Review article

Simondoniana:
Essays by Kodalak and Kousoulas, with Mutual Responses

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No Gilbert, no Bernard. It would be unimaginable to dedicate an issue to Stiegler without devoting a section to Simondon. Two contemporary architectural philosophers have responded to the editors' call to speculate on the impact of the philosophy of technology on the discipline of architecture. The essays were written in isolation and subsequently sent back and forth for mutual responses. The two converging and diverging lines of thought are juxtaposed. It turns out that our initial question was perhaps posed wrongly. Ask not what Simondon can do for architecture – ask what architectural technicity can do for philosophy.

Simondon, the Question of Technology, and the Architectural Margin of Indeterminacy

Gökhan Kodalak

Gilbert Simondon is a post-war philosopher who formulated a new way of conceiving individual modalities – from crystals, technical objects and biological organisms to psychic phenomena and social collectives – by exploring their individuating processes. Despite his original insights on philosophy and technology, however, Simondon's work was overlooked for decades, with the exception of dedicated thinkers such as Bernard Stiegler who unpacked and furthered his project.[1] The field of architecture is no exception to this neglectful tendency. After decades of silence, we have been discovering the architectural implications of Simondon's philosophy only in the last few years.[2]

Simondon was active from the 1950s until his death in 1989 within the vibrant context of French thought. He interacted in varying degrees with Georges Canguilhem's philosophy of science and biology, Martial Guéroult's history of early modern philosophy, Maurice Merleau-Ponty's phenomenology of perception and art, and Gilles Deleuze's idiosyncratic philosophy. His metaphysical conception of ontogenesis, which explains how *individuals* emerge from a *pre-individual field* of metastable potentials through processes of *individuation*, helped him reconceive technical objects, no longer as passive automata, but as exuberant individuals, active and full of life, with their own irreducible modes of existence. With this new vision, Simondon invites us to rethink our relationship with technical objects beyond the mythological attitudes of technocracy, technophilia, and technophobia, which we can develop further today to reconceive architecture's own modes of existence and charged relations with technology.

Ontogenetic triad: predindividuality, individuation, and individuality

Simondon explains the making of the universe and the existence of a plethora of different beings by way of an ontogenetic triad of his own. Every individual (*individuel*), he argues, exists via continuous processes of individuation (*individuation*), arising immanently from divergent potentials of the preindividual being (*l'être préindividuel*). The interplay within this ontogenetic triad – preindividuality > individuation < individuality – breathes life into all modes of existence, through which the underlying

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generativity of the cosmos is channelled by each and every being.

Simondon's ontogenetic approach is a fundamental objection against the canonical lineage of continental philosophers and scientists who, for centuries, have defined the cosmos with respect to 'constituted individuals' such as galaxies and planets at the macro-scale, humans, animals, plants, and technical objects at the meso-scale, and atoms and subatomic particles at the micro-scale, to such an extent that even when they envision what transcends reality, the supernatural dimension they imagine is still only populated by preformed individuals such as angels, demons, and gods. Yet reality, Simondon counters, is not made of individuals whose modes of existence arrive preformed. Individuals rather become individuated by way of genetic and developmental processes of individuation. 'Grant[ing] an ontological privilege to the constituted individual' is the majestic misstep of canonical Western thought, Simondon argues, which 'runs the risk of not actualizing a veritable ontogenesis that would put the individual back into the system of reality within which individuation takes place.'[3] To oppose this canonical misstep, Simondon develops his ontogenetic approach by seeking 'to know the individual through individuation, rather than individuation starting from the individual.'[4]

Knowing the individual through individuation requires identifying – and to a certain extent speculating about – its genetic relationship with 'the preindividual being.' In Simondon's own words:

> The individuated being is neither the whole being nor the first being; *instead of grasping individuation on the basis of the individuated being, the individuated being must be grasped on the basis of individuation and individuation on the basis of preindividual being*, which is distributed according to several orders of magnitude.[5]

Simondon's 'preindividual being' is not a supernatural, transcendent realm, but an immanent, subsisting dimension of reality. It is a topological continuum, a shared manifold, an infinite ocean constantly dephasing itself beneath our everyday actuality. There are no individual distinctions in the preindividual being's continuity, but infinite variations and differentiations attained by the thickening and thinning of its potential fields. This means that all beings in the cosmos, all of us, attain our individuality from a common preindividual field of potentiality, yet do so by actualising and unpacking this shared field's differentiating gradations. We all embody the same underlying source, but manifest it in many different forms.

Simondon's ontogenetic triad therefore expresses co-existing dimensions of a single reality. At the level of preindividuality, nothing has yet taken on form or become actual; rather, there is a metastable field capable of assuming various individual forms. At the level of individuation, preindividuality is in the process of being immanently expressed as individuality, that is, the different potentials and contrary tensions of preindividuality resolve themselves in the emergence and persistence of individual beings. At the level of individuality, underlying potentials have already given way to certain modes of actuality and stability, constraining the spaces of genetic and developmental possibilities, expressing certain qualities and formal organisations over the others.

Such is the ontogenetic worldbuilding that allows Simondon to posit that all individual beings are generative and express unique modes of life. For all individual beings, whether humans, animals, plants, crystals, technical or architectural modalities, can implicate underlying potentials of the preindividual being, complicate such potentials through individuation processes, and explicate them via individuated forms and qualities. Being alive and generative simply means being capable of articulating the very life that runs across the preindividual and individual dimensions by way of individuations. 'Thus, life is not a distinct substance of matter', Simondon concludes, 'it supposes processes of integration

and differentiation that cannot in any way be given by something other than physical structures.'[6] That is, there is no bifurcation of life and non-life in reality but a gradual continuity of vitality across physical and biological individuations.

