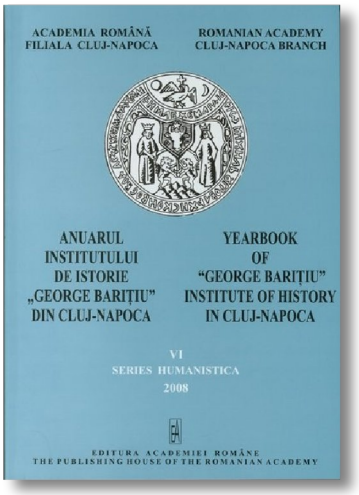

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SCIENTIFIC DISCURSIVENESS. CONTEMPORARY PERSPECTIVES IN SOCIAL EPISTEMOLOGY

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Abstract. *This paper's purpose is to reflect the general improvement of the role of science in the contemporary society. Once with this extension of certain sciences and their effect upon the nowadays ways of life, a proportionate contributive effort at the level of epistemology is noticeable. The XXth Century represents, from a certain perspective, the time when the greatest scientific theories have been discovered. It is also the century of the deepest and full of consequences conceptual, operational and methodological shifts. The epistemological and the methodological inquiry start to be always present in building any scientific discursiveness. With the aim of grasping the evolution of different scientific conceptions along the XXth Century we analyzed, briefly, Ilie Pârvu's book entitled* ***The Scientific Theory****. The end of this paper emphasizes the relation between individualism and holism in the field of social sciences, and focuses on the de-absolutized way of perceiving the significance of* ***truth*** *in contemporary thought.*

If we place ourselves in a philosophical and cultural époque characterized by a mature way of thinking and reflexivity, [it is worth mentioning that this reflexivity always presupposes a critical positioning], simultaneously defined by the deconstruction of philosophical or other systems, if we assume our falling into an axiological relativism which, paradoxically, tends to become, at its turn, absolute and if we engage in this process of anchoring in post modernity, for every contemporary thinker it becomes necessary to experience a reflexive and critical-ironical relation to the consequences of modernity and to what contemporary times presuppose. Even though the end of modernity assumes its intention of freeing itself of any limitation of criteria, nothing seems to escape, in what one calls post modernity, from the above mentioned relativistic mirage.

This mirage also explains the need of some contemporary thinkers to break with a so-called traditional theory, respectable in a way, but sometimes high-minded, authoritarian or "objective". Such traditional theories pretend to unveil an essential intelligible order as the fundament of reality or of existence, as it happens

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in the case of Plato and Kant. The question whether this period is characterized by a lack of originality or not could be raised from a philosophical perspective. Paradoxically, the solutions to these so called crises often appear at this stage of questioning. Herein, the question of the authenticity and originality of reflexivity is neither raised in terms of exhausting all the possibilities of thinking and interpreting, nor does it lay in the unity and coherence of the philosophical discourse that would, then, follow the model of systematic philosophy. Rather, this authenticity consists in being open to new meanings that emerge from each cultural context. In this also stands the legitimation of contemporary scientific discursiveness.

We are not interested here to dissociate what is old from what is new in the field of science, to seize its dynamics, rather we aim at questioning the place occupied by sciences in general and by social and human sciences in particular in the nowadays global context, also focusing on the local Romanian particularities of scientific discursiveness. Starting with the postmodern theoretical background, we will try to amount to and analyze, in what follows, some of the contemporary aspects in social epistemology.

