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TEACHING OF PHILOSOPHY AND GRAMMATICAL INCOMMENSURABILITY: An example in Gaston Bachelard

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Abstract:

This paper articulates the notion of grammatical incommensurability in Gaston Bachelard's epistemology with the challenges of contemporary philosophy teaching. It argues that scientific thinking, by operating through grammatical

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structures distinct from common knowledge, requires cognitive and methodological reconfiguration. Drawing on teaching experience in logic and philosophy, it defends a propedeutic formation aimed at abstraction and conceptual mastery. Grounded in Bachelard's epistemology, the proposal outlines a rational pedagogy capable of preparing students to engage with refined and non-intuitive concepts.

Keywords: Gaston Bachelard; philosophical pedagogy; grammatical incommensurability.

I

Gaston Bachelard warns, already in the presentation of the *Essai sur la connaissance approchée*, that his intention is to "accompany knowledge in its task of refinement, precision and clarity". To this end, he states that it is necessary to resist the temptation to seek primary conditions for coherent thinking, and rather, one must start from the knowledge already established and stick to the study of its progress (BACHELARD, 1969, p. 7). At another point in the work, he observes that, when we consider description as a "second-class method", we often confuse knowledge as it is transmitted with knowledge as it is created (BACHELARD, 1969, p. 10). This epistemological gesture is decisive: Bachelard's epistemology is distinguished by its own technical vocabulary, which may, at first glance, suggest that its task is limited to teaching the meaning of certain words. However, it is precisely through this vocabulary that a

philosophical grammar is structured: an ordering principle that regulates acts of reflection and provides a model of epistemological methodology. This grammar defines the conditions of possibility for the rigorous understanding of his theses. From this, the question that guides this text arises: how, and where, can the student of philosophy begin to understand Bachelard? In other words: how to properly insert it into the conceptual maturity and technical movements of a refined philosophy?

Everything seems to be the same thing. Things just are - and that's it. To have a coffee, press the car's ignition button, open a door, perform a prayer, hum a song, stumble on the sidewalk and laugh with the drunk of the Senadinho (or "Sindicato", for the intimates), who babbles: "anything is the same thing" or "there is nothing... but there is". There is, here, a certain tranquility in the daily use of language, as if everything flowed naturally. Until something strange comes along, like a character from the Addams Family: a disembodied hand, called a "little hand" or simply "*Thing*". The quotation marks already denounce a disturbance in the ordinary. They signal a change of regime in language: between the use and mention of a word, between common sense and a more technical grammatical operation. Consider the following example: if we say: *nevertheless and yet, but not also, they have the same meaning as but, nevertheless, no, no* - we are in a zone of ambiguity. But if we say — '*however*' and '*nevertheless*,' but '*not*' also, have the same meaning as '*but*'; yet '*not*,' no — then we enter the field of an artificial language. We are outside the spontaneous course of a natural language, the

one that is born, evolves and transforms over time between human groups. As Mortari states: "If an artificial language has a precise grammar, it can always be said whether an expression of the language is grammatical or not (which is difficult with natural languages)" (MORTARI, 2006, p. 36).²

These difficulties are not only theoretical: they are repeated insistently in my concrete teaching experience. Over the course of 27 years dealing with formal logic for students of philosophy, mathematics and physics, the most persistent obstacle, transversal to these trainings, has been the difficulty of dealing with the abstract. It is not just a matter of not understanding the content; it is a matter of not yet having the technical, conceptual and grammatical instruments necessary to enter the game of erudite thought. The same happens when trying to teach music to a beginner: before any creative expression, it is necessary to present the score, which is, above all, a logical system of sound representation. It is necessary to explain what musical time is (the relative duration of sounds and silences), the measure (the unit of rhythmic organization that distributes the tempos in regular pulses) and the rhythmic values that structure the melody: for example, the quarter note, which represents a full time within the measure, or the eighth note, which is worth half of a quarter note, that is, half time. These figures, in turn, are inserted in their own logic of subdivisions, pauses and articulations. The

² I develop these examples in greater detail in the article "Gaston Bachelard and the Question of Grammatical Incommensurability", published in *Arts, Linguistics, Literature and Language Research Journal*, v. 5, n. 1, 2025 (GONÇALVES, Ângelo Márcio Macedo).

student cannot interpret a melody if he does not yet recognize that an eighth note is not just "a shorter sound", but a relative unit within an abstract temporal structure.

