IS DISCONTINUOUS BERGSONISM POSSIBLE?

TERESA CASTELÃO-LAWLESS*

Abstract: Gaston Bachelard’s position toward the philosophy of Henri Bergson is most interesting. In *La Dialectique de la durée* (1936), Bachelard claims that “of Bergsonism we accept everything but continuity” and that the rest of his book will be an attempt to show the possibility of a “discontinuous Bergsonism”. In this paper, I focus on the reaction of Bachelard to works of Bergson such as the *Essai sur les données immédiates de la conscience* (1889), *L’Evolution créatrice* (1907), and *Durée et simultanéité: à propos de la théorie d’Einstein* (1922) and demonstrate that even though the conditions necessary for the possibility of a discontinuous Bergsonism are not the same ones which Bachelard had in mind when he accepted most of Bergsonism, their phenomenologies of the scientific spirit were analogous.

Keywords: continuity, discontinuity, epistemology, scientific creativity, metaphysics, nature of science, nature of physical reality.

French epistemologist Gaston Bachelard (1884-1962) could not have escaped confronting his philosophy of science with the philosophy of Henri Bergson (1859-1941). Bachelard’s first book, the *Essai sur la connaissance approchée*,1 appeared in 1927, the year Bergson received the Nobel Prize for Literature. By then, Bergson had been part of the intellectual landscape of France for almost two decades. Bergson’s *Essai sur les données immédiates de la conscience* had come out in 1889; his “new metaphysics” had been published by the Revue de métaphysique et de morale in 1903 and in *L’Evolution créatrice* in 1907; and his interpretation of Einstein’s relativity in *Durée et simultanéité* in 1922 had sparked much controversy in the

---

* Teresa Castelão-Lawless is Ph.D. Professor, Department of Philosophy, Grand Valley State University, MI, USA. E-mail: Castelat@gvsu.edu

1 Bachelard’s doctoral thesis
academic community. Bergson had scientists and intellectuals taking sides on his position regarding the boundaries of science and metaphysics. He had supporters in Louis de Broglie but detractors in Henri Poincaré, Albert Einstein, and Léon Brunschvicg. The divide was also sociological, since it coincided with the “competing currents of philosophical thought and practice in the French universities”2. For instance, at the Sorbonne, Le Roy was combining in his courses the philosophies of Bergson and Poincaré, thus reducing science to a system of practical conventions, whereas Brunschvicg was doing just the opposite in order to protect scientific realism against what he perceived as Bergson’s “irrationalism”(Chimisso 1997, 4-5). These facts were probably enough to motivate Bachelard’s curiosity. Not only does he mention Bergson in all of his works on epistemology, he devotes two books to Bergson’s philosophy, L’Intuition de l’instant (1932) and La Dialectique de la durée (1936). These titles suggest that Bachelard opposed Bergsonism for, according to his own view, intuition was not composed of instants and duration was not dialectical.

Scholars have taken Bachelard’s criticism of Bergson’s philosophy of continuity at face value. This is because it seemed to them that a discontinuist philosopher such as Bachelard had necessarily to reject not only continuity but Bergsonism altogether with it. My interpretation diverges from this view. It shows that Bachelard accepted continuity, with the proviso that it was continuity of scientific explanation rather than in physical reality, and that Bergson’s and Bachelard’s phenomenologies of the mind are analogous.

BERGSON AND BACHELARD ON FLEXIBLE CONCEPTUALIZATION

Bachelard quickly detected the need to accommodate the vocabulary of philosophy to the new sciences in light of their new requirement that scientific concepts be as flexible and mobile as the dialectical mind which produces them, and which demonstrate at different times and in different situations an alternation between rationalism and empiricism, continuity and discontinuity. He knew

---

that, especially at the level of quantum mechanics, there were ambiguities in the act of knowing and that one had to replace causality for uncertainty and probability. He also claimed that philosophy was philosophy or metaphysics of science only.

