

H. Bergson on the Problem of Origin of Life

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Abstract. Henri Bergson's conjectures about the origin of life avoid providing a solution to the problem, and yet he did make some suggestions. A close reading of his texts reveals the philosopher's implicit assumption of an origin of life on Earth through natural processes. This paper is concerned with the concept of an *élan*, and focuses on the evolution of this philosophical concept in Bergson's thought. The argument divides the *élan* from its constant companion, *vital*, in order to highlight its non-spiritual aspect which applies to what that Bergson described as "physiological life." I emphasize that *élan* has a history, and that there must have been a moment when an *élan* began. Finally, the argument moves from *élan*'s history/origin to life's history/origin.

Keywords: Bergson, origin of life, physiological life, *élan*, *élan vital*

Gyvybės kilmės problema H. Bergsono filosofijoje

Santrauka. Henri Bergsono gyvybės kilmės hipotezė vengia pateikti šios problemos sprendimą, visgi filosofas pateikia keletą pasiūlymų. Nuodugnus jo tekstų skaitymas netiesiogiai atskleidžia prielaidą, kad gyvybė žemėje atsirado vykstant natūraliems procesams. Šiame straipsnyje nagrinėjama *élan* (polėkio) sąvoka bei akcentuojama šios filosofinės sąvokos evoliucija Bergsono mintyje. *Élan* argumentuotai atskiriamas nuo jo nuolatinio palydovo *vital* (gyvybiškasis), kadangi siekiama pabrėžti jo nedvasinį aspektą, kuris taikomas tam, ką Bergsonas apibūdino kaip „fiziologinę gyvybę“. Noriu pabrėžti, kad *élan* turi savo istoriją ir kad neabejotinai buvo akimirka, kuomet *élan* prasidėjo. Galiausiai argumentacija perkeliama nuo *élan* istorijos ir kilmės prie gyvybės istorijos ir kilmės.

Pagrindiniai žodžiai: Bergsonas, gyvybės kilmė, fiziologinė gyvybė, *élan*, *élan vital*

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Introduction

Like Darwin, Bergson consciously avoided any discussion of the origin of life. Nevertheless, he allowed for the possibility of the natural appearance of the first organic forms of life, as a detailed analysis of his works shows.¹ This paper examines the traces of Bergson's ideas and concepts which confirm this point. Bergson's conception of life seems incomplete without consideration of his views on its origin, one of the most controversial scientific topics in the wake of Louis Pasteur's experiments to disprove spontaneous generation.

To develop my argument, in the first section of this paper, I shall describe two faces of the *élan vital*: spiritual (theistic), and physical. This physical face will be the focus of the paper. In the second section, via a textual analysis of Bergson's *Creative Evolution*, I discuss Bergson's use of the term *élan* in different variations and contexts. I show that *élan vital* is not the unique agent in Bergson's evolutionary theory. In the third section, I analyze three modifications of *élan*: *élan originel* (original *élan*), *élan commun* (common *élan*), *élan initial de la vie* (initial *élan* of life) as the main agents of the evolutionary process. Then, I track the evolution of the *élan* itself to seek its origin (non-spiritual). And, finally, I move from the origin of the *élan* to the origin of life.

Two faces of *élan vital*

The *élan vital* has a simultaneously spiritual (theistic) and a physical dimension. In the letter to the theologian Joseph de Tonquédec, as well as to philosopher Henri Gouhier, Bergson sees God as the source of *les élans* or the *élan vital*: "I speak of God as the source from which, by an effort of his freedom, the 'flows' or '*élans*' come one after the other, each of which will form a world,"² and "the *élan vital* therefore derives from God."³ However, in the same letter to Gouhier, he claims that when he speaks of the *élan vital*, he tries to stick as closely as possible to empirical biological data.⁴ Of course, Bergson's position is ambiguous. But he has made several suggestions on the non-spiritual dimension of the *élan vital*. One crucial example is how he presents *élan* as an organism's effort⁵ to accumulate and release energy. Nevertheless, this effort does not very often succeed. That is because it is finite: "*Élan* is finite" (Bergson 2023: 223). Its finitude highlights an *élan*'s non-spiritual facet. It also indicates that the *élan* is not only an image, as claimed by Tano Posteraro in several of his articles (e.g., Posteraro 2022a), but something real.