This means that just as there are modes of life peculiar to organic individuals like humans, animals, and plants, so too are there modes of life unique to non-organic individuals like crystals, technical objects, architectural buildings, and machines. 'The machine, being a work of organisation and information, is, like life itself and together with life', Simondon argues at one point, 'opposed to depriving the universe of the power of change.'[7] At another point, he adds: 'There is something alive in a technical ensemble.'[8] Technical – and by extension architectural – modalities do not lack generativity; they are not inert tools or passive instruments lacking 'the power of change' as conventionally perceived. From Simondon's radical lens, technical and architectural modalities are all alive, albeit 'according to several orders of magnitude.'[9]

Mythological triptych: technocracy, technophilia, and technophobia

Simondon's heterodox acknowledgment of technical and architectural life goes against orthodox Western conceptions, which imagine a 'gap' between the life of humans and the so-called 'nonlife' of technical (and architectural) objects: 'What is wrong is rather that there is a gap between man and the object, a misunderstanding, a sort of war.'[10] As most of us are indoctrinated by the Western canon's far-reaching influences, Simondon argues, we find ourselves internalising this gap, which leads us to develop mythological attitudes toward technical objects: 'A gap manifests itself in our civilization between the *attitudes* provoked in man by the technical object and the true nature of these objects; from this inadequate and confused rapport a set of *mythological* valuations and devaluations arises'.[11] Acknowledging the unique lives of technical objects and architectural modalities requires, first and foremost, revealing the inadequacy of our mythological attitudes arising from this fabricated 'gap'.

Simondon observes that we have developed three dominant 'mythological attitudes' in our modern relationship with technology. The first attitude corresponds to 'enslaving' technical modalities, so that we subordinate their lives to our own purposes; we turn them into passive objects; we force them to echo our own ambitions; we ignore their transfinite capabilities of individuation; we devalue their lives, or rather, we don't even recognise that they are, in fact, alive. Simondon calls this mythological attitude 'technocracy'.[12]

Because of our technocratic attitude, Simondon maintains, 'the technical object remains neglected.'[13] And so, the technical object 'must be rescued from its current status, which is miserable and unjust.'[14] Technical (and architectural) modalities must be rescued, Simondon insists, for we turn them into 'slaves' so as to extend our methods of domination by their mediation over nature as well as over other people:

> One could use the term 'autocratic philosophy of technics' for a philosophy that takes the technical ensemble as a place where machines are used in order to obtain power. The machine is only a means; the end is the conquest of nature, the domestication of natural forces by means of a first act of enslavement: the machine is a slave whose purpose is to make other slaves. Such a dominating and enslaving inspiration can coincide with the quest for man's freedom. But it is difficult to free oneself by transferring slavery onto other beings, men, animals, or machines; to reign over a people of machines that enslave the entire world is still to reign, and every reign presupposes the acceptance of the schemas of enslavement.[15]

With this technocratic attitude, we instrumentalise technical objects and architectural modalities as a means to our own ends. We weaponise them to domesticate nature and discipline culture. We acknowledge neither their unique lives and singular

modes of existence, nor their underlying potentials and arcs of individuation. We overlook their vitality, pretend that their exuberant agencies are mere reflections of other 'living' actors, and cover their animate capacities with our self-serving impositions.

Simondon seems to insist in the analogy of 'enslavement', not to devalue the traumas and pains embedded in the social history of slavery, but to oppose the constant imposition of different 'enslavement schemes' on other beings, to animals, natural milieus, and technical modalities. For he intuits that, insofar as we keep similar techniques of domination, we are always at risk of not just enslaving other beings, but also ourselves and each other:

> Awareness of the modes of existence of technical objects must be brought about through philosophical thought, which must fulfil a duty through this work analogous to the one it fulfilled for the abolition of slavery and the affirmation of the value of the human person.[16]

This urges us to reconceive our tired relationship with technical and architectural modes of existence beyond instrumentalising them for 'enslaving' social and natural modalities.

The second mythological attitude reverses the master-slave hierarchy and turns technical objects into transcendent masters with a positive moral lens, so that we divinise them; we assign them supernatural qualities; we worship their 'prophetic' powers; we seek our redemption in their 'sacred' existence. Simondon calls this 'technophilia', or 'the idolatry of the machine'.[17] Regarding the technophilic attitude, Simondon gives the example of idolising an imaginary ideal of human-like robots, which can be updated with recent examples such as the naïve (seemingly transhumanist but latently idealist) dreams of uploading our minds to clouds to achieve disembodied immortality, or the unsuspecting utopias of living in perfect harmony under the flawless control of (supposedly) non-biased algorithmic systems.

The third and the final attitude keeps technical objects as transcendent masters, but pushes them to the opposite, negative moral pole, so that we demonise them; we assign them aggressive qualities; we fear their 'cataclysmic' powers; we envision them as the harbingers of the impending apocalypse. Simondon calls this 'primitive xenophobia' against the technical object, which can be shortened to and renamed technophobia, so as to better fit his conceptual triptych.[18] Regarding the technophobic attitude, Simondon gives the example of our constant fear of machinic rebellion that poses an existential risk to our (self-proclaimed) human supremacy, which has become even more prominent in the last few decades with the new discussions around artificial general intelligence.

What these three seemingly different – even opposing – mythological attitudes all share is their insistent overlooking of the unique modes of existence of technical objects: technocracy enslaves and instrumentalises their life; technophilia dresses them in holy robes; transphobia turns them into diabolical monsters. Simondon's subtle observation of our mythological attitudes reveals that it is easier for us to imagine technical objects as gods, demons, or slaves than to acknowledge their singular modes of being.

Architecture is not exempt from such mythological attitudes, as the next cutting-edge technology – whether algorithmic coding, robotics, artificial intelligence, 3D printing, or blockchain – is either immediately instrumentalised by the technocrats to impose new orders of domination on social actors and natural environments, or naïvely embraced and idolised by the technophiles, or paranoidly opposed and demonised by the technophobes. None of us are totally immune to these attitudes, which are not even mutually exclusive; that is, we all find ourselves from time to time participating in, hybridising, and disseminating these myths in different ratios and to varying degrees. Considering the deeply-entrenched influence of these attitudes, is there even the possibility of an

alternative position in our relationship with technology? Building on Simondon's critical analysis, can we today evade the pitfalls of this mythological triptych?

