

Editorial

Bachelard as Pedagogue: Education toward Novelty

Gaston Bachelard (1884-1962) is probably one of the most important French philosophers of the first half of the 20th century, and his thought continues to influence the work of many authors around the world¹. This issue of “Bachelard as Pedagogue” focuses on the themes of the dreamer’s “cogito,” the “material imagination,” scientific pedagogy, and the “philosophy of no” in Gaston Bachelard, including the cultivation of creative imagination. We argue that Bachelard’s work is still relevant and pertinent to thinking about a “pedagogy of no” dear to Georges Jean² especially in a context where it is repeated *ad nauseam* that education is in crisis. However, as Michel Fabre points out, it is precisely “against a background of crisis that our [pedagogical] dialogue with Bachelard takes place”³. Moreover, the author claims that the concept of “formation” remains more adequate than that of education to seize the “pedagogical” sense in Bachelard’s work, both at the epistemological level [see *La Formation de l’esprit scientifique*] and at the poetic level [see *La Poétique de la rêverie*]⁴: formation then becomes a reform of the mind⁵. In our view, Bachelard’s œuvre as a whole helps us to re-think education as a reform of thought, recalling here the proposals of both Edgar Morin and Michel Fabre, both strongly committed to transforming a “made-up mind”⁶. Michel Fabre, one of the best French-speaking specialists on Bachelard, has worked throughout his academic life on the Master’s thought from the point of view of the philosophy of education based on the key idea of “formation” which proves to be central in his most epistemological writings themselves. What interests Michel Fabre in Bachelard is less the problematics of pedagogy than his philosophy of formation⁷, as illustrated in one of his best-known titles, *Bachelard éducateur*⁸.

¹ Gayon, J. ; Wunenburger, J.-J., *Bachelard dans le monde*, Paris, PUF, 2000.

² Jean, G., *Bachelard, L’Enfance et la Pédagogie*, Paris, Éditions du Scarabée, 1983, p. 105-177.

³ Fabre, M., *Bachelard educator*, Paris, PUF, 1995, p. 1.

⁴ *Ibid.*, p. 2.

⁵ Jean, G., *Bachelard, L’Enfance et la Pédagogie*, Paris, Éditions du Scarabée, 1983, p. 182-183.

⁶ *Ibid.*, p. 14-21.

⁷ Cfr. Fabre, M., *Gaston Bachelard. La formation de l’homme moderne*, Paris, Hachette Éducation, 2001; Fabre, M., *Penser la formation*, Paris, Éditions Fabert, 2015.

⁸ Filloux, J.-C., Fabre, M., «Bachelard educator», *Revue française de pédagogie*, volume 117, 1996, pp. 158-162.

In this context, there is a profound difference between an “education of the imagination” and an “education *by and for* imagination”. And there is no way to promote imagination without a pedagogy receptive to the “power of images”⁹. This pedagogy becomes in many ways a pedagogy of the imagination under the sign of the “dreamer’s cogito” and of an imagination envisaged as faculty to deform images which are at the same time unconscious matrices (archetypes) based on two polarities – masculine (*Animus*) and feminine (*Anima*) – and images in contact with material elements of the cosmos which serve as their content (the material imagination). “Our images are indeed enriched and nourished by the symbolism of the four elements (earth, water, air, and fire), which provide ‘hormones of the imagination,’ which make us ‘grow psychically’”¹⁰. What we would really like to do is to launch, from a new pedagogy, the prolegomena of an education for an imagination of a distinct Bachelardian tenor, anchored in a “pedagogy of no,” in the “dreamer’s cogito”, and in the “material imagination.” On its principles, we wish to revalorize an imaginative subject, that is, a subject open to the formation of verbo-iconic images created by the creative imagination as a faculty of the surreal, which presupposes a reverie generated by the “dreamer’s cogito”¹¹. In other words, the hope is to form a subject open to the Bachelardian creative imagination. Thus, to better understand Bachelard’s pedagogical contribution, we must identify the “elective affinities” (Goethe) that conceal the relationship between concept and image in their complex and sometimes invisible dialogue: the concept (*Animus*) tends to objectify the image (*Anima*) and the latter, in turn, tends to subjectivize it, all of which occurs in the sphere of the “dreamer’s cogito”¹². We maintain that in its sphere there is place, however nuanced, for both the imagination and conscience opened to a subjectivity that is sensitive to the “tonality of being”¹³.

