

Schizoanalysis and Bergsonism: Matter, Machine and Abstract Animal

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Abstract

In this article, I show how an examination of the philosophy of Henri Bergson, and the Deleuzoguattarian concept of the abstract machine, can help us understand the relation between matter and mind, I expound Deleuze's interpretation of Bergson's method, and specifically how his concept of heterogeneous multiplicity, which corresponds to Deleuze and Guattari's machine, progresses throughout Bergson's philosophy. I explain how this notion — which for Bergson indicates psychological time or *durée*, movement, as well as the *élan vital* or the original impetus of life — overcomes the body-mind distinction. I argue, like Deleuze and Guattari, that Bergson develops a machinic worldview, according to which matter always already contains mind, at least virtually, as a ghost waiting to materialize. A description of Bergson's notion of *élan vital* then allows me to clarify Deleuze and Guattari's concept of the abstract machine in its relation to its concrete productions. I address the concept of becoming-invisible, as well as of the abstract Animal, the abstract machine of the organic stratum, and its relation to the idea of a diagram or map.

Introduction

The concept of machine is probably one of the most original and important contributions of Deleuze and Guattari's philosophical work together. And yet, a lot of work of clarification could still be done with regard to this concept. Especially the "abstract machine" remains rather enigmatic, despite the central role it plays in *Kafka: Toward a Minor Literature* (Deleuze & Guattari 1986: 47-52, 86-88/1975: 87-95, 154-157) and in *A Thousand Plateaus* (1987/1980: *passim*).

One very illuminating work on the concept of machine is Daniel Smith's "What is the body without organs? Machine and organism in Deleuze and Guattari" (2017). This article addresses the originality of Deleuze and Guattari's notions of the machine and of the organism, as well as their relation in what they call "the body without organs." More precisely, it explains how Deleuze and Guattari overcome and modify the distinction that is usually made between the mechanic and the organic, in order to consider the organism as restrictive and the machine as creative.

Another enlightening contribution, Igor Krtolica's "Diagramme et agencement chez Gilles Deleuze. L'élaboration du concept de diagramme au contact de Foucault" (2009),

addresses the conceptual dichotomy assemblage — diagram (or the later concrete machine — abstract machine) in relation to Foucault. This contribution focuses on Deleuze's response to Foucault, whose notion of diagram would be too static. It also explains that the conceptual dichotomy concrete machine–abstract machine aims to overcome the distinctions between signifier and signified, and infrastructure and superstructure (Krtolica 2009: 102).

Both of these contributions suggest that the notion of machine is essentially directed towards the overcoming of dualisms and to the explanation of change, which are indeed two of the main issues that preoccupied Deleuze and Guattari. It is striking that Henri Bergson was also preoccupied with exactly these issues. Bergson's profound and long-lasting influence on Deleuze has been remarked on by, for example, his own student Éric Alliez (1998); by Alain Badiou (2000: 38), who believes that Deleuze is first and foremost a Bergsonian rather than a Nietzschean or Spinozist; and by Giovanna Borradori, who shows that Deleuze's reading of Nietzsche is largely influenced by his interpretation of Bergson rather than the other way around, as is often believed (Borradori 2001: 1). As Keith Ansell-Pearson notes (1999: 1), this Bergsonian influence in itself already constitutes an original contribution to philosophy on Deleuze's part, as no one was reading Bergson anymore at the time Deleuze did.

As we will see, this Bergsonian influence remains very present in the works Deleuze writes with Guattari. Indeed, I agree with Craig Lundy, the author of *Deleuze's Bergsonism*, when he affirms that “it is rare to find instances [in Deleuze's works] where the Bergsonian frame, as understood by Deleuze, is repudiated or significantly deviated from” (Lundy 2018: 9). It is notable that Bergson's *Creative Evolution* is permeated with the term “machine” (see notably Bergson 1944: 104/2003: 94). As Valentine Moulard-Leonard remarks (2008: 150), Bergson uses this term in the context of his argumentation against mechanism, in order to argue for his notion of *élan vital* or vital impulse, which we need to presuppose in order to understand the productions that have emerged in the evolution of life. According to her, this may have sparked Deleuze's interest in the notion of the machine. She follows Ansell-Pearson in associating Bergson's thought with a machinic ontology (Moulard-Leonard 2008: 3-4; Ansell-Pearson 1997: 6) and remarks that Deleuze also considered Bergson's thought as machinic (Moulard-Leonard 2008: 143; she cites *Cinema 1*, Deleuze 2001: 59/1983: 87).¹

Despite this, Bergson's thought and Deleuze's interpretation of it are rarely associated with Deleuze and Guattari's work on schizoanalysis or used in order to elucidate the main concepts of their machinic ontology. Two exceptions to this are the texts of Elizabeth Grosz (2004 & 2007) and of Keith Ansell-Pearson (1997 & 1999).² However, none

¹ For the works by Bergson, Deleuze, Guattari, and Deleuze and Guattari, I will always refer first to the English translation, and then to the original French text.

² In a work devoted to a theory of becoming, Grosz explains the Deleuzoguattarian concepts of becoming-animal and becoming-plant with Bergson (Grosz 2004: 217-220). In another work, where she examines Deleuze's concept of life through his Bergsonism (Grosz 2007), she indicates that it is

of these works bring Bergson's thought to bear on how exactly we should understand the relation between matter and mind in a machinic ontology, nor in terms of the notion of the abstract machine. An examination of the notion of the concept of machine with Bergson will clarify, first, how it surmounts the body-mind distinction; and second, it will elucidate some central concepts of Deleuzoguattarian thought related to the abstract machine, so shedding some light on the schizoanalytic enterprise.

Bergson and the machine

Some authors are skeptical about emphasizing Bergson's influence in the later works of Deleuze and Guattari. Levi Bryant, for example, affirms that Deleuze does not share Bergson's method of division, which makes mixtures understandable through conceptual dualisms, but instead advocates a method that consists in pushing one's faculties to their limits, as Deleuze describes in *Difference and Repetition* (Bryant 2008: 173; Deleuze 1994: 138-148/1968: 181-192). This affirmation seems unjustified, as Deleuze uses conceptual pairs in nearly all his works with and without Guattari (see for example atomism-associationism in *Empiricism and Subjectivity*, active-reactive in *Nietzsche and Philosophy*, actual-virtual in *Difference and Repetition* and *Logic of Sense*, and striated-smooth in *A Thousand Plateaus*, to name a few). These conceptual dualisms allow him to theorize becoming or change, and so they seem at least inspired by Deleuze's interpretation of Bergson's method, of which the final phase constitutes a genetic principle according to Deleuze (Deleuze 1991: 96/1966: 99). Furthermore, this method is not incompatible with the idea of pushing one's faculties to their limits.

