BLAGA'S EPISTEMOLOGY AND ITS "MODEST RELATIVISM" IN PHILOSOPHY OF SCIENCE

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Abstract. Regarding its structure, aside from the introduction, my approach has three parts. In the first part I will present the perspective that, in Romanian philosophy, has already established Blaga as the forerunner of the historical trend in the philosophy of science (inaugurated by Th. Kuhn). In the second part, I will resume my interpretation of Blaga's reshaped position on science from *The Experiment and Mathematical Spirit*, in which this position delves beyond characterizing his epistemology merely as historical "relativism". Finally, in the third part, I will extend the results of the previous parts in an interpretation of Blaga's epistemology that will reveal the possible relationships with the different currents of epistemological realism, as it was synthesized in a well-known recent study by Niiniluotto.

Keywords: "modest realism"; "modest relativism"; Kuhn; epistemology; philosophy of science; Blaga.

Lucian Blaga (1895 – 1961) is one of the greatest Romanian thinkers, boasting an extensive philosophical oeuvre[1] underpinned by a robust metaphysical framework and an innovative philosophy of cognition. Also recognized for his literary prowess, he earned the epithets of "philosopher-poet" or "poet-philosopher". Remarkably, Blaga exhibited a profound understanding of mathematical and theoretical physics, making him a celebrated figure among both literary and cultural philosophers, as well as epistemologists and philosophers of science.

The actual subject of this three-part study is the analysis and revaluation of Blaga's epistemological view within nowadays disciplinary debates. Any approach

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[1] Among the relevant philosophical works, we note: *Cultură și cunoaștere* [*Culture and Knowledge*], 1922; *Trilogia cunoașterii* [*The Trilogy of Knowledge*], 3 volumes, 1943; *Trilogia culturii* [*The Trilogy of Culture*], 3 volumes, 1944; *Trilogia valorilor* [*The Trilogy of Values*], 3 volumes, 1946; *Experimentul şi spiritul matematic* [*The Experiment and the Mathematical Spirit*], 1969 – published posthumously; *Trilogia cosmologică* [*The Cosmological Trilogy*], 1983 – published posthumously.

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to this subject requires an "introduction" regarding the place and role of this outlook within his general metaphysics. In the first part of the essay, I will take up synthetically and summarily the fundamental elements of some previous researches, which brought to light the unique positioning of Blaga's theoretical program in relation to the young historical trend in the philosophy of science since since the latter half of the preceding century[2]; in the second part, I will recapitulate the findings of my own research, wherein I advanced a framework for situating Blaga's epistemology within a "continuity" with the historical paradigm, conceived as an "exceeding it by inclusion". The final section will introduce the novelty of this text, building upon the preceding two parts, as I endeavor to position this reconstruction of Blaga's epistemology at the heart of the contemporary debate on "epistemological realism".

INTRODUCTION

In this introduction I will resume from my previous researches the overview of the relations between philosophical (metaphysical) knowledge, the "metaphysics of knowledge" and scientific knowledge in the perspective of a re-configuration of the theoretical-systematic levels of Blaga's philosophy of knowledge. In this regard, I will resume the presentation of some fundamental concepts such as that of "mystery", the key concept of both his metaphysics and epistemology, as well as the clarification of the Blagian types of knowledge (I and II) with respect to the metaphysical vein, on the one hand, and with the epistemological one, on the other.

[2] These researches have already consecrated Blaga as the forerunner of the historical trend in philosophy of science. The discovery of this fact and especially its imposition are largely due to M. Flonta's vast works on Blaga. I mention here only a few: „Istoria științei și analiza culturală a cunoașterii pozitive", 1987 [*The History of Science and the Cultural Analysis of Positive Knowledge*, 1987], in D. Ghișe, A. Botez, V. Botez (eds.), *Lucian Blaga – Cunoaștere și creație* [*Lucian Blaga – Knowledge and Creation*], București, Cartea Românească, 1987, pp. 181–197; „Sistem sau teme perene? Despre posteritatea filosofiei lui Lucian Blaga", 2007 [*System or perennial themes? About the Posterity of Lucian Blaga's Philosophy*, 2007] in A. Botez *et al.*, *Lucian Blaga – Confluențe filosofice în perspectivă culturală* [*Lucian Blaga – Philosophical Confluences in Cultural Perspective*], București, Editura Academiei Române, 2007, pp. 303–316; "O voce care nu a fost auzită: Lucian Blaga și reorientarea istorică a filosofiei științei", 2015 [*A voice that was not heard: Lucian Blaga and the Historical Reorientation within Philosophy of Science*, 2015], in M. Mamulea, *et al.* (eds.), in *Studii de istorie a filosofiei românești* [*Studies in History of Romanian Philosophy*], vol. XI, București, Editura Academiei Române, 2015, pp. 53–64. Without exhausting the epistemological literature (in Romanian) about Blaga's philosophy of science, strictly related with the topic here I also mention the study of G. Nagâț, „Varietăți ale cunoașterii și câmpuri stilistice în filosofia lui Lucian Blaga", 2020 [*Varieties of knowledge and stylistic fields in the philosophy of Lucian Blaga*, 2020], in *Studii de epistemologie şi de teorie a valorilor* [*Studies in Epistemology and Theory of Values*], 2020, București, Editura Academiei Române, 2020, pp. 33–48, and a work on Blaga's epistemology written by Al. Petrescu, *Lucian Blaga: o nouă paradigmă în filosofia ştiinţei*, 2003 [*Lucian Blaga: A New Paradigm in the Philosophy of Science*, 2003], Timişoara, Eurobit Publishing House, 2003.

Resuming some of the mentioned research results, I showed[3] that Blaga has two perspectives on knowledge – metaphysical and epistemological – and these complement each other in his general philosophy. From this point of view, a requirement of the general framework of Blaga's philosophy compels that the result of any interpretation on his philosophy of science be integrable in his metaphysical system; and conversely, any evaluation of his metaphysics presupposes an acknowledgment of his epistemological conception. I believe that this element constitutes a true methodological principle of any philosophical exegesis or reconstruction of Blaga's view, a hermeneutic criterion of his philosophy in general, and, at the same time, a criterion to be taken into account with respect to how he conceives the role and place of epistemology in any general philosophical perspective.

I'll now resume some considerations on how Blaga understands philosophical (metaphysical) and scientific knowledge. In *Despre conştiinţa filosofică* [*On Philosophical Consciousness*][4], Blaga explicitly distinguished philosophical knowledge from scientific knowledge and common sense knowledge, and states that the purpose and finality of philosophy is best found "in its creative function metaphysically oriented". Understood as metaphysics, philosophy enjoys a natural autonomy in relation to science and art, being irreducible to them, with a proper horizon of objects, methods and values. The scientist, on the other hand, assumes the role of a researcher of a field separated from the infinite domain of phenomena; he considers the problem and the methods of his research in a subordination to methodological principles and rules assigned to precisely established areas of the vast body of experience; therefore, the solutions within science, taken individually, do not have a broad validity, do not account for existence as "a Whole"[5].

In order to address the relationship between metaphysical and scientific knowledge, I will not resume here my previous available analyses[6], but I will only explain and emphasize their results, namely that Blaga's two (apparently) separate perspectives reveal one and the same thing: a certain perspective on knowledge or a "theory of knowledge" (the most appropriate term here *from* a "metaphysics of knowledge" is *gnoseology*, but *from* an evaluation of scientific knowledge or from a "philosophy of exact sciences" is that of *epistemology – the theory of scientific knowledge*). *This* theory of knowledge, however, must pass the caudian forks of both metaphysics and philosophy of science, in order to be compatible with them. In this respect, my reconstruction concerns Blaga's *epistemology*, that theory of knowledge from his analysis of science, more clearly, that from the direction of a

[3] "Programul lui Blaga din filosofia ştiinţei. O interpretare necanonică" ["Blaga's Program in the Philosophy of Science. A Non-canonical Interpretation"], *Studii de epistemologie şi de teorie a valorilor* [*Studies in Epistemology and Theory of Values*], vol. VIII, 2022, pp. 65–107.

[4] L. Blaga, *Trilogia cunoaşterii*, Bucureşti, Humanitas, 2019, pp. 13–137.

[5] *Ibidem*, pp. 22–23.

[6] See note 3 above.

philosophy of science. But that epistemology must be methodologically validated *separately* from the metaphysical perspective. Moreover, according to Blaga, in the same time this theory of knowledge (or *epistemology*) must be compatible with this metaphysics.

In my previous researches, among the concepts and constructs of Blaga's theory of knowledge, necessary both for the original structuring of his system as a whole as well as for any interpretive analysis of his epistemology, I re-considered especially the concept of *mystery* (with a particular stress on its meaning of "limit-concept" – the Kantian "thing-in-itself"), the epistemological distinction between "Paradisiac knowledge" (type I) and "Luciferian knowledge" (type II), the concept of *regulative idea*, of "stylistic matrix" or "stylistic field", "the modes of rationalization", the *stylistic (abyssal) categories* and the Kantian categories. For our purposes, in this introduction I will synthetically refer more to the concept of mystery and to the two types of knowledge.