The contemporary scientific research shows such huge progresses from one stage to the other that in order to "illustrate the general growth of the role of science in the contemporary life, its multiple impact on all domains of society, we resort to the observation that almost eighty percent of all scholars whom history has ever known are our contemporaries."[1]

The XXth century could be defined by the bigger role assigned to science and by the self-reflective trends in the field of general epistemology and in the epistemologies of social and human sciences, which, together, exemplarily justify an affirmation of Mario Bunge who underlined in his first synthesis, dating from 1967, that "a particularity of the science in the XXth Century is that the most important scientific activity – the most profound and fertile – is focusing on theories and not on isolated questions and singular data, classifications and conjectures."[2] All great scientific theories appeared in this last century, which also entailed the deepest and full of consequences mutations resulted at a conceptual-operational and methodological level. Besides the fact that in the last century there were formulated, statistically, the same amount of theories as all theories previously affirmed, purely epistemological preoccupations augmented in a number of disciplines that had not, until then, manifested any tendencies of this kind. This huge epistemological effort was possible because, in the meantime, a general growth of the role of science in the contemporary life has intervened, together with a "multiple impact on all domains of society", statistically supported by "the observation that almost eighty percent of the scientists who have ever lived

[1] Cf. Ilie Pârvu, *Teoria ştiinţifică. Modalităţi de reconstrucţie şi undele semantice ale structurii şi dinamicii teoriilor ştiinţifice*, Bucureşti, Edit. Ştiinţifică şi Enciclopedică, 1981, p. 9.

[2] Mario Bunge, *Scientific Research,* Heidelberg, Springer, 1967 (apud Ilie Pârvu, *op. cit*., p. 9).

are our contemporaries"[3]. All debates that are taking place in the natural, mathematical and cybernetic sciences or in the social or historical and social sciences are marked by a theoretical inclination, being thus dominated by essay to apply new hypothesis, techniques and strategies, meant to overcome the factual and the descriptive dimension, the classifications and typologies and meant to propose this new hermeneutical and self-reflexive "turn". Within this framework, "the questions are raised and the data is collected in the light of theory and with the hope of conceiving new hypothesis, which could, at their turn, be extended or synthesized in theories. The observations, measurements and experiments are done not only in order to collect information and generate hypothesis, but also to test the theories and find their truth value; action itself, in so far as it is consciously done, is founded to a greater extent on theories; and this happens to the better or to the worse. In brief, what characterizes contemporary science is the fact that the accent is put on the system and that the science is based mainly on the empirically testable theories and not on pure experience."[4]

The distinction between the fundamental sciences and the applicative ones is narrowing down until it disappears in inoperable classifications. The epistemic and methodological importance of all domains is constantly increasing in the sciences of XXth Century. Therefore, the theoretical questions, the doubtful attitude which is manifest in constructing any scientific discourse, raise the question of evaluating and revealing this specific tendency. As a result, in the XXth Century there appears a tentativeness of elucidating the status of theories in the real ("empirical") sciences, which are, in fact, a new kind of "meta-theoretical research programs", which constitute the domain of *philosophy of science* or *theory of science*.

The Romanian contribution to this domain are owed to renowned mathematicians and logicians like Petru Sergescu[5], Octav Onicescu[6], Grigore Moisil[7], but also to philosophers such as Lucian Blaga, the author of the well known – although posthumously published in 1969 – *Experiment and the Mathematical Spirit*, and chiefly to a more recent generation of which we mention Ilie Pârvu, author of many books and editor different volumes of studies of Epistemology, Semantics and Logic of Science, History of Contemporary Scientific Theories. Mircea Flonta, Călina Mare, Andrei Marga, C. Popa also worth mentioning here.

The book published in 1981 by Ilie Pârvu came after two important anthologies: *Epistemologie. Orientări contemporane* (Bucharest, Political Publishing House, 1974) and *Existenţă şi realitate în ştiinţă şi filosofie* (Bucharest, Political Publishing House, 1977), creating a veritable panorama on the evolution of contemporary epistemological theories.

[3] Ilie Pârvu*, op. cit.,* p. 9.
[4] *Ibidem*.
[5] Petru Sergescu, *Gândirea matematică*, Cluj, 1928.
[6] Octav Onicescu, *Principiile de cunoaştere ştiinţifică*, Bucureşti, 1944.
[7] Grigore Moisil, *Les mathématiques structurelles et leurs applications*, Bucureşti, 1971.