Bergson too was very critical of empiricism and rationalism. Both of these metaphysics of science could lead one into falsely believing that “by putting together all the diagrams [we] can reconstitute the object itself”4. He thought that traditional philosophy had made one to confuse real problems with linguistic fallacies, symbols with reality, and to think that symbols represented reality instead of fragments of it. Bergson also wanted to demonstrate that, even though science and metaphysics are complementary and ought to cross paths at some point, they should nevertheless be kept demarcated on grounds of intention and purpose, on what level of reality they were expected to grasp, and on the methodologies that were used to approach qualitatively different perceptions and levels of reality. In fact, he said, “if consciousness has to split up into intuition and intelligence, it is because of the need it had to apply itself to matter at the same time as it had to follow the stream of life. The double form of consciousness is due to the double form of the real”5. He had claimed since the Essai sur les données immédiates de la conscience (1889) that our intelligence grasped “artificial” reality analytically and scientifically, while our intuition grasped “real” reality psychologically and metaphysically. Physical science gave us knowledge that was practical for life and for the study of “dead matter.” But this knowledge was a contrived, static construct of reality in its dynamic completeness. It was a mistake to expect mechanicist science to be readily capable of giving us access to the essence of things. Dialectic was to Bergson an incomplete, fractured tool of analysis. It only captured in fragments, as in a “still movie,” a reality and a mind which were in constant flux.

To Bergson, metaphysics, if properly used, would give us glimpses of a reality which tended to escape rational categorization. For this to happen, we needed to keep our intellectual habits from creating static images of duration, such as imagining time as moving in a linear spatial trajectory as it was described abstractly in science, instead of

---

3 Bachelard’s epistemology kept with the French tradition of combining history and philosophy of science
the real, concrete time given by intuitive consciousness (Bergson 1944,196). This was an extremely difficult task. As Bergson pointed out in the Essai, “all dynamic representation is distasteful to reflective consciousness”. However, “concepts are necessary [to reach intuition], for all the other sciences work as a rule with concepts, and metaphysics cannot dispense with other sciences. But it is only truly itself when it goes beyond the concept, or at least when it frees itself from rigid and ready-made concepts in order to create a kind very different from those which we habitually use; I mean, supple, mobile, and almost fluid representations” (Bergson 2007, 13). Later in the text, he adds, “Shall we say, then, that duration has unity? Doubtless, a continuity of elements which prolong themselves into one another participates in unity as much as in multiplicity….shall we conclude that duration must be defined as unity and multiplicity at the same time? (…) when I replace myself in duration by an effort of intuition, I immediately perceive how it is unity, multiplicity, and many other things besides. These different concepts, then, were only so many standpoints from which we could consider duration. Neither separated nor reunited have they made us penetrate it.” (Bergson 2007, 14-15)

The mind does fragment reality into dualisms like unity and multiplicity, continuity and discontinuity, realism and idealism, but it also makes the mistake of mixing qualitatively different ones, such as when we “make time into a representation imbued with space”.

These passages in Bergson’s texts about metaphysics show interesting points of intersection with Bachelard’s epistemology of science. For, while Bergson was describing the metaphysical function of thinking and Bachelard talked about the metaphysics of applied rationalism, they referred in similar terms to the value of representation, to how the mind works, and to what ought to happen to the shelf-life of concepts. In other words, Bachelard believed that the capacity for concepts to be flexible testified to their adaptability to a constantly moving, probabilistic scientific reality and to the dynamic of the scientific spirit in its creative activity, whereas Bergson required conceptual flexibility and a variety of standpoints for us to be able to grasp dynamic reality and dynamic consciousness intuitively. Thus, if Bachelard defended conceptual fluidity in good science and the

mobility of the mind to adjust to whatever level of reality one was dealing with, and Bergson defended conceptual flexibility and the mobility of the mind to grasp the flux of reality, then they both would have to agree that either continuity or discontinuity were incomplete conceptualizations of reality. They also would have to agree that sometimes there was unity, sometimes disunity, and sometimes multiplicity in the knowledge of nature and of the self. The same texts of Bergson testify to the fact that he was not without further qualification “the philosopher of continuity.” To Bergson, labeling duration a simple “continuity” would be an error, for this would be attempting to conceptualize that which could not be conceptualized at all. As Bergson had said when referring to the study of consciousness, “the inner life is all of this at once: variety of qualities, continuity of progress, and unity of direction. It cannot be represented by images, and it is even less possible to represent it by concepts” (Bergson 2007, 10).

