields and following the lines of flow that practitioners make things. In this view, making is a practice of weaving, in which practitioners bind their own pathways or lines of becoming into the texture of material flows comprising the lifeworld. Rather than reading creativity 'backwards', from a finished object to an initial intention in the mind of an agent, this entails reading it forwards, in an ongoing generative movement that is at once itinerant, improvisatory and rhythmic. To illustrate what this means in practice, I compare carpentry and drawing. In both cases, making is a matter of finding the grain of the world's becoming and following its course. Historically, it was the turn from drawing lines to pulling them straight, between predetermined points, which marked the transition from the textilic to the architectonic, debasing the former as craft while elevating the latter as technology. © The Author 2009. Published by Oxford University Press on behalf of the Cambridge Political Economy Society. All rights reserved.","author":[{"dropping-particle":"","family":"Ingold","given":"Tim","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Cambridge Journal of Economics","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2009"]]},"note":"It appears that Ingold is quite a heideggerian himself.\nIn this text, Ingold is a bit lacking - he is not as bright as he usually was. But regardless, it still have some of the important concepts and ideas that i will deal with.\n\nThe problem of both Ingol and Collins is that they try to address their question by simplifying it (although in different and rather opposite ways

11 Ibid.by an agent with a design in mind. Against this hylomorphic model of creation, I argue that the forms of things arise within fields of force and flows of material. It is by intervening in these force-fields and following the lines of flow that practitioners make things. In this view, making is a practice of weaving, in which practitioners bind their own pathways or lines of becoming into the texture of material flows comprising the lifeworld. Rather than reading creativity 'backwards', from a finished object to an initial intention in the mind of an agent, this entails reading it forwards, in an ongoing generative movement that is at once itinerant, improvisatory and rhythmic. To illustrate what this means in practice, I compare carpentry and drawing. In both cases, making is a matter of finding the grain of the world's becoming and following its course. Historically, it was the turn from drawing lines to pulling them straight, between predetermined points, which marked the transition from the textilic to the architectonic, debasing the former as craft while elevating the latter as technology. © The Author 2009. Published by Oxford University Press on behalf of the Cambridge Political Economy Society. All rights reserved.","author":[{"dropping-particle":"","family":"Ingold","given":"Tim","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Cambridge Journal of Economics","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2009"]]},"note":"It appears that Ingold is quite a heideggerian himself.\nIn this text, Ingold is a bit lacking - he is not as bright as he usually was. But regardless, it still have some of the important concepts and ideas that i will deal with.\n\nThe problem of both Ingol and Collins is that they try to address their question by simplifying it (although in different and rather opposite ways

12 Eduardo Viveiros de Castro, 'Os Pronomes Cosmológicos e o Perspectivismo Ameríndio', (Cosmological pronouns and Amerindian perspectivism) *Mana* 2, no. 2 (1996): 115–44, https://doi.org/10.1590/s0104-93131996000200005.

13 Ibid.

14 Ingold, 'The Textility of Making'by an agent with a design in mind. Against this hylomorphic model of creation, I argue that the forms of things arise within fields of force and flows of material. It is by intervening in these force-fields and following the lines of flow that practitioners make things. In this view, making is a practice of weaving, in which practitioners bind their own pathways or lines of becoming into the texture of material flows comprising the lifeworld. Rather than reading creativity 'backwards', from a finished object to an initial intention in the mind of an agent, this entails reading it forwards, in an ongoing generative movement that is at once itinerant, improvisatory and rhythmic. To illustrate what this means in practice, I compare carpentry and drawing. In both cases, making is a matter of finding the grain of the world's becoming and following its course. Historically, it was the turn from drawing lines to pulling them straight, between predetermined points, which marked the transition from the textilic to the architectonic, debasing the former as craft while elevating the latter as technology. © The Author 2009. Published by Oxford University Press on behalf of the Cambridge Political Economy Society. All rights reserved.","author":[{"dropping-particle":"","family":"Ingold","given":"Tim","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Cambridge Journal of Economics","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2009"]]},"note":"It appears that Ingold is quite a heideggerian himself.\nIn this text, Ingold is a bit lacking - he is not as bright as he usually was. But regardless, it still have some of the important concepts and ideas that i will deal with.\n\nThe problem of both Ingol and Collins is that they try to address their question by simplifying it (although in different and rather opposite ways.

15 Alfred Gell, *Art and Agency: An Anthropological Theory* (Oxford: Clarendon Press, 1998), https://doi.org/10.1525/var.1998.14.2.101.

16 Harry Collins, *Tacit & Explicit Knowledge*, (Chicago: The University of Chicago Press, 2010)

17 Ingold, 'The Textility of Making'by an agent with a design in mind. Against this hylomorphic model of creation, I argue that the forms of things arise within fields of force and flows of material. It is by intervening in these force-fields and following the lines of flow that practitioners make things. In this view, making is a practice of weaving, in which practitioners bind their own pathways or lines of becoming into the texture of material flows comprising the lifeworld. Rather than reading creativity 'backwards', from a finished object to an initial intention in the mind of an agent, this entails reading it forwards, in an ongoing generative movement that is at once itinerant, improvisatory and rhythmic. To illustrate what this means in practice, I compare carpentry and drawing. In both cases, making is a matter of finding the grain of the world's becoming and following its course. Historically, it was the turn from drawing lines to pulling them straight, between predetermined points, which marked the transition from the textilic to the architectonic, debasing the former as craft while elevating the latter as technology. © The Author 2009. Published by Oxford University Press on behalf of the Cambridge Political Economy Society. All rights reserved.","author":[{"dropping-particle":"","family":"Ingold","given":"Tim","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Cambridge Journal of Economics","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2009"]]},"note":"It appears that Ingold is quite a heideggerian himself.\nIn this text, Ingold is a bit lacking - he is not as bright as he usually was. But regardless, it still have some of the important concepts and ideas that i will deal with.\n\nThe problem of both Ingol and Collins is that they try to address their question by simplifying it (although in different and rather opposite ways.

18 Maikel H. G. Kuijpers, *An Archaeology of Skill: Metalworking Skill and Material Specialization in Early Bronze Age Central Europe* (New York: Routledge, 2018), https://doi.org/10.4324/9781315196022.

19 Carlos Emanuel Sautchuk, 'O Que a Rede Nos Ensina Sobre o Pescador?', (What does the net teach us about fishermen?) *Revista Coletiva* 1 (2010): 1–4.

20 Gilbert Simondon, *On the Mode of Existence of Technical Objects*, trans. Cecile Malaspina and John Rogove (Paris: Univocal Publishing, 2012).
21 Sautchuk, 'O Que a Rede Nos Ensina Sobre o Pescador?'
22 Castro, 'Os Pronomes Cosmológicos e o Perspectivismo Ameríndio.'
23 Ibid.
24 Ted Toadvine, "Maurice Merleau-Ponty", *The Stanford Encyclopedia of Philosophy* (Winter 2023 Edition), Edward N. Zalta & Uri Nodelman (eds.), URL = <https://plato.stanford.edu/archives/win2023/entries/merleau-ponty/>
25 John Farleigh, 'The Crafts: Their Past, Present and Future,' *Journal of the Royal Society of Arts* 96, no. 4757 (1947): 28–37.
26 Castro, 'Os Pronomes Cosmológicos e o Perspectivismo Ameríndio.'

Spatialising Flows Through a Liquid Milieu: Cognitive Archaeology and the Technics of San Rock Art

Gert van der Merwe

Cognitive archaeology draws on neuropsychology to study altered states of consciousness alongside ethnography, and may hold possibilities for developing contemporary spatial theory. San hunter-gatherers in Southern Africa still practice shamanistic trance, while nineteenth-century primary records and ethnography from the twentieth and twenty-first centuries allow for an ethnographic mosaic that draws on neuropsychology to produce more insights.[1]

Bernard Stiegler considered cave art to be exosomatic organs and organisms or species, exorganisms, spatialising flows.[2] We may therefore see San rock art as an open-ended and generative 'technics' through which a liquid milieu and society as a 'generalised theory of flows' may be understood.[3] Here I shall briefly discuss the various trajectories for theory that may be developed out of cognitive archaeology, and how this relates to Stiegler and Deleuze.

The arch-cinema as a technical and noetic form of life (since it produces desire) is a montage of primary, secondary and tertiary retentions and protentions, concretised and spatialising flows.[4] Reciprocal flows of the |*nū* (supernatural force as understood by the San) between the physical and psychological dimension, through trance (due to physiological effects of exhaustive dance and trance, for example, shortness of breath and a sense of floating in water), allows access to the spiritual dimension behind the rock face, which the San understand as an underwater world behind the rock face.[5]

This milieu is coded through the flow of bodily fluids such as sweat and blood, and is also literally understood as a liquid milieu in the sense that it is the

substance of the underwater world. Thus, the liquid milieu is both the relational flow as an 'in-between', and the environment. The flow is understood through the history of philosophy, a becoming of concepts, not fully formed, but generative forces, as Deleuze puts it, which may be spatialised as a reciprocally interacting material continuum between the body and the spiritual realm.[6]

The *Innenwelt* or *Eigenwelt* (psychological dimension) affect the *Umwelt* (physical dimension) and the *Überwelt* (spiritual dimension) with respect to the production of desire in a social formation (implanted back into the Innenwelt).[7] San rock art therefore functions not simply as a recording of the actual, and does not operate as a Cartesian 'map'; rather, it holds the virtual, as a medium grounding it; through which the spiritual world is accessed and becomes actualised through trance.[8] The image is not indexically fixed; rather it's an active production process, since the images themselves move between the material and the spirit realms.[9] Shamanistic trance, therianthropy (metamorphosing or shapeshifting into animals or hybrids) and the manipulation of the |nū allows the shaman to access the spirit world (Überwelt) and by capturing the rain creature, affect the Umwelt (bringing rain).[10]

Depicted gestures, such as the 'hands to nose' (the nose is the seat of the supernatural spirit) and the 'arms back posture' (increasing potency) alongside black paint as a solvent (dissolving the rock by mimicking cracks or water functioning as a portal), the flow of nasal blood and bees, all play out on the mediating rock face, through which it flows.[11] Image clusters serve as an active grammatisation (the capacity to project mental temporal contents into spatial forms). It disrupts and transforms the continuous flows produced by humans as exosomatised matter.[12] These re-concretise as the inscription of code, a tertiary retention, and a spatial and material meta-stability.[13]

Through trance, shamans may cure people by placing their hands on them, drawing the sickness out, and expelling it through the back of their neck using 'flywhisks' (either physically or through the pictorial image) to flick away the arrows of sickness that the spirits of the dead shoot into people.[14] The process requires physiological, neuropsychological and spiritual (yet material) operations, and emerges from the milieu as material and relational flows.

In San rock art, shamans are easily identified as wearing an eared cap, or alternatively as therianthropic figures, part human and part animal, where shifting into the form of a bird allows them to survey the land, while bleeding from the nose may help them guide the hoofprints and consequently the movement of antelope.[15] To access the spiritual realm, the shaman must find a way through the veil of the rock. Cracks are smeared with black paint, which acts as a solvent dissolving the surface of the rock and opening a passage to the spiritual realm.[16]

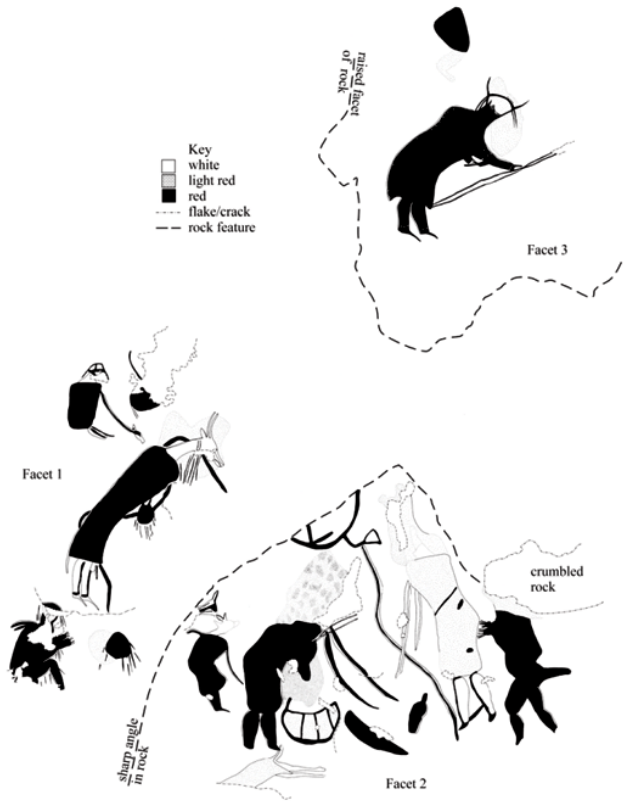


Fig. 1: Tracing illustrating the rock face as a complex 'canvases' as intermediary space in which shaman are suspended, zoomorphic transformations occur and access to the under-water realm of the spiritual dimension is gain through the cracks (dashed lines). Eastern Cape province, South Africa. In Lewis-Williams and Pearce (2008). (CC BY 4.0)

The spiritual realm is under water, and under the right conditions the shaman may gain access to it, and from it animals may emerge.[17] These may be aquatic, such as fish, eels and turtles, or land-based animals, such as antelope (significant because they are considered food), or spiritually significant animals associated with rain (for example giraffe, rhino), or entirely mythical creatures (the hunting of the rain animal allows the shaman to guide storm clouds).[18] All of these processes may be fertile ground for thinking through various becomings and a theory of flows.[19]

Since these practices may still be observed today, neuropsychology can shed light on the manipulation of forces through trance, since we may see them as projections of secondary retentions (memories of primary retentions of perception) and of protentions and select primary retentions (what we retain temporally from a perceptual flow), which then generate primary protentions. Using techniques from neuropsychology, we may look at which areas of the brain is activated during trance, and induced through physiological effects, to understand the generation of primary protentions. The affect may then be matched with rock art through an ethnographic mosaic, so that it may be understood as a generative techne.[20] In the productive process through trance, each selection is singular, each time (conditioned by the retentional and protentional characteristics) and the re-temporalisation constitutes a projection. Stiegler argues that readers project their own secondary protentions and retentions onto a text, and select primary retentions, which generate primary protentions, so that nobody ever reads the same book.[21] Similarly, we may now investigate the neurophysiological processes through trance, to understand the reciprocal processes of creation, between the earliest exosomatic organs and the human species, as materially and relationally bounded exorganisms, spatialising flows through affect.[22] From a capacity for abstraction, we 'conceive what we build', based on tertiary schematisation, with implications not only for understanding rock art, but how we think about spatial production in contemporary theory.[23] As an exosomatisation, cave paintings as generative techne may provide clues.

Stiegler challenges Marx, who argues that bees and architects are distinguished by the fact that the architect 'builds the cell in his head before he constructs it in wax', claiming that Marx's conception is a contradiction, since the architect's knowledge is exosomatised in the form of buildings he has inhabited, plans he has drawn up, and the instruments he utilises.[24] This understanding of exosmatised knowledge places the milieu of the cave, the rock wall and the spiritual realm at the centre, since this milieu serves as the substance through which the technicity operates. The term 'milieu' is usually translated from French as the physical or social setting; it subsumes the Innenwelt or Eigenwelt (psychological dimension) in the Umwelt (physical dimension). However, the etymology of *mi*,

Fig. 2: Therianthropic figure (centre) in the “arms back posture” and bleeding from the nose, flanked by others wearing the characteristic rhebok-eared caps (karosses). KwaZulu-Natal, South Africa. In Challis and Skinner (2021). (CC BY 4.0)

meaning 'middle', and *lieu,* 'place', translates to 'the place between.' This suggests a second meaning derived from a co-constitutive relationality emphasising the *Mitwelt* (social dimension), making it spatial. Mediation or relationality of the in-between and the technicity by which this is done are central questions.

The milieu is an assemblage, dynamically produced by heterogeneous forces acting discursively and materially. As material substance or solvent in which concentrations vary spatially, it becomes a synthesis of the Umwelt (physical dimension) and the Überwelt (spiritual dimension).[25] Manipulation of the spiritual realm requires therianthropic shifting into the form of a bird in order to travel through it, as an extension of the physical landscape into the spiritual realm.[26] As a system of flows, we may observe debt economy transmitted through fluids, such as nasal blood. This brings together the political and libidinal economies, which are identical in nature and reciprocally co-constituted, but with distinct operative regimes with respect to the production of desire in a social- formation (implanted back into the Innenwelt).[27] While the full relationship between |nū as a flow of the supernatural force needs more study, the relation with the movement medium (fluid) as a vector of force seems to flow through the liquid realm, but in the opposite direction as the debt. It is impossible to grasp a flow other than by and through the operative code and what I call the liquid milieu, since it is simultaneously both the environment and the vector or place between.[28]

Since the images can move between the material and the spirit realms, it is important that this relationality is between human and animal worlds, and that there is a coupling between their social, molar formation, reciprocally producing desire towards de- and re-territorialisation.[29] This is important, because it not only situates the human relationally within a co-constructed milieu, but also suggests that various social becomings, such as Deleuze's orchid-wasp coupling, are operative in this process.[30] Through Stiegler's conception of grammatisation of exosomatised matter, we may not only conceive ourselves as a socio-technical species, but we may spatialise various becomings. This understanding of San relational spatial production also carries a set of norms and values and political orientations of minoritarian becomings, such as becoming animal, quite literally seen in the therianthropic figures.[31]

The surface of the rock face may be explored in relation to faciality.[32] Deleuze and Guattari argue that subjectification never exists without a black hole (on the 'white wall') into which consciousness, passion, and redundancies are fixed, to form a face.[33] This is not too dissimilar from Stiegler's montage of primary, secondary and tertiary retention and protention, concretised and spatialising flows.[34] The face constructs the wall that the signifier needs in order to break through, as consciousness or passion; the 'third eye.'[35] The wall as abstract

Fig. 3: Coiled, rhebok-headed serpent permits itself to be touched by the base-human therianthropes. Dashed lines indicate cracks in the rock surface. In Challis and Skinner (2021). (CC BY 4.0)

machine produces faces, according to relational combinations, but the abstract machine does not resemble what it produces or will produce.[36] The shaman therefore draws on the memories of primary retentions of perception as secondary retentions and protentions while selecting primary retentions through trance as a temporal perceptual flow to generate primary protentions. As a product of this flow of primary retentions, it is re-temporalised and re-territorialised.[37]

Without the rock face smeared with black paint as solvent, the shaman cannot enter through the cracks, and subjectification cannot exist, suggesting that the wall and black hole are conditional and that it functions as an exosomatic organ and anchor. [38] To conclude, we may draw on the material and physiological understandings from cognitive archaeology through neuropsychology and an ethnographic mosaic to draw out the various flows. We could indeed theorise a liquid milieu with the rock art functioning as a technics through which the spatialisation is produced first as virtualities, and then actualised through trance, with every re-temporalisation. Although I cannot fully develop this here, the potential theoretical trajectories proposed, suggests that new techniques in the disciplines of archaeology and neuropsychology hold potential for developing spatial theory, and that San rock art in parallel to ethnography and neuropsychology warrant further study.

Notes

1 David Lewis-Williams, '"Doing" Rock Art', talk at the Oxford University Archaeological Society, 18 October 2021, 55:03, https://www.youtube.com/watch?v=ctKNMKVRuP8, 15:29–17:37.
2 On exorganisms, see Bernard Stiegler, *Nanjing Lectures 2016–2019*, ed. and trans. Daniel Ross (London: Open Humanities Press, 2020), 258–59; on spatialising flows, see Bernard Stiegler, *The Neganthropocene*, ed. and trans. Daniel Ross (London: Open Humanities Press, 2018), 160.
3 Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia,* trans. Robert Hurley, Mark Seem and Helen R. Lane (Minneapolis: University of Minnesota Press, 1983), 262; Daniel W. Smith, *Essays on Deleuze* (Edinburgh: Edinburgh University Press, 2012), 36–55.
4 Stiegler, *The Neganthropocene*, 160.
5 Lewis-Williams, '"Doing" Rock Art', 31:42–32:02
6 On generative forges, see Smith, *Essays on Deleuze*, 124; on their spatialisation, see Stiegler, *The Neganthropocene*, 160.
7 Brett Buchanan, *Onto-Ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze* (Albany: State University of New York Press, 2008).
8 Lewis-Williams, '"Doing" Rock Art', 17:23–17:37
9 Ibid., 38:31
10 Ibid., 33:55; 18:32–19:02.

11 Ibid., 22:57, 33:18–35:24; 23:22–26:46; 35:41–36:05; 22:57, 33:18–35:24; 23:15, 24:07–24:27.
12 Stiegler, *The Neganthropocene*, 160; Stiegler, *Nanjing Lectures*, 272–73.
13 Ibid.
14 Lewis-Williams, '"Doing" Rock Art', 12:26; 32:34–32:40.
15 Ibid., 33:55–37:46; 35:24–35:17. This is striking because it presupposes the human bleeding in exchange for a successful hunt, in essence a debt economy of blood and sacrifice.
16 Ibid., 28:10–28:52; 35:41–36:23.
17 Ibid., 30:05.
18 Ibid., 30:25–30:38, 36:05–36:23; 18:32, 18:56–19:02.
19 Smith, *Essays on Deleuze*, 36–55.
20 Lewis-Williams, '"Doing" Rock Art', 17:23–17:30.
21 Stiegler, *The Neganthropocene*, 161–62.
22 Stiegler, *Nanjing Lectures*, 258–59; Stiegler, *The Neganthropocene*, 160.
23 Stiegler, *Nanjing Lectures*, 275.
24 Ibid., 265
25 Buchanan, *Onto-Ethologies*.
26 Lewis-Williams, '"Doing" Rock Art', 33:55–37:46
27 Deleuze and Guattari, *Anti-Oedipus*, 31; Smith, *Essays on Deleuze,* 162–71.
28 Smith, *Essays on Deleuze,* 164
29 *Molecular*- formations: The *molar* formations are social or collective formations, and can either be a biological unity, species, or any structural unity. They are generated from statistical distributions and accumulations at the *molecular*-scale, obeying the laws of large numbers, but hold no relation in form. They are reciprocally co-constructed. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 1087. Lewis-Williams, '"Doing" Rock Art', 38:31; Smith, *Essays on Deleuze,* 163–66.
30 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 10.
31 Claire Parnet, *L'Abécédaire de Gilles Deleuze, avec Claire Parnet*, film directed by Pierre-André Boutang, unpublished translation and notes: Charles J. Stivale (1996), 'A as in Animal', 3–6; Lewis-Williams, '"Doing" Rock Art', 33:55.
32 Deleuze and Guattari, *A Thousand Plateaus*, 167.
33 Ibid., 167.
34 Stiegler, *The Neganthropocene*, 160.
35 Deleuze and Guattari, *A Thousand Plateaus*, 168.
36 Ibid.
37 Stiegler, *The Neganthropocene*, 161–62; Smith, *Essays on Deleuze,* 163–66.
38 Lewis-Williams, '"Doing" Rock Art', 28:10–28:52.

Wilful Pedagogies: Forging an Aesthetics of Exposure through Trans Visual Art

Libe García Zarranz

In a 2022 piece for *Capacious: Journal for Emerging Affect Inquiry*, Jennifer Duggan and I share a conversation around affect and/as pedagogy, bringing together our commitment to feminist, queer and trans knowledges.[1] In our dialogue, we engage with affect scholar Bessie P. Dernikos, whose research rethinks normative literacy practices to cultivate cultural, linguistic and gender diversity. Writing within the textures of US classrooms, Dernikos advocates for a pedagogy of exposure that 'seeks to not only *expose* but also *recover* traumatic wounds by reimagining an affective, albeit risky, relationship to past and present histories of violence.'[2] In this chapter, I seek to translate her formulation into the world of trans visual art and ask how this genre's aesthetics of exposure may enact what I call 'wilful pedagogies' that are collective, relational and ethico-affective. To be wilful is to be obstinate, to be unreasonable, to be disobedient. For For feminist scholar Sara Ahmed, wilfulness is a 'sweaty concept' that 'involves persistence in the face of having been brought down… . Mere persistence can be an act of disobedience.'[3] Thus, to act in wilful ways further signals desire, determination, a wish. In this chapter, I approach this ambivalence as the perfect site for the creation of wilful pedagogies; that is, engaged pedagogies that animate space, pedagogies that emerge out of the rage of living with transmisogyny and that are sustained through the 'practice of transformational love', pedagogies that centre Black and Indigenous trans lives and knowledges.[4]

My formulation 'wilful pedagogies' further privileges works of art that expose and move viewers in ethical and affective ways. In this chapter, I engage with Black trans queer artist Syrus Marcus Ware and his installation *Radical Love* (2020) as a case study. Ware is also a scholar, a community activist and an educator. He is co-founder of Black Lives Matter Toronto and Toronto's Prison Justice Action Committee, and a member of the Performance Disability Art Collective. His work centres Black and Afro-Indigenous trans women and non-binary people, which, in my feminist view, counters cis-centric necropolitical impulses while cultivating 'arts of living.'[5] By re-making public space as an embodied relational site of Black and Afro-Indigenous trans aliveness, Ware exposes viewers to wilful subjects and objects as a way to respond affectively, ethically and aesthetically to historical and current sociocultural and technological realities.

I want to begin with some remarks on research positionality, especially given the worldwide intensification of anti-feminist, anti-Black and anti-trans violence. I was born in Spain in 1979, a time of profound social and political change. I started reading feminist and queer theory in my early twenties, while attending university, and grappling with questions about my sexual identity and my critical position as a feminist. These questions are ongoing as I navigate the contours of academia as a cis queer bi woman, now a tenured researcher and educator, who resists conceptualising trans as a supplement to the feminist project. Instead, I insist on thinking and learning with trans knowledges and artistic practices as instances of feminist world making. Transfeminist studies scholar T.L. Cowan has written extensively about these tensions, urging for the creation of 'a poetics of killing trans-absent or trans-exclusionary feminist joy.'[6] I have written about the joys of being a feminist killjoy elsewhere, asking how we could devise an ethics of joyful insurrection, of passionate disobedience, of pleasurable dissent.[7] This chapter echoes these discussions as I follow 'wilfulness' through the lens of transfeminist studies and theories of affect. I here return to the etymology of the term 'theory' (from Greek *theōria*, contemplation, speculation, viewing) which invites us to speculate; a practice I try to enact every day in my role as educator and researcher working with written and visual texts in embodied, embedded and affective ways. In this sense, architects, literature scholars and visual researchers such as Syrus Marcus Ware potentially share a number of speculative practices, a thirst for experimentation, and theoretical orientations that can lead to crafting futures otherwise.

Ware's multimedia installation *Radical Love* is one of the creative projects in *Safe in Public Space*, an initiative 'that aims to broaden the definition of public safety to address new public health challenges presented by Covid as well as systemic inequities, and ensure that there is a shared social contract governing

Fig. 1: Syrus Marcus Ware, *Radical Love*, 2020. Installation view at the Bentway (Toronto). Reproduced with the permission of the artist.

public space access and use."[8] *Safe in Public Space* offers a platform for creative experiments on the Bentway's physical and digital sites. For those unfamiliar with the place, the Bentway is situated under Toronto's Gardiner Expressway and it is described as 'a new type of civic organisation: a not-for-profit, powered by vital partnerships with the City of Toronto, residents, supporters, artists, city-builders, and dreamers. … a catalyst rooted in experimentation, leading a creative movement to re-imagine the opportunities of urban spaces.'[9] Dreaming of a future otherwise, *Radical Love* was developed in the summer of 2020, a paradoxical time where a global pandemic co-existed with multiple uprisings in the city of Toronto, reacting to the killings of George Floyd in the US and Regis Korchinski-Paquet in Canada.