Arjen Kleinherenbrink proclaims that Deleuze must repudiate the idea of a continuous, living force or tendency, such as the one Bergson advances, because of his adherence to the empirical thesis of the externality of relations to their terms (Kleinherenbrink 2019: 77), and that he abandoned his "early infatuation" with intensity in his later works (Kleinherenbrink 2019: 15). However, the Bergson-inspired concepts of intensity and of virtuality, which both indicate qualitative multiplicities for Deleuze,³ remain important

Deleuze's early reading of Bergson that opens to the ideas of an ethology, a geology, and a machinic phylum (Grosz 2007: 288). She does not elaborate on these Deleuzoguattarian concepts, however. In the context of his reflections on the transhuman condition, Ansell-Pearson explains Deleuze and Guattari's machinic and rhizomatic philosophy of evolution with Bergson (Ansell-Pearson 1997: chap. 5). He continues his elaboration of the Deleuzoguattarian philosophy of biology in a text that turns to Deleuze's Bergson in order to ask what it means to think beyond the human condition. Here he explains concepts such as the body without organs (Ansell-Pearson 1999: 152-154), the machinic phylum (141 ff.), the becoming-animal and becoming-molecular (179-181), and involution (*passim*), but he does not expressly explain the abstract-machine.

³ Deleuze slightly modifies the Bergsonian concepts: for him, intensity belongs to the qualitative multiplicity (Deleuze 1994: 222/1966: 286), and as such has virtuality, whereas for Bergson intensity is a misguided concept, which conflates a qualitative multiplicity with a quantitative and extended one, because it describes the quality as a magnitude, this is, as something that is more or less intense

in Deleuze's later works, with and without Guattari. Indeed, in *Anti-Oedipus* the desiring machines are conceived as heterogeneous and intensive multiplicities; in his books on cinema, Deleuze uses the Bergsonian concepts of movement and of time; in *What is Philosophy?*, intensity and virtuality are considered essential elements of thought; and in "Immanence... A Life", his very last text, Deleuze still describes the transcendental field as a virtual multiplicity, and he suggests that he has been preoccupied with this field his entire life.

What is more, Deleuze has a habit of building further on his previous work, without going through the trouble of explaining concepts that he has already elaborated elsewhere.⁴ This also seems to be the case in his works with Guattari. As a result, as Ansell-Pearson remarks, "[t]he seeds of Deleuze's attempt to map out the field of nonorganic life with Guattari in terms of rhizomatic becomings can be seen to already exist in a dormant state in the work of the late 1960s" (Ansell-Pearson 1999: 139). Deleuze's reading of Bergson seems especially important here, and many elements of his Bergsonism are present in Deleuze's works with Guattari. Indeed, Bergson considers matter as flux (Bergson 1944: 204/2003: 187), just like Deleuze and Guattari in *Anti-Oedipus*, and he speaks about "canalizing" in the context of the organizing capacities of the machine (Bergson 1944: 104/2003: 94). He also describes the creations of the *élan vital* as "eddies [*des tourbillons*]" (Bergson 1944: 141/2003: 129), as vortexes in which the movement of life turns upon itself and comes to a halt. This is an image that Deleuze and Guattari also use throughout *A Thousand Plateaus* (see for example Deleuze and Guattari 1987: 113-114, 381, 489, 509/1980: 143, 473, 610, 623) to describe bodies and other forms of sedimentation. It is thus safe to say that Bergson's influence on Deleuze remains strong in his later works with Guattari.

As François Dosse describes (2010: 3-6), Deleuze's collaboration with Guattari starts with the notion of the machine: this is arguably the concept that brought the two thinkers together. Indeed, when Deleuze and Guattari meet in June 1969, Guattari has just written a lecture on the notion of machine for the Freudian School of Paris entitled "Machine and Structure" (Guattari 2015: 318-320/1972: 240-248). In this lecture, which criticizes structuralism, he relies heavily on *Difference and Repetition* and *Logic of Sense*, which Deleuze has just published. While reading *Logic of Sense*, Guattari had already written to Deleuze that he believes their viewpoints are very similar, and that a meeting between them would be "an event with several origins that is already retroactively present" (Dosse 2010: 4). Deleuze encourages him to publish "Machine and Structure" together with a number of other essays, which results in the collection of essays *Psychoanalysis and Transversality* (1972), prefaced by Deleuze. He also encourages him to continue working out his ideas, which Guattari has been avoiding, among other things, be-

(Bergson 2001: 1-74/2011: 1-55).

⁴ See for example the eternal return, which plays an important part in the two first chapters of *Difference and Repetition*, but which Deleuze uses in another sense than most readers of Nietzsche, a sense which is not properly explained or justified in this work, but which is in *Nietzsche and Philosophy*.

cause of a lack of theory (Dosse 2010: 5). The two meet not long after that, and Deleuze is very enthusiastic, notably about the notion of machine (Dosse 2010: 6). He writes to Guattari immediately, in order to lay out the principles of their new collaboration. The first product of this collaboration, *Anti-Oedipus*, systematizes the insights of Guattari in *Psychoanalysis and Transversality*, as noted by the editor of this book on the back cover. *Anti-Oedipus* consists principally of a thorough theoretical elaboration of the concept of the desiring machine, and of machinic production in all its forms.