Heterarchy: 'being among the machines'

Simondon suggests getting rid altogether of these master-slave hierarchies that mistake technical objects for slaves, gods, and demons. Because we, humans, Simondon argues, are neither above the machines, nor below them: '[man] is *among* the machines that operate with him. '[19] Now, this is a crucial alternative, a fourth attitude moving beyond the mythological triptych, which acknowledges not just the singular life of technical (and architectural) modalities, but situates their life on equal grounds with ours. Although Simondon does not give a specific name to this alternative attitude in his oeuvre, it is too critical to remain unnamed, so I suggest retrospectively calling it heterarchy (as opposed to the master-slave hierarchy).[20]

Developing a heterarchical attitude toward technical (and architectural) modalities means conceiving of ourselves 'among' them, affirming that they 'operate with us', and acknowledging their modes of existence on equal footing with ours, insofar as one affirms that it is a question of heterogenous capacities, 'as long as one realises that it is a question of different speeds'.[21] For technical (and architectural) modalities are also beings with singular modes of existence; they can also harbour unique potentials and constraints as continuous extensions of life; they are also capable of embodying transfinite capabilities of affecting and being affected by their associated milieu within their finite lifetime; they can also channel the preindividual field of potentiality, undergo ever new individuations unique to their being, and crystallise themselves as persevering yet malleable individual beings. Ontogenetic commonalities render humans, machines, and buildings continuous and on equal footing; ontogenetic singularities render each and every one of us distinct and unique.

Simondon maintains that our relationship with technical (and architectural) modalities is neither vertical, nor unilateral, but reciprocal: in our tempering and hurrying them, we are tempered and hurried by them in return.[22] This means there is a co-determining evolution, a latent intimacy shared across our organic and technical setups. In an often-overlooked TV interview, Simondon goes even further: 'Without an excess of passion or indifference, one must have an attitude of friendship, of society with technical objects.'[23] Such is the heterarchical attitude: a friendship of equals mutually benefiting from each other's heterogeneous skillsets. This means that potencies of flesh, silicon, and stone are not alien to each other. Humans, machines and buildings, regardless of our divergent potencies, regardless of our dissimilar form and content, regardless of our singular beings and different contexts, can and do trespass on preset classifications; we associate with each other in unexpected, surprising ways. Through Simondon's heterarchical lens, we – humans, machines, and buildings – are all singular modes of existence evolving in a reciprocal dance by way of individuating the generativity of life that runs through us in varying magnitudes and speeds.

A 'high degree of technicity': becoming more alive

Simondon argues that, insofar as we can affirm the unique life of technical (and architectural) modalities and acknowledge our heterarchical reciprocity with them, we can construct machines (and buildings) 'with a high degree of technicity'.[24] This is Simondon's crucial move, bridging metaphysics with ethico-aesthetics. It means no longer reducing the life of buildings and machines to predetermined operations, no longer conceiving them from the viewpoint of automation, no longer closing them in on themselves. Rather, Simondon suggests constructing 'open machines' that harbour 'a certain margin of indeterminacy':

Automatism, however, is a rather low degree of technical perfection. In order to make a machine automatic, one must sacrifice a number of possibilities of operation as well as numerous possible usages … The true progressive perfecting of machines, whereby we could say a machine's degree of technicity is raised, corresponds not to an increase of automatism, but on the contrary to the fact that the operation of a machine harbors a certain margin of indeterminacy. It is this margin that allows the machine to be sensitive to outside information. Much more than any increase in automatism, it is this sensitivity to information on the part of machines that makes a technical ensemble possible. A purely automatic machine completely closed in on itself in a predetermined way of operating would only be capable of yielding perfunctory results. The machine endowed with a high degree of technicity is an open machine.[25]

That is, the higher margins of indeterminacy that technical (and architectural) modalities can harbour, the higher the degree of technical perfection they can achieve.

It is no wonder that the canonical modes of architectural practice and thinking have rarely embraced such a heterodox approach. That would mean letting go of our predetermined control, self-proclaimed authority, and unilateral master-slave projections over the vibrant lives of architectural modalities. We have yet to cast away our mythological conceptions, leave behind our technocratic, technophobic, and technophilic attitudes, and stop overlooking the unique existence of architectural modalities. Only then can we reconceive of architectural modalities not just as full of life and on equal footing with ourselves, but as harbouring high margins of indeterminacy and operating within an expanded space of possibilities.

Cedric Price is one of the few architects (and anomalies) in the history of the profession who resisted the canonical given of conceiving architectural modalities as lifeless automata. Rather, he grounded his design ethos on 'the acceptance of the "life" of a building', and developed an idiosyncratic post-war vision congruent with that of Simondon.[26] As though channeling Simondon's plea for augmenting technical indeterminacy, Price once concluded a public architectural lecture as follows:

> But what does worry me, is that the profession doesn't like the idea of uncertainty. If something is uncertain, they call it a crisis... Now unless architecture realizes that *calculated uncertainty* is one of the great generators for what it should be doing in the future, then I think the profession has no future. But I think architecture has.[27]

From the shared, and implicitly cybernetic viewpoint of Simondon and Price, this is the ethico-aesthetic horizon of technical and architectural modalities: becoming more open, harbouring a higher degree of technicity, operating within higher margins of indeterminacy, in short, *becoming more alive*.[28]

Architects for Simondon
Stavros Kousoulas

Why Simondon in a volume dedicated to Stiegler? It is not that Stiegler's oeuvre cannot be examined without referring to the crucial influence of Simondon. More importantly, it is only through Simondon that Stiegler makes sense. Simondon is keen to remind us that sense, first and foremost, stands for directionality: to make sense is to grasp a direction.[29] Without Simondon's critical reformulation of our technological becoming, Stiegler's project is without meaning. In a non-zero-sum game, Stiegler through Simondon and (retroactively) Simondon through Stiegler produce the norms and values of a directing sense that can indeed compel us to engage in our worldly endeavours with neganthropic care.