In the mentioned study[7] I showed that the language of his early writings contains some metaphors through which he seemed to propose a theory of knowledge primarily *from* a metaphysical point of view (I note here the metaphysical terms "Luciferian knowledge", "paradisiac knowledge", "Great Anonymous", "mystery", etc.). Although this metaphysical language is still used in *Science and creation*, this work may be considered a "transitional one" between a metaphysical perspective on knowledge and an epistemological one; for, beyond the fact that proper epistemological terms also appear, the more important aspect is that here we deal with a development of Blaga's conception of knowledge that encompasses a philosophy of exact science, trying thus to explain both the dynamics and historicity of science by illustrating and explaining its historical moments in accordance with that conception. It is known that *The Experiment and the Mathematical Spirit* no longer contains the metaphors and phrases specific to his works from 1931 to 1934, and it has an obvious epistemological style.

A "historical" proof for the unity of those two perspectives on knowledge (metaphysical and epistemological) is the fact that, in the "Editorial Testament" (1959), Blaga put his late work *The Experiment and the Mathematical Spirit* in the revised form of his *Trilogy of Knowledge*: for presenting "a philosophy of today's exact science", this volume would be a complement to the theory of knowledge enounced in the original parts of the *Trilogy*[8].

I have shown that the central idea to the two *Trilogies*, namely the idea of "mystery", is *implicitly* present in other works (for example, when Blaga proceeds to a "purely" epistemological analysis of the possibility of our knowledge, as it appears in *The Experiment*...). Among the different shapes of the concept of mystery, conceived as the "original, irreducible horizon of our existence", the most

[7] See note 3 above.

[8] L. Blaga, "Addenda la Testamentul Editorial" [„Appendix to the Editorial Testament"], in *Despre conştiinţa filosofică* [*On Philosophical Consciousness*], Bucureşti, Humanitas, 2003, p. 204.

important is the "imaginary-revealed" mystery that can be constantly opened as such, and also that can be subjected to further "revelation" *ad infinitum*[9], as Blaga claims. Among the veils that disguise mystery we may also find the Kantian „thing in itself", one of the "variants" in which Blaga's mystery is (not) revealed.

In order to subsequently understand the determining role of the "abyssal categories" in the "theoretical creations of science", I focus now on defining the concept of mystery and the two types of knowledge; moreover, this focus on Blaga's distinction places us precisely in his general epistemological conception.

The "paradisiac knowledge" is the *plus-knowledge*, that is established in the horizon of the given world, and that can be completed with simple "unknowns" that will get to be known (inclusively) by appealing to intuitions and concepts and to the Kantian categories of consciousness. This type of knowledge has no direct connection with the mystery. The "Luciferian knowledge" is the (only) one that appears in the horizon of mystery, in which what belongs to the given world is only a "sign" (or "signalling" through the senses) of some mysteries, and is called *minus-knowledge*; at the same time, it is the one who "attenuates", "permanentizes", "potentiates", or "radicalizes" the mystery. Here the mystery involves another kind of "unknown", and any attempt to reveal it only enhances it. At the level of the Luciferian knowledge (which has nothing to do with the "devil", but only with "logic and the theory of knowledge", as Blaga stresses) we find the same epistemological vehicles from the level of the paradisiac knowledge (experience, intuition, concept, categories, etc.), but completely differently articulated and structured and with a completely different *function* (primarily a *methodological* one).

Blaga holds that, mostly since Kant to present day, in the theory of knowledge has been an attempt to reduce human knowledge to the specifics of the "paradisiac knowledge", while with his philosophy of science we should witness a philosophical foundation chiefly of the "Luciferian type of knowledge" (his program of a "new theory of knowledge"). This type of knowledge we could find, for example, in the quantum theory of modern physics. By this, Blaga emphasizes the antinomian character of the "Luciferian knowledge", a type of knowledge similar (in method only, not in terms of content) to the Neoplatonic one and the Christian dogmatics. It has nothing to do with the "dogmatic thinking", but with the antinomian structure of the discourse that follows from its nature.

Blaga believes that without a solid theory of knowledge one cannot have a proper metaphysics, although the latter can even be completely separated from any "scientific consideration". A possible solution that I have already outlined to this apparent contradiction is the philosophical legitimization of scientific knowledge, *including* the constructions of current physics, in a general metaphysics compatible with this theory. A "proof" in this respect is the fact that the categorical (*abyssal*) construction, as well as the Kantian categories reshaped by Blaga are coherent with

[9] L. Blaga, „Schiţa unei autoprezentări filosofice" ["The Sketch of a Philosophical Self-Presentation"], in *Despre conştiinţa filosofică* [*On Philosophical Consciousness*], p. 208.

his metaphysical perspective in general and with his metaphysical position strictly related to the theory of knowledge (*the metaphysics of knowledge*). I have shown that, although in Blaga there is a fundamental distinction between metaphysics and science, a metaphysically and epistemologically coherent theory of knowledge is underlying his program also providing a certain self-consistency to the system to other levels as well.

The metaphysical meaning of Blaga's principle ("mystery does not convert into non-mystery") is based on the results of analyses of science summarized in the following assumption: our individual consciousness, which also presupposes the knowledge we are capable of and which is limited, must somehow be overcome and conditioned ("controlled") by a "metaphysical center of a spiritual nature". In *Censura transcendentă* [*The Transcendent Censorship*], therefore, we deal with the same problem of knowledge, but metaphysically approached – Blaga himself claimed that his achievement *here* was "a metaphysical attempt". In *Cunoaşterea luciferică* [*The Luciferian Knowledge*] we are still at the level of the philosophical or metaphysical development of Blaga's theory of knowledge, which I would call "the metaphysical-*gnoseological* level", where, as the author himself points out, terms such as "empirical" for "paradisiac" or "theoretical" for "Luciferian" would have concealed, even completely falsified the identity, the novelty and the strength of his conception. On the other hand, the epistemological language purged of symbols and metaphors from *The Experiment and the Mathematical Spirit* is justified by the fact that this work is subsequent to the full development of his metaphysical-gnoseological perspective on knowledge. Furthermore, Blaga argues, this work is a complement to his theory of knowledge enounced in the *Trilogy of Knowledge*.

The most general concept of Blaga's epistemology, in my view, is that of "theory of knowledge" (*gnoseology*) – but, developed within an epistemological framework of an analysis of science, it can therefore be considered *epistemology*; this theory of knowledge is part of *the metaphysics of knowledge* that Blaga shaped, as he indicates, mainly in his *Censura transcendentă* [*Transcendent Censorship*]. We also need to remember that *epistemology* as a theory of knowledge *from* the analysis of science is "completed" by "a philosophy of today's exact science" (or by a philosophy of science), but only in the terms of type II analysis of knowledge; at a different level we also have the "'scientific' considerations" of science.

What I'm proposing here is to understand the concepts of "metaphysics of knowledge", "theory of knowledge" (*gnoseology*, *epistemology*), and the "philosophy of science" respectively "knowledge from sciences" as types of "epistemological positioning" on distinctive levels of theorization.

Therefore, at the "lowest" level we would have *the discourse of science*, where its immediate considerations cannot be detached from the specialized framework conferred by its specificity, but which can be analyzed with *epistemological* tools (within the philosophy of science). Science as such, here, cannot successfully

engage in appropriating problems and objects that it has no way of investigating, such as those of metaphysics – "science is incapable of absolute truths" – or those of the philosophy of science ("mystery does not allows to be transformed into non-mystery"). I hold that here "science" (the first level) rests under "today's *philosophy of exact science*" (the second level), who *completes* the theory of scientific knowledge (*the epistemology*, the third level), which, in turn, is the narrower domain of the codomain represented by *gnoseology* (the fourth level), and the latter is also incorporated into a *metaphysics of knowledge* (the fifth level). Thus, decoding Blaga's *epistemology* (which passes to metaphysics as *gnoseology* and to exact science as *philosophy of science*) can be done both ways: from the perspective of the metaphysics of knowledge, or as a result of the reflections on scientific considerations from research traditions corresponding to different historical stages, *including* that of "today's" physics (from a *philosophy of science*).

Therefore, in a dynamic perspective, from "top to bottom" I establish these levels: the general metaphysics (Blaga's philosophy in general, which is not of interest *as such* here), the "metaphysics of knowledge", the "theory of knowledge as *gnoseology*", the "theory of knowledge as *epistemology*", "yesterday and today's *philosophy of science*", and the immediate "scientific considerations" of science. If we proceed reductionistically, analytically and somehoe "statically", excluding general metaphysics, these levels can be reduced to 3: the *metaphysics of knowledge*, the *epistemology* (*gnoseology* or "today's philosophy of science"), and the "considerations of sciences".

Resuming some results of my previous analyses, I will show in parts I and II that *this epistemology* (as a theory of knowledge that includes a "philosophy of today's science") presupposes two projective dimensions: it is suitable to any non-mathematized "science", as is mostly the case in Blaga's *Science and Creation*, just as it is related to the mathematized sciences since the era of Galilean-Newtonian science (also in relation to "today's exact science", as exemplified in the *Experiment and the Mathematical Spirit*).