This means that the notion of machine, which is often believed to come mainly from Guattari, can actually be said to come from both authors, as a product of their association, since Guattari found inspiration in Deleuze's thought in order to argue for this notion, and since he theorizes it with Deleuze. Given that Deleuze's thought is very influenced by Bergson, who moreover can be said to hold a machinic ontology, as we mentioned above, it seems very relevant to look at Bergson and Deleuze's Bergsonism in order to better understand how the Deleuzoguattarian notion of machine helps overcome the body – mind distinction, and on how we should understand the concept of the abstract machine, despite the differences that exist between Bergson and Deleuze and Guattari.⁵

Bergson's method of division

In his book on Bergson, Deleuze argues that we can understand Bergson's works, and the different concepts that he develops, as a progression, and thus in a coherent way (Deleuze 1991: 91-94/1966: 92-95). This does not seem evident at first sight, since in *Time and Free Will* Bergson criticizes the idea of differences of degree in favor of differences in nature (for example, in a growing emotion, we see differences of degree, while

⁵ The main differences between Bergson's thought and Deleuze and Guattari's seem to be the following: first, Deleuze and Guattari are preoccupied with power relations, with social and political reality and with forms of socialization or lack thereof, and with creativity and political change, whereas Bergson is preoccupied with epistemological and metaphysical questions regarding consciousness, freedom, movement, and life. Second, Bergson's conception of the evolution of life may seem too arborescent from the point of view of Deleuze and Guattari. Indeed, in *Creative Evolution* he describes the effort or movement of life as a movement that keeps branching of, culminating in the human, which is the most free and creative of all beings (Bergson 1944: chapter II). It is not completely clear, however, if he really means this in an arborescent way, since the different bifurcations could be interpreted to indicate that just one species, just one creation of life branches of, and because there are similar creations and efforts on different branches. Third, and most importantly, according to Deleuze Bergson is unable to account for real, original thought in his writings on the mind, but only for recognition (Deleuze 1994: 176). In the terms of *A Thousand Plateaus*, Bergson is only able to account for relative deterritorialization, that is, for changes and becoming within one existing plane or stratum, and not for absolute deterritorialization, which creates an absolutely autonomous and new product (Deleuze & Guattari 1987: 55-56/1980: 73-74). Despite these differences, of which I will say more below, Bergson's thought still seems very relevant in order to understand the main concepts of the Deleuzoguattarian machinic ontology.

there are actually differences in nature, see Bergson 2001: 9-10/2011: 8), while in *Matter and Memory* he affirms that the whole of reality consists in rhythms and levels of contraction, in a continuous movement, which knows only differences of degree (notably Bergson 1990: 208-209/2017: 233-235). In *Creative Evolution*, then, Bergson seems to advocate a dualism again: he conceives of a bifurcating movement of life, which consists in two opposing tendencies, namely a creative and an anti-productive one (for example Bergson 1944: 272-295/2003: 250-271). In short, in *Time and Free Will* Bergson seems to advocate for a dualism, which distinguishes homogeneous from heterogeneous multiplicities; in *Matter and Memory* he seems to sketch a monism of *durée* or a pluralism of levels of contraction; and, finally, he seems to go back to a dualism in *Creative Evolution*.

For Deleuze, these different, seemingly contradictory stances should be seen as different moments of Bergson's "method of division" or of "intuition" (Deleuze 1991: 13, 22/1966: 1, 11): first, a moment of reflection with a dualism of method allows for an analysis of mixtures by distinguishing two poles or tendencies, namely a tendency toward homogeneity or dead matter, and a tendency toward the continuous heterogeneity of *durée*, pure potency. This methodological dualism allows Bergson to dissolve false problems, as well as to overcome other dualisms. For example, he distinguishes the *durée* of mental states from homogenous extension (Bergson 2001: 75-91/2011: 56-68), and pure perception, which is material, from pure memory, which is spiritual (Bergson 1990: 44-48, 71/2017: 42-47, 74), in order to avoid false problems such as the impossibility to conceive freedom and the relation between matter and consciousness. In the second moment, the sufficient reason of the mixtures of phenomena is conceived through a reconstruction of this mixture as a virtual point on the crossing of the two tendencies. Here, the mixture is defined through a certain relation between difference or tendency and homogeneity through a description of levels of contraction and relaxation, and thus in a way that does away with the presuppositions that accompany our human manner of perceiving and conceiving. In a third moment, Bergson elaborates a dualism again; this time a genetic one: the double movement of the *élan vital*, which serves as a genetic principle.

One of the main strengths of this interpretation of Bergson is that it explains the continuity between matter and mind, and that it offers interesting tools to explain how certain concrete instances of mind, for example recognition, come about. Indeed, for Deleuze, Bergson's heterogeneous multiplicity, which can be compared to Deleuze and Guattari's machine, takes on different forms in the progression of his thought: *durée*, movement (of which matter is constituted), and *élan vital*. Since this multiplicity is also a tendency, this means that, as Deleuze writes, "Duration, Life, is *in principle (en droit)* memory, in principle consciousness, in principle freedom" (Deleuze 1991: 106/1966: 111; Deleuze adds that with "in principle" he means "virtually"). Since matter is movement, and thus also virtually *durée*, this means that matter also virtually contains life, consciousness, and freedom.

If we call heterogeneous realities “machines”, as Deleuze and Guattari do (Deleuze & Guattari 2000: 38-39/1972: 47), then this means that matter, that all of reality, is inherently machinic. This also means that there is a continuity between matter and mind, which are connected through the machines that run through them and bring them about. In this context, the question becomes how these machines bring things about or, in other words, under what conditions they become creative and produce particular effects. This question has to do with the Deleuzoguattarian concept of the abstract machine. Indeed, Deleuze formulates it with Bergson: “The whole question (*quid facti?*) is knowing under what conditions duration becomes in fact consciousness of self, how life actually accedes to a memory and freedom of fact” (Deleuze 1991: 106/1966: 111). And he formulates a similar question with Guattari in *A Thousand Plateaus*: “given a certain machinic assemblage, what is its relation of effectuation with the abstract machine? How does it effectuate it, with what adequation? Classify assemblages” (Deleuze & Guattari 1987: 71/1980: 91); they even write that this is “[t]he most important problem of all”.

Even though Bergson does not formulate the question in this way and does not explicitly advocate for a classification of the creative movements of reality, it seems that he is preoccupied with a similar question: in *Matter and Memory* he investigates how matter gives rise to consciousness, and how different levels of contraction of a heterogeneous memory give rise to things like motor reflexes, attention, recognition but also pure phantasy or reverie (Bergson 1990/2017: chapter II); in *Creative Evolution*, he examines how complex machines like the eye emerge from matter. More importantly, he advocates a thought able to render continuity, movement and becoming (Bergson 1990: 183-193/2017: 203-215; 1944: 218ff., 296-297/2003: 201 ff., 272-273) and, as we have seen, the main concepts that he creates designate heterogeneous and thus machinic multiplicities. Bergson’s project thus also seems very close to Deleuze and Guattari’s on these points, which is why it is relevant to look at how Bergson’s heterogeneous multiplicity relates matter and mind.

