

Scientific and Medical Network: Continental Meeting 2016

(Rome. Friday 29th September)

Beyond mechanism and finalism: Alternative accounts of becoming in Bergson and Jung.¹

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Abstract:

In this paper I discuss Henri Bergson's (1859-1941) contribution to convergent evolution in his account of vitalism (*Creative Evolution*; 1907). He developed an alternative conception of external finalism beyond conceptions of internal (teleological) finalism (Immanuel Kant; 1724-1804) and external (teleological) finalism (notably advanced by Gottfried Leibniz; 1646-1716) which contributed to debates in the emerging milieu of holistic biological thought in the early twentieth century as a reaction to the prevalence of reductive mechanism and linear spatio-temporal causality. Bergson's conception of the *élan vital* and his temporal notion of duration (*durée*) not only influenced philosophical thought but also the science of Ilya Prigogine (1917-2003) who's far from equilibrium thermodynamics emphasised the fundamentally irreversible nature of time and creativity within the emergence of organic and non-organic structures. Bergson's account of evolution and temporality has a profound effect on the philosophy of Gilles Deleuze (1925-1995) as well as the conception of libido (psychic energy) advanced by C.G. Jung (1875-1961), taking this notion in a very different direction from Sigmund Freud. Considering Bergson's contribution to an alternative conception of causality which privileges the interconnectedness of all "Life", Deleuze's account of the "virtual" and Jung's notion of "a-causality" in his work on synchronicity might serve to show how the immanent and creative unfolding of "Life" is not and should not be restricted to transcendent structures which undermine the unforeseeable in advance. As such a critique of Teilhard de Chardin's notion of the Omega Point will be offered as well as a re-conceptualisation of Jung's notion of the *Unus Mundus* (one-world) from a Bergson-Deleuze perspective. From a philosophical perspective this critique deconstructs notions of unity which privilege a form of identity whose form is then given metaphysical depth as 'final cause' or 'first principle'. As Bergson said: 'Finalism thus understood is only an inverted mechanism [...] It substitutes the attraction of the future for the compulsion of the past' (*Creative Evolution*, 1998, 39).

Introduction:

In 1907 French philosopher Henri Bergson published *Creative Evolution*. In it he offered a critique of prevailing ways of explaining evolution at the time; mechanism and teleological finalism. His aim was to offer an alternative to these explanations; explanations which he thought were one and the same. What was similar about these explanations was that both tended to logically stall the possibility of a truly creative evolution, that is, an evolution of the genuinely novel, the unforeseeable, the new. Although Bergson's work has been labelled neo-vitalist - usually revolving around an interpretation of his concept the *élan vital*; a vital force which exists outside matter and living matter but which supervenes on them both - this interpretation is incorrect and if Bergson is a vitalist he is one in a very unique sense.

¹ DRAFT of September 2016: not for citation in any publication

In the context of this conference I thought a discussion of Bergson might be apt given that his attempts to account for the positive efficacy of the effects of time on creative becoming might be lost in accounts of retro-causality and the logic of “convergence”. This may seem strange, after all Bergson died in 1941 and his work that I draw from is now over one-hundred years old. Yet the influence of his work on contemporary continental philosophy has been steadily growing since the 1990’s particularly via its resurrection in the thought of Gilles Deleuze. In scientific circles, Bergson’s thought had a direct influence on the emergence of far-from equilibrium thermodynamics, and its “father” Ilya Prigogine (1917-2003) explicitly noted Bergson’s ideas on time and energy in his early studies of dissipative structures. I will mention some of this but all too briefly.

I also allude to my own interests in the thought of C.G. Jung and particularly his philosophical education and the influence of German idealism and Romanticism in his work. Jung’s highly inconsistent use of philosophical ideas to lend legitimacy to his own ideas and, sometimes, to offer explanatory support for the structure and dynamics of the psyche, a psyche which is ultimately cosmic in scope according to his later works on synchronicity, evidences aspects of a kind of vitalism, often teleological and finalistic in character but also somewhat Bergsonian as we shall see. The connection between aspects of the philosophy of Bergson and the thought of Jung has been considered in the literature; (Gunter 1982, Shamdasani, 2003, Kerslake, 2007, Pilard, 2015).