Why architects for Simondon? Primarily, to be done with the 'philosophers for' plague that torments almost any discourse: philosophy should not be misused metaphorically in any other field than its own. On the contrary, philosophy can and will meet

other discourses on the level of the problems that they pose. Let us not forget Deleuze's declaration:

> It is a question of stealing a word … we will take it, we will pick it up and we will keep it for our own uses but not as a metaphor. We will proceed neither by metaphor nor by metonym. We will proceed by using an inexact term to say the exact thing.[30]

As such, architecture and philosophy can meet each other, without any metaphors or simplifications, on the intensity of their problematic entanglements. Within this problematic field, an amateur 'architectosophy' can emerge, one that produces architectural concepts for philosophical problems and vice versa. In the architectosophical academy, Simondon is a pioneer, always on the limit: between technology and culture, actuality and virtuality, disparation and emergence, a philosopher of humble, material – done in the workshop – production which nonetheless succeeds in being cosmological. This is the plan: to steal Simondonian terms that are architecturally inexact in order to speak in an exact way about architecture. However, I will not speak about architecture in general, but rather about the architectural act itself. Through Simondon and through an architectural reconsideration of his most critical terms, we will see how we can speak of an architecture that depends only on the architectural act and its capacity to be affectively attuned to a shared (informational) meaning.

What does architecture do?

Architecture produces information. Before clarifying that production is not the most accurate term when it comes to information (another Simondonian concept will prove much more adequate), we need to dissociate information from dataism. Information, for Simondon and for architecture, has nothing to do with data, big or small. To confuse information with data is an original sin we have carried since the first information theories, be it those of Claude Shannon, Léon Brillouin or even Alan Turing himself.

Most of those self-proclaimed information theories deal with the transmissibility or the compressibility of data but, crucially, not with the effect of data when it gets to be eventuating; or, in better terms, when it becomes informative. In other words, most information theories are flawed since they do not examine information but rather how information can be calculated and simulated; as such, they are data theories and not information theories.

This is Simondon's first important lesson: information is a universal process that concerns all being and it is the formula for individuation, the sense according to which a system individuates.[31] It is a requirement for individuation, but it is never a given thing to be measured in bits and bytes, words or numbers. In simple terms, information is a difference that can make a difference.[32] In even simpler terms, it is the potential that can energise a potential: what sort of and how much intensity is needed for a transformation to occur. Therefore, information becomes synonymous with significance, with meaning. Nothing is inherently informational, nor is anyone informed in the same way. What matters is neither the emitter, nor the message but a particular state of the receiver that needs to be metastable enough, charged with potentiality in order to make becoming-informed possible. We are in for a surprise though: something is meaningful when it is constrained. As biologist Stuart Kauffman writes, 'constraints are information and information is constraint.'[33]

This is architecture's first important lesson: to enhance life you need to constrain it. This is precisely what architecture has been doing; from the first gatherings around a fire in a primitive cave to a lobster dinner in a Manhattan skyscraper, architecture introduces constraints that reduce our options (from infinity to infinity minus one) and by doing so, ironically, proliferate our affective capacities. With architecture, constraints are acting for what they truly are: synapses.[34] A synapse is a singularity, a junction, an almost imperceptible gap through which an impulse of intensity passes. Beyond the

modal temptation of placing it in space and time, the synaptic moment folds upon the synaptic location, the two being one since both are simply pure action and, consequently, pure relationality: both a material object and a figure of thought, the complementarity of an actual brain and a virtual mind.[35] As Félix Guattari points out:

> A-signifying synapses, which are simultaneously irreversibilizing, singularizing, heterogenesizing and necessitating, push us from the world of memories of redundancies embedded in extrinsic coordinates, into Universes of pure intensive iteration, which have no discursive memory since their very existence acts as such.[36]

This is the reason why synapses should be understood as constraints: they delimit the field of the actual while reinforcing the virtual. In those synaptic passages, architecture turns into something much more significant than the simple construction of space. By producing (and being produced by) synapses that constraint infinity, architecture enunciates ways of life that would otherwise have been impossible: who would ever claim that there is anything natural or even historically necessary to our Manhattan lobster dinners? To introduce novel ways of life, architecture not only produces and manipulates synaptic constraints, but crucially, determines how, when and where those synapses relate to each other. As such, architecture can be understood as a transductive meta-synapse, a constraint of constraints.

There have been many attempts to explain Simondon's use of the concept of transduction, but for practical reasons I will propose a rather simple one: transduction is the operation of moving from the singular to the singular, from synapse to synapse, and in doing so, introducing a new constraint that becomes informative in its own right. In fact, Simondon did not coin the term. He has simply introduced a wider understanding of a concept that was first used in children's psychology, initially by

William Stern, later by Maurice Merleau-Ponty and more extensively by Albert Burloud: when a child is asked why the sun is hot, it will answer that it is hot because it is on fire; transduction is a transfer from particular to particular, a movement from the singular to the singular without any dominant order intervening.[37] In moving from synapse to synapse, information emerges as an enabling constraint that energises a potential. This is why it is not accurate to claim that information is produced; information is transduced whenever singular synapses are brought together. How is it, though, that the singular can come close to the singular and how is architecture (in the very act of architecting) transductive?

Neither form nor function

The first transductive principle is something that perhaps any architect can attest to, despite the stubborn efforts of many reductionists: form and function are not separate. Simondon becomes an ally here: against the traditional hylomorphic schema that opposes matter to form, Simondon claims that any such distinction also implies a binary opposition between structure and operation, or in terms more familiar to architects, between form and function.[38] To position form and function together, Simondon proposes two key terms: modulation and allagmatics. Both terms can essentially be understood as the analytics of transduction, the key process that explains how information propagates through the encounter of the singular with the singular. While modulation and allagmatics are not separate processes, developing a unique account for each can help us grasp transduction.