Ware responds to this troubled historical juncture with *Radical Love* as 'a monument replacement project – a slow creative exploration of trans agency.'[10] The installation is composed of three three-metre-tall abstracted geometric monuments with pyramidal rooftops 'that glow in low light, radiating vibrant images that embody the notion that #transisbeautiful and #transispowerful, proclaiming radical love for all our ways of being.'[11] Each monument celebrates a local living trans activist and community worker: Monica Forrester is a programme and outreach co-ordinator for Maggie's Toronto Sex Workers Action Project and a long-time advocate for trans women. Chrys is also a local activist and trans rights advocate. Ravyn Wngz is a queer, 2Spirit Afro-Indigenous abolitionist, storyteller and artist, and a member of Black Lives Matter Toronto. Monica, Chrys, and Ravyn re-occupy public space, challenging transphobia and anti-Blackness while offering a different story to counter reductive representations of trans life. As you can see in figure 1, each monument stands as a collective endeavour containing the faces of the three activists. They are wilful subjects who are connected and in relation; they are 'willing together', in Ahmed's words.[12]

The exhibition *Radical Love* now endures digitally, complemented by some testimonies from these local activists who share their insights on safety, public space, and the paradoxes of trans representation in various audio clips.[13] By animating physical and digital space with these collective and relational stories, Ware exposes viewers to Black trans life and enacts a mode of wilful pedagogy that responds affectively, ethically and aesthetically to historical and current sociocultural and technological realities.

Learning *with* Exposure and Discomfort

My formulation 'wilful pedagogies' has been inspired by Dernikos's focus on exposure and recovery, and I believe that Syrus Marcus Ware's multimedia speculations attend to these questions in various ways. In Ware's digital exhibition,

for example, audiences can read and listen to the stories of Ravyn, Chrys, and Monica through various audio clips and written transcripts. Here they reflect on their experiences as Black and Afro-Indigenous trans people living, moving, and acting in public space, and how they envision futures in truly safe and inclusive cities for all. Commenting on public spaces, the testimonies convey the paradoxical everyday experiences of Black trans people. Monica expresses her views through feeling and image rather than word. She also comments on the paradoxes of exposure, that is, the 'feeling of being hyper-visible and invisible at the same time.'[14] Ravyn reflects on the paradoxes of being Black and trans in public, focusing particularly on the co-existing feelings of exhilaration and pain she has often experienced. Similarly, Monica moves to the affective realm to express her views on the unsustainability of public space for Black trans people: 'The first word that comes to mind or – I think it's more a feeling than a word necessarily – but I guess, discomfort. Just like the strongest discomfort.'[15] Instead of retracing, however, Ravyn, Monica and Chrys stay with the discomfort in critical ways. I would also argue that the artist, Syrus Marcus Ware, works with and transforms this discomfort by exposing viewers to the vibrancy of trans life. When asked about how an ideal city would look like, Ravyn talks about 'abundance' and 'rather than building a world rooted in fear, it's rooted in love.'[16] Chrys also mentions how Black trans people 'have brought vibrancy to spaces;'[17] I would contend that these wilful subjects animate space through collective storytelling and action, sometimes discomforting cis and white audiences.

Educational studies scholar Michalinos Zembylas has written extensively about pedagogies that consider emotional discomfort as a source of productive learning for teachers. As Zembylas claims, this pedagogical framework seeks to 'engage students and teachers with issues of difference, race and social justice by troubling their emotional comfort zones.'[18] We could translate Zembylas' (to mirror Dernikos's) insights here and argue that Black trans visual art has the potential to convey discomforting affects for the cisgender gaze, while simultaneously having the capacity to transform those affects into joyful dissent, radical love, and other vibrant affective responses for trans and non-binary audiences. In both cases regarding viewers' responses, there is a pedagogical moment taking place in that audiences are exposed and urged to become engaged viewers and listeners. In Ahmed's sense, I read the artist's and the activists' persistence to centre Black trans life, with all its comforts and discomforts, as acts of wilfulness.

Desiring Wilful Subjects

Ware's practices of exposure enact wilful pedagogies that are collective, relational and ethico-affective. In the opening remarks of his 2022 article 'Foraging the Future: Forest Baths, Engaged Pedagogy, and Planting Ourselves Into the Future', Ware honours the work of Octavia Butler and bell hooks: 'imagine a world full of desire; desire for difference and desire for the most marginalized in our current system.'[19] Desire, in this context, enacts a mode of research that resists methodologies sustained by the premise of conceptualising Blackness or Indigeneity as a problem, as the work of Unangax̂ scholar Eve Tuck claims.[20] In my view, Ware's desire-based frame further enacts a form of wilful pedagogy in that his installation, *Radical Love*, showcases insurgent subjects who respond to their reality in wilful ways and are not punished in the process. I draw here from Ahmed's conceptualisation of wilfulness as 'a diagnosis of the failure to comply with those whose authority is given.'[21] At the level of reception, I am further intrigued by the way Ware's multimedia work may mobilise a wilful pedagogy that not only seeks to recover but also respond to and transform ongoing colonial and anti-Black necropolitical forces. Ware's work enacts a form of wilful pedagogy in that it activates desire and vibrancy as motors for social transformation and justice. The physical and digital exhibitions expose viewers to knowledges and forms of life that have historically been rendered unworthy while rewriting colonial history from Black, trans, and Indigenous points of view. This pedagogy of exposure, in Dernikos's sense, further allows for the recovery and re-situation of these subjugated knowledges. In doing so, the monuments in *Radical Love* enact a wilful pedagogy in that Blackness, trans-ness and Indigeneity persevere, they keep 'coming up' in ethico-affective ways.[22]

Transfeminist Kill/Joys and other Forms of Radical Love

As I mentioned at the start of this chapter, Cowan discusses the figure of the transfeminist kill/joy, examining a variety of literary and cultural artifacts that advocate 'for the poetics of killing trans-absent or trans-excluding feminist joy.'[23] Drawing on and expanding Ahmed's formulation of the feminist killjoy, Cowan develops the trope of the transfeminist kill/joy as 'a set of proliferating dialectics expressed as the rage that comes into being through living the violent effects of transphobia and transmisogyny and the practice of transformational love as a struggle for existence.'[24] Cowan's transfeminist kill/joy works as a tool that visibilises the paradox of death worlds propelling the emergence of rage and love 'as a full politics;'[25] a wilful method, I claim, that can reframe and create more ethical ways

of being and responding to others. Ware's visual practices are populated by these transfeminist kill/joy impulses, forging a wilful pedagogy through politicised love.

Ware's other projects, such as the participatory performance *Activist Love Letters* (2012–), further enact a form of wilful pedagogy. His notion of radical love also resonates with other contemporary trans writing such as Kai Cheng Thom's *I Hope We Choose Love*: *A Trans Girl's Notes from the End of the World* (2019), which proposes ethical love as an antidote for trans survival. This is an ethical and a politicised love that can coexist with, and sometimes is even dependent on, other affects such as rage and anger as modes to ensure some communities' sustenance. This is something that Black feminist thinkers like Audre Lorde have taught us. As Ware explains, the multimedia installation *Radical Love* 'draws on the 1977 Combahee River Collective articulation that if we make the world safer for those most marginalised – for me, this means specifically Black trans women (who are Deaf, Mad and disabled) – we are necessarily making the world safer for everyone.'[26] I claim that Ware's collective monuments model a 'willfully resistant joy, thrill, love and hope' that interrupts ordinary transphobic and racist affects with important ethical and pedagogical repercussions.[27]

Black trans writers and visual artists like Syrus Marcus Ware are leading the way into wilful paths. In my view, Ware's multimedia installation *Radical Love* situates reciprocity at the core of technicity by urging viewers to re-see wilful subjects in response-able ways and by insisting on how this techno-affective exposure can lead to transformative practices of what constitutes public space. I would contend that Ware's monuments stand as a relational site that inundates and exceeds the contours of the state in that it repositions minoritised peoples, those who are often placed outside the social script of the state, into the centre of public space. Let me close this chapter with the words of architect Mariapaola Michelotto, who tells us that 'building is an act of power', which I believe extends to writers, artists and educators committed to crafting wilful presents and futures.[28] I thus invite you, dear reader, to continue forging wilful pedagogies sustained through collaborative practices and feminist/queer/trans/anti-racist texts that invite sensing and thinking differently, thus slowly transforming normative educational settings.

Notes

I would like to thank the artist Syrus Marcus Ware for his generosity sharing his visual art with me. I would also like to extend my thanks to the activists in *Radical Love* for their important testimonies. This chapter was completed with the support of the research project 'Cinema and Environment: Affective Ecologies in the Anthropocene' (PID2019-110068GA-100).

1 Jennifer Duggan and Libe García Zarranz, 'Affect and/as Pedagogy', *Capacious: Journal for Emerging Affect Inquiry* 2, no. 4 (2022): 1–8.
2 Bessie P. Dernikos, '"It's like You Don't Want to Read It Again": Exploring Affects, Trauma and "Wilful" Literacies', *Journal of Early Childhood Literacy* 0 no. 0 (2018): 3; emphasis in the original.
3 Sara Ahmed, *Willful Subjects* (Durham, NC: Duke University Press, 2014), 2.
4 On the practice of transformational love, see T. L. Cowan, 'Transfeminist Kill/Joys: Rage, Love, and Reparative Performance', *TSQ Transgender Studies Quarterly* 1, no. 4 (2014): 501.
5 Hil Malatino, *Trans Care* (Minneapolis: University of Minnesota Press, 2020), 5.
6 Cowan, 'Transfeminist Kill/Joys', 502.
7 Libe García Zarranz, 'Joyful Insurrection as Feminist Methodology; or The Joys of Being a Feminist Killjoy', *452°F: Journal of Literary Theory and Comparative Literature* 14 (2016): 16.
8 'Safe in Public Space', 2020, https://www.safeinpublicspace.com/about.
9 'Welcome to The Bentway', https://www.thebentway.ca/about/.
10 Syrus Marcus Ware, 'Radical Love – building monuments to trans revolutionaries in a summer of change', UAAC Conference, University of Toronto, 2022, https://uaacadmin.github.io/conf22/g1.html
11 Syrus Marcus Ware, *Radical Love*, 2020, https://www.syrusmarcusware.com/art/radical-love
12 Ahmed, *Willful Subjects,* 19.
13 Syrus Marcus Ware, Radical Love: A Digital Exhibition, https://www.safeinpublicspace.com/content/radical-love-a-digital-exhibition
14 Ware, *Radical Love.*
15 Ibid.
16 Ibid.
17 Ibid.
18 Michalinos Zembylas and Elena Papamichael, 'Pedagogies of Discomfort and Empathy in Multicultural Teacher Education', *Intercultural Education* 28, no. 1 (2017): 3.
19 Syrus Marcus Ware, 'Foraging the Future: Forest Baths, Engaged Pedagogy, and Planting Ourselves into the Future', *Qualitative Inquiry* 28, no. 2 (2022): 236.
20 Eve Tuck, 'Suspending Damage: A Letter to Communities', *Harvard Educational Review* 79, no. 3 (2009): 409–27.
21 Ahmed, *Willful Subjects,* 1.
22 Ibid., 2.
23 Cowan, 'Transfeminist Kill/Joys', 502.
24 Ibid., 501.
25 Ibid, 508.
26 Ware, *Radical Love.*
27 Cowan, Transfeminist Kill/Joys', 503.
28 Mariapaola Michelotto, 'The Power of the Plan: Benedictine Monastic Architecture and the Formalization of Life', unpublished abstract for the *Noetics without a Mind* symposium, email correspondence, Rotterdam, November 2022.

Making a/one-self: Afro-Brazilians and more-than-double Architectures of the Black Atlantic

Alina da Porciuncula Paias & Léa Alapini

The term Black Atlantic, coined by Paul Gilroy in 1993, designates a transnational cultural formation resulting from the encounter of Black cultures with those around the Atlantic.[1] Initially enforced by the violent displacement of enslaved peoples starting in the fifteenth century, the Black Atlantic's complex arrangement of syncretic cultures is Gilroy's response to a Pan-Africanist paradigm from which ethnically absolute approaches derive, founded on the territorialisation of identity and racialisation of geography.[2]

Further used as a tool, the notion of Black Atlantic allows one to think away from the myth of a racial polis. The Atlantic, described as a single complex unit of analysis, is used as a territory-framework with its own cosmopolitics.[3] Beyond situated assemblages of culture, the Black Atlantic is a space of shared technics presenting certain tendencies for individuation of its inhabitants. While staging the process of (in)forming shared memories of its inhabitants, architectures of the Black Atlantic relay transcultural narratives of technologically mediated processes of individuation.

Two bell towers adorn the facade of the Our Lady of the Rosary church, ornamented inside and outside in the rococo style, in Ouro Preto, Brazil.

Ouro Preto grew as the knot through which most material and people flowed during the Gold Rush in the Portuguese colony. Throughout the 1800s, mining enterprises brought hundreds of thousands of enslaved workers trafficked from the African continent to areas with gold deposits. To the Afro-Brazilian

Rosary brotherhoods gathering Black women and men enslaved, freed or on their way to freedom, the employment of conventional architectural elements in their churches integrated a larger effort to display literacy about the codes transversally governing life in the colonial cosmopolis.[4] Funding and building a church, to a confraternity, was place-making: it was a claim of actual space within the city for the strengthening of group-specific rituals and for capture and conversion of new members, and it also reasserted the confraternities' legitimacy within highly coded social and ecclesiastical hierarchies.[5]

At the centre of the colonial operation, architecture works as a culmination of an implicated process of exercising attainable alternative becomings towards something *other* than slave – in most cases, a citizen.[6] It has specific forms of agency within processes of individuation, where elements of buildings operate in ways that surpass categorical divides between ornamental and programmatic. This mode of action involves culturally informed systems of meaning that are consciously manipulated and have immense affective power.

What Sylvia Wynter establishes as the sociogenic principle provides a conceptual alliance between meaning and affect, and thus helps clarify how architecture and architectural ornamentation can make the inhabitant of the Black Atlantic anew.[7] To define this principle, Wynter addresses Frantz Fanon's question of why and how an uttered racial epithet, like the one he hears after his arrival in France, has profound consequences for his sense of self (here meaning the existence of a self). The engagement with the Martinican philosopher's experience leads to the inquiry of what the precise relationship is between a racial slur and a neuron firing, or, in other words, of how a sound with a meaning that is culturally informed induces material changes to one's body.[8] Supported by Mikhail Epstein's description of transculture as a 'space opened between different cultures', which, when inhabited, allows for a clear view of how every 'subjectively experienced identity … arises directly from a specific sociocultural situation', Wynter connects Fanon's de- and re-composition of his sense of self, in all its exo-somatisations, to its material and biochemical basis, pointing out that 'if the mind is what the brain *does*, *what* the brain *does*, is itself culturally determined through the mediation of the socialized *sense of self*.'[9]

Beyond Wynter's detailed attention to (at that time) emerging research on feelings of reward and punishment and the opioid system in the brain, the centre of the argument rests on how the experience of a 'born biological human' *as* human is mediated by what Wynter calls 'cultural technology'.[10] The sociogenic principle, then, refers to how culture's 'information-encoding organisational principle' co-forms what feels good or bad, what actions will be replicated more or less often, and, ultimately, what is more or less possible for any one individual.[11] Stavros Kousoulas frames architecture in Simondonian terms as that which produces

Fig. 1: Church of Our Lady of the Rosary, Kaquende, Ouro Preto, Minas Gerais, Brazil, eighteenth century. Photo: Alina da Porciuncula Paias & Léa Alapini, July 2018.
Fig. 2: Inside of the Church of Our Lady of the Rosary, Kaquende, Ouro Preto, Minas Gerais, Brazil, eighteenth century. Photo: Alina da Porciuncula Paias & Léa Alapini, July 2018.

information; this information being the kinds and quantities of intensity that catalyse a transformation, or individuation, in a transductive fashion.[12] Wynter's view, informed by her and Fanon's transcultural experience, is that this synaptically transmitted information can be culturally encoded. Architecture made and thought of by the inhabitant of the Black Atlantic makes this inhabitant anew, because the one-to-one, always dissimilar, subjective and culturally formed experience – the moment of 'becoming-informed' – of unexpected elements in familiar contexts or known elements in unexpected contexts can be transformative.[13]

One of these elements are *azulejos*, painted tiles introduced to Iberia during the Andalusian period and then brought to the colony to be placed on new buildings. More than a material output of transatlantic commerce, *azulejos* are one of the elementary pieces of the Black Atlantic material landscapes, effecting a new Afro-Brazilian identity in the form of a material statement.

In 1740, the brotherhood members behind the construction of the Our Lady of the Rosary church in Pelourinho, Salvador, resorted to *azulejos* as a tool in the creation of a new Black identity.[14] Their material manipulation of baroque Portuguese heritage hinged on the literacy of the cultural codes and values of the time.

The tin-glazed ceramic tilework inside the church contributes to redefining and affirming the Afro-Christian community's personhood-through-citizenship. The epiphanic iconography of the *azulejos* of Pelourinho presents the visitors with the sight of a Black magus. The scene, situated in the lower part of the nave walls, pays tribute to the visit of Balthazar, a Black saint, standing in the centre and surrounded by two other magi. This manipulation of catholic liturgy and iconography (re)inscribes the Black Afro-Brazilian in the 'history of salvation.'[15] The former/current slave transcends their condition of subjugation through an exo-somatised moment of full personhood. The iconographic inscription of *a* Black self (recognised, visible, valuable) counters the de-/re-composition of what Fanon calls a third-person (made by others) identity: through experiencing *a* self the former/current slave regains *one*self.[16] The powerful effect of this materially embedded manipulation of code surpasses the original programmatic and ornamental functions of the *azulejo*.

The church becomes a space of cultural creation as it (re)inserts Blackness into its material archive, sedimenting new possibilities of being in a process of (Black-Atlantic) epiphylogenetic memory-making. The resulting technical environment performs a strategic attempt at integration into the surroundings, since buildings in the same area are dominantly covered in *azulejos* stretching inside-out the building like skin.[17] This awareness of context and code integrates the survival tactics of the Black Christian community in their efforts of place-making within a complex colonial order.

Fig. 3: The central nave of the Church of Our Lady of the Rosary, Pelourinho, Salvador, Brazil, eighteenth century. Photo: Gustavo di Giorgi, January 2022.

The inhabitant of the Black Atlantic crosses the ocean twice, at least. She is brought to Brazil by force and, in the colonial city, witnesses churches ostentatiously adorned and with architecture that has the power 'to move and change people.'[18] After she and her family achieve freedom, she sails back to the shores of Dahomey and Nigeria as a returnee, neither native nor foreigner. She mobilises architecture and its affective powers to, once again, make space and stand ground in order to survive amid competitive dealings between colonisers and local kingdoms.[19]

The Aguda arrived in Lagos in the middle of the nineteenth century with the clear intention to make themselves anew, in a context of colonial conquest where 'large mansions became advertisements for the advantages of a new civilisation.'[20] This group of Afro-Brazilian returnees in the Benin Gulf, Babalola Yai writes, had 'no debt of gratitude to their former masters.'[21] These inhabitants of the Black Atlantic took advantage of colonial disputes to introduce and place themselves within the (social and physical) space of the city, dis- and re-assembling baroque architectural elements, breaking away from being tutored by the Brazilian Portuguese as they did in the first years after their return.[22]

Beyond their ability to manipulate architectural references circulating across the Black Atlantic, with such spatial figures the Aguda redefined typical Brazilian one- and two-storey houses to their advantage, with the hallway becoming a main agent of change. Behind thick walls covered in stucco, bricks shaped the hallway and supported the structure of the first floor. This was all made possible by the material flows of the transatlantic trade, as the same bricks insured sufficient ballasting of the empty boat holds on their way back from Brazil.[23]

Cutting across the house's plan, the hallway shaped habits that fell in line with a newly acquired care for privacy and individuality and a growing legitimacy of the nuclear family as the most suitable family model, a view heavily informed by the religious education and conversion of Afro-Brazilians while still in Brazil.[24] The division of the ground floor into two distinct zones also gave the Aguda the option to use a section of the space for commercial purposes, engaging with trade activities in the city.[25] These spatial technologies led to vastly different forms of living than the ones exercised in Yoruba compound houses and worked to support and (re) inscribe, in the urban space, the redefined role of the Aguda in the local economy.

Double bell towers appear repeatedly in what Ayodeji Ogunnaike calls Muslim-Christian architecture, with a genealogy inaugurated at least as early as during the reconquista of the Iberian peninsula.[26] If in Portugal and Spain they emerge as the converted minarets of mosques, in Brazil they are one of the neither

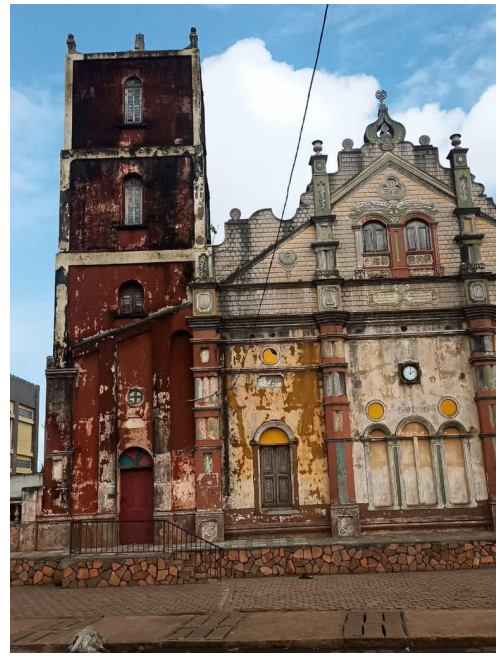


Fig. 4: The Great Mosque of Porto Novo, Benin, 1912–25. Photo: Denise Alapini, April 2023.
Fig. 5: Facade of The Great Mosque of Porto Novo (South), Benin, 1912–25. Photo: Denise Alapini, April 2023.

ornamental nor programmatic components of colonial churches, operating in association with other elements so that the church building is perceived as such within the growing cosmopolis. To a Brotherhood of the Rosary, the validation of the architecture associated with the group is a step towards the validation of identity through citizenship, the possible and attainable alternative to the non-identity of enslavement. To the Afro-Brazilian community of Porto-Novo, it gains new meanings.

With resources amassed through participation in transatlantic commerce including the slave trade, the Afro-Brazilian community of Porto-Novo supported the construction of a new central mosque following the approval of a new road project for the city in 1910.[27] The politically informed adoption of Islam by slaves and their descendants in Brazil was amplified in the Bight of Benin, where a refusal to capitulate to either local animist beliefs or the Christian faith of the coloniser was precisely what allowed the returnees to establish strategic relationships with both groups.[28] In the new mosque, The minarets converted into bell towers in Iberia and employed in Brazil to communicate the church building as such here retained the visual characteristics of a bell tower but were once again used as minarets.[29] The front and back facades, only finished in 1935, presented the same ornaments, forms and recognisable elements found in Christian churches built in colonial Brazil during the eighteenth and nineteenth centuries. This architecture acted *on* the city's inhabitants through culturally mediated modulations of affect – the impact of the rococo ornamentation on the senses was still felt outside of Brazil (or at least this was the thesis of the Afro-Brazilian architect and craftsman), but the bodily responses to this architecture were also culturally determined, subjected to previously formed associations to feeling good or bad, powerful or powerless.[30]

Making the Afro-Brazilian mosque involved a manipulation of codes originated in the colonial metropolis so the groups of returnees could remake themselves as influential and indispensable in the West African port city. Their decisions were pragmatic; their wariness in pledging loyalty to either local monarchs or colonisers guaranteed their survival.[31] Their situation was the precondition of what W.E.B. Du Bois calls double consciousness, a state of suffering between two irreconcilable identities through which one develops 'double words and double ideals.'[32]

The architectures that the inhabitant of the Black Atlantic makes (and that make her in return) are complex assemblages. Every product of the Black Atlantic is *at least double*; it needs at least one categorical conjunction to be understood: Muslim-Christian and beyond, African-Brazilian and beyond. The Black Atlantic

is a tool and a space, but also an interstice; the inhabitant of the Black Atlantic inhabits the irreducible, unclassifiable space between one pole and another. Architecture, here, is much more than a reflection or expression of this interstitial inhabitation; it reinvents itself and people, it encodes and transmits information that is disaggregated and recomposed in order to strategically elicit affective responses, opening up, through them, new possibilities for becoming.

Notes

1 Paul Gilroy, The Black Atlantic: Modernity and Double Consciousness (London and New York: Verso Books, 1993), 5.
2 Achille Mbembe, 'Difference and Self-Determination', *e-flux journal* 80 (March 2017): 11, https://www.e-flux.com/journal/80/101116/difference-and-self-determination/.
3 Gilroy, *The Black Atlantic*, 15.
4 Afro-Brazilian is a term with a context-dependent meaning. It can be used to describe enslaved peoples trafficked from Africa to Brazil, and their technical-cultural products and those of their descendants in Brazil until today; and to describe enslaved peoples brought by force to Brazil, who returned to Western Africa, and their technical-cultural products and those of their descendants. In this text we engage with both of these meanings. See: Miguel Valerio, 'Architects of their own humanity: race, devotion, and artistic agency in Afro-Brazilian confraternal churches in eighteenth-century Salvador and Ouro Preto', *Colonial Latin American review* 30, no. 2 (June 2021): 251, https://doi.org/10.1080/10609164.2021.1912483.
5 Francisco Eduardo de Andrade, 'Os pretos devotos do Rosário no espaço público da paróquia, Vila Rica, nas Minas Gerais', (Black devotees of the Rosary in the public space of the parish, Vila Rica, Minas Gerais), *Varia Historia* 32, no. 59 (May–August 2016): 410–30, http://dx.doi.org/10.1590/0104-87752016000200006. Cf. Valerio, 'Architects of their own Humanity', 239.
6 Elizabeth W. Kiddy, 'Congados, Calunga, Candombe: Our Lady of the Rosary in Minas Gerais, Brazil', *Luso-Brazilian Review* 37, no. 1 (Summer 2000): 48, http://www.jstor.org/stable/3513857.
7 Sylvia Wynter, 'Towards the Sociogenic Principle: Fanon, Identity, the Puzzle of Conscious Experience, and What It Is Like to Be "Black"', in *National Identities and Sociopolitical Changes in Latin America*, ed. Mercedes F. Durán-Cogan and Antonio Gómez-Moriana (London and New York: Routledge, 2001).
8 Ibid., 41.
9 Ibid., 34, 36, 37.
10 Ibid., 53.
11 Ibid., 53.
12 Stavros Kousoulas, Gökhan Kodalak, 'Simondoniana: Essays by Kodalak and Kousoulas, with Mutual Responses', *Footprint* 16, no. 1 (Spring/Summer 2022): 97, doi.org/10.7480/footprint.16.1
13 Ibid., 97.
14 Valerio, 'Architects of their own Humanity', 244.
15 Ibid., 253.
16 Frantz Fanon, *Black Skin, White Masks,* trans. Charles Lam Markmann (London: Pluto Press, 2008), 83.