In recent years, there has been quite a lot of research that cast doubt on the exclusivity of the *élan vital*'s metaphysical facet. Notably, the special issue on Bergson's vitalism ap-

¹ Bergson, in the letter to R. Kroner, uses the crucial phrase: "first appearance of life on our planet" ("*première apparition de la vie sur notre planète*") (Bergson 2011c: 391). Eng. translations of Bergson's quotes are mine (P. B.).

² "Je parle de Dieu comme de la *source* d'où sortent tour à tour, par un effet de sa liberté, les «courants» ou «élans» dont chacun formera un monde" (Bergson 2011b: 361).

³ "L'*élan vital* dérive donc de Dieu" (Bergson 2011a: 661).

⁴ See also: Bergson (2013: 264).

⁵ See, e.g., Tano Posteraro, who suggests that "the *élan* can be conceived as an image for a form of effort that is de-subjectivized and generalized across the evolutionary process" (Posteraro 2022b: 63).

peared in *Parrhesia* in 2022. Mathilde Tahar concluded that “the *élan vital* is an empirically based concept that serves to think the movement immanent to biological evolution” (Tahar 2022: 21). Paco Majic attempts to translate “some of Bergson’s metaphysical concepts relating to biological evolution into the language of contemporary molecular evolutionary theory” (Majic 2022: 102). James DiFrisco, in his significant article *Élan Vital Revisited: Bergson and the Thermodynamic Paradigm* argues against the vitalistic interpretation of Bergson’s *élan vital* in favor of an interpretation based on his overlooked reflections on entropy and energetics. DiFrisco claims that the *élan vital* is not a specific vital force. It does point to the set of actual forces responsible for the production and functioning of an organization, but this is not what is opposed to material forces (DiFrisco 2015: 54, 64).

Thus, there are two types of the *élan vital*: first, the general trademark of Bergson’s philosophy, its spiritual facet – and second, a singular, specific *élan* involved in animal and plant life’s accumulation and release of energy.

In this light, it is crucial to distinguish between the two types of the *élan vital*, and then such claims as, for example, David Kreps’s “when Bergson describes *élan vital* as a property of matter itself, he is also saying that matter as we perceive it is in fact how *élan vital* expresses itself – represents itself back to itself” (Kreps 2015: 76) would not seem so alien to Bergsonian philosophy.

Bergson divides life, like the *élan (vital)*, into two types. This division initially appeared in *Psychophysical Parallelism and Positive Metaphysics*. Here, Bergson emphasizes the separation between “thought and the physical conditions in which thought takes place” (Bergson 2005: 59), by defining it as the “relation between man the thinking being and man the living being” (*ibid.*). As John Meechan points out, “what Bergson says of ‘life’ in relation to ‘matter’ in CE [Creative Evolution] is here [in *Psychophysical Parallelism and Positive Metaphysics*], to some extent, prefigured in what he has to say of ‘thought’ in relation to ‘life’, or rather of ‘the insertion of thought into life’, where ‘life’ tends to represent the material conditions of action” (Meechan 2019: 481). Furthermore, Bergson distinguishes between “physiological life” (*vie physiologique*) and “life of thought itself” (*vie de la pensée elle-même*), or “organic life” (*vie organique*) and “spiritual life” (*vie spirituelle*) (Bergson 2011e: 262). Additionally, an essential distinction between ‘life in general’ and ‘the forms in which [life] manifests itself’ can also be found in *Creative Evolution* (Bergson 2023: 119).