Rigorously elaborated in three main sections and in nine chapters where the emphasis lays on the evolution of scientific conceptions, presenting either older scientific conceptions or more actual ones, the book entitled *The Scientific Theory* proposes four appreciable and foremost objectives:

1. "To present, of a synthetic and selective manner, the main directions of reconstruction and the systematic models of the structure and of the dynamics of scientific theories.
2. To insist on the general epistemological frameworks of different approaches, trying to detect *thematic* presuppositions of formal or methodological reconstructions.
3. To express and to articulate thoroughly one of these approaches, i.e., the structuralist pattern of different theories. The author considers that this pattern is able to offer the formal and methodological starting point which seems to be the most promising for subsequent progresses of epistemological analyses.
4. Finally, to propose, as a preliminary hypothesis, a new meta-theoretical approach of the structure and of the dynamics; this approach could offer a context and a system of categories that is more comprehensive and more relevant either for the logical-formal analysis, or for the socio-historical analysis from contemporary theory of science."[8]

In the first section of his work, Ilie Pârvu critically analyses the "standard" logical- empiric pattern of scientific theories, "the pragmatic empiricism and the holist interpretation", as these arise from the work of one of the most prominent logicians and philosophers of science from the XXth Century, W. von O. Quine, quoted with no less than eight fundamental books, in which he rejected two of the dogmas of classical logical empiricism, pleading for imposing the holistic model of science and for consolidating and "naturalizing" the epistemology. Within this work, Quine commented on Karl Popper's idea of negative methodology and critical rationality.

In the second section, the author's analytic effort focuses on the historical-sociological conception of Thomas Kuhn, the author of the well-known synthesis entitled *The Structure of Scientific Revolutions* published in 1962, (translated, though, into Romanian in 1976), than it focuses on P. Feyerabend's "new critique of scientific reasoning", then on St. Toulmin's neo-evolutionist model and then on the philosophical contributions of one of the greatest contemporary physicists, W. Heisenberg.

Finally, in the seventh chapter, the author applies himself to structuralist meta-theory of mathematical physics, which founds its theoretical and epistemological premises on P. Suppes' researches in the field of the Philosophy of Science, i.e., in nine works written between 1954 and 1978. This structuralist meta-theory of mathematical physics reveals its entire relevancy in the works of two great researches namely J. D. Sneed şi W. Stegmüller.

[8] Ilie Pârvu, *op. cit.,* p. 11.

Yet, Pârvu's scientific approach is not a linear, almost didactic one, as one could deduce from the fact that each chapter focuses on one eminent personality. Rather, as one can notice from each page of the book, and, most of all, from the ample bibliography which ends the work, in debating the issue at stake, dozen of other epistemological references are entailed and put forward. In Pârvu's work, most of the cited authors have founded their theoretical contributions on the "strong" sciences. Thus, the importance of human sciences, especially sciences such as linguistics or cultural anthropology, is, unfortunately, neglected, with some exceptions, in the work of this Romanian philosopher. Yet, in general, social and cultural theories are marked by the same natural inclination towards the epistemological dimension of the scientific discourses promoted by these theories. Nevertheless, these social and cultural theories have not been taken into account within the great theoretical confrontations of the XXth Century.

This final section of the book engages Ilie Pârvu, even more than the first two sections, in a personal constructive and interpretative effort, even though this personal effort seems to be rather restrainedly affirmed. "The most remarkable fact in the recent evolution of the field of Philosophy of Science, states the author, is the appearance of a possibility of an interactive approach – at a meta-theoretical level – of science; the possibility to integrate, in a synthetic vision, the results obtained by the analysis pursued form different disciplinary perspectives such as Logical Science, Philosophy of Science, History of Science, Psycho- Sociology of Knowledge etc."[9]

The author is convinced that the premises of surpassing certain more general and generalizing perspectives are based on the rationality of cognitive approaches and on a more fecund and more advantageous type of understanding which is, generally, structural-systemic. The researches of the 1980's considered that this type of understanding equaled a "new approach" from the perspective of the "structuralist conception of theory" or of the "structuralist model of empirical theories"[10].

Knowledge has been changed at the end of the XXth Century by certain meta-theoretical inclinations.