Virtuality: The ghost in the machine

In order to explain how consciousness or mind emerges from matter, Bergson begins by looking at matter as “an aggregate of ‘images’” (Bergson 1990: 9/2017: 1), which “act and react upon one another in all their elementary parts according to constant laws” (Bergson 1990: 17/2017: 11), “present[ing] each to the others all their sides at once: which means that they act and react mutually by all their elements” (Bergson 1990: 37/2017: 34). With “image”, Bergson means the common-sense idea of something that exists independently of human perception, but which is also that which is represented or reproduced in perception. Since images act upon each other, this conception of matter also comprises movement.

In this context, Bergson affirms that the brain and the nervous system, which are evidently also matter, should be seen not as something of an entirely different nature from the other images, but simply as images that select, delay and connect the movements coming from other images to certain motoric systems, like a telephone exchange (Bergson 1990: 30/2017: 26).⁶ For Bergson, the possibility of selecting images, delaying reactions, and connecting movements, which introduces indetermination in a purely mechanical world, is constitutive of life and of consciousness, and reflects a being's power of action upon other images (Bergson 1990: 20-/2017: 14-22). This is what happens in all living beings, from the most rudimentary ones, such as unicellular organisms, which can act upon their environment by warding it off or incorporating parts of it, to the most complex ones, like human beings, who evidently act upon their environment. Bergson thus considers these different organisms to be in a continuity with each other from this point of view.

Starting from this definition of life and of consciousness, Bergson goes on to explain conscious perception. According to him, conscious perception is nothing else than a selection of movements of matter by the living organism, like when light does not pass because of the type of materiality that it comes across (Bergson 1990: 37-39/2017: 34-36). When they pass through different densities, rays of light can change direction, and for certain densities and certain angles of incidence, they cannot continue their movement. When this happens, there is a total refraction of light which shows a surface or an object. Perception is a similar phenomenon according to Bergson: it results from the fact that certain movements are prevented from passing through a spontaneous center of action, upon which these movements thus do not have any influence. The movements are then reflected, in a kind of virtual image — the image of an object — which represents the possible action of the living being upon matter.

Let us note that, in this situation, there is still no question yet of anything spiritual, but only of matter; Bergson does not introduce anything from another nature than matter to explain the nervous system, life, consciousness, and a relative freedom related to the possible actions of a being on matter. This means that, for Bergson, there is a continuity between matter and consciousness, or that consciousness is present in principle within matter. Bergson indeed writes:

there is in matter something more than, but not something different from, that which is actually given [...] conscious perception does not compass the whole of matter, since it consists, in as far as it is conscious, in the separation, or the 'discernment,' of that which, in matter, interests our various needs. But between this perception of matter and matter itself there is but a difference of degree and not of kind, pure perception standing toward matter in the relation of the part to the whole. (Bergson 1990:

⁶ The question of how matter becomes capable of doing this, is the concern of *Creative Evolution*, of which I will say more below. In short, matter contains movements and tendencies which differentiate through the creative effort that Bergson calls the *élan vital*.

71/2017: 74)

However, because it is a heterogeneous multiplicity, a continuous effort or tendency, a *durée*, any organism or consciousness introduces something of another nature in matter: memory or spirit (Bergson 1990: 33-34/2017: 30-31). Indeed, perception is never instantaneous, it thus always takes time, and always involves memory. Memory spontaneously takes advantage of perception to slip in recollections of the past. According to Bergson, because of this, perception tends to contain more elements from the living beings' past than actual, material, immediate and impersonal perception. From the material perception there tends to remain only a few traces that act as signs, which trigger old images that are grafted upon the perceptions. Generally, this contribution of memory makes perception convenient and effective because it allows one to take advantage of elements of the past that are useful to the present situation. But it can also put the individual in an ineffective state of reverie.

Through his original notion of memory, which Deleuze subscribes to (see notably Deleuze 1994: 81-84, 212/1968: 110-114, 274), Bergson is able to account for different concrete mental states and acts such as recognition, general ideas or notions, reverie, and so on (Bergson 1990/2017: chapter II). For Bergson, memory is like a muscle; it can contract and relax. It thus virtually contains different levels of contraction, which all encompass the entirety of the past, arranged in a different way — memory is thus also a heterogeneous, virtual multiplicity, but between its different levels there is not only a difference in degree of contraction, but also a difference in nature. Bergson illustrates his conception of memory through his famous cone (Bergson 1990: 152, 162/2017: 169, 181), of which I will say more below.

As mentioned above, in the second moment of his method, Bergson moves toward a monism or a pluralism rather than a dualism according to Deleuze. He then comprehends phenomena through their differences in degree with other phenomena, rather than distinguishing two elements that differ in nature. After having distinguished matter from memory, Bergson indeed goes on to say that, given that matter always already contains movement, it is a heterogeneous multiplicity, just like the *durée* of consciousness (Bergson 1944: 188-218/2017: 209-235). He describes matter or reality as “numberless vibrations, all linked together in uninterrupted continuity, all bound up with each other, and traveling in every direction like shivers through an immense body” (Bergson 1994: 208/2017: 234). From this point of view, which consists in a monism of *durée* combined with a pluralism of levels of contraction, there is only a difference of degree between the various phenomena: all beings select and delay movements, and they insert a certain amount of images from the past in the present depending on their level of contraction of memory, so that there are only differences in rhythm and in contraction between the different beings.

In this way, through his concept of heterogeneous multiplicity or virtuality, Bergson

overcomes the body–mind distinction. Given the tendential nature of the heterogeneous multiplicity, matter always already contains mind at least virtually, as a ghost waiting to materialize.