My analysis of the problem of the origin of life applies exclusively to ‘physiological life’, ‘organic life’, and the forms in which life is manifested. According to Bergson, matter manifests itself not only through physical facts (its simplest forms), but also through physiological facts (its most complex form). In *Deleuze, Bergson and the Concept of Life*, Elizabeth Grosz emphasizes that, according to Bergson, “life is not some mysterious alternative force, an other to matter, but the elaboration and expansion of matter, the force of concentration, winding or folding up that matter unwinds or unfolds” (Grosz 2007: 292). Moreover, as Mark Sinclair argues: “But life and matter here are not two things. The same spectrum can be viewed in the ascendant or in the descendent. In the ascendant, the spectrum is the energy of matter fueling life, genial life reaching out to ever higher forms;

in the descendent, it is life congealing as matter, life becoming fascinated and hypnotized by habit and its own materiality” (Sinclair 2020: 222). In this respect, the question of the origin of physiological life, as it is currently framed, seems consistent with Bergson’s philosophy. I agree with Laurens Landeweerd’s thesis that Bergson’s view of the origin of life constitutes a significant potential contribution to the current debates in the molecular life sciences. Landeweerd stresses that Bergson’s “views seem to place him dangerously close to vitalist biological theories of the nineteenth century. But on closer inspection they differ from biological vitalism on crucial points” (Landeweerd 2021: 59). Bergson’s aim, he argues, is not to explain life’s nature through an inexplicable mystical factor. Instead, Bergson is concerned with showing how change was an essential quality of existence.

It is impossible to solve the origin-of-life’s problem unequivocally, with a simple ‘yes’ or ‘no’. As Bergson points out, both ‘yes’ and ‘no’ are sterile in philosophy. What is interesting, instructive, and fruitful is “*dans quelle mesure*” (to what extent) (Bergson 2011e: 246). So the question is: to what extent is the problem of the origin of life (physiological) relevant to Bergson’s key ideas.

Bergson was clearly engaged in thinking through this problem of the origin of life, and we find it as a specific focus in his lectures on Plotin’s philosophy, given at the *École normale supérieure*, most likely in 1898–99. In these lectures, Bergson attempted, among other things, to answer the question, “What is a living being?” (*Qu’est-ce qu’un être vivant?*). In the course of his argument, Bergson makes the interesting point that organized bodies can come chemically close to life, but something else from the outside is needed – a guiding principle. It would be ineffective, however, “*si la matière n’était déjà par elle-même prête à s’organiser*” (“if the matter were not already ready by itself for self-organization”) (Bergson 2000: 60–61).

The explication of life runs through the whole of *Creative Evolution*. It is crucial to note that, as Bergson claims in the “Introduction” to *Creative Evolution*, this explication is accompanied by the concept of *l’histoire*.⁶ In order to convey the full range of meanings inherent in this concept, one must look at the carriers of life – the organisms. An organism is essentially a historical being. Its past is always interwoven to some degree with the present. Consequently, its history, which has a point of origin, e.g., a “common source” (*souche commune*) (Bergson 2023: 119), must be included in the explanation of any living being.

Thus, *l’histoire* is the first aspect of the origin of life discussed in *Creative Evolution*. The second aspect is that no living being is independent. For this reason, Bergson argued against the vitalism of the late eighteenth century which attributed an independent and substantial ‘vital principle’ to each living being, and against the neo-vitalism of Hans Driesch. In the letter to A. O. Lovejoy, Bergson points out that he only refutes vitalism if it pretends to constitute each living being as an independent entity (Bergson 2011f: 403). On the contrary, “there are no universal biological laws” (Bergson 2023: 22). Each particular species, in the very act by which it constitutes itself, affirms its independence,

⁶ This word is the first in *Creative Evolution*.

has a degree of freedom, and could therefore deviate from the line. However, freedom comes only in degrees; the complex organisms, with “expanded consciousness,” have more freedom, and the humble organisms, with “contracted consciousness,” have less.⁷

As a consequence, no living organism has absolute freedom or autonomy. Even a Vertebrate, the most individuated of all organisms, develops an ovum that is part of another body. This vertebrate could even be related to “that of the tiny mass of protoplasmic jelly that is in all likelihood at the root of the genealogical tree of life” (*ibid.*: 46). The aforementioned common source could be this protoplasmic jelly.

The third and most important aspect of the origin of life mentioned in Bergson’s philosophy is his postulate that reality pre-exists possibility. The fact that he rejects the idea that possibility precedes reality does not mean that reality cannot flow from a deeper ontological foundation. This rejection underlines that reality creates itself (*réalité se crée*). In the course of this creation, its image appears to have been possible at all times. Possibility develops as it is realized, thus demonstrating its creative nature.