I. THE HISTORICAL TREND AND BLAGA'S PROGRAM IN THE PHILOSOPHY OF SCIENCE

In *Science and Creation*, the Romanian philosopher primarily explores the historical development of "science" from its inception, while in *The Experiment and the Mathematical Spirit*, he shifts focus to the examination of "today's exact science", starting with the Galilean-Newtonian era. However, in both cases, we encounter Blaga's epistemological perspective. Although it foreshadowed the historical trend in 20th-century philosophy of science, this epistemology is not solely confined to it; it transcends this particular philosophy of science (the historical trend), as we shall elucidate in the final two sections of this paper. Therefore, Blaga's epistemology encompasses and elucidates not only these episodes and "traditions" that constitute and shape the history of science up to Galileo, but also

incorporates "a philosophy of exact science" (initiating with the science of the Galilean-Newtonian model) as a component of the metaphysics of knowledge.

In this first part I will resume the reconstruction of some elements of Blaga's philosophy as extraordinary anticipations of the historical trend in the philosophy of science. I considered mainly the researches of Mircea Flonta and the last study of Gabriel Nagâţ[10], in which Blaga's perspective on science within the historical trend is highlighted for the first time through a parallel with A.C. Crombie's and I. Hacking's researches. Given the focus of my study, I will consider a condensed synthesis only of M. Flonta's standpoint.

I will first make a brief inquiry in Blaga's doctoral thesis developed since 1920 (*Cultură şi cunoştinţă* [*Culture and Knowledge*], 1922)[11]. He sets forth here for the first time the determinative concept of *regulative idea*, a concept that will become fundamental for the development of his theoretical project in the philosophy of science in his subsequent works. This project was built in opposition to the "standard position" in the philosophy of science in a way that resembles the reaction of the historical trend to it. But we have to stress here that Blaga's construction preceded this trend by several decades, *even prefiguring it*. In order to highlight Blaga's contribution, it is necessary to recur to some elements of the "traditional" or "standard" standpoint on the rationality, objectivity and progress of scientific knowledge, the very one that generated the reaction of the "new philosophers of science" (Th.S. Kuhn, P.K. Feyerabend and St. Toulmin).

As I did in my previous study, I will also refer here to the excellent synthesis of these accounts made by M. Flonta[12]: he argues that, in the "traditional" sense, the objectivity and rationality of scientific knowledge presuppose an understanding of the dynamics of this knowledge based on progress and accumulation; the most easy way to explain the distinction "science – pseudoscience" is by defining the concept of science as a systematic and specialized research of a certain field of phenomena, through which the aim is to describe them as adequately as possible, as well as to discover laws with increasing generality and rigour[13]; formulated as hypotheses, these assumptions and descriptions were subsequently confirmed or rejected within an experiment. This leads to explanations and predictions that must meet the consensus of all qualified and honest researchers (M. Flonta). The concept of "progress in science" presupposes the fact that scientific knowledge generally progresses linearly; scientists of the past appear as being guided in their research by the same criteria and values that today's scientists recognize and apply. Therefore, important scientific discoveries of the past were seen as anticipations or contributions to present science. This perspective is best represented by the historical accounts contained in the textbooks, manuals and treatises of the various disciplines

[10] See note 2 above.

[11] In *Opere* [*Works*], vol. 7, Dorli Blaga (ed.), Bucureşti, Minerva, 1980.

[12] M. Flonta, „O voce care nu a fost auzită..." ["A voice that was not heard: Lucian Blaga and the Historical Reorientation within Philosophy of Science"], in *ibidem*, pp. 53–64.

[13] *Ibidem*, p. 54.

(Th. Kuhn). Finally, the concept of "scientific revolution" implies maintaining the same rules of scientific description and explanation as well as the same ideals of knowledge.

Flonta shows that the most important aspect that distinguishes between the two standpoints is related to the "general method of scientific knowledge". It requires that the evaluation of the questions and answers formulated by researchers takes place in the framework of those values, criteria and standards of excellence specific to scientific research *in general* and subsequently unchanged[14].

In contrast to the "standard position", Blaga's general idea (set forth more than 40 years before the first edition of Kuhn's *Structure…*) takes into account the fact that the explanatory ideals and validity criteria by which researchers are guided reflect also some ways of thinking that that are affected by the pretense that marks the transition from one cultural era to another[15]. This idea is perfectly congruent with one of the fundamental characteristics of the historical trend in the philosophy of science: I have in mind here the concept of "research tradition". Here Flonta argues that, over time, the reassessment of the evolution of the scientific research of nature proposes a history of science as a succession of research traditions, each of which related to a cultural-historical context where the objectives, values and criteria of excellence of science vary depending on certain cultural-historical factors. By changing the objectives of the research, what can be accepted as a satisfactory description and explanation of nature also changes; these objectives and values are dependent on the "image" of reality and nature specific to each historical era[16].

The first explanation I provided[17] regarding the opposition between the "standard position" and that of the "new philosophers of science" is that the history of a science is typically constructed *post-factum*, often long after the moment and context of the discovery of new knowledge, somewhat disconnected from the appropriate tradition and distant from the practical research conducted by the involved scientists. Consequently, contemporary philosophers of science may struggle to authentically interpret this context due to the preconceptions they may hold while examining various contexts. They may employ tools with an atemporal perspective established according to fixed standards of analysis and rigor. These standards, specific to the ideals and theoretical values of this nature, are inherently *normative*, detached from the actual context in which science is practiced and carried out.

Perhaps an even more important explanation that I have also provided is that a philosopher of science who hasn't grappled with the practical aspects of "how

[14] *Ibidem*.
[15] *Ibidem*, p. 55
[16] *Ibidem*.
[17] "Programul lui Blaga din filosofia ştiinţei. O interpretare necanonică" ["Blaga's Program in the Philosophy of Science. A Non-canonical Interpretation"], pp. 65–107.

science is done" or hasn't been open to tracing the history of science at this level, might find themselves limited to using only the "standard" analytical tools with which they are familiar and trained. Considering this perspective, it seems no coincidence that *The Structure...* was authored by Thomas Kuhn, a "physicist-philosopher" and former practitioner of science. On the other hand, since Blaga was neither a theoretical physicist nor a scientist, the precedence of his accomplishments over the inception of this trend in philosophy of science becomes even more significant for contemporary thinkers and for the "new philosophy of science".

I will present now a crucial quote from the "Preface" to Blaga's thesis (1920), that Flonta considered it may represent "the core of a theoretical program"[18], later developed chiefly in *Science and Creation* (and less so in *The Experiment and Mathematical Spirit*). I will resume from my previous text a discussion from the third chapter of his thesis, where the "regulative idea" is addressed and already considered by Blaga as underlying the "fundamental scientific research", a phrase that will later advocate to this program.

The early remark in *Culture and Science* refers primarily to how the method was conceived in the traditional theory of knowledge; but Blaga considers that another approach can supplement it, namely the *cultural* one (or the "stylistic method"):

The theory of knowledge used the logical, psychological, biological, sociological method. Couldn't we enrich it with a less used method: the cultural one? It is a question that clarifies the title of this paper: "Culture and Knowledge". And it is – so we hope – a question that opens the perspective of a vast synthesis. [19]

As M. Flonta noticed, even since 1920, in the "Preface" to his thesis, Blaga laid the foundations of a real theoretical program in the philosophy of science. The "cultural" method and the related jargon served him to develop this synthesis in his later works, especially in relation to the progress of science and the "research traditions".

As noted by M. Flonta, as early as 1920, in the "Preface" to his thesis, Blaga established the groundwork for a comprehensive theoretical program in the philosophy of science. Blaga utilized the "cultural" method and its associated terminology to further advance this synthesis in his subsequent works, particularly concerning the advancement of science and the concept of "research traditions".

Related to the passage above, I will refer to one of my comments on a fundamental issue in Blaga's epistemology: his approach to "the problem in science". In chapter 3 of his thesis, he argues that the problem in science encompasses more than just aligning observable phenomena with experiments guided by a simple hypothesis, validated through inductions that move from

[18] M. Flonta, "O voce…", ["A voice that was not heard: Lucian Blaga and the Historical Reorientation within Philosophy of Science"], p. 56.

[19] L. Blaga, *Cultură şi cunoştinţă* [*Culture and Knowledge*], p. 11.

specific instances to general principles, ultimately leading to the resolution of the problem. While this problem-solving method is commonly encountered in science, "*the fundamental* problems of science possess a wholly distinct internal structure"[20]. Beyond the two aspects – the observed phenomenon and its explanation through an experiment based on a hypothesis derived from observational data and subsequently confirmed – there is also *the idea*, understood as an "imperative". This idea shapes the hypothesis and essentially forms the foundation for "the creative construction of the solution". This guiding idea directs the entire experiment, aligning with observations yet not directly extracted from the data observed. The imperative role of the idea lies in shaping both the hypothesis and the experiment in accordance with specific requirements of scientific explanation and description. I posited that these criteria serve as the conditions for acceptable problem formulations and/or admissible solutions within a particular research tradition. Furthermore, they represent the specific explanatory ideals characteristic of such a tradition. As highlighted by M. Flonta, "the guiding ideas and consequent imperative conditions are, in turn, specific to a particular culture and will undergo significant changes in the transition from one culture to another".

The examples used by Blaga here strikingly resemble those used by Koyré and later echoed by Kuhn, focusing on the significance of the mechanistic idea that underpinned the scientific tradition of the 17th to 19th centuries. Particularly noteworthy are instances from Huygens' acoustics, Darwin's biology, and Galileo's physics, in which phenomena are explained within the framework of the same mechanistic idea. The success of the mechanistic model in these sciences was feasible due to the preexistence of the worldview in Western culture that was already influenced by the concept of the "clockwork world".

