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Er(r)go. Teoria-Literatura-Kultura Er(r)go. Theory-Literature-Culture Nr / No. 48 (1/2024) humanistyka/humanistyka II humanities/humanities/humanities II ISSN 2544-3186 https://doi.org/10.31261/errgo.15150

Gaston Bachelard's Psychoanalysis of Reason and Its Practical Dimension

Abstract: The aim of the article is to analyze Gaston Bachelard's psychoanalysis of the scientific mind in its practical dimension. Inspired by Sigmund Freud's psychoanalysis, Bachelard deployed his own method to analyze the *scientific unconscious*, populated by *epistemological obstacles* inhibiting scientific cognition. As this article seeks to demonstrate, Bachelard's psychoanalysis aims to purify, and thereby streamline the cognitive mind on two levels: individual and historical. Bachelard's methodological experiment, transferring psychoanalysis into the spheres of the theory of knowledge and philosophy of science, turns out to be, at the same time, an instance of the architecture of a scientific mind, a polemic with cognitive realism and empiricism, and a postulate of analytical therapy in the field of cognition.

Keywords: Gaston Bachelard, psychoanalysis of scientific cognition, philosophy of science, epistemology, epistemological obstacles

The most frequently emphasized, and, by that virtue, also the most characteristic aspect of Gaston Bachelard's philosophy is the fact that the thinker's reflection concerns two problem areas: (1) epistemology and philosophy of science and (2) the philosophy of reverie and poetic imagination. One of the most often contended points in the debate among his commentators is the question of the unity/duality of this philosophy. Depending on the interpretation, it is either unity, exclusivity, complementarity, or dialecticity that is indicated as the principle underlying Bachelard's thought as a whole. The considerations presented here refer to the first of the major areas of the French philosopher's interest, within which Bachelard developed a thought-provoking analytical method: the psychoanalysis of objective cognition. This variation on the psychoanalysis of Sigmund Freud, with particular emphasis on its practical dimension, is the subject of the present article.

^{1.} In Bachelard's work, the concepts of "psychoanalysis of the scientific mind," "psychoanalysis of (objective) knowledge," "psychoanalysis of the scientific unconscious," and "psychoanalysis of reason" are used as interchangeable. Henceforth, following the intentions of the author of *The Formation of the Scientific Mind*, I recognize these terms as synonymous.

Writing about the psychoanalysis of scientific cognition, Anne-Marie Denis states: "To enter the world of objectivity, one must first die to the oneiric world." Let us dwell on this short sentence, since it applies to many of Bachelard's intuitions. The first of those concerns the separation of the objective order from the subjective, the latter of which A.-M. Denis, directly referencing Bachelard's philosophy of reverie, describes as *oneiric*. In the French philosopher's language, this distinction is tantamount to the separation of imagination from reason, idea from image, abstraction from the concrete. This division looms large in the entire philosophy of Bachelard, not least because of its aforementioned double track. Importantly, it is clearly discernible as a constitutive factor within each of the two areas of Bachelardian reflection; predictably, it manifests itself differently in each.

In view of the subject of the article, let us turn to the impact that this division exerts on the process of the shaping of knowledge. For Bachelard, cognition is an ongoing movement of objectification, while knowledge – as a construct – rather than *distant* from the concrete, is entirely *different* from it. In order to know, we must therefore die to the world of dreams, that is, we must break away from what is subjective. Yet, at the same time, "that which science finds to be an obstacle serves a positive function on a different plane: it is the fundament of artistic creativity." Here lies the source of Bachelard's duality, which I interpret as based on the principle of complementarity: a reverie ousted from the field of cognition finds its fulfillment in poetic experience.

"The world of objectivity," the entry into which Anne-Marie Denis describes as conditioned by one's death to the world of dreams, is not the world accessible by way of direct experience (the concrete). On the contrary: the concrete is as removed from the objective world of cognition as is the dream. Bachelard emphasizes that "[r]eality is never 'what we might believe it to be': it is always what we ought to have thought." Elsewhere, he states: "We would moreover be committing a serious error if we thought that empirical knowledge could remain at the level of rigorously assertoric knowledge by restricting itself to the simple affirmation of facts." Direct experience is what must be transcended towards the construction of a scientific abstraction, and such transcendence is one of the tasks of the psychoanalysis of objective cognition.