Simondon develops his concept of modulation as a theory of structures, or in better terms, as an updated theory of genetic structures, since according to him, most of our sciences until now have focused exclusively on studying generic structures.[39] Focusing on the process of moulding, traditionally the hylomorphic example par excellence, where a subject in command dictates matter to assume the form of a brick and then, almost magically, a brick

indeed appears, Simondon makes three crucial points: 1) the clay is neither passive nor inert, but like any other material, it has its own specific affective capacities; 2) the mould is neither an ideal nor an abstract form, but rather a specific material frame that has itself been produced through specific technicities at play; and 3) the craftsman, by increasing the temperature or applying pressure introduces and manipulates singular intensities that catalyse the resolution of the disparate tension between clay and mould to the point that a third individual, a brick, emerges.[40] By bringing the craftsman onto the same plane as the materials and the tools used and therefore proposing an account of material production that he calls technicity, Simondon sheds light on all the tensions and struggles that most architects fail to express when they find themselves in the eye of the productive, designerly storm: we stand much closer to the intensity of the architectural act itself if we understand the architect as a helpmate to emergence rather than as a subject in command.

As architects, now liberated from the tyranny of our supposed agency over matter, we can grasp much more easily the counterpart of modulation; more than that, we can – and we should – effectively introduce an architectural account of allagmatics. Defined by Simondon as the theory of operations, allagmatics focuses on approaching an operation as the conversion of one structure into another.[41] In this sense, no operation, no function designed by an architect can be determined outside of a structure, outside of a form: any function is always immanent to the form that undergoes it and vice versa.[42] Regarding allagmatics, what is astonishing is that it manages at once to dissociate function from all its functionalist reductionisms while simultaneously proposing a proper and true account of it: one can no longer speak of function in an essentialist manner; there is no function in general, there are as many functions as the forms that individuate through them, and in doing so, they enunciate a particular style, a specific 'how' in the 'it is done'. In other words, architectural allagmatics helps us understand that the singularity of architecture lies in the passage from form to function, from structure to operation and vice versa: its capacity to catalyse new ways of life by assisting and intensifying the transduction of novel informational constraints.

Caught in the act
Architecture's allagmatics and the modulational individuation of forms that it implies, stand surprisingly close to the rather obscure deleuzo-guattarian concept of generalised chromaticism.[43] Deleuze and Guattari describe this term as the operation where elements of any kind are placed in a continuous variation and in doing so, new distinctions emerge but none is taken as final, and none is prioritised in advance.[44] Simondon's account of individuation puts forward the same idea: the knowledge of individuation is the individuation of knowledge. Or, said differently, one cannot know individuation, one can only individuate.[45] As such, Simondon rejects any a priori or a posteriori principle of individuation and instead demands that we examine individuation qua individuation in the *a praesenti* of its autonormativity.[46]

To explain what autonormativity stands for, Simondon uses the example of a hiker in a forest. Each step a hiker takes when walking in the woods is its own consequence: it is self-constitutive. The act of walking does not include any intrinsic directionality, any inherent compass that will orient the hiker.[47] Likewise, if the hiker gets lost, it is not possible to depend on any familiar, recognisable exterior norm. For a hiker in the woods, there are 'no norms, no set rule of direction, every step, in every direction, is equiprobable and equivalent at once.'[48] From an infinity of directions, the first step – as the act of hiking-in-the-woods – becomes the norm itself: every step that follows builds on the relation of the step before it, one after the other leading the hiker to the edge of the forest. This is what Simondon has in mind when he claims that 'the norm is derived from the act … Every act, anomic from its absolute origin, valorises itself in an

autogenous fashion because it continues and rests, consequently, more and more on itself.'[49]

In this regard, architectural norms and values, the very logics, practices and ethics of architecture, are not only co-determinable, they are fundamentally contingent.[50] There is no ground for them, except for the ground on which an architectural act territorialises. Subsequently, the act itself must allow for the synaptic passage of an architectural memory that will select a territory and will allow it to express and possess a form that is yet to be invented. On the territory and in the architectural act of expression, the technicities that cause subjects, objects and environments to fold, become the eventuating *a praesenti* of that which is about to come. The architectural act as the event becomes a principle, since it is the moment where the a posteriori becomes a priori. The architect does not perform architecture prior to the technicities that afford it, but in and during their allagmatic operation. As Simondon has it, the architect fulfils the function of the present and maintains the reticularity of its consequences because her life is made of the rhythms of the technicities that surround her and allow her to connect with them and to connect them with one another.[51]

Consequently, architectural information (as the meaning that produces architecture and the meaning that architecture produces) is what allows architecture to further individuate. One step after the other, one architectural act after another, architectural information transductively propagates the constraints that assist the constant effort of coupling the genetic with the epigenetic via detachable, externalised epiphylogenetic technicities. Architectural evolution is not something that belongs to the discursive, a succession of different typologies and ideologies, nor is it the story of an imposed design; architectural evolution is the dynamic individuation of a progressive constraint. What is crucial is that the individuation of this constraint is constantly and continuously open to contingent modulations: the very style of how we do architecture not only determines our current practices but

is also able to rearrange the entire plane of architecture itself. In the architectural act, architecture is not only producing its technicities, its norms and its values. The architectural act allows architecture to rearrange itself without actually erasing itself; it allows an architectural memory of the future to pass through what is at once genetic, epigenetic and epiphylogenetic. Through architecture, paraphrasing one of Stiegler's favourite dictums, we get to know that is not simply the 'what' that makes the 'who'. The style of the eventuating architectural act highlights that essentially it is the 'how' that makes the 'what' that makes the 'who'; if not, why bother climbing a skyscraper built on former indigenous land just to eat a crustacean that has been caught in the depths of the Atlantic?

Kodalak responds

Stavros Kousoulas is obsessed with sense – with directionality, significance, and meaning. Obsession is a necessary ailment for thinking and making. This is one of those trade secrets not taught in school: obsession is the precondition of becoming a philosopher, the prerequisite of becoming an architect, especially if you are to operate at the limit, and it is perhaps this obsessive orientation that constitutes the underlying continuity of both fields. Becoming obsessed with a problematic field, with a conceptual or constructive modality, with something as seemingly abstract as sense, or as seemingly tangible as the sense of the wind and the sun, of the brick and the concrete, is the first step toward generating something new.

The irony of Kousoulas's obsession lies in its meta-position. Obsession is a sensorial tunnel vision, the radical act of losing ourselves in the affective direction we are heading, the extreme emphasis on a singular event at the expense of dimming almost everything else. Given that Kousoulas affirms Simondon's definition of sense as the grasping of a direction, obsession can be deemed as sensemaking on steroids. This is the meta-position full of potentials but also dangers:

Kousoulas is trying to make sense of sensemaking; he is obsessed with obsession itself.