Why did Bergson not do away with the possible? He could only write that reality creates another reality or that one organism derives from another. However, “it is the real that makes itself possible and not the possible that becomes real” (Bergson 1947: 122). For Bergson, life forms embody an *élan*. However, living beings do not derive this *élan* from another, more general *élan*. “Every species, and even every individual, retains only a certain *élan* from the overall impulsion of life, and tends to use this energy toward its own interests” (Bergson 2023: 52). The concepts of impulsion and energy can be understood in ordinary terms; for example, “the billiard ball that is launched at another billiard ball determines its movement by *impulsion*” (*ibid.*: 71). Bergson writes at the beginning of *The Possible and the Real* that the inorganic world is a series of infinitely rapid repetitions, the totality of which constitutes the visible changes. These repetitions rhythmicize the life of conscious beings and measure their duration, thus providing a possible source of energy or impulsion. In *Creative Evolution*, the deep cause of the transformation of species is the impulse that “launched life into the world” (*qui lança la vie dans le monde*) (*ibid.*: 122). Let us take note of Bergson’s choice of the verb ‘*lança*’ here. I will return to it in what follows. In the meantime, I consider the impulse’s derivative forms – a whole line of *élan*s.

Bergson’s many *élan*s

The *élan vital* is regularly placed first amongst Bergson’s *élan*s. In *Creative Evolution*, the word *élan* has 39 occurrences in various combinations. The combination ‘*élan vital*’ appears in only two of them. In half of these 39 cases, the word *élan* was used without adjectives, mostly with definite and indefinite articles. Why, then, does the *élan vital* take up the pole position in the philosophy of Bergson? And on what grounds?

⁷ Bergson, in *Creative Evolution*, identifies consciousness with freedom, “consciousness is essentially free, it is freedom itself” (*ibid.*: 236).

In *Creative Evolution*, our reason is “incorrigibly presumptuous” (*ibid.*: 50). It dismisses the idea that we must create a new concept or a new way of thinking for a new object. Reason affixes philosophy to previously created concepts and, thus, attaches itself to what is ready-made. During the discussion of André Lalande’s *Vocabulaire technique et critique de la philosophie (Technical and Critical Vocabulary of Philosophy)* (Lalande 2010), Bergson first pointed out that philosophizing aims at creating new concepts.⁸ Different concepts should reflect the diversity of the world, attaching itself to what is being made (*se faisant*). Detailing the world means detailing concepts. Nevertheless, the “incorrigibly presumptuous” reason manages to impose its own game, which is also evident in the fact that philosophy deals only with the *élan vital*, excluding its other modifications. One can say that Bergson himself contributed to this tendency. Throughout *The Two Sources of Morality and Religion*, he uses the expression “*la conception d’un élan vital*” (Bergson 2013: 264). The *élan vital* is here taken as something ready-made (*tout fait*), symbolizing his evolutionary theory. In *Creative Evolution*, however, this concept does not function as a symbol; it does not *directly* correspond to life or ‘vitality’. It is instead something *comparable* to life: “And life must be compared to an *élan* since there is no other image borrowed from the physical world” (Bergson 2023: 225); an *élan (vital)* is involved in the real dynamic (physical) process in which it is simply one of the many acting fragments, *un élan, certain élan, l’élan...*

Bergson pointed out: “life is comparable to an impulse or an *élan*” (*ibid.*: 226). However, at the beginning of the paragraph, he writes: “life must be compared to an *élan*” (Bergson 2023: 225). At first glance, this may seem contradictory. However, it is our reasoning that makes it contradictory. In *Creative Evolution*, the rigorous analysis of our cognitive capacities (mind, reason, intelligence) is linked to the problem of life. For Bergson, our cognition cannot penetrate the *flow of reality* because it must always arrange the elements spatially, that is, one after the other. In this way, human understanding juxtaposes an *impulse* and an *élan*, and that juxtaposition leads to comparison. In reading these passages, we unconsciously compare an *impulse* and an *élan*. At one point in space, we deal with an *impulse* and an *élan*; at another, we deal with an *élan* alone. It all happens at the same time. However, reality, according to Bergson, functions differently.

