The Architecture of the Virtual

An Encounter Between Cognitive Neurosciences and Architecture

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Abstract. *The philosophies of substance presuppose a subject which then encounters a datum. This subject then reacts to the datum. The process ontology presupposes a datum (firstness) which is met with feelings (second-ness), and progressively attains the unity of a subject (thirdness). It is in this sense that our bodily experience is primarily an experience of the dependence of the actual presentational immediacy upon the virtual causal efficacy, and not the other way round. To put it bluntly, the world does not emerge from the subject, but processes of subjectification emerge from the interactions between the body and world. The chapter is meant to provide the basis for the panel that will stage an encounter between cognitive neurosciences and architecture.*

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Introduction: Between Senses, Inventions and Worlds[1234]

Deleuze famously considered Phenomenology to be within the ancient tradition which placed light on the side of spirit and made consciousness a beam of light drawing things out of their native darkness, as it were ("all consciousness is consciousness of something…"). By contrast, he follows Bergson for whom things are luminous by themselves without anything illuminating them: "all consciousness is something, it is indistinguishable from the thing, that is from the image of light" (Deleuze, 1986, 60-61).

The philosophies of substance presuppose a subject which then encounters a datum, as Whitehead explains in his Process and Reality (Whitehead, 1978, 234). This subject then reacts to the datum. The process ontology presupposes a datum firstness – which is met with feelings – secondness – and progressively attains the unity of a subject – thirdness (Peirce, 1905). It is in this sense that our bodily experience is primarily an experience of the dependence of presentational immediacy upon causal efficacy, and not the other way round (Whitehead, 1978, 267). To put it bluntly, the world does not emerge from the subject (as in Kant) but processes of subjectification emerge from the interactions between the body and world. This is what makes subjectification an ethico-aesthetic condition that is always temporal, intensive and individuating.

Perception is thus clearly an act of subtraction (sieve) and not of enrichment (Read

and Jones, 1982, 297). It entails a selection of a flow of immediate experience out of the potential ground that is pure experience. Interestingly, this is also the current view in cognitive neurosciences: perception is the informational act of delimiting potentials (Friston, 2010 Cf. Gallagher, 2017). This means that there is less in perception than in matter. In the words of François Zourabichvili: "Mind is the membrane of the external world, rather than an autonomous gaze directed towards it" (Zourabichvili, 1996, 195). Quentin Meillassoux explains the underlying principles of such a subtractive theory of perception:

> [I]f, to pass from matter to perception, we must add something, this adjunction would be properly unthinkable, and the mystery of representation would remain entirely intact. But this is not at all the case if we pass from the first to the second term by way of a diminution, and if the representation of an image were held to be less than its simple presence. Now, if living beings constitute 'centres of indetermination' in the universe, then their simple presence must be understood to presuppose the suppression of all the parts of the object that are without interest for their functions [...] Perception does not, as in Kant, submit sensible matter to a subjective form, because the link, the connection, the form, belongs wholly to matter. Perception does not connect, it disconnects. It does not inform a content but incises an order. It does not enrich matter, but on the contrary impoverishes it (Meillassoux, 2007, 72–73).

The poet William Blake wrote: "If the doors of perception were cleansed every thing would appear to man as it is, infinite." According to the neuroscientist Walter Freeman such cleansing would not be desirable at all. Without the protection of the doors of perception we would be overwhelmed by eternity (Freeman, 1991). Besides, it is never necessary to distinguish all the features of an object and it would in fact be impossible to do so (Augé, 2002, 14). According to the founder of the Ecological School of Perception James Jerome Gibson, perception is economical: "Those features of a thing are noticed which distinguish it from other things that it is not – but not all the features that distinguish it from everything that it is not" (Gibson, 1966, 286).

To address this, one needs to return to the (architectural) event itself. In the traditional view, the event is decomposed into a succession of moments, each described by its own stimulus. For the event to be perceived the succession of stimuli needs somehow to be strung back together. A deus ex machina is drafted for the mysterious task of reconstituting the dynamic. By contrast, in the ecological approach the perceiver's task is merely to detect the event as specified by information or signs. The 'information' here is meant in Batesonian terms, not as a code, but as a difference that makes a difference, and it is for this reason that Gibson finds 'tuning in' a more appropriate metaphor than 'computing'. Our bodily units must incorporate within themselves aspects of the world beyond themselves (umwelt).