Secondly, we must recall that *Le Rationalisme appliqué* (1949) contributed many ideas from the point of view of scientific culture and knowledge, as well as from the perspective of an emerging and established rationalism (*rationalisme enseignant et enseigné*), thus reinforcing the pedagogical ideas of the “Education Nouvelle” which were well known by Gaston Bachelard. In that work there are several references to pedagogues and theorists of the time, as for example Adolphe Ferrière who wrote a kind of bible of the New Education entitled *Let’s transform the school* (1947). We are thus convinced that Bachelard, like Ferrière, wanted to contribute to the transformation of schools by using a dialogical pedagogy and the master-disciple dialectic: “In fact, scholars go to each other’s school. The master-disciple dialectic is often reversed”¹⁴. The author was against

⁹ Huyghe, R., *O poder da imagem*, Trad. Helena Leonor Santos, Lisboa, Edições 70, 1986.

¹⁰ Wunenburger, J.-J., *Gaston Bachelard, Poétique des Images*, Paris, Mimesis, 2012, p. 31; 75-77.

¹¹ Bachelard, G., Bachelard, G., *La poétique de la rêverie*, 8^e edition, Paris, PUF, 1984, p. 124-147; Boccali, R., Boccali, R., *Collezioni Figurati. La dialettica delle immagini in Gaston Bachelard*, Milano-Udine, Mimesis Edizioni, 2017.

¹² Bachelard, G., Bachelard, G., *La poétique de la rêverie*, 8^e edition, Paris, PUF, 1984, p. 124-147.

¹³ *Ibid.*, p. 144.

¹⁴ Bachelard, G., *Le Rationalisme Appliqué*, 3^e edition, Paris, Puf, 1966, p. 36.

a mutilating education where pupils were forever fearful of the scissors of rhetorical censorship in the hands of their master. This pedagogical attitude reminds us of the adage *Discat a puero magister* (let the master learn from his pupil) which, according to Daniel Hameline, is the keystone of the New Education. Moreover, this adage was taken up by Bachelard himself when he emphasized, for example, that the secret desire of the master was to continue being a schoolboy in a school that remained the highest model of social life¹⁵. Already in *Lautréamont* (1939) Bachelard had been asking: “How can an arbitrary education, where the teacher confidently feeds ‘on the tears and blood of the adolescent’, not leave inexpiable resentments in the heart of the young man?”¹⁶. The analysis of science, which Gaston Bachelard taught at the school of Bar-sur-aube, would be renewed through the psychology of the formation of the scientific mind (cultural history and individual formation), and thus of the school institution and later of the laboratory. In *La Formation de l'esprit scientifique* (1938), the author would highlight the place of psychological obstacles to abstract knowledge attributable to subjective imaginative projections, which implies a whole scientific pedagogy, developed in his earlier *Le Nouvel esprit scientifique* (1934), where he had criticized the Cartesian method's reductionism in a now-classic chapter¹⁷: Chapter VI – *L'épistémologie Non-Cartésienne*¹⁸. Science is, for Bachelard, a polemical process of rupture and negation of current knowledge. What characterizes the “new scientific spirit” is the construction of new epistemological presuppositions that move away from the idea according to which science “discovers reality” to postulate instead the creative faculty of science that forms, deforms and reforms concepts, while poetic reverie deals with living the metamorphoses of images¹⁹. Thus, scientific pedagogy, in its social and historical contexts, should stimulate a critical and reflective scientific practice²⁰. In *La Formation de l'esprit*

¹⁵ *Ibid.*

¹⁶ Bachelard, G., *Lautréamont*, Paris, Librairie José Corti, 1939, p. 45.