In reality, “the universe endures” (“*L’univers dure*”) (*ibid.*: 17). To Bergson, duration is primarily invention, the creation of forms, and the constant development of the new. He distinguishes two opposing movements in the universe: ‘descent’ and ‘ascent’. ‘Descent’ only unwinds a roll already prepared; it is like a mechanism, and its ‘actions’ can indeed be predicted. ‘Ascent’ is creation itself. Ascending movements are unpredictable. It is on this level that duration operates. It is, therefore, possible to imagine that, at a given moment, an *impulse* works only; a few moments later, it evolves into an *élan* which works independently and indefinitely, and, in a million years, it evolves into a *poussée vitale* or an *élan vital*.

⁸ “philosopher consiste le plus souvent non pas à opter entre des concepts, mais à en créer” (Bergson 2011d: 940).

For this reason, Bergson sought to grasp the process of this duration, the phases of this becoming, or this evolution. However, it is common for most academic works to prefer to analyze Bergson's theory of evolution exclusively through the concept of the *élan vital*, while ignoring other agents of the evolutionary process (an impulse, a push of life,⁹ etc.). First, e.g., genetic energy gives an *impulsion* to embryonic life. This *impulsion* passes from germ to germ through the intermediary of a developed organism (*ibid.*: 31). An *impulsion* is what is transmitted; it is *between*. Then, inside an organism itself, begins operating *thrust* (*poussée*) by which the living being grows, develops and ages (*ibid.*: 24). But each organism grows, develops and ages in an original way. And this *originality* depends on an *élan*. An organism uses an *élan*, retained from an *impulsion*, toward its own interests (*ibid.*: 52). An *élan* is the deep cause of the variations (*ibid.*: 84). As a result, life is, as Arnaud François claims, in perpetual self-overcoming ("*en perpétuel dépassement d'elle-même*") (François 2010: 97).

Élan originel, élan commun, élan initial de la vie

Bergson modifies an *élan* through this temporal force: *original* or *initial*, by focusing on its capacity as a source of vital processes. The eyes of a vertebrate and those of a mollusk react equally to light, sharing some common features despite the significant morphological differences between these species. This implies that a vertebrate and a mollusk come from the same source; as Bergson pointed out at the beginning of the second chapter of *Creative Evolution*: "there is simply general movement of life" (*ibid.*: 96). Biologically, there are divergent directions and tendencies in life's evolution, but, metaphysically, there is an "indivisible motor principle from which their *élan* has emerged" ("*l'indivisible principe moteur d'où procédait leur élan*") (*ibid.*: 97). This led Bergson to create modifications of an *élan*: *originel* and *commun*. After having flowed from a single source, living beings began to shape their riverbed autonomously, thus demonstrating a freedom of creation that is unprecedented for a material mass.

At this point, an *élan* came closest to life. However, reducing the *élan initial de la vie* to the *élan vital* would be a gross generalization. The concept of the *élan initial de la vie* suggests an energetic element which operates within life, but it does not mean that this element and life become identified. Bergson suggests that the energy distributed in the universe initiates life, so, despite its reticence, his theory of evolution is certainly concerned with the origin of life, and he has left many clues as to its nature.

Origin of an *élan*: *se lancer, s'élaner*

There is an interesting passage in *The Two Sources of Morality and Religion*: "*un grand courant d'énergie créatrice se lance dans la matière*" (Bergson 2013: 221) ("a great current of creative energy is precipitated into matter" [Bergson 2002: 209]). Attention should be

⁹ The gradual exploration of these forces is present, e.g., in: Ansell-Pearson (2018: 103).

drawn to the form of the verb *se lance* (is precipitated). He declares *se lance*, and, later in the text – *est lancé*: “dans des mondes où le courant est lancé à travers une matière” (Bergson 2013: 223). In the English version, “in worlds where the current rushes through matter”¹⁰ (Bergson 2002: 211). Bergson hesitates between “current *est lancé*” (was precipitated) and “*énergie se lance*” (energy is precipitated), consciously or not.