By eulogizing Thomas Kuhn's view, which regarded the essays of "formalization" and of "rationalization" that characterized the epistemological approach and which sustained certain scholars' effort "to make accessible, for the analytic philosophy of science, new and important territories", Ilie Pârvu affirms that the new paradigm has reduced the tensions created by oppositions between the historical-dynamic, evolutional approaches and the systemic-synthesizing ones, making way for general theoretical and methodological progresses such as axiomatization. By the means of a "standard "formalization", and, altogether, from

[9] *Ibidem*, p. 141.
[10] *Ibidem*.

a holistic perspective, the axiomatization of theories in empirical sciences materializes, in the new viewpoint, by:

1. "[…] an explicit expressing of generic theories, presupposed by the respective field of researches;
2. formulating the notions that pertain to the theory and indicating their clear theoretical character;
3. formulating the axioms intrinsic to the theory;
4. constructing the empirical interpretation of axiomatic theory"[11].

Fathoming the labyrinth of the physicalist-mathematized visions of Sneed, Suppes and Stegmüller, the author is rather preoccupied by disclosing the logical reconstruction of the theories of science and by the two types of axiomatization, i.e., the standard axiomatization and the axiomatization of ensemble. He also aims at establishing the place in which "the structuralist model detaches itself, absolutely, from the standard pattern of scientific theories"[12].

In Stegmüller's view, for promoting new paradigms, the abandonment of fundamental "errors =presuppositions" encountered in the logistic program became necessary, together with a mathematic perspective able to interpret the theories as systems of enunciations. On the other hand, other perspectives such as the one elaborated by E. W. Adams in 1995 or as the conceptions indebted to *The School of Standford* are also considered as important.

"The logical-empiricist philosophy of science has almost completely neglected the specific development of the evolution of empiric (factual) sciences. This philosophy has limited itself to immediate images of the structure of empirical theories, considering that this structure has to contain all that is essential regarding the science. But in the case of empirical theories, their structure could not have been analyzed without discussing their dynamic aspect, the type of historical evolution which characterizes them."[13]

This profound critical observation qualifies Ilie Pârvu to aim even more firmly at embracing the new, structuralist vision, at conceptually clarifying the "structure of factual theories"[14], and at reevaluating the place and the role of empirical (factual) sciences in the dynamics of epistemological theories.

Studies in the field of Philosophy of Science, chiefly those of a larger comparative coverage "have highlighted fundamental aspects of empirical sciences. Thus, the logical reconstruction of the structure of theories will have to explain those fundamental aspects of empirical sciences in logical and epistemological terms."[15]

[11] *Ibidem*, p. 143.
[12] *Ibidem*, p. 147.
[13] *Ibidem*, p. 193.
[14] *Ibidem*.
[15] *Ibidem*.

The obsessive orientation of factual sciences that follows the model of the "bigger brother" i.e., mathematics, made the whole epistemological aspect of their dynamical evolution from the second half of the XXth century negligible. The weak affirmation of the corresponding sciences, such as the philosophy of science in the great theoretical debates of the century, is consequently explainable.

Pârvu finishes his exemplary analysis published in 1981 of the new pattern of reconstruction by indicating the most important four aspects:

1. the new approach represents, firstly, a meta-theory of mathematical physics, which draws on to the rigueur and precision from meta-mathematics, maintaining, at the same time, its empirical evidence. This evidence has been demonstrated through the reconstruction of some real scientific theories;
2. it has the possibility of extending itself to other domains, especially to the mathematizable parts of some disciplines;
3. the new approach impelled new domains of meta theoretical research, first of all the inter theoretical relations, the semantics of empirical theories and the dynamics of theories;
4. the structuralist model gradually reveals its value for founding a new *general epistemology*.

Ilie Pârvu's investigative approach ends, in the final chapter, with the draft of a veritable typology of basic models of scientific theories.

However, as we have mentioned above, social and cultural theories also seem to be subjected to the epistemological trait of scientific discourses, even though they were neglected in the theoretical debates of the XXth Century.