17 Amy J. Buono, 'Historicity, Achronicity, and the Materiality of Cultures in Colonial Brazil', *Getty Research Journal* 7 (2015): 26, http://www.jstor.org/stable/10.1086/680732.
18 Ayodeji Ogunnaike, 'The Transcontinental Genealogy of the Afro-Brazilian Mosque', *MAVCOR Journal* 6, no. 2 (2022): paragraph 17, doi: 10.22332/mav.ess.2022.5.
19 J. Michael Turner, 'Africans, Afro-Brazilians and Europeans; 19th Century Politics on the Benin Gulf', África: Revista do Centro de Estudos Africanos da USP 4 (1981): 21.
20 Aguda is a term used in the region of the Bight of Benin to designate people with surnames of Portuguese origin, linked to the slave trade from West Africa and to slavery in Brazil or being former slaves themselves, often of Yoruba descent. The quotation is from John Michael Vlach, 'The Brazilian House in Nigeria: The Emergence of a 20th-Century Vernacular House Type', *The Journal of American Folklore* 97, no. 383 (January - March 1984): 6, http://www.jstor.org/stable/540393.
21 Olabiyi Babalola Yai, 'The Identity, Contributions, and Ideology of the Aguda (Afro-Brazilians) of the Gulf of Benin: A Reinterpretation', in *Rethinking the African Diaspora: The Making of a Black Atlantic World in the Bight of Benin and Brazil*, ed. Kristin Mann and Edna G. Bay (London: Routledge, 2013), paragraph 3, eBook.
22 Alain Sinou, 'L'architecture afro-brésilienne de la côte du Golfe du Bénin, Un genre imparfait, entre ignorance et oubli', (Afro-Brazilian architecture of the Gulf Coast of Benin, An imperfect genre, between ignorance and oblivion), in *Patrimoines oubliés d'Afrique*, ed. Caroline Gaultier-Khuran (Paris: Riveneuve Éditions, 2011): 11, HAL Open Science reproduction, https://hal.science/hal-00700729
23 Ibid., 13.
24 Vlach, 'Brazilian House', 18; 14.
25 Sinou, 'L'architecture afro-brésilienne', 17.
26 Ogunnaike, 'Transcontinental Genealogy', paragraph 20.
27 Luc Gnacadja, 'Le Bénin', in *Rives Coloniales: Architectures, de Saint-Louis à Douala*, ed. Jacques Soulillou (Marseille: Éditions Parentheses and Paris: Editions de l'ORSTOM, 1993), 233.
28 Yai, 'Identity, Contributions, and Ideology', paragraph 16.
29 Ogunnaike, 'Transcontinental Genealogy', paragraph 38.
30 Ibid., paragraph 6.
31 Turner, 'Africans, Afro-Brazilians and Europeans', 14.
32 Here it is relevant to note that Du Bois was a contemporary to the consolidation of the Afro-Brazilian communities in West Africa. W.E.B. Du Bois, *The Souls of Black Folk* (Oxford: Oxford University Press, 2007 [1903]), 136.

The Hollow Noetics of the Image by Proxy: Kaleidoscopic Waypoints in the Techno-Social mediascape

Marc Boumeester

The dichotomy between actual and perceived reality has become increasingly opaque in the techno-social mediascape, having a profound impact on our understanding of reality itself. The agency of desire is contended to be subsumed within the illusion it creates, therefore a new paradigm of understanding is required in order to capture the different perspectives and nuances of the ontology of the image, which – arguably still consequential – can be divided into two tiers: the political and the empowering. When dealing with desire, one should start at the point where the political and empowering tiers meet, specifically in relation to the image as a product of the individual drive to essentialise subject-events that are by definition 'non-essentialisable.' To this end, I introduce a new type of image, the 'image by proxy', which I set against an unprecedented volume of production and distribution of images, bringing an unknown yet palpable dynamism. In this mediated field I explore the impact of this vigour on noetics, suggesting that the creation of a choice in which reality to operate in is the only vitalising aspect of the techno-social space and that the only way to ground ourselves in this space is to embody our understanding of it.

Desiring

Desire is produced. Its production is a well-balanced play between the absolute, its object, the relative, and its subject that creates its own forcefield of nearing (towards the liberating perversion) and distancing (towards the limiting utopian). The exact point where they meet is the domain of desire; nevertheless – as this

is a non-fixated field of affects – this 'point' needs to be constantly re-established and consumed (both of which are part of its production) in order for it to exist at all. Desires are increasingly externalised as the horizons of our perception are artificially furthered and technologically enhanced. However, the forces of production-enabling have very different magnitudes depending on their ability to be technologically enhanced, therefore the desire-production of the social machine *itself* becomes a crucial force. Even more: the concept of desire is prone to be externalised full spectrum, disembodied and translucent. In the process of producing desire there is no role for a distinction between types of reality (embodied or externalised, or anything in between), as their affective capacities are the only qualifiable parameters for their effectivity. As techno-social desire has no possibility to be embodied directly, it becomes a projection without a source, a hologram in the Freudian theatre, effective if only and only if, to be trans-individuated into noesis. 'There are no desiring-machines that exist outside the social machines that they form on a large scale; and no social machines without the desiring machines that inhabit them on a small scale', to speak with Deleuze and Guattari.[1]

Thus, the social and technological fields are merging to the extent that desiring production in the techno-social field is causing types of effects that could previously only be imagined, literally. In affective words: the distinction between technological and embodied fantasmagoria is more inconsequential than their effects on desire production.[2] As I have argued elsewhere, the process of cinematographing perception in individuation includes both actualised and non-actualised components, which act, intertwine, disrupt and otherwise modulate each other's existence.[3] It deals with the reality within the illusion, not the reality behind or separate from it. The agency subsists *in* the illusion, *making* it reality. This process shifts the claim on factuality from the actualised to the desired reality and makes this an inseparable illusion of its noesis. The production of desire for desire's sake (and therefore for any disembodied entity) is shifting to a mediated field in such an unprecedented way that waypoints such as reality, truth, justice, absoluteness or scale are better expressed in degrees of inception rather than in singular or anchored entities. Rather than to solely focus on the agency of the entity-less surplus-desiring-machine (backstage), or the hallucinatory podium of the Freudian lack-producing chorus line of self-affirming mediaphilia (on stage), it is perhaps time to adapt a mode of understanding the desire production in the techno-social domain akin to looking at falling ice crystals: the right eye sees one specific set of reflections (surplus), the left eye sees another (lack). Combined, they simultaneously both see and do not see the kaleidoscopic spectacle, a Schrödinger's cat of desire that produces itself, a reality of illusion.[4]

Imaging

The current discourse on the ontology of the image can probably best be divided into two tiers: the political (freedom from) and the empowering (freedom to). The political tier (the context) bifurcates into the discourses on inclusion, engenderment, governance and diversity. This tier produces the debate that rightfully questions the power structures that determine which images are placed (by whom, in what way, where, how and when) and challenges the question of semiotics from a shifted perspective on normativity. Systems of codification, situation, commodification and signification mask and confuse direct perception, hence, aesthetic noesis is never free of the context generated by those that influence these systems. Underneath (or above) the political tier lies the empowering tier (the imaging), which enables, but does not engage with the first tier. It does not prescribe, dogmatise, stigmatise or value acts of politics, yet it enables multiple world views to be expressed in a non-conformist and non-normative way. This leads to increased societal awareness of the role and purpose of image-making and public debate on authenticity, political placement, historical value and psycho-behavioural effects. In the words of writer-architect Jesús Vassallo: 'once we assimilate the idea that a photograph can be manipulated or constructed, it no longer matters whether it actually has been or to what degree. When (photography's) illusion of neutrality dissipates, the act of making a picture becomes more than ever a charged statement about how the world could or should be.'[5]

Yet, when dealing with desire we ought to start on the plane where the political and empowering tiers meet, specifically in relation to the (photographic snapshot) image as a product of the social-individual drive to essentialise subject-events that are by definition 'non-essentialisable.' This process produces a new type of image: the image by proxy, which capitalises on the reciprocal relationship between human individuation, technology, and their affective environment. In simple terms: almost all images that are produced as an individuation of an already existing image are produced by proxy and become merely another shekel in this circular semiotic chain. Any selfie at any tourist destination is thus an image by proxy and as the individuated image is only part of the aforementioned chain, it never becomes *a* selfie, but will always be *the* selfie. The interest thus lies not in the image itself, but in the socio-technological mechanism that produces it. The term 'by proxy' relates to the condition in which these images are mere recreations of already existing (concepts of) images, which gives them a sense of (proximate) signification without a semiotic baseline. It differs from the image by context – although it originates from the same system of codification, situation, commodification and signification (c.s.c.s) in the absence of individuation in the process of imaging. The creation of the image by context (as done by AI)

hallucinates (re-)production (proxy-production), whereas the creation of the image by proxy approximates fulfilment (proxy-desire).

The image by proxy is itself not material, yet it produces many material outcomes in its process of imaging.[6] The perception of the photographic image can be said to have transformed from being a reproductive instrument which has a prerogative on veracity (the static image), through being in a state of illusionary influence (the dynamic image), the state of illusion itself (the moving image), towards a state of gaining independence (the material image).[7] Unlike the first four types of images in this 'liquid' taxonomy, the image by proxy is not grounded in its physical appearance (the image), but in the capacity and desire of the area between expectancy and perception that creates reality (imaging). Therefore, to accept reality is to accept that images, to quote art historian Horst Bredekamp, 'do not derive from reality. They are, rather, a form of its condition. Images, through their own potency, empower those enlightened observers who fully recognise this quality. Images are not passive. They are begetters of every sort of experience and action relation to perception.' [8]

This process aids the construction of the reality of the individual and is set against an unprecedented volume of production and distribution of images which brings an unknown yet palpable dynamic. Aside from the obvious visual output (the image) the image by proxy also produces significant expectations of a certain spatial cognisance by the pre-formation of angles, frames and vantagepoints.[9] After all, if the encounter with any (built) environment has been abundantly heralded by its imaging, the degrees of freedom to have an unbiased experience are reduced to nix.

The image by proxy is the 'negative' body of the asignifying sign: there where the asignifying sign escapes from signification by rupturing all known before (yet being recognised as a sign on an affective level, and therefore being an image), the image by proxy is only created as a result of the coalescent signification resulting in a temporal embodiment, which is for that reason never a single, fixated image.[10] The image by proxy is thus always a result of shadows cast from the domains of c.s.c.s., it is shadows embodied, rather than a bodiless shadow.[11] A body (or nebula) of signification is thus portrayed as a signifier, which makes both the asignifying sign and the Image by Proxy different from Jean Baudrillard's notion of the simulacrum, hinging on the establishment of veracity, which – as I will argue –in the field of techno-social desire is no longer regarded as singular or universal, but better expressed in degrees of inception.[12] In Table 1 the relation of the theoretical and philosophical setting, the various (meta-) frameworks and the ontological position of the image by proxy is schematised.[13]

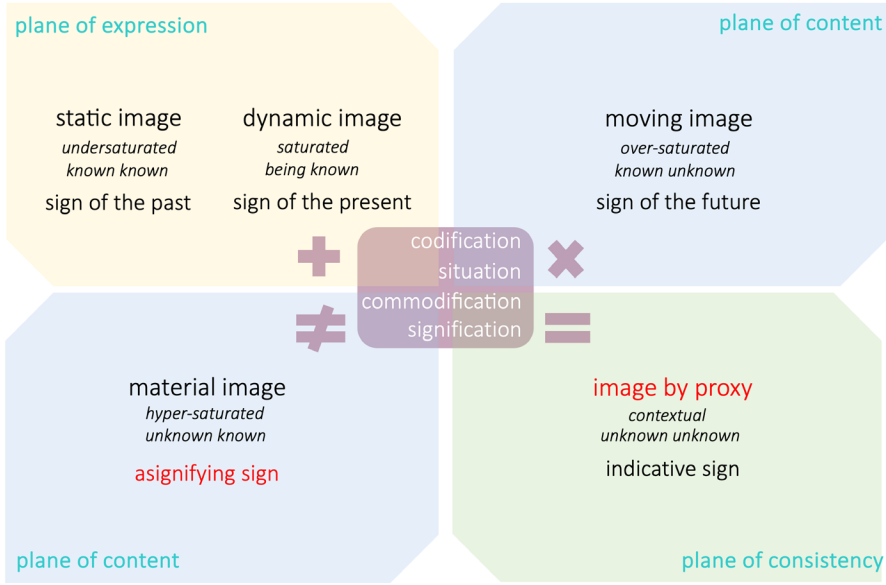


Table 1: Schematic of the order of the image (by proxy).

Noeting

It would be too easy to designate technological effects in our individual-social condition as mono-directional. Technological structures follow social assemblages up to the point that their influence starts to reverse positions that causes a continuing social unrest.[14] Asserting the point that technicity is not an external drive but inherent to the developing of the mind does not help to soothe the fear of 'technolag.' Technolag indicates the idea that humans will not be able to keep up with the technological developments and will lack the necessary skillsets to properly function in an increasingly technologized world. The world's population has almost reached full saturation when it comes to the possession and use of a mobile, connected communication device that can produce and distribute images, such as a smartphone. Although the current (2023) 6.9 billion smartphones operating in the world cannot be translated one-on-one into a percentage of its 8 billion inhabitants, it is clear that the limits are rapidly approaching when we reckon only with those able, capable or willing to use such an instrument.[15] The thus created ubiquitous capacity to produce and instantly distribute images has already lead to a surge of new images over the last decade, and is expected to accelerate even more in the time to come. While the entire history of photographic imaging produced an estimated 3,5 trillion photos by 2013, one decade later this number had already grown to 12,4 trillion photos, and this number has been predicted to increase by 1,7 to 2 trillion every following year.[16] On top of that, and currently un-estimable, is the amount of images (by context) that are added by the production by artificial intelligence, images which have neither a ground in the actualised (reproduction), nor in the fulfilment of desire (proximation), but find their source – literally – in the imagining of an image, the image by context. This scale of production and distribution of images makes it impossible to speak about an individual image separate of its place in this vast body of imaging, in the same way that speaking of this body of imaging apart from its role in the Anthropocene is inadequate. In this mediascape the distinction between imagination, hallucination and nightmare is quantitative, not qualitative, as a result of the lack of any grounding in or through 4EA.[17] Therefore the noetics in this field is governed by both fear and excitement which are both part of the desire-spectacle as mentioned before. The human fear of being rendered useless (technolag) is both paranoid and justifiable. After all, a much-defended typical human quality is the ability to create, yet at the moment this competence is being 'encroached upon' by technology, the question should not be how to protect the human in this quality (production), but how to signify its value (reception). Nothing in the techno-social space is there without intention; the fact that this space is able to produce fantasmagoria doesn't make it accountable for that, it merely shows the undercurrents of mediaphilia in a stroboscopic way.[18] The techno-social mediascape is well equipped to corrupt

Fig. 1: ‘The Electrician’ (2023) by Boris Eldagsen, courtesy of the artist.
No further use is allowed.

the fragile line between the perception of truth and fabrication, yet seen from the (desirable) perspective of the reality-producing illusion, truth becomes folded into different layers of reality: when it acts, it is true, regardless of objective veracity (caused or authenticated by association). In this context synthetised truth can only be validated in its own reality, becoming an indicative truth, but acting as a very strong agent, nevertheless. An early example of this could be found in the work of photo-media artist Boris Eldagsen. Under the title 'Pseudomnesia' (2023) he has co-produced – with the aid of artificial intelligence – a series of work that centres (and displays) counterfeited remembrances of non-existing events. The melancholically tinted anachronisms refer to occurrences and places that are thinkable; the images themselves are also only thinkable, they are images by context. The significance of this example obviously lies not in the creation of fiction as such, but in the given that none of these layers of denotations and connotations are portrayed, but are purely syntactically generated, especially given the purpose to produce forged projections of absent pasts. This sharpens the discussion as it overtakes and transcends the human capacity to create, exactly as this does not disturb the potential to affect the spectator in the least. Rather, this work was awarded with a prestigious photography award, which Eldagsen rightfully refused, as his aim was to initiate the debate on the force of AI technology by joining the competition [Fig. 1].[19] Deliberately operating within the realm of photography has made clear that the notion of reality has fully shifted from being rooted in anything factual (including the fact of illusion), to being grounded in synthesised affect. This creation of the choice of *which* reality to operate in (theatre of lack), is surely the most enticing and vitalising aspect of the desire-spectacle that has created the techno-social space in the first place. Similar to the inceptive nature of veracity, its effects are both attracting and repulsive, depending on which reality one has chosen. Nevertheless, the ultimate reckoning of its noesis comes through a grounding in 4EA (surplus production).

Conclusion

Rather than opening Pandora's Box, the attribution of the techno-social mediascape to noesis can perhaps best be seen as a Piri Reis paradox, which indicates finding evidence of knowledge previously obtained, but later forgotten (including the knowledge of that knowledge); the encounter with an unknown known (fig. 2).[20] The technological enhancement of desire comes without its crucial capacity to be 4EAed; is itself an extension of the theatre of mediaphilia, which in its turn is a product of the social assemblage, closing the circle at the starting point. When we witness that the image by context might be more 'real'

[Written for The Flag of our Union.]

A Dream within a Dream.

BY EDGAR A. POE.

Take this kiss upon the brow!
And, in parting from you now,
Thus much let me avow—
You are not wrong, who deem
That my days have been a dream;
Yet if Hope has flown away
In a night, or in a day,
In a vision, or in none,
Is it therefore the less *gone?*
All that we see or seem
Is but a dream within a dream.

I stand amid the roar
Of a surf-tormented shore,
And I hold within my hand
Grains of the golden sand—
How few! yet how they creep
Through my fingers to the deep,
While I weep—while I weep!
O God! can I not grasp
Them with a tighter clasp?
O God! can I not save
One from the pitiless wave?
Is *all* that we see or seem
But a dream within a dream?

Fig. 2: '/Imagine bench wake-me-up-when-I'm-famous' (2023) AI-generated image by Midjourney, collection of Marc Boumeester. 21

Fig. 3: 'A Dream within a Dream' (1850) by Edgar Allen Poe, Koester Poe Newspaper Collection, public domain. 22

than the image by proxy, the only way to ground ourselves in the encounter with the techno-social mediascape (to break the circle) is to embody our noesis (fig. 3). Similar to counting one's fingers to determine if one is awake or asleep, we need to count the number of dimensions attributed to an indicative truth and the number of senses used to perceive those dimensions: if there are more than four dimensions or fewer than five senses, we are in a reality *in* the illusion, a dream within a dream, a reality nevertheless (fig. 4).

Fig. 4: ‘The Confession’ (2023) by Boris Eldagsen, courtesy of the artist.
No further use is allowed.

Notes

1 Gilles Deleuze and Félix Guattari, *Anti-Oedipus : Capitalism and Schizophrenia*, trans. Robert Hurley (Minneapolis: University of Minnesota Press, 1983), 340.

2 Fantasmagoria is a French term referring to 'ghost shows', theatre-like performances that included various types of optical illusions, which were popular in the late eighteenth and early nineteenth centuries. The aim was to shock the audience, and the audience came to be shocked.

3 Marc Boumeester, 'Technicity as the Montage Production of the Mundane', in *The Space of Technicity: Theorising Social, Technical and Environmental Entanglements*, ed. R.A. Gorny, S. Kousoulas, D. Perera and A. Radman (Delft: TU Delft OPEN Publishing in partnership with Jap Sam Books, 2024), 229–50, DOI: https://doi.org/10.59490/mg.95.

4 The term paraphilia is designed as a non-pejorative designation for unusual sexual interests to replace the heavily connotated word perversion. However – and dating back to Freud's definition – the term 'unusual' is already inherently judgmental. I use the term Mediaphilia to indicate – non-judgmentally –any activity connecting non-sentient, synthetic mediation and desire, such as pictophilia, autagonistophilia and (introducing) proxyphilia. Proxyphilia covers the act of being aroused by engaging in the production and distribution of an Image by Proxy.

5 Jesús Vassallo, *Seamless: Digital Collage and Dirty Realism in Contemporary Architecture* (Zürich: Park Books, 2016), 48.

6 The individual (photographic) image is thus instrumental in defining the Image by Proxy when it is 'de-individualised': when the individual image is regarded as *any* image (a meta-image) to reveal its instrument of production.

7 On the static image, see Rosalind Krauss, 'Sculpture in the Expanded Field', *October* vol. 8 (1979): 30–44; on the dynamic image, see George Baker, 'Photography's Expanded Field', *October* vol. 114 (2005): 120–40; on the moving image, see Marc Boumeester, 'Iridescence of Perception: A-Signification Through Pre-Emptive Desecration of the Visual Urzustand' in *What Images Do!,* ed. Henrik Oxvig et al. (Aarhus: Aarhus University Press, 2019), 51–62; on the material image, see William J.T. Mitchell, *What Do Pictures Want? The Lives and Loves of Images* (Chicago: University of Chicago Press, 2005); and also Jacques Rancière, *The Future of the Image*, trans. Gregory Eliot (New York: Verso, 2007).

8 Horst Bredekamp, *Image Acts: A Systematic Approach to Visual Agency* (Berlin: Walter de Gruyter, 2018), 283.

9 The individual (photographic) image is thus instrumental in defining the Image by Proxy when it is 'de-individualised': when the individual image is regarded as *any* image (a meta-image) to reveal its instrument of production.

10 Marc Boumeester, 'Medium Affect Desire: Hybridising Real Virtual and the Actualised through Affective Medium Ecology,' in *Footprint* (2014): 69–80.

11 Marc Boumeester, 'The Bodyless Shadow: Towards a Meta-Medial Framework', *Drawing-On* 1 (2015): 49–60.

12 'The simulacrum is never that which conceals the truth – it is the truth which conceals that there is none. The simulacrum is true.' Jean Baudrillard, 'Simulacra and Simulation' in *Selected Writings*, ed. Mark Poster (Stanford: Stanford University Press, 1988), 166–84.

13 A case study can be found here: https://publication.avanca.org/index.php/avancacinema/article/view/373/730.

14 Manuel DeLanda, *A New Philosophy of Society: Assemblage Theory And Social Complexity* (London: Continuum, 2006).

15 In 2016 49 per cent of the population had a mobile phone; in 2023 the number of connected phones would translate to 91 per cent of the population, of which 86 per cent was a smartphone, although the geographic distribution was highly unequal and not limited to 100 per cent (having more than one phone). At that same moment there where

over eleven billion mobile connections, which include Internet of Things, 1,37 per capita. See for the latest data: https://www.bankmycell.com/blog/how-many-phones-are-in-the-world. My numbers are from January 2024.

16 The sources are regularly updated; for the latest information, see: https://www.statista.com/topics/1164/social-networks/#topicOverview; https://ourworldindata.org/rise-of-social-media; https://photutorial.com/photos-statistics/.

17 'Mediascape' is a term introduced by sociologist Arjun Appadurai and refers to the global network of images and information that shapes our perceptions of the world, and is not limited to any specific form of media. I have extended the definition of this and other 'scapes' to match current developments; see Marc Boumeester, *The Desire of the Medium* (Arnhem: ArtEZ Press, 2017), 201–49.

18 Artificial intelligence's infamous 'hallucinating' of is probably this technology's most charming side-effect , akin to the fantastic 'inventions' made in the nineteenth century by creators like Étienne-Gaspard Robert and Jules Verne, who took emerging technology as a springboard for an unlimited fantasising of new world elements, thus also opening new patterns of thinking.

19 The prize was awarded by the Sony World Photo Awards (https://www.worldphoto.org/). The refusal, publicity and following discussion will most likely prove to be one of the first controversies in which synthetic generation of affect has been disconnected from notions of veracity. Regardless of how far a human artist can push their work into the abstract and obscure, the life-likeness of AI-produced work seems far more alarming.

20 The Piri Reis paradox is a trope that I have named after the Ottoman seafarer and cartographer Piri Reis, who in 1513 produced a world map that (arguably) contains geographical information and knowledge that would only be 'discovered' centuries later. He used several predating maps for his composition, suggesting that the lost knowledge was much older than his era. The map was discovered in 1929 and as it has the potential to rewrite the (Western) history of discovery, exploration, ownership and accountability; it remains a source of dispute to this day.

21 Early AI imaging was notorious for the absence of 'common sense' in generating images, most notable for its inaccuracy in differentiating between various components and 'miscalculating' the number of teeth and fingers in depicting humans.

22 Edgar Allan Poe, *A Dream Within a Dream* (Austin: Harry Ransom Center, The University of Texas, Koester Poe Newspaper Collection, Public Domain, 1849).

Do Galactic Empires Dream of Cosmic Sheep?

Sinan Cem Kızıl

The original question asked by Philip K. Dick invoked in me, when I first read it, the answer: 'No. Yes. Probably, if anything like that even exists.'[1] It is a question that elicits no answer but only signifies the elusiveness of the line that separates humans from technology. Dick's novel is filled with speculations on the construction of the senses and an alternative historicity for emotions under the effects of technology.[2] After all, speculations concerning consciousness, the senses, technology and their reticular relation are repeating themes in science fiction. But societies and even ecologies are also caught up in narratives. Science fiction speculates on politics, power and territories when not washed up with action and mystery.

The closest possible habitable stellar system, Proxima Centauri, is 4.2 light years away from us. Imagining any coordinated decision-making across multiple planets from that distance is absurd, not only because reaching another habitable planet or terraforming any other planet in our system is a complex problem, but so is communicating with them. However, this is nothing that cannot be resolved by a science fiction author's magical invention. Some of those inventions squeeze space-time relentlessly. Interstellar communication and travel pose almost no problem in such stories. Sure, science fiction has a lot to explore in the relationship between an individual – whether human, post-human, or non-human – and the construction of space-time,[3] but this text will focus on territories – or multiplicities of larger scales, including societies and biomes– and how they construct their space-times.[4] Those territorial speculations display various aspects of the relationship between technology, ecology and power.

Speculating on how power works on multiple planets may seem inauthentic, considering the human history of colonialism. After all, humanity has an extensive experience and know-how on colonisation, and science fiction borrows a lot from that history.[5] Stories of exploitation, war, emancipation, conquest, and many more are central themes of mainstream science fiction. To understand the originality of science fiction's galactic empires, we must look at their power at its limits. History presents such an example with the colonisation of the new world. At the time, travel across the oceans was a difficult and time-consuming task. It took weeks or even months for messages to be sent back and forth between the mainland and the colonies, and there was no way to communicate quickly in an emergency. Important decisions needed to be made in situ without the control of the central authorities. That eventually ended with the fragmentation and dissolution of some of the colonial territories. The production and reproduction of territory depend on the capacity of tools to construct a new space-time by connecting distant places in various ways.[6] The rate of exchange is the rate of space-time manipulation, a gravitational pull toward centres of power.[7] So, the technological capacity equates to the potential of power to unfold as it desires to reproduce territories.

In this regard, a rearticulated version of Dick's question of whether galactic empires dream of cosmic sheep resonates with questions such as: Does the power feel its territory, and if so, in what ways? How can any authority make decisions that impact entire ecologies across multiple planets? Even if it were possible to make such decisions, can they truly be seen as the consciousness of an authority? Can a galactic empire truly be a cohesive entity? And so on. I see the banality of these questions because of their evident answers or misdirected energy, considering the actual territories in which power is unfolding. However, fiction in any form can contemplate and find some novelty in different organisations of space-time.

The frequently quoted third law of science fiction author Arthur C. Clarke states: 'Any sufficiently advanced technology is indistinguishable from magic.' This statement has often been used in the genre to explore the boundaries of what is possible regarding technology and its impact on society. The concept of a galactic empire is a prime example of this, as it requires technologies far beyond our current understanding and capabilities. Another narrative law, from fantasy writer Brandon Sanderson, categorises 'hard and soft magic systems' in fantastic literature.[8] The primary differentiation between hard and soft systems is their approach to the rules of magic. While hard systems explain rules intricately to create a logic;[9] in soft systems, magic appears as a source of mystery.[10] Either of these narrative approaches can sustain a fictional galactic empire. A magical technology may produce an omnipresent power centre squeezing space-time and bringing distant planets side-by-side. But the author can also choose to

engage with the limits of this fictional gravitational centre with the complex logic of magical technology.