There is an intimate connection between Senses, Inventions and Worlds. In contrast to phenomenology where the problem of construction of signs becomes a problem of 'bestowal of meaning (Sinn)', in Deleuze's account it is sense that is productive of signs and their meanings (Deleuze, 2007; Deleuze and Guattari, 2004, 124). This distinction between sense and meaning is not purely academic nit-picking, as Colebrook cautions: "Sense is that orientation or potential that allows for the genesis of bodies but that always, if extended, would destroy the bordered organism" (Colebrook, 2010, 37). The life form itself becomes an image among other images. This special image – a Bergsonian 'center of indetermination' – acts as a filter creatively selecting images from the universal flux.

Our ability to distinguish the essential from the inessential is at the basis of this zeroing in. According to Antonio Damasio, the 'sterile' combinations do not even present themselves (Damasio, 1994, 180). However, on no account does this mean that we look on and grasp a specific aspect of the world or environment as detached and fully formed beings: "[A] being is what it is because it is already an expression of every aspect of the whole. [...] Organisms are possible because they concretely embody potentialities – the power to eat, to see, to move, to think – that could have been actualized differently, and that can even be counter-actualized" (Colebrook, 2010, 84, 110). According to Colebrook, a (fully) bounded organism is but an organicist fantasy. So is bounded architecture, and that is why it would make more sense to treat it as a (semi-permeable) membrane(s) (Teyssot, 2008, 166; Clark, 2017). In other words, architecture is cognition. The question then becomes how one knows what to subtract. Is it a matter of measurement (of the extensive) or an issue of intuiting (the intensive)? More so, what is the role of architecture in perceptual subtraction and what is the role of subtraction in the production of architecture?

The Four Pitches for the (Virtual) Panel on the Virtual

Karan August: Atmospheres

The desire to frame what is with a human vantage often pulls thinking to prioritise the importance of analytical minds to an hedonistic extent, rending impossible the capacity to conceive systems of relating matter without a perceiver. Yet Atmosphere once grasped the virtual vitality of just that; not beyond the perceiver, but irrelevant to. The trick of good architecture is that an object can manifest relating parts within its systems; both those attending and those inherently able to join. Matter's mission is not to be formed by biped, biocular, unidextrous creatures hoping to profit off cleaver jesters. However matter's disadvantage resinates with those who's capacity to influence their formation, be it physical, psychological, political, or prudential, is limited by context existed through networks of reinforced relations of power. That which warrants manifestation regardless of observation persist, while meaning placers peripheral glances fail to grasp the acts own meaninglessness, until that which manifest shows what can not be unseen, that which may be tangential though not incidental, affording atmosphere to shift.

Akin to a thought experiment gone awry, herd hysteria calls on seemingly familiar situations to warrant new norms. Prior signifiers in our shared surroundings and behaviours shake their projected historic meanings, while material relations remain. Is the parting of habitual patterns with newly forced rhythms what calls those to see an unfamiliar Atmosphere that has always been possible? Or are unstable material relations unbinding forced formation, affording fresh ranking of which possibilities most easily actualise? Our time is both of our making and that which we find ourselves within. If we may grant the insignificance of our role as makers of space, perhaps we may more freely engage the persistent capacity of what is to actualise. The vibrancy may overwhelm, but perhaps it will welcome more to join in the care of our collective atmospheres.

Zakaria Djebbara: A Virtual brain?