The extent to which Bergson and Jung were engaged with scientific debates in the late and early nineteenth century, concerning ways to understand evolution in biology, is not always given sufficient attention. Whilst Bergson was directly engaged in disputes concerning ways to account for life beyond mechanistic reduction, Jung’s exposure to these debates occurred at university and formed a very important part of his education. Jung would later restrict these accounts to the domain of psychology (Analytical Psychology) as this became his chosen field of enquiry. Whilst Jung avoided his own formulation of metaphysical principles that might have allowed him to escape from prevailing mechanistic conceptions of energy and time, opting instead for established finalistic doctrines of change, Bergson confronted the classical laws of thermodynamics and near-equilibrium studies on energy that would eventually herald a new thermodynamic paradigm.

The following questions will bear consideration in what follows:

1. What is vitalism?
2. What was Bergson’s critique of mechanism and finalism
3. Was Bergson a vitalist?
4. What kind of a vitalist was Jung?

In seeking rudimentary answers to these questions I will also attempt to elucidate where Bergson’s criticism of mechanism and finalism might also loosely apply to notions of “convergence” or final unifying causes. Having no familiarity with the work on Fantapiè what little I know of retro-causality is derived from sources whose authority remains dubious. I must also apologise for including little on the thought of Deleuze in this paper. Needless to say much of Bergson’s thought is synonymous with that of Deleuze.

1. What is vitalism?

In his biological writings, Aristotle (384-322 BC) postulated several kinds of immaterial souls (*psyche*) to explain the properties of living organisms, especially the fact that the living organisms seem to carry their own *telos* (goal or purpose) within themselves. (Esfeld, 2004, 3). Immanuel Kant (1724-1804), whose ideas had a profound influence on Jung and all of nineteenth century German philosophy, thought that some biological phenomena do not admit of mechanistic explanations. It is the cognitive limitation of human reason, according to Kant, which forces us to treat certain natural phenomena as if they were driven by an immanent *telos*. By the time of the late nineteenth century, whilst Jung was studying at Basel and Bergson was engaging directly in biological debates, a neo-vitalism had emerged largely associated with the work of Hans Driesch (1867-1941). Driesch claimed to have "proofs" for the impossibility of mechanistic explanations of life processes. These alleged proofs were based on Driesch's own experiments on the regeneration of lost body parts in certain marine invertebrates. Driesch explained such phenomena by postulating an immaterial factor, which he termed "entelechy" (after Aristotle's term *entelechia*, which is derived from *telos*). Driesch also postulated the notion of the 'psychoid' which, according to Ann Addison was significant for Jung from an early point in his thought although its formal appearance in his work occurs later, in 1947, in his *On the Nature of the Psyche*. Driesch's entelechy was purposive and he claimed it could not be reduced to a form of energy as Driesch, (just as Jung would claim in his work on synchronicity) considered all energy as quantifiable and therefore mechanistic. Hence an immaterial and somewhat mystical "force" would fill in as a non-mechanistic principle of emergence in organic life. This is vitalism, the assumption that matter in itself is inert and for there to be biological complexity, living matter requires some animation by a vital principle which has determined in advance what the "whole" organism is to become.

2. What was Bergson's critique of mechanism and finalism?

Before elaborating on this I want to remind you that I have claimed that Jung was a finalist or rather a teleological finalist for most of his life. Jung's philosophical education in nineteenth century Romanticism is implicated in his teleology from an early period during which many of his mature ideas began to blossom. This is most evident in his *Zofingia Lectures* of 1896-1899 which have been studied in the literature by Addison, Paul Bishop and Marilyn Nagy among others. These lectures evidence the extent to which Jung was steeped in the biological neo-vitalist debates of the late nineteenth century and that his response was to "side" with the teleological and organicist writers of the period. One source of inspiration for Jung's early vitalism in these lectures was Schopenhauer (1788-1860) whose notion of the Will was equated by Jung with the "soul", an early precursor of "psyche" in his thought. Although Schopenhauer had claimed the Will was "blind" and by implication lacking in purpose, Jung's reading of Schopenhauer had been mediated by his reading of Eduard von Hartmann's 1846 work *The Philosophy of the Unconscious*. In a seminar in 1925 Jung elaborated on this mediation;

von Hartmann formulated Schopenhauer's ideas in a more modern way. [Jung] states he followed Hartmann, in contrast to Schopenhauer, in attributing "mind" to the unconscious. (Shamdasani, 2003, 199).