Bergson’s machinic evolution: The *élan vital*

As mentioned above, Bergson’s *Creative Evolution*, which is aimed at explaining evolution, is permeated with the term “machine.” Notably, near the end of the book, in a chapter that addresses the question of the meaning of life and of its evolution, Bergson writes that the history of life — or of the *élan vital*, the original impetus of life — is that of an effort “to create with matter, which is necessity itself, an instrument of freedom,” and “to use the determinism of nature to pass through the meshes of the net which this very determinism had spread” or, in other words, “to make a machine which should triumph over mechanism” (Bergson 1944: 288/2003: 264). Even if these passages are specifically about the human species, given that humanity is a result of the *élan vital* just like other species and that, as we have seen, introducing indetermination in matter is typical of all life for Bergson, it can be said that, just like Deleuze and Guattari, Bergson develops a worldview that is machinic, as opposed to mechanistic. As we will see, the concept of *élan vital* is very helpful for understanding the concept of the abstract machine and its relation to the concrete machine.

It is important to note that, even though in the cited passage it seems that Bergson strictly opposes matter to life, these are certainly not strictly opposed for him. An explanation of how he considers the relation between these two realities will shed light on Bergson’s method of division, which is important to better understand the significance of the *élan vital*.

In *Matter and Memory*, Bergson already showed that all matter is movement and, at least virtually or potentially, life and even consciousness (Bergson 1990: 188-218/2017: 209-235). This means that, just like for Deleuze, for Bergson the effort or tendency proper to life, or in other words virtuality, is not a separate reality, which would exist outside matter, but it is immanent to it. Matter and life are not distinct realities, but two tendencies pointing to two poles or limits: a descending movement toward dead matter, or towards the homogenous, extended isolated system, which he sees as a lifeless residue or deposit of life; and the ascending, creative movement of life, of that which moves and endures, and which is heterogeneous by nature (Bergson 1944: 13-16/2003: 10-13).⁷

⁷ For Bergson, the double movement or tendency of being corresponds to the two first laws of thermodynamics. The tendency towards homogenization and isolation represents the first law of thermodynamics, namely that of the conservation of energy, whereas the creative, ascending tendency corresponds to the second law of thermodynamics, that of the diffusion of energy or of increasing entropy. It should be noted that, for Bergson, the first law of thermodynamics has no metaphysical significance, while the second one does (Bergson 1944: 263-265/2003: 242-244). Indeed, according to

This is the core of what Deleuze calls Bergson's "method of division" (Deleuze 1991: 22/1966: 11). As Deleuze remarks, this conceptual dichotomy does not indicate your usual clear-cut division, it is not the usual dualism in which the terms are mutually exclusive: from the two terms, which designate two tendencies, one indicates pure homogeneity, and only contains differences of degree or quantitative difference, while the other one encompasses heterogeneity or differences in nature. In Deleuze's own words, "[t]here is thus not a difference in kind between the two halves of the division; the qualitative difference is entirely on one side" (Deleuze 1991: 30/1966: 23). Indeed, matter points to homogeneity, extension, mechanism and thus to the measurable and quantifiable, while life or duration points to the heterogeneity proper to time, movement and tendency whose efficacy, or creative power, is not quantifiable. For Deleuze, this division allows Bergson to be precise in philosophy: it allows him to see differences in kind where others only see differences in degree and the other way around and, in this way, it allows him to dissolve problems and to accurately analyze complex phenomena. This is why, even if Bergson can seem like a dualist because of his constant use of conceptual dichotomies, his thought actually dissolves dualisms and allows to think mixtures and their becoming.

In *Creative Evolution*, Bergson attempts to overcome the mechanism-finalism distinction through his concept of *élan vital*, a vital force or tendency, which expresses itself through a movement of differentiation. Even though Bergson is often considered a vitalist, it can also be said that Bergson actually also overcomes the distinction between mechanism and vitalism, as Smith affirms regarding Deleuze and Guattari (Smith 2018: 96): he is skeptical about any approach that considers the whole of reality as deterministic and measurable, but he does not presuppose a special kind of matter particular only to the organic or go out from the individual organisms as traditional vitalism does (Bergson 1944: 48-50/2003: 42-44) — for him, all matter endures or moves to some degree. On this basis, every kind of life (even intelligence or cognition) can be accounted for and, additionally, for him the force of life transcends the individual organism and even the species (see Fujita & Lapidus 2007 and Fujita 2013).

Let us look at a concrete example from Bergson himself, in order to clarify the concept of *élan vital*: the example of the eye. Bergson describes the eye as an "infinitely complex machine" (Bergson 1944: 98/2003: 89) which nevertheless appeared on "entirely different lines of evolution" (Bergson 1944: 63/2003: 56), by unlike means and in different materials. For Bergson, this cannot be explained teleologically, because then the

him the law of the conservation of energy, which belongs to physics, can only be applied to closed systems and to quantities, which are limited in a conventional and arbitrary way, according to a system of artificial measure. The second law of thermodynamics, however, which Bergson summarizes as follows: "all physical changes have a tendency to be degraded into heat, and that heat tends to be distributed among bodies in a uniform manner" (Bergson 1944: 265/2003: 244), is generalizable and understandable without the intervention of symbols and of artificial isolation, and thus it points to the way in which reality works independently of any intervention. In short, for Bergson the ascending, creative movement has metaphysical precedence over the descending one.

plan or design is just presupposed. It also cannot be explained mechanistically, neither through the negative concept of natural selection, nor through the positive concept of adaptation (Bergson 1944: 63-67/2003: 56-59). Accidental variation and natural selection cannot explain that something as complex as the eye appeared repeatedly in divergent lines of evolution, because this would suppose that the same accumulation of an incredible amount of similar small accidental causes and effects would have been repeated in very different situations, which is extremely unlikely. The idea of adaptation, according to which the organism would mechanically adjust itself to its environment, like the content adjusts to the container, rests upon an illusion for Bergson: there is no given form, no one prearranged way for the organism to fit its environment, so that the form it takes is always a creation, and the complexity of the different creations still needs an explanation.

For Bergson, the mistake both kinds of mechanistic explanations make is that the causes are considered similar to their effects, that is, homogeneous to them, and that the emergence of the organ is thus considered the result of mere mechanistic or passive affections while it should be seen as the result of an effort (Bergson 1944: 78-81/2003: 70-73). Indeed, according to him we cannot explain the appearance of an organ such as the eye through the mere addition of mechanistic causes and effects, and thus through a dissection of its components, just like we cannot arrive at movement through the addition of the different static positions or that the movement traverses (Bergson 1990: 190-193/2017: 211-214, 1944: 36-37/2003: 31-33). In order to account for the emergence of an organ such as the eye, and especially for the fact that it appeared on divergent lines of evolution, in different types of matter, and in different environments, we need to suppose a force or effort proper to life: the *élan vital*.