¹⁷ Bachelard, G., *Le Nouvel Esprit Scientifique*, 10^e edition, Paris, Les Presses Universitaires de France, 1968, pp. 104-137.

¹⁸ See the chapter by Vincent Bontems – La méthode non cartésienne selon Gaston Bachelard et Ferdinand Gonseth, 2013, in Delphine Kolesnik-Antoine (ed.), *Qu'est-ce qu'être cartésien ?*, ENS Éditions, Lyon 2013, pp. 567-580: «Non-Cartesianism» is an expression that Gaston Bachelard introduced in the *Nouvel esprit scientifique* in 1934 by analogy with non-Euclidean geometries. He used it frequently thereafter in his epistemological works. [...] However, one should not misunderstand the meaning of the «no» in «non-Cartesian»: it is not an absolute negation. Non-Cartesianism is not *anti-Cartesianism*, even if, in a first step, it indicates the necessity of an epistemological break with the Cartesian claim to offer an absolute, certain and definitive foundation to knowledge. In a second time, non-Cartesianism aims at amplifying nevertheless the first intention of Cartesianism. [...] Non-Cartesianism thus corresponds to a demarcation, then to a reversal, and finally to a reintegration, even to a refoundation of Cartesianism, provided that one does not forget that it is precisely a question of escaping from any absolute foundation.

¹⁹ Fabre, M., *Bachelard educator*, Paris, PUF, 1995, p. 3.

²⁰ Castelaño-Lawless, T., *La Philosophie Scientifique de Bachelard aux États-Unis : Son Impact et son Défi pour les Études de la Science*, in Gayon, J. ; Wunenburger, J.-J., (eds.) *Bachelard dans le monde*, Paris, PUF, 2000, pp. 77-94; Tiles, M., *Technology, Science and Inexact Knowledge:*

*scientifique*²¹, Bachelard would then advocate the total reorganization of the system of knowledge (“The made-up mind must be remade”). Knowledge thus makes humanity a mutant species that needs to change, which makes pedagogy a never-ending process. In this respect, Bachelard’s work is thus an invitation to a pedagogy truly won over to the idea of an open rationalism, or rather a ‘*sur-rationalism*’, whose hermeneutical potential at the heart of the old debate about the importance of rationalism is yet to be discovered.

In the context of a dialogical pedagogy, we can now ask ourselves: how can educators and pedagogues value the positive aspects of the creative imagination in their educational practices? How can it be reconciled with the demands of a rational (scientific) culture that is specific to the logic of school learning, that is, of the pedagogical relationship? Under the influence of this spirit, we then draw attention to the implications of a “pedagogy of no” (Georges Jean), indebted to Gaston Bachelard’s *La Philosophie du non* (2012), to launch the foundations of a “New Pedagogical Spirit” (NEP)²² that sought to form an imagining being capable of living within, or alternating between, the two constitutive poles of our psychic life (diurnal and nocturnal poles). In other words, a being able to live on the way of the “double culture”: the one devoted to rationality, approached through the history, epistemology and psychology of sciences (under the influence of the *Animus*), and the other devoted to the imagination, in particular to lucid reverie, and various modes of artistic creation, such as poetic writing (under the influence of the *Anima*). Meanwhile, the imagination, being more individual, is invited to free itself from cognitive and psychoanalytical obstacles (cultural knowledge, superego, etc., which may tend to impoverish imagery and metaphorical thinking), to free its creative force by following the desire and will for novelty, at the complex intersection of the unconscious, the cogito, and the superego. In both cases, it is a question of transforming the mind. Bachelardian pedagogy, in other words, is indeed a “dialogical philosophy”²³ which already presupposes a dialogical pedagogy between thought (science – *logos* – *animus*) and imagination (poetic cosmology – *mythos* – *anima*). Although they are, as Bachelard himself admits, “two disciplines that are difficult to balance”²⁴ this is precisely the challenge that is always before us. According to Bachelard, one of the functions of this type of pedagogy indeed consists in reconciling rational life (the lived experience of

Bachelard’s Non-Cartesian Epistemology, in Gutting, G. (ed.). *Continental Philosophy of Science*, Oxford, Blackwell, Oxford, 2005, pp. 157-175.