The same is true of logic or philosophy: the student cannot be required to make an abstractive gesture if he has not yet learned to read the structure of an argument or to recognize categories such as "time," "relation," or "causality" outside of his spontaneous intuition. Each philosopher requires an immersion in his own grammar – and this is not an external jargon, but an internal architecture that organizes the construction of concepts and, at the same time, provides the conditions for the possibility of their intelligibility. In Bachelard's case, this demand intensifies. There is a particular inflection in it that we will return to later: in addition to learning a methodological grammar, there is also a mutation of cognition, another way of thinking that needs to be cultivated. This is exactly what we propose to face: how to train the student not only to know philosophical theses, but to inhabit the technical and speculative mode of conceptual production that these theses require. "L'acte de connaissance n'est pas un acte plein. S'il est joué avec aisance c'est parce qu'il se développe sur un plan irréel. Cette irréalité est la rançon de sa facilité." (BACHELARD, 1969, p.13).

II

The difficulty in understanding philosophical thought lies not only in the content, but in the internal grammar that

sustains its form. Throughout my teaching career, I have understood that this grammar requires specialized training, a technical propaedeutic that introduces the student to the abstract game of philosophy. This observation runs through the various works that I have been developing on philosophical teaching. In *Propedeutics of the philosophical game*, I argue that the study of philosophy requires, above all, a familiarity with the modalities proper to conceptual discourse.³ The relationship between object, method and content in philosophy is not contingent: it is a structural overlap that demands a type of reading that is confused with the act of philosophizing itself. As I argue in this article, the philosopher not only transmits concepts: he constructs his own criteria of intelligibility and demands from the reader a coexistence with this grammar, not in the ordinary grammatical sense, but as an internal, rigorous, methodical and erudite logic.

This training process requires the cultivation of specific skills: attention, concentration, discipline, mastery of technical vocabulary and willingness to interpret. Philosophical reading, in this context, is an action: one deals with concepts such as playing a game of chess or intertwining the threads of a web. The image of the spider – which knows where to lean and when to capture it – accurately synthesizes the nature of philosophy as a game of conceptual positions. Philosophizing is not just

³ For a deeper understanding of this investigation, I refer to two texts of my authorship: *Propedeutics of the philosophical game: between Alice, chess and the spider*, published in the journal *Periagoge* (UCB, v. 5, n. 1, 2024), and *Considerations on learning philosophy*, published in the journal *Ideação* (UEFS, n. 21, 2009).

saying something about the world: it is moving in a formal field in which argumentative precision determines the value of the idea. At other times in the classroom, we explored how this game can be understood by analogy with formal logic, through exercises of syllogistic deduction or semantic analysis extracted from literature. The experience with students shows that the entry into this domain does not occur by the simple accumulation of readings, but by persistent contact with the rational game of conceptual construction. Like a musical score, which requires the performer to accurately read the tempo, the time signature, and the values of the notes, the philosophical text requires from the reader a technical tuning and constant intellectual training. Thus, the teaching of philosophy cannot do without its propaedeutic dimension. To teach philosophy is to teach how to play: to understand the movements of a system of thought, to recognize the pieces of the conceptual game and, above all, to interpret the meaning of the moves made by an author. In my pedagogical proposal, this propaedeutic is not opposed to creativity or free reflection; on the contrary, it offers the necessary field for both to emerge with rigor. Once this requirement is understood, it becomes possible to outline a philosophical pedagogy that not only presents doctrines, but also forms the spirit for the exercise of philosophy as a living practice. It is at this point that we return to Bachelard: he demands not only reading, but reconstruction; not only understanding, but transfiguration. To read Bachelard is to enter into an epistemic game that transforms cognition itself - and this is, perhaps, the greatest challenge for the teaching of his philosophy.

III

The grammar of scientific thought, as proposed by Bachelard, requires a radical repositioning of the spirit. It breaks with spontaneous intuitions, with familiar language and with the perceptive habits of common knowledge. It is not only a question of a difficulty of translation between conceptual systems, but of the revelation of an ontological and cognitive discontinuity. Everyday experience offers the stability of what has already been lived; Scientific experience, on the contrary, requires the reinvention of one's own relationship with reality. As Bachelard states, "experience at the level of common sense is susceptible to being contradicted by an experience of another level of knowledge, by a more refined and more evolved experience" (BACHELARD, 1935-1936, p. 448).

