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Openness, Pedagogy, and Parenthood in Gaston Bachelard

«A teacher and a father were born. As a parent, he was ready to transmit and teach. As a teacher, he was prepared to protect and understand. He would become an extraordinarily competent teacher who listened to everyone. Education came to him doubly and made the task of educating necessary»¹. With these words Bachelard's biographer Jean-Michel Wavelet has described the first pedagogical steps of the French philosopher in his book *Gaston Bachelard, l'inattendu*. Bachelard's care for his daughter Suzanne overlapped with his early years as a teacher. The double task of teaching and parenthood would later become a key motif of his peculiar psychoanalysis of the pedagogical mind.

While teaching is a profession (and certainly a vocation), parenthood is however a quite different anthropological experience. There are various faculties of pedagogy in colleges which prepare young people to become teachers. But there is no school that provides the subject matter for becoming a parent. Parenthood is a very intimate experience, and it is largely one's own choice how to be a father or a mother. We could talk about good and bad students of pedagogy, but we could not say anything about good and bad students of parenthood. Nevertheless, many parents do not handle their role as parents well, and they make many mistakes with the result that very often the relationships between them and their children become disrupted. A pedagogue can correct his mistakes and work to become a good teacher for new classes of pupils; but parents often do not have the possibility of going back and correcting their mistakes. As we will see, this point is important for Bachelard's analyses of the pedagogical and the scientific mind.

In this paper I would like to stress three aspects of Gaston Bachelard's pedagogical philosophy. First of all, the crucial topic for him is openness in opposition to guarding knowledge by keeping it to oneself. If we jealously keep knowledge to ourselves, we cannot open the door for the development of knowledge in future generations. That is why Bachelard values scientific *discursivity* more than a sage's solitary knowledge. Secondly, what is essential for teaching and parenthood is the choice of the words used. One badly chosen word from a parent's mouth to his

¹ Wavelet, J.-M., *Gaston Bachelard, l'inattendu*, Paris, L'Harmattan, 2019, p. 124.

child can be the reason for lasting complexes, traumas or neuroses that can be continued into further generations. Similarly, one badly chosen scientific concept or misinterpretation in the pedagogical process means the dissemination of long-lasting errors. This opens up the idea of the super-ego of education in Bachelard's psychoanalysis of pedagogy. And thirdly, every educator should understand himself as a perpetual pupil because by teaching, he educates himself. What is important here is the role of the school in Bachelard's thought. The school is not some institution created only for young people. Rather, it is a long-life choice.² To be a teacher means constantly educating oneself. Even more, it means educating oneself through one's pupils. What does this mean in the context of parenthood? In the same way, parenthood is not only the temporary experience of someone educating one's small children, but it is the experience of being permanently like a child in relation to one's parents, to their norms (for better or worse), their obstacles, and their complexes. Often, we pass along to the next generation what we have received. This is not a rule, but rather a custom. The three mentioned topics will be discussed in this article with an emphasis on Bachelard's own texts.

However, why do we want to raise this theme in our times, when pedagogy is more humanistic than in Bachelard's youth? Today pedagogy tries to remain open, and teachers are now trained to evaluate their words in a class in front of their pupils. We are also familiar today with the concept of lifelong learning. So, what is new here? Evidently, nothing, if we don't want to spend our time on mere historical remarks and trivial interpretations of the philosopher's work. Of course, we would like to be more critical in our examination, and we can follow the pedagogical praxis in Bachelard's times and look for correlations between this and his attitudes. We could also focus on how the pedagogical mind prepares an individual to correct his or her scientific mind, given that this was really Bachelard's main intention, even if today scientists may react to this by claiming that they already know the principles of openness, exact terminology, lifelong learning and the requirements for their lives as scientists. So, to whom do we want to communicate such considerations?

