

Editorial

Reasons and passions of matter: Gaston Bachelard's materialism

Matter, material, and materialism are all terms that have insistently appeared in Bachelardian studies in an attempt to outline the horizon of novelty of his thought. His reflections expose the pinnacle of an authentic imagination, as well as an element of rupture between common knowledge and scientific thought. Therefore, such terms are used both critically to denounce their reductionist use, and positively as a qualifying element of Bachelard's production.

In a “personal confession” – one of those autobiographical remarks he would often insert in his scientific texts – Bachelard declares that, in a space of a dozen years, he came upon a number of contexts that forced him to draw a distinction between the materialism of imagination and that of experimentation – a division that would lead to his radical opposition between *imaginary materialism* and *advanced materialism*.

As a result, matter comes to be conceived as a pivot point within and between knowing and imagining. But what sort of matter? How are we to talk about it: as an obstacle or as a resource? If materialism is considered the common resource of authenticity among different fields, how can it operate meaningfully on such dissimilar fronts? Bachelard immediately places us before a way of thinking opposed to what the history of Western thought has accustomed us – namely, a movement committed to the pursuit of unity through a process that excluded its opposite. *Matter, material, and materialism* are terms that have in fact been opposed to spirit, form, and rationalism precisely because of that principle of unification that this constellation of terms claims to produce. But Bachelard turns the question on its head by claiming that these terms create unity and diversification not by mutual exclusion but by actively engaging them in a dialectics.

The articulated and differentiated reflections of Bachelard on matter—both on the scientific and aesthetic fronts—complicate any systematization that pretends to harden his position and would ultimately betray its spirit.

A significant point of reference on this subject is the volume *Bachelard e le "provocazioni" della materia* (Bachelard and the provocation of matter), a collection of essays – published fifty years after Bachelard's death – concerning an intense discussion on this theme among international scholars. The current issue of *Bachelard Studies* opens up a forum for the extension of this debate. Here we limit ourselves to a few introductory remarks, in order to allow the questions raised in this issue to deepen the intuitions herein announced – intuitions necessary for an evaluation and a reassessment of the fecundity of Bachelard's contribution to contemporary thought, and its current relevance.

Matter. Matter has always been an unavoidable, albeit problematic, issue in philosophical-scientific and creative-aesthetic research. The Greek philosophical world bequeathed us a conception of matter in line with that of common sense: matter as everything that has consistency and is perceptible to our senses. Tied to sensibility, matter shares its limits: it is the site of passivity, of becoming, of contingency and is therefore the receptacle of irrationality, an element of instability, an obstacle to knowledge. It is not by chance that modernity, notably in Descartes, intervenes to stem this aspect of matter, by leading it back to geometric space and by bringing into play an epistemic operation which reduces matter to a mathematical-geometric object.

Bachelard, on the other hand, immediately strips matter of the attribute of sensibility that a certain philosophical tradition, hand-in-hand with common sense, imposes on it. Instead, he makes it clear that advanced materialism and imaginary materialism should not retain an indeterminate notion of matter which can only find its determination in form, exteriority, or in an immediately given phenomenon which would have natural value. Subtracting matter from such categories does not, however, entail the search for a universal or an essential characteristic that would make it possible to designate matter in general. To seek a general definition of matter is not only an impossible undertaking – it is indeed a meaningless claim.

For Bachelard, we must therefore also abandon the realm of general ideas and stop fooling ourselves into thinking that we can find matter on the side of simplicity: he urges us, rather, to probe its complexity. Matter outlined in this way, not as the receptacle of sensible qualities, excludes sensation as well as any form of subjective projection in scientific knowledge. This was the established path of modernity. However, Bachelard, unlike Descartes, does not arrive at *res extensa* or the search for simple natures, but at the complexity of a systematic inter-materialism. Sensation, from this perspective, is no longer the privileged access to that matter which feeds imagination, because such access rather occurs by activating the unconscious materialism of the subject, in the mode of "provocation".