In his "Thoughts on the nature and value of speculative enquiry" in the *Zofingia Lectures* from almost thirty years before Jung said that;

“Schopenhauer describes instinct as a stage in the objectification of the Will. So does Hartmann, adding the absolutely essential element of purposeful intention” (ZL, 182 in Shamdasani, 199)

In their studies Addison and Nagy have both claimed Jung’s approach was teleological and that this was evident from an early point in Jung’s thought. Addison writes that:

right from the outset and even as a student, Jung espoused in his psychology a purposeful, i.e., a teleological, approach directed towards goals of wholeness in the future, and in this he displayed the foundations of some of his much later ideas with their vitalistic basis. (2009, 128)

Nagy likewise claims that ‘the immediate philosophical source for Jung’s theory of individuation and the self is in vitalism’ (250). Although Jung seeks to distance himself from vitalism in the immediate break with Freud, evident no more than in his works on energy in 1912 and 1928 respectively, these stand out as rather curious attempts to align his new de-sexualised notion of libido, or psychic energy, with the two laws of thermodynamics as understood at the time. It is even more curious that throughout 1912 and in between to 1919, Jung appears to have been influenced by Bergson’s notion of the *élan vital* when distancing his new notion of psychic energy from Freud’s (See PAY Gunter, 1982 and Shamdasani, 2003, 244). Although I use the term “curious” this should be seen taken context given that after 1907 Bergson was virtually an intellectual celebrity in Europe and the United States and, in aligning his notion of psychic energy Jung would increase the legitimacy of his emerging analytical psychology away from Freud’s established psychoanalysis. Jung’s references to Bergson are dropped in the 1920’s as Bergson’s thought fell out of fashion. What seems clear is that Jung’s favoured teleological position meant that he could not have fully read or perhaps understood Bergson’s critique of finalism from *Creative Evolution* despite citing Bergson’s work so approvingly just after the break with Freud.

With this we turn to Bergson’s criticism of mechanism and finalism incorporating his notorious concept of the *élan vital* into the mix. Bergson uses the *élan vital* as an ‘image of thought’ (Ansell-Pearson, 2002, 135-139) to help us think beyond the problems that he identifies with mechanism and finalism. The following passage is Bergson’s synopsis of his critique:

finalism thus understood is only an inverted mechanism. It springs from the same postulate, with this sole difference, that in the movement of our finite intellects along successive things, whose successiveness is reduced to a mere appearance, it holds in front of us the light which it claims to guide us, instead of putting it behind. It substitutes the attraction of the future for the impulsion of the past. (*Creative Evolution* [hereafter *CE*], 39).

Bergson’s problem with mechanism in biology (and by this is meant the Neo-Darwinism of the time referring to August Weismann’s view ‘that the organisation and evolution of living forms could be explained entirely through the “omnipotence of natural selection”’) (in DiFrisco, 2014, cited Wolsky and Wolsky, 1992, 159) was that natural selection performed the only explanatory principle for the activity of life in which time has no positive efficacy in and of itself. Bergson remarks that;

the essence of mechanical explanation, in fact, is to regard the future and the past as calculable functions of the present, and thus to claim that *all is given*. On this hypothesis, past, present and future would be open at a glance to a superhuman intellect capable of making the calculation.’ (*CE*, 37).

Pausing for a moment, perhaps we should consider these remarks in light of retro-causality, or reverse-causality. Are not causality and its reverse logically equivalent? Do they not presuppose that, in Bergson's terms, the whole is "given" in advance and that it is impossible for any true "evolution" to take place? In one sense to posit a notion such as retro-causality compels us to treat the future event as if it has already happened, as if it is already given and then retrospectively made to account for the present in light of it. For Bergson this would be a habit of the intellect, an effect of spatializing time which may be of great use for practical purposes, for navigating and manipulating our environment, but as a metaphysics of "real" becoming it is both limiting and inadequate.