These limitations are also limits to territories, their definition and control. Territories are always marked by the technology and resources available to those who hold them. I will mention two science fiction series that propose magical technologies directly relating to the territorialisation of power, its disruptions and limits. In these examples, the boundary of the technology conditions the political forces by specifying the rules of space-time and thus its construction.

The first example is Orson Scott Card's *Ender's Game* series, in which interstellar communication is instant, but travel is not.[11] Limits to the magical technology 'ansible' creates a society in which the impact of data and words are amplified.[12] Card tells the story of the character Ender from childhood to death in multiple volumes. The conflict of the first book revolves around the tension between the individual and the territory, both amplified and limited through technology. The protagonist finds himself in a war simulation, only to realise his commands are being deployed in another corner of the universe through ansible. An experience that seems personal and isolated reveals itself as social and empathetic towards the alien race that has been wiped out. Ansible actualises the virtual simulation and connects Ender to aliens, allowing him to communicate with the last of them. In the following books, the guilt-ridden Ender escapes from his past and adopts another identity as a 'speaker for the dead.'[13] The individual-territorial tension gains a new expression. The speaker's words move faster than he does, deterritorialises and reterritorialises both the emperor 'Hegemon' and Ender. Because of space-time logic, words and thoughts in Card's narrative mobilise faster than individuals do. In travels close to the speed of light, time passes much more slowly for the traveller. Words, however, roam the galaxy in an instant. They attract followers, and Ender becomes just another one of the speakers. Whether willingly or not, technology distributes Ender to the territory. His words and thoughts affect planets and societies. Ender encounters his own reflection in the imperial territory.

The second example is Frank Herbert's *Dune* series.[14] Herbert's narrative places interstellar travel in a politico-economic context. Here instant travel is possible but only with certain prerequisites. Only a specific group of people – the 'guild of navigators' – can perform pilotage, using a particular drug –'melange' – that is found on a specific planet, Arrakis. Herbert's melange presents a different space-time logic than ansible. Herbert says that melange provides the ability to look at potential futures for extreme users. Thus, pilots can draw a safe trajectory while moving faster than the speed of light. Melange allows the guild to monopolise interstellar trade by allowing them to organise space-time through logistics. Besides the guild, feudal factions that govern planets under the emperor

compete for a better place in the market. As political actors, factions own armies and the means of production on their planets.

The *Dune* series emphasises history and its construction in relation to technology. For example, a book titled the 'Orange-Catholic Bible' appears in dialogues and chapter intros, and signifies a war that ended with the abolishment of thinking machines. Or a word, 'zenshia,' hints at a galactic history that originates from the Earth. A shadow organisation holds a secret breeding and myth-making programme for thousands of years, to produce the genetic messiah and the contexts he will find himself in.

Within this complex history, the extent of Herbert's narrative shows itself when the various ecologies of Arrakis unfold as the main characters of the first novel. Herbert provides a detailed account of the environment. Endless dunes, a scarcity of water, an extreme climate, giant sandworms and animals dominate the planet's culture and everyday life. Technology complements the biological regimes of water to sustain human life on Arrakis. The desert people cannot even imagine a life without water recycling suits. Trees are planted before the governmental palace as a display of power. Crying after death is unexpected, because it contradicts the sacred principle of preserving water. We encounter a contradiction as we learn the nature of 'melange,' which depends on the dry, hot desert and dangerous creatures. Water threatens the sandworms and melange production. Within the story, the imperial power, mediated through guilds and a rivalry between feudal lords, encounters its limits on the planet. Herbert portrays the territory as existing in a metastable state. Accumulated potentials, the tension between the imperial centre and Arrakis, the dream of water and the power of melange, and messianic myths all resolve into the deterritorialisation of imperial power and reterritorialisation of power on Arrakis. The human protagonist kickstarts the process; essentially, he gains prophetic abilities akin to guild pilots and uses them to claim the means of production akin to the power of the emperor and the lords under him.

In telling the story of next generation of characters in Arrakis, Herbert takes another step towards the personification of the environment. When Arrakis is finally terraformed, the sandworms die. The emperor transforms into a sandworm hybrid, and nests within the only desert section left on the planet. From then on, there is no difference between melange, the sandworms and the dry dunes; they only exist with or within the god-emperor. At the centre of new imperial territory there is a massive black hole.

In this regard, I should note that both authors have their critiques and biases towards humanity and power, which are too complex to express without extensive summaries of multiple books and a larger perspective. Instead, I would

like to highlight the common effort to define space-time logic. Both examples specify the possibility of a galactic empire with an invention, and speculate on its limitations. Technology forces the power to territorialise in a certain way. In both examples, the sense of the universe and of power is constructed simultaneously. Technology limits and provides the means of exchange between human and non-human bodies. Characters find themselves in an extraordinary relationship with the technology, which disturbs and eventually reshuffles the territory of the galactic empire. Ansible depersonalises speech; it almost stretches and lays the individual senses onto geographies, making it a material to be processed by the collective consciousness. Technology turns the individual into a resource to be used in constructing territories. In *Dune*, melange personalises the planet, or more accurately, makes it sensible. The nature of the scarce and dangerous drug entangles the human and non-human ecologies of one planet with many planets. Furthermore, Herbert explores becoming-Arrakis with the transformation to the sandworm. After the terraforming, the environment where melange is produced gets transposed to a territorial individual.

Although they built upon magical narrative devices, these stories still make sense. Both examples present the organisation of space-time as a determinant in constructing individual, societal and environmental realities. Territories and power reproduce themselves through technology, as it is the means of production of space-time that constructs human and non-human ecologies. After straightforward analogies of alien races or desert people, we see glimpses of colonial dreams and nightmares of not just of galactic empires, but of every empire.

Notes

1 '*Do Androids Dream of an Electric Sheep?*' is the original question and the title of Philip K. Dick's influential novel; Philip K. Dick, *Do Androids Dream of an Electric Sheep?* (New York, Random House, 1968).

2 Carl Freedman provides various readings of the construction of the senses in Dick's works. Carl Freedman, *Critical Theory and Science Fiction* (Middletown, CT: Wesleyan University Press, 2000).

3 In these stories the construction of space-time may operate through presenting an 'other', like an alien species or a cybernetic upgrade. In such cases, we encounter the potential of the universe. The plasticity of space-time allows different conditions to be present, to actualise various worlds that house unimaginable creatures or allow extra-human acts. The construction of space-time is hinted at as another possibility of space-time opposed to that constructing present-day humanity. Technology may appear to amplify, numb or scramble the senses. For example, the manipulation of the personal experience of space-time causes a crisis of meaning in director Hideaki Anno's anime series *Neon Genesis Evangelion* (Studio Gainax, TV Tokyo, 1995–96).

4 In this second kind, the construction of space-time becomes synonymous with the territorialisation of power and governance. However, it is evident that the two-partite categorisation presented here may appear simultaneously. Beyond individual and societal categories, Ursula K. Le Guin, in *The Dispossessed* (New York: Harper & Row, 1974) tells of two worlds, a planet and its moon, providing alternative space-time organisations to each other. The expression of different organisations creates two human but alien societies. Freedman presents a review of this novel in *Critical Theory and Science Fiction* (111–29).

5 This issue has been historically situated and elaborated in John Rieder, *Colonialism and the Emergence of Science Fiction* (Middletown, CT: Wesleyan University Press, 2008).

6 'Territory should be understood as a political technology, or perhaps better as a bundle of political technologies. Territory is not simply land, in the political-economic sense of rights of use, appropriation, and possession attached to a place; nor is it a narrowly political-strategic question that is closer to a notion of terrain. Territory comprises techniques for measuring land and controlling terrain. Measure and control – the technical and the legal – need to be thought alongside land and terrain.' Stuart Elden, *The Birth of the Territory* (Chicago: University of Chicago Press, 2013, 323–24).

7 Levi Bryant proposes to replace the term 'power' with 'gravity' to overcome its anthropocentric connotations; he highlights 'the way in which non-human machines such as plants, animals, bacteria, technologies, infrastructure, and geographical features also contribute to the form that social assemblages take.' For Bryant, 'a topological conception of space treats space as arising from machines. In a topological conception, space is conceived of as a network of paths between machines or nodes produced by machines.' Levi Bryant*, Onto-Cartography an Ontology of Machines and Media (*Edinburgh: Edinburgh University Press, 2014), 10, 144.

8 Brandon Sanderson, 'Sanderson's First Law', on his blog, 20 February 2007, https://www.brandonsanderson.com/sandersons-first-law.

9 'If the reader understands how the magic works, then you can use the magic (or, rather, the characters using the magic) to solve problems. In this case, it's not the magic mystically making everything better. Instead, it's the characters' wit and experience that solves the problems.' Ibid.

10 'The really good writers of soft magic systems very, very rarely use their magic to solve problems in their books. Magic creates problems, then people solve those problems on their own without much magic.' Ibid.

11 Orson Scott Card, *Ender's Game* (New York: Tor Books, 1985).

12 Ansible as a science fiction invention is originally credited to Le Guin and appears in several of her novels, including *The Dispossessed*.

13 Orson Scott Card, *Speaker for the Dead* (New York: Tor Books, 1986); Orson Scott Card, *Xenocide* (New York: Tor Books, 1991).

14 Frank Herbert, *Dune* (Boston, MA: Chilton Company, 1965); Frank Herbert, *Dune Messiah* (New York: Putnam Publishing, 1969); Frank Herbert, *Children of Dune* (New York: Putnam Publishing, 1976); Frank Herbert, *God Emperor of Dune* (New York: Putnam Publishing, 1981).

Sound and the Ontological Inseparability of Sense-Making (Making Sense of Noise)

Taufan ter Weel

An experimental approach to sound and signal processing in spatial practice and spatial thinking allows for exploring the intensive and machinic dimensions in the production of sense and subjectivity.[1] The attentiveness to vibrational energy resonates with the turn to affect and ontology (to the analogue) in critical theory and philosophy.[2] In this entry I stress the importance of such an analogue way of thinking today, but call into question analogue-digital oppositions that favour one over the other. This isolation and prioritisation of either one or the other is especially questionable in the context of the present-day convolutions of capitalism and ubiquitous computing in which machinic or asignifying processes (based on an analogue or diagrammatic mode of thinking) indeed become increasingly integrated but in which the symbolic order, alongside discretisation, remains significant. Arguably, the ontological dimensions of sounds and signals cannot be disentangled from the meanings assigned to them, including the meanings assigned to noise.[3] Signal processing, from transductions and modulations to algorithms and stochastics, may guide us here, to comprehend the continuous and discrete, or the analogue and digital, as entangled modes of both technological mediation and thinking.[4]

With the advent of telecommunication, remote sensing, and more recently ubiquitous computing, human activity increasingly moves to the electromagnetic domain, to the transmission and electronic processing of signals. We are surrounded by radiation, immersed in electromagnetic fields (of information and in formation), imperceptible by the human sensory apparatus, but operative through

the machines with which we intra-actively produce sense.[5] This increasing complexity and invisibility challenge the predominant ocularcentric (or panoptic) perspective, which gives primacy to vision over the other senses, and which in architecture, unsurprisingly, has remained prevalent. This change coincides with the decline of the symbolic and semantic, and is closely connected to the uncertainties we are currently facing, produced through the techno-scientific complex in which we are engaged.

Noise of Unformed Matter

Amid this spectral complexity, however, there is a renewed interest in sound, signals and vibrational energy in both the arts and humanities – take the emergence of sound studies, for example, or the transdisciplinary spatial practice of sound installation and immersive sound in the arts (in electro-acoustic and computer music, sound art, and experimental architecture).[6] This entails a certain shift away from signification and representation, which can be traced back at least to the Italian Futurist manifestos on noise (rejecting musical representation and tonality) and on the radio (discarding narration), to *musique concrète* and its 'sonorous object' which is 'acousmatic', isolated from sound source and place of propagation, and to Edgar Varèse's definition of music as 'organised sound', to name a few canonical and occidental but nonetheless significant examples.[7]

For Jaques Attali, the facilitation of indeterminacy and use of probability functions – the 'noise of matter', of 'unformed' matter – in the experimental music of John Cage, Pierre Boulez, Iannis Xenakis, Karlheinz Stockhausen, Earle Brown and others, confirmed the absence of meaning in what he called repetitive society, characterised by normalisation and silence.[8] Attali's book *Noise: The Political Economy of Music* targeted music as stockpiled commodity (record and mould) as he could not anticipate today's manifestations of advanced automation, control and algorithmic governance. His argument can, in retrospect, be problematised in relation to the advancement of neoliberalism. Nonetheless his work not only indicated the decline of representation (like that of other postmodern thinkers) but also heralded the integration of asignifying probability functions in politico-economic practices and material-energetic articulations.

In his book *Sonic Flux: Sound, Art, and Metaphysics*, Christoph Cox arrives at a sonic materialist approach informed by Friedrich Nietzsche, Gilles Deleuze and Manuel DeLanda. His sonic materialism focuses attention on the intensive dimensions of sound rather than on auditory culture, on sonic qualities rather than the sound *of* something, prioritising a sonic ontology over epistemology, signification and representation.[9] This is in accordance with the new materialist

wave in media theory, shifting from symbol or sign to signal and signaletic material (with its precursor: the notion of inscription superseding signification).[10]

It is important, first of all, to acknowledge that with the contemporary convolution of ubiquitous computing and capitalism, power precisely absorbs these intensive and asignifying qualities and utilises diagrammatic capacities in the (machinic) production of subjectivity, as Félix Guattari already recognised, and which indeed cannot be grasped through representation.[11] Or as Antoinette Rouvroy puts it: 'Raw data function as de-territorialized signals, inducing reflex responses in computer systems, rather than as signs carrying meaning and requiring interpretation.'[12] The utilisation of predictive algorithms anticipating events in real-time and affecting one's choices at a preconscious stage, for Rouvroy, tends to prevent no less than the very possibility of critical thinking.

'Diagrams provide the thresholds of proto-subjectivity from which human subjectivity determines its choices', Maurizio Lazzarato states. [13] He points out that capitalist power needs to control asignifying semiotic apparatuses to depersonalise and depoliticise power relations and to more easily circumvent barriers and institutions; the efficiency of these apparatuses lies in the automation of evaluation and their ability to automate decision-making.[14] As Deleuze and Guattari already put it, 'power centers function at the points where flows are converted into segments: they are exchangers, converters, oscillators', whereby segments 'are themselves governed by an abstract machine' and power centres govern 'the assemblages that effectuate that abstract machine.'[15] Arguably, it is at these points of conversion (and associated moments of decision) where a sharp analogue-digital divide becomes far from innocent.

Continuous-Discrete Entanglements

Alexander R. Galloway questions why in the so-called digital age many thinkers have turned toward analogue themes. Put differently, could the digital age or condition be better understood analogically through intensities, assemblages, and affects (remaining within the real or 'the one'), or should we recuperate attention to the digital (as in the capacity to divide and make distinctions) along with the analogue coequally? Galloway acknowledges 'the global installation of a new economy of platform capitalism and social media rooted in rhizomatic affects and distributed drives rather than more traditional constructs like law, symbol, or ego.' [16] But he quite rightly argues that with the decline of the symbolic order, 'a whole series of concerns seem to have fallen away, concerns that once played an essential part in the critical method but now seem entirely unessential.'[17]

Accordingly, we could follow Karen Barad's path grounded in 'ontological inseparability', which derives from quantum physics, and argue that isolating discursive practices (the digital) from material phenomena (the analogue), or the other way round, would lead to a misrecognised objectivity which bypasses questions of responsibility and accountability (or the ability to respond). In Barad's words: 'The material and the discursive are mutually implicated in the dynamics of intra-activity and enfolding. Material and discursive constraints and exclusions are similarly entangled, thereby limiting the validity of analyses that attempt to determine individual effects of material or discursive factors (indeed, they misidentify their objective referents and elide important questions of responsibility).'[18]

Barad's ontological inseparability, or entanglement, shakes the presumption of separate, fully-formed or pre-existing, individual entities (bodies, objects, subjects) which interact. Rather, they are entangled, iteratively and mutually co-constituted or co-produced through 'agential intra-action.' Human bodies, for instance, are not situated *in* environments but are intra-actively produced through one another. This, however, does not imply the impossibility of what Barad calls 'agential separability', which is 'an agentially enacted ontological separability within the phenomenon' or 'the agentially enacted material condition of exteriority-within-phenomena' and 'provides the condition for the possibility of objectivity.' The 'agential cut enacts a resolution within the phenomenon of the inherent ontological (and semantic) indeterminacy', she argues; 'relata do not preexist relations; rather, relata-within-phenomena emerge through specific intra-actions.'[19] Apparatuses enact 'agential cuts' in the material-discursive production of reality. Barad's agential realism rigorously challenges traditional boundaries between interiority and exteriority, individual body and external apparatus, ontology and epistemology, ethics and politics, while remaining within the real. It offers the possibility to approach art and science as entangled and open-ended material-discursive practices, as part of the ongoing intra-activity of the world.

Transductive Operations

The philosophical notion of 'transduction', put forward by Gilbert Simondon, also contests the presumption of fully-formed pre-existing individual entities. It urges us to think into the *operation* of individuation, the overlooked zone between pre-individual and individual, taking into account that an 'individual' (inherently in becoming) cannot be decoupled from the (technical) milieu with which it co-evolves.[20] Transduction, in the more general technical sense, is the process of converting one kind of vibrational energy into another, from one medium to

another, such as sounds into electrical signals, or vice versa. For example, physiological and psychoacoustic tonotopic maps describe how mechanical energy (sound) is transduced into electromagnetic energy (signals) in the spiral-shaped cochlea of the inner ear. Different frequencies are picked up by hair cells at different positions in this spiral, transduced into electrical signals and transmitted through the auditory nerves to the brain.

The composer and pioneer in sonic practice Maryanne Amacher, who was well aware of psychoacoustics, expanded the notion of the inner ear as merely a passive receptor in her 'ear tone' music. She experimented with the inner ear's sound-generating capacities in response to stimulation. These phenomena are known as 'combination tones' and 'otoacoustic emissions'. Furthermore, she employed structure-borne sound in her site-specific installations, extending acoustic spaces beyond their apparent physical boundaries and explored what she termed 'aural architecture'. In her work, she challenged the split between interiority and exteriority, between passive listener and environment as well as between interior space and exterior.[21]

Alvin Lucier explored transductive processes in his piece *Music for Solo Performer* (1965).[22] By means of EEG scalp electrodes attached to the performer's head, brainwaves are sensed. These input signals in turn are amplified and converted into mechanical energy by means of transducers (for example, loudspeakers). Because the brain's alpha waves have a frequency range below the hearing threshold (eight to twelve hertz), these rhythms are made audible by routing the signals to transducers attached to percussion instruments and to switches activating pre-recorded sped-up alfa waves. The spatial distribution of transducers (as sound sources) was inspired by hearing sounds from an abundance of geographical positions.[23] Interestingly, this piece is also one of the examples in which classical musical notation as graphical and linear time-based score is superseded by an operating diagram. Cox emphasises Lucier's sonic materialism and realism.[24]

Seemingly in contrast, Xenakis in his stochastic operations defined sound in terms of time-discrete grains rather than exclusively time-continuous sine functions (like in Fourier analysis and resynthesis), drawing upon quantum theory.[25] This enabled him to move to compositional techniques based on probability distributions akin to contemporary asignifying processes. Through the recognition of ontological and semantic indeterminacy we may arrive at a preliminary conclusion, inherently incomplete. In the matter of contemporary artistic sonic-spatial practices and sound studies, Barad's notion of intra-action could help us to take emergent sonic properties more seriously, without

disentangling sonic materiality from the meanings assigned to sounds, signals and noise (and without simply replacing ocularcentrism with otocentrism). It allows us to approach sense-making as an entangled material-discursive practice – to regain a sense of responsibility, accountability and political agency.

Notes

1 This approach, which may be identified in the field of sound studies and sound art, is not only informed by my theoretical research but also explored in my own artistic sonic-spatial practice. While the approach can be considered transdisciplinary (cutting across architecture, art, sound and media studies, and the philosophy of technology) the specific focus on signal processing enables a certain depth.

2 Regarding this, see for example: Marie Thompson and Ian Biddle, eds., *Sound, Music, Affect: Theorizing Sonic Experience* (London: Bloomsbury, 2013); Marie Thompson, 'Whiteness and the Ontological Turn in Sound Studies,' *Parallax* 23, no. 3 (2017): 266–82.

3 Although it seems contradictory at first, this may even apply to acknowledging the 'machinic [asignifying] qualities of signals' (whereby 'information precedes signification') in contrast to the insignificance or lower status attributed to signals from a reductionist linguistic viewpoint, as argued in Gary Genosko, 'A-signifying Semiotics,' *The Public Journal of Semiotics* 2, no.1 (Winter 2008): 11–21. Concerning the meanings assigned to noise, an eloquent and extensive survey is provided by Hillel Schwartz in *Making Noise: From Babel to the Big Bang & Beyond* (New York: Zone Books, 2011).

4 It is important here to note that technological mediation (or media technology) should not be confused with a reductionist or metaphorical notion of 'mediation' through which the material world is experienced, that is, mediates access to reality (for example, through images); it implies matter or the material as medium for transmission or propagation, and entails processes of transduction, amplification and modulation, without separating machinic assemblages from abstract machines.

5 The notion of information in Gilbert Simondon's work replaces the static or final notion of form – the predominant hylomorphic schema. A signal, as carrier of information transmitted through a medium (in analogy to the propagation of sound), should itself not be confused with information in the Simondonean sense. See Gilbert Simondon, *Individuation in Light of Notions of Form and Information*, trans. Taylor Adkins (Minneapolis: University of Minnesota Press, 2020), 16.

6 See, among many others, Brandon LaBelle, *Background Noise: Perspectives on Sound Art* (New York: Continuum, 2007); Douglas Kahn, *Noise, Water, Meat: A History of Sound in the Arts* (Cambridge, MA: MIT Press, 1999).

7 Translations of Luigi Rusollo's 'The Art of Noises: Futurist Manifesto' (1913), a selection of Edgar Varèse's writings, and the section of Pierre Schaeffer's 'Treatise on Musical Objects' (1966) on acousmatic listening and sonorous objects can be found in *Audio Culture: Readings in Modern Music*, ed. Christoph Cox and Daniel Warner (New York: Continuum, 2005). F.T. Marinetti and Pino Masnata's 'La Radia' (1933), translated by Stephen Sartarelli, can be found in *Wireless Imagination: Sound, Radio, and the Avant-Garde*, ed. Douglas Kahn and Gregory Whitehead (Cambridge, MA: MIT Press, 1992), 265–68.

8 Jaques Attali, *Noise: The Political Economy of Music*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1984), 114.

9 Christoph Cox, *Sonic Flux: Sound, Art, and Metaphysics* (Chicago: University of Chicago Press, 2018).
10 See for instance Jussi Parikka, 'Operative Media Archaeology: Wolfgang Ernst's Materialist Media Diagrammatics', *Theory, Culture & Society* 28, no. 5 (2011): 52–74; or Bodil Marie Stavning Thomsen, 'Signaletic, haptic and real-time material', *Journal of Aesthetics and Culture* 4, no. 1 (June 2012). Regarding inscription, see Friedrich Kittler, *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford: Stanford University Press, 1999).
11 See, among others, Félix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm*, trans. Paul Bains and Julian Pefanis (Bloomington: Indiana University Press, 1995).
12 Antoinette Rouvroy, 'The End(s) of Critique: Data Behaviourism Versus Due Process', in *Privacy, Due Process and the Computational Turn,* ed. Mireille Hildebrandt and Katja de Vries (Abingdon: Routledge, 2012), 143–67, 147–48.
13 Maurizio Lazzarato, *Signs and Machines: Capitalism and the Production of Subjectivity,* trans. Joshua David Jordan (Cambridge, MA, MIT Press: 2014), 97.
14 Ibid., 41.
15 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia,* trans. Brian Massumi (London: Continuum, 2004 [1980]), 249.
16 Alexander R. Galloway, 'Golden Age of Analog', *Critical Inquiry* 48, no. 2 (Winter 2022): 211–32, 215.
17 Ibid., 220.
18 Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007), 244.
19 Ibid., 175.
20 Simondon, *Individuation*.
21 See, among others: 'Maryanne Amacher' in *Eight Lectures on Experimental Music*, ed. Alvin Lucier (Middletown: Wesleyan University Press, 2017); Brandon LaBelle, *Background Noise: Perspectives on Sound Art* (New York: Continuum, 2007), 173; Cox, *Sonic Flux*, 13–14.
22 Alvin Lucier, *Music for Solo Performer* (1965); also discussed in Douglas Kahn, *Earth Sound Earth Signal: Energies and Earth Magnitudes in the Arts* (Berkeley: University of California Press, 2013), 83–121.
23 Kahn, *Earth Sound Earth Signal*, 105.
24 See, e.g., Cox, *Sonic Flux*, 187.
25 Iannis Xenakis, *Formalized Music: Thought and Mathematics in Composition*, revised edition (Maesteg: Pendragon Press, 1992), 242–54; see also: Agostino Di Scipio, 'Clarification on Xenakis: The Cybernetics of Stochastic Music', in *Presences of Iannis Xenakis*, ed. Makis Solomos (Paris: CDMC, 2001), 71–84.

The Mattering of Signaletic Modulation

Bodil Marie Stavning Thomsen

At the time of writing, the rise of autocratic regimes worldwide is discussed in the media as threatening the agendas of representative democracies in the West. Especially the ongoing Russian warfare in Ukraine since February 2022 is seen to exemplify a backfiring of the idea that globalised transactions would be peace-keeping precautions per se. Russia, on the other hand, accuses NATO of aggressive behaviour, and confiscates Western businesses. At the same time, the very fact that China dominates the mining industry needed for screen and battery technology is presented as jeopardising the so-called green transition. All this certainly threatens the world order. Thus, a power play unfolds between states, leading to a war about resources, which seems to overrule the need for joint action regarding climate change. Along with this, a heightened awareness of how data is spread and harvested on a global scale has become a general concern, as it has become clear how infiltration of infrastructure and manipulation of information is war fought with other means. All this clearly demonstrates that internet communication is key to transactions of capital and power on a global scale, and thus has to be studied as comprising far more than communication. As Damian Sutton argues in reference to Michael Hardt and Antonio Negri's *Empire*, capital "operates on the plane of immanence, relying on the equivalence of money to bring all values together in 'quantifiable, commensurable relations'." [1] According to Sutton, the medium of the internet is well equipped for this, and it should rather be seen as designed for a continued modulation of capitalist valuation than as a place for the free exchange of information.

One of the most fascinating new features of the internet is its capacity for real-time activity, which among other things has substantiated news around the globe 24/7 along with a demand for premediation of future scenarios.[2] As the interest of securing the return of investments goes hand in hand with premediation, the internet must be seen as integrated in substantiations of power. On the other hand, we should also acknowledge its potentials for new thoughts, as each new medium takes part in the formation of new resistances and creativity in art, culture and society. With this perspective, in this article I will start by drawng attention to how Walter Benjamin and Gilles Deleuze after him were able to single out both the transformative and the affective power of the film media at the time.

A 'Hightened Presence of Mind' and 'the Signaletic Material'

In his 1936 essay 'The Work of Art in the Age of Its Technological Reproducibility', Benjamin praised the medium of film for being an adequate aesthetic answer to the sensorial impact of the production line and the new metropolises.[3] To him, the 'shock effect' of film responded much better to the tactile impressions of modern cities than the contemporaneous Dada-movement, for the shock effect of film could release a 'heightened presence of mind' – *and* prompt distraction as a necessary strategy to cope with the sensory impressions of modernity. In combining Alois Riegl's art historical term, the 'tactile' or 'haptic image', with the potentialities of the filmic close-up, Benjamin made the experience of affect one of the focal points of cultural and aesthetic analysis.