We could still claim that a reason for Bachelard’s criticism of Bergson’s philosophy of continuity was because they defined “intuition” differently. To Bergson, intuition was metaphysical thinking, something that we ought to encourage in ourselves so that we could both access immaterial reality and be able to understand the operations of consciousness. It seems that Bachelard would not agree with this, since to him intuitions had to be discouraged in science because they were an epistemological obstacle to its development. However, this is not all that Bachelard had to say about intuition. In La Dialectique de la durée he admitted that, besides those “negative” intuitions which were “at the root of our concepts”, “positive” intuitions had an important role in science, since they could “put concepts together: these essentially secondary intuitions (…) are wrongly thought to be artificial and poor.” They too have an important role in the scientific enterprise. Furthermore, Bergson would not disagree with Bachelard that there should be no place for “negative” intuitions in science, for he too claimed that physical science ought to

---

9 G.Bachelard (2000). *The Dialectic of Duration* (1950). Manchester: Clinamen Press, p.30. The role given to “irrational” judgments of value which cannot be articulated linguistically but are essential to scientific theory assessment and in theory choice receives an incomparably better treatment in works such as Michael Polanyi’s *Personal Knowledge: Towards a Post-Critical Philosophy.* Chicago: The University of Chicago Press, 1958
be the product of intelligence only and not of metaphysics. In fact, Bergson affirmed that all intuitions ought to be subjected to empirical verification just like any other science. So, those of Bergson’s intuitions which could be confirmed by observation were not dissimilar to Bachelard’s “positive” intuitions which cooperated in the construction of conceptual systems. Besides, both Bergson and Bachelard believed that metaphysics should interact creatively with science, and that they should be checked against one another. In fact, the role that Bachelard gave to philosophy of science was operationally analogous to the role that Bergson gave to metaphysics: their combined effect allowed for their mutual progress and development, and enabled us to approximate the essence of reality.

EMPIRICALLY VERIFIED METAPHYSICS

Bergson and Bachelard claimed that metaphysics ought to be empirically confirmed by science itself and by the way we thought. Bachelard spent decades showing that his epistemology fitted scientific evidence perfectly well. In his turn, Bergson had said in L’Evolution créatrice that “metaphysics is dependent upon the theory of knowledge”, that “both one and the other depend upon experience,” (Bergson 1944, 196) and in the Essai that “we [can] witness the superposition or, even better, the intimate fusion of many ideas that, once dissociated, seem to exclude themselves from each other in logically contradictory terms” (Bergson 1889, 101). One way for Bergson to test the metaphysical hypothesis of duration, for instance, was to do so against two of the most important scientific theories of his time, biological evolution and relativity. In L’Evolution créatrice, Bergson tried to demonstrate continuity in the phenomenon of life as it developed through duration. To him, “there is an unbroken continuity between the evolution of the embryo and that of the complete organism….The development of the embryo is a perpetual change of form”(Bergson 1944, 22), so that “evolution implies a real persistence of the past in the present, a duration which is (...) a connecting link…Continuity of change, preservation of the past in the present, real duration – the living being seems (...) to share these attributes with consciousness” (Bergson 1944, 27). As it can be testified by the marks of time in our aging bodies, external time or duration is not about static being, as described by non-temporal frames such as mathematics and logic, but about becoming (Bergson 1944, 324). So, even though we can find a multiplicity of durations, “there is only a current of
existence and the opposing current; thence proceeds the whole evolution of life” (Bergson 1944, 203). It was from the study of evolution that one can recognize that the two lines of thought provided by the intellect and intuition truly led to one another (Bergson 1944, 196). Also, in Durée et simultanéité Bergson tried to demonstrate the empirical validity of “continuity” of duration by inferring it from the conception of time as described in Einstein’s theory of relativity. As Bergson put it, “not only the theses of Einstein do not seem to contradict, but they even confirm, they (...) are a commencement of proof in the natural belief that men have of a unique and universal time”.