Not much different from Bergsonian process philosophy, which resonates through Whitehead's and Deleuze's philosophy, recent advances in cognitive neuroscience suggests that the experience of the world, including sensing ambiances, rests on the interaction between an intuitive and practical knowledge in the body and its environment. The integrative use of sensorimotor patterns in cognitive functions has recently

provided a novel framework for cognition, breaking from the Cartesian non-physical interface conception of mind. The Bergsonian term 'virtual' refers to the qualitative multiplicity and continuity in the unfolding of time, which is strikingly similar to recent theories of cognition when applied to action. It reflects the creative process of enacted sensation, corresponding to a cascade of motor-related prediction errors in neuroscience. By casting action as motor-predictions, the negation, i.e. error detection, becomes the essential motivator for enacted sensation. Considering process philosophy, perception and action are inseparable as they converge in their functional unfolding in sensing. As the genesis of the virtual reside in negation and the sensed being entirely positive, the process of enacted perception flourish between object and subject. Once action is grasped in its complex context, it is clear that any action unfolds solely under the virtual, that is, a directed multiplicity. In turn, the virtual is never conceived without a complex range of affordances relative to the "type" of action and perception, e.g. how, by what means, and under what circumstances did she do it? Ambiances can thus be indirectly addressed by questioning these layers of action—however, the answers will only provide a peek into the complex trajectory ex post facto. Approaching sensibility via cognitive neuroscience and the virtual provides a view into the sensing of ambiances as reflected in the inhibitory cascade of motor-related prediction errors. The difficult question to this extent relates to the genesis of the directed multiplicity within the virtual during becoming.

Stavros Kousoulas: It Does not Fold Because You Say So

Inherited from Deleuze, the concept of the fold has a long history in architectural theories and practices. Unfortunately, this history does not approach the fold as a primarily architectural problem. The fold remains a purely philosophical concept that conventionally has had a merely metaphorical use in architecture. The value of the fold, of the membrane, when examined as a proper architectural problem and not merely as formalist gesture, is that it makes the architectural world, the architectural subject and all the binaries that they presuppose, collapse. In the membranic limit, the metastability of a folded architecture expresses the forces, the milieus and the territories that produce any architectural subject; in the thresholds of the fold, the vibratory affects of rhythms and their symphonic composition pulsate in order to produce surpluses of energy that can resolve the potentials of an architectural becoming. Space and time, what produces architecture and what is produced by it, no longer stand opposed but individuate along the architectural technicities that we need in order to individuate. As such, the membrane expresses the singularity of a given individual and its territory, as well as the universality of the forces that are in constant play on it. This duality, an impersonal personalisation and a singular universalization, as expressed in the membranic event, has two consequences. Firstly, one can examine an individual and its territory as a singular product – avoiding any form of essentialist, typological or hylomorphic thinking. Secondly, it can elevate the informational and affective agency of the event on a level that is independent of the singular assemblages that expressed it. In doing so, we can address affects and information as autonomous from their actualizations. In other words, we can approach the virtuality of the pre-individual refrain without the need of a method: we can intuit it.

Andrej Radman: Logic of Sense

The concept of the virtual opposes the logic of law with the logic of event: Nothing is; everything becomes. Sense is not given. It is the product of complex processes and it has to be conceived as sense-effect, or better as sense-event, that subsist as real yet incorporeal. In a nutshell, the material cause is tied to the (Stoic) incorporeal effect, which will in turn operate as a quasi-cause. The concept of quasi-cause (a.k.a.

dark precursor) prevents regression into simple reductionism. It designates the pure agency of transcendental causality, the difference that relates heterogeneities. The Stoics show that things themselves are bearers of ideal events which do not exactly coincide with their properties. Any (actual) incarnation may in fact be seen as a (provisional) 'solution' to the problem posed by the virtual the same way that the eye is the solution to the problem of light. This is what makes the virtual not ideal but problematic. Guattari's appropriation of Joyce's term Chaosmosis is quite fitting for teleodynamic processes where everything seems to fold upon itself. However, this logic (if sense) must not be reduced to the Manichean opposition between the quantitative actual and qualitative virtual. The difference between the difference in degree and the difference in kind is not reducible to either. In the words of Deleuze from Difference and Repetition: "Between the two are all the degrees of difference – beneath the two lies the entire nature of difference in other words, the intensive." And indeed, for Deleuze it is the intensive nature of difference – which binds the virtual and actual, the ideal and sensible – that supplies catalysis for individuation.

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