This focus is maintained by Gilles Deleuze in his two books on film, *Cinema 1: The Movement-Image* and *Cinema 2: The Time-Image*.[4] In contending that sensory experiences (of film) have a direct impact on thinking, Deleuze shows a continued interest in the haptic image from a previously published book, *Francis Bacon: The Logic of Sensation*.[5] Among other things, he explores Bacon's modulation of colour as a 'continuous creation of space, the spatializing energy of colour' by which both abstraction and narration can be avoided in favour of a 'pure state of a pictorial "fact" that has nothing left to narrate.' Deleuze's term for this pictorial fact is 'a haptic function of sight.' [6] This observation is extended in the film books to the modulatory power of the movement-image, developed as 'a signaletic material', defined as covering 'all kinds of modulation features (visual and sound), kinetic, intensive, affective, rhythmic, tonal, and even verbal (oral and written). [...] It is not an enunciation, and these are not utterances. It is an *utterable*.' [7] So, in paying specific attention to the signaletic features of film, TV and video, as well as the upcoming information technology, Deleuze underlined the necessity to switch focus from a narrative production of meaning to the potentialities of modulation in all electronic and digital art and media forms.

The technological reproducibility and automation that characterise the twentieth-century media are thus interpreted in a positive vein by both Benjamin and Deleuze. While it is Benjamin's achievement to attend to the way the nervous system is affected by technological reproduction and on these grounds appreciate the tactile potentials of film as a new artform, the 'haptic function of sight' becomes a key feature in Deleuze's philosophical appreciation of time as becoming. For just as the signaletic material in the movement-image potentially presents 'an *utterable*', the haptic modulation features of modern film (pure optical and sound situations, compositions of interstices, cracks and cuts between shots) allow for another conception of time. In his explorative readings of film Deleuze gives an abundance of examples as to how the sensation of the signaletic material in time-images can potentially grant access to a 'haptic function of sight'. And so, the time-images enfolded under the names of crystal-images, peaks of present, sheets of past, and powers of the false might affectively speaking open up a philosophical conception of time as becoming. Since Charles Sanders Peirce's general terminology is used in the film books, Deleuze's approach to film could be called a diagrammatic reading strategy, following Peirce's definition as explored by Aud Sissel Hoel: a diagram-icon can establish 'analogue (often dyadic) relations to (parts of) an object', which means that they can 'make visible the (hitherto) invisible.' [8]

So, if Walter Benjamin before him found in film a new aesthetics with potentials for social change, Deleuze saw in the modulatory power of film a pure presentation of becoming as a philosophical concept. He pinpointed how diagrammatic assemblages could function as 'pictorial "facts"' and render a 'haptic function of sight' visible. Thereby, he underlined how the production of sense in film could potentially grasp the 'utterable' in believing 'not in a different world, but in a link between man and the world, in love or life, to believe in this as in the impossible, the unthinkable, which none the less cannot but be thought.' [9]

A Diagrammatic Reading Strategy

A diagrammatic reading strategy might provide a new approach to the current media situation in which 'content' is both treated as exchangeable (whether 'fake' or not) and as key to increased data traffic. Thus, a contemporary understanding of how signals matter and modulate and become significant as meaning must acknowledge that affect is embodied in every interface encounter.[10] Anna Munster defines the interface as a producer of intensity in the 'folding between being in the body and mapping it from the outside.'[11] This definition might bring us closer to answering the question: what is the utterable of digital interface media? As

indicated above, we should pay more attention to the question of how bodies are affected and contribute. If these contributions are only available as data belonging to software providers the most valuable key to collective individuation is endangered.

I will propose a diagrammatic strategy so that the folding intensity of interfaces might be sensed. In reference to *Noetics Without a Mind*, the word 'sense' must be conceived in its double meaning – as pertaining to sensation as well as to the noetic. Brian Massumi explores this as the 'thinking-feeling of what happens', explaining how we can see potential in an object like a chair if we focus on 'the object's *relation* to the flow not of action but of life itself, its dynamic unfolding, the fact that it is always passing through its own potential. It's how life feels when you see it can seat you.' [12] On the same page, he specifies that 'art brings that vitality affect to the fore', because 'art foregrounds the dynamic, ongoing, relational pole', while 'everyday experience foregrounds the object-oriented, action-reaction, instrumental pole'. So, a 'thinking-feeling of what happens' designates an affinity to the vitality affects and the virtual potentials, just as in Deleuze's term 'the utterable'. Relationality thus encompasses far more than what is referred to in J. J. Gibson's term 'affordances', which Massumi discusses along with the term 'interactivity', since 'the dynamic form of the experience tends to get reduced to the instrumental affordance as concretized in the actual form of the technical object. It gets reified in an objective function.'[13] If aesthetic affects should be built into interaction, it would demand folding inside-out, and creating 'vanishing points.' [14]

So, if the 'thinking-feeling of what happens' is reduced in digital interactions, a diagrammatic reading that makes philosophic sense of affective impacts might be hard. Individuation must be regarded as irrelevant, for data traffic is more valuable than so-called content, often reduced to an 'affective motor' in boosting interest. Even if 'the feel' of interfaces is emphasised, individuation's potential is minimised, since data is owned and controlled by global stakeholders. Thus, the affective intensities of digital interface experiences seem embedded in software programmes whose data-storage is reused in AI-solutions.

Such pessimism might be contradicted in looking at how sense in Massumi's 'thinking-feeling of what happens' is activated in art. If interface intensities of affect are registered as 'being in the body and mapping it from the outside', the modulation features might be registered as affect in the very folding.[15] If a folding relation of inside and outside can potentially be sensed as a signaletic material, it might become 'utterable' (noetics without a mind). As a matter of fact, bodily sensations are felt in real time as interfacing, but this modulation process has no direct imprint in media, and thus cannot appear in, for example, a piece of content

Fig. 1: Scene from Anne Imhof's Faust (Venice Biennale 2017), from above the glass floor. Photo: Bodil Marie Stavning Thomsen.

or a figuration – even as a 'haptic function of sight'. Conventional ideas of media must be discarded in interface encounters, since the signaletic material is directly felt.

As such, the experience of interfacing comes close to Whitehead's description of the becoming of subject-and-object. He underlines that 'data are the potentials for feeling', no matter what data is encountered.[16] Even though the word 'data' is defined much more broadly in Whitehead than today, he comprehends the forming of experience as a process of 'elimination of indeterminateness of feeling from the unity of one subjective experience'. The 'potential for feeling' goes beyond classical notions of subjectivity. The term 'subject' can exclusively be experienced as a 'satisfaction' from the '"intensity" achieved.' [17] In approaching the felt intensity of interfacing, we should at least acknowledge that excitement as well as exhaustion behind screens might be due to a constant (and often vain) attempt to experience data as 'potentials for feeling'.

However, if data as 'potentials for feeling' can be felt – sometimes as missing encounters – in affective folding capacities, some contemporary works of art have highlighted their modulatory potentials. Even though the Whiteheadian concept of data might be integrated in interfacing, the folding capacity of interfaces makes it possible to comprehend the differentiation taking place between feeling and mapping. Even if the potential 'utterable' of interfaces is often experienced negatively as fatigue or exhaustion, a diagrammatic approach to ways in which interfacing could be uttered is produced in Lars von Trier's *Nymphomanic* (2014), for example. Here, a diagrammatic folding of being in the body and mapping it from the outside is acted out by Charlotte Gainsbourg and Stellan Skarsgård. Her story is depicted in images, while he maps it from the outside. The folding intensity of this interplay is intensified for the audience in the composition of diagram-icons displayed on the screen. A thinking-feeling is activated, whereas a direct pornographic involvement of the audience is denied. The film does not titillate; no sexual arousal is provoked. This lack of a 'voyeuristic satisfaction' can activate a thinking-feeling of interface encounters via film. The film's creation of interface encounters lacking in intensity can pave the way for a study of folding modulations as such.[18]

Another artwork that successfully explores how data as 'potential[s] for feeling' are deprived a satisfactory function of 'thinking-feeling', is Anne Imhof's performance *Faust* (Venice Biennale, 2017). Here, the audience explore both an intensification of potentials and a missing access to data. The audience is put in a bewildering space, following performers moving on or under a transparent floor. The slow action and singing that from time to time takes place in various groups excludes rather than includes the audience.

Fig. 2: Scene from Anne Imhof's *Faust* (Venice Biennale 2017), from below the glass floor/ glass/ screen.

While waiting for something to happen, the very sense-filtering activity becomes the centre of attention. In this void, an awareness of the modulation features of the performance and the other guests in the gallery space is relationally felt. But 'elimination of indeterminateness of feeling' is not felt, and thus no satisfaction in the Whiteheadian sense is reached. This, on the other hand, opens toward a potential field of transindividual becoming. An invitation to form new diagrams of relation is at stake and was certainly felt by the guests at the Venice Biennale.

In his continued discussion of how interactivity should include 'immanent relation', Massumi underscores how such gaps of discontinuity are vital: 'we shouldn't say "interaction" without thinking-feeling discontinuity. We will have to give the gaps between things, and from one moment to the next, their vital, virtual due. It is in those gaps that the reality of the situation is to be found.' [19] To my mind, we need to make affect-diagrammatic readings of interfacing – in the double meaning of the word 'sense' – since data-measure and data-tracking modulates bodily felt intensities. A continued exploration of how the immanent relation of interfacing as an embodied 'signaletic material' is felt needs to consider both how real time changes the modulation features in well-known forms of communication and how affect-reactions might contribute to a thinking-feeling of gaps and discontinuities.

Notes

1 Michael Hardt and Antonio Negri, *Empire* (Cambridge, MA: Harvard University Press, 2001), 326–27, cited in Damian Sutton, 'Virtual structures of the Internet', in *Deleuze Reframed: A Guide for the Arts Student*, ed. Damian Sutton and David Martin-Jones (London: I. B. Tauris, 2008), 39.

2 About real time, see: Lev Manovich, 'New Media from Borges to Html', in *The New Media Reader*, eds. Noah Wardrip-Fruin and Nick Montfort (Cambridge, MA & London, England: The MIT Press, 2003) 13–29; about premediation, see Richard Grusin, *Premediation: Affect and Mediality after 9/11* (New York: Palgrave Macmillan, 2010).

3 Walter Benjamin, 'The Work of Art in the Age of Its Technological Reproducibility', trans. Edmund Jephcott in *The Work of Art in Its Technological Reproducibility, and other Writings on Media*, ed. Michael William Jennings, Brigid Doherty and Thomas Y. Levin (Cambridge, MA: Belknap Press of Harvard University Press, 2008).

4 Gilles Deleuze, *Cinema 1: The Movement-Image*, trans. Hugh Tomlinson and Barbara Habberjam (Minneapolis: University of Minnesota Press, 1986), and *Cinema 2: The Time-Image*, trans. Hugh Tomlinson and Robert Galeta (Minneapolis: University of Minnesota Press, 1989).

5 Gilles Deleuze, *Francis Bacon: The Logic of Sensation*, trans. Daniel W. Smith (Minneapolis: University of Minnesota Press, 2004).

6 Ibid., 108.

7 Deleuze, *Cinema 1*, 29.
8 Aud Sissel Hoel, 'Measuring the Heavens: Charles S. Peirce and Astronomical Photography', *History of Photography* 40, no. 1 (January 2016): 49–66, 64. In an article on Lars von Trier's *The House that Jack Built* (2018), I explore the concept analytically; Bodil Marie Stavning Thomsen, 'The play of iconicity in Lars von Trier's The House That Jack Built', *NECSUS_European Journal of Media Studies* 9, no. 1 (2020): 69–89, https://doi.org/10.25969/mediarep/14324.
9 Gilles Deleuze *Cinema 2: The Time-Image*: 170. See also Deleuze's expansion on the double meaning of 'sense' in Gilles Deleuze, *The Logic of Sense*, trans. Mark Lester with Charles Stivale, ed. Constantin V. Boundas (London: The Athlone Press, 1990).
10 The question of what interfaces can do is the main topic of *Affects, Interfaces, Events*, ed. Bodil Marie Stavning Thomsen, Jette Kofoed and Jonas Fritsch (Lancaster: Imbricate! Press, 2021).
11 Anna Munster, *Materializing New Media: Embodiment in Information Aesthetics* (Hanover, NH: University Press of New England, 2006), 142.
12 Brian Massumi, *Semblance and Event: Activist Philosophy and the Occurrent Arts* (Cambridge MA: The MIT Press, 2011), 45, original emphasis.
13 Ibid., 46.
14 Ibid., 49.
15 Munster, *Materializing New Media*, 142.
16 Alfred North Whitehead, *Process and Reality* (New York: The Free Press, 1978), 88–89.
17 Ibid.
18 For more on this, see Bodil Marie Stavning Thomsen, *Lars von Trier's Renewal of Film: Signal, Pixel, Diagram* (Aarhus: Aarhus University Press, 2018).
19 Massumi, *Semblance and Event*, 67.

Making Sense of Chaos: Narrative Necessity and Inhabiting

Sonat Özcivanoğlu

Erratic aspects of nature have posed perplexing questions to science, and when it comes to chaos and disorder scientific research often reveals an ignorance or deficiency in comprehension. Classical science reaches its limits when chaos commences.[1] In this entry I propose the two acts immanent to human beings, narration and inhabiting, as sense-making processes that operate on the territory of chaos, disorder, contingency, and the irregular – where science is puzzled. One can associate the presence and indisputability of narrative with the descriptions, circumstances, and expectations within architectural practice. Among these, the pursuit of meaningful connections between events and entities constitutes the minimal condition. In that sense, there is a peculiar parallelism between narrating and building – narrativity and architecture.[2] The parallelism can be most adequately grasped through the identification of the conditions when narrations make sense, in other words, through the identification of the conditions defining narrativeness.[3] After redefining narrative(s) as essential and inherited forms of knowledge and as a scalar quality, I will dwell on the Ricœurian analogy of narration and inhabiting or building as configurative acts.[4]

Re-framing Narrative(s)

Myths and poetry can be regarded as the oldest form of narratives.[5] Nevertheless, the capacity and ability for narration has always transcended the realm of writers

and poets. All kinds of human subjects – architects, patrons, dwellers, and visitors – are tellers and interpreters of narrative. Such conceptualisation of humankind (as *homo fabula)* can be traced back to the ancient idea of mimesis, to the claim that one learns by watching and imitating, as Aristotle said in *Poetics*.[6] Narratives have been tools for searching and grounding meanings of human existence, thought, language, and experience, going back to the times when philosophy was phonocentric and logocentric. In that sense, every transcendent meaning is fictional, in other words, constructed. An act of narration can be seen as an effort or game of meaning construction. No concept that is intricately woven in this game is free from the traces and fragments of other thoughts.

It is also possible to consider narrative as a scalar quality. There is a notion of 'narrativeness', that is, a spectrum of making sense of narratives within specific conditions. Narrativeness reveals how essential narratives are in reshaping connections between entities and events. The quality of narrativeness can be located in forms of narratives and forms of knowledge; there are cases and conditions in which only narrative can describe what is essential, and others for which narrative can be replaced by theory. One can report a physics experiment step by step, as in Wittgenstein's notes on logic, just like a mathematician can 'prove' a theorem with equations, but the question of why a scientist chooses to study physics over mathematics comes up in the form of a biography or novel.[7] Considering this, it is worth examining the perspective presented by Gerald Prince. He notes that in the context of scientific experiments, physics, for instance, accounts of experiments lack a high degree of narrativity. As he explains, 'it is partly due to the fact that neutrons, electrons, leptons, ions, quarks do not have intentions, wishes, or fantasies; of course, such accounts can be made more highly narrative if experimenters' beliefs, expectations, disappointments, and triumphs are also represented.' [8] Prince's frame makes it clear that narrative thought is not only present but also essential in structuring human activities. However, it is limited to a certain attitude towards grounding meanings, setting aside certainty and its associated concepts such as truth, determinacy and accuracy. In this regard, among what kinds of things can we locate the quality of narrativeness? In which circumstances does the need for narrative emerge?

One can ask, is war a situation that can be calculated or projected with all its possibilities, and then, can 'mistakes' be detected? In *Narrativeness*, Gary Saul Morson refers to Prince Andrei, the character in *War and Peace*, to illustrate the sense of presentness, a condition that calls for a narrative approach.[9] Andrei asks, 'What science can there be in a matter in which, as in every practical matter, nothing can be determined and everything depends on innumerable circumstances, the significance of which becomes manifest at a particular moment and no one can tell when that moment will come?'[10]

The quality of narrativeness can be sought among entities and events, and it is rooted in contingency, an excess of possibilities, motivations, uncertainty and presentness. Free will, projections, intentions and expectations of things, subjects and entities, and the conditions of incalculability, messiness and the existence of actors define the necessity of a narrative approach. Narratives are required for the (re)configuration of relations, the identification of matter, and when choices matter. In that sense, it is not surprising that the disciplinary areas regarding evolution, economics and war carry a dependence on narratives.

Ricœur's Analogy: Architecture and Narrative as a Configurative Act, a Matter of Crossing Space and Time

In 'Architecture and Narrativity', an article dealing with the entanglement between the architectural configuration of space and the narrative configuring of time, Paul Ricœur establishes a parallelism between narrative and architecture by examining how they relate to the concepts of time and space.[11] In Ricœur's account, architecture and narrative are 'a matter of crossing space and time through building and recounting, one would be located in space, the other in time.'[12]

Ricœur defines the parallelism between narrativity and architecture under three headings: 'prefiguration', 'configuration', and 'reconfiguration'. He had already defined and covered these concepts in an earlier work, *Time and Narrative Vol. 1*, to conceptualise the ancient term 'mimesis'. The 'three-fold mimesis' concept proposed by Ricœur provides us with a (re)definition of the mimesis as an action about action; in this sense, Ricœur's conceptualisation can be separated from mimesis as a reflection (as in the metaphor of mirror) and a mere imitation or representation.[13] Instead, it is a creative act involving the interpretation and transformation of the events into a new action. In the Ricœurian sense, mimesis is 'recreation and creative representation', and narration constitutes the 'what' of mimetic activity.[14]

In the first two chapters of the first volume, Ricœur conducts an investigation into the two concepts, time and emplotment, through Augustine's *Confessions* and Aristotle's *Poetics.* In Chapter 3, Ricœur presents his theoretical framework under the title 'Three-Fold Mimesis', which relates the concepts of time and plotting. According to this framework, each narrative dwells and mediates on three mimetic moments where it gains meaning by becoming a condition of temporal existence. Those three moments of mimesis are 1) the relation to the time acted and lived, 2) the relation to the specific time of the plotting, and 3) the relation to the time of reading.

The parallelism between the practice of time and that of space proposed in the text 'Architecture and Narrativity' unfolds under the headings prefiguration-configuration-refiguration, this time carrying a parallel reading with architectural practice. Ricœur identifies a parallelism between acts: that of inhabiting (resonating with Heidegger's dwelling and building) is related to prefiguration. We pass from the prefiguration stage to configuration, which is related to building and defined as more overtly interventionist. The third step, refiguration, is related to the act of rereading.

Ricœur starts the discussion of the prefiguration stage with the concept of 'inhabiting-building complex', and goes on to describe the construction processes that encompass the act of staying, of stopping, and of fixing oneself, the processes of flow, of going and coming. Ricœur defines the inhabiting-building complex as a pre-architectural stage and states that 'it is pointless to ask oneself if inhabiting precedes building. At first, there is a need for building, we might say, which comes hand-in-hand with the vital need to inhabit.'[15] He considers the act of inhabiting the origin of the architectural act, with a variety of operations: protecting, dwelling, demarcating, controlling, signifying, and so on. Instead of identifying the key components of a building, Ricœur emphasises the act, inhabiting. It is not the act of surrounding that creates the space, but inhabiting, which 'is made of rhythms, stops and starts, settlement and movements.'[16] In this sense, Ricœur proposes a dialectic of shelter and movement: 'The place is not only the hollow where we fix ourselves, as Aristotle defined it (the inside wall of the protective covering), but also the distance to cover.'[17]

Bottom Line: Re-reading Ricœurian Analogy of Time and Space

Ricœur remarks that 'time of the narrative and the space of architecture are not limited to simple parts of universal time and geometrical space.'[18] This remark on the operational territory of narrative and architecture reminds us that there are forms of knowledge about events, 'lived temporal experience', other than what is measurable. Yet, the cartesian and determinist tradition of thought takes the categories of natural sciences as paradigms of knowledge. The question arises, then, 'whether science presents us with a picture of the world which is complete and sufficient', as Merleau-Ponty posed it in his lecture series *Causeries 1948*.[19] The scientific territory of knowledge had been based on a complete and accurate understanding of things and events in the world. Merleau-Ponty highlights the rediscovery of the perceived world, as there are many areas of life where it may not seem possible for the natural sciences to provide us with a full understanding of the facts and phenomena involved.

Following the Ricœurian set of parallelisms, we can state that narratives are a matter of crossing space and time, the identification or figuration of how it crossed (or as Ricœur put it, the 'what' of mimesis), and the configuration of what space will be to time. The relation between narrative and architecture, and between time and space can be conceptualised as follows: the narrative weaves the fabric of time. Space is embedded in the fabric of time. The practice of architecture deals not only with the configuration of space, but also with time to pass.

The set of parallelisms drawn in configurative acts (inhabiting-prefiguration, building-configuration and reading-refiguration) can be considered as a contribution to the enlargement of the media covered by the field of narrative theory. Ricœur locates the practice of architecture within narrative territory, where the acts of inhabiting, building and rereading are not detached, but building operates through the mediation of inhabiting, the conceptualisations of inhabiting, and critical reading.

Notes

1 James Gleick, who explores the 'science of chaos', a field that transcends traditional scientific disciplines and delves into the realms of irregular and discontinuous, puts it like this: 'Where chaos begins, classical science stops. For as long as the world has had physicist inquiring into the laws of nature, it has suffered a special ignorance about disorder in the atmosphere, in the turbulent sea, in the fluctuations of wildlife populations, in the oscillations of the heart and brain. The irregular side of nature, the discontinuous and erratic side–these have been puzzles to science, or worse, monstrosities.' James Gleick, *CHAOS: The Amazing Science of the Unpredictable* (London: Random House, 1998), 3.

2 The term narrativity comes from the French term *narrativité* and Latin verb and noun *narrativus*. In French, the noun form refers to 1) the state or quality of being narrative 2) the way in which a story is told, including the structure, pacing, and style of the narration. The term narrativity has also been used to refer to the study of narrative in various forms of media.

3 Gerald Prince defines narrativeness as an aspect of narrativity. Gary Saul Morson's definition of narrativeness as 'the quality that makes narrative not merely present but essential' fits in the context of this essay. Gerald Prince, 'Narrativehood, Narrativeness, Narrativity, Narratability', in *Theorizing Narrativity,* ed. John Pier and José Angel Garcia Landa (Berlin: Walter de Gruyter, 2008), 19–27; Gary Saul Morson, 'Narrativeness', *New Literary History*, Vol. 34 (2003): 63.

4 This essay mainly focuses on two works by Paul Ricœur, the first of the three-volume work, *Time and Narrative* (1983) and the more recent article, 'Architecture and Narrativity' (2006). In the former, Ricœur analyses the existential function of narratives; he engages many fields of philosophical activity, particularly phenomenology and narrative theory. The latter unfolds the conceptualisation of narrative as a mimetic activity proposed in *Time and Narrative*, problematising the entanglement between the spatiality of the

narrative and the temporality of the architectural act. Paul Ricœur, *Time and Narrative Vol.1,* trans. Kathleen McLaughlin and David Pellauer (Chicago: University of Chicago Press, 1984), 5–89. Ricœur, 'Architecture and Narrativity', *Ricœur Studies* 7, no.2 (2016): 30–42.

5 The earliest narrators of myths are identified as poets in the writings of the Athenian philosophers. In the *Republic*, Plato refers to Homer as 'the most poetic of poets and the first of tragedians.' Plato, 'Republic' in *Plato in Twelve Volumes,* trans. Paul Shorey (Cambridge, MA: Harvard University Press, 1969), [607a].

6 In Aristotle's view, humans can exist in nature with mimetic activity, and narration is considered as the mimesis of an action: 'Poetry in general seems to have sprung from two causes, each of them lying deep in our nature. First, the instinct of imitation is implanted in man from childhood, one difference between him and other animals being that he is the most imitative of living creatures, and through imitation learns his earliest lessons; and no less universal is the pleasure felt in things imitated.' Aristotle, 'Poetics' in *Aristotle in 23 Volumes Vol. 23*, trans. W.H. Fyfe (Cambridge, MA: Harvard University Press, 1932), [1474a].

7 Ludwig Wittgenstein*, Tractus-Logico Philosophicus* (London: Routledge, 1990 [1921]). Herman Broch's novel *The Unknown Quantity (1935)* can be given as an example: Herman Broch, *The Unknown Quantity*, trans. Edwin Muir and Willa Muir (Illinois: Northwestern University Press, 2000 [1933]).

8 Gerald Prince, 'Revisiting Narrativity', in Narrative Theory: Critical Concepts in Literary and Cultural Studies, ed. Mieke Bal (New York: Routledge, 2004), 15.

9 Morson refers to presentness as a situation 'when one has to pay attention to what is taking place now.' Morson, 'Narrativeness', 64.

10 Leo Tolstoy, *War and Peace*, trans. Ann Dunnigan (New York: Penguin, 1968 [1867]), 786.

11 While constructing the analogy, Ricœur states that 'architecture would be to space what narrative is to time.' Ricœur, 'Architecture and Narrativity', 32.

12 Ibid., 32.

13 Ricœur, *Time and Narrative Vol. 1*, 53.

14 Ibid., 31–34.

15 Ricœur, 'Architecture and Narrativity', 33.

16 Ibid., 34.

17 Ibid., 34.

18 Ibid., 32.

19 The original question raised by Merleau-Ponty is: 'The question which modern philosophy asks in relation to science is not intended either to contest its right to exist or to close off any particular avenue to its inquiries. Rather, the question is whether science does, or ever could, present us with a picture of the world, which is complete, self-sufficient and somehow closed in upon itself, such that there could no longer be any meaningful questions outside this picture.' Maurice Merleau-Ponty, 'The World of Perception and World of Science', in *The World of Perception,* trans. Thomas Baldwin (Oxford: Routledge, 2004 [1948]), 43.

Transformation: Mind-Bodies of Humans and Buildings

Sebastian Gatz

In this entry, I would like to explore, or rather challenge, the prevailing Western understanding of architecture and its inhabitants – specifically their relationship with each other in terms of minds and bodies. Architecture is seen as a manmade technological mediator between individual humans and their environment. Usually, the understanding seems to be the following: buildings are made of matter and do not have a mind, and humans are made of a mind and a body – which somehow operate in different realms.[1] And the two – buildings and humans – do not have much in common when it comes to mind or bodies, except that both are made of the same atomic building blocks and one (the human) perceives the other (the building), but not the other way around. The latter view is increasingly challenged by technophile transhumanist 'smart' homes – but it is questionable in such cases if we truly have a building-mind perceiving a human-mind-body, or just another technological extension of the human mind. This double-dichotomous relationship (building-body/building-mind and human-body/human-mind) should be broken, or internationally entangled and de-homogenised, in order to overcome one of our time's prevailing cultural stumbling blocks: anthropocentrism.[2]

We can find an entry point into this discussion in contemporary more-than-human onto-epistemological debates – found in new materialism and critical feminist posthumanism – or in more ancient non-mainstream ontologies and cosmologies such as animism or theosophy. Just to give one example of how the former academic field approaches the latter occultural understanding of the world, I would like to examine just one description from each of those transintellectual

conglomerates – each rather big and convoluted fields of ideas and practitioners – focusing on the human body.[3] The first is feminist posthumanist Stacy Alaimo's conception of the body, and the second a theosophical understanding of the same formulated by one of the founders of the Theosophical Society, W.Q. Judge. In order to break down the aforementioned double dichotomy, which seems to be in line with a general understanding of the world of contemporary more-than-humanists, I would like to give credit not just to the much older theosophical ideas (the society was established in 1875) but also to their rootedness in a specific form of Tibetan Buddhism going back millennia. There is nothing new under the sun, but there might be new ways of reshuffling our existing ontological building blocks to cognize reality.