***Élan vital* and abstract machine: The invisible becoming**

We have seen that Bergson's *élan vital* should be considered, not as a distinct reality separate from matter, but as a tendency within reality. As a tendency, however, it should be seen as different in nature from the matter that it organizes, and which tends toward homogeneity and inertia. To continue with Bergson's example, that of the eye: if we suppose a tendency or an effort proper to life, which would be nothing else than a tendency to act on matter in order to organize it, then it is not surprising nor unlikely that the eye appeared, and that it appeared in very different types of matter. Indeed, as Bergson had already observed in his previous work (Bergson 1990: 31/2017: 27-28), perception, in the broadest sense, allows an organism to act upon its surroundings. It is common to all living organisms, which all perceive in a more or less rudimentary way. Vision is a particular kind of perception which takes advantage of light, and which is connected to the motor mechanism.

If we see life as a tendency to change or to create (Bergson 1944: 95/2003: 86), and we suppose a common effort to all living organisms (Bergson 1944: 50/2003: 43-44), then the variations or changes that life produces cannot be considered random any longer: they must be considered to go in a certain direction. This is where Bergson believes Darwin is wrong, and this is how he believes the effort of life explains the appearance of the eye. Indeed, seen through this lens its appearance becomes likely, no matter the circumstances and the materiality in which it arises. It is important to note that this should not be seen as a teleological development, however, since for Bergson life does not follow a predetermined plan but only follows a partly contingent course.

So, for Bergson, this effort, the *élan vital*, which we must presuppose in order to be able to explain the creations of life, is not of the order the mechanical or of matter.⁸ It is also not reducible to the living organism; it must be “of far greater depth than the individual effort, far more independent of circumstances” (Bergson 1944: 97/2003: 88) to be able to explain such creations. For Bergson, this “original impetus” (Bergson 1944: 58/2003: 51) is common to all life, to all individuals and even species, which all constitute a kind of deposit or residue of it. This common effort leads to the most divergent forms because of its creative nature, and because it evolves through the dissociation of tendencies (Bergson 1944: 61/2003: 53). But this original impetus stays present in all of its divergent products, which explains the development of similar effects in different lineages. Indeed, if we consider the simple fact that vision is useful to any mobile living being, and that mobility is useful to any living being that feeds on food that is not present in its immediate environment, we quickly conclude that this being will tend to develop eyes, and therefore that the formation of the eye responds to a vital impulse.

Now, I would like to argue that this *élan vital* has a lot in common with what Deleuze and Guattari call “the abstract machine”, and that it can help with a better understanding of this concept, and especially with regard to the relation between the abstract machine and the concrete machines or the assemblages.

First, as Adkins rightly remarks (2015: 61), the abstractness of the abstract machine should not be understood in opposition to the concreteness of the concrete machinic assemblage, but rather in opposition to its discontinuity: it should be understood as a continuity, as a heterogeneous multiplicity, an “intensive continuum” (Deleuze & Guattari 1987: 73/1980: 90) or “continuous variation” (Deleuze & Guattari 1987: 511/1980: 637-638), in opposition to the discontinuous or separate concrete assemblages (Deleuze & Guattari 1987: 70/1980: 90). The *élan vital* is also defined as a continuous heteroge-

⁸ It should be remarked that this effort starts with a purely mechanical or passive affection according to Bergson, namely a pigmentation spot, and thus an imprint, which then is further developed in an effort that involves the nervous system, and which takes advantage of the impulse. We thus go from a passive affection to an active response through degrees almost insensibly. In this context, Bergson would say that the eye is not made to see, as the teleological interpretation would have it, but that the individual sees because the organism, because life, was able to make use of light (Bergson 1944: 78-81/2003: 70-73).

neous multiplicity, as a movement (Bergson 1944: 105-106/2003: 95-96), and, as such, as distinct from not only the homogeneous and mechanical extreme of dead matter, but also from its discontinuous organic creations. Secondly, as Adkins also observes (2015: 92), the term “abstract machine” indicates the tendency toward change, as opposed to the static reality of the organism, the subject or significance. As we have seen, this is also the case for the *élan vital*, which is nothing else than life’s creative effort for Bergson. Being essentially creative or becoming, just like the *élan vital*, the abstract machine is also characterized by openness, as opposed to the closedness of static phenomena (Deleuze & Guattari 1987: 510-511/1980: 636-637). Thirdly, just like Bergson’s original impetus of life, the abstract machine does not contain formed matter, content or expression (Adkins 2015: 92; Deleuze & Guattari 1987: 510-511/1980: 636-637). These latter result from it, they are effectuated or actualized by it, but they are of a different nature. Lastly, despite this lack of form, neither the *élan vital* nor the abstract machine are completely indeterminate: they contain intensive traits, which indicate tendencies or directions, like a tendency to movement and to vision in the case of the vital impetus — they draw a plan or a map (Deleuze & Guattari 1987: 70-71/1980: 90-91), which explains why Deleuze and Guattari also call the abstract machine a diagram (Deleuze & Guattari 1987: 510/1980: 636).

It thus seems reasonable to assume that the abstract machine moves and creates in a similar way to the *élan vital*. This would shed some light on how we should conceive of the relation between this machine and its concrete products, because Bergson provides a very enlightening illustration to explain this relation. This illustration can also help understand why Deleuze and Guattari affirm that the abstract machine is “enveloped” in a stratum of formed matter (see for example Deleuze & Guattari 1987: 57/1980: 73), and why they speak about “imperceptibility” and “becoming-imperceptible” in relation to destratification (for example Deleuze & Guattari 1987: 55-56/1980: 73).

