

INTRODUCTION

There is no "Bulgarian school" in the philosophy of science. Yet there are "Bulgarian ways" of critical reception of ideas and approaches developed by Western schools. As early as the late 1930s, logical positivism gained ground in this country. Carnap's conception of the "formal mode of speech" and his claim that the philosophical investigation of science must be a logical analysis of scientific language were welcomed by the members of the Informal Group of Epistemological Studies in Sofia. Strangely enough, however, Bulgarian positivists were not inclined to accept the program of the unity of science. Because of the influence of the Diltheyan school in the first place, they remained champions of a fundamental distinction between the natural and human sciences.¹ They displayed a strong sympathy for Carnap's search for a "protocol language" providing an absolute foundation of the whole cognitive structure of the natural sciences. What they denied was the positivist attempt to represent the human sciences as systems of statements controlled by experimental verification. On their view, and this was actually a dominant methodological view at the departments of philology and history of the University of Sofia, experience in the human sciences is engendered by the interplay of researchers' theoretical concepts and the concepts embodied in the objects of inquiry. The objects of the human sciences are always (pre)conceptualized by their native interpreters and in their original historical contexts. This view was a specification of Dilthey's conception that in their pre-thematic status the objects of inquiry of the human sciences are already constituted within the triple relationship of understanding, experience (*Erlebnis*), and expression (*Ausdruck*). Bulgarian positivists from the pre-war period also subscribed to the Diltheyan conception that one has to relate every constituent of the cognitive structure of the human sciences to the historical-cultural dynamics in which "the whole of human nature" manifests itself.

After the communist invasion in Bulgaria (1944-46) the new political authorities proclaimed positivist (anti)philosophizing to be the propaganda of bourgeois ideology incompatible with the values of the Proletarian Revolution. The Informal Group of Epistemological Studies in Sofia was prohibited and its members were deprived of positions at academic institutions. The Diltheyan philosophizing had a similar destiny. Epistemology and methodology of science were replaced by a dogmatic discipline called Marxist-Leninist dialectics of nature and scientific knowledge, a discipline belonging to the canonized corpus of dialectical materialism. Ironically, this discipline created a niche in the 1950s for those who were looking for an escape from the ideological discourses of the repressive communist society. The very escape provoked an ongoing transformation (in terms of de-dogmatization) of the discipline. More and more the "dialectical-materialist studies of science" took on the form of Western philosophy of science.

Professor Azarya Polikarov's (1921-2000) books - *Matter and Knowledge* (1961) and *Relativity and Quanta* (1963) - marked the culmination in this transformation. The former book opened the reception of post-positivist philosophy of science, whereas the latter initiated studies into philosophy of physics.² The interpretations of quantum mechanics played a central place in these studies. No doubt, Dr Sava Petrov's (1934-1989) investigations into the origin of the statistical interpretation of the wave function became paradigmatic for a whole generation of philosophers of physics in Bulgaria.

In the 1970s, post-positivism became fashionable among Bulgarian philosophers of science. A source of inspiration for them was first and foremost Norwood Russell Hanson's thesis that formal reconstructions of finished cognitive systems (e.g., planetary mechanics or classical thermodynamics) have to be replaced with the search for the rise of new patterns of explanation within the ongoing historical dynamics of the research disciplines. Due to Dr Georgy Bratoev's excellent work, the post-empiricist claim of the theory-ladenness of observations became entangled in the ideas of Wittgenstein's philosophy. It was this connection that provoked inquiries into the logical semantics of scientific languages.

The reception of post-positivist philosophy of science also owes an essential impetus from Professor Ivanka Apostolova's work on the notion of scientific style. The elaborations on this notion aimed at bridging Kuhn's historical relativism and Lakatos' quasi-Hegelian rationalism. To a certain extent, the spread of post-positivism was also a *sui generis* vindication of the pre-war "strange mixture" between logical positivism and the Diltheyan epistemology of human studies. More specifically, for many Bulgarian authors working in the 1970s, the post-positivist insistence on self-reflection on the history and explanatory practice of the sciences was reminiscent of Diltheyan historicism. Yet the search for an essential distinction between the natural and human sciences was no longer on the agenda. The methodologies of cognitive historicism and the models of scientific change promised new formulas of non-reductionist unification of the sciences.

To be sure, the orientation towards holist models of science's cognitive structure and dynamics was prompted by antireductionist research programs that dominated scientific life in Bulgaria. I mean programs based upon explanations in terms of "emergent properties and processes". Prominent examples in this respect are Methody Popov's school in cytology and general biology (whose research work is a typical case of what G. G. Simpson calls "compositionism") and Stransky-Kaishev's school in physical chemistry whose impact on domains like crystallography and colloid chemistry is still significant. (Subjects in the philosophy of science like "types of scientific explanation", "logical structure of scientific theory", and "the symmetry between explanation and prediction" are included in natural science's curricula in the main Bulgarian universities since the mid-1930s.)