The desired audience is not a specific set of educators, scientists, or even philosophers. Maybe Bachelard's own attitude is needed here: by writing about pedagogy and parenthood, the writer himself learns how to become a better pedagogue and a better parent. There is still something existentially and personally formative in doing philosophy, if we are not keepers, holders, or guardians of truth and knowledge, but perpetual seekers. What are we giving to others? Not knowledge, not truths – we only want to share with our readers the pleasure of being a part of some tradition of thought. And thinking about such a tradition is never only a repetitive return to the past, it is at every moment a responsive and dialogical act. Bachelard leads us to that point by distinguishing between the concepts of *recevoir*

² In his very useful book on Bachelard's pedagogy, Jean Georges writes that «school is a place of a child, a place, where the child dreams and learns». And he adds that for Bachelard not only children are pupils, but also masters. See Georges, J., *Bachelard : l'enfance et la pédagogie*, Paris, Éditions du Scarabée, 1983, p. 194.

and *réceptionner*: we never simply *accept* the ideas of the past; in reality, we still *elaborate* on them and, by adding our own experiences, we can create an amalgam of brand-new contributions to some of the greatest historical discussions.

1. Openness and Guarding the Truth

The concept of openness was not new in Bachelard's time. French philosophers, especially, are familiar with it since Henri Bergson, but this was also a topic of lively debates on the nature of science as well. For Bachelard, its importance lies mainly in pedagogy and scientific life. Whoever thinks of himself as a kind of depository of knowledge, for Bachelard, will become a representative of scientific old age or senility. Here we must digress for the moment. What does scientific senility mean?

In *La formation de l'esprit scientifique*, Bachelard develops his famous concept of epistemological obstacles³. These obstacles tend to obstruct the process of knowing, and the danger is that we often tend to ignore them. However, for Bachelard, such obstacles are connected to the scientist's "age". This does not mean that a sixty-year-old scientist is better or worse than his younger colleagues. Bachelard doesn't measure scientists' age in terms of their physiological years, but in terms of their attitude towards knowledge. This is the key point. Scientific youth is the age of study and permanent schooling. In Bachelard's view, the nature of our scientific age is just the opposite. Only if we humbly remain scientific "beginners", will we be able to overcome our prejudices and obstacles. We keep working at a task in order to undergo a *metanoia* (a metamorphosis of mind) such that we may become youthful again. That's why Bachelard writes: «Even when it first approaches scientific knowledge, the mind is never young. It is [...] in fact, as old as its prejudices. When we enter the realms of science, we grow younger in mind and spirit, and we submit to a sudden mutation that must contradict the past»⁴.

A paradigmatic example of scientific senility for Bachelard is that of an "alchemist in search of the fountain of youth." The alchemist is an «Old Man» whose senility, in the philosopher's view, resides in his attitude towards knowledge. While alchemists are convinced they are embarked on the path to regain youth, they identify the value of youth with the young body, hence their obsessive focus on ways to attain *corporeal immortality*. Such alchemists do not realize they live absorbed in material prejudice. Any person who believes he or she can grasp the principles of reality intuitively, without the need for schooling in critical thinking, remains stranded in the pre-dawn era of science. Nonetheless, according to Bachelard, there is a difference between such an alchemist and a dreamer. Let us unfold this difference.

³ Cristina Chimisso explicates the relation between epistemological and pedagogical obstacles through cathartic motion, through purification from previous knowledge. See Chimisso, C., *Gaston Bachelard: Critic of Science and the Imagination*, London and New York, Routledge, 2001, p. 91.

⁴ Bachelard, G., *The Formation of the Scientific Mind*, Eng. trans. by M. McAllester Jones, Manchester, Clinamen Press, 2002, pp. 24-25. [*La formation de l'esprit scientifique*, Paris, J. Vrin, 1977].

The daydreams of dreamers are non-scientific. Nonetheless, in Bachelard's view, scientists still need to remain, in part, dreamers. Whereas the alchemist does science from his dreams and empirical intuitions about what is assumed to be "reality", the Bachelardian rational scientist understands dreams as relaxed yet inspiring intuitions of what *might be* – possibilities that yet need to be tested. Here we can follow Bachelard's rational anthropology of the scientist as a phenomenological (or even psychoanalytical) study of the individual whom he calls the «round-the-clock man»⁵ – namely, a person who takes account of both diurnal and nocturnal experiences, including intense rational work and relaxed poetical dreaming. For Bachelard it is impossible for anyone to remain attentive twenty-four hours a day, since we all need to take breaks⁶. Some people rarely allow their mind to relax, for they value work above all, often obsessively. Yet there is nothing bad about relaxing into poetic and metaphysical dreams, where the mind is soothed and renewed within the deep, calm waters the psyche. But the break of day urges us to return to the intense work of rationalistic thinking. Nonetheless even that part of a rationalist's daily cycle tends to be shortened because human beings are bound to drift on occasion into daydreams about the world. Bachelard describes this "rationalist tone" as a sensibility to the rhythm between day and night, work and relaxation – between tackling an intellectual challenge and taking it easy.