In his illustration of the *élan vital*, Bergson has us imagine the *élan vital* as the effort or movement of an invisible hand, which would move through matter:

we may compare the process by which nature constructs an eye to the simple act by which we raise the hand [...] Let us now imagine that, instead of moving in air, the hand has to pass through iron filings which are compressed and offer resistance to it in proportion as it goes forward. At a certain moment the hand will have exhausted its effort, and, at this very moment, the filings will be massed and co-ordinated in a certain definite form [...] suppose that the hand and arm are invisible. (Bergson 1944: 106/2003: 95)

Bergson remarks that, since the hand is invisible, one will tend to seek the explanation for the way in which the iron filings are organized in the filings themselves — this is the equivalent of what the mechanists do in their explanation of evolution. But, actually, the filings express an undividable movement or effort; they express it negatively, and

are from another nature, and nevertheless one cannot explain their appearance without reference to this movement. In Bergson's own words: "*the materiality of this machine [the eye] does not represent a sum of means employed, but a sum of obstacles avoided*: it is a negation rather than a positive reality" (Bergson 1944: 104/2003: 94). This negative reality, however, "is no more explained by the assembling of its anatomic elements than the digging of a canal could be explained by the heaping-up of the earth which might have formed its banks" (Bergson 1944: 104/2003: 95).

In this illustration, the movement, which Bergson considers the cause or the productive instance, and which may be convoluted, is invisible or imperceptible, just like the abstract machine is and, since it is a movement, it is also continuous and heterogeneous. It is enveloped in matter, which we could imagine to be layered, and which it forms and organizes through its trajectory. The configuration or organization that results from this movement — here: the eye — is like a negative imprint, a kind of residue, which is from a different nature than the movement itself. Bergson conceives the eye as a machine, which is connected — horizontally, we might say — to the sun and other light sources, to the way in which light is reflected, and to the system of locomotion (Bergson 1944: 68-69, 78-81/2003: 61-62, 70-73). This is reminiscent of the way in which, for Deleuze and Guattari, the plane of organization, which concerns organized or formed matter, and which is characterized by certain components and connections, constantly resists movement, and interrupts or puts a stop to creation (Deleuze & Guattari 1987: 270/1980: 330). It thus seems that the eye-machine Bergson describes could be compared to what Deleuze and Guattari call "[t]he concrete machinic assemblage," given that it should be distinguished from the abstract machine, while at the same time being intrinsically related to it, as that which "effectuates the abstract machine on a particular stratum" (Deleuze & Guattari 1987: 71/1980: 91).

It should be noted that this example, and even the whole of *Creative Evolution*, concerns just one of Deleuze and Guattari's "planes of organization", this is, just one "stratum", the organic one, while Deleuze and Guattari are preoccupied with different strata in *A Thousand Plateaus* (they write about the physicochemical, organic, and anthropomorphic or "alloplastic" strata, Deleuze & Guattari 1987: 502/1980: 627). It should also be noted that Deleuze and Guattari complexify the picture that Bergson sketches of the evolution of life. Indeed, even if Bergson does not believe there is a pre-given plan or *telos*, he nevertheless conceives of evolution as a movement in one general direction, which is composed of bifurcations, of different lineages (Bergson 1944/2003: chapter 2). He thus conceives of life in an arborescent way and through the idea of descent. Deleuze and Guattari, in contrast, believe that the arborescent model of evolution should be abandoned in favor of a more complex, rhizomatic model able to account for the communication between different lineages, which can be caused for example by viruses (Deleuze & Guattari 1987: 10/1980: 17).⁹

⁹ For a detailed description of the differences between the thought of Bergson and that of Deleuze and

The question arises if we can really understand the abstract machine through Bergson's *élan vital* if Deleuze and Guattari do not subscribe to Bergson's conception of the evolution of life. This disagreement with, or rather modification of, Bergson's thought explains why Deleuze and Guattari do not use the term *élan vital*. Nevertheless, the abstract machine still has a lot in common with this original impetus which is transversal to all living beings, and which also relates to dead matter, to consciousness, and even to religion and morality (Bergson 2002: 111-115/2020: 115-121). Indeed, Deleuze and Guattari explain that the abstract machine holds together a whole field or plane, a stratum, while also relating to other planes or strata (Deleuze & Guattari 1987: 71/1980: 91). Just like the abstract machine, the *élan vital* holds together and organizes or canalizes. It thus responds to the question that preoccupies Guattari in *The Machinic Unconscious*, when he writes: "[w]e are constantly brought back to the same interrogation: what holds the assemblages and their heterogeneous components together?" (Guattari 2011: 146/1979: 162), and to the question of the effectuation of the machinic assemblage, that is, the tendency or movement present in matter. As mentioned above, Deleuze and Guattari affirm this as "the most important problem of all" (Deleuze & Guattari 1987: 71/1980: 91).

As we will see now, Bergson's thought is also very helpful with regard to the question of the effectuation of the organic abstract machine, since it helps clarify the concept of the abstract Animal, the abstract machine of the organic stratum.

Reality as a gigantic memory: The abstract Animal

As Adkins remarks (2015: 47), for Deleuze and Guattari, each stratum has its own abstract machine. In the case of the organic stratum, its machine consists in "a specific unity of composition, a single abstract Animal, a single machine embedded in the stratum" (Deleuze & Guattari 1987: 45/1980: 61). This abstract machine of the organic stratum, the "abstract Animal", is realized in different modes or to different degrees throughout the stratum, depending on what the environment or milieu calls for and allows. As we will see, this concept of the abstract Animal also seems inspired by Bergson, namely by his conception of the potentialities of life as a gigantic memory (Bergson 1944: 23-25, 184/2003: 19-23, 168). An explanation of Bergson's concept of memory will clarify this concept, and its relation to the diagram or map. It will also be related to some intuitions that are key to the schizoanalytic endeavor, in order to shed new light on them.

As we have seen, for Bergson, memory is like a cone. At the tip of the cone, we have an

Guattari regarding life, see the texts of Ansell-Pearson (1997, 1999) and Moulard-Leonard (2008). Ansell-Pearson indicates the differences with Bergson regarding the theory of evolution and philosophy of biology, and Moulard-Leonard observes that the main difference between the Bergsonian and Deleuzoguattarian worldviews is that, in the former, the emphasis lays on life and on continuity, while the latter stresses rupture and death.

extremely contracted memory, which is close to a purely material present, like the motor reflex. Bergson calls this “the greatest possible simplification” (Bergson 1990: 166/2017: 185) of our past. This kind of motor memory is the one we use when we have learnt something by heart. It can lead to extremely complex mechanisms, and Bergson writes that it can “imitate intelligence” (Bergson 1990: 86/2017: 92), which suggests that this is still only a question of matter for him, and not of spirit. A being who would constantly live in this state, would be a purely instinctive being, “a conscious automaton” according to Bergson (1990: 155/2017: 172), who would in each instant simply react on stimuli with a certain motor mechanism, which is connected to it by habit. At the base of the coin, we have memory in its most relaxed state. This level contains all the memories of the individual in all their singularity, as dated and exactly localized. At this level of contraction, memories are fleeting and unstable. A being who would constantly live in this state would be a “dreamer” according to Bergson (1990: 153/2017: 170). For Bergson, these two kinds of memory are incompatible, and the first one, the useful one, even serves to cover over the second one.