For Stacy Alaimo the human body is not separate from its environment but part of it. Her concept of trans-corporeality emphasises an understanding of the human body without clear boundaries – a body which is open to the interactions with its internal and external nonhuman others:

> Potent ethical and political possibilities emerge from the literal contact zone between human corporeality and more-than-human nature. Imagining human corporeality as trans-corporeality, in which the human is always intermeshed with the more-than-human world, underlines the extent to which the substance of the human is ultimately inseparable from 'the environment.'[4]

We find a very similar and even more profound understanding of the human body in W. Q. Judge's text *The Synthesis of Occult Science*:

> The complex structure that we call 'Man' is made up of a congeries of almost innumerable 'Lives'. Not only every microscopic cell of which the tissues are composed, but the molecules and atoms of which these cells are composed, are permeated with the essence of the 'One Life'. Every so-called organic cell is known to have its nucleus, a center of finer or more sensitive matter. The nutritive, all the formative and functional processes consist of flux and re-flux, of inspiration and expiration, to and from the nucleus.[5]

Here we have a similarly permeable human body as described by Alaimo, but this body is not just open to the flow of nonhuman agents in its immediate environment, but open to the 'One Life'. The theosophical understanding of reality is that there is ultimately just one unexplainable form of life which permeates all of existence.[6]

In Tibetan Yoga – and theosophy can be seen as peculiar form of pre-Vedic esoteric Tibetan Buddhism[7] – the body is an illusion alltogether:

> The Doctrine of *Māyā* asserts that the whole world and cosmic creation, subjective and objective, is illusory, and that mind is the sole reality... That the microcosmic mind is not different or really separate from the Macrocosmic Mind has been aptly illustrated by the thinkers of India: Air in a sealed jar, as they explain, is not different from the outer air surrounding the jar, for once the jar is broken the confined air becomes unconfined; and, similarly, by breaking the Vessel of *Māyā*, the microcosmic mind becomes what it ever has been and ever will be, the Macrocosmic.[8]

We have here three increasingly permeable understandings of the human body which are increasingly older in their conception. We finally loosen the dichotomous relationship of mind and body: if mind is everywhere and bodies are just vessels which hold portions of it then it becomes increasingly nonsensical to speak of this or that body or this or that mind.

If human and nonhuman bodies (matter) are an illusion (Māyā) and all is mind (the 'One Life'), then how can we think or talk about architecture productively? We could stop our little thinking experiment of breaking down our double dichotomy by saying everything is mind, therefore nothing physical truly exists, but that would contradict our lived experience: I have a body and I can enter a building which is separate from me. The answer must be found in individual human perception: a form of meditation or (non-hatha) yoga. A true de-centring of the human – in order to oppose anthropocentrism – has to happen in the perceiving mind, inside of the individual vessel.

A relatively known concept where individual human perception, nonhuman agency, Buddhism and architecture come together is the Japanese concept of wabi-sabi. The idea is situated simultaneously in the physical and the metaphysical world, acknowledges nonhuman material agencies and emphasises the importance of individual human perception.[9]

Architectural wabi-sabi can be seen to be similar to the Western concept of memento mori (remember you must die), as both emphasise that change and transformation are the ultimate reality and final destiny, we, human or nonhuman, all have to face. While the Western architectural form of memento mori is found, for example, in the ruin,[10] wabi-sabi is found in a more subtle form of architectural decay. There is a difference not in kind but of degree. The ruin has to exist to a certain degree in order to be acknowledged as a ruin (instead of being a pile of rubble or nothing), but is unsuited for human living. Wabi-sabi on the other

hand is closer to the concept of weathering.[11] Weathering is a mix of nonhuman material agency and time. But this mix is still under human control (and allows inhabitation). While ruins are out of control, weathering and wabi-sabi are within human control. Is it in the individual contemplation of human-nonhuman control relationships where we can achieve a dissolution of boundaries between bodies and minds?

Rumiko Handa describes Sen no Rikyū (1522–1591), one of the key figures behind the development of the Japanese concept of wabi-sabi, and his relationship to human control over the nonhuman world: 'There are a number of instances that demonstrate Rikyū's preference for impermanence, which is important because it shows the limitation of human control in comparison to natural forces. Rikyū's desire to submit to forces beyond human control extends to allowing the artifact not to function in its primary utility.'[12] Part of the wabi-sabi philosophy (and its Zen Buddhist context) is letting go of human control over the nonhuman world. Ironically, the construction of architecture demands total control and our Western understanding of a successful building's life cycle is equally obsessed with keeping nature's flux at a distance.

Contemplating a building that weathers and decays is perhaps as close as one can get to bringing the double dichotomy into one moment of perception: time, space, mind, nonhuman agency and death all coming together in one node of complex interactions. Time, space and death – the three great unknowns that I suspect are ultimately one – work together to take and give life. Human shelter decays – first poetically and superficially, and then structurally and drastically – and transforms manmade objects into life-substance for other nonhuman entities. The Buddhist and the theosophist know: life is transformation and death is just another entity's life. Nothing rests, nothing stays the same. Transformation, as a form of trans-corporeal transubstantiation, is where human and nonhuman minds and bodies intermingle and unite – for one moment, before they become something else entirely. In Tibetan yoga it is the moment when knower, knowing and the known become one.[13]

Here, I promote the idea that mind is everywhere and confined neither to human nor to architectural bodies, but that the same universal mind flows through all physical aspects of matter and that individual cognition can be seen more like a radio that picks up radio-waves that are everywhere. When we lose ourselves in the contemplation of – in this case – decay and weathering of architectural matter, we become that matter and that matter becomes us.

But what does this mean for the problem of Western anthropocentrism? The low-hanging fruit would be to re-reveal our interconnectedness with everything in order to save the planet (presumably we are supposed to take better care of it now

that we know). But ironically it truly means nothing. If everything is interconnected and every form of death is the beginning of life for something else, then nothing needs to be done. That which is poison to human life might be an environment to thrive in for a nonhuman other. If we truly want to overcome anthropocentrism, then everything is good as it is – but I suspect we are not ready yet to overcome it, and all talk about the more-than-human is ultimately human-centric. A true change is not found in theory, but potentially in an individual change of perception.

Notes

1 Gilbert Ryle, *The Concept of Mind* (New York: Hutchinson's University Library, 1951), 11–19.
2 Andrés Jaque, Marina Otero Verzier, and Lucia Pietroiusti, eds. 'Editorial,' in *More-than-Human* (Rotterdam: Het Nieuwe Instituut, 2020), 6–9.
3 The term occultural was originally coined by punk musician and occultist Genesis P-Orridge, see: Christopher Partridge, *The Re-Enchantment of the West: Alternative Spiritualities, Sacralization, Popular Culture and Occulture*, vol. 1 (London: T&T Clark International, 2004), 68.
4 Stacy Alaimo, *Bodily Natures: Science, Environment, and the Material Self* (Bloomington, IN: Indiana University Press, 2010), 2.
5 W.Q. Judge, 'Appendix D: The Synthesis of Occult Science,' in *The Gupta Vidya: God, Nature and Man*, by Raghavan Narasimhan Iyer, vol. 1 (Norfolk, VA: Theosophy Trust Books, 2020 [1891]), 652.
6 H.P. Blavatsky, 'Appendix A: The Three Fundamentals,' in *The Gupta Vidya: God, Nature and Man*, 633.
7 David Reigle and Nancy Reigle, *Theosophy and Buddhism* (Cotopaxi, CO: Eastern School Press, 2015), 1–16.
8 Walter Yeeling Evans-Wentz, *Tibetan Yoga and Secret Doctrines* (London: Oxford University Press, 1970 [1935]), 161–63.
9 Leonard Koren, *Wabi-Sabi for Artists, Designers, Poets and Philosophers* (Point Reyes, CA: Imperfect Publishing, 2008 [1994]), 40–57.
10 Stephen Cairns and Jane M. Jacobs, *Buildings Must Die: A Perverse View of Architecture* (Cambridge, MA: MIT press, 2017), 170.
11 Koren, *Wabi-Sabi*, 62.
12 Rumiko Handa, *Allure of the Incomplete, Imperfect, and Impermanent: Designing and Appreciating Architecture as Nature* (Abingdon: Routledge, 2014), 163. Handa is professor of architecture at the University of Nebraska-Lincoln.
13 Evans-Wentz, *Tibetan Yoga*, 115.

Lessons Learned While Passing Through Doorways

Renske Maria van Dam

During my first year as an architecture student at TU Delft the faculty building burned down. In the months after the massive fire, I noticed a change in the architectural studios and the way we approached our projects. Without a faculty building the students, lecturers and researchers were forced to work outside and directly engage with the messy contingencies of city life. Architecture is often practiced and taught at a distance. Both in- and outside academia, architects are bound to their desks. In a globalised practice, this desk is almost always located miles away from the building site. However, to study architecture – and to produce knowledge – shouldn't imply a withdrawal from 'the real work in the real life.'[1] I clearly remember the pain stemming from the loss of the faculty building. Designed as a site for study and exchange by Broek and Bakema, it had a special place in the Dutch architectural community. Nevertheless, I would say that the fire marked a crucial point in my architectural training. It opened the architectural studio to a full-body immersion in, and experimentation with the world.

Reciprocity

In the recent past we have come to understand that 'we can no longer view the built environment through the Cartesian lens of a mind interpreting meanings found in objects or buildings.'[2] This awareness contributes to an enlivened, rather than reductionist, worldview, and stresses the importance of a new field of research known as the enactive-embodied, embedded-extended and affective

(4EA) approach to cognition.[3] The core of the 4AE approach to cognition is that consciousness and cognitive phenomena, including our experience of architectural space, are understood as emerging from the reciprocity between organisms and environments. Consciousness and cognition do not happen in the head but are 'a kind of doing' arising out of biological, environmental and social resources.[4] In architecture this call for epistemic change sparked an experiential and multi-sensory turn. American architectural theorist Harry Francis Mallgrave characterises this as a radical shift of perspective from an architecture centred around the formalist and conceptual architectural object to the more deeply rooted dimension of the spatial experience. To facilitate this shift, 'pedagogical and accreditation programs in the coming years have to undergo a radical rethinking of their most basic premises.'[5] The near obsession with the creation of design concepts, even the conceptualisation of the experience of architecture, has undermined the experiential aspects of architecture itself. Following the implications of the 4EA approach to cognition, what is required to further study the spatiotemporal experience is a pedagogy that emphasises reciprocity. Instead of architecture taught at a distance, architectural pedagogies should offer the opportunity to examine and experiment upon organism and environment entanglement within a situated context as it happens in the immediacy of lived, moment-to-moment experience.[6]

Sited Experimentation

Based on my early observations after the fire, and with the aim to emphasise reciprocity in architectural pedagogy, I conducted a long-term research project supported by the Teaching Tools Research Group at the University of the Arts The Hague. In this project, in-situ experimentation is explored as a pedagogical approach to include embodied-enactive, embedded-extended and affective first-person experiences in the architectural studio.[7] Over the course of eight years, I have organised each new design studio around a sited experiment. In a sited experiment one interferes in the fabric of the real, rather than interpreting life from an untenable distance. Through performative and spatial interventions, my students and I directly relate to local inhabitants, materials, and the weather. From a lecture hall to a shipyard, from a theatre to the rooftop of the academy building, I have brought students to extraordinary places to study the sensorial and performative diversity in these environments.[8] Collectively, we have moved in and were moved by the same situation. In this essay, I summarise the pedagogical insights of this research project illustrated by archive material from a short workshop 'Walking Through Doorways' [fig. 1–3] in which the site of experimentation was the doorway. In conclusion, I present five doorways to epistemic change.[9]

Fig. 1: Improvised Door. Documentation of the workshop ‘Walking Though Doorways’ with students of the ArtScience Interfaculty at the Royal Academy of Arts in The Hague.

Sensitised Doorways

Sited experimentation entails a shift in perspective from the architectural object to tiny perceptions, the subtle sensations and comprehensions that guide the spatiotemporal experience. Through sensorial fieldwork the architect develops a heightened sensitivity, an empathic-animistic engagement with the world.

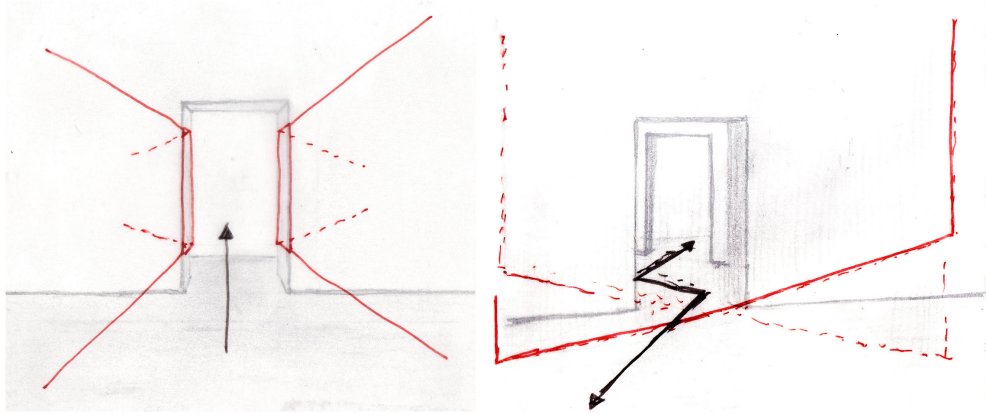
The 4EA approach to cognition stresses the embodied and affective aspects of consciousness and cognition. In my pedagogical practice, sited experimentation involves sensorial exploration. In a movement practice tailored for architects, I invite students to move, listen and breathe with the environment.[10] Through this form of attunement one learns to 'sense oneself sensing'. This does not imply a renunciation of subjectivity in general but should be understood as an attempted clearing of commonly accepted ways in which the subject relates to the environment.

To extend the traditional site analysis – characterised by an extensive mapping of historical, social, and material properties – I introduce a form of intensive mapping to archive the processual and sensuous experiences.[11] This form of poetic measurement allows one to develop a rigorous sensory awareness of the subtle realities that constitute the spatial experience.[12] This changes the view of the visionary architect to that of an attuned architect able to sense interdependency.

Procedural Doorways

Sited experimentation entails a shift in perspective from the architectural object to architectural procedures, spatial sequences that guide the way our moving bodies and environment mutually form and extend each other. Through procedural fieldwork the architect trains to catalyse transformation and to construct vital ways of inhabitation.

The 4EA approach to cognition stresses the enactive aspects of consciousness and cognition. In my pedagogical practice, sited experiment involves an active engagement with the (built) environment through procedural fieldwork. Our daily behaviour and built environment are filled with instinctual sequences. For example, as Japanese professor in philosophy Hideo Kawamoto explains in regards to the work of artist and architect duo Arakawa and Madeline Gins, 'each operation through which the body balances itself in respect to gravity has already been 'built into' the body during infancy through repeated trial and error.'[13] Procedural fieldwork reactivates these layers of sedimentary spatial experiences through procedural (re-)enactment and extends the sensorium by re-orienting bodily coordination anew through procedural intervention.



October 2020.

Imagine you are standing still in a square room facing an open door that leads towards a similar square room. As you start walking in a straight line towards the doorway you become aware of the transition. The space around you first narrows, and then opens up again. A little journey, a straight line, a small threshold.

Let's do it again. But now position yourself not in the middle of the room but slightly more to the left. Face the door again, so that a diagonal line emerges. Slowly walk towards the door following this diagonal, pass through the doorway, and continue walking until you reach the right side of the other room. A little journey, a diagonal line, and a surprisingly dynamic experience.

How does walking a straight line differ from walking a diagonal? While listening with our whole body we conclude:

If there is easy thresholding, while passing through a doorway by means of a straight line, it may feel easy precisely because the crossing doesn't create a space. The passage is homogeneous. In contrast, when walking a diagonal line, your experience of balance changes while passing through. Walking a diagonal, first your sense of balance gravitates to the left; as soon as you pass the door, the balance shifts and gravitates towards the right. It is in this dynamic thresholding that an autonomous spatiotemporal experience is activated. It is a qualitative difference, the shift condition, that triggers the experience of space within the process of movement itself.

Fig. 2: Shift Condition. Documentation of the workshop 'Walking Though Doorways' with students of the ArtScience Interfaculty at the Royal Academy of Arts in The Hague.

To extend the traditional plan analysis – characterised by a cultural and topological mapping of the building – I invite students to (re-)enact the existing movement complexities. For example, I ask students to (re-)enact the orthogonal movement of Western typologies in comparison to the zig-zagging movements of Japanese space to study the experiential variations. To make room for first-person experiences in the design process, I invite the students to activate the site of experimentation with 1:1 spatial and performative interventions that make them aware of, and disrupt situated normativity.[14] For example, I invite students to iterate on the directions for use by Shusaku Arakawa and Madeline Gins.[15] These forms of vitalisation allow the architect to tactically pose complex spatial dynamics at the intersection of habits and habitats. This changes the view of passive architectural structures to that of vital habitats in which interdependency is made experiential.

Collective Doorways

Sited experimentation entails a shift in perspective from a planned design process to aware play, a design attitude in which situated awareness allows the processes of design and inhabitation to follow their own course of action. Through collective improvisation the architect trains to accommodate change and to affirm life in the open-present.

The 4EA approach to cognition stresses the embedded and extended aspects of consciousness and cognition. In my pedagogical practice, sited experimentation involves a radical situating in the here and now through collective, corporeal and material improvisation. Without verbal communication, and guided by reflex rather than reflection, the students and I de- and re-construct the site of experimentation with materials we have brought from home or found at the location. In this improvisation practice tailored for architects, I invite students to let go of previously learned theoretical, sensorial or procedural tactics. Free from conditioning, but sensitive to the conditions and genuine possibilities of the present situation, we act in an open manner. In this playful process, a natural matching and meshing occurs.[16] Through the oscillation between matches and mismatches, in-phase and phase-delayed states, the collective – consisting of both human and non-human, environmental and material bodies – coordinate with each other and start to perform in a synchronised manner. The collective improvisation gains autonomy as if it has a life of its own. This form of situating strengthens the (response-)ability of both architect and architecture to re-negotiate with their surroundings. This changes the view of a planned process with a general focus on the future as captured in architectural plans, to lively processes of design and inhabitation radically situated in an environment that is always in flux.

Fig. 3: Doorways Will Never be the Same. Documentation of the workshop ‘Walking Though Doorways’ with students of the ArtScience Interfaculty at the Royal Academy of Arts in The Hague.

Conceptual Doorways

Sited experimentation entails a shift in perspective from low context learning to high context learning. Through concept creation the architect becomes aware of newly formed knowledges and develops new sensibilities.

Sited experimentation is a form of high context learning. The mass of the information is in the physical context or internalised in the person, while very little information is being vested in the explicit code, as in low context learning.[17] The learning process is not guided by pre-given theoretical and historical concepts or typologies as in most architectural studios, nor by a theoretical introduction to 4EA cognition. New knowledge emerges in and through first-person spatial experiences. In my pedagogical practice, I introduce concept creation as a way to become aware of extended sensibilities and complex spatial dynamics. I invite the students to practice conceptualisation as a creative practice in its own right.[18] During the – sometimes poetic and visual – writing process the students become scientists of the sensorial and train to extend their awareness by capturing, sharing and archiving their unique spatial experiences. Sometimes the writing is inspired by a study of non-western languages and spatial practices or deepened by existing concepts from architectural theory. More often personal, cultural and sensorial diversity activate the learning experience. For example, differences in the way our bodies relate to the environment open new worlds of experience; a taller person hears different sounds compared to a shorter person; someone with a developed sense of touch has a different experience from someone who is more sensitive to gravity. Concept creation belongs in and to the process of bodily and situated sense-making. A sited experiment doesn't start with given concepts, nor does it end in a conceptual reflection. Site, sense and concept are constructed simultaneously. This is my interpretation of what architectural theorist Hélène Frichot would refer to as dirty theory.[19]

Forgotten Doorways

Sited experimentation contributes to a meadow of knowing about, knowing of and knowing as sited awareness. Through sited experimentation architects train to construct an architecture of reciprocity, not as a conceptual matter or according to a prescribed method, but as a lived and enlivened experience.

In the article 'Walking Through Doorways Causes Forgetting: Environmental Integration', Gabriel A. Radvansky et al. report that the 'shift condition', which appears while passing through doorways, causes forgetting.[20] While passing through doorways together with my students, I became cognisant of the way

the teaching environment – the chairs, the floor and the sun – participate in the learning experience. I realised that epistemic change in the architectural studio is supported through a shift in perspective from the planned architectural object to tiny perceptions, architectural procedures, collective improvisation and concept creation. More importantly, I realised that the students might forget all the above while leaving through the classroom door. To improvise and experiment is not to know in advance; it is a form of non-education, unlearning, undoing and de-formation. By arguing for in-situ experimentation in the architectural studio the goal is neither to reclaim space for the human body nor to remember a prescribed method. The goal is to emphasise the lived experience of reciprocity and to allow architects to establish a meadow of knowing about sited awareness. This form of knowledge emerges while in movement, similar to the way Kawamoto explains the nervous and immune systems operate, such that the movement within the system is at the same time a kind of cognition: 'In both cases, the operation of the system does not constitute its cognition, nor is the system controlled by its cognition. Rather, the movement of the system is 'coherent' with its cognition, through and through, and vice versa.' [21] During in-situ experimentation a similar double operation allows for sited awareness to emerge amidst reflex and reflection, sense and conceptualisation. To frame it in the words of German marine biologist and cultural researcher Andreas Weber, 'to the scientific *third-person perspective* of "objective reality" that now prevails, we can add a *first-person ecology*.' [22]

Doorways Will Never be the Same

In March 2023, I receive a message from an alumnus of the door workshop. Currently based in Berlin, he has organised an artist's residency for his former classmates. The message is short; it includes an image of a doorway that is blocked by several objects with the text: 'The door-course came up in our workshop yesterday. I wonder if this door makes us forget.' With heightened awareness of the reciprocity between inside and outside, between minds, bodies and environments, doorways will never be the same [fig. 3].

Notes

The work presented here has been developed through a thorough and prolonged testing in my pedagogical practice between 2013 and 2023. I owe a great debt to my students and colleagues at the University of the Arts in The Hague, specifically the ArtScience Interfaculty, who joined my experimental practice and gave me the freedom to develop my research within the curriculum.

1 Olafur Eliasson, 'Nothing is Ever the Same', page on the website of the Institut für Raumexperimente, January 2009, http://raumexperimente.net/en/meta/nothing-is-ever-the-same/.
2 Harry Mallgrave, *From Object to Experience: The New Culture of Architectural Design* (London: Bloomsbury, 2018), 2.
3 Andreas Weber, *Enlivenment: Towards a Fundamental Shift in the Concepts of Nature, Culture and Politics* (Berlin, Germany: Heinrich Boll Foundation, 2013); Albert Newen, Leon de Bruin and Shaun Gallagher, eds., *The Oxford Handbook of 4E Cognition* (Oxford: Oxford University Press, 2018); Dave Ward and Mog Stapleton, 'Es Are Good: Cognition as Enacted, Embodied, Embedded, Affective and Extended', in *Consciousness in Interaction: The Role of the Natural and Social Context in Shaping Consciousness*, ed. Fabio Paglieri (Amsterdam: John Benjamins Publishing Company, 2012), 89–106, doi:10.1075/aicr.86.06war.
4 Andrea Jelić and Aleksandar Staničić, 'The Memory of Bodily and Architectural Making: Reflections from Embodied Cognitive Science', in *Affective Architectures: More-than-representational approaches to heritage*, ed. Jacque Micieli-Voutsinans and Angela M. Person (New York: Routledge, 2020), 187–203.
5 Mallgrave, *From Object to Experience*, 5.
6 Russell W. Hughes, 'Do It Yourself Future Construction: The Deregulated Self' (PhD diss., School of Architecture and Design, RMIT University, 2011), 107.
7 Renske Maria van Dam, 'Working With/In the Gap: Japan-ness in Architecture of Experience' (PhD diss., Faculty of Architecture, KU Leuven, 2021).
8 Renske Maria van Dam, 'Grasping Ma', in *Architectures of Life and Death: The Eco-Aesthetics of the Built Environment*, ed. Andrej Radman and Stavros Kousoulas (Lanham: Rowman and Littlefield International, 2021), 83–101; Renske Maria van Dam, 'Somersaulting Horizons and Making Sense of Sensorial Journeys', November 2018, video, https://www.youtube.com/watch?v=6e__LnNCLk0.
9 This workshop was given to a mixed group of students from the masters in interior architecture Inside and the Artscience Interfaculty at the University of the Arts in The Hague in October 2020.
10 Van Dam, 'Working With/In the Gap', chapter 2.
11 Manuel Delanda, 'The Philosophy of Energy', 2017, ResearchGate, https://www.researchgate.net/publication/310644943; Arnaud Hendrickx, 'Making Sense of Intensities: A First Step Towards an Architecture of Intensities', in *Perception in Architecture: Here and Now*, ed. Claudia Perren and Miriam Mlecek (Newcastle upon Tyne, Cambridge Scholars Publishing, 2015), 22–28.
12 Wim Goossens, Arnaud Hendrickx and Nel Janssens, 'A Case of Poetic Measuring: Isopleth', *Studies In Material Thinking,* 14 (May 2016): 1–31.
13 Hideo Kawamoto, 'The Mystery of Nagi's Ryoanji: Arakawa and Gins and Autopoiesis', *Interfaces: Image, Text, Language,* 21/22, no. 11 (2003): 90.
14 Erik Rietveld, 'Situated Normativity: The Normative Aspect of Embodied Cognition in Unreflective Action', *Mind* 117, no. 468 (October 2018): 973–1001.

15 Shusaku Arakawa and Madeline Gins, *Reversible Destiny Lofts Mitaka – In Memory of Helen Keller –Directions for Use*, 2005.

16 Shogo Tanaka, 'Intercorporeality and Aida: Developing an Interaction Theory of Social Cognition', *Theory & Psychology* 27, no. 3 (2017): 337–53 https://doi.org/10.1177/0959354317702543

17 David Slawson, *Secret Teachings in the Art of Japanese Gardens: Design Principles, Aesthetic Values* (Tokyo, Japan: Kodansha International, 1987/2013), 54.

18 'You will know nothing through concepts unless you have first created them.' Gilles Deleuze, & Felix Guattari, *What is Philosophy?,* trans. Hugh Tolinson, & Graham Burcell (New York, NY: Columbia University Press, 1994), 7.

19 Hélène Frichot, *Dirty Theory: Troubling Architecture* [Kobo Publishers default] (Baunach, Germany: AARD/Spurbuchverslag, 2019).

20 Gabriel A. Radvansky, Sabina A. Krawietz, & Andrea K. Tamplin, 'Walking Through Doorways Causes Forgetting: Environmental Integration', *Psychonomic Bulletin & Review*, 17 (December 2010), 900-904, doi:10.3758/PBR.17.6.900.