What does Bergson’s hesitation between *se lance* and *est lancé* mean? At the very least, it means that Bergson could not finally decide on the universe’s energy source. Frédérick Keck and Ghislain Waterlot in the *Dossier critique* of the French critical edition of *The Two Sources of Morality and Religion* suggest that Bergson, by using *se lance*, alludes to the self-positing of an *élan vital*, and that it has no other relation than to itself (Keck & Waterlot 2013: 450). On the one hand, this source is transcendent (see letters to Joseph de Tonquédec and Henri Gouhier, above); on the other hand, it is immanent to the world (*immanentisme radical*, as Keck and Waterlot define it). This last version dominates in *Creative Evolution*. For example, “a broad current of consciousness had penetrated matter” (Bergson 2023: 163). The involvement of consciousness legitimizes the use of the verb form *se lancer*, namely the part *se*. It can be assumed that this form triggers the functioning of the *élan* and its modifications. The conceptualization of the ordinary verb *se lancer* is also essential because of the ‘philosophical’ etymology of the word *élan*. Of course, this etymology is linguistically artificial, but it is quite possible to accept it by the logic of Bergsonian philosophy’s internal deployment. An *élan* refers to the transition, an ongoing process that includes the past and, as a result, history. An *élan* is not a ready-made concept. According to Bergson, concepts as such must represent reality itself. Reality is in the process of constant change. Thus, if we consider Bergson’s *élan* as something already fixed, we falsify the whole philosophy of Bergson.

S[fe lan]cer. The conjunction of *se* and *lancer* shapes the concept of the *élan*, which simultaneously contains both the elements of launching (*lancer*) and consciousness (*se*). The current brings a broad multiplicity of virtualities that penetrate each other (*s’entrepénétraient*) in the material mass (Bergson 2018: 182). It implies that reality is unpredictable. As a result, it is saturated with possibilities (multiplicity of virtualities), thus shaping a new reality.

Est lancé in the material mass becomes *se lancer* and then *s’élancer* (shoot forth [Bergson 2023: 217]) in the living mass. Those words essentially sharing the same pronunciation and bearing similar significance belong to different areas. The evolution of *se lancer* into *s’élancer* can be clarified by the following example from *Creative Evolution*:

Imagine a container full of steam at a high pressure [*tension*], with some cracks here and there in the walls of the container through which steam is escaping in a jet. The steam shooting out into the air condenses almost entirely into droplets that fall, and this condensing and falling represents simply the loss of something, an interruption, a deficit. But a small part of the jet of steam subsists, uncondensed, for a couple of instants. This steam attempts to lift up the drops that fall; it can at most slow down their fall (*ibid.*: 217).

¹⁰ The translation needs to be more accurate. First, it was translated wrongly by using the active voice. Second, it is essential to keep the word “precipitated,” as used above.

‘The steam shooting out’ in the French version is “*la vapeur lancée en l’air*” (Bergson 2018: 248). In the same way, jets must ceaselessly shoot forth from an immense reservoir of life, where each one, falling back, is a world. ‘Shoot forth’ in the French version is *s’élancer*. There is the ‘steam’, and then ‘it escapes in a jet’; this ‘steam’ is *lancée*, and then the functional part of the steam – the jet – is in the process of *s’élance[r]*. Each jet, falling back, is a world; a world where there is energy *lancé* (or which *se lance*), and where there are the jets of this energy which *s’élance*.

Bergson could be seen as a ‘transitional fossil’ between the commitment to material mass and the autonomy of life, on the one hand, and between teleology and absolute spontaneity, on the other hand. Bergson’s hesitation between *se lance* and *est lancé* seems to stem from this ‘transitivity’, and from his warning not to carry the comparison between a container full of steam and life too far. The emergence of the concept of *élan* could be seen as an attempt to strike a balance – to be on the dry land of material mass and at the same time to be wet in the cause of the incessant free jets of life.

From the origin of an *élan* to the origin of life (living beings)

One of Bergson’s aims was to avoid considering life in general. He regularly asserts that philosophy must be able to follow concrete reality in all its sinuosities. Reality is always concrete, and life is no exception.