Finalism fares little better in Bergson's treatment. As we have seen he referred to it as an "inverted mechanism" as it likewise pictures the organism 'as an aggregate of parts, only to suppose a coordinating principle over and above the parts which is responsible for their organisation and evolution' (DiFrisco, 2014). Once again time has no positive reality; everything is given prior, not in the past but in the future state which is its *telos*. The concept of a goal is central to this and I would suggest that "convergence" is a surrogate term for this.

Why might we posit "convergence", "love", the "omega Point"? This external principle, a transcendent explanatory principle logically seems to serve a stalling of open becoming and an avoidance of thinking the creativity of life as an open indetermination. In Jung's synchronicity one's "convergence" with the *unus mundus*, a unity, or One, implies that time has no positive efficacy, that the One is without time and therefore that one is converging with that which has always been. Is this not also a logical consequence of Teilhard de Chardin's (1881-1955) Omega Point? To "converge" on a unity that was a first principle but lost implies a lack of adequacy between that which is given and that which participates in the given. This view of participation is an ancient one, whose formalisation is most evident in Platonism, Neo-Platonism and medieval Scholasticism. It is also evident in the work of Jung, de Chardin and Paul Tillich (1886-1965) among others. In Jung's psychology, argues John Dourley;

Without the realization that the principles of participation and identity are operative in Jungian psychology it remains largely unintelligible and its power of transformation is eviscerated. (2015, 51).

The desire to recover a lost unity in time reduces time to a 'moving image of eternity'. There is little role for a positive conception of time in such accounts and ethically one might question this ancient tendency of the intellect to make of past, present and future mere abstractions, a modern equivalent of which was Einstein's cosmological constant, an idea he was eventually forced to abandon albeit with reluctance.

An implicit hint of Parmenides (515-445 BC) can be discerned in this thought of "convergence". Keith Ansell-Pearson, notable scholar on the thought of Bergson and Deleuze has suggested this is a logos of;

Western civilisation [...] a civilisation based on science, notably the science founded by Copernicus, Galileo, Kepler, and Newton, and *this science is a continuation of the Greeks*. And what can be said of Newton in this regard can be said of Einstein who in his thinking of space-time is a Parmenidean. (2002, 44)

Likewise Karl Popper argued that the idea of Parmenides 'reaches 'its highest fulfilment in the continuity theory of Einstein'. (1998, 1965).

My all too limited appraisal of cursory literature on retro-causality also drew concerns given language such as the following:

Time does not pass, and the past and future are as real as the present [...] If time really is like space, then shouldn't events from the future influence the present and past, too?

But should we actually be troubled by the idea of information from the future traveling into the past? After all, mathematically, entanglement in time is identical to entanglement in space, and we have no qualms with information traveling in all directions across space.

(By George Musser, "The Quantum Mechanics of Fate" January 30, 2014:

<http://nautil.us/issue/9/time/the-quantum-mechanics-of-fate>

A lost unity presupposes an identity which would, if capable of being recovered reveal that upon which the relationship between the world of perception and the world in itself depended. Yet this guarantee between the infinite and the finite, undone by Kant in his Critique of Pure Reason (1791) leaves no room for a conception of creative transcendence in which the conditions of experience are not given in advance in the form of an Ideal identity or as general conditions of possibility, but rather are given a genetic determination as emergent with experience itself. It is a genetic account of divergence (and occasional convergence) in evolution that Bergson's seeks which requires taking a path beyond the reduction of time to space evident in both mechanistic and finalistic accounts of change. Shortly we shall see what this genetic account amounts to given Bergson's account of matter.