Yet this is not a generic pursuit. That is, Kousoulas is not looking for that one and only transcendent sensation of sense, the master key to grasp any and every meaning, the top-down conception of obsession that would apply to all obsessive pursuits. Rather, he is obsessed with doing justice to the immanent sense of each and every operation in its one-of-a-kind unfolding. There is no sense that is not unique to the events and individuations it accompanies; no obsession that is not laser focused on an irreducible set of singularities. It's no coincidence that Kousoulas allies his thinking with Simondon, Stiegler, and Bateson, as well as with Spinoza, Deleuze, and Guattari, the thinkers with the deepest obsessions of immanent odysseys from one set of singularities to the other without appealing to transcendent generalities and reductive fixes. Kousoulas is obsessed with the singularity of each operation of sensemaking.

It is at this point that the irony of Kousoulas's obsession turns into an elegant delirium with an almost impossible demand. How are we to grasp the sensorial directions of each event, the affective rhythms of each modality that unfold before us, the critical thresholds of each operation with which we find ourselves in constant co-operation? How can we prepare ourselves for every unpredictable encounter, every twist and turn, every erratic fluctuation? There are no pre-set answers, only an invitation to experiment. A direction makes itself felt only when we make ourselves confluent with its inclinations. A gradation is sensed only when we dilute or condense our affective setup so as to reach its levels of saturation. We tend to forget that none of us knew how to swim at the initial moment our bodies met with water. If only for a few moments, we all literally drowned until our bodies learned, on the fly, how to align their movements with those of the sea and *make sense* of aquatic forces, rhythms, and directions. Such is the ethico-aesthetic vision Kousoulas sets forth. We make sense in the immanent thickness of making and thinking, in the obsessive zigzags of pursuing one singular direction after another, in the delirious act of jumping into the water for the first time without knowing in advance how to swim.

This leaves us with a final set of questions already implicit in the direction of Kousoulas's thinking, even though there is at times hesitation, at times generative tension, yet always prompting for further experimentation. What if sense is not simply the vector of our obsession, but the self-obsession of the cosmos? Can sense be the immanent waltz between *Natura Naturans* and *Natura Naturata*, the incessant overlapping of distinguishing singularities with underlying commonalities, the salient agent with which we break our individual casing and learn to become one with the universe? Or as Novalis subtly put it in *Blüthenstaub*: 'We dream of travels through the universe – Is not the universe *within us*?'

Kousoulas responds

A response should always be critical. But we ought to dissociate the notion of the critical from that which conflates it with critique. The latter is always a matter of judgement, of conformity to supposed criteria, the triumph of *doxas*, or worse, *urdoxas*, opinions that think the world of themselves. Instead, we should simply think of the world; and the world keeps individuating regardless of our judgements or opinions. What matters is our capacity to figure out how the world is worlding. This is where the critical attains its value. Going critical, as Alan Turing would have it and as Bruno Latour reminds us, refers to critical mass: a neutron enters a critical sample of nuclear material, causing a branching chain reaction. To think (and respond) critically means to trace the singular (critical) points and moments that can catalyse change. In Kodalak's essay there are (at least) three such instances, that, not surprisingly, work in tandem: gradations, folding and heterarchy.

Manifesting (pun intended) his Spinozist background, Kodalak claims that all that exists shares

a common preindividual field, differing however, by actualising differently differentiating gradations. Indeed, there are three references to difference in a single sentence, but that is what it means to think in terms of intensities and not in terms of shapes and outlines. This is also what Spinoza proposes when he refers to the 'face of the whole universe'. In the original Latin, Spinoza uses the word *facies*, derived from the verb *facio*, to fashion or to make – the making of the whole universe. However, the word 'face' implies a surface continuum that expresses finite modes. Each individual is composed of many other individuals, forming a series of increasing complexity, in the same way that multiple cells and micro-organisms make a fish; multiple fishes, plants, stones and water make a river; multiple rivers, mountains and land make up the earth; multiple planets make the universe and so on: a finite yet infinite continuum where everything pertains to a process of expressive individuation.

But what is it that propels this process? In simple terms, nothing but the process itself, what Simondon calls autonormativity: make, and by making, make yourself. In less simple terms, the individuation of the cosmos is a process of continuous, incessant and unstoppable folding, for better or worse. Bearing in mind the French word for a fold, *pli*, the cosmos individuates by implicating, complicating and explicating at once. Simondon has an intriguing understanding of this process, since he approaches the fold as a membrane: for Simondon, the process of folding is always a liminal one, and it happens on the membrane that is itself neither spatial nor temporal but both simultaneously. In this sense, the membrane is purely experiential, but as an experience that precedes, transcends and determines individual experience. Everything is of the membrane by dint of being on the membrane.

This is where heterarchy comes to the fore. On the membranic folds, any individual is always complicating on the continuous limit of its interiorised past and its exteriorised futurity: the interior as implicated affects and the exterior as explicated encounters. In Kodalak's heterarchy, interiorised affective pasts meet exteriorised futural encounters without a priori or a posteriori categories and taxonomies, but rather on the intensive *a praesenti* of their transindividuation. The transindividual, one of Simondon's greatest conceptual contributions, is by default heterarchical, since the very condition of its existence is neither collective nor individual, neither of the future nor of the past, neither interiorised nor exteriorised, but eventuating: what will always have come first (and we need such complex grammar to express it) is the event of crossing a limit, and in doing so catalysing a qualitative transformation. In other words, it is not that the cosmos is heterarchical; the cosmos *is* because it is heterarchical. This is a crucial reversal and we should be thankful to Kodalak for insisting on reminding us.