^{2. &}quot;Pour entrer dans le monde de l'objectivité, il faut d'abord mourir à notre vie onirique" – unless stated otherwise, all quotations translated by Paweł Jędrzejko. Anne-Marie Denis, "Psychanalyse de la raison chez Gaston Bachelard," *Revue Philosophique de Louvain* 61, 72 (1963), 646.

^{3.} Damian Leszczyński, "Filozofia nauki Gastona Bachelarda," in Gaston Bachelard, *Kształtowanie się umysłu naukowego. Przyczynek do psychoanalizy wiedzy obiektywnej*, trans. Damian Leszczyński (Gdańsk: Wydawnictwo słowo/obraz terytoria, 2002), 334.

^{4.} Gaston Bachelard, *The Formation of Scientific Spirit. A Contribution to a Psychoanalysis of Objective Knowledge*, trans. Jones M. McAllester (Manchester: Clinamen Press, 2002), 24.

^{5.} Bachelard, The Formation of Scientific Spirit, 52.

However, before we expand on the latter, let us consider one more point, to which A.-M. Denis seems to refer when she writes about entering the world of objectivity. To use Bachelard's terminology, one could say that such an "entry" is, in fact, synonymous to the formation of the scientific mind. It is the process of crossing boundaries, involving the removal of inherent superstitions, or, in other words, the epistemological obstacles⁶ that distort research results. The phenomenon in question is an *ongoing process*; it continuously transpires on two levels: historical (universal) and individual. On the one hand, knowledge (in the universal sense) is constantly constructed in the course of historical transformations and breakthroughs; it continually evolves by way of progress and ensuing regressions. On the other hand, this historical process is founded upon another phenomenon, perhaps of lesser momentum, but of equal importance: the process of education. Bachelard dedicates much of his reflection to the institution of the school, which he considers to be a unique embodiment of a scientific laboratory. As such, the Bachelardian school is therefore a paradoxical, ambivalent, and bipolar space – the space of a constant exercise in deconstructing the knowledge already acquired, irrespective of whether one is a student or a teacher.⁷

From the above remarks emerges an outline of Bachelard's epistemology: an epistemology opposing empiricism and cognitive realism. Cognition is neither the accumulation of facts nor an observation; instead, it is a construction whose value is a function of the "rupture" with direct data. The rupture, incidentally, is one of the fundamental concepts of Bachelard's theory of knowledge. This category is useful both in the study of the history of knowledge (which, in Bachelard's terms, is discontinuous, contingent on the rupture with the convictions of the past, and based on the dialectical mechanism of negation) and in the analysis of the cognitive process, in the light of which cognition can only arise as a result of the rupture with the colloquial conceptualizations of reality. As Damian Leszczyński emphasizes, "[t]his is the motto of Bachelard's philosophy of the 'no': the new must always contradict the old, science must stand in opposition to common sense, rationalism must negate direct experience, the new theory must question the premises of the old." The scientific mind is thus shaped not by means of transforming or changing the inherited values, but in negating them in

^{6.} Les obstacles épistémologiques.

^{7.} Cf. Jean-Jacques Wunenburger, "Cogito et cogitamus: la méditation d'autrui dans la formation de la rationalité," in *L'altérité dans l'oeuvre et la philosophie de Gaston Bachelard*, ed. Christian Thiboutot and Jean-Jacques Wunenburger (Montréal: CIRP, 2010), 134.

^{8.} La rupture.

^{9.} Damian Leszczyński, "Gaston Bachelard," in Damian Leszczyński and Krzysztof Szlachcic, Wprowadzenie do francuskiej filozofii nauki. Od Comte'a do Foucaulta (Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego 2003), 189.

many dimensions: cognitive, historical, and methodological alike. In his quote, Leszczyński refers to Bachelard's significantly titled book *The Philosophy of No (La philosophie du non)*, in which the French thinker unequivocally states that the scientific mind can only be formed by way of the destruction of its un-scientific counterpart.¹⁰ Scientific cognition is not the *continuation*, but the *negation* of common sense, observation, and colloquial cognition. And one of the methods making it possible to arrive at a thus defined negation is the psychoanalysis of objective cognition.