According to Blaga, in a succession of research traditions, the change in scientific knowledge is based on its "fundamental dimension", namely its constructive-creative character. Blaga argues that theoretical explanations of natural phenomena in science are *creative* attempts to reveal the unknown/mystery, but guided by the frameworks offered by the specific categories of a certain "stylistic" field. This idea is the ground for a history of sciences from a *stylistic perspective* that Blaga advocates for, and in which a major role is played by "the determining influence of *stylistic* categories on the content and the very structure of theoretical constructions"[21].

The determining (stylistic) factors don't come into play in all scientific endeavors, rather, they manifest when science endeavors to "unveil mysteries through theoretical constructions". The concept of (scientific) knowledge that Blaga develops in his works is evidently intertwined with the genesis of his "stylistic" conception, and his stylistic conception pivots around the "stylistic-abyssal categories" as its core element. These categories, distinct from Kantian categories of the conscious,

[20] *Ibidem*, p. 32.
[21] L. Blaga, *Știință și creație* [*Science and Creation*], p. 163.

have deep roots in the unconscious and significantly contribute to the formation and evolution of scientific knowledge. In most of the activities of scientific knowledge, stylistic factors do not influence but *only guide* the research, namely in that wide aria of science, when the cognitive task in the study of phenomena is only descriptive – with some precautions, a correspondent here would be Kuhn's "period of normal science".

The various examples Blaga offers from the history of science are intended to illustrate the fact that scientific discoveries themselves are produced "in the light of stylistic coordinates", which lead to a certain interpretation, specific to a certain mentality of what we call since modernity "phenomena".

As far as the "stylistic matrix" as such is concerned, a fundamental role here is played by Blaga's so called "stylistic-abyssal categories", which form and function as a "bundle" or "network", and numerically appear as a "set". The determining functionality of this stylistic field is ensured by the systemicity of these categories, for being independent and irreducible to each other, they form a kind of (*stylistic*) matrix. As we may see, these characteristics are borrowed from mathematics[22]. With respect to the distinction between "stylistic matrix" and "stylistic field" as well as to the contexts in which Blaga uses them differently, another Romanian author concerned with Blaga's epistemology considered that "the recourse to the notion of 'stylistic matrix' is made when the philosopher wants to highlight the categorical structure of the unconscious; instead, when he wants to highlight the dynamic, formative character, respectively the shaping function of the unconscious, he prefers to use the notion of 'stylistic field'"[23]. A complement that I renew here would be that the actual determinative role is exercised "categorically", where the "matrix" joins, while the "field" would stand for a "field of possibilities"; in my interpretation, from the determined structure we "see" the matrix, and from the unconscious level we glimpse the "field".

The way scientific research is determined by stylistic coordinates is exemplarily presented in a study[24] by M. Flonta. We only note here that the stylistic features of ancient and medieval "physics" find their clearest expression in Aristotle's "theory of movement"; that is a research tradition inaugurated by Aristotle's physics, in opposition to the mathematical science of nature inaugurated by Galileo and Newton. Moreover, the very "transition" from the Aristotelian tradition to the Galilean became possible due to the fact that in Galileo's time a new culture acquired clear outlines (M. Flonta), whose stylistic dominants were radically different from those of the culture in which Aristotelian physics appeared and gained

[22] M. A. Drăghici, „Raportul dintre cunoașterea comună și cea științifică în *Trilogia cunoașterii* a lui Blaga" ["The Relationship between Common and Scientific Knowledge in Blaga's *Trilogy of Knowledge*"], in *Revista de filosofie*, nr. 2/2022, p. 163.

[23] I. Biriş, „Ideea de câmp cultural în filosofia lui Lucian Blaga" ["The Idea of Cultural Field in Blaga's Philosophy"], in *Revista de Filosofie*, tom XL, nr. 6, pp. 549–554), quoted by Al. Petrescu, *ibidem*, p. 54.

[24] M. Flonta, "O voce…" ["A voice that…"], pp. 53–64.

prestige. This is also what Blaga argued with reference to the "law of inertia", whose formulation he attributes to Galileo. As for the scientific revolutions, for Blaga, they represent precisely the dislocation of the ideological framework of a great tradition of nature research and its replacement by another (Flonta claims): "What Galileo, Descartes, Huygens, Newton did was not, through therefore, the foundation of a science of movement, but its re-foundation, a radical reorientation of the research of nature that results from establishing it on new ideological foundations. The epoch-making discoveries of Kepler, Galileo or Newton became possible due to this reorientation."[25]

We resume from the text we referred to a surprising conclusion, namely that the terms in which both Koyré and Blaga characterized the ideational premises of the new science of movement, inaugurated by Galileo's work, are identical. For both Koyré and Blaga the first premise is the geometrization of space, the replacement of space with privileged directions of ancient and medieval physics with the uniform, infinite space described by Euclidean geometry. And the second premise is the conception of movement as a state, "an indestructible state, on the same level as rest"[26]. This surprising parallelism occurs, in Flonta's analyses, also with respect to Blaga and Toulmin.

Benefiting from M. Flonta's research and from my previous text, I was able to notice until now how Blaga managed to develop a perspective on "the history of science as a succession of research traditions" (Flonta), at least up to and including the "Galilean moment". Unknowingly, Blaga foreshadowed the historical current in the philosophy of science inaugurated by Thomas Kuhn (with the first edition of *The Structure...*) and continued in the last century in the works of L. Fleck, A.C. Crombie and I. Hacking (topic that I'll not resume here addressed by G. Nagâţ[27]). This extraordinary, but little known in the last century (at least across Romanian borders) achievement was expanded and completed with what I have already shown in my previous research and I will resume in part II in connection with Blaga's position regarding the exact sciences of nature starting with the Galilean-Newtonian type.

II. BLAGA'S PROGRAM IN THE PHILOSOPHY OF SCIENCE

This interpretation was extensively elaborated in my mentioned text (in Romanian), so here I will only resume and adapt its essential elements, that are fundamental to Blaga's *mature* epistemological perspective and to its updates in the context of today's disputes regarding "epistemological realism" (the final part of this essay). In the first instance, this ultimate type of science, i.e., the Galilean-Newtonian one is subject in a very special way to the determinism of the "stylistic

[25] *Ibidem*, p. 60.
[26] *Ibidem*, p. 63.
[27] See note 2 above.

matrix" and the other structuring and variable categories (which resemble Kitcher's conceptual pluralism, as I will in part 3) that were initially responsible for the time *sequence* of the "research traditions" up to Galileo; in a second instance, I showed how this perspective is an integral part of Blaga's philosophy of exact science (something he himself held at a given moment[28]) and what it means.

The approach I set forth would benefit from a certain interpretation of Blaga's "modes of rationalization" in connection with his concept of "supermethod", as well as a parallel between, on the one hand, Blaga's "stylistic matrix" and "supermethod", and, on the other hand, Kuhn's "disciplinary matrix". The parallel, which I will resume very briefly here, showed that, in fact, both views presuppose an epistemological positioning beyond the historical relativism attributed to early Kuhn. Finally, I will try to integrate Blaga's "philosophy of science" within the current disputes regarding "epistemological realism" (part III).

Thus, in *The Experiment....*, Blaga explains the determination of the traditions of scientific research not so much through the "stylistic matrix", the Kantian categories and the abyssal ones, but through four "modes of rationalization" closely related to what he called "supermethod". I have already accounted for the "modes of rationalization/reasoning" in two papers; therefore, after a condensed resystematization, I will resume here only the "novelty" set forth there[29]: the "source" and the determinative-foundational character of these modes of reasoning.

I have shown in both my previous researches that Blaga fundamentally relates the concept of rational knowledge to these four "modes of rationalization", as they relate to "rationality" in general. For they are conceived as "rational" structures that participate, in different degrees, in any rational act in general, the modes of rationalization virtually exhaust the entire field of possibilities for any rational-cognitive construction.

The first mode is that of the tautological "rationalization along the lines of pure identity", and is based on the "pure identity postulate" (Parmenides and Zeno); the second mode is represented by "rationalization along the lines of an 'attenuated identity'" that is guided, up to a point, by the postulate of identity, its results being judgments in which the connection between subject and predicate is of partial "identity" (according to Blaga, this is the case with sciences of a descriptive nature as in Linné's system of classification of living beings); "rationalization along the lines of mathematical equality (of equivalence)" is to be found in the field of mathematics, being "the intimate source of this science" (for example, in the Galilean-Newtonian type of science, i.e. where the respective disciplinary field is mathematized/mathematizable); "rationalization along the lines of contradictory identity" is based on the principle of dialectics (with respect to the relation to the empirical character, this principle is the most permissive: it adapts "rationality to

[28] Blaga claimed that what he achieved in *The Experiment...* was "a completion of his conception" of the structure and evolution of science (see the "Introduction" of this paper).

[29] See note 2 above.

the structures of the empirical" realm, and the search for "the identity" is carried out both in similar, diverse, but also in contradictory forms (Heraclitus). This way of rationalization becomes dominant in quantum mechanics, when the principle of non-contradiction is put to the test.