Bachelard had tried to infer from relativity an epistemology of science that would confirm his longtime belief that discontinuity existed in matter, in history, and in consciousness. Bachelard’s first critical book on Bergson, L’intuition de l’instant, used the views of Gaston Roupnel against those of Bergson. Roupnel had in the past criticized Bergson’s dualistic phenomenology. He had also attempted to establish a rapprochement between discontinuity and “phenomena of radiation in the quanta hypothesis”. The musings over Roupnel’s La Nouvelle Siloë were a license on the part of Bachelard to return to relativity and to prove that continuity in duration did not exist except as a rushed, generalized approach to reality. In the midst of profuse literary considerations, Bachelard admitted that “[we] were awoken from our dogmatic dreams [i.e., our confidence in the Bergsonian thesis] by the Einsteian critique of objective duration. It seems (...) to us evident that this critique destroys the absolute of that which lasts, but in keeping (...) the absolute of what is, that is to say, the absolute of the instant”. (Bachelard 1979, 29)

Despite agreements between Bergson and Bachelard on issues such as the role of intuition, the mobility of the mind, and the need to reform philosophy of science, one would think that Bachelard’s realization that the metaphysics of continuity could not be empirically corroborated by relativity would lead him to give up on Bergsonism altogether. But in fact, four years later Bachelard published La

11 Gaston Roupnel (1871-1946). He is seen as anticipating some of the spiritualism of Teilhard de Chardin, which makes it even stranger that Bachelard never used evolution theory to test Bergsonism
Dialectique de la durée to advance his own agenda of epistemological discontinuity and to further test Bergsonism against modern science. As we have seen, Bergson had not rejected discontinuity altogether. But he had definitely restricted its use when he claimed in L’Évolution créatrice that “of the discontinuous alone does the intellect form a clear idea (…) as the intellect is characterized by the unlimited power of decomposing according to any law and of recomposing into any system” (Bergson 1944, 170-173).

The problem was that Bachelard continued to be attracted to Bergsonism but did not agree that discontinuity was simply an intellectual tool to be used to capture something that was in reality continuous. He wanted to demonstrate that discontinuity corresponded approximately to the ontology of the physical world as described by quantum mechanics. So, his new book was an attempt to test again his discontinuity thesis. It was also meant to provide another falsifying test of Bergson’s metaphysics, this time by trying “to develop a discontinuous Bergsonism, showing the need to arithmatize Bergsonian duration so as to give it more fluidity, more numbers, and also more accuracy in the correspondence the phenomena of thought exhibit between themselves and the quantum characteristics of reality” (Bachelard 2000, 29). The need that Bachelard had to ‘discontinualize’ Bergson came from his own belief in the functional futility of “the postulate of temporal continuity.” He did not think that presupposing a continuous reality could clarify the descriptions and the enumerations necessary for microphenomenology in general or for quantum experiments in particular (Bachelard 2000, 50). However, even though he could not accept that physical reality was continuous, he still believed that Bergsonism helped to legitimize his own views on the mobility of the mind and the need for flexibility in conceptualization.