Bergson's critique of finalism distinguishes between two types, internal finalism and external finalism. Internal finalism is evident in Kant's teleological conception of causality hypothesised in his *Third Critique* of 1790. It is also evident in Hans Driesch's entelechy. Bergson takes internal finalism to task for presupposing that there is a "whole" organism that can somehow be localised. Bergson complains that no localisation of a whole is possible, since there is no truly discrete individual among the levels of organisation. Among 'cells, tissues, organs, organisms, populations, and species an entelechy' directed by the elemental agent Driesch called the "psychoid", 'cannot be assigned at any one level, so that, for example, organs would exist for the sake of the organism' (DiFrisco, 2014). The doctrine of internal finality 'naively assumes that the organism exists as a self-subsisting single whole' whilst instead it is 'the elements of what is taken to be a unitary whole possess a true autonomy.' (Ansell-Pearson, 2002, 134). Bergson also criticises what he calls radical external finalism evident in the pre-established harmony of the thought of Gottfried Leibniz (1646-1716). In this instance beings simply realise a programme that has been previously arranged assuming that time is without effect. Hence, external finalism reduces time to little more than the execution of a programme.

I make these points partly with Jung in mind given that he adopts Driesch's term "psychoid" in 1947 and given that Leibniz features as one of Jung's "forerunner's" to the idea of synchronicity in his 1952 essay of the same subject. Having said this, two issues emerge which dislocate Bergson's criticism of finality from Jung's use of it. Firstly where Jung only speaks of finality with respect to the

psyche as a whole, it is very hard to apply Bergson's critique of biological unitary wholes to it. Secondly, Jung's employment of the term 'psychoid' differs from that of Driesch because he conceives of the relationship between matter, instinct and archetypal image as operating along a continuum suggesting that matter itself is this dynamic substrate. Interestingly it is in 1919 that Jung first formulates his theory of archetype within a Bergsonian context, one often overlooked by scholars (see Kerslake, 2007, 86-92). Jung returns to this context in 1947 where he elaborates on it in terms of his conception of the psychoid. The idea of a spectrum could have come to Jung from William James (1842-1910) and FWH Myers (1843-1901), (see Shamdasani, 2003, 260-1). Yet Bergson also uses the notion of a spectrum in his *Creative Evolution* (360) when characterising an intuition of the "flux" of matter. Bergson's undoubtedly drew this from William James but Jung may well have drawn it from Bergson. The important point to note is that Jung moves beyond traditional vitalism when he gives to matter a far greater dynamic remit than in his works hitherto, a point not lost of physicist Wolfgang Pauli who compelled to Jung to elevate the status of matter equal to spirit in their dialogue concerning quantum physics and a-causality in synchronicity.

Bergson's *élan vital* is conceived as a primordial impulsion or simple virtual responsible for the organisation of living things. Whilst this is a simple unity, it is not represented as the effect of a *telos* that draws life toward a definite future state, but rather as the effect of a common *élan* coming from behind. Time is given positive efficacy because the complex pathway of release in living organisms cannot be determined in advance. Where "convergence" might posit a common aspiration, Bergson resolutely opposes this finalism of attraction-causality. All life has this impulsion in common and this accounts for the possibility of convergent evolution across very different phyletic lineages. One commentator has described the impulsion as a 'a pre-established disharmony', one that denies to diverging species any 'immediate consanguinity, transitive filiation, actual "descent" between them.' (Jankelevitch, 1959, 122). Deleuze and his collaborator Felix Guattari will modify this somewhat when they introduce the idea of transversal communication between different lineages which serve to scramble metaphors of evolution in terms of genealogical trees.

They variously describe this phenomenon of transversal communication as 'a parallel evolution', as 'machinic becomings', as 'rhizomes', and so on. These are modes of becoming which cut across arborescent schemas of evolution that move from the least to the more differentiated. (Ansell-Pearson, 1997b, 225).

In this model "convergence" is not a product of a pre-determined direction, but of something living matter shares and which might result in common structures such as the eye if similar evolutionary problems are encountered across very different environmental contexts. With the addition of transversal communication the extent to which something may become organisationally closed is limited, and new dimensions of a porous openness are fostered. In contrast to the arborescent schema of the evolutionary tree, convergent, a-parallel and transversal forms of communication in evolution refute its movement as a series of stages, positing in place of the human phylum a machinic phylum which serves to show how;

systems from the biological to the social and technological are made up of assemblages, complex foldings, and movements of deterritorialisation which serve to cut across and complicate their stratification. (Ansell-Pearson, 1997b, 225)

3. Was Bergson a vitalist?

No. But to explain why is no easy task. If vitalism posits the separation between inert matter and living matter in terms of substance then Bergson seeks to avoid this dualism. Bergson does not oppose life to matter. Neither is he an organicist, that is he does not rule out some reduction of life to its material substratum. Rather, Bergson regards matter as “fluxes” or “processes” and his position, according to DiFrisco, can better be ‘described as an encompassing energeticist or thermodynamic view of nature, in which processes or fluxes have a more fundamental status than substances.’ (2014).