No genuine rationalist is satisfied with already-attained knowledge, but science ceaselessly faces him with the question about what he does not yet know. This kind of dialectic is also highlighted by Georges Canguilhem, who wrote about it in 1930 (eight years before Bachelard's *La formation de l'esprit scientifique*) also in connection with the topic of youth and senility. For the younger mind the "not yet" is essential, but for the senile mind knowledge is only what has "already" been attained⁷.

Right here one finds the moment of openness in Bachelard's thinking about the scientific mind. All non-scientific minds are closed by a similar notion of "already". They are unable to accept the new and abandon the old. The rationalist's openness lies in an ongoing willingness to reorganize his thinking. Bachelard repeatedly criticizes Descartes for his arguments about clear and distinct ideas, which – in his view – could blind a rational being with its apparent "clarity". That's why clear and distinct ideas could paradoxically become an obstacle for the scientific mind.

The openness of the rationalist means posing a question time and again, from varying points of view: «[a] rationalist without a problem is like an intellect unable

⁵ Bachelard, G., *L'engagement rationaliste*, Paris, PUF, 1972, p. 47.

⁶ As a teacher of chemistry and physics in Bar-sur-Aube, Bachelard had a habit to interrupt a class, to sit among pupils and to tell them about Ibsen, Dostoevskij, Baudelaire, Rimbaud, Allan Poe, Valéry, Proust, about impressionists or Van Gogh. See Parinaud, A., *Gaston Bachelard*, Paris, Flammarion, 1999, p. 62.

⁷ Canguilhem, G., *Œuvres complètes 1 : Écrits philosophiques et politiques (1926-1939)*, Paris, J. Vrin, 2011, p. 320.

to breathe»⁸. We are familiar with many pages in Bachelard's writings about closed rooms, and about the poetics of doors. For him doors are metaphors of openness vs. closure. Let us mention one telling example. In the chapter entitled "The Cave" in *La terre et les rêveries du repos* Bachelard writes about the dialectic of the hiding place and danger:

The dialectic of the hiding place and danger demands *openness*. We want to be safe but not trapped (or closed in). Human beings understand the values of *exteriority* and *interiority*. A door is an archetype as well as a concept: it is the sum of both conscious and unconscious securities. Doors *materialize* the guardian of the threshold, but all such deep symbols lie buried in an unconscious that lies beyond the reach of writers' dreams⁹.

Within the framework of a psychoanalysis of the pedagogical mind, openness plays an important role. If a teacher guards his treasury of knowledge before his pupils, he is acting more like a zealous guardian of the threshold than as a teacher and a pedagogue. In this case, he may turn out to be, for his students, more of an obstacle than a facilitator of new learning in the sciences.

In *Le rationalisme appliqué*, Bachelard argues that thinking is not a souvenir, and that possession of information does not amount to knowing: «[i]n order to clarify knowledge, we must unpack it, and reveal it; we must share it with another and discuss it...»¹⁰. Later he adds that «the constitution of a rational system is developed in a dialogue between a master and a pupil», and that the mind (*animus*) can be likened to a school, while the soul (*anima*) is can be likened to a confessional¹¹. There is no need here to explain Bachelard's dual terms *animus* and *anima*, inspired by Jung's psychoanalysis, but simply enough to note that the integrated personality – the "round-the-clock" personality – knows both of them. Still, the originality of such an image lies in the meaning of the school and the confessional. Schools are settings where truth is sought via polemics and openness; on the other hand, confessionals are places where we recognize our errors, our intentions, and our subjective intimacy.

⁸ Bachelard, G., *L'engagement rationaliste*, cit., p. 51.

⁹ Bachelard, G., *La terre et les rêveries du repos*, Paris, José Corti, 1992, p. 186. We wrote broadly about the topic of the guardian of the threshold in Bachelard's philosophy in Vydra, A., *Epistemologická překážka a «strážce prahu» u Gastona Bachelarda*, "Filozofia", Vol. 76, n° 1, 2021, pp. 59-71. In the paper I stress a difference between the notions of threshold and obstacle, a signification of the concepts of borders and transgression in Bachelardian thinking, and a special usage of the conception of "the guardian of the threshold" by Jan Hendrik van den Berg's psychotherapy.