Thus, there is a whole series of recent works, which were published in the last two decades of the last century, in which the relation between individualism and holism in the social sciences, [16] has been, again, brought, into the debate, whereas in sciences like anthropology, a true change of paradigm has occurred only through the affirmation of postmodern cultural anthropology.

The social and humanist sciences along the XXth Century were characterized by almost desperate tendencies of amounting to a more accountable and "recognized" status, i.e., closer to the standards of natural sciences, in order to pull them out of what Claude Lévi Strauss toughly called "their pre-historical époque"[17]. Linguistics, sociology, psychology and cultural anthropology made significant theoretical and methodological efforts to recuperate the noticed gap,

[16] Raymond Boudon, *Individualism et holism dans les sciences sociales,* in: Pierre Birnbaum et Jean Lecca, *Sur individualism. Theorie et méthodes,* Paris, Presses de la Fondation Nationale de Sciences Politiques, 1986 ; Cf. also *Le relativisme est-il résistible?*, R. Boudon, M. Clavelin (eds.), Paris, PUF, 1994.

[17] Claude Lévi Strauss, *Răspuns la ancheta UNESCO privind ştiinţele sociale,* "Revue Internationale des Sciences Sociales" XVI (1964), no. 4 (apud René Berger, *Artă şi comunicare,* Bucureşti, Edit. Meridiane, 1976, p. 69).

delimitate their domains and establish their cognitive strategies and legitimating standards.

Out of all these scientific disciplines, XXth century *linguistics* succeeded "to be equal with exact and natural sciences, due to three reasons: a) linguistics possesses a universal research object, which is the articulate language, present in all human groups; b) its method is homogenous; in other words it remains the same, whichever the particular language studied: modern or archaic, primitive or civilized; c) this method is based on some fundamental principles on which the specialists unanimously agree (regardless of second degree divergences) for recognizing its validity."[18]

Systematic visions, paradigms and adequate methodologies gradually imposed themselves also in the other domains; thereby, functionalist and structuralist theories are imposing themselves in sociology and social and cultural anthropology. Researches on cultures and arts take advantage of the theory of models and of the knowledge, but mostly of the communication theories, impelled by the spectacular evolution of cybernetics and informatics.

In the 1930s and 1940s, the American cultural anthropology had a veritable program of systematic investigation of cultural phenomena, based on the information gathered from the Indian tribes and from other primitive communities, focusing, especially on the aspects of verbal communication, including the expression and "receiving" of narrative values, of myths and of certain forms of primitive art.

The language of gestures had an unusually high frequency and important role in tribal societies from all continents, since the dawn of humanity till nowadays, this being, with predilection, the object of study of some investigators of primitive arts and cultures like Lucien Lévy Bruhl in France, Leo Frobenius and Wilhelm Wundt in Germany or Franz Boas in the United States of America[19].

Thus a lot of investigation fields, having, surely, unequal chances, have appeared. These fields of research attracted the philosophers of languages and other scholars interested in communication theories, semiotics, cultural studies, history of culture and arts. Among these fields, sociolinguistics, ethno linguistics and generally linguistic anthropology contributed significantly to promoting communication theories.

Discovering the model of verbal communication, the American linguist Roman Jakobson, formed within the Prague linguistic Circle, set the bases of the new sociolinguistics and ethno linguistics. Anthropologists like Dell Hymes and Robert A. Georges adhered to these new theoretical trends. They were the ones who studied the culture and the art of communities as complex communication processes, presupposing the existence of socio-cultural interactions, of certain

[18] *Ibidem.*
[19] Lucia Wald, *Sisteme de comunicare umană*, Bucureşti, Edit. Ştiinţifică, 1973, p. 133–140.

environments, situations and events that can be narratively communicated, and which explain, more accurately, the collective artistic values with their specific functionality. These anthropologists, who will, then, be joined by Claude Lévi Strauss, valued the social component of every cultural and artistic act not only from the perspective of the performer or of the person who emitted a message or from the point of view of the individual or collective "receiving body". They observed and tried to grasp especially the *socio-cultural transmitting code*, the *intermediary contacts* and the *contexts* which usually mediate the transmitting process of *cultural-artistic values*, with their entire signification sets.