A material substratum conceived in terms of flux distinguishes between living things and material things as differences of degree rather than in kind. There are two terms in Bergson’s work which are important to understanding how he arrives at this curious view of matter as flux and these are the *élan vital* and duration (*durée*). It is in the third chapter of his book *Creative Evolution* that he details how the dualism that was evident in earlier chapters is to be resolved.

For Bergson matter qualitatively changes from cause to effect under the action of dissipative forces. Unlike classical mechanics he does not regard causes as being symmetrical to their effect. He rejects the reduction of all forms of energy to mechanical energy and stands at odds with the classical conception of near equilibrium thermodynamics of his time. He fully embraces the irreversibility of time implied in the law of entropy, a law that he refers to as ‘the most metaphysical’ (*CE*, 243) because of its qualitative character. It might be noted that Jung does not challenge the classical conception of energy which is one reason why he rejects energy in any explanatory account of synchronicity (See Cambray, 2009, 412).²

More importantly for Bergson, his energeticist conception of matter exists along a ‘continuous spectrum of different degrees of “tension” or “extension”.’ (DiFrisco, 2014) Matter tends in two ways, towards inertial torpor or relaxation, and contraction. The point here is that matter is a tendency in these directions and never fully realises either. Hence matter is not eternal or created all at once by an external agent, it is created as different degrees of tension and relaxation. These tensions exist in a cosmic duration of many different levels each standing for a different intensity of duration. Living matter would be “higher” within the hierarchy of duration, capable of contracting other levels of duration and thereby relating to the future with more means of action at its disposal. At its lowest level of relaxation Bergson likens matter to the movement of vibration, quality itself, vibrating internally (*Matter and Memory*, 1896, 1908/1991, 202). Contracting vibrations gives rise to

² According to Joseph Cambray, ‘Jung’s argument [about energy] is based on the laws of thermodynamics articulated in the nineteenth century as they applied to closed or complete systems. Scientific descriptions of energetics in open systems far from equilibrium were not available in Jung’s day. As Schneider and Kay point out: “The common statements of the first and second law [of thermodynamics] are that energy is conserved and entropy increases respectively. Unfortunately, entropy is strictly defined *only for equilibrium situations*. Thus, these statements are not sufficient for discussing non-equilibrium situations, the realm of all self-organising systems including life”.’ (2002, 412). In a more recent work Cambray has reiterated these comments arguing that: ‘In his synchronicity essay Jung saw meaningful coincidence as being inexplicable and acausal because for him they lay *outside* of energetic phenomena. With access to complexity theory, this can be *reconsidered* in the light of the energetics of open systems far from equilibrium, capable of developing CAS [complex adaptive systems]. Such a perspective was unfortunately in its infancy at the time Jung was writing his essay on synchronicity.’ (2009, 46).

something which shares the same substratum but which is a difference of degree from more fully relaxed vibration.

‘Our perceptions of light, for instance, should be taken as durational, because they contract quantities of physical vibrations into condensed units of colour.’ (Kerslake, 2009, 231).

Hence there is no world ‘in itself’ behind appearances, contra Kant. We could perceive the vibrational quality of matter in “descent” if we did not condense

enormous periods of an indefinitely diluted existence into a few more differentiated moments of an intenser life’. (Bergson, 1912, *The Creative Mind*, 184, in Kerslake, 2009, 231).

Instead of the familiar, spatialized distinction between the ‘veil’ of appearance and the reality ‘underneath’, we are asked to conceive of our subjective perceptions as derived from physical reality itself, but in a state of contraction. [...] If one wanted to remove the veil of Maya, one could not do it by sweeping aside a curtain, but by slowing perception down to the molecular level [...] fragmenting into a flux of loosely connected vibrations.’ (Kerslake, 2009, 232).