21 Kawamoto, 'The Mystery of Nagi's Ryoanji', 87.

22 Weber, *Enlivenment,* 33, original emphasis.

Spatialising Desire

Michał Romaniuk

The essential claim of Deleuze and Guattari in Anti-Oedipus is that libidinal and political economies are one and the same thing.[1] They assert that 'desire is part of the infrastructure' of the political economy.[2] Crucially, they reject Freud's psychoanalytical lineage, in which lack produces desire, and argue that desire itself is a productive entity. Deleuze elucidates this by examining the prosaic process of drinking. He states that drinking is never just drinking, saying that he either desires 'to drink all alone while working, or drink all alone while relaxing, or going out to find friends to have a drink, go to some little café.'[3] That is to say, desire produces the way in which the drinker conducts his life. Producing one's life crucially exceeds mere life reproduction. It is the surplus that is one's way of imprinting one's stamp upon reality. Precisely this excessive stamp is the product of desire – simply, the desire is a certain individual way of producing one's own life.

Slavoj Žižek puts it succinctly: 'humans are not simply alive, they are possessed by the strange drive to enjoy life in excess, passionately attached to a surplus which sticks out and derails the ordinary run of things.'[4] Surplus-life is the urge to go beyond mere reproduction and express one's own way of life, simultaneously being the product and the object of desire. We chase the surplus by producing some form of it. It is this excess that then becomes the fundament of our political economies, as surplus realises itself in some form of material production of desiring-machines. Input (desire) is gobbled up by the machine, which subsequently disgorges an output within the real – that process is what

constitutes the desiring-machine. What shall then become the focus of political theories, is the coding of this process, that is, the means of desire realisation, which is key in ruling any political system.

The hegemonic force inscribing our actions – the capitalist-machine, is propelled by a single monetary code that runs the desiring-machine. Capital makes sure to do everything so that surplus-life is equated with some purchasable commodities, which is perhaps best illustrated within the advertising world. Contemporary ads tend to ignore the most pragmatic functions of products, rather focusing strictly on equating the images of the commodity with some form of enjoyment (surplus-life). Apple ('Think Different'), Coca Cola ('Open Happiness'), Mastercard ('Priceless')... no matter what the product is, it is promoted in a slogan that relates to a certain lifestyle, emotion, or more broadly, what is so blatantly stated by the Mastercard commercials, something intangible, with a non-quantifiable character. The premise of the capitalist-machine is to control all the desiring-subjects, so that the desiring-machine is fully subordinated to the production of monetary value. In this way, it is imperative not only to consider an individual subject's desire but also this overarching meta-desire that facilitates the flows of human production.

Spatialising Desire

My argument is founded on the premise that this collective act of desiring can be spatialised. There is a certain intensive field detached from a fixed subject, formed by differing levels of libidinal investment by desiring-subjects, generating what I will refer to as the desirescape. This field is a field of potential. It is pre-coded, but more importantly it can always be re-coded for the needs of a new praxis. The focus of progressive politics ought to be identifying these potentials and then hijacking them, establishing new codes for desire realisation.

The desirescape is embedded within real spaces. It is the link between our perception of the world and those abstract intensive flows that can become politically creative in conceptualising our interactions with our surroundings. Thus, rather than speaking of an amorphous field of desire, one shall consider cognitively differentiable spaces of desire as the main matter of concern. For the sake of clarity, I put forward a list of theses on spaces of desire, that can precisely explain the concept.

Spaces of Desire

I. All spaces are spaces of desire as long as they are entangled in some sort of human interaction.

II. Spaces of desire are part of the spatial field of desire.

III. The spatial field of desire varies in intensities of desire, creating nodal intensifications of desire.

    a. Spaces of desire are differentiated by the intensity of desire – the more intense the concentration of desire, the more desirable the space is.

        i. Differentiating the spatial field into constituent spaces is motivated by an attempt to analyse the points of intensification of desire, which are defined by experiential factors.

IV. Spaces of desire are spaces of surplus-life.

V. Absorbing the flows of surplus-life should be critical in establishing any collective praxis, as surplus-life is the state of maximal libidinal investment by the subject.

    a. The absorption of surplus-life captures the productive inputs of the desiring-machine in order to create a specific type of desiring-production.

    b. The surplus can be absorbed by the identification of lack within the existence of the collective, as an effort to prevent this lack becomes the focus of desiring-production.

        i. This follows the method of collective praxis intensification proposed by Ernesto Laclau, following his concept of antagonism, which is built on the premise of the 'impossibility that any social identity – be it an individual identity or a group identity – can achieve a state of perfect "fullness" or completion, and the fact that the possibility of achieving such fullness will always be experienced as "blocked" by external entities.'[5]

    c. The surplus can be absorbed by introducing a spatial possibility for collective action to be produced, where production is seen as a fundamental force that constitutes the surplus-life.

        i. Thus, what becomes critical is the provision of the certain potentiality of progressive action within the spaces of surplus-life intensification.

VI. Spaces of desire consist of tangible and intangible relations.

VII. Intense spaces of desire possess strong affective capacities.

- a. The affective capacities vary in relation to different subjects.
  - i. Then, the architecture of desire would be the architecture that maximises the capacity of spaces to introduce surplus-life into multiple domains of life.

VIII. Spaces of desire are distributed in nodes of varying intensity, constituting the city desirescape.

IX. There is a meta-desirescape, which congregates individual desires into a single assemblage, while simultaneously every subject produces his own individual desirescape rooted in his perception.

- a. The individual desirescape is built upon a cognitive understanding of space and the expected capacities of different nodes to fulfil subject desires.
  - i. The capacity of a node is judged based on the image that the subject assigns to the node.

X. The meta-desirescape is constituted by individual desires, but it also largely constitutes one's desirescape as they co-form themselves in constant feedback loops.

- a. In this way conceptualising the meta-desirescape might be more creative than thinking about a single individual's desirescape.

Perceiving the Environment

The desirescape products are real; they are formed by real praxis, which is coded by the material constraints of our bodies, precisely by its perception. How does one interact with the desirescape? How do certain places become locations of intense desirability, while others seem ostentatiously dull? To answer these questions, I shall investigate how we perceive and experience the space we interact with. Bernard Stiegler asserts that the 'structure of consciousness is through and through cinematographic, if one calls the cinematographic in general that which proceeds by the montage of temporal objects, that is, of objects constituted by their movement.'[6] What comprises this cinematographic experience, and how does the montage unfold itself? I argue that this can be abstracted to some fundamental components, and thus I propose the concept of nodes and routes as primary units of our perception of space.

It is crucial to understand that nodes are always mediated. They do not exist as objective entities. They are our personal way of conceiving space; they do not

exist as tangible beings but rather as certain images forming in the mind of the subject. Thus, first introducing how we perceive nodes is critical in understanding the concept of the node itself.

Nodes are an 'embodiment of subjective perception' one generates regarding a certain place.[7] Their image is never stable; like all nodes, their images and perceiving subjects undergo processes of constant individuation. Gilbert Simondon stresses that in fact no being has any unity of identity; it rather has 'a transductive unity: which is to say that it can go out of phase with itself, can overflow itself in any direction from its centre.'[8] The individuating being constantly undergoes processes of territorialisation, which is the measure of its homogeneity. Manuel Delanda explains that 'when the "control knob" of territorialization is set at a high value, the assemblage exhibits a high degree of stasis, fixity, homogeneity, normalization, and self-replication. Conversely, when deterritorialization values are high, the assemblage exhibits mobility, flux, heterogeneity, destabilization, novelty, and a loss of unity.'[9] The image is built upon the subject's understanding of the object's haecceity (that is, the object's 'thisness'), which considers the object as an individual entity, but also as a part of multiple assemblages. Then the strength of this image in the subject's mind depends on how stabilised its identity is, which I would like to explain by introducing the theses on spatial nodes.

Theses on Spatial Nodes

I. Nodes are fundamental in any cognitive understanding of space.
    a. Nodes are the cognitive function that simplifies the field of desire into distinct places.

II. Nodes are defined as places that afford a premise of realising the subject's motive, which drives him to interact with space.
    a. Thus, nodes should be understood as not mere containers of actions, but rather as places that possess a certain affective capacity. In this sense, following James J. Gibson, the node is a space that provides certain affordances where 'the affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill… I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment.'[10]

III. Nodes can be both attracting and repelling; both types of spaces form our cognitive understanding of the urban realm.

IV. Nodal understanding is determined by the spatially nodal nature of the subject's immediate perception.
    a. Subject's spatiality and sensory cognition are limited to the material limitations of its organism.

V. Nodes have no definite boundaries; they can be overlapping, separated, inclusive of each other and so on. It is rather what affects our decision to interact with a certain place that cognitively determines the existence of a node.
    a. In this way, the node is a virtual construct that can be later actualised by subject's interaction with the site.

VI. In an idealised situation of no previous subject engagement with space, nodes are constructed and actualised on the spot.

VII. Nodal understanding pre-empts any interaction with a space, as in order to interact with space one has to place oneself in a specific node, and the node is chosen upon pre-conceived expectations regarding the node.

VIII. Nodal understanding is both spatial and temporal.
    a. Node potentialities vary according to time.

IX. In this way nodes can be understood as spaces of certain events.

X. Nodes are connected by routes.

XI. Routes are any spaces used for transportation between the nodes.
    a. Routes are chosen from the potentiality of transportation options between spaces, which is afforded by the material conditions of the space.
        i. Routes are primarily chosen by the efficiency of transportation, but can also be chosen by other factors (such as the appeal of the route, etc.).

XII. As routes are spaces of sensorial engagement of the subject (as the subject travels via the route), they are spaces of potentiality for new nodes to emerge.
    a. The clearest example of this phenomenon is how the cinematographic character of our cognition is capitalised on in shopping malls.

XIII. The experience of the node is the experience of the actual (physical interaction with the node) and the virtual (projections about the past, present or future concerning the node).

Praxis

The above ought to provide a basis for understanding how our desires are spatialised around the environment and how the environment is coded within our perception. Now, it is the task of our political imagination to observe this field and absorb its surplus intensities for the needs of a new praxis. New modes of collective living should suck out the libidinal intensity that is directed at commodified forms of desire realisation and provide an alternative that can disrupt the hegemonic production systems. What needs to happen is to establish new modes of desire realisation, so that the machine that produces our environment can be re-coded. Rosi Braidotti defines the political as that which focuses 'on the transformative experimentations with new arts of resistance and existence.'[11] Proposing new ways of existence then becomes the political task par excellence. These new ways of life should follow the inherent creativity of humans and their productive striving for surplus-life. If capitalism is the great homogeniser, then unconstrained surplus-life should be the diversifier. Finally, the call for new politics should be a call for a praxis that follows all varieties of desire – libidinally, but also, not less saliently, spatially.

Notes

1 Daniel W. Smith, Essays on Deleuze (Edinburgh: Edinburgh University Press, 2012).
2 Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robert Hurley (London: Penguin, 2009), 104.
3 Gilles Deleuze, *Gilles Deleuze from A to Z* (Cambridge, MA: MIT Press/Semiotext(e), 2012), DVD.
4 Slavoj Žižek, *Less Than Nothing: Hegel and the Shadow of Dialectical Materialism* (London: Verso, 2012), 499.
5 Jeremy Gilbert, *Common Ground: Democracy and Collectivity in an Age of Individualism* (London: Pluto Press, 2013).
6 Bernard Stiegler, quoted in Patrick Crogan, 'Essential Viewing: On Bernard Stiegler, La technique et le temps 3: Le temps du cinéma et la question du mal-être', *Film-Philosophy* 10, no. 2 (2006): 39–54.
7 Marc Boumeester, 'Place as Image, Image as a Place', *Inflection Journal* 8 (2022): 56–61.
8 Gilbert Simondon, quoted in Gilbert, *Common Ground* (London: Pluto Press, 2013): 109.
9 Andrew Ball, 'Manuel DeLanda, Assemblage Theory', *Parrhesia* 29 (2018): 241–47.
10 James J. Gibson, *The Theory of Affordances* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1977), 67–82.
11 Rosi Braidotti, 'On Affirmative Ethics', video, 2017: https://www.youtube.com/watch?v=aCvZAR7Pulk.

On Tectonic Naivety: Naive Cities

Lena Galanopoulou

Stratifications such as cities are ongoing, dynamic assemblages, of which every part (corporeal and non-corporeal) might be considered an evolving system made possible by formative and mutually constitutive relations. In that sense, an urban structure ought not to be perceived as a static entity but as a configuration in a state of fluidity; boundaries are not solid and impermeable, but rather porous and subject to continuous reconfiguration. The perception of a city as an adaptive and environmentally responsive apparatus that undergoes a kind of intuitive development highlights the limitations of rigid frameworks or predetermined organisational arrangements. Moreover, it challenges traditional design practices and distance-oriented planning, raising the question of how to shape a city in flux.

In this context, I employ the concept of *tectonic naivety*, aiming to stress cities' intuitive evolution. I introduce it through a series of questions – not with the ambition to provide answers, but to further problematise the ontogenesis of urban structures: *What does a city do? What makes a city? How is a city? How is a city made?*

Tectogenetics

Gilbert Simondon argued that 'there is something alive in a technical ensemble', signifying that technical objects have a developmental process similar to living organisms.[1] Driven by that statement, I intend to analyse the phenotype of urban configurations, that is, to delve into the mechanisms of their intuitive development. I refer to such mechanisms as *tectogenetics*.

What does a city do?

A city can be seen as a technical multitude in a constant process of becoming technological.[2] A technical multitude is an assemblage of technical objects intertwined via a plethora of connections that enable it to operate as a whole. The concept of becoming technological implies that city structure undergoes a continuing process of emergence, gaining functionality and relevance through the implementation of an ever-changing context of knowledge, techniques and processes. In architecture-friendly terminology, this process might be understood as modernisation. Therefore, exploring what a city does is also an exploration of its evolutionary attributes.

In Gilbert Simondon's conception of ontogenesis, every being (animate or inanimate) undergoes a process of individuation that stems from a pre-individual field of metastable potentials.[3] This process involves an actualisation of potentials, leading to the emergence, development and integration of a being into a broader system. Notably, Simondon recognises a certain level of indeterminacy within technical objects that varies depending on their own pre-individual being, which underlies the virtualities that they carry through the different stages of individuation.[4] In his own words:

> 'Technical ensembles are characterized by the fact that in them a relation between technical objects takes shape at the level of the margin of indeterminacy of each technical object's way of functioning.'[5]

This implies that certain technical systems may exhibit a higher degree of complexity, adaptability, flexibility or transformation compared to others, owing to the *margin of indeterminacy* inherent in the technical objects comprising them. This acknowledgment emphasises how technical objects retain information and functionalities from previous stages of their development, establishing a link between technical systems and their pre-individuating state.

Perceiving the city as a technical multitude through a Simondonian lens requires identifying a form of tectonic memory inherent in technical objects. This memory serves as a repository of knowledge and processes that enables, while simultaneously limiting, the structural potentialities of existing individuating systems or pre-individuating systems yet to come. It is passed from one generation of technical objects to the next, providing part of the information needed for their emergence, while claiming a certain level of autonomy for them. In this sense, urban structures are characterized by an underlying vitality, manifested through mechanisms of evolution and inheritance.

What makes a city?

The concept of *tectogenetics* suggests a genealogical approach to the question of 'what makes a city', which means identifying a genetic link between contemporary cities and the essence of human settlements. In this context, the Greek term 'polis' is analytically significant, as it referred not only to a physical place, but also to a political and social entity with a shared communal identity.[6] This dual meaning signifies that cities are dynamic manifestations of sociopolitical relationships, engaging in a complex interplay of division and connection. Urban environments play an active role in the emergence and functioning of social entities by providing tectonic arrangements that promote both integration and differentiation. Hence, the inquiry shifts from 'what makes a city', to understanding the architectural technicity that enables this complex duality to function.

In *A Thousand Plateaus* (1987), Deleuze and Guattari introduce the concept of segmentarity as a means to elucidate the functioning of social systems through the creation of segmented structures.[7] Each segment exhibits its own distinct modes of operation, contributing to the overall dynamics of the social system.[8] The notion of segmentarity, which offers a territorial understanding of the intricacies of social structure, stands close to the architectural technicity of apartmentalisation, meaning the introduction of physical constraints that regulate flows (social, physical, of energy, and so on).[9] Deleuze and Guattari, though, emphasise the ever-changing nature of social formations as well as the potential for interconnectedness and hybridity within them. Segments have the capacity to intersect, overlap, and even disrupt and reconfigure one another, leading to new possibilities of connections.[10] In the same sense, even though an apartment, as a spatial arrangement, is commonly imagined as a rigid, closed structure, apartmentalisation (or compartmentalisation) involves an inherent capacity for connection, allowing new forms of interaction to emerge.[11] In a rather provocative speculation, one could claim that a path in a cornfield or a fence in a plain contextualises the tectogenetic evolution of urban scapes.

Epitectogenetics

The idea of a constantly evolving urban structure due to environmental changes challenges the notion of fixed organisational schemes and suggests that the development and form of cities are not predetermined, but emerge through complex encounters within a broader milieu. The term *epitectogenetics* is used as a means to emphasise cities' responsive mechanisms and shift focus from urban structures to urban dynamics.

How is a city?

A city could be identified by the density of flows (residents, visitors, immigrants, money, culture and so on) in it. These encounters stand for the relations, forces, interactions and dependencies of flows and consequently of the structures they are operating in or through. The flux of residents, visitors and activities requires urban environments to perpetually adapt to the economic, social and cultural processes that reshape their fabric.[12] Essentially, social and urban structures are in a dynamic, co-evolutionary relationship, as flows regulate urban structure and urban structure regulates flows. This could be described as a cycle of co-evolution between social and spatial systems, in which social entities shape the ecosystem, to which later they have to adapt.

Simondon's process of *individuation* involves the reciprocal shaping of modes of existence through relational dynamics that occur due to interactions and exchanges between individuals.[13] To grasp this concept, we could envision it as a sedimentary rock, the transformation of which implies the mutual influence and co-evolution of the entities that co-exist within a collective or relational context. This dynamic and flexible nature of systems acknowledges a two-fold form of autonomy. The first is associated with their capacity to self-regulate and the second with their capacity to adapt. An epitectogenetic approach to the evolution of urban structures aligns with this view, as it transcends the application of traditional design strategies and focus on how socio-techno-environmental couplings affect the dynamics of flows within an ecosystem.

How is a city made?

The idea of an environmentally responsive – or sensitive – architectural design is not new in architectural discourse. More recently (between 1990 and 2010) architectural theory witnessed a rhetoric of transition, between two different aspects of the genesis of architectural objects. The architectural object emerges either as the inevitable unfolding of a predetermined programme (within the modernist paradigm) or as a constantly changing state of becoming, interrelated to its environment, which affects it morphoplastically and behaviourally.[14] The first perspective is associated with typology, a term used in architecture mainly in the 1960s.[15] The second perspective was introduced as topological, claiming a dynamic interrelation of architecture and the fields of mathematics and the life sciences.[16] These two different approaches, subsumed under the umbrella of the borrowed terms typology and topology, seem to have conceptual similarities with the biological notions of preformation and epigenesis, respectively.

According to the *Stanford Encyclopedia of Philosophy*, '*Epigenesis* is the thesis that every developing entity starts from material that is unformed, with form

emerging gradually, over time, in the process of development. *Preformation*, in contrast, is the thesis that development begins with the entity in some way already preformed, or predelineated.' [17] The nature of topological architecture seems akin to epigenesis, since it wants the architectural form to unfold organically in ways that are not prescribed or predetermined.[18] This indirect correlation in the context of a generalised interpretational approach of the *organic* leads to formalistic multiplicity, but more importantly, links architectural design to concepts like continuity, fluidity and connectivity.

Shifting the focus from the genesis of an architectural object to the genesis of an architectural system emphasises spatial relationships and relational networks over standardisation, allowing structures a level of indeterminacy. In this context, topology provides a fertile ground for the emergence of structures characterised by a higher level of indeterminacy.

Naive Cities

The Simondonian acknowledgment of technical life allows a view of the evolution of an architectural mode (either a building or a whole city) and of architecture itself through the lens of the life sciences.[19] The conceptualisation of an architectural object's ontogenesis re-evaluates its dynamics and elevates its being from a passive tectonic device to a dynamic system that carries a certain level of autonomy, a vital force that manifests as a continuous process of becoming.

In his concept of creative evolution, Henri Bergson proposes that evolution is not solely driven by mechanical, deterministic processes, but is also characterised by creative and vital forces.[20] Bergson introduces the concept of *élan vital* or 'vital impulse' to underline the internal driving force that powers evolution.[21] The concept of naivety stands for that force, as it embodies an intuitive form of knowledge able to transcend constraints imposed by conceptual frameworks and preconceived notions.

A common misconception is that tectonics pertains to static states; however, it fundamentally concerns dynamic equilibriums. It refers to the flow of forces within a system, where shifts in these forces can result in significant changes to the system as a whole. Tectonic naivety signifies systems' capacity to self-regulate as well as their sensitisation to external stimuli. In this regard, cities should not be smart, but rather naive in order to provide a higher level of adaptability to their environment and to continue to evolve in parallel with it. Automatisation, either functional (the traditional notion of the technological) or spatial (that is, typological design), presupposes the sacrifice of a number of operational possibilities and several possible uses.[22] According to Simondon,

'much more than any increase in automatism, it is this sensitivity to information on the part of machines that makes a technical ensemble possible.'[23] In light of this, the perception of a city as an adaptive and environmentally responsive apparatus that undergoes intuitive development leads us to reconceive the ontogenetic process of urban structures, the mode (form in operation) of architectural objects, and design objectives in general.

Notes

1 Gilbert Simondon, *On the Mode of Existence of Technical Objects*, trans. Cecile Malaspina and John Rogove (Minneapolis: Univocal, 2017), 140.
2 Bernard Stiegler argues that technology is constantly being updated and maintained to ensure its ongoing relevance and currency. As he says, technological development is driven by a desire to overcome limitations and improve efficiency, and this process is ongoing and never-ending. Bernard Stiegler, *Technics and Time 1*, trans. Richard Beardsworth and George Collins (Stanford: Stanford University Press, 1998), 15.
3 Gilbert Simondon, *Individuation in Light of Notions of Form and Information*, trans. Taylor Adkins, (Minneapolis: University of Minnesota Press, 2020).
4 Simondon, *On the Mode of Existence of Technical Objects*, 258.
5 bid., 157.
6 Similarly, the term 'city' is derived from the Latin civitas, which refers to a community. Online etymology dictionary, https://www.etymonline.com/search?q=city.
7 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia,* trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), the chapter 'Micropolitics and Segmentarity', 208–31.
8 Ibid.
9 Gokhan Kodalak and Stavros Kousoulas discuss the way How constraints shape our relationship with the world is discussed in Gokhan Kodalak and Stavros Kousoulas 'Simondoniana: Essays by Kodalak and Kousoulas, with Mutual Responses', *Footprint* 30 (2022): 97.
10 Deleuze and Guattari, A Thousand Plateaus, 209.
11 For more about the concept of apartment, apartmentalisation, and the genealogy of apartments, see Robert Alexander Gorny, 'A Flat Theory: Toward a Genealogy of Apartments, 1540–1752,' (PhD diss., TU Delft, 2021), https://repository.tudelft.nl/islandora/object/uuid%3A8f7d924d-ad3d-4e90-a05f-1bbdae23146c.
12 According to the US Census Bureau: 'Using 2007 ACS data, it is estimated that a person in the United States can expect to move 11.7 times in their lifetime based upon the current age structure and average rates and allowing for no more than one move per single year. At age 18, a person can expect to move another 9.1 times in their remaining lifetime, but by age 45, the expected number of moves is only 2.7.' US Census Bureau, https://www.census.gov/topics/population/migration/guidance/calculating-migration-expectancy.html
13 Simondon, *Individuation*.
14 Greg Lynn, ed., *Folding in Architecture*, revised edition, first published as an issue of *Architectural Design* (Chichester, NJ: Wiley-Academy, 2004 [1993]), 28.
15 Anthony Vidler, 'The Third Typology' (1976), in *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory, 1965–1995*, ed. Kate Nesbitt (New York: Princeton

Architectural Press, 1996), 258–63; Rafael Moneo, 'On Typology', *Oppositions* 13 (1978): 23–45; and Alan Colquhoun, *Essays in Architectural Criticism: Modern Architecture and Historical Change* (Cambridge, MA: The MIT Press, 1985).

16 Mario Carpo, 'Ten Years of Folding,' in *Folding in Architecture*, ed. Lynn, 14.

17 Bonie Fagan and Jane Maienschein, 'Theories of Biological Development', in the *Stanford Encyclopedia of Philosophy*, https://plato.stanford.edu/entries/theories-biological-development/.

18 Greg Lynn, *Animate Form* (New York: Princeton Architectural Press, 1999), 33.

19 Henri Bergson, *Creative Evolution*, ed. Keith Ansell Pearson, Michael Vaughan and Michael Kolkman, trans. Arthur Mitchell (Basingstoke: Palgrave Macmillan, 2007). In the introduction, Bergson argues that philosophy should align itself with the life sciences, in which matter is not merely organised but undergoes transformations in response to its interactions with other entities. Therefore, a revolution in the science of life would also entail a revolution in the philosophy of life. Ibid., ix-xv.

20 The concept of élan vital is introduced in the first part of *Creative Evolution* as a metaphor for understanding life. Unlike finalism, where the unity of the living world is seen as a consequence of a teleological force pulling life towards a specific future state, it is presented as the outcome of a common élan that emerges from the past. Ibid., 51.

21 In the third chapter of *Creative Evolution* Bergson defines élan vital as an 'impetus' or 'force', an active agent in constant relation with the physical world. Ibid., 186–236.

22 Gilbert Simondon, *On the Mode of Existence of Technical Objects*, 17–18.

23 Ibid.

Urban Pedagogies as an Assembling Practice: A Conceptual Sketch

Vladyslav Tyminskyi

Since the second half of the twentieth century, the 'positivist-rationalist' approach to planning and design, which derived its power and legitimacy from the dominant modernist paradigm, has been widely criticised in both academia and in practice.[1] The globalised world of uncertainty, complexity, and hyperconnectivity, conceptualised and articulated by Manuel Castells in a 'network language' as a dynamic space of flows, demanded a radical revision of the modernisation myth.[2] This was embodied in the transition from the universalist understanding of the urban 'as container or surface'[3] towards its actor-relational and ontologically 'flat' conceptualisation as a 'momentary coexistence of trajectories, a multiplicity of histories all in the process of being made.'[4]

Against this backdrop, since the 1980s, strategic and future-oriented approaches to design and planning 'through which a vision, actions, and means for implementation are produced that shape and frame what a place is and may become' have been advocated by the global North scholars and practitioners as a new hope that could innovatively propel the disciplines forward and guide 'planetary urbanisation' in a more sustainable and integrated way.[5] In this context, the following perspectives on the role of knowledge and the dynamics of its production and dissemination have become particularly compelling and influential in both academia and practice: 1) the argumentative theory prompted by the works of Jürgen Habermas on normative consensus-building by means of multi-stakeholder 'ideal communicative action' and 2) the theory of power inspired by Foucauldian philosophy, with its critical attention to a variety of frequently

asymmetrical (human) power relations, conflicting rationalities and attempts at hegemony.[6] Both conceptualisations of knowledge-making (frequently positioned as antagonistic) have been gradually mainstreamed as a new orthodoxy for European urban pedagogies, and can be traced in the curricula of design and planning schools on the continent, especially those advocating a holistic, interdisciplinary, practice-based, collaborative and transformation-oriented teaching philosophy.