¹⁰ Bachelard, G., *Le rationalisme appliqué*, Paris, PUF, 1986, p. 61.

¹¹ *Ivi*, pp. 67-68. We notice that the master-pupil relation plays a crucial role in a number of Bachelard's writings as evident, for instance, in his description of the "Prometheus complex". According to Bachelard we all (sons, daughters, infants, pupils, novices...) dream to be like and better than our fathers, like and better than our teachers – which, in his view, amounts to the "Oedipus complex of intellectual life". See Bachelard, G., *La psychanalyse du feu*, Paris, Gallimard, 2011, p. 31.

2. The Psychoanalysis of Errors

Canguilhem's *Idéologie et rationalité* starts with the French saying: «[t]o err is human, to persist in error is diabolical»¹². For Canguilhem, as for Bachelard¹³, it is no catastrophe to be caught in errors. The calamity would lie, rather, in being passive, frightened, or recalcitrant when faced with errors. The recognition of errors is an important part of scientific knowing, and errors belong to scientific history. The problem is when we persist in error even after such recognition. We find here a religious element: a sin may be forgiven, but a guilty man must be ready to avoid repeating it. Even more, the guilty man should not project his guilt onto others.

«Parents», writes Bachelard in *Le rationalisme appliqué*, «more often abuse their knowledge than their power»¹⁴. Bachelard draws a correlation between the “omniscient” parental attitude and that of teachers. Both lead to dogmatism and sadism, not to culture or education. The omniscient attitude of parents or teachers becomes, for the French philosopher, an obstacle in the development of children for two reasons: 1) children lose their self-confidence in gaining knowledge, and 2) parents and teachers have no awareness that they are wrong in their presumption of “omniscience”. To learn to overcome obstacles, children must be motivated to do things themselves, without help from their parents. The best way to learn to do scientific work is by overcoming epistemological obstacles. Education aiming at epistemological or scientific self-confidence must start in childhood when the child is obliged to make the effort to do things on its own.

Here we can turn to Immanuel Kant's famous *An Answer to the Question: «What is Enlightenment?»*, where he writes:

Thus it is difficult for each separate individual to work his way out of the immaturity which has become almost second nature to him. He has even grown fond of it and is really incapable for the time being of using his own understanding, because he was never allowed to make the attempt. Dogmas and formulas, those mechanical instruments for rational use (or rather misuse) of his natural endowments, are the ball and chain of his permanent immaturity. And if anyone did throw them off, he would still be uncertain about jumping over the narrowest of trenches, for he would be unaccustomed to free movement of this kind¹⁵.

¹² Canguilhem, G., *Idéologie et rationalité dans l'histoire des sciences de la vie*, Paris, J. Vrin, 2009, p. 7.

¹³ «The first and the most essential function of the activity of the subject is to err. The more complex his errors are, the richer his experience will be. After all, experience is a memory of rectified errors. Pure being is being discovering errors [*l'être détrompé*]» (Bachelard, G., *Idéalisme discursif*, in Id., *Études*, Paris, J. Vrin, 2002, pp. 77-85, p. 79).

¹⁴ Bachelard, G., *Le rationalisme appliqué*, cit., p. 75.

¹⁵ Kant, I., *An Answer to the Question: «What is Enlightenment?»*, Eng. trans. by H. B. Nisbet, in Reiss, H. S., *Kant: Political Writings*, Cambridge, Cambridge University Press, 2003, pp. 54-60, pp. 54-55 [*Beantwortung der Frage: Was ist Aufklärung?*, “Berlinische Monatsschrift”, n° 12, 1784, pp. 481-494].

Kant here expresses the idea of bad habits in education. If someone is anxiously led by his or her guardians (*Vormunden*, who is like a spokesperson or representative for the person), then he will not be able to walk firmly in childhood or in old age (*naturaliter maiorenes*). The personal development of such human being was stymied in his childhood by a misguided education. Throughout his whole life he has overcome all obstacles only with the help of or by guardians. Such children have no experience in solving problems themselves, and so, the smallest issue seems to be a big problem for them. This is one reason why immaturity (*Unmündlichkeit*) can remain a lifelong characteristic of such a person. Bad habits in childhood become inscribed in the person for his entire life.