The relationship between matter as a tendency to “descent”, to “unmaking”, “relaxation” and other terms Bergson uses for this movement, should be associated with the law of entropy and the movement towards equilibrium and final heat-death globally. The movement of ascent, contraction and so on is the *élan vital*. Together the two constitute a cosmic duration, an intensive duration proper to the universe. The movement of contraction or ascent is not a vital force as it is not opposed to matter. Rather it is the splitting up of different tendencies of instinct and intelligence, different contractions and excitations of matter found in plant and animal which occurs away from equilibrium exhibiting 1) irreversibility in principle, 2) macroscopic indeterminism, 3) holism and 4) the multiplication of slight influences in mass phenomena, (see Gunter, 1991, 166). For Bergson there are regions of local or microcosmic growth in material organisation which do not arrest the global direction of entropy, indeed it is accelerated in proportion to increases in counter-entropic material contraction. His argument in *Creative Evolution* is that energy in its contractive, intensive state, a state we usually associate with organised levels of living matter, is a ‘storing up of the solar energy, the degradation of which energy is thus provisionally suspended on some of the points where it has been poured forth’ (246) Those points of storage and accumulation are like energetic reservoirs with varying powers to canalise potential energy ‘in variable and indeterminable directions’ (*CE*, 255). Global entropy remains a fact in Bergson’s thought but it is complemented by a theory of ‘creation of structure’ lacking in classical thermodynamics.

An open system operating away from equilibrium avoids essentialising the role, for instance, that attractors might play in the draw of trajectories to steady-states. Whilst these attractors exist and help ensure the long-term stability of a system, they are not transcendent and neither do they draw systems in certain directions as if the trajectory was determined in advance. A genetic account of the movement of trajectories in a system requires us to acknowledge that the attractor does not pre-exist the system but emerges with it. Likewise, permutations to such systems can knock out stable attractors creating unpredictable trajectories resulting in novel outcomes. To deny time to evolution, to posit its becoming in advance so that its very creativity is rendered logically obsolete, is to do a

terrific violence to it, an all too human violence that I believe we sometime glimpse in certain of Jung's ideas, accounts of teleological "convergence" and notions such as de Chardin's 'Omega Point' to which I finally turn.

One may detect a certain resonance in the thought of Bergson and the thought of de Chardin concerning their respective views of matter. Partly this is due to de Chardin's familiarity with Bergson's book *Creative Evolution*. For de Chardin matter does not appear to be ultimately divided but, akin to Bergson, possessive of two tendencies, one to "unmaking" and the other to "ascending", or for Chardin, a power to dispersive nothingness and a unifying power. In terms of thermodynamics we might regard the first as the law of entropy and the latter as Bergson's and de Chardin's negentropic or counter-entropic principle, one which heralds, in scientific terms, the move from classical equilibrium thermodynamics to far-from equilibrium thermodynamics. But it would be an error to make such a direct correlation. Bergson's *élan vital* is not the same as de Chardin's unifying power which presupposes an original kind of identity and a convergence with this identity given what he calls the law of "complexity-consciousness". Whilst many of Bergson's ideas appear to point in the direction of a teleological evolution of which the human is the apotheosis, he does not have recourse to a directing principle which logically prohibits the creation of genuine novelty by affirming in advance its termination point in a convergence of identity between first cause and final cause. Counter-entropic tendency in matter does generate higher forms of complex life with greater powers of indetermination to respond to problems in the environment but this is at the expense of global equilibrium. My view is that convergence implies some kind of analogous theological equilibrium state in which difference is homogenised and cancelled as the end of an eschatological cosmic individuation. In the words of one writer:

At present we can witness a revival of the 'cosmic evolutionism' associated with the dubious spiritualism of Teilhard de Chardin, in which machine intelligence is construed in terms of a global cerebralisation that leads 'inexorably to the emergence of the "noospheric brain". What is disturbing about this revival of cosmic evolutionism is the attempt to explain the alleged phase-space transition in 'intelligent' evolution in biological terms, which results in gross anthropomorphisms. (Ansell-Pearson, 1997a, 31-32).