The concept of psychoanalysis first appears in Bachelard's 1934 book *The New Scientific Spirit* (*Le nouvel esprit scientifique*). The philosopher uses it in the context of the transgression of Euclidean geometry effectuated in modern physics. According to Bachelard, such a breakthrough was possible owing to the fact that the scientists were able to reach back to the geometric unconscious (*l'inconscient géométrique*), which was attained by means of negating the heretofore dominant mode of thinking. Only then, "with total independence of the mind [liberated] from Euclidean presuppositions by engaging in what one might call a kind of psychoanalysis," entering the territory of a new discipline proved possible. In the assumptions and goals of the Freudian method, Bachelard sees a potential that both an epistemologist and a philosopher of science may employ in their work. He is inspired by the stratiform concept of the human, in which the unconscious contents of the mind affect consciousness. Furthermore, pointing to unconscious epistemological obstacles that disrupt and block conscious cognitive aspirations, he acknowledges the same dependence in science.

In the most general terms, the goal of psychoanalysis is to reach down to the patient's unconscious blockages, to make him or her aware of these obstacles, and to aid the subject in eliminating them. To Bachelard, the therapeutic and cathartic dimensions of the Freudian method are of paramount importance. The practical consequences of Freudian psychoanalysis become significant in his own project of the psychoanalysis of objective cognition, the principles of which he first outlines in his *The Formation of Scientific Spirit. A Contribution to a Psychoanalysis of Objective Knowledge* (1938). The philosopher's aim is not simply to transfer the psychoanalytic terminological apparatus into the field of epistemology: his essential goal is to carry out a psychoanalysis of the subject as the agent of cognition.

^{10.} Cf. Gaston Bachelard, *The Philosophy of No. A philosophy of the New Scientific Mind*, trans. G. C. Waterston (New York: The Onion Press, 1968), 9.

^{11.} Gaston Bachelard, *The New Scientific Spirit*, trans. Arthur Goldhammer (Boston: Beacon Press, 1984), 39.

Psychoanalysis of the scientific mind is not just a minor adjustment. On the contrary, it implies a profound transformation. It is to provide tools for a radical change of thinking, for reformulating its foundations and, as a result, for a complete metamorphosis. A mind immersed in subjectivity must free itself from it in order to progress towards critical thinking. It must abandon its ideas, desires, and delusions of the truth of direct experience. Bachelard's psychoanalysis is thus a path of conversion, a dialectic driven by negation as the only way leading to valuable cognition. "Scientific culture must bring about profound modifications of thought." ¹²

Central to Bachelard's psychoanalysis of cognition is the aforementioned category of the epistemological obstacle. The essence of the problem does not lie in the existence of external stumbling blocks (such as disturbances in the subject-object relationship), but in the presence of internal obstacles: superstitions and habits, of which the subject as the agent of cognition must become aware (by extracting them from the scientific unconscious) in order to eventually overcome and reject them. Jean-Claude Pariente calls them "factors of inertia that are born in the very act of cognition." As such, they are inscribed in the process of cognition. They are born in the cognitive act, as Pariente writes, yet they are not related to the object of cognition, but only to the subject of it, and to and the way of comprehending the object inscribed in subjectivity. The cognitive act is not a source of epistemological obstacles in the causal sense, but in the temporal sense, because it is in the act itself that these obstacles become active.

To strive for knowledge means to be doomed to encountering epistemological obstacles. But to achieve knowledge is to face them, to transcend what is natural and to move towards an abstract construction. The latter, however, cannot happen without if two turning points do not occur: the moment of becoming aware of the obstacles and their impact on the cognitive process, and the moment of clearing the mind of these unconscious blockages. These two breakthroughs are enabled by the psychoanalysis of cognition. For its task to be realized, however, it is necessary to frame the process of cognition in psychological terms:

Epistemologists must [...] make every effort to understand scientific concepts within real psychological syntheses, that is to say within progressive psychological syntheses, by establishing an array of concepts for every individual idea and by showing how one concept has produced another and is related to another. Then perhaps they may succeed

^{12.} Bachelard, The Philosophy of No. A philosophy of the New Scientific Mind, 10.