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For Simondon's primary literature, see: Gilbert Simondon, *On the Mode of Existence of Technical Objects,* trans. Cecile Malaspina and John Rogrove (Minneapolis: Univocal, 2017 [1958]); *Individuation in Light of Notions of Form and Information*, trans. Taylor Adkins (Minneapolis: The University of Minnesota Press, 2020 [1964]); *Two Lessons on Animal and Man,* trans. Drew S. Burk (Minneapolis: Univocal, 2011 [c.1960s]); 'On Techno-aesthetics', trans. Arne De Boever, *Parrhesia* 14 (2012 [1982]): 1-8; 'The Position of the Problem of Ontogenesis', trans. Gregory Flanders, *Parrhesia* 7 (2009 [1989]): 4–16.

1. For some of the significant secondary literature, see: Gilles Deleuze, 'On Gilbert Simondon', in *Desert Islands and Other Texts, 1953–1974,* trans. Michael Taormina (New York: Semiotext(e), 2004 [1966]), 86–89; Muriel Combes, *Gilbert Simondon and the Philosophy of the Transindividual*, trans. Thomas LaMarre (Cambridge, MA: The MIT Press, 2013); Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford: Stanford UP, 1998 [1994]); Jean-Hugues Barthélémy, *Life and Technology: An Inquiry Into and Beyond Simondon,* trans. Barnaby Norman (Lüneburg: Meson Press, 2015); Andrea Bardin, *Epistemology and Political Philosophy in Gilbert Simondon* (Dordrecht: Springer, 2015); David Scott, *Gilbert Simondon's Psychic and Collective Individuation* (Edinburgh: Edinburgh UP, 2014); Pascal Chabot, *The Philosophy of Simondon: Between Technology and Individuation,* trans. Graeme Kirkpatrick and Aliza Krefetz (London: Bloomsbury, 2013); Arne De Boever et al., eds., *Gilbert Simondon: Being and Technology* (Edinburgh: Edinburgh UP, 2012).

2. An early formative encounter was the publication of Gilbert Simondon, 'The Genesis of the Individual', trans. Mark Cohen and Sanford Kwinter, in *Incorporations: Zone 6*, ed. Jonathan Crary and Sanford Kwinter (New York: Zone, 1992), 296–320. Only for the last decade, however, has Simondon's philosophy been in the process of being addressed in relation to the architectural field: Georges Teyssot, *Topology of Everyday Constellations* (Cambridge, MA: The MIT Press, 2012); Katie Lloyd Thomas, 'Between the Womb and the World', in *Relational Architectural Ecologies*, ed. Peg Rawes (Routledge: London, 2013), 192–208; Stavros Kousoulas, 'Shattering the Black Box: Technicities of Architectural Manipulation', *International Journal of Architectural Computing* 16, no. 4 (2018): 295–305; Stavros Kousoulas, 'Flights of a Spider: A Play of Architectural Limits' in *Communicate, Villard Journal*, vol. 2, ed. Luca di Lorenzo and Giulia Menzietti (Rome: Quodlibet, 2020), 113–26; Muriel Combes, 'On Nature', *Log* 49 (2020): 146–64; Peter Trummer, 'Notes on Mechanology', *Log* 49 (2020): 164–68; Andrej Radman, 'Machinic Phylum and Architecture', in *Proceedings of the 2020 DigitalFUTURES*, ed. Philip F. Yuan et al. (Singapore: Springer, 2021), 3–16; Elizabeth Mortamais, 'What is an Intelligent Building?', in *Organizing Smart Buildings and Cities*, ed. Elisabetta Magnaghi et al. (Cham: Springer, 2021), 125–39.

3. Simondon, *Individuation*, 1*.*

4. Ibid., 3.

5. Ibid.; emphasis in original.

6. Ibid., 173.

7. Simondon, *Mode of Existence*, 21.

8. Ibid., 140.

9. Simondon's primary technological project then becomes tracing the ontogenetic processes of different modes of technical existence and their vibrant lives in different orders of magnitude. With this approach, he formulates a progressive genealogy of different levels of technical objects, arguing that from simpler technical elements and individuals the more advanced technical ensembles of the twentieth century arise. In addition to tracing this lineage of evolutionary differentiation, Simondon distinguishes technical modalities from organic modalities by way of their modes of individuation and causality, and distinct uses of memory, among other things. Finally, Simondon pays special attention not to reduce the singular life of each and every technical object under an essentialist genus or species, and suggests tracing their individual

ontogenesis whenever possible. Having said that, the raison d'etre of this section is not to trace the ontogenesis of a unique technical object, but to provide the very ontogenetic system by which the uniqueness of technical objects go hand in hand with their gradual continuity with other modalities of life, so as to reveal, together with Simondon, that technical modalities are singularly alive.

10. From Jean Le Moyne's TV interview with Simondon, *Gilbert Simondon, Entretien sur la mécanologie*, National Film Board of Canada, 1968.

11. Simondon, *Mode of Existence of Technical Objects*, xv; my emphasis.

12. Ibid., 21, 132, 141–2, 160.

13. Gilbert Simondon, interview in *Esprit* 76 (04/1983): 147–52, translated by Andrew Iliadis as 'Save the Technical Object: Interview with Gilbert Simondon' and available on Iliadis's website, http://s3.amazonaws.com/arena-attachments/2444381/e42a00ab751f-52f09178e22ec821e936.pdf?1531871959.

14. Ibid.

15. Simondon, *Mode of Existence*, 141.

16. Ibid., 15.

17. Ibid., 17, 21.

18. Ibid., 16–17.

19. Ibid., 18.

20. Heterarchy is a conceptual formation whose variations can be found in different modes of metaphysical and ethical thinking, ranging from Zhuangzi's Daoism and Heraclitus's ever-living fire (*pyr aeizoon*) to Spinoza's immanent metaphysics and Whitehead's 'democracy of fellow creatures'. For a more detailed elaboration of heterarchy operating in Spinoza's philosophy, see: Gökhan Kodalak, 'Spinoza, Heterarchical Ontology and Affective Architecture', in *Spinoza's Philosophy of Ratio*, ed. Beth Lord (Edinburgh: Edinburgh University Press, 2018), 89–108; Kodalak, 'Spinoza and Architecture: The Air of the Future, ' *Log* 49 (Summer 2020): 122–46; Kodalak, 'From Architecture Lifeless to Architecture Alive', in *Architectures of Life and Death*, ed. Andrej Radman and Stavros Kousoulas (Lanham: Rowman & Littlefield, 2021), 39–61.