This is not the first time that Kant writes in this way about such a topic. In his lectures *On Education* he also says that for children it is good to walk in the mountains and exercise physically in order to establish the right habits for later life¹⁶. He is also strongly critical of all forms of laziness, especially the laziness of reason (*ignava ratio*)¹⁷.

There is something very Kantian in Bachelard's attempt to reform education¹⁸. He resembles Kant when he says that parents and teachers should enable children to do things themselves even if they make mistakes. Through this they learn to be more self-confident in various areas of life. However, what is crucial here is Bachelard's accent on the effort to understand abstract concepts of science. Scientific concepts are not epistemological obstacles *per se*; rather, they serve as rungs on a ladder which we need to ascend. According to Bachelard, epistemological obstacles represent a different problem: they are never external (complex or unstable scientific concepts are not obstacles), and they do not lie in a weakness of our senses or mind¹⁹. We inherit many epistemological obstacles from past culture: not only from our families and schools but also from certain forms of cultural discourse. One of the epistemological obstacles that Bachelard identifies, for example, is the absence of questioning. A smart pupil who knows everything grows to maturity as "an answerer." His good memory leads him to be a master of formulas and so also of indoctrination. Meanwhile, relations between scientific concepts tend to be psychologically loaded, so Bachelard develops an original «psychoanalysis of

¹⁶ Kant, I., *On Education*, Eng. trans. by A. Churton, Mineola, New York, Dover Publications, 2003, p. 60 [*Über Pädagogik*, Königsberg, Friedrich Nicolovius, 1803].

¹⁷ Kant, I., *Critique of Pure Reason*, Eng. trans. by P. Guyer and A. W. Wood, Cambridge, Cambridge University Press, 2000, pp. 615-616 [*Kritik der reinen Vernunft*, Riga, Hartknoch, 1787² (1781)].

¹⁸ Vincent Bontems correctly argues that Bachelard's intention is not to be like a strict father who wants to penalize his child for errors. His idea of corrections lies in the encouragement to become an adult, to abandon the immature state. And as Bontems adds, for Bachelard the sin is not an error, but *acedia*, renunciation, dejection: «[t]he only one capital sin in Bachelard's eyes would be *acedia*, escaping to nihilism, renunciation of progress» (Bontems, V., *L'éthique de l'ouverture chez Gaston Bachelard et Ferdinand Gonseth*, in Wunenburger, J.-J. (ed.), *Gaston Bachelard. Science et poétique, une nouvelle éthique ?*, Paris, Hermann, 2013, pp. 379-397, pp. 396-397).

¹⁹ Bachelard, G., *The Formation of the Scientific Mind*, cit., p. 25. Cf. *La formation de l'esprit scientifique*, p. 20.

reason»²⁰ with the intention of detecting the motivations which lead people to use certain words and concepts. A primary observation (or empirical perception), for example, is linked to our imagination. But the act of generalizing even biased observations leads us back to abstraction and systematic thinking (however faulty our theories may later be proven to be). Bachelard explains: «when we go from observation to system, we go from bewildered eyes to closed eyes»²¹. Nonetheless, he believes that a child educated with closed eyes (drilled in abstraction) becomes well prepared to *enter* the fields of modern science.

The psychoanalysis of errors in Bachelard's writings is a very important topic. One page from *Le rationalisme appliqué* is instructive here: Bachelard writes, alluding to Friedrich Nietzsche, that error *descends* toward convictions, while truth ascends toward proof²². He calls this explicitly «the psychoanalysis of knowledge» and «descending psychology», suggesting an asymmetry between error and truth. «In the sciences truths are [extracted and] grouped into systems, while errors [precipitate to the bottom, and] get lost in shapeless magma. In other words, truths are apodictically intertwined, while errors are cumulatively amassed»²³. This is the issue of the organization and the re-organization of knowledge and of the disorganized, sedimented mass of miscellaneous convictions.

Can we extrapolate on the relevance of such insights today? Contemporary conspiracy theories and fake news do not create systematized truths, but they can sound very convincing. Political discourse is often loaded with the convictions of politicians, but not with truth. In elections deep emotions are amassed under the name of a party. And what about schooling and teaching? What about the great convincing power of parents in relation to their children, regardless of the need for supporting proofs? We see this problem around us everywhere: the masses descending into the realm of convictions instead of ascending to the heights of proof. The human right to express opinions may be largely praised, but little is said about

²⁰ *Ivi*, p. 29.