^{13.} Jean-Claude Pariente, Le vocabulaire de Bachelard (Paris: Éditions Ellipses, 2001), 28.

in measuring epistemological efficacy. And straightaway, scientific thought will be seen as a difficulty that has been overcome, an obstacle that has been surmounted.¹⁴

Let us add that cognitive obstacles are natural and, as such, are a difficulty that science must overcome. Its aim, after all, is not to get closer to what is natural: "[...] the scientific mind must be formed against nature, against all that comes from nature's impetus and instruction, within us and outside us, against natural allurements and colourful, diverse facts."¹⁵

Bachelard indicates a number of epistemological obstacles affecting the scientific cognition of the objective world and the physical phenomena in it. Among them, the scholar emphasizes the subject's tendency to rely on primary/direct experience, their inclination towards generalization (the doctrine of the general), towards the reduction of diversity to unity, towards the adoption of utility as an explanatory principle, and their penchant for substantialism (constant explanation of properties by substance). Bachelard's method concentrates on what we forget (or *want* to forget) in science: it focuses on fallacious theories, on the "errors of the mind's past." Seeking to diagnose the causes of such errors, he looks for underlying regularities, that is, epistemological obstacles, which can be construed as his own counterparts of Freudian complexes.

Obstacles are intellectual habits, patterns/templates of thinking, whose existence the researcher or a student of science often fails to see as affecting their own reflection. As Bachelard writes, "[e]ven in a clear mind there are dark areas, caverns still haunted by shades, and traces of the old remain in our new ways of thinking." The phrases he uses – "shades" and "traces of the old" – may be interpreted as metaphorical references to Freudian complexes buried in the (scientific) unconscious. However, direct references to the terminology introduced by Freud are hard to identify in Bachelard's scientific psychoanalysis. Although the French thinker uses many concepts characteristic of the Freudian discourse (the unconscious, the complex, the triadic division of the personality – *ego*, *id*, *super-ego*), his adaptation of Freudian terms is rather liberal. In fact, Bachelard

^{14.} Bachelard, The Formation of Scientific Spirit, 28.

^{15.} Bachelard, The Formation of Scientific Spirit, 33.

^{16.} Bachelard, The Formation of Scientific Spirit, 27.

^{17.} Bachelard, The Formation of Scientific Spirit, 19.

^{18.} Bachelard's liberal attitude to psychoanalysis is pointed out by many interpreters of his thought. For example, referring to negation as the methodological principle of this "philosophy that says no," Leszek Brogowski, calls Bachelard a "non-psychoanalyst." Cf. Leszek Brogowski, "Posłowie od tłumacza," in Gaston Bachelard, *Poetyka marzenia*, trans. Leszek Brogowski (Gdańsk: Wydawnictwo słowo/obraz terytoria, 1998), 245. Likewise, Bachelard's approached to psychoanalysis is interestingly summarized by Marysa Choisy, who claimed that: "He understood

employs them quite conventionally, refraining from any substantial debates with their author. Suffice it to say that throughout *The Formation of Scientific Spirit* Freud's name is mentioned only once.¹⁹

Bachelard's interpretations of Freud's terminology are the subject of numerous commentaries, whose authors examine the Frenchman's relationship to psychoanalysis. Among such statements, we find the thesis posed by Jacques Poirier, according to which Bachelard "plays" with psychoanalytic concepts, carrying out, within their scope, conceptual shifts (les déplacements conceptuels), thus resorting to the language of Freud's only to use it for his own purposes. Didier Gil, on the other hand, calls Bachelard's philosophy inverted Freudism: in his opinion, Bachelard is not about transferring Freudian categories to the area of epistemology, but about their extrapolation – and about the change of their meaning enforced by the framework of new problems. Marcela Renée Becerra Batán proposes that in Bachelard's philosophy the five basic pillars of Freudianism are subject to disintegration or modification: unconsciousness, repression, resistance, libido and the Oedipus complex.²⁰ In this context, therefore, the legitimate question is not that of whether Bachelard is a Freudian, but the much more radical one of whether the psychoanalysis of objective cognition has anything to do with Freudian psychoanalysis.