Rooting the imaginary in matter brings into play the functions of human psychism which are completely involved in the productive process of material imagination, as shown in Bachelard's masterfully illustrated works on the four elements

– air, water, earth and fire – corresponding to the different experiences of material imagination. When these elements, which Bachelard describes as “hormones of imagination”, are considered the basis for the explanation of all phenomena, they tend to trigger epistemological obstacles, henceforth becoming elements of a cosmology rather than factors in an experimental study of matter. In order to reach a rationalism of the four elements, a long process of rational elaborations and paradigmatic discontinuities becomes necessary, starting from the loss of symmetry among the four elements, revealing their different characters: dynamic and transformative in the cases of air, water and fire, yet passive for earth. This latter observation constitutes the necessary premise that will enable us to grasp inter-material processes and to inaugurate a long course of rationalization that will lead to a phenomenology of matter articulated in terms of physical, chemical, and nuclear experiences.

What then of *matter*? Bachelard is quite aware of the fact that his questioning of the certainties of naive realism concerning the concrete element of matter can give rise to two possible meanings: on the one hand, a form of materialist nihilism and, on the other hand, a vitalized materialism that generates excessive images which then tend to act as obstacles to progressive experimentation.

Far from being an arbitrary constructivism or a psychologizing vitalism, rational materialism is keenly attentive to specific experiences, ever open to receiving new determinations from experiments. Rational materialism is the knowledge of a transformed, rectified, dematerialized reality oriented towards a plurality of micro-realities into which laboratory technology allows increasing access.

What Bachelard wishes to claim is the *active and dynamic character of matter*. Again, departing from the paths of modernity, he does not intend to define, like Galileo, a primacy of dynamics over statics, nor to update the body-space-movement nexus of mechanism. For him, it is rather a question of recognizing the internal dynamism of matter: not the displacement of a body in space, but an intrinsic transformative movement. What is at stake is thus the recognition of a *time of matter* which is the *time of transformations* – a theme as much scientific as it is aesthetic, despite their profoundly dissimilar approaches.

Particularly rich in documentation, in this sense, is the phenomenology of chemical and nuclear experiments: not a phenomenology of objects, but a phenomenology of matter that goes hand-in-hand with a phenomenotechnics. Contemporary physics explicitly recognizes a phenomenal synthesis of matter, its properties, and its actions. Matter is thus conceived as irradiation, and the photon as its ray, its movement. There is no movement separate from a body: the body is its own action and movement. Energy thus expresses this deep, structural link between thing and movement: energy stored in matter remains timeless, only to become duration during its emission. Matter is energy and, when it receives or loses energy, it changes form: it deforms itself through inter-material transformations. This is the expanded materialism that abandons geometric abstraction to become, instead, an

ontological dialectic: the atom is atomized and grants a structure to the energy it emanates while being discontinuously transformed, in turn, by absorption or emission of discontinuous energy. Matter, as the object of microphysics and phenomenotechnics, is both *constructed* and *real*, root and reason of phenomena. It requires new rational modes of knowledge that imply a novel interweaving of reason and reality. Envisaging a temporally active matter suggests that scientific thought opens up a perspective of depth in the object – a perspective that breaks with matter as nature, as pure exteriority, to end in multiple ontologies, as is the case of various corpuscles (electrons, protons, photons, neutrons, neutrinos) provided with different kinds of ontological status.

Materialism. The dynamism and transformative character of matter are crucial elements underlying rational materialism as well as imaginary materialism. We note that, especially in the epistemological texts of Bachelard's mature years (*Applied Rationalism*, *Rationalist Activity in Contemporary Physics* and *Rational Materialism*), the term *materialism* is always associated with an adjective – whether it critically designates its naive or reductive aspect, or positively underlines the scientific effect it produces. In each expression, the adjective makes explicit the need for a process of rupture: the differentiation from what is abandoned generates a gain in terms of rationality.