The Omega Point as a negentropic apotheosis of complexification recapitulates an old grand narrative of escaping the entropic conditions of life on planet earth. It supports 'a negentropic promise of guaranteed immortality for all in the future. The Omega Point refers to the point at which the noosphere coalesces into a supersapient being' (Ansell-Pearson, 1997, 167a). Yet this 'vision of negentropic futures ultimately rests' according to Ansell-Pearson, 'on a biologicistic legitimation of capital and universal imperialism.' (ibid.). When I equated the "equilibrium" state with the Omega Point earlier this may have sounded contradictory. But the control implied in a cosmic involuntarism in de Chardin's account of change logically takes place at the expense of the freedom and contingency that belong to the human project. It entails the neutralisation of unpredictable effects which counter-entropic far-from equilibrium freedom helps to actualise.

It is not a question of doubting that life has invented means of defying the second law, but simply of demonstrating that it is erroneous to ascribe a vitalist teleology to the movements of negentropy on planet Earth in which the apotheosis of complexity is equated with

'human' intelligence, an intelligence whose evolutionary task and *telos* is to 'save' the Universe. (Ansel-Pearson, 1997b, 221).

Whilst it is sometimes hard to read between the lines of Bergson's own evolutionism with its residual humanism and perfectionism, Deleuze's involution is unequivocal in rejecting the kind of cosmic evolutionism which contains within it a quasi-Hegelianism, a primacy to self-consciousness and spirit. With Guattari, Deleuze's contention that there is no "noosphere" or "biosphere", only what they call the "mechanosphere" in their work *A Thousand Plateaus* (1980, 77) can in part be seen as directed 'at the overly spiritualist and cosmicist interpretation of evolution as creative involution advocated by de Chardin' (Ansel-Pearson, 1997a, 131, n. 9). Deleuze's creative involution suggests 'the emergence of a symbiotic field that allows assignable relations between disparate things to come into play.' (ibid., 130).

4. What kind of a vitalist was Jung?

Sadly I leave virtually no time to answer this. In his early intellectual life, as evident in *the Zofingia Lectures*, it is clear that Jung is a vitalist in the more classical sense. Later, when his speculations are confined to the autonomy of the psyche he is not, or at least he is quasi-vitalist, and then later, when he aligns the archetype with instinct (firstly in embryo in 1919 and then formally in 1947) within the context of his use of Driesch's concept of the psychoid, Jung gestures towards an emergent view of the archetype, implicating it within a matter that, like Bergson's in *Creative Evolution*, is not dualistic implying that Jung was not a vitalist. Likewise the extension of living matter to matter in general which can be seen in Jung's work on synchronicity further collapses any apparent dualism that might have existed before. Yet, although an immaterial vital force which opposes life to matter is collapsed in Jung's thought over the period of his life, the "flux" of matter envisaged by Bergson is never adopted by Jung. Instead, as both Shamdasani (2003, 230)³ and Gunter (1982, 652)⁴ have noted, the dynamic flux of energy is reduced by Jung to Forms as archetypes. Whilst these certainly do not have the status of Platonic Forms, and nor are they the logical equivalent of Kantian *a priori* conditions of possibility, it is only their location and their subservience to a superordinate orientating ground such as the Self that is altered. In their final incarnation in his work on synchronicity, archetypes, as eternal structures of transcendent meaning, (1952, 915) gesture to a material substratum as *unus mundus* a substratum which may have been fully shorn of time.

³ This is starkly apparent in Bergson's critique of forms, which may be taken as a critique of Jung's archetypes, "avant la lettre": "The Forms, which the mind isolates and stores up in concepts, are then only snapshots of the changing reality. They are moments gathered along the course of time; and just because we have cut the thread which binds them to time, they no longer endure. They tend to withdraw into their own definition, that is to say, into the artificial reconstruction and symbolic expression which is their intellectual equivalent. They enter into eternity, if you will; but what is eternal in them is just what is unreal.'

⁴ 'I conclude by posing a general question suggested by the content and conclusions of this paper: Does Jung really have a concept of creativity, or does his recourse to a fixed set of timeless archetypes limit him to a cyclic, repetitive concept of man and of history? Many of Jung's assertions would support this conclusion'

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