Regardless of his lack of orthodoxy, Bachelard undoubtedly follows Freud when he points to the necessity of an analysis that will extract from the scientific unconscious which constitutes the underlying cause of its deliberate actions. However, it is difficult to distance oneself from oneself, from one's own mind and one's own achievements. How, then, does Bachelard propose to do this? The psychoanalysis of scientific cognition delves deep into the history of science in search of vivid, albeit utterly outdated, examples of the mistakes the scientists, unconsciously, made in the past. *The Formation of Scientific Spirit* thus becomes a study of forgotten errors, intellectual constructions erected on distorted foundations and supported on rotten pillars. Bachelard's goal is to demonstrate that the history of scientific cognition, which we wish to see as the history of continuous progress,

nothing of psychoanalysis, and this misunderstanding allowed him to construct a great work." Cf. Marie-Louise Gouhier, Anne Clancier, "Bachelard et la psychanalyse," in *Bachelard. Colloque de Cerisy*, edited by Maurice de Gandillac, Henri Gouhier, and René Poirier (Paris: Union Générale d'éditions, 1974), 142.

^{19.} As Cristina Chimisso aptly observes, "[...] in *La formation de l'esprit scientifique* there is less psychoanalysis than may be expected." Cristina Chimisso, *Gaston Bachelard. Critic of Science and Imagination* (London–New York: Routledge, 2014), 202.

^{20.} Cf. Marcela Renée Becerra Batán, "Gaston Bachelard et la psychanalyse. Rencontres, transformations et usages," *Bachelard Studies / Études Bachelardiennes / Studi Bachelardiani* 2 (2021), 34–37.

is marred by periods of stagnation and regression. Interestingly, scrutinizing the past, the philosopher formulates claims for the present. He argues that although we ignore – or altogether displace – theories that arose in the "old days," we still, unwittingly, cultivate in our minds the mechanisms that led to their creation. Bachelard explores the forgotten past to shed light on the present. He reaches for what has been repressed, confined in the depths of the scientific unconscious, in order to emphasize its influence on the conscious scientific self.

Bachelard's psychoanalysis places as much emphasis on the "scientific mind" (understood as a collective, historical cognitive effort) as it does on the individual mind as the agent of cognition. This issue is analyzed by Roch C. Smith, who points to the peculiar bifurcation of the key psychoanalytical category of "the unconscious," which results from the above duality:

Just as conventional psychoanalysis attempts to free the personality by releasing it from the shackles of unconscious repression, so too does the "psychoanalysis of reason" attempt to free the scientific mind from the various irrationalisms that obstruct it. The "unconscious" in the case of science is buried not only in the past of the individual scientists, but in the collective past of science itself, in its history.²¹

Again, let us consider Bachelard's liberal attitude towards Freud, manifest in the way in which the philosopher uses the term "unconscious." Although the French philosopher offers no precise definition of the concept, he is rather specific as to what the scientific unconscious contains (and what should be removed from it), listing, among others, evaluation, desires, dreams, and beliefs, that have nothing to do with cognition. In other words, the Bachelardian unconscious encompasses the subjective world of the oneiric concrete, which is the actual source of blockades obstructing cognition, both at the individual level and in the historical dimension.

In his book *The Psychoanalysis of Fire (La psychanalyse du feu)*, published in the same year as *The Formation of the Scientific Spirit*, Bachelard writes thus: "our aim will be as follows: to cure the mind of its happy illusions, to free it from the narcissism caused by the first contact with the object."²² It may therefore be inferred that the goal of Bachelard's psychoanalysis of objective cognition cannot be reduced solely to theoretical or methodological considerations on the history of science and the process of the formation of knowledge. Bachelard

^{21.} Roch C. Smith, Gaston Bachelard: Philosopher of Science and Imagination (Albany, NY: SUNY Press, 2016), 34.