Bergson illustrates the difference between these two poles of memory (1990: 169/2017: 188-189): when a word is spoken to me in a foreign language, this may put me into the reality of that language and prepare me to respond, or it may remind me of a certain person’s voice and the tone that it had when this person pronounced this word to me in the past. In the first case, I am reminded of the language in general, without considering the singularities of any situation. This puts me in a position to respond, to speak the language, because I am at a relatively contracted level of memory, which still contains my whole past, but which retains only the generalities, the rules and the habits that I have contracted which are useful to this situation. In the second scenario, my past does not prepare me for action, but it presents itself like the fantasy of a dreamer.

In this context, the question arises as to why, or in which case, an individual will respond in one way or in another? Why does a word spoken in a certain language make us daydream instead of activating us to use that language? Bergson’s conception of memory allows for an original response to the question of association, which, according to him explains nothing, or at least not on its own, as we will always find a way to associate two ideas (Bergson 1990: 163-164/2017: 181-182). According to him, in theory, it should be possible to investigate the way in which the different levels of memory are organized, that is, to classify different systematizations of the past, as well as the principles according to which they become actualized in the present (Bergson 1990: 196/2017: 189). As we have seen, these systematizations can be more contracted, impersonal, and useful, or more personal and eccentric, so that that the urgency of a certain situation, and an individual’s own determination, purpose, or lack thereof, should play a role, or the force of an insisting memory that has not been covered over by a useful mechanism.

This could be an interesting perspective for schizoanalytic theory and experimentation, and it sheds another light on some of its key concepts. First, intensity here refers to

elements of pure *durée*, pure tendency or virtuality, which is not yet actualized, covered over, or stopped by a product like an object or a meaning. Further, this conception of memory and mental life explains the importance of rhythms, refrains, and singularities (see for example Deleuze & Guattari 1987: 310-350/1980: 381-433; Guattari 2011: 107-148, 243-306/1979: 117-166, 271-340), as well as the significance of an investigation into different sign regimes (Deleuze & Guattari 1987: 111-148/1980: 140-184; Guattari 2011: 199-230/1979: 223-256). Indeed, since we constantly pass from one level of memory to the other, and since these levels correspond to different levels of contraction, this means that (mental) life is a matter of rhythms. This is also the case for material reality since the different images that constitute it select and delay movements. Life is also a matter of refrains, since memory spontaneously inserts useful elements from the past into the present, which may be rules or generalities, and because matter tends to create mechanisms. Finally, since the different levels of memory present a completely different organization of the past this means that, on each level, other elements will be significant, and other connections and associations will be made. We can imagine that the different levels will have different affective connotations, different tonalities, but there is also a difference in rigidity or compulsion.

Bergson's notion of memory also helps understand the idea of the abstract Animal, the abstract machine of the organic stratum from *A Thousand Plateaus*, and its relation to the map or the diagram. We have seen how Bergson's *élan vital* accounts for the parallel evolution of complex organs (Bergson 1944: 78-81/2003: 70-73). We have also mentioned that Bergson relates this force to an organic memory common to all living beings (Bergson 1944: 184/2003: 168). This memory virtually contains all possible species as so many different organizations of the past of the organic, at different levels of contraction, which may be exactly what Deleuze and Guattari mean by the abstract Animal. Here, actualization means responding to the problem of the needs and possibilities of life, which takes on different forms in different contexts, and which guides the creative process of the *élan vital*. Since the actualizations of these virtual potentialities always create differentiations in a certain direction, this conception of life as memory implies the idea of a map of diagram, which contains all possible movements, bifurcations, halts, and breaks that are virtually contained in the effort of life, and that can become actualized in a certain milieu, depending on the possibilities and obstacles that it offers.

Conclusion: The Bergson–Deleuze–Guattari connection

My main objective has been to show how Bergson's thought, and mainly his heterogeneous multiplicity, which prefigures the concept of machine, allows to understand how the machine overcomes the distinction between matter and mind, as well as to clarify some other important Deleuzoguattarian concepts. Through his notion of heterogeneous

multiplicity, and the machinic worldview that goes along with it and which Deleuze and Guattari seem to embrace, Bergson is able to account for the complex relation between matter and mind, which are continuous with each other, while also being of another nature. On the one hand, there is only a difference in degree between matter and mind, namely a difference in the complexity of material mechanisms. But, on the other hand, because of the delay that is created and the fact that these organized beings endure, there arises something of another nature: memory, which constitutes the subjective or spiritual.

We have seen that Bergson elaborates an original notion of memory, according to which memory is like a cone, containing numerous levels of contraction which all organize the entire past in a different way, and which are thus differences in degree as well as differences of nature. Through this notion of memory, Bergson can explain how different mental acts, such as reverie, recognition, and the general ideas or notions that are essential to language and practical life, emerge from matter. What is more, in Bergson's worldview — which we can call machinic, since it considers reality as replete with productive heterogeneous multiplicities — spirit or mind is always already virtually present, this is, present as a tendency or a potentiality waiting to materialize.

Bergson's thought has also allowed me to delve into some key Deleuzo-Guattarian concepts. Bergson's concept of *élan vital*, which he illustrates through the image of a hand moving through iron filings, has allowed me to clarify the notion of the abstract machine in its relation to the concrete products that it brings about. I have connected this illustration to the idea of becoming-imperceptible, and I have shown how Bergson's concept of organic memory can help with an understanding of the notion of the abstract Animal, as well as the idea that this contains a map or a diagram. In this way, I hope to have contributed to a better understanding of Deleuze and Guattari's thought, especially in relation to the question of the relation between body and mind.

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