This profound difference in the ways of signifying, in the ways of inhabiting language, is precisely what characterizes grammatical incommensurability. In the universe of common sense, as Riobaldo observes: "The hinterland is the size of the world. I know that inside us the world is big too. But I don't know about myself, I don't know more about the world. I explain: 'we live, because we don't always see each other'" (ROSA, 1986, p. 22). Everyday language coexists with silence, with ambiguity, with the suspension of judgment. Scientific language, on the other hand, requires accuracy, structure, syntactic precision and, therefore, often becomes unintelligible outside its own field. Jonathan Swift dramatizes this chasm in *Gulliver's Travels*, when narrating the meeting between Gulliver and the

Houyhnhnms - rational beings who are unaware of the concept of lying. Gulliver writes:

The greatest effort I had to make was to explain to them what was a lie; for the concept did not exist among them. The closest word I could use in his language meant 'to say what is not'. When they understood what I meant, they were deeply disturbed. It seemed inconceivable to them that anyone could deliberately say something that did not correspond to reality. One of the elders asked me if all the yahoos knew how to do this, and I had to admit that I did. (*Swift, 2005, p. 219, adapt.*)

At this moment, it is not just a mismatch of vocabulary, but of a radical difference in the world. The grammar of the Houyhnhnms does not support the concept of intentional falsehood. What is evident to Gulliver, and to us, becomes incomprehensible to them. Grammatical incommensurability manifests itself here as the impossibility of mutual thought.

This impossibility takes even clearer form in Carroll's universe. In *Alice Through the Looking Glass*, Humpty Dumpty states:

"When I use a word," said Humpty Dumpty, in a tone of disdain, "it means exactly what I choose it to mean — no more and no less." The question,"

said Alice, "is whether you can make words mean so many different things." The question," said Humpty Dumpty, "is who's in charge—that's all." (CARROLL, 2009, pp. 114–115)

Alice notices the break in meaning. She, like the student in front of a technical philosopher, encounters a language game that seems arbitrary to her. But Humpty Dumpty operates on another system, with different rules. This is also the case between common knowledge and scientific knowledge: there is no shared code that ensures the equivalence of the senses. As Bachelard reminds us, the new scientific language "impose à l'esprit une nouvelle grammaire, une nouvelle construction conceptuelle qui échappe souvent aux classifications ordinaires de la langue." (BACHELARD, 1999, p. 244). Incommensurability is, therefore, the impossibility of a tacit harmony between ways of thinking. At the end of *Alice*, a more radical question arises: not only if there is agreement on the terms, but on who dreams of whom. "Unless... that we are all part of the same dream. I just hope the dream is mine, not the Red King's! I don't like to belong to someone else's dream," says Alice, "I feel a huge desire to go and wake him up and see what happens." (Carroll, 2009, p. 268).

Bachelard, by rejecting the assumptions of common sense, invites us to break with the shared dream. Thinking here requires waking up. But wake up for what? For a constructed, formal, non-imagetic reality. A reality in which abstraction is not escape, but method. A reality that requires the teaching of philosophy to train not only readers, but players, those capable

of entering the board of concepts, of understanding the web of reason, of dreaming of science without belonging to the dream of others.

If we were to write like Carroll, he might say it like this: what I mean by the concept of grammatical incommensurability could take the form of a brief dialogue, more or less in these terms:

"What time is it?" Alice asked, looking up at the sky that always looked the same. "That depends," replied the Knight. "It depends on what?" "On where you are, how fast you are going, and on the gravity around you." isn't it always the same three hours for everyone?" said the Knight, adjusting a clock that was turning backwards. "There are places where three hours pass in a sigh. And others where one minute can last a whole year.- That is impossible!- Impossible... in his reference, of course. But here, even time has its mirrors.⁴

⁴ The dialogue above is a free creation of our own, inspired by the literary style of Lewis Carroll. Its function, in this context, is to illustrate in an accessible and allegorical way the thesis of grammatical incommensurability, as discussed throughout the text. Just as Carroll resorts to logical absurdity to reveal the limits of ordinary language, the invented scene dramatizes, in a philosophical and playful key, the mis-

This small imaginative exercise dramatizes, with Carroll's humor, the mismatch between modes of signification that operate with different presuppositions and that, therefore, do not share the same grammatical regime. This is precisely what we call incommensurability: a rupture in the conditions of mutual intelligibility between language systems. But where can we find an example of this in Bachelard? And how can we initiate the student into a refined and mature work? To understand Bachelard, we first need to understand how a philosophical grammar presents itself to us.