²¹ Bachelard, G., *La formation de l’esprit scientifique*, Paris, Librairie philosophique J. Vrin, 1938, p. 15.

²² Duborgel, B., *Imaginaire et pédagogie. De l’iconoclasme scolaire à la culture des songes*, Paris, Privat, 1992, p. 246-252.

²³ Bachelard, G., *Le Rationalisme Appliqué*, 3^e édition, Paris, Les Presses Universitaires de France, 1966, p. 11-23.

²⁴ Bachelard, G., *La poésie de la rêverie*, 8^e édition, Paris, PUF, 1984, p. 152.

diurnal man) with dream life (the lived experience of nocturnal man)²⁵ in order to lay the foundations of a pedagogy capable of integrating this “continuous double culture” of which Georges Jean speaks: a double culture characterized by a lucid oneirism (the activity of imagination) and a conquering reason (the activity of mind)²⁶. In other words, it is really about a kind of pedagogy simultaneously capable of reconciling a lucid oneirism (an imagination which invents new life and a new spirit) and a conquering reason in the sense of a pedagogy of “fertile and fruitful eyes”²⁷.

In short, the questions of sharing and transmitting the objective contents of mind as well as the conditions for a transformation of the learning subject (by others or oneself) are at the center of Gaston Bachelard’s philosophy. He develops a specific pedagogy of science, linked to the good practices of the school and the laboratory; but if the imagination must be supervised, it must also be stimulated in and by reverie, and artistic creation. Is there not a paradox or at least an educational ambivalence here? Nonetheless, aren’t the obstacles to rational innovation as to aesthetic creation of the same nature? How to educate the two poles of the spirit within the same person?

The articles presented in the sections on *The Letter* and *The Spirit*, constitute a contribution to the dialogue, guided by the questions raised above, but also allows each reader, from his or her own point of view, to study Bachelard’s work in light of a pedagogy and philosophy of education under the sign of both a “philosophy of culture” and what Bachelard calls the “scientific city” where the dialogue between teacher and disciple is strongly encouraged:

Moreover, the scientific city presents, within itself, such an activity of differentiation that one can now foresee that it will always pose itself as a transcendence with respect not only to usual knowledge, but also to the knowledge of first culture. Any philosophy of culture must welcome the idea of pedagogical levels. Every culture is linked to a study plan, to a study cycle. The man devoted to the scientific culture is an eternal schoolboy. *The school* is the highest model of social life. To remain a schoolboy must be the secret wish of a teacher.²⁸

Bachelard will then magnify the school model conceived as a place of intersubjectivity and teaching within the framework of a dialogical pedagogy: “There are there elements of a dialogical pedagogy whose power and novelty one barely suspects if one does not take an active part in a scientific city”²⁹. One can then understand that the different pedagogical levels which constitute the educational relationship must be understood from both the vantage points

²⁵ See Georges Jean, *Bachelard, L’Enfance et la Pédagogie*, 1983, *L’homme diurne et l’homme nocturne*, pp. 106-110.

²⁶ Jean, G., *Bachelard, L’Enfance et la Pédagogie*, Paris, Éditions du Scarabée, 1983, p. 193-199; p. 148-150.

²⁷ *Ibid.*, p. 194.

²⁸ Bachelard, G., *Le Rationalisme Appliqué*, 3^e édition, Paris, Les Presses Universitaires de France, 1966, p. 36.

²⁹ *Ibid.*, p. 37.

of an established scientific culture and of an emergent rationalism, if they are to constitute and affirm a pedagogical knowledge that claims to be open to the new: “In short, it is a question of realizing profoundly, philosophically, the experience of novelty. One cannot achieve this in-depth renewal without open access to the philosophical spirit which calls for a more or less explicit polyphilosophism”³⁰.