I have shown in my previous research that putting these "four modes" at the foundation of the other determinative levels (the abyssal categories, the Kantian categories and the "stylistic matrix") reveals a certain coherence and a self-consistency of these elements within Blaga's epistemology in general. Moreover, the "historical criterion" of this model is satisfied as it proves its effectiveness in illustrating and explaining the different stages of the actualization of the rationality of the human spirit in correspondence *also* with the stages of the development of science, as Blaga understands them in their historical sequence. I will very briefly resume below the arguments in favour of sustaining the fundamental character of the modes of rationalization at this level.

Referring to the mode of rationalization according to the principle of "equality" (equivalence), for instance, Blaga argues that "this mode is particularly appropriate to the mathematical domain and constitutes the *intimate principle* of mathematical science [s.n.]"[30]; or that "Galilean-Newtonian science would never have come into being if its mode of rationalization was that of 'pure identity'", but this science was only possible "after rationalization along the line of mathematical equivalence had entered 'in action'". Blaga talks about this founding character at a general level; he explicitly states that "a process that makes possible the Galilean-Newtonian science as a whole is the 'rationalization' of empirical reality"; in the absence of such "rationalization acts, science would not have come into existence"[31]. Regarding this type of science, it can be considered that its possibility resides in the mode of rationalization according to the principle of equality (equivalence); moreover, in the absence of this principle, the very existence of this science would not have been possible.

Blaga assigns to these modes of rationalization the character of "structures"[32]; they are also *irreducible*[33] and constitute the basis of any cognitive approach; finally, taking into account the fact that based on Blaga's claim that "the Ionians rationalized empiricism based both on 'identity' and on 'contradictory identity' (...), but they performed these operations *without awareness of the principles of thought* and in an applied way [s.n.]"[34] I have argued that the Romanian philosopher recognizes these modes as "principles of thought", hence their foundational function.

[30] L. Blaga, *The Experiment…*, p. 595.

[31] *Ibidem*, p. 551.

[32] Blaga claims that "rationality" is "one of the modes in which the human spirit reveals itself capable in its cognitive aspirations in relation to existence"; these "modes" are the "'rational' structures" that "constantly participate, in various degrees, in the processes of knowledge" (*ibidem*, p. 590).

[33] *Ibidem*, p. 596.

[34] *Ibidem*, p. 551.

Regarding the other types of cognitive acts, Blaga refers to "a correspondence of style as far as one or another mode of rationalization is dominant in one era or another". The founding character of the modes of rationalization must therefore be sought not so much at the level of the unconscious *as such*, but at the level of its first comprehensive expression, that of a style *to be specified* – in one or more of these four modes; obviously, *as principles of thought*, they act particularly at the rational level. From the perspective of the unconscious, the structuring intervention of these principles can be found at the level of what I have already called in my previous text "the identity of the stylistic matrix", when the modes of rationalization select and structure, at the categorical level, "certain contents" or the "ideas" of a matrix. At the fundamental level of rationality, the "modes of rationalization" are determinative in relation to the identity and structure of a "matrix". More clearly, in the scientific "research traditions", the stylistic matrix already appears conditioned by certain determinative modes of rationalization. Their "intervention" in the "stylistic field" is all the stronger the closer we get to the Galilean-Newtonian type of science, where the "supermethod" becomes a fundamental component of any type of science; from this viewpoint, through the "supermethod" of modern science, the modes of rationalization (especially the mathematical one "according to the principle of equivalence") become *consubstantial* with the scientific research of nature in general. Moreover, these modes are not only conditions of possibility, but they become active principles at the level where science is made, imposing restrictions and directions on the research itself.

In the perspective of the third part of my paper, it is important now to resume what Blaga says about the "objective knowledge of reality" in the methodological context. This knowledge is influenced by the use of methods in two ways, Blaga claims: they "either qualitatively modify reality or reduce it, or, in most cases, both modify and reduce reality at the same time"[35]. In this sense, in the less developed research traditions of science, the role of the actually extra-scientific "imperative idea" was significantly stronger than in the case of the Galilean-Newtonian science. The explanation is that, with this science, "idea-guided observation" was coupled with the mathematical method. In Galileo's case, observation was guided by the idea of mechanical determinism *but always mathematically controlled*.

After presenting the most significant features of the *supermethod*, I will synthetically resume a comparison extensively made in my quoted text between Blaga's "stylistic matrix" and Kuhn's "disciplinary matrix".

As a principle, the "supermethod" is characterized as that complex set of methods of the exact sciences of nature (starting with the Galilean-Newtonian physics) in which each method must be in a methodological couple with mathematics[36]. It is non-normative, because one of its sources is historical (Blaga), and it is determinative.

[35] L. Blaga, *Însemnări filosofice* [*Philosophical Notes*], 1977, quoted in Al. Petrescu, *ibidem*, p. 170.

[36] L. Blaga, *Trilogia cunoaşterii* [*The Trilogy of Knowledge*], p. 519.

The most important feature of the supermethod is its "methodological expansion"[37] (see Part III below). Methodological expansion is found in modern physics that assimilates more and more methods. Within the supermethod, any method must couple with mathematics through a mutual control of these couples "under the supervision of the supermethod". The expansion is achieved through these more and more diversified methodological couples assuming a mutual control. The "criterion of mathematization" is fundamental within the supermethod, its supervision presupposing at a given moment the exclusion of any method that is not eligible to mathematization[38]. Blaga argues that the mutation caused by contemporary physics, especially in relation to space and time, presupposed a swing of the supermethod especially towards the area of rationalization modes according to the principle of equivalence and contradiction (the attempts of a quantum logic are mentioned).

As for the experiment, it is always built in a mathematical frame and subject to acceptance-rejection. The distinctions between empirical laws and the discovery of the laws of physical science and between change and movement are made by the contribution of mathematics at the level of physical science and of movement. Within the type II knowledge, the "supermethod" is responsible for the significant success of experiments even if they involve a transempirical horizon that may confirm counterintuitive hypotheses – the participation of the supermethod here provides an extraordinary power of prediction (this element is also very important for the Part III of this paper). On the other hand, the supermethod ensures the avoidance of the "panmathematization" of methods, its goal being the maximum exploitation of all methods that allow mathematization, and not the reduction of methods to a "melting point in mathematics"[39].

I will reproduce here from my previous text three fundamental characteristics of the supermethod, decisive for the interpretative construction that I will set forth in the discussion at the end of this essay. I argued there that, first of all, the connection between "observational data" and theoretical ideas ("laws" and "hypotheses") is an indirect one by the mathematized experiment "under the supervision of the supermethod"; secondly, the decision in science is, ultimately, the prerogative of the set of methods controlled by a supermethod[40]; thirdly, as far as scientific rationality is concerned, under the influence of the supermethod there is a "progressive depersonalization in the Galilean-Newtonian type of science". Blaga also refers to a "constructive conformism" that "makes collaboration between researchers possible"[41] (these elements have indeed surprising similarities with what Kuhn argued later on, in the answers to his critics).

[37] *Ibidem*, p. 518.
[38] *Ibidem*, p. 559.
[39] *Ibidem*, p. 574.
[40] *Ibidem*, pp. 557–560.
[41] *Ibidem*, p. 561.

Blaga's "stylistic matrix" determines a *style* in correspondence with the four "modes of rationalization". These elements are put to work together mainly in the cultural-historical determination *in general*, but they also function in determining the successions of research traditions in science. It should also be mentioned here that, although the supermethod proceeds to the "depersonalization" of those engaged in the pursuite of knowledge in the area of sciences after Galileo, the stylistic matrix, nevertheless, works at the level of research communities through the *tacit* predispositions from the level of experience in the community as well as from that of biography and individual psychology (resemblance to Kuhn's view).

I've primarily characterized the stylistic matrix taking into account four of its elements that Blaga considered to be fundamental, but not unique: "space and time", "*anabasic* and *catabasic* (or neutral) attitude", "values" and "formative tendency". These are filled with the contents of the unconscious and determine the research traditions somehow indirectly, mostly through the "images" of the world from different eras, to a greater extent until the Galilean-Newtonian science; for due to the consolidation of this science, the matrix influence on the research of the scientific communities is filtered by the supermethod.

In order to set forth that parallel between Blaga's stylistic matrix and supermethod, on the one hand, and Kuhn's "disciplinary matrix", on the other, it is necessary to resume the characteristics and configuration of the disciplinary matrix from Kuhn's response to his critics, as presented in my previous work.

Acknowledging that most of the main difficulties with the text of the first edition of *The Structure*... were caused by how the concept of paradigm was presented, Kuhn corrects his original standpoint in two places: in the "Postscript"[42] to the second edition of *The Structure…*, and in "Second Thoughts on Paradigms"[43] from *The Structure of Scientific Theories* (1973), republished in *The Essential Tension*.

In my previous text I argued that Kuhn held only 2 meanings out of the approximately 22 that were indexed to this concept. I particularly emphasized the importance of the first meaning, where paradigm designates a whole constellation of group commitments[44] (beliefs, values, methods, etc.), tacitly shared by the members of a *given* community[45]. The second meaning refers to an element of that constellation, the one under which are the concrete solutions to *puzzle* problems used as models or examples that can replace explicit basic rules for solving *puzzles* problems in normal science. In both the mentioned places, Kuhn proposes the

[42] Th. Kuhn, „Postscript", in *The Structure of Scientific Revolution*, Second Edition, enlarged, Chicago and London, The University of Chicago Press, 1970, pp. 174–210.