IV

We should not be more Bachelardians than Bachelard; no less. It is the author himself who guides us and demonstrates, in an exhaustive way, his thesis in *the Essai sur la connaissance approchée*. The so-called "novelty" attributed to Bachelard, often highlighted by the literature based on the explanatory construction of his categories, manifests itself, to a large extent, in a more visible way in these conceptual elements. This does not mean that these categories are secondary, on the contrary, Bachelard's thought, articulated through them, is essential, constituting a *sine qua non condition* for the understanding of what he calls *nouvel esprit scientifique*. However, our argument, both in its

match between different regimes of signification — in this case, the divergence between an intuitive conception and a relativistic conception of time. It is, therefore, a didactic-philosophical resource, and not a quotation extracted from Carroll's original works.

general structure and in the demonstration of the author's philosophical parts or instances, develops within the conditions of possibility of these categories. We strongly affirm: the *Essai* should be considered the foundation that precedes and delineates all the architecture of his later work. This precedence, however, is of a derivatory nature: the categories, to a greater or lesser extent, are configured as consequences of the conceptual and methodological modeling that this dense inaugural text establishes.

Faced with the complexity of the question of method in Bachelard, we resorted to the consultation of a specialist in his thought, whose answer — in a Socratic tone — returned us to the question in the form of a new question: were we dealing with the scientific method itself, or with the formulation of a new method for a new science? From this questioning, we understood that the difficulty lay not only in defining the status of the method, but, more profoundly, in delimiting the domains proper to each field: that of science, that of philosophy and, more specifically, that of the philosophical presuppositions of the scientific method. Moreover, the task was to identify the existence of a method of Bachelard's own epistemology - an instance that we designate here as the study of his philosophical grammar.

Barbosa (2021, p. 1) states that "when making a chronological reading of Gaston Bachelard's works, I perceived, in this thinker, three moments in the concern with the method of investigation", and elegantly continues by observing that, at first,

"in his analyses and shown by himself, he speaks of a method as objective as possible" (BARBOSA, 2021, p. 1). These indications are, to a large extent, compatible with the reading we propose here. However, when the author adds that Bachelard "refers to the method as something circumstantial that is quickly replaced by a more effective method" (BARBOSA, 2021, p. 2), greater care is needed. The notion of method to which she refers seems to operate as a general diagnosis, but it does not accurately explain the type of conceptual trajectory that we seek to evidence. The author concludes by emphasizing the Bachelardian thesis of approximation (*approchée*), stating that "encircling the whole object" would be the central idea, and attributes to the notion of "description" the role of the fundamental axis of the epistemological process. It is at this point that we propose an inflection: the idea of description, in Bachelard, is profoundly technical and cannot be reduced to a simple general sketch of the work or to a linear reading. It is a differential epistemology. As Pravica also notes:

Bachelards nicht-reduktiver Umgang mit naturwissenschaftlichen Themen wurde dabei zunächst als eine "differenzielle" Philosophie konkretisiert. Diese betont nicht nur Ungewohntes, Neues und Divergierendes und stellt es als einen "Anlass" für das Denken positiv in den Vordergrund, sondern weist darüber hinaus der Philosophie die Aufgabe zu, Denkooptionen, die die Naturwissenschaften potenziell bereitstellen, zuallererst in deren Diversität verfügbar zu machen. (PRAVICA, 2015, p.238)

The course of the levels of description, of the successive gradations of approximation, constitutes one of the most sophisticated features of his epistemology. And it is precisely within this subtle dynamic of gradations that we situate the emergence of logical time, understood as the methodological operator that structures the advancement and internal refinement of epistemological activity.

It is important to emphasize that these three fundamental theses, the accumulation of details while maintaining the broad lines, the progressive enrichment of predicates, and the objective ordering of qualities, are already explicitly formulated in *Essai sur la connaissance approchée*. Bachelard states:

Avant d'arriver à la connaissance scientifique nous devons examiner, de notre point de vue, comment les détails s'accumulent en gardant les grandes lignes d'une description, comment les prédicats enrichissent progressivement le sujet, comment enfin les qualités s'ordonnent pour aboutir à un classement objectif. (BACHELARD, 1969, p. 7).