The arbitrariness of the separation between the subject and the object did not demonstrate to Bachelard that our mind was imposing discontinuous standpoints to a fluid duration - which would be Bergson’s position if he could have tested continuity against quantum theory -, but that all the mathematical standpoints created by the mind were as different as the multiple ways in which a discontinuous reality could give itself to us. In other words, where Bachelard disagreed with Bergson was not in the use that Bergson had made of continuity as a category of thought per se, since Bachelard shared the same belief that one must use multiple plastic concepts to represent possible states of knowledge and of thought. As he pointed out, “from our point of view
(…) continuity – or continuities - can be presented as characteristics of the psyche, [but] characteristics that cannot be regarded as complete, solid, constant (Bachelard 2000, 29). His disagreement was with Bergson’s claim that continuity existed OUTSIDE of the self that thinks it. Bachelard said in L’Intuition de l’instant that “we reject this metaphysical extrapolation which affirms a continuous in itself, when we are at all times in the face of the discontinuous of our experience” (Bachelard 1979, 42). In La Dialectique de la durée, he even claimed that science, which provided us with “proofs of being,” (Bachelard 2000, 33) had not proved at all the existence of continuity (Bachelard 2000, 43). So, Bachelard was a realist in relation to scientific entities while Bergson was a conventionalist in relation to scientific entities and a realist in relation to the objects of intuition. But they were both “the philosophers of mobility”, and this might well be why Bachelard kept coming back to Bergson.

Bachelard’s recurrent fascination with Bergson could have had two more sources. One was that, contrary to common belief, the influence of Bergsonism in French academia had not disappeared completely after 1922. In fact, five years after La Dialectique de la durée, Louis de Broglie published “Les Conceptions de la physique contemporaine et les idées de Bergson sur le temps et sur le movement” in the Revue de métaphysique et de morale. There, De Broglie admitted that one could disagree with some of the ideas of Bergson, including his misinterpretation of relativity and his weak argumentations, which were usually hidden by an “admirable style”.13 But, now that one knew relativity was not “the last word in science” (De Broglie 1941, 246), one could not help but to be shocked by “the analogy between certain new conceptions of contemporary physics and some of the astounding intuitions of the philosopher of duration” (De Broglie 1941, 242).

Contrary to the views of Bachelard, De Broglie had not kept relativity and quantum theories in the same epistemological bag. So, he criticized Einstein’s relativity on the grounds that it was unable to interpret quantum phenomena; that quantum theories allowed us to “penetrate in the deepest layers of reality” in a way that relativity could not; that relativity could only give us macroscopic and statistical views

13 Louis De Broglie (1941). «Les Conceptions de la physique contemporaine et les idées de Bergson sur le temps et sur le mouvement», in Revue de métaphysique et de morale, T.LIII, n.4, p.242
of phenomena; and so that, contrary to wave mechanics, relativity did not allow for a detailed description of elementary processes, ones which could help us to properly access those discontinuities that were linked to the existence of the quantum of action. In the same breath, he then asked whether “this new physics would not be in better accordance with certain ideas of Bergson than with the relativistic doctrine” (De Broglie 1941, 246-247).

What intrigued De Broglie the most was the anticipatory nature of Bergson’s speculations on time, duration, and movement. Wave and quantum mechanics showed the impossibility of being able to simultaneously “attribute to an elementary corpuscle a well defined state of movement and a completely determined position. The existence of the quantum of action (…) opposes every simultaneous determination and perfect precision of those coordinates which fixate the position of the corpuscle and the (…) energy and quantity of movement which specify its dynamic state. In other words, it was impossible to know at the same time and with precision the dynamic aspect of these elementary processes as well as their localization in space” (De Broglie 1941, 248). To De Broglie, only macroscopically could one have the illusion of being able to know these two things precisely and simultaneously and, contrary to what Bachelard thought, only rushed generalizations could make one assume that the world was as static as its relativistic descriptions.

Bachelard saw our inability to detect position and momentum simultaneously as definite proof that nature was discontinuous, while De Broglie believed that our inability to measure it except with the help from theories of quantum discontinuity was a sign that nature was fleeting, continuous, and unpredictable. Wave mechanics showed that physical entities were constantly “in progress.” Therefore, De Broglie continued, “if Bergson could have studied the quantum theories in detail, he would have noted certainly with joy that, in the image that they offer us of the evolution of the physical world, they show us nature in all its occasions hesitating between several possibilities, and he would have undoubtedly repeated, as in La Pensée et le Mouvant, that ‘time is that very hesitation or it is nothing at all’” (De Broglie

---

14 The quantum of action had been first postulated in 1900 by Max Planck and later by Einstein
The very need for wave mechanics to renounce individualization of particles, as well as its inability to follow the evolution of particles throughout time meant that reality was fluid, just like Bergson had suggested (De Broglie 1941, 255). So, it is possible that Bachelard did not give up on Bergson precisely because De Broglie demonstrated that quantum mechanics verified continuity in nature, and thus that Bergsonism might be right after all.