^{22.} Gaston Bachelard, *The Psychoanalysis of the Fire*, trans. Alan C.M. Ross (Boston: Beacon Press, 1964), 4.

looks further, seeking to influence the scientific practice by means of streamlining the cognitive process, both in its universal dimension and individually. For this reason, it can be concluded that, at both these levels, the defining feature of Gaston Bachelard's psychoanalysis of objective cognition is its visibly practical orientation. The practical nature of this concept is determined by the adoption of the assumptions of psychoanalysis – created as a therapeutic method – which indisputably places it in the area of praxis. Therapy (healing the scientific mind) is also Bachelard's overarching goal. Furthermore, the psychoanalysis of objective cognition is normative in its nature. It is not limited either to theory or to analysis (whether historical or material); instead, it postulates particular solutions meant to enable the subject to perceive – and to eliminate – the remnants of *pre-scientific thinking*.²³

This trait becomes fully manifest in those chapters of *The Formation of the Scientific Spirit* in which Bachelard focuses on successive epistemological obstacles. Each of them is analyzed in its historical dimension and at the individual level, and each such insight leads to conclusions addressed both to scientists doing research in their laboratories and to teachers, who shape the minds of their students. There can be no talk of cognition, Bachelard claims, without a critical analysis – a self-analysis – that would lead to the removal of unconscious obstacles misdirecting our thoughts. "Since there is no objective process without consciousness of a first, inward error, we have to begin our lessons in objectivity with a real confession of our intellectual sins."²⁴

Experimenting with an interesting juxtaposition of the assumptions and tasks of teaching and parenthood, Anton Vydra thoroughly analyzes Bachelard's philosophy of pedagogy in the context of the assumptions of the psychoanalysis of cognition. He draws the reader's attention to the category of age, about which Bachelard writes not in the physiological sense of the term, but in relation to the attitude towards knowledge. "Scientific youth is the age of study and permanent schooling," ²⁵ Vydra claims, emphasizing that Bachelard would always favor this youthful attitude, associating it with humility, with the ability to see and abandon one's own prejudices, with the courage and readiness to become a "beginner" and thus to revise one's previous knowledge on one's was towards the new. ²⁶ "We keep working at a task in order to undergo a metanoia (a metamorphosis of

^{23.} Hans-Jörg Rheinberger, "A Remark on Gaston Bachelard's Idea of a Psychoanalysis of Knowledge," *Bachelard Studies / Études Bachelardiennes / Studi Bachelardiani* 2 (2021), 176.

^{24.} Bachelard, The Formation of Scientific Spirit, 240.

^{25.} Anton Vydra, "Openness, Pedagogy, and Parenthood in Gaston Bachelard," *Bachelard Studies / Études Bachelardiennes / Studi Bachelardiani* (2021), 77.

^{26.} Cf. Vydra, "Openness, Pedagogy, and Parenthood in Gaston Bachelard," 77.

mind) such that we may become youthful again."²⁷ Scientific youth – the opposite of dogmatism – should be a regulative idea, guiding both the scientist and the teacher²⁸.

"Thus, all scientific culture must begin with an intellectual and emotional catharsis," Bachelard writes, clearly indicating how his epistemological theses are related to pedagogical ones. Bachelard's resolutions and postulates regarding education allow for a fuller understanding of the idea of the psychoanalysis of scientific cognition. This context makes it clear that the psychoanalysis of scientific cognition is not only an epistemological concept, but also a practical postulate that every person – regardless of the extent and level of their knowledge of the surrounding reality – may put into practice, to their own enormous benefit. When we consider the psychoanalysis of objective cognition as a method of teaching and learning, it will turn out to encourage critical thinking, motivating one to abandon the beaten path, and fostering constant self-analysis.

The practical dimension of Bachelard's epistemology can be summed up in three words: criticism, purification, and healing. The philosopher follows the principles of the classical Freudian psychoanalysis, yet he relates its tasks to science understood as a process occurring in interactions defining the essence of the scientific community, and to educating young minds to think scientifically. The psychoanalysis of objective cognition understood in this fashion is tantamount to the architecture of the scientific mind. It is, at the same time, a polemic with cognitive realism and empiricism, and the postulate of analytical therapy applicable both to knowledge in its general sense and to every student-teacher relationship. It is this relationship that is the fundament of the social dimension of science and, incidentally, the reflection of its actual shape, which may only be properly formed in the course of psychosocial interactions.

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^{27.} Vydra, "Openness, Pedagogy, and Parenthood in Gaston Bachelard," 77.

^{28. &}quot;To be a teacher means constantly educating oneself. Even more, it means educating oneself through one's pupils." Vydra, "Openness, Pedagogy, and Parenthood in Gaston Bachelard," 76.

^{29.} Bachelard, The Formation of Scientific Spirit, 29.

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