These progressive operations of conceptual ordering and refinement indicate, already at this moment, the presence of a temporal structure internal to rationality in action, whose methodological function corresponds to what we designate here as

the first instance of epistemological grammar: logical time⁵. It is an instance that organizes the impulse of epistemological activity in terms of a grammar that regulates and operationalizes the processes of conceptual construction and rectification. "En étudiant les conditions de l'application des concepts nous allons les voir rentrer en mouvement dès qu'on voudra les combiner ou simplement les analyser, bref s'en centres." (BACHELARD, 1969, p. 19). This movement is essential, because it is precisely in it that we can perceive when a hypothesis becomes a thesis. Conditions, motion, combinations, analysis, functions, and applications govern a specific field of activity of the method. Bachelard speaks of concepts and conceptualization, and this task of refinement - or rectification - requires a temporal process of gradual approximations, carried out by means of successive adjustments and operative displacements within the epistemological activity itself.

La répétition monotone de procédés simples est au moins une répétition, c'est-à-dire un mouvement. Si l'on réfléchit que cette répétition qui est à la base de l'approximation obéit par définition à un principe d'ordination, on se rend compte que l'on tient là une

⁵ The concept of logical time has already been addressed in an introductory way in a previous article of my authorship and is the object of exhaustive analysis in the doctoral thesis currently under development, under the guidance of Professor Dr. Olival Freire Jr., in the Graduate Program in Philosophy of the Federal University of Bahia (UFBA).

méthode qui, dans son apparente modestie, peut substituer à l'ambitieuse intuition d'emblée des grands philosophes, une intuition progressivement organisée, très apte à prolonger les concepts. (Bachelard, 1969, p. 29)

The above reference requires considerable methodological caution from us, since the approximations operated by Bachelard are not homogeneous: they follow gradations that involve stigmatized concepts marked by a certain functional fixity, but which develop through internal levels of rectification. Movement, here, is not external to the idea of method; on the contrary, it is immanent to the very time of conceptual operation. In addition, what Bachelard calls detail or, more technically, the structuring of minimal concepts, manifests itself, as we have argued, as a regulating element of a temporality internal to rational construction. This temporality requires the formulation of a more subtle methodological instance: a field of impulse that regulates the rectification and application of epistemological concepts.

Still without - or deliberately at a distance from - any form of "Bachelardism"⁶, it is Bachelard himself who shows us

⁶ The term "Bachelardism" is used by Bontemps (2017, p. 187) to refer to a history of Bachelard's affiliations and the interpretative consequences that result from this process. We will deal in more detail with the question of the constitution — or reconstitution — of the interpretative field of Bachelard's work in the following chapters of

and shows us the way. The clues and evidence he offers (strongly marked by rigorous technical expertise) can sometimes make it difficult to grasp the most compact core of his thought, but they are arranged with remarkable precision. The notion of rectification, that is, the degrees of approximation of conceptualization, in which concepts are analyzed in their fragmentary nature, constitutes the key point for the understanding of "time" in the genealogy of method. Or *Essai*, as an inaugural work, is also the ground where the categories that later branch out into the *corpus* epistemological author. It is to this root that we seek to lead the reader back. The notions that, at first sight, seem later (both in their composition and in their definition and application) are, in fact, characters of Bachelard's epistemological environment, remaining founded on the philosophical basis of the *Essai*. Throughout our current research, the configuration of the methodological instances of Bachelardian epistemology is revealed, on the one hand; on the other, the emergence of a constitutive time, a *team* as a condition for the possibility of one's own understanding. It is in this field that the *Nouvel esprit scientifique* it is structured: as the operationalization of a reason that applies becomes thinkable, on the one hand; on the other, the progressive rationalization of a methodical materialism. And it is in the time between them that the most essential aspect of our study is founded. For this very reason, our insistence on

the first part of this study. Cf. VINCENT BONTEMPS, Bachelard, 1. ed. São Paulo: Estação Liberdade, 2017.

logical time is justified: for a beginner in philosophy, it is a matter of learning to grasp this *team* - in the sense of compass - of the time of the method that is inscribed within Bachelard's conceptual movements.