²¹ *La formation de l'esprit scientifique*, p. 20 : « De l'observation au système on va ainsi des yeux ébahis aux yeux fermées ». Cf. The published English translation has been amended by us (cf. *Ivi*, p. 30).

²² Bachelard, G., *Le rationalisme appliqué*, cit., p. 58. A minor digression: Bachelard liked Jean Wahl's conception about two forms of transcendence: transcendence and transascendence. The German psychiatrist Hans Pollnow understood such notions as an expression of a transcendental schema or an anthropological structure in the sense of «the primitive attitude of the human being». In the history of philosophy, we often find human beings ascending toward rationality and light, but also descending into obscurity and darkness. However, Pollnow says there can also be an inversion of such relations, where the good lies down below, while the bad resides on high. The image of Goethe's return to the Mothers (*die Mütter*) is a transcendent motion into the depths, but it is considered by philosophers (we could mention Edmund Husserl) as a return into the realm of the roots or deep sources of pure consciousness. The inverse example for Pollnow is Ludwig Klages and his belief that creative force dwells deeply in a human being and all ascents up to the spirit are hostile to such a power. See Pollnow's observation in the section entitled *Letters* in Wahl, J., *Human Existence and Transcendence*, Eng. trans. by W. C. Hackett, Notre Dame, IN, University of Notre Dame Press, 2016, p. 127.

²³ Bachelard, G., *Le rationalisme appliqué*, cit., pp. 58-59. [Explanatory phrases added in parenthetical brackets.]

the importance and need for hard and serious arguments. Opinions without arguments are like dogs barking in a noisy street. Doesn't this describe the cacophony of our age? Errors thus tend to be lost in a shapeless magma of assertions, but such magma threatens to destroy everything around us. And what will the residue be when all this magma cools down? Mineralized, petrified convictions.

3. Loners and Lifelong School

Still, one might ask, why can't individuals learn by themselves? Why do we need schools for learning? «The real educator is one who grows, psychically enabling growth; one who institutes by a kind of mental induction the correlation between teaching rationalism and learning rationalism»²⁴. The pedagogy of a rationalist is essentially discursive, based upon an ongoing dialogue between master and pupil. A smart pupil, well-drilled within a closed system of knowledge, is not a student-rationalist²⁵. Similarly, a close-minded teacher without relations to the community of scientists (or to the community of students) is not a teacher-rationalist. The point is that a rationalist is not a loner but rather a member of *la cité scientifique*. To become a rationalist, it is not enough just to be smart, as Bachelard says: «[a] person may be quite intelligent, yet not a rationalist»²⁶.

The problem of the school is a problem of discursivity. There were many philosophers in the past who were scientific or philosophical mavericks with persuasive voices. For Bachelard, truth must be sought in the scientific community, not in the *ego cogito*, but in the *nos cogitamus*: «The [*cogitamus*] provides us with a veritable tissue of co-existence»²⁷.

We already wrote that Bachelard's pedagogy grows out of the dialogue between master and student because this is for him the place of the provision of real rationality. Bachelard discovers here the importance of the super-egos of both teacher and

²⁴ *Ivi*, p. 74.

²⁵ Let me mention a related problem here: in academic circles it is generally customary to prefer a specific type of philosophical writing, often called "scientific". The philosopher-academician writing in this single style brings to mind Bachelard's smart pupil: he knows precisely how to write in an academic style. However, philosophy is much more about the ability to think and work freely with language, styles, and genres. These different ways are not irrational, and philosophers have the right to be interested in developing their own genres. Jon Stewart describes this situation very explicitly, and I am convinced that Bachelard would agree with him: «[t]he danger in modern academic philosophy in the Anglophone world is that the homogeneity with respect to the form of philosophical writing unknowingly promotes an intellectual intolerance by denying a forum to those philosophical positions that demand a form of expression at odds with the standard one. If the goal is to create an intellectual atmosphere that stimulates creativity and originality instead of one in which a sterile and limiting conformity with regard to style and genre is not only accepted but even mandatory, then one must not merely grudgingly accept or impassively suffer variation in philosophical expression but rather actively encourage it» (Stewart, J., *The Unity of Content and Form in Philosophical Writing: The Perils of Conformity*, London/New York, Bloomsbury, 2013, p. 168).