The adjective “advanced” separates materialism into imaginary and scientific, allowing each of the two to assume, in the dissociation, its own authenticity; the term “rational” distinguishes between primitive materialism and learned materialism, introducing in the disjunction the difference between brute and coherent matter, the result of technical purity; the adjective “technical” goes with applied rationalism to exclude any progressive inertia of thought that leads to a conception of reality as a synonym of irrationality; the term “cultured” dissociates the materialism engaged in the line of the artificial from the sensitive origin of knowledge of naive materialism. Naïve, primitive, innate, naturalist, observant, vitalized, discursive, progressive, orderly, evolved, cultured, technical, scientific, elaborate, synthesizing, constructive materialism: the terms here listed cannot exhaust the prolific richness of Bachelard's language, yet they are sufficient to grasp the structure of rational materialism, the outcome of the dialectical process that a culture must undergo to lead from the certainties of naive realism to the certainties of educated rationalism. Being inseparable from a technical materialism which produces new elements and with them creates order, rational materialism generates an extension of rationality leading to a depth in objectivity and in the hierarchy of rationality itself.

Material. The matter of *technical materialism* is the result of the work of the scientist who is engaged in a progressive complication of images of matter made available by the history of science, in a continuous rectification of knowledge. Meanwhile, *imaginary materialism* is the result of a bodily envelopment, fruitful result of the unconscious materialism of primitive valorizations that arise from the

four material elements, each of which is a center of images according to forces of imagination oriented towards a work of depth, in search of the original and the eternal. The *imaginary*, by separating itself from the *rational*, sets in motion the nocturnal and oneiric world of aesthetic creativity, subtracting it from the logic of the day and delivering it to the psychic functioning of the human being. In the *imaginary* (a term which designates the open, innovative character of imagination), the axis of objectivity gives way to that of subjectivity. Here the provoking subject is provoked, in turn, by the matter in which it is reflected. It provokes and is provoked: here matter yields itself to the imagining subject reflected in it, generating oneiric matter through a psychic correspondence or reverberation (*retentissement*) which triggers a process of deformation, de-materialization and re-materialization. As in the case of matter taken as an object in scientific thought, the work of profound transformation in the case of imaginary matter is not an external operation carried out passively, but an active operation carried out from the inside. Forming, deforming, figuring, transfiguring is the work of the very mobility of the imaginary. It is its intrinsic dynamism. When it reaches the very root of imaginative forces, the *material* imagination dissociates itself from the *formal* one, and carries out the imagination's task of *materialization*. Drawing on the deep beauty of materials, it reaches their mass of hidden attractions; it gathers the affective space that is concentrated inside things, bringing forth images of depth and substantial intimacy. The work of in-depth exploration makes it possible to reach the material beneath the form, and this gives material imagining a transformative capacity that adds exuberance to formal imagining, which would otherwise tend to stabilize itself by becoming more and more similar to perception, risking a progressive reduction of its power to produce *reveries*, decaying from matter, to object, to thing.

The imaginary lives in a dialectical polarity that produces forms; but the visible forms of matter must be continually erased by the very matter that produced them so as to prevent them from becoming rigid: deformation is a force of dissolution, but it is also matter's productive force of creativity, which must be constantly drawn upon in order to enliven images and prevent them from being objectified. Objectification is an obstacle for scientific knowledge, as well as for the thought of reverie, because it blocks reason by stultifying its dialectical capacity, thus preventing the deep dynamism that forms and deforms according to the inter-material logic of science, and which proceeds, in aesthetics, by contamination and valorization.

It follows that, to the purely kinematic description of a movement, we must always add a dynamic account of the matter described. Authentic reason – be it scientific or aesthetic – lives only in that deep dynamism which, by dialecticizing reality, becomes creative of unreality, able to produce new realities that emerge from delving into the material origin of forms. Reverie does not originate from objects, from things that surround us, but from the matter in which a deep psychic structure recognizes itself and by which it allows itself to be absorbed. One does not dream with objects, one dreams deeply only with matter. As suggested by the fascinating pages of *L'eau et les rêves* dedicated to the myth of Narcissus, the mir-

ror does not produce imagery, there are no *reveries* of the mirror: it is a very fixed image that is enlivened only if the material imagination delves deep into the water to participate in the lively and spring-like nature of the source or the placid and dormant nature of the canals.

The pivotal point from which Bachelard forces us to reconsider matter is none other than an insistent call and a continuous process of deconstruction which splits the natural datum, delivering to us the *artificial matter of technical materialism*, as well as the symbolic and cultural matter of imaginary materialism.

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