V

Logical time is situated between the metaphysical and the psychological, insofar as it accompanies the constitution of the concept as an element of a construction. It acts as the *tone* of an action, an internal rhythm that drives thought. This context is outlined along the path that Bachelard presents in the processes of rectification, or in the approximate gradations of conceptualization.

En effet, le concept, élément d'une construction, n'a tout son sens que dans une construction ; La connaissance minima dont il peut être l'objet doit naturellement s'expliciter en une proposition. Sa simple analyse doit distinguer les prédicats de l'acte qui les réunit. Cet acte n'est pas uniquement placé sur le terrain métaphysique, il est au contraire fonction du tonus psychologique, il se développe à des points de vue différents, suivant les circonstances, suivant le but, suivant la valeur intellectuelle de l'esprit qui s'y dépense. (BACHELARD, 1969, p. 19).

This *psychological tone*, as outlined by Bachelard, must be understood as a functional principle that mediates the internal procedures of the gradations of approximation in the processes of conceptual rectification. It is a dynamism that is not to be confused with a defined psychic entity, nor with an objective datum of psychology; it acts in the domain of the psychic as a modulating impulse device. Its role is not to provide content to knowledge, but to order its movements; it is he who sets the pace and direction of the conceptualization activity. Therefore, even at the highest degrees of approximation, the guarantee of full objectivity is not achieved; what is obtained, rather, is a progressively organized intuition, which regulates the conceptual construction internally. In this sense, *tone* is the sensible index of a time in operation, it expresses, on the psychological plane, the methodical impulse that animates the rational process of rectification.

There is, therefore, within Bachelard's epistemology, a time that is not to be confused with either the empirical chronology, or with the time conceived as a measurable body of reference, as defined in the physical sciences and mobilized by Bachelard in other contexts of his work. The time to which we refer here - and which we name, precisely, as *Logical time* - it is not identified with time as such, nor with logic as such. It is a constructed instance, a modality of ordering that operates in the genesis of conceptual approximations. It is not presented as a given, nor as a previous structure, but as a modulating impetus that precedes and guides the acts of construction and rectification. Just as in the interior of musical experience - where, even

before spelling or meter, there is an expressive gesture that drives the form - here too logical time insinuates itself into the intervals of thought, regulating the movement of approximations and establishing a compass between the resistance of the given and the malleability of the concept. Bachelard warns that we must not detach ourselves from the world, even when it escapes us at its first appearance: it is precisely this rebellious character of the real that leads thought to methodical invention. In this sense, logical time manifests itself as an operative force internal to epistemology, not as an external condition, but as a structural impulse of rationality in its effective and current activity. It is a fundamental operation of dynamic knowledge in action. "Goethe, négligeant les arts préparatoires du dessin, s'accoutume à maintenir les objets devant l'attention comme de simples occasions de la réaction sentimentale. Il ne faisait que les saisir dans leur ensemble <<en tant qu'ils produisaient de l'effet>>." (BACHELARD, 1969, p. 12).

Bachelard, to a certain extent, touches here on essential questions of the philosophical tradition. With his singular style, situated in his own conceptual environment, he enters movements of intellection that are at the center of a theory of knowledge. Already at the beginning of the *Essai*, and so that it is far from being mere rhetoric, Bachelard makes it clear that his intention is not to determine [...] "les conditions primitives de la pensée cohérente" (BACHELARD, 1969, p. 7). And if, as an epistemologist, the objection were addressed to him that it would be necessary to justify in advance how something is already

known, he replied incisively: "L'épistémologue comme le physicien ne peut-il se refuser aux questions d'origine?" (BACHELARD, 1969, p. 15).

This is not a problem for Bachelard, for his theory of knowledge is, from the beginning, an applied theory. However, this philosophical application touches on sensitive areas of traditional epistemology and, as we have already said - and here we reiterate - Bachelard is attentive to these delicate inflections of the philosophy of knowledge. The first three chapters of the *Essai* (first book) show the author's degree of philosophical specialization, constituting not only the starting point that we assume here, but also his horizon of arrival. It is in them that the grammatical ordering of the epistemological movement is outlined, whose core lies in the notion of rectification of concepts. This notion inaugurates and sustains the philosophical foundations of the epistemological method in Bachelard, revealing a form of investigation whose subtlety is particularly demanding and decisive for philosophy and its teaching.