Bachelard’s contribution to a new educational paradigm in which epistemology and poetics come together can be thought of from the perspective of the “Prometheus complex” (as Bachelard called it). This complex calls for the defense of the creative act as a result of negation and disobedience, while regarding error not necessarily as a negative path, but rather as a viable path toward pedagogical novelty³¹. This new pedagogy, creative and emancipatory, brings together in a complementary way the two branches of science and poetry present in Bachelard’s work, under the aegis of his “pedagogy of no”, or even a “pedagogy of both *for* and *against*”³². It is indeed a kind of pedagogy which advocates an education whose ideal is to form a student sensitive to the scientific, literary-poetic and artistic dimensions. In other words, Bachelard helps to reflect on the *libido educandi* or the process of learning from the approaches of epistemology, literature, poetics and imagination. In light of these approaches, the exercise of learning as treated, for example, in *L’Intuition de l’Instant* (1932), illustrates the virtualities that animate Bachelard’s “pedagogy of no,” whose dialogical philosophy and master-disciple dialectic prove to be successful pedagogical models as a basis for the advancement of knowledge.

In view of the above, we can assert that, although Bachelard did not devote himself specifically to the sciences of education (general pedagogy and philosophy of education), his work presents several key elements, discussed in the articles contained in this issue, for the renewal of education through a pedagogy that reconciles the epistemological rigor of a science in constant revolution with the creative power of imagination and reverie. A new perspective on Bachelard thus emerges : one deeply inhabited by a pedagogical will – a pedagogy of open reason and discovery where the imagination plays a fundamental role, as we read in *La poétique de la reverie*, where waking up intellectual astonishment owe much to the faculties of wonder: “Reverie and thought : here are two disciplines undoubtedly difficult to balance”³³. However, it is a risky venture indeed, perhaps even a daring adventure such as that which Bachelard undertook himself, as both a student and a teacher.

With this issue, we hope that Bachelard’s pedagogy, centered on formation, will contribute to a reflection devoted to the sciences of education and to “the life of

³⁰ *Ibid.*, p. 60.

³¹ Jean, G., *Bachelard, L’Enfance et la Pédagogie*, Paris, Éditions du Scarabée, 1983, p. 141-144; 180-182.

³² Jean, G., *Bachelard, L’Enfance et la Pédagogie*, Paris, Éditions du Scarabée, 1983, p. 105-177.

³³ Bachelard, G., *La poétique de la rêverie*, 8^e édition, Paris, PUF, 1984, p. 152; Jean, G., *Bachelard, L’Enfance et la Pédagogie*, Paris, Éditions du Scarabée, p. 123-124.

images”³⁴, a life that always seeks to reconcile formation along the rational-scientific path with the poetic-imaginative path, hoping that this dual training may thus contribute to the formation of a “*bi-frontal* humanity,” that is, a humanity capable of reconciling the sense of the abstract and the concrete (*animus*), along with the world of concepts and images (*anima*)³⁵.

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³⁴ Wunenburger, J.-J., *La vie des images*, Grenoble, PUF, 2002.

³⁵ Bachelard, G., *La philosophie du non. Essai d'une philosophie du nouvel esprit scientifique*, Paris, PUF, 2012, p. 216-217; Chimisso, C., *Gaston Bachelard: Critic of Science and the Imagination*. London and New York, Routledge Taylor & Francis Group, 2001; Barbosa, E.; Bulcão, M., *Bachelard. Pedagogia da Razão, Pedagogia da Imaginação*, Petrópolis, Editora Vozes, 2004; Gambardella, A. P., *Pedagogia tra ragione e immaginazione. Riflessioni sul pensiero di Gaston Bachelard*, Napoli, Liguori Editore, 1983; Mcallester, M. (Edit. by), *The Philosophy and Poetics of Gaston Bachelard*, Washington, D. C., University Press of America, 1989; Smith, R. C., *Gaston Bachelard, Revised and Updated: Philosopher of Science and Imagination*, New York, State University of New York Press, 2017.