In consequence, studies in sociolinguistics and cultural anthropology opened themselves to the unusual theme of processes and ways of communication. Thus, semiotics, as a domain oriented precisely at investigating *communicational acts* seen as individual or group approaches, associated with a specific state of conscience or desire of integration supposed to trigger in another individual or group an understanding, a decoding of the intended act or cultural behavior, was discovered.

Therefore, along the XXth Century development of sciences, it has been observed that what is truly important is the people's way of thinking, their comprehensive processes. This way of thinking includes the significance and the status that the human beings attribute to their statements regarding the reality, i.e., the epistemology which structures their approaches. Everything that is perceived and conceived, everything that one thinks concerning the surrounding reality presents a certain extent of constructiveness. Hence, in the late modern thinking, as well as in the post-modern one, the notion of truth has, no longer, an absolute, exclusive and static value, but it is rather a concept which is, to a greater extent, a de-absolutized, dynamic and inclusive.

The basis for promoting these "non-absolutist" epistemologies, which started playing a more important role in the hermeneutics and in the social sciences of the last decades of the XXth Century[20], has been laid, at the end of the XIXth Century, by Wilhelm Dilthey's openness towards comparative philology or even theology. These fundaments have also been consolidated by the development of anthropological researches along the XXth Century. Yet, other roots of these relativistic perspectives are to be found deep in the history of oriental thinking, or in ancient philosophy.

"This "new" view of truth came about in at least six different, but closely related, ways. In brief they are"[21]:

1. Historicism contributed to creating a new and de-absolutized perception of truth by encouraging contextual and circumstantial descriptions of reality.

[20] Cf. Paul Ricoeur, *Eseuri de hermeneutică*, Bucureşti, Edit. Humanitas, 1995 ; James Coleman, *Foundation of Social Theory*, Massachussets and London, 1990.

[21] Leonard Swidler and Paul Mojzes, *The Study of Religion in an Age of Global Dialogue*, Philadelphia, Temple University Press, 2000, p. 47.

2. Inquiries regarding the intentionality of scientific approaches, which have disclosed the "individual" character and the observer's "implication" in his/her description.
3. Studies in the sociology of knowledge revealed the idea that the truth is de-absolutized and it becomes legitimate in terms of geography, culture and social standing.
4. Inquiries regarding the limits of the language in the process of cognition have showed that the meaning, the significance and the value of a certain cultural data are determined by the 'limits of language'.
5. Hermeneutics (philological, and/or theological and, afterwards, philosophical) by which it has been demonstrated that the whole truth and the entire knowledge are the result of *interpretation*, and each observer of reality is, therewith, a *hermeneutist*.
6. The dialogic perspective, as it started to dominate philology, theology, anthropology and the history of religions, through which the knower engages the observed reality in a dialogue. This would provide the knower a de-absolutized perspective in everything (s)he will affirm in her/his "description"[22].

Thus, these "sources" of the truth actually share the same essence, that is, the idea of *relation-ality*, "the macro paradigm with which the critical thinkers operate today (or the horizon in which framework they operate, to use the term of Bernard Lonergan) is characterized trough historical, social, linguistic, hermeneutical, experimental and dialogical relational consciousness"[23]. For the human being, this relation-ality actually determines and entails another way of relating to the extra-mental reality. One does no longer place him/herself passively in the relation with the extra-mental reality, but rather enters into dialogue with it.

Through this new way of comprehension, of cognition and irreversible assumption of the significance of truth, the thinker of the XXth century, critical and reflective, caused a real revolution, an important change of paradigm in the social epistemology.

[22] Leonard Swidler, *După absolut. Viitorul dialogic al reflecției religioase*, Cluj-Napoca, Edit. Limes, 2002, p. 23.
[23] *Ibidem*, p. 16.