"Il y a cependant dans la vie de l'esprit des moments qui laissent des traces indélébiles, des éléments que rien, semble-t-il, ne rectifie : tels sont les concepts." (BACHELARD, 1969, p. 16). It is precisely by questioning this supposed and indelible fixity of concepts that Bachelard establishes his thesis on rectification and the gradations of approximation. It is in the fragmentary and in the detail that this process takes place, and it is there that his epistemology turns, in an incisive way, against the

traditional notions of concept as stable units. The conceptual elements located at the top of the process of knowledge elaboration are precisely those in which the intervention of detail operates with more intensity. It is through these gradations, and attention to the *micro-times* of rectification, that Bachelard penetrates and displaces a tradition that often stabilizes concepts in timeless abstractions. As we have already pointed out, he is here in contact with a fundamental philosophical problem: a structural detail in the theory of knowledge itself. It is in this context that the theory of sensation, for example, acquires prominence, since it is from it that Bachelard argues, in a way that we consider decisive, about the conceptual specialization that structures his epistemology. Although he does not directly mobilize the classical debates of the philosophical tradition, Bachelard reframes them in a singular way, inscribing them in a technical-methodological field that displaces them and reinterprets them in a new light. But the analysis of this here would go beyond the object of this article.

SAW

The reading of Gaston Bachelard's epistemology, as we propose throughout this article, requires from the reader - especially from the student in training - a continuous effort of conceptual reconstruction. It is a philosophy whose technical vocabulary is not just a set of terms, but the expression of a deeper change: a cognitive mutation, a shift from the habitual way of thinking to a progressive and experimental rationality. That is

why we insist on the idea that the *Essai sur la connaissance approfondée* should not be read as a simple introduction to Bachelard's work, but as the conceptual ground on which all later epistemological grammar is rooted. Its concepts are refined, require maturity, and only become intelligible within a formative process in which the student learns to follow the time of the method (its *compass*) that unfolds in the internal movement of conceptualization.

In this sense, the figure of the teacher assumes a decisive role. It is up to him not only to present theses, but to form the spirit for the exercise of philosophy. It is the teacher who must offer the necessary instruments for the student to develop the cognitive skills that enable him to follow Bachelardian thinking. Such skills are not given in advance: they need to be cultivated, trained, exercised, and this takes place within a pedagogical process that begins with a real change of culture. It is not about transmitting content, but about transforming dispositions. Here is Bachelard's lesson: rational pedagogy must begin with confronting the prejudices and misconceptions fixed in the current mentality, that is, with the reconfiguration of the naïve experimental culture.

In elementary education, Bachelard warns, striking experiences, rich in images, can become false centers of interest. They delight, but they do not clarify. For this reason, the teacher must continually move from experience to abstraction, avoiding metaphors and analogies, in order to make teaching a progressive and rigorous reorganization of knowledge. This is the

basis of a *rational pedagogy*, in which learning is structured not by the accumulation of information, but by the active formation of ideas. The Bachelardian proposal of a new pedagogy is affirmed precisely at the moment when it is recognized that teaching can no longer be systematic in the traditional sense: it must be systematic, that is, marked by a constant dialogue between teacher and student, where knowledge is constructed in movement.

This pedagogy requires a change in rationality. To understand the *new scientific spirit*, it is necessary to overcome the cognitive inertia of common sense. Cognition, in this process, is not a natural given, but a field of formation, a space in which intellectual skills must be previously cultivated so that they can, when summoned, operate effectively. To understand a concept, in this context, is not only to understand it in its formal definition, but to recognize the system of procedures, classifications and operations that make it functional in its environment. Bachelard's pedagogy, therefore, is not only rational, it is also erudite. The school, according to him, must recover what was taken from it: its primary function, which is to study.

Thus, Bachelard's epistemology is not limited to describing scientific knowledge: it proposes a true intellectual formation capable of promoting the rigorous exercise of thought. Rational pedagogy, as an unfolding of epistemology, becomes, in this horizon, a condition of possibility for the appropriation of the new scientific spirit. Only from this pedagogy, which ar-

ticulates conceptual maturity, grammatical attention and cognitive transformation, will it be possible to prepare the student to face the incommensurability between ordinary knowledge and modern science. And it is at this point that philosophy, teaching and epistemology meet again in Bachelard: in the need to form not only a student who knows, but a spirit who thinks.

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