Another reason for why Bachelard would not give up on Bergsonism had to do with his own work on creative imagination in art and in literature. Contrary to Bergson who believed that science and intuition or instinct were complementary, Bachelard thought that science was complementary to poetry. For instance, in La Psychanalyse du feu, he said that “the axis of poetry and science are first of all inverted. The only thing that philosophy should aspire to do is to make poetry and science complementary, to unite them as two well made contraries. One must therefore oppose expansive poetic spirit [and] taciturn scientific spirit (…).” In L’Évolution créatrice, Bergson claimed that “instinct and intelligence are two divergent developments of one and the same principle, which in the one case remains within itself, in the other steps out of itself and becomes absorbed in the utilization of inert matter” (Bergson 1944, 184). This means that Bachelard’s role for poetry was analogous to the role Bergson had given to intuition.

Bachelard wrote a series of books on rêverie, a state of consciousness which is prompted by our contemplation of the world of matter. The reflections that we make in the state of rêverie are freed from those rational and empirical constraints which we must impose on scientific frames of thinking. There we could give free reign to the wandering mind and to those “negative” intuitions that were obstacles to the scientific spirit but fruitful to the literary and artistic imagination. Rêverie does not need to be tested, and this is probably what makes them so open to the Bergsonian metaphysical method.

---

15 Karl Popper develops this “hesitation” of nature in his theory of propensities, which is really an amendment of probability theory. To him, probability did not explain emergent evolution and other open but predictable acts of nature. Popper knew some of the works of Bergson, but he quickly dismissed Bergson’s *élan vital*


17 In his studies of the unconscious in science and in art, Bachelard also relies heavily on the analytic psychology of C.G. Jung
In L’Air et les songes (1943), which was a study in the imagination of movement, Bachelard said that a psychology of the imagination - in other words the study of states of consciousness in rêverie – “cannot be developed with static forms, it must get instruction from those forms which are in the process of deforming themselves, which are paying much more attention to the dynamic principles of deformation. The psychology of the aerial element is the least “atomic” of all the four psychologies that study the material imagination” (Bachelard 1938, 30). In the last chapter of the book, he recognized that Bergson had been important when he had advocated a “revolution against the philosophy of concept,” and when he made one realize that the excesses of geometrization in the physical sciences were obstacles to the study of movement. (Bachelard 1943, 332) Then, he admitted that “the images that we propose lead us to maintain Bergsonian intuition – which sometimes only offers itself as a mode of enlarged thinking – by positive experiences (...) of the imagination….One could then multiply Bergsonism if we could make it adhere to the images of which he is so rich, by considering it in matter and in the dynamic of its own images”. (Bachelard 1943, 333)

CONCLUSION

Is a discontinuous Bergsonism possible? Yes, but only if we agree with De Broglie’s epistemological interpretation of quantum physics. Furthermore, discontinuous Bergsonism is possible to Bachelard if he would agree to restrict Bergsonism to the study of conceptual flexibility in knowledge, in the mind, and to poetic states of consciousness where intuitions, instincts, and the freedom to dream are principles of creative action. In these realms, it does not really matter whether physical reality is continuous or discontinuous, or whether concepts correspond to reality or simple conventions. What Bachelard could not accept of Bergson was not continuity tout court, but the continuity of physical reality.

References:


De Broglie, Louis (1941). «Les Conceptions de la physique contemporaine et les idées de Bergson sur le temps et sur le mouvement», in *Revue de métaphysique et de morale*, T.LIII, n.4