[43] Th. Kuhn, "Second Thoughts on Paradigms", in *The Essential Tension. Selected Studies in Scientific Tradition and Change*, Chicago and London, The Unviesity of Chicago Press, 1977, pp. 293–319.

[44] Th. Kuhn, "Postscript", pp. 181–182.

[45] Th. Kuhn, "Second Thoughts on Paradigms", p. 296.

concept of "disciplinary matrix"[46] for the first meaning, while the second meaning is represented, within the same matrix, by one of its elements – "common examples" or "exemplars" –, which is also the correct meaning that Kuhn intended for the original paradigm concept of the first edition of *The Structure...* The disciplinary matrix refers to a discipline and assumes the independence and determinative character of its elements, but always through a certain specification. The most important elements of the "disciplinary matrix" that Kuhn emphasizes are: *symbolic generalizations*, *trust in certain models*, *values*, and *common examples* (*exemplars*)[47]. Similarly, in *The Essential Tension* Kuhn holds that each of the elements of the matrix, in turn, requires further specification[48].

I showed in my previous text that the resemblance between Blaga's "stylistic matrix" and Kuhn's "disciplinary matrix" is not of the overlapping type: even if the matrix is in Blaga a "constellation of factors", of "independent variables", being established in the human unconscious, and acting as a "determining complex", it is closer to the meanings of Kuhn's paradigm from the first edition of *The Structure...* I explained that the emphasis on the "unconscious" makes the determining radius of the matrix to cover a much wider area, from art to the Galilean-Newtonian type of science. Moreover, the level of the unconscious underlies the contents of the concepts and categories of consciousness, so its contents can influence consciousness only through the "creations" filtered by the set of the Kantian-type categories; however, as a stylistic matrix, the Blagian structure appears at the level of style as one of its *specifications*, and this style, through the stylistic-abyssal categories, "can be found in consciousness not only in the form of cultural creations", but also in "scientific creations" (Blaga).

The analysis in my previous research was part of a reconstruction that puts together into a structure the "stylistic matrix" and the "supermethod" of *The Experiment...*, and holds that *only in this formula will it be consonant with Kuhn's disciplinary matrix*. I emphasize here that Blaga's "matrix" is prior to *The Experiment...*, while Kuhn's disciplinary matrix is posterior to the first edition of *The Structure...*. What I meant to argue there is that in Kuhn we encounter a similar path, from the first edition of *The Structure...* to his standpoint from the works in response to his critics, as Blaga's theoretical program in the philosophy of science involves "completing" (Blaga) it with *The Experiment…*

I will briefly resume below the similarity between three of Blaga's stylistic matrix elements and those of the disciplinary matrix: Blaga's "values", the "*anabasic* and *catabasic* attitude" and the "normative tendency" correspond to Kuhn's "epistemic values", "trust in models" and "common examples".

[46] Th. Kuhn, "Postscript", p. 182.

[47] Th. Kuhn, „Second Thoughts on Paradigms", p. 297 (see also Kuhn's reference in footnote 8 of the fist edition of *The Structure…*); Th. Kuhn, "Postscript", especially pp. 176–191.

[48] Th. Kuhn, "Second Thoughts on Paradigms", p. 297.

I have shown and I briefly repeat here that, in *Orizont şi stil* [*Horizon and Style*], Blaga uses instead of "value" the phrase "axiological accent"[49], a phrase that presupposes a deeper and more general conceptual dimension compared to the analytic concept of "value"; except for *The Experiment...*, in Blaga's philosophy in general, "value" presupposes a phenomenological clarification and has a spiritual-cultural expression. The sources of "values" are in the unconscious and presuppose the "axiological accent" ("valuable attitude, of which any later conscious appreciation will be influenced"[50]), a propensity towards meaning, therefore towards appreciation, evaluation, an initially unconscious oriented process of valuing or devaluing in varying degrees. From this point of view, value is a *specification* of the "axiological accent" up to the level of consciousness, where it can be analyzed. At the epistemological level, however, starting with the Galilean-Newtonian science, the values of the stylistic matrix become the epistemic values under the control of the supermethod, tacitly accepted by the members of a scientific community, and thus overlap Kuhn's epistemic values. The latter are variable in content within the limits of the same sociological and psychological predeterminations (Blaga and Kuhn), especially in periods of "crisis" (Kuhn). In this respect, taking into account that the "supermethod" governs the way science is done, and that the "depersonalization" appears in the Galilean-Newtonian science (both in Blaga and Kuhn), the "axiological accent" *specified* as an epistemic value refers to almost the same thing as Kuhn's "value" in the mentioned works.

Using the same model, I showed that the "anabasic and catabasic attitude" can be relatively easily put in correspondence with the "commitment in models" (Kuhn). I argued that the three coordinates of this third type of element of the stylistic matrix (anabasic, catabasic and neutral attitude) are nothing else in Blaga than directions in which the generic attitude of the unconscious is qualitatively oriented in relation to a meaning imprinted to the world, or express "a quantum of intensity" in the sense of meaning of "destiny" or existence. This type of attitudinal orientations of the unconscious, which underlies the intimate structure of "various cultures", also underlies the tacit beliefs and attitudes of researchers when they encounter situations where evidence helpful in epistemic decisions is objectively lacking, that is, when they are confronted with deadlocks in solving puzzle problems or "crisis" situations. Moreover, I have shown that, although with the Galilean-Newtonian type of science these attitudes are less explicit due to the supervision of the supermethod, this primary factor is also present there, often in combination with other factors (such as "value"), of both conscious and unconscious nature.

In the original version of the first edition of Kuhn's *Structure...*, the "commitment to models" (that appears both in the "Postscript" and "The Second Thoughts…" from the second edition of *The Structure…*) appeared under such

[49] L. Blaga, *Orizont şi stil* [*Horizon and Style*], in *Trilogia culturii* [*Trilogy of Culture*], Bucureşti, Humaintas, 2011, (p. 97 and following).

[50] *Ibidem*, p. 111.

headings as "metaphysical paradigms" or "metaphysical parts of paradigms". In the first editon they expressed "common options" of researchers in a scientific community in favour of certain understandings of the scientific ideas. The metaphysical character consisted in the fact that often the concepts were not in correspondence with the designated "realities", such as "field" or "atoms", and sometimes they simply expressed metaphors. In the "Postscript", Kuhn uses the phrase "heuristic models", which provides the group of researchers with "preferred or admissible analogies and metaphors". The role of this type of models is to determine what will be accepted as an explanation or solution to some *puzzle* problems; also, they concur to determine the list of unsolved puzzles and to evaluate the importance of each of them.

Things become even clearer in the case of the correspondence between the "normative tendency"[51] and Kuhn's "exemplars". This "normative tendency" provides the ground for common images corresponding to cultural-historical models, and originally constitutes a more or less discrete presence in a very wide area of human and artifacts: the "normative tendency" is found, for instance, particularly in the artistic creation. At the same time, and this is significant with respect to the comparison with Kuhn's "exemplars", Blaga's "normative tendency" is responsible both for the "reduction to" a common scheme and for its "variations". The normative tendency is generally in solidarity with the anabasic and catabasic attitude: the more complex the patterns are, the more they are branched and tend to diversify, from standardization to "individualization" and "variation"; conversely, the more schematic the patterns are, the more they evolve towards elementary and totalizing forms[52].

Resuming only the conclusion of my previous text, what was of primary interest, along with the tendency towards "forms in general", was "diversity" and "variation". These "ingredients" are perfectly consonant with those of Kuhn's "exemplars" and their scheme of operation, as they appear in the "Postscript". In this sense, the presence of the diversity of these trends and of the variations through the three dimensions guarantees the possibility of alternative constructions, of searching for solutions *beyond* the learned paradigmatic framework, but starting from it. On the other hand, in the Galilean-Newtonian type of science, with the preservation of valence for variation, the standardization tendency is reducible to the search for patterns, for similar forms, which conditions the possibility of learning and searching *for examples*, configurations of common solutions (examples) to certain *puzzle*-problems, as in the case of Kuhn's "exemplars".

Therefore, as well as "looking for patterns" for various problems solutions, it is equally important that the elements of both matrices presuppose further *specifications*, and are *variable* (Kitcher's "conceptual parallelism"). In this sense,

[51] In explaining this phrase, Blaga starts from "nisus formativus" which designates man's imperative tendency toward the recognition of "forms in general".

[52] L. Blaga, *Orizont şi stil* [*Horizon and Style*], p. 127.

I will resume below the striking similarity between the role of mathematics in Kuhn's *symbolic generalizations* and in Blaga's *supermethod*.

The fragment discussed in my previous research refers in particular to the "Postscript", where Kuhn defines the "disciplinary matrix" as "the common possession of the practitioners of a certain discipline", being "composed of ordered elements of various sorts, *each requiring further specification* [my emphasys]"[53]. *Symbolic generalizations* represent the first of the elements of Kuhn's matrix: they are "formal or easily formalizable components of the disciplinary matrix" that can lightly be put into certain logic. Symbolic generalizations function as common "landmarks", and they are generally accepted in order to associate powerful logical and mathematical manipulation techniques in the effort to solve puzzles. Taking into account the fact that Kuhn considered that "the power of a science seems quite generally to increase with the number of symbolic generalizations its practioners have at their disposal"[54], I showed in my text an important similarity, up to identity, between the dynamics and configuration of the Kuhnian symbolic generalizations and the Blagian "expansion" of the supermethod. In order to show how close Kuhn's position is to Blaga's in his theorization of the supermethod, I will resume below a single comparison, as I originally formulated it.