21. Le Moyne, *Gilbert Simondon Entretien*.

22. Simondon, *Mode of Existence*, 18.

23. Le Moyne, *Gilbert Simondon Entretien*.

24. Simondon, *Mode of Existence*, 17.

25. Ibid., 17–8.

26. Cedric Price, 'Concentrate, ' in *Re:CP,* ed. Hans Ulrich Obrist (Basel: Birkhäuser, 2003), 107.

27. Cedric Price, 'Has the Architectural Profession a Future?', AA Lecture (6 March 1975). Price devoted his life to developing ever new design logics of indeterminacy. He incessantly experimented with conceptualising and constructing architectural modalities that embody an open horizon, genetically charged with the capacity to be made, re-made, and unmade in their never-ending unfolding, that is, always catalysing modification and change.

28. It is no wonder that Simondon and Price, as children of a shared post-war context, were both heavily influenced by the emerging science of cybernetics, which promised to approach the lives of 'the animal and the machine' not as distinct areas of inquiry, but as a unified and continuous problematic field. See Norbert Wiener, *Cybernetics: Or Control and Communication in the Animal and the Machine* (Cambridge: The Technology Press, 1948).

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29. Simondon, *Individuation*, 287.

30. Gilles Deleuze, 'Il Senso in Meno, Part 1: Surfaces of Redundancy, Black Holes, Language and Orders', in *Deleuze & Guattari at Vincennes, 1975–76*, trans. Graeme Thomson and Silvia Maglioni, https://deleuze.cla.purdue.edu/seminars/thousand-plateaus-i-deleuze-paris-8-video-links/lecture-01.

31. Simondon, *Individuation*, 12.

32. Gregory Bateson, *Steps to and Ecology of Mind* (New York: Random House, 1972), 453.

33. Terrence Deacon, *Incomplete Nature: How Mind Emerged from Matter* (New York: W.W. Norton & Co, 2012), 392.

34. For a detailed discussion of architecture, synapses and constraints see: Stavros Kousoulas, 'Synaptic

Passages', in *The Future of Indeterminacy International Conference*, University of Dundee, November 2021, https://youtu.be/6CE-KgZ6jkc.

35. Hanjo Berressem, 'Degrees of Freedom: Félix Guattari's Schizoanalytic Cartographies', in *Schizoanalysis and Ecosophy,* ed. Constantin V. Boundas (London: Bloomsbury, 2017), 142.

36. Félix Guattari, *Schizoanalytic Cartographies,* trans. Andrew Goffey (London: Bloomsbury, 1989), 178.

37. Emmanuel Aloa and Judith Michalet, 'Differences in Becoming: Simondon and Deleuze on Individuation', *Philosophy Today* 61, no. 3 (Summer 2017), 493.

38. Anne Sauvanargues, *Artmachines: Deleuze, Guattari, Simondon*, trans. Suzanne Verderber and Eugene W. Holland (Edinburgh: University Press, 2016), 69.

39. Simondon, *Individuation.*

40. Sauvanargues, *Artmachines*, 69.

41. Simondon, *Individuation*, 661.

42. Barthélémy, *Life and Technology*, 204.

43. For a discussion of generalised chromaticism, see: Andrej Radman, 'Generalised Chromaticism: The Ecologisation of Architecture', in *Embodiment and Meaning-Making: Interdisciplinary Perspectives on Architectural Heritage*, ed. Aleksander Staničić and Andrea Jelić, special issue of the *Journal of Architecture* 27 (forthcoming).

44. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus,* trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 97.

45. Barthélémy, *Life and Technology*, 219.

46. David Scott, 'How Do We Recognise Deleuze and Simondon Are Spinozists?', *Deleuze Studies* 11, no. 4 (2017): 571.

47. Ibid.

48. Ibid.

49. Gilbert Simondon, *Sur la Technique: 1953–1983* (Paris: Presse Universitaires de France, 2014) cited in Scott, 'How Do We Recognise Deleuze and Simondon Are Spinozists?', 571.

50. Stavros Kousoulas, Architectural Technicities: A Foray Into Larval Space (Abingdon: Routledge, 2022).

51. Simondon, *Mode of Existence*, 140.

Biography

Gökhan Kodalak is a theorist, teaching philosophies of architecture, nature, and cities at Pratt Institute; an architect, directing design studios at Parsons School of Design; and a historian, who completed his PhD on 'Spinoza and Architecture' at Cornell University. Kodalak's research is awarded by the Andrew W. Mellon Foundation, Canadian Centre for Architecture, and the Institute for Comparative Modernities. His design work is acknowledged with international awards, and exhibited at the Johnson Museum of Art (New York), Antalya Architecture Biennial, and One Architecture Week (Plovdiv). His theoretical discourse has been published in journals such as *Deleuze Studies* and *Interstices*, and in edited collections like *Spinoza's Philosophy of Ratio* (Edinburgh University Press, 2018) and *Architectures of Life and Death* (Rowman & Littlefield, 2021). Most recently, Kodalak served as the Theories of Architecture fellow at TU Delft (spring 2021) and developed a multi-issue editorial project at *Log* (2020–21), unpacking the understudied thinking of Spinoza, Whitehead and Simondon to explore alternative approaches to interfused questions of nature, philosophy, and design.

Stavros Kousoulas is assistant professor of architecture philosophy and theory at the Faculty of Architecture of TU Delft. He studied architecture at the National Technical University of Athens and at TU Delft. He graduated cum laude from IUAV Venice, participating in the Villard d' Honnecourt International Research Doctorate. He has published and lectured in Europe and abroad. He has been a member of the editorial board of *Footprint: Delft Architecture Theory Journal* since 2014. He is the author of the book *Architectural Technicities* (Routledge, 2022) and the edited volumes *Architectures of Life and Death* with Andrej Radman (Rowman & Littlefield, 2021) and *Design Commons* with Gerhard Bruyns (Springer, 2022).