Life has a *history*. It is not just a phenomenon; it has a history and something that generates its “evolutionary movement” (*mouvement évolutif*). At the beginning of Chapter One of *Creative Evolution*, Bergson suggests: “At a certain moment and at certain points in space, a clearly visible current was born: this current of life ...]” (*ibid.*: 30). What does Bergson mean by “was born” (*a pris naissance*)?

The age of the Earth is 4.54 billion years. Evidence of life (bacteria and cyanobacteria [blue-green algae]) dates back at least 3.5 billion years, and the oldest known animal fossils show that animals appeared about 700 million years ago. This temporal data could correspond to Bergson’s “at a certain moment.” “In certain points of space” could refer to the different presumable locations of the beginning of the process of abiogenesis, such as “Darwin’s little pond,” “volcanic hot springs and hydrothermal vents,” “deep-sea hydrothermal vents,” “fluctuating hydrothermal pools on volcanic islands or proto-continents,” and “volcanic ash in the ocean,” etc. Bergson also writes: “Even in the most distant small streams, something of the impulsion received back at the source” (*ibid.*: 55–56). In their cells, the *masse protoplasmique* can be seen as the traces of the primordial source from which they are derived. The biologist Armen Y. Mulikidjanian and co-authors in the article *Origin of First Cells at Terrestrial, Anoxic Geothermal Fields* write that the geochemical reconstruction they made shows that: “the ionic composition conducive to the origin of cells could not have existed in marine settings but is compatible with emissions of vapor-dominated zones of inland geothermal systems” (Mulikidjanian et al. 2012: 821).

Alternatively, Bergson's sentence from the last paragraph of the Second Chapter of *Creative Evolution* reads: "In reality, there is but a certain current of existence and the antagonistic current; the entire evolution of life comes from this" (Bergson 2023: 166). Bergson's statement could be compared with Robert Hazen's hypothesis concerning the role of rocks and minerals in the geochemical origin of life. Hazen argues (e.g., in the book *Genesis: the Scientific Quest for Life's Origins* [Hazen 2005]) that life did not spring up in isolation; minerals most likely pushed the development of life. Those inanimate compounds could catalyze the synthesis of basic biomolecules, selecting, protecting, and concentrating them. They may even be considered as life's initial genetic system. These two seemingly opposite compounds can somehow conjoin and thus provide "the whole evolution of life," or arrange what Bergson called *le spectacle de l'évolution de la vie*. For Bergson, life courses through matter and cuts living beings out of it (Bergson 2023: 219). In other words, living beings spring out of the matter. Matter opposes life, but life gains something from matter: "between them results a *modus vivendi*" (*ibid.*: 250).

Conclusion

Many such instances point to the direction of Bergson's thought towards the problem of the origin of life. Most importantly, the quite concrete problem of the origin of life in Bergson's evolutionary theory was implicated in his concept of the *élan*, though, at a first glance, it may be seen only as metaphysical. First, I showed that the *élan vital* is simply one of many acting fragments of an *élan*: *un élan, certain élan, l'élan...* Then, I focused on the capability of an *élan* to be a source of vital processes, an *élan* as an engine of the history of living beings; such modifications as *élan originel*, *élan commun*, and *élan initial de la vie* are derived from this function of *élan*. After that, a review of the construction of this engine revealed that the *élan* itself has a history; the source (not the origin or the cause) of the *élan* might be found in a material mass, or rather in the process which takes place there: "a great current of creative energy 'se lance' into the matter." The material facet of an *élan*, its concrete history, gives reason to say that life (physiological) also has a history, a concrete place of birth, and a concrete time of birth. All this provides sufficient grounds to put the problem of the origin of life in the context of Bergson's philosophy, despite him leaving only a few suggestions about it.

Either way, these suggestions shed light on Bergson's point of view concerning life and matter, previous descriptions of which have commonly been too abstract, and what seems petrified. Bergson considers an organism not in its ultimate shape, but – quite the opposite – in its continuous becoming, and not only organism as such, but also what precedes it – *masse indifférenciée* (undifferentiated mass).

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