Kuhn argues that when an expression of the type "*f=ma* appears in a *pure* mathematical system, it is, so to speak, there once and for all"[55]; if it "enters into the solution of a mathematical problem formulated within the system, it always enters in the form *f=ma or in a form reducible to that one by the substitutivity of identities or by some other syntactic substitution rule*"[56] (my emphasys). In sciences, however, symbolic generalizations usually function in a very different way: "*they are not so much generalizations as generalization-sketches, schematic forms whose detailed symbolic expression varies from one application to the next*"[57] (my emphasys). Kuhn further explains that uninterpreted symbolic expressions constitute the common possession of the members of a scientific community (for example that *f=ma*); and although precisely such expressions provide the group with the possibility of using logic and mathematics, these two specifying tools *do not apply to the generalization shared in common*, "but to one or another special version of it". What is really important is that, in a sense, "*each such class of symbolic generalizations requires a new formalism*"[58] (my emphasys) and *an interpretation*.

As in the case of the role of mathematics in Blaga's supermethod (in physics, for instance), *symbolic generalizations* pressupose *intermediate* ways of specifying symbols and relations from *pure* mathematics. It is about exactly how *pure*

[53] Th. Kuhn, "Postscript", p. 182.
[54] *Ibidem*, p. 183.
[55] Th. Kuhn, "Second Thoughts…", p. 299.
[56] *Ibidem.*
[57] *Ibidem.*
[58] *Ibidem*, p. 300.

mathematics is involved at the *adapted* level of the languages of the exact sciences from reporting to nature through experiment. The symbolism of *pure* mathematics and the laws of mathematics and mathematical logic undergo an *adaptation* through a symbolic *specification* or a symbolic generalization *interpreted* at the level of each exact science *before* its application through experiment to nature.

I consider Kuhn's claims above to be in correspondence with the core of Blaga's supermethod as follows: the extraordinary methodological expansion presupposes a structure in which mathematics is present at all construction levels of research in the exact sciences but *adapted*, forming methodological couples with other methods in certain frameworks specific to each experiment. We also learn from Kuhn that all revolutions involve, among other things, the abandon of generalizations initially similar to tautologies[59]. But this variation does not take place at the level of the generative structure, of the symbolic generalizations from *pure* mathematics, but at the level of the *interpreted* symbolic systems: if the interpreted generalizations change, the structure that continues to support the dynamics and progress of science remains. This "dynamic structure" closely resembles the configuration and valences of Blaga's supermethod.

PART III: CRITICAL REALISM AND BLAGA'S "MODEST RELATIVISM"

Kuhn's position on incommensurability and choice is relativist only when "applied to culture and its development"; "But applied to science it may not be, and it is in any case far from *mere* relativism"[60] (Kuhn). Putting this "relativism" in relation to "values", what was said above could be read in a double-language (Blagian-Kuhnian) as follows: the epistemic choices are based on values which are, beyond the variable contents, determinants of stylistic matrix guided by the supermethod – "predictability", "simplicity", "coherence", "fruitfulness", "methodological extension", "ability to solve new problems", "compatibility with other disciplines". The conclusion of my previous research on Blaga's "relativism" from *The Experiment…* compared to late Kuhn's "relativism" from the "Postscript" aserts that the two are unitary.

For a more accurate illustration of what we argued above, I quote the famous passage from the end of the "Postscript":

> "Perhaps there is some other way of salvaging the notion of 'truth' for application to whole theories, but this one will not do. There is, I think, no theory-independent way to reconstruct phrases like 'really there'; the notion of a match between the ontology of a theory and its "real" counterpart in nature

[59] Th. Kuhn, „Postscript", p. 184.
[60] *Ibidem*, p. 205.

> now seems to me illusive in principle. Besides, as a historian, I am impressed with the implausability of the view. I do not doubt, for example, that Newton's mechanics improves on Aristotle's and that Einstein's improves on Newton's as instruments for puzzle-solving. But I can see in their succession no coherent direction of ontological development. On the contrary, in some important respects, though by no means in all, Einstein's general theory of relativity is closer to Aristotle's than either of them is to Newton's. Though the temptation to describe that position as relativistic is understandable, the description seems to me wrong. Conversely, if the position be relativism, I cannot see that the relativist loses anything needed to account for the nature and development of the sciences."[61]

In other words, if what Kuhn claims is relativism, then this "relativism" accepts and embraces everything that science has offered and promises, based on evidence, that it will be able to offer: but not the Truth; because then we make ontology.

I have outlined so far a "negative framing" of Blaga's philosophy of science; the conclusion was that his epistemological perspective is beyond the historical relativism that Thomas Kuhn was accused of after the first edition of *The Structure...* (1962): here I refer to the imputations of irrationalism, subjectivism and distrust in the progress of science. For a "positive" evaluation of Blaga's epistemological conception, while trying to fulfill the promise made at the beginning of this essay, I will discuss the degree of its accommodation relative to the grid proposed by Niiniluoto[62] in the lastest debates in the philosophy of science on the dispute between *scientific realism* and *anti-realism*.

Niiniluoto shows that, after the failure of Popper's attempt to settle the concept of truth as verisimilitude, a number of alternatives in nowadays debate propose different definitions to this concept, such as that of truth as *truthlikeness* or as "approximately true". Most philosophers believe today that the standard cumulative model of scientific progress is outdated, for being invalidated by radical changes in the history of science. Instead of the "old accumulation", the current thesis is that the new theories in science correct the old ones by including them at most as special *counterfactual* cases. So, according to the "new correspondence principle", a new theory "roughly contains the old one or not at all". Niiniluoto points out that critical realists who want to argue that science makes theoretical progress at the level of theories have proposed an alternative to the cumulative view by taking seriously either Pierce's idea that science approximates truth at least "in the long run" or Kuhn's maxim (1970) that "evolution-from-what-we-know" is easier to assess than "evolution-towards-what-we-want-to-know"[63].

[61] *Ibidem*, pp. 206–207.

[62] Ilkka Niiniluoto, "Optimistic Realism about Scientific Progress", in *Synthese*, 194, 2017 (first published in 2015), pp. 3291–3309.

[63] *Ibidem*, p. 3296–3297.

According to Niiniluoto, as a philosophical view in its various variants, "scientific realism" presupposes certain features that characterize its 5 + 2 coordinates. For a systematization of these debates, Niiniluoto proposed a kind of "grid" that meets some of his relatively recent researches[64] and of Stathis Psillos'[65]. The latter has most clearly discerned the *critical realism*, the *naïve realism* and the *metaphysical realism*. *Critical realism* can be distinguished from the naïve or the metaphysical by adding, to the initial five, two more theses (*fallibilism* and *conceptual pluralism*). The variants of scientific realism in the current debate are subsumed to those three types. Indeed, a closer look will show that, except in the case of metaphysical realism, in all the others the concept of truth is modified with respect to the classical meaning: for "truth" or "true" are used phrases like *truthlikeness* or (Popper's) *verisimilitude*, or "more and more similar to the truth".

Assuming that Niiniluoto's study is familiar to the reader of this paper, I will resume very briefly and synthetically the five + two dimensions of the critical realism: (i) *the ontological dimension*, at least part of reality is ontologically independent of the human mind and culture; (ii) *the semantical dimension*, truth implies a non-epistemic relationship between language and reality – we have truth, but it has no relationship with the classical correspondence theory of truth, experimental results alone are not decisive; (iii) *the epistemological dimension*, knowledge about mind-independent (as well as mind-dependent) reality is possible (metaphysical realism) or at least partially possible (critical realism comes with the amendment of a "weakened" concept of truth, relativized, and of accepting fallibilism and conceptual pluralism); (iv) *the theoretical dimension*, the best and deepest part of knowledge about the world is provided by empirically testable scientific theories; (v) *the methodological dimension*, the most important goal of science is to find true (informative) theories that postulate unobservable entities and laws to explain observable phenomena; (vi) *fallibilism*, we do not have "truth", but something "like the truth" (critical realism); (vii) *conceptual pluralism*, we have alternative conceptual frameworks that can asymptotically approximate the truth (critical realism)[66].

Let us now try to understand Blaga's epistemology in terms of what his possible responses to the above grid would look like, thus placing him, in the analysis that follows these responses, at the center of today's disputes within philosophy of science relative to scientific realism.