However, despite the evident communicative and power-relational turns in European academia and practice, accompanied by efforts to de-centre the object of urban studies and supplement the ontological (what?) and epistemological (how?) dimensions of design and planning with an axiological (who?/why?) one, [7] the following three-fold gap remains highly relevant to be critically addressed both theoretically and empirically. First, although focusing on actors, power relations, and politics of design and planning processes, the above-mentioned theories are predominantly focused on the roles and types of *human* entities and their interactions as the main object of analysis and the key source for strategic socio-spatial future interventions. Herewith, those involved in change-making processes – as architects, designers, and planners – are commonly positioned as rational 'objective outsiders' or 'innocent mediators' rather than actors whose wishes, desires, emotions, and attachments (or lack thereof) are an integral part of the formation, re-formation and de-formation of relational and multi-dimensional urban assemblages.[8] Second, *non-human agency* is often overlooked or, at best, reduced to 'factors of importance' and intermediaries in heterogeneous relations.[9] In particular, the capacity of design strategies, conceptual projects, tactical interventions, and so on, to reshuffle the status quo and direct transformative trajectories by actualising their relational power over the other (subordinated) heterogeneous actors is frequently not taken seriously enough in design and planning research. Third, from the methodological perspective, the curricula of modern design and planning schools promoting communicative and power-relational approaches frequently rely on generic elements and largely conventional analytical frameworks, methodologies, and techniques of learning and knowledge production.[10] From this perspective, the growing trend towards the digitalisation of design and planning education is, de facto, largely reduced to the conventional positivist-reductionist conceptualisation of the digital as a rationalistic 'optimisation' of actual processes of living, cognition, and knowledge production by means of virtual and algorithmic technologies. Such an approach, in turn, has already proven its practical inadequacy in comprehending and handling the unprecedented real-life challenges in times of complexity, uncertainty, hyperconnectivity, pandemics and planetary conflicts.[11]

Summarising the above arguments, one can conclude that prescriptive-rationalistic, abstract-discursive, and human-driven knowledge-making remains omnipresent in European urban pedagogies. In this context, the following questions arise: How can the complex processes of knowledge production and dissemination in education for designers and planners be revised in order to overcome the limitations of 'communicative' and 'power' theories? What alternative conceptualisations can be deployed in design and planning pedagogies to shape a more radical conceptual framework for multiple ontologies and epistemologies of the socio-technological and real-virtual world(s) of continuous becoming(s)? What are the conceptual-methodological foundations of these 'more-than-human' urban pedagogies of uncertainty, heterogeneous actor-networks, distributed agency, and asymmetrical power relations? Finally, how can one theorise and re-evaluate the policies of trans-institutional collaboration of European design studies and practices, aiming toward an open and life-long education that addresses the complexity and uncertainty of our current urban conditions? In the remainder of this chapter, I reflect on the above questions to sketch the conceptual framework for assembling the urban as a pedagogical practice.

Conceptually, such a pedagogical project could greatly benefit from the intellectual engagement with relational-constructivist, process-oriented, and neo-materialist theories and practices, consolidated in assemblage thinking by Gilles Deleuze and Félix Guattari,[12] actor-network theory (ANT) and material-semiotics by Bruno Latour, Michel Callon and John Law,[13] and activist philosophy by Brian Massumi.[14] This would encourage an understating of designing and planning as an aesthetico-political and speculative-pragmatic practice of problematising contingent and situated matters of concern and conceptualising potential resolution trajectories (material-discursive strategies and tactics) for the identified problematic field to enable the actualisation of a desirable spatial-temporal change of urban assemblages. As a pedagogical practice, such an approach could propel thinking about the urban as a global-local whole that is contingently constructed through the labour of heterogeneous actors (human and non-human, actual and virtual) involved in drawing together parts of the geographically-topologically near and far, of fixed and mobile pieces of expertise and desires that are brought together and temporarily stabilised in the process of becoming. The designer, in this conceptualisation, becomes an assembler and actualiser of heterogeneous urban worlds.

Methodologically, this project should be conceived as a transdisciplinary exploration of heterogeneous urban assemblages – as both a process and an outcome of assembling – through a combination of methods and techniques of arts, science, and social disciplines that could synergistically provide a comprehensive

conceptual-analytical framework for innovative worlding endeavours. Furthermore, to be agential and transformative (that is, capable of making a difference), such a pedagogical practice would require departing from the human-centred and rationalist-consensualist approaches and intersubjective discursive techniques (for instance, critical analysis, multi-stakeholder debates and storytelling) towards more inclusive modes of (more-than-human) problematisation and experiential engagement with the materiality of the urban through various spatial interventions and performative practices of onto-politics. Consequently, the outputs of designing and planning as material-discursive assembling should be able to radically transcend the spectrum of conventionalised representational semiotic forms, including seductive yet uniform future development images, specialised architectural blueprints, prescriptive policy reports, or universally valid strategic recommendations. As a potential conceptual-methodological tool for engaging with various forms of heterogeneous (human and other-than-human) agency, the assemblage-based pedagogical project could deploy the notion of an ordering device conceptualised in ANT. Such a device can be understood as material-discursive technology for the problematisation (constructing a situated problem) and converting ('black boxing', in Latour's term) a matter of collective concern (a status quo problem) into a matter of collectively accepted (black boxed) fact, as well as for further spatio-temporal governing of diverse actor-relations at a distance to direct an innovation (for instance, a desirable urban change) in accordance with the articulated and collectively enacted vision and trajectory of action.[15] Deliberate decentring of the focus from the formal properties (what it is or may be) of an ordering device as a conceptual-methodological tool to its performative capacities (what it does or could do) could open up avenues for creative pedagogical experiments with the multiplicity of techniques and practices of assembling the urban. Specifically, such a move could be deployed in the process of designing and planning to register, articulate and enact various modes of existence.

Finally, in organisational terms, thinking of urban pedagogies as an assembling practice requires overcoming the fragmentation of learning and knowledge production, induced by specialisation. Thus, in addition to transdisciplinarity as a pedagogical principle, this project should claim to expand the conventional institutional borders of design and planning education, going beyond faculties, institutes, and departments as sacred cradles exclusively monopolising learning-teaching situations and practices. In particular, there is currently an obsession with orientation towards problem-solving by re-producing universally valid solutions, 'best practices' and urban transformation recipes in the form of imitative 'real-life labs' (German: *Reallabore*) under the roof of a university.

Instead, the strength of design and planning schools could be restored by shifting attention to thoroughly situated problem-articulation, as well as its theorisation and conceptualisation as a basis for experimenting with daring transformational initiatives in an emancipatory manner. This, in turn, would elevate the role of university education in the formation of profound conceptualisation skills as an essential part of design and planning activities that are capable of addressing the complexity and uncertainty of our current urban conditions. At the same time, the proactive engagement of design and planning schools in trans-institutional collaborations with a wide range of organisations and actors directly representing the 'community of practice', 'policy community', and 'epistemic community' could provide a fruitful framework for an inclusive continuous learning-practising cycle organised in a networked manner, where the individuation of urban assemblers would become both a key principle and a means of knowing and knowledge-making.[16]

Notes

1 See Louis Albrechts, 'Ingredients for a More Radical Strategic Spatial Planning, ' *Environment and Planning B: Planning and Design* 42, no. 3 (2015): 510–25, https://doi.org/10.1068/b130104p; Philip Allmendinger, *Planning in Postmodern Times* (London: Routledge, 2001); Ash Amin and Nigel Thrift, *Cities: Reimagining the Urban* (Cambridge, Oxford: Polity, 2002); Luuk Boelens, 'A Flat Ontology in Spatial Planning: Opening Up a New Landscape or Just a Dead End? ' *disP – The Planning Review* 57, no. 2 (2021): 4–15, https://doi.org/10.1080/02513625.2021.1981006; Ignacio Farías and Thomas Bender, eds., *Urban Assemblages: How Actor-Network Theory Changes Urban Studies* (London and New York: Routledge, 2010); Patsy Healey, *Urban Complexity and Spatial Strategies: Towards a Relational Planning for Our Times* (New York: Routledge, 2007); Patsy Healey and Robert Upton, eds., *Crossing Borders: International Exchange and Planning Practices* (London: Routledge, 2010); Yvonne Rydin and Laura Tate, eds., *Actor Networks of Planning: Exploring the Influence of Actor Network Theory* (Abingdon: Routledge, 2016).

2 Manuel Castells, *The Rise of the Network Society, 2nd Edition* (Oxford: Wiley-Blackwell, 2010).

3 Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network Theory* (Oxford: Oxford University Press, 2005); Doreen Massey, *For Space* (London: SAGE Publications, 2005).

4 Boelens, 'Flat Ontology ', 4–15; Doreen Massey, 'Travelling Thoughts', in *Without Guarantees: Essays in Honour of Stuart Hall*, ed. Angela McRobbie, Paul Gilroy and Lawrence Grossberg (London: Verso, 2000), 229.

5 Louis Albrechts, 'Strategic (Spatial) Planning Reexamined', *Environment and Planning B: Planning and Design* 31, no. 5 (2004): 747, https://doi.org/10.1068/b3065; Louis Albrechts, Patsy Healey and Klaus R. Kunzmann, 'Strategic Spatial Planning and Regional Governance in Europe', *Journal of the American Planning Association* 69, no. 2 (2003): 113–29, https://doi.org/10.1080/01944360308976301; Neil Brenner and Christian Schmid, 'Planetary Urbanisation', in *Urban Constellations*, ed. Matthew Gandy (Berlin: JOVIS Verlag GmbH, 2012), 10–13; Vincent Nadin et al., 'Integrated, Adaptive

and Participatory Spatial Planning: Trends Across Europe', *Regional Studies* 55, no. 5 (2021): 791–803, https://doi.org/10.1080/00343404.2020.1817363; Christian Schmid et al., 'Towards a New Vocabulary of Urbanisation Processes: A Comparative Approach', *Urban Studies* 55, no. 1 (2018): 19–52, https://doi.org/10.1177/0042098017739750.

6 Jürgen Habermas, *The Theory of Communicative Action (Vol. 1): Reason and the Rationalization of Society*, trans. Thomas McCarthy (Boston: Beacon Press, 1984); Jürgen Habermas, *The Theory of Communicative Action (Vol. 2): Lifeworld and System: A Critique of Functionalist Reason*, trans. Thomas McCarthy (Boston: Beacon Press, 1987); Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (Harmondsworth: Penguin, 1979); Michel Foucault, 'Space, Knowledge, and Power', trans. Christian Hubert, in *The Foucault Reader*, ed. Paul Rabinow (London: Penguin, 1986), 239–54; Michel Foucault, 'Governmentality, ' in *The Foucault Effect: Studies in Governmentality*, ed. Graham Burchell, Colin Gordon, and Peter Miller (Chicago: University of Chicago Press, 1991), 87–104.

7 Farías and Bender, *Urban Assemblages*, 20–44; Gert de Roo, 'Knowing in Uncertainty', *disP – The Planning Review* 57, no. 2 (2021): 90–111, https://doi.org/10.1080/02513625.2021.1981016; Yvonne Rydin, "Re-Examining the Role of Knowledge within Planning Theory," *Planning Theory* 6, no. 1 (2007): 52–68, https://doi.org/10.1177/1473095207075161.

8 Philip Conway, 'Back Down to Earth: Reassembling Latour's Anthropocenic Geopolitics', *Global Discourse* 6, no. 1–2 (2016): 43–71, https://doi.org/10.1080/23269995.2015.1004247; Martin Müller, 'Assemblages and Actor-Networks: Rethinking Socio-Material Power, Politics and Space', *Geography Compass* 9, no. 1 (2015): 27–41, http://dx.doi.org/10.2139/ssrn.2497405; Rydin and Tate, *Actor Networks of Planning*, 3–23; Vladyslav Tyminskyi, 'Mobilization, Assembling and Translation of Integrated Urban Development Policy in Ukraine: Revealing Strategies, Actors and Labors', *Planning Practice and Research, 2nd Special Issue on Regional Design* (2022), https://doi.org/10.1080/02697459.2022.2042922.

9 Yvonne Rydin, 'Actor-Network Theory and Planning Theory: A Response to Boelens', *Planning Theory* 9, no. 3 (2010): 265–68, https://doi.org/10.1177/1473095210368772.

10 See Carola Hein and Elise van Dooren, 'Teaching History for Design at TU Delft: Exploring Types of Student Learning and Perceived Relevance of History for the Architecture Profession', *International Journal of Technology and Design Education* 30 (2020): 849–65, https://doi.org/10.1007/s10798-019-09533-5; Elise van Dooren et al., 'Architectural Design Education: In Varietate Unitas', *International Journal of Technology and Design Education* 28 (2018): 431–49, https://doi.org/10.1007/s10798-017-9396-1.

11 Antoinette Rouvroy, 'Algorithmic Governmentality and the Death of Politics', *Green European Journal*, 27 March 2020, https://www.greeneuropeanjournal.eu/algorithmic-governmentality-and-the-death-of-politics/; Slavoj Žižek, *Pandemic! Covid-19 Shakes the World* (Cambridge: Polity, 2020).

12 Manuel DeLanda, *A New Philosophy of Society: Assemblage Theory and Social Complexity* (London: Continuum, 2006); Manuel DeLanda, *Assemblage Theory* (Edinburgh: Edinburgh University Press, 2016); Gilles Deleuze and Félix Guattari, *Anti-Oedipus,* trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1983); Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987); Félix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London: Continuum, 2008).

13 Michel Callon, 'Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay', in *Power, Action, and Belief: A New Sociology of Knowledge?*, ed. John Law (London: Routledge, 1986), 196–223; Michel Callon, 'Actor-Network Theory', in *International Encyclopedia of the Social and Behavioral Sciences*, ed. Neil J. Smelser and Paul B. Baltes (Amsterdam: Pergamon Press, 2001), 62–66; Latour, *Reassembling the Social*; Bruno Latour, *An Inquiry into Modes of Existence: An Anthropology of the Moderns* (Cambridge, MA: Harvard University Press, 2013); John

Law, 'Notes on the Theory of the Actor-Network: Ordering, Strategy, and Heterogeneity', *Systems Practice* 5, no. 4 (1992): 379–93; John Law, 'Actor-Network Theory and Material Semiotics', in *The New Blackwell Companion to Social Theory*, ed. Bryan S. Turner (Oxford: Blackwell, 2008), 141–58.

14 Brian Massumi, *The Power at the End of the Economy* (Durham, NC: Duke University Press, 2014); Brian Massumi, *Ontopower: War, Powers, and the State of Perception* (Durham, NC: Duke University Press, 2015); Brian Massumi et al., 'Affect and Immediation: An Interview with Brian Massumi', *disClosure: A Journal of Social Theory*, Vol. 28, Article 13 (2019): 110–21.

15 Latour, *Reassembling the Social*.

16 Healey, *Urban Complexity and Spatial Strategies*.

List of Contributors

Léa Alapini graduated cum laude from the TU Delft Faculty of Architecture in 2023. Based in Rotterdam, she works as an architect and researcher. With previous experience as an exhibition designer and assistant editor, her scenography work was on display at SESC Pompéia, Brazil in 2023 as part of the exhibition *A Parábola do Progresso*.

Marc Boumeester, PhD, is a scholar, consultant and educator. He has worked in research with an interdisciplinary agenda aimed at developing and transforming theoretical and media-philosophical frameworks in concrete teaching programmes for undergraduate, graduate and PhD education. He holds a doctoral degree from the University of Leiden, which focused on non-anthropocentric desire, producing the monograph: 'The Desire of the Medium'. Boumeester was director at the ArtEZ University of the Arts, a lecturer and researcher at TU Delft and founder of the department of Interactive/ Media/ Design at the Royal Academy of Art in The Hague, among other functions. He has presented papers and lectured in over 20 countries around the globe and published in a wide array of books and journals.

Christoph Brunner, PhD, is assistant professor for philosophy of media and technology at Erasmus University, Rotterdam. He is the founder of the ArchipelagoLab for Transversal Practices at Leuphana University, Lüneburg. His research concerns the relations between media and their aesthetics, affective politics, and social movements in networked cultures. He takes a particular interest in practices and positions from the Global South and translocal forms of organising. Most of his work arises from collaborations with critical practitioners.

Eric Ferreira Crevels is an architect, craftsman and a PhD candidate at TU Delft, within the Communities of Tacit Knowledge: Architecture and its Ways of Knowing Network. His research focuses on material culture and craft, investigating the interfaces between labour, design and construction, and connecting architecture, anthropology, and critical theory in the exploration of the epistemologies of making.

Renske Maria van Dam, PhD, is artist, architect and academic. She is founder of the atelier Spacious, as well as lecturer and researcher at ArtEZ University of the Arts. She is specialised in the correspondence and divergence between the Japanese spatiotemporal practice of *ma* and recent findings in the cognitive sciences that emphasise the centrality of the moving body for the experience of architectural space.

Jonas Fritsch, PhD, is associate professor in interaction design at the IT University of Copenhagen in the Department of Digital Design. He is head of the Affective Interaction & Relations (AIR) Lab and head of the design research section. His work revolves around a creative thinking of interaction design, design processes, experience philosophy and affect theory through practical design experiments with interactive sound and physical interfaces.

Lena Galanopoulou is a PhD candidate at the School of Architecture of the National Technical University of Athens (NTUA) and a scholar of the Hellenic Foundation for Research and Innovation (HFRI). She holds an MArch Diploma (equivalent Diploma, NTUA) in architectural engineering and an MSc in architectural research (NTUA's interdisciplinary postgraduate programme, 'Theory of Knowledge'). She is a licensed member of the Technical Chamber of Greece, participating in Panhellenic Architectural Competitions and with design experience in projects of various scales. Galanopoulou has been part of NTUA's teaching staff for the undergraduate courses of Architectural Design between 2017-22. Since February '23, she is a guest researcher at the TU Delft Faculty of Architecture and the Built Environment.

Sebastian Gatz is an architect, artist and trained car mechanic, who works at the intersection of art, architecture and technology. Currently he is doing a PhD in Fine Arts at Konstfack – University of Arts, Crafts and Design in Stockholm. His research combines ficto-critical and posthuman methods to explore human-nature-technology relationships. He has an interest in experimental metaphysics, degrowth practices and digital fabrication. Previously he worked and taught at the Royal Danish Academy of Fine Arts at the Centre for Information Technology and Architecture (CITA) in Copenhagen, where he worked with artificial intelligence, robotic fabrication and robot-plant-hybrids.

Sinan Cem Kızıl, PhD, is an architect, scholar, and occasional singer-songwriter. He completed his BArch, MArch, and PhD degrees at METU Faculty of Architecture, Ankara. His dissertation Architecture as Territory: Politico-Aesthetic Constructions and Representations of Space-Time (2024) has discussed territory and territoriality, with a focus on the political and aesthetic dimensions within close relation to philosophy and social geography. He organized public workshops for the Istanbul Design Biennale and the Turkish Chamber of Architects and won prizes in national architectural competitions. Currently, he is a research assistant at METU, where he contributes to design studios as an instructor, teaching assistant, and guest jury.

Stavros Kousoulas is Assistant Professor of Architecture Philosophy and Theory at the Faculty of Architecture and the Built Environment, TU Delft. He studied architecture at the National Technical University of Athens and at TU Delft. He received his PhD cum laude from IUAV Venice. He has published and lectured in Europe and abroad and is production editor and member of the editorial board of the peer-reviewed architecture theory journal *Footprint*. He is the author of *Architectural Technicities* (Routledge, 2022) and has co-edited the volumes *Architectures of Life and Death* (RLI, 2021), *Design Commons* (Springer, 2022) and *The Space of Technicity* (TU Delft OPEN, 2024).

Halbe Hessel Kuipers holds a doctorate in philosophy from the University of Amsterdam; thesis under the direction of Patricia Pisters and Erin Manning, entitled 'Perspectives and Event: A Study on Modes of Existence', defended in 2022. Having worked a lifetime in the experimental laboratory for research-creation, SenseLab, under Erin Manning and Brian Massumi, Kuipers was editor of the journal *Inflexions* and spearheaded its radical pedagogy project on neurodiversity. Kuipers now teaches at the University of Amsterdam and is working on a book on perspectivism.

Gert van der Merwe grew up in Namibia after which he moved to South Africa, where he graduated from the University of Pretoria (MProf Arch) in 2014 and worked until 2020, before returning to teach at the Namibia University of Science and Technology. He is currently pursuing a PhD at TU Delft. His research focuses on water as a lens with which to shape norms and values in the development of a non-anthropocentric theory; the preliminary title is 'Water: Flow, Code and Stock: A Rhizomatic Genealogy of the Political Ecology in Namibia.'

Sonat Özcivanoğlu is a mixed-media artist, designer, architect, PhD candidate, and educator. She received her MArch (2015–19) in architecture from Middle East Technical University (METU), with the thesis 'Map-Making As A Walking-Based Spatial Practice In Architecture', and conducted several walking and mapping workshops and exhibitions as a part of her master's thesis study. She is currently pursuing her PhD studies in the same institution with a focus on the narrative territory of architecture. Her major academic research fields include walking-based mapping practices, the ethos of architectural practice, and narrative theory.

Alina da Porciuncula Paias, an architecture worker and independent researcher, holds a master's degree cum laude in architecture from the TU Delft (2022). She is one of the curators for the 2024 International Architecture Biennale Rotterdam (IABR) and a member of the Editorial Team for Footprint, the Delft Architecture Theory Journal. She is currently developing an exhibition on energy consumption and the technologies of architecture production for VI PER Gallery, in Prague, and for the Lisbon Triennale, with the support of the LINA platform.

Andrej Radman is Assistant Professor of Architecture Philosophy and Theory, and coordinator of the Ecologies of Architecture research group at the Faculty of Architecture and the Built Environment, Delft University of Technology. Over the past two decades Radman's research has focused on the nexus between Architecture and Radical Empiricism. His latest publication is *Ecologies of Architecture: Essays on Territorialisation* (2021). In 2023, Radman was honoured with the *Mark Cousins Theory Award* presented by DigitalFUTURES. This award recognises leading theorists in the field of architecture and design who have demonstrated forward-thinking perspectives in the field.

Michał Romaniuk is an alumnus of TU Delft and the Manchester School of Architecture. While he searches for novel ideas on how to conduct his life, he devotes some of his free time to thinking about matters concerning space, politics and architecture.

Bastian Schleier an architect and trained cabinet maker based in Karlsruhe, Germany, graduated from the TU Delft Faculty of Architecture. His research explores traditional modes of production and their relevance to contemporary challenges across various scales. In his current project, "Organisms and Partner," he and a diverse range of collaborators investigate the emergence of material flows and properties, examining the interplay between distinct forms of labor, knowledge production through making, and the resulting questions concerning new technologies and extractive practices within specific landscapes and ecologies.

Heidi Sohn is associate professor of architecture theory, and head of the Architecture Philosophy and Theory group at the Faculty of Architecture and the Built Environment of the TU-Delft. Her areas of expertise are eclectic, and include notions of 'worlding', 'the monstruous', 'heterotopia' and 'difference'. She is interested in teasing out articulations of critical and intensive (onto)cartographies within culture, materiality, spatiality and time on the lived environment. Her current research deals with new materialism and the field of creative ecologies. In her recent writing, she explores environmental narrative and ecological storytelling as alternatives to conventional academic writing and theory production.

Bodil Marie Stavning Thomsen is a professor at the School of Communication and Culture, Aarhus University. She was leader of Affects, Interfaces, Events (Denmark, 2015–20) and part of the research team of Immediation: Art, Media and Event (Canada, 2013–2021). Her interests cover haptic visuality and affect studies in film, video and digital interface culture. Recent publications include: *Lars von Trier's Renewal of Film 1984–2014: Signal, Pixel, Diagram* (2018); *Immediation I & II* (2019); 'The Play of Iconicity in Lars von Trier's *The House That Jack Built*' in *NECSUS* (spring 2020); *Transmedia Directors: Artistry, Industry and New Audiovisual Aesthetics* (2020); *Affects, Interfaces, Events* (2021).

Vladyslav Tyminskyi is a researcher, educator and planner. His profile is shaped at the intersection of interdisciplinary planning policy research, experiential urban pedagogy, and post-structuralist theory of architecture and urbanism. Started in 2018, Vladyslav's doctoral project at the University of Stuttgart (Department of International Urbanism) critically explores the processes, actors, and practices of mobilisation, consolidation, and territorialisation of strategic planning policy in Ukrainian municipalities in the 2010s. Since 2022, he has been an editorial board member of the peer-reviewed journal Planning Practice & Research. In 2022-2023, Vladyslav was a guest researcher at the Architecture Philosophy and Theory academic group (TU Delft).

Taufan ter Weel is an architect, artist and researcher with a transdisciplinary approach across sonic and spatial fields, interested in the technicity of signal processing in connection with the production of space. Since 2015 he has worked for the Architecture Philosophy and Theory chair of TU Delft's Faculty of Architecture, where he also received his master degree in 2009. He is a PhD candidate at the faculty's Theories, Territories, Transitions section and participates in the CA2RE+ and Villard d'Honnecourt programmes. He has realised various artistic projects, performs live electronic music since 2001, and finished the Institute of Sonology's one-year course at the Royal Conservatoire The Hague.

Libe García Zarranz (she/her) is Professor of Cultural Theory and Literatures in English in the Department of Teacher Education at the Norwegian University of Science and Technology (Trondheim). Her research is positioned at the intersection of Canadian literature and visual cultures, gender studies and affect studies, with a focus on feminist, queer and trans approaches. She is the author of *TransCanadian Feminist Fictions: New Cross-Border Ethics* (2017) and co-editor of the collection *Living and Learning with Feminist Ethics, Literature, and Art* (2024). Her research has been published by *Capacious: Journal for Emerging Affect Inquiry*, *The Year's Work in English Studies*, *University of Toronto Quarterly* and *Atlantis: Critical Studies in Gender, Culture & Social Justice*, among other venues. She leads the research group TransLit: Sustainable Ethics, Affects and Pedagogies at NTNU and she is a member of the international research project Cinema and Environment: Affective Ecologies in the Anthropocene.

Noesis should not be mistakenly identified with cognition. It is essential to steer clear of conflating cognition with re-cognition, which involves a stagnant affirmation of sameness or a repetitive process lacking in heterogeneity. In contrast, noetics shares a common root with noema, translating literally as 'meaning' or, in a broader sense, as 'sense.' However, it is important to note that sense is not pre-existing; its production is inherently embodied, embedded, enactive, extended, and affective (4EA). The transdisciplinary volume 'Noetics without a Mind' (NWM) expands on the 4EA approach of noesis by introducing a crucial technological dimension.

A NWM perspective on generalised noetics delves into sense-making processes shaped by the organisation of bodies, assemblages, and material environments. This includes the involvement of more-than-human entities and technical objects, onto which thought, memory, and desires are increasingly offloaded. The individuation processes, both psychic (personal) and social (collective), are intricately linked with technical evolution. By incorporating the concept of technicity, NWM posits a reciprocal relationship in the individuation of humans, technology, and their affective surroundings. The simultaneous process of transindividuation nurtures an ecological understanding that transcends a purely logo-centric or inter-individual perspective. This evolution, occurring 'by means other than life', prompts speculations on non-apodictic pedagogies, emphasising sensibility and its potential for significant pre-individual affective amplifications. The volume thus explores both a knowledge of the sensible and a sensible form of knowledge.

NWM provides a platform for thinkers who boldly traverse disciplinary boundaries, encompassing a diverse range of fields. These include, but are not limited to, affect and affordance theories, architecture, art and cultural studies, philosophy and philosophy of technology, (digital) media studies, feminist theories, film theory, social sciences, and literature.

9 789493 329249

Ecologies of Architecture Book Series

TU Delft OPEN

JAP SAM BOOKS