²⁶ Bachelard, G., *L'engagement rationaliste*, cit., p. 59.

²⁷ Bachelard, G., *Le rationalisme appliqué*, cit., p. 60.

pupil. This psychoanalytical concept is used here as a description of the scientific mind. The scientist often acts under the judging gaze of «a historical super-ego», which must be replaced «by a coherent super-ego, by a super-ego opened to culture», which would not be a judge but would be judged by us²⁸. This is where the problem of authoritarian education arises. At the level of parenthood, corporeal punishments and primitive threats lead the child to develop an anxious or aggressive mind, but, Bachelard adds, when we move from the level of parenting to that of educating, the intellectual super-ego affects similar neuroses when teachers presume to be prophets of the future of young minds. The possibilities of youth are destroyed by the absolute, rationalized (not rationalistic) and immutable certainty of old age. Bachelard calls this «the Cassandra Complex», the sadism of the teacher, prophesying the future without any possibility of one being able to change it²⁹.

Bachelard's pedagogy demands strict discipline but not domination nor a dictatorial attitude on the teacher's part. It calls for a balance between the teacher's «essentially stimulating supervision» and the pupil's own independence and freedom of thought³⁰. The question is: how to be an essentially stimulating teacher and parent? And after all, is this even possible in all cases? Of course, Bachelard's example provides an ideal of teaching and parenting – a modest example which is possible to follow. Teaching-learning rationalism are engaged in a perpetual process, without a strictly defined end. According to him, good teachers and good parents become supervising «super-egos», who institute the fundamentals of the new scientific culture of education. That's why the school is for him a setting of life-long learning. In such a cultural setting the teacher-pupil or father-son rivalry may still be at play, but without destructive psychological consequences. As Bachelard famously wrote, toward the end of *La formation de l'esprit scientifique*:

Only in the work of science can you love what you destroy; only here can you continue the past by repudiating it, and honour your teachers by contradicting them. When that is the case, schooling does indeed go on throughout your whole life. A culture that is stuck in schooldays is the very negation of scientific culture. There is science only if schooling is permanent. It is in this [kind of] schooling – and only in this schooling – that science must be found. Social interests will then be reversed once and for all: society will be made for the school, not the school for society³¹.

What does the final *bon mot* mean? If schooling in its discursivity would involve the social and intersubjective faculties of human beings and not just some buildings where teachers and pupils spend time during the day, then schools would not be merely depositories of outdated knowledge provided by a solitary teacher to a solitary pupil. Educated society needs schools, but they need to be formed by principles of permanent and discursive schooling. In this regard, Bachelard reveals the chal-

²⁸ *Ivi*, p. 71.

²⁹ *Ivi*, p. 75.

³⁰ *Ivi*, p. 76.

³¹ Bachelard, G., *The Formation of the Scientific Mind*, cit., p. 249. [Parenthetical brackets added.]

lenges of a new anthropology in which education is the most important priority in making the world not only better, but also a more communicative and more highly educated place. Such “dialogism” was an essential feature throughout his writings. As Edward K. Kaplan rightly notes, thematizing Bachelard’s reception of Martin Buber’s *I and Thou*, «[h]ealthy persons harmonize both *animus* and *anima*, reason and imagination. By integrating these competing faculties, Bachelard’s phenomenology of imagination mediates between the solitary dreamer and the outside world»³².

Conclusion

I have stressed three integral steps in Bachelard’s thought about the pedagogical and parental mind. We could see how the French philosopher developed this issue in his works and why it was so important for his entire philosophical oeuvre. Openness is the first condition for creating a new pedagogical mind. The second is working with errors and truths, eventually with convictions and proofs. And finally, the third condition lies in permanent schooling on the side of pupils as well as teachers. Open pedagogy includes strict discipline, the effort to understand abstract scientific concepts (with closed eyes) and to grasp the meaning of the systematic organization of knowledge, as well as the dialogical dimension of discursivity or polemics. However, if there are unconscious obstacles on the way to that ideal, then people end up with complexes and neuroses. Bad teaching methods can cause anxiety and resistance on the side of pupils. In such cases pupils are not anxious existentially but rather scientifically. What does this mean? They can be afraid to accept new truths, new approaches in the sciences, new methods, and a novelty in outcomes which can destroy all old knowledge and make it unusable. The new scientific mind in the Bachelardian sense is open to “uncertainty”, to provisional and operative work with concepts, to changes and mutations. If the school provides students with knowledge only as something that approaches certainty, it simultaneously functions as a depository of already attained knowledge; in this case school would be a deep well, a treasury of knowledge, and teachers would be the guardians of that treasury. Omniscient teachers do not listen to their pupils but rather demand to be heard; they are unwilling to take up a polemical dialogue.