At the same time, however, the view began to emerge that post-positivist doctrines are in need of a Kantian framework. Many philosophers of science in Bulgaria displayed a discontent with the incommensurability thesis and the lack of a clear epistemological definition of scientific rationality. They believed that in supplying the post-empiricist approach to science's cognitive dynamics with a sort

of transcendental epistemology, one would be able to find a remedy for overcoming cognitive relativism. From the works of the members of the Bulgarian Kantian Society, a new awareness of the pervasive role of the synthetic a priori emerged, affecting a whole cluster of traditional issues concerning the structure of scientific theory. Yet neo-Kantianism was not the only "Continental ingredient" of the studies into history and philosophy of science in Bulgaria. The shift in focus from the normative justification and rational reconstruction of scientific knowledge to reflecting upon scientific research in the making invited attention to linguistic and social-practical fore-structures of the research process. By implication, the ideas of French authors like Bachelard (especially his idea of a psychoanalysis of scientific intuition and imagination), Canguilhem (the social-historical origin of scientific norms), and Foucault dominated the scene in the early 1980s. Due to the growing interest in phenomenology and hermeneutics in the mid 1980s, ideas of Husserl's, Merleau-Ponty's, and Ricoeur's programs were "integrated" into the efforts of scrutinizing scientific thought. Gadamer's and Heidegger's variants of philosophical hermeneutics also came into play. An important additional reason for the willingness to accept Continental approaches to the philosophy of science is that analytical philosophy has never been a dominant tradition in Bulgaria.

A great diversity of tendencies flourished in the 1980's. Postmodern voices appealing for the replacement of the philosophy of science with social studies and cultural studies of science are still audible. At the opposite pole were attempts at a rehabilitation of logical positivism. Another tendency has been the growing interest in strategies for naturalizing philosophy of science on the basis of models developed in the cognitive sciences. Several programs of AI were employed in this respect. Analog devices without clearly defined rules were applied to the methodology of problem-solving in scientific research.³ In trying to cope with the complexity of scientific research, other authors made use of Pylyshyn's account of a noninferential mechanism that mediates between the environment and the effect. In this context, the name of Professor Polikarov has to be mentioned again. Polikarov's position of "heuristic realism" was the best response to the situation of a growing diversity of conflicting tendencies. Leaning on his divergent-convergent heuristic methodology,⁴ he succeeded in managing a "dynamic unity" in a variety of philosophical paradigms of science studies. Heuristic realism is a view predicated on (i) realism without Cartesian dualism; (ii) anti-foundationalism without "epistemological behaviorism"; and (iii) historical approach without historical relativism.⁵ Although many aspects of heuristic realism are in need of further elaboration, it is successful in showing the way to surmount long-lasting dilemmas in epistemology that prevent one from reaching a genuine interaction between philosophical ideas and scientific theories.

In recent years, significant philosophical aspects have been incorporated in the works of Bulgarian mathematicians, logicians, and linguists. A leading exponent of the dialogue between philosophy of science and the formal sciences was Dr Georgy Gargov whose ideas (in modal logic, intuitionistic fuzzy logic, and mathematical linguistics) still have an immense impact on several lines of research.

To develop a map of all trends, positions, and thematic orientations of "Bulgarian studies in the philosophy of science" is, of course, beyond the scope of this introduction. Collected in the present volume are essays illustrating some of the aforementioned "Bulgarian ways".

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NOTES

¹ About the "Diltheyan philosophizing in Bulgaria", see Ginev *Zwischen*.

² Three volumes of studies into philosophy of physics marked symptomatic stages in a *sui generis* development. The first one (Apostolova et al.) is devoted chiefly to the logical reconstruction of non-classical theories in physics. The problems of causality and determinism, the types of quantum logic, the justification of the law of conservation of energy, and special cases of interrelation between theory and experiment are the dominant subjects in this volume. The second one (Polikarov *Methodological Problems*) shifts the focus from the logical structure of theorizing in physics to the historical dynamics of the transition from classical to non-classical physics. The last volume (Tögel) puts more emphasis upon the cultural contexts and historical situations of emerging central ideas in contemporary physics. A similar evolution was also undergone by studies into the philosophy of biology, whose main exponents in the 1970s and 80s were Dr Stoyan Nikolov and Dr Atanas Danailov.

³ See, for example, the contributions of Bulgarian authors in Bibel and Petkoff.

⁴ See in particular Polikarov, *Method*.

⁵ For Polikarov's heuristic realism, see Ginev *Introduction*.

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