Here is Blaga's answer in relation to the indexed aspects: (i) *ontological* (at least part of reality is ontologically independent of the human mind and culture): he recognizes the reality of the external world, and that at least part of it can be known in an objectively human way, "objective knowledge of reality" is partially possible, being influenced by the use of scientific methods that "reduce reality to only a part of it"; (ii) *semantic* (truth implies a non-epistemic relationship

[64] I. Niiniluoto, *Critical Scientific Realism*, Oxford, Oxford University Press, 1999.
[65] S. Psillos, *Scientific Realism: How Science Tracks Truth*, London, Routledge, 1999.
[66] I. Niiniluoto, "Optimistic…", pp. 3291–3292.

between language and reality: we have truth, but it has no relationship with the classical correspondence theory of truth, experimental results alone are not decisive by themselves): in Blaga, "the modes of rationalization" and the mathematical substructure of the supermethod also establish the "conditions of truth" within the theories, which exceed those of classical correspondence or empirical truth – however, although truths are possible in science, they presuppose a mathematical substructure and, moreover, *are dependent on the experimental visa*, for the epistemological dimension, as defined above, is also necessary; (iii) *epistemological* (in the case of metaphysical realism, knowledge about mind-independent reality as well as mind-dependent reality is possible at least in part; critical realism proposes a "weakened", relativized truth as well as the acceptance of fallibilism and conceptual pluralism): as I will show below, Blaga accepts mind-independent reality and its unlimited knowledge ("quasi-knowledge" + "negative-knowledge"), he also admits "knowledge in general", but not "absolute knowledge" (only in "principle") – along with the contribution of mathematics in experiment, this experimental part is fundamental in the progress of science; (iv) *theoretical* (the best and deepest part of knowledge about the world is provided by empirically testable scientific theories): Blaga accepts the truth in science, and considers it as a prerogative of the "supermethod"; here mathematics is coupled with methods from the experimental sciences – the mathematized experiment plays a fundamental role in scientific theories; (v) *methodological* (the most important goal of science is to find true theories – informative, not absolute – that postulate unobservable entities and laws to explain observable phenomena): for Blaga, scientific knowledge is ensured by the *expansion of the supermethod*, which presupposes strong predictions for counterintuitive and unobservable entities; (vi) *fallibilism* (*critical realism*): in Blaga, individuated knowledge is distinguished from absolute knowledge and is possible within science through an asymptotic progress towards an absolute but inaccessible truth – *quasi-knowledge* and *type II negative-knowledge*, knowledge censored in absolute, but *unlimited*; (vii) *conceptual pluralism* (*critical realism*): Blaga accepts the change or alternation of conceptual frameworks in the development of science through the stylistic matrix filtered by the supermethod.

As we can notice, Blaga's complex view covers, to one extent or another, all 7 dimensions of (critical) realism. Let us now analyze Blaga's supposed answers, and then outline our response on framing his epistemology within the trend of critical realism.

First of all, if we take into account that the Romanian philosopher checks (i), (ii), (iii), (iv), and (v), since he (implicitly) accepts the idea that we have before us a world distinct from us, our culture and from our mind, a discussion can be initiated regarding Blaga's consideration as a realist, or even a metaphysical realist. The world has an objective structure and reality; but the absolute and "positive-adequate" knowledge related to it are only *together* possible, and *they are exclusively the prerogative of the Great Anonymous or the divinity*. Likewise, within the

framework of *non-individuated* knowledge, which is "positive-adequate" to reality (here, very importantly, we are talking about the perfect correspondence between object and its "totally adequate" knowledge), we have the knowledge present in the "formative processes of biological world" – but again, it is *implicit*, unproblematic and *limited*. Relevant in this case is the character of perfect correspondence between reality and its knowledge as "positive-adequate" knowledge that therefore Blaga admits, even if it is an *implicit* and limited one, as it is the case with the "formative processes of biological world".

The "testimony" for this hypothetical metaphysical realism could be provided by the model of absolute knowledge of an objective world, with the proviso that it is performed by the Great Anonymous; although limited, the "testimony" for the character of *possibility* of "positive-adequate" knowledge, in a perfect *correspondence* ("adequacy") to the object, is given by the activity of "formative processes in the biological world".

In order to discuss the possibility of placing Blaga's standpoint within metaphysical realism, the following comment is necessary: the Romanian philosopher does not, however, bring the metaphysical aspect of "absolute and positively-adequate knowledge" (of divinity) in the debate on knowledge, at least in *The Experiment...*; but neither does he consider that the "philosophy of scientific aspects" that he elaborates and proposes is vicious in any way. Indeed, as in Kant, the purely epistemological perspective is functional in Blaga in these conditions – epistemologically one can disregard whether or not the "thing in itself" or the world is known *as such* by divinity.

However, these kinds of knowledge are not like human knowledge that Blaga conceives as *individuated knowledge*. Anyway, the "proof" provided by God's eye (*without quotation marks*) cannot stand here as an argument in favour of considering Blaga a metaphysical realist (the *sine qua non* requirement for the metaphysical realist is his belief that this complete knowledge is accessible to man). Interestingly, the aspect of "realism" is more pronounced in Blaga than in Kant, for in his first *Critique* the German philosopher does not explicitly recognize a structure or certain determinations of the "thing in itself", or this aspect is problematic and, in any case, still under debate today; conversely, in Blaga these determinations are tacitly accepted and absolutely knowable – within "absolute and positive-adequate" knowledge and/or in limited "positive-adequate" knowledge – but they do not belong to man.

Subsequently, relevant here is the character of the correspondence between the "reality out there" and the knowledge of it (but we can say that this knowledge is admitted by Blaga only "in principle" – without being able to nominate here divinity or other entity as a knowing agent), as well as the impossibility for man to know reality completely and absolutely, since he benefits only from "individuated" knowledge, which allows solely a "partial" knowledge, never complete or absolute, although it is nevertheless an *unlimited* knowledge.

Insofar as Blaga admits a world out there, with a structure independent of us, as well as the possibility of being partially known by man, within the framework of scientific realism, his viewpoint comes closest to the branch of "critical realism", more precisely to Philip Kitcher's version of "modest realism". The work of Antonio Diéguez[67] strongly contributed to this interpretive version of Kitcher's philosophy of science ("modest realism"), to which Niiniluoto also refers to in his text. Very briefly, Diéguez tries to rescue Kitcher's epistemological standpoint from after his change of optics in *Science, Truth and Democracy*[68] in terms of a "modest realism" by reformulating his old "monism", according to which the world has a unique structure that can be represented in a complete theory (Niiniluoto, 2015). This kind of scientific realism, as Niiniluoto points out, combines the "correspondence-truth" with conceptual relativity: despite the fact that our conceptual frameworks "draw new boundaries in nature" (Kitcher), there is a "compatibility of truths in different languages" (Niiniluoto).

The last two dimensions (*fallibilism* and *conceptual plurality*) implied by the *critical* realism and by Kitcher's *modest* realism can now be relatively easily accepted as two equally meaningful dimensions of Blaga's epistemology.

Having learned from the above how the Romanian philosopher conceives the connection between individuated knowledge and external reality, let us now see how this perspective is completed by the integration here of the last two dimensions of critical realism in Niiniluotto's grid (*fallibilism* and *conceptual plurality*).

We've noticed from the first and the second part of this essay that late Blaga like late Kuhn cannot easily be "accused" of relativism. In this respect, related to (vi) fallibilism, although the picture of the world offered by science in different historical eras changes through the succession of dominant theories, in general they constantly increase knowledge by making more and more accurate and sophisticated predictions of phenomena and offer more and more certain, reliable knowledge. Also, to a variable extent, these theories are "extra-scientifically" determinable at certain moments of their constitution according to their degree of maturity (Kuhn) provided by their level and especially by their mode of mathematization, and those of the scientific experiments (Blaga and Kuhn). However, this knowledge will not be able to become absolute or to exhaust its object (in Blaga this is obvious; after the second edition of *The Structure...*, Kuhn also claimed, almost paradoxically, that whoever believes that we know through science "what is really there" or "what is reality as such" makes ontology, not science).

After the stamp of "modest" given to Kitcher's realism by Diéguez, I will consider Blaga's and Kuhn's views as pertaining to what I call a "modest relativism", thereby emphasizing the "weakened" character of their relativism due to the

[67] Antonio Diéguez, "Kitcher's Modest Realism: The Reconceptualization of Scientific Objectivity", in Wenceslao Gonzalez (ed.), *Scientific Realism and Democratic Society: The Philosophy of Philip Kitcher*, Amsterdam, Rodopi, 2011, pp. 141–169.

[68] Philip Kitcher, *Science, Truth, and Democracy*, Oxford, Oxfort University Press, 2001.

detectable presence of a realist vein in their conceptions. In order to clarify this assumption and particularly its source, I will hold that if "critical realists" came to accept conceptual plurality (vii) in the end (especially Kitcher in *Science*...), Blaga and Kuhn, on the contrary, started from the historical, so-called "relativist model", and ended up by acknowledging a realist vein (the objectivity and independence of the external world and the possibility of knowing it, but in a fallibilist way). This is how the "compatibilization" that Diéguez attempted in Kitcher between the "correspondence principle" and the "conceptual pluralism" should be understood: the former provides the realist foundation of his conception and the direction from which it is "relativized", oriented towards a conceptual pluralism.

The resemblance of Blaga's epistemology to late Kitcher's can be established from two (apparently) opposite directions in these two points: the possibility of an (increasingly better) correspondence between knowledge and the world (Kitcher) or of a "positive-adequate" knowledge of "out there world" (Blaga), but with certain limits determined by the fallibilist acceptance of a conceptual pluralism, be it reducible, respectively by the change of conceptual frameworks of the stylistic matrix (in the case of individuated knowledge in Blaga). Even if the two perspectives are derived from different directions, I consider that they converge, and the next two phrases are suggestive in revealing a similarity up to an isomorphism: "modest realism" (Kitcher), respectively "modest relativism" (Blaga).