The mirror of two different pedagogical processes can be found in two different parental attitudes. A father who is dominant and authoritative can cause his children to be anxious and weak in self-confidence. A mother who knows everything leads children to the conviction that they must always look for a kind of calming wisdom in archaic forms of thinking. There is nothing new in these claims for our days, but it presumably sounded new in Bachelard’s times. Nevertheless, we can find here much inspiration for our own experiences as people living in the era of the internet and new technologies in the 21st century. We live in an age of humanistic pedagogy and of parental attitudes that profess to be very humanistic.

³² Kaplan, E. K., *Reverie and Reverence: Bachelard’s Encounter with Buber*, in Rizo-Patron, E. (ed.), *Adventures in Phenomenology: Gaston Bachelard*, New York, SUNY Press, 2017, p. 223.

Nowadays parents avoid adopting overly-authoritarian attitudes, as they endeavor to create an open environment for their children. They aim at educating their children with respect for certain boundaries, while not conveying an irrational fear of boundaries. Are children today better prepared to become scientists in the sense of Bachelard's "new scientific mind"? The answer is uncertain, because the problem lies not in the humanization of educational values but in the methods used to approach the intended goals. Parents might be very humanistic and open in their education, yet tragically closed in their understanding of the pedagogical principles of openness. If so, they may subconsciously retain the attitude of "omniscient" parents, incapable of listening to what their children are trying to say. They tend to assume they know what kind of future is good for their child, but often without respect for the child's unique potentials and insights about how to forge a new future that is not organized according to their parental expectations and norms.

We are not yet living in the age of teaching and parental "super-persons", although we can of course aspire to that ideal. If for Bachelard a historical super-ego was an obstacle to progress, today we stand before different super-egos. We are confronted, for example, with social media (or mass-media) super-egos who judge and make corrections (without any stimulating encouragement) of young people's attitudes according to their various ideological intentions. To find one's freely chosen path is still one of hardest challenges in a world driven by conformity.

If there is something implicit throughout Bachelard's works, it is his permanent appeal to care for one's own freedom of conscience, and particularly for scientific freedom which can detach itself from its historical burdens, while at the same time granting history its due respect. These two elements are important here: freedom and respect. Someone who remains captive to the past is bound and unable to take a step into new territory. Someone who simply rejects the past without respect for its attempts and errors is an uncritical or neurotic person driven by *hybris* – i.e. one who thinks he or she can never err. For Bachelard, this is not the attitude of a rationalist, but the sign of a weak person who needs to grow to become an integrated adult.

Freedom with respect is a characteristic of a balanced person who does not destroy the past with hatred but who faces and overcomes it with love. Is this a paradox? No, it is Bachelard's challenge to humanity, and his proposal for its liberation from prejudices and obstacles. Such stumbling blocks will always be with us – unconsciously – but we can work with and through them with respect. For example, we may be attracted to images of fire and raging flames, but, as Bachelard wrote in *La psychanalyse du feu*, they are no longer *objects of science* or bases for us to draw scientific conclusions³³. What has been scientifically devalued may subsist as a valued object of imagination: it still teaches us much about our affects, about the roots of our errors, obstacles, and prejudices. And if we tried to organize the shapeless mass of the imagination into certain systematic patterns, we would discover rational ways of bringing order to our anthropological experiences. The kinds of scientists we become reflect the kinds of people we choose to

³³ Bachelard, G., *La psychanalyse du feu*, cit., p. 13.

be as children, pupils, partners, parents, or teachers. To sum up Bachelard's legacy: Let us not remain slaves to our unconscious habits and fears; instead let us shed light on them, and – to the degree possible – gain mastery over them by organizing this shapeless dark mass.

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