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rethinking orthodox Marxist principles*

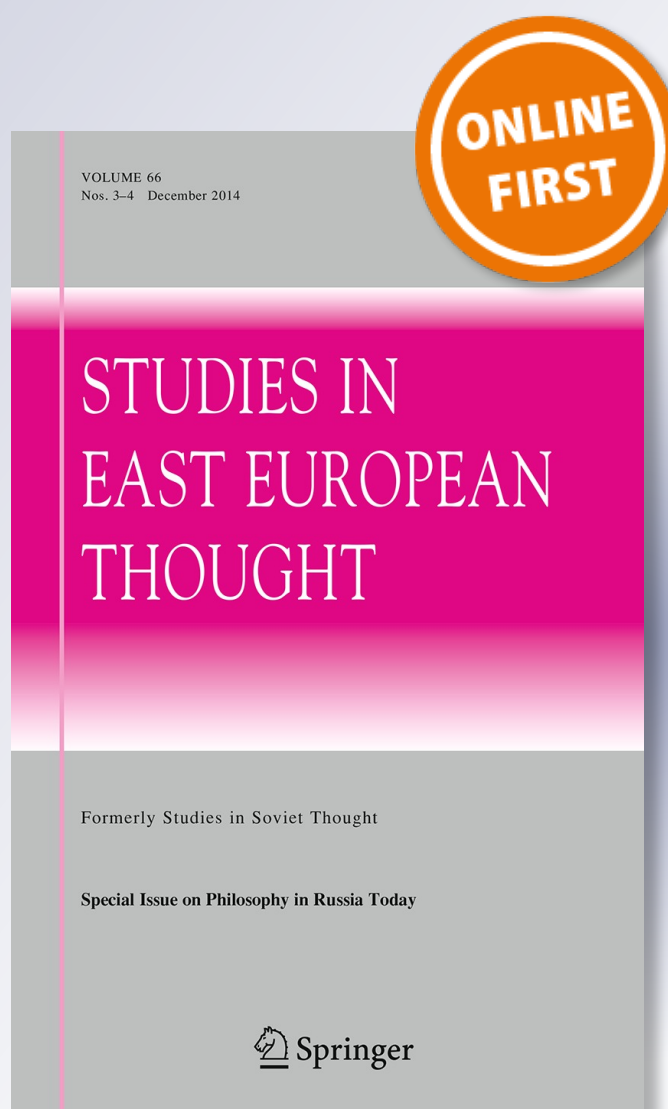
Valentin A. Bazhanov

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Epistemological contributions to the study of science in the latter days of the USSR: rethinking orthodox Marxist principles

Valentin A. Bazhanov^{1,2}

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Abstract During the last quarter of the twentieth century, Soviet Russian philosophy did away with ideology in the fields of Science; but until the mid-1980s, scientists could not escape intense ideological scrutiny. A great number of Soviet scientists did their best to avoid this ideological supervision, and pursued their research, remaining neutral toward Marxist ideology. Among these fields of research were so called “philosophical problems of natural sciences” (The Western counterpart would have been the Philosophy of Science). Some Soviet Russian philosophers put forward original conceptions of scientific development, the structural features of science, and/or provided novel interpretations of certain scientific principles and ideas. These thinkers had deep roots in Marxism, though not orthodox Marxism. They, so to speak, overcame classical Marxism and proposed innovative ideas largely based upon epistemological considerations. The legacies of I. S. Alekseev and M. A. Rozov are especially worthy of attention for their original epistemological contributions to the philosophy of science.

Keywords Ideologized science · K. Marx · V. I. Lenin · Theory of reflection · Philosophy of quantum theory · Principle of complementarity · Activity approach · Subject · Object · Reflexion social relay

Marxism as a state ideology created the phenomenon of ideologized science (Ahundov and Baženov 1989; Bazhanov 2009), which was crucial for the development of Soviet philosophy almost to the end of the 1950s. This phenomenon

✉ Valentin A. Bazhanov
vbazhanov@yandex.ru

¹ Ulyanovsk State University, Ulyanovsk, Russia

² Tomsk State University, Tomsk, Russia

long made itself felt—until the early 1980s.¹ It announced itself in the effort by some “old school” scholars to dissect the achievements of science from the standpoint of orthodox Marxism using the heavy artillery of quotes from the classics of Marxism–Leninism. Not only had philosophers engaged in the practice, but prominent scientists as well (e.g., D. I. Blokhintsev, Ya. P. Terletskij, and even A. D. Aleksandrov who usually did his best to adhere to high moral standards). Moreover, even in the middle of the 1980s, many inside editors at publishing houses, deliberately and without the consent of the authors, inserted statements from the classics of Marxism–Leninism into their articles in all the “right” places, where “necessary.” Encyclopedias and reference works were especially targeted. Authors were often compelled to certify the authenticity of these passages used in their works.

The state ideology, meanwhile, could not last forever. Sprouts of ‘fresh’ philosophical thought began to push through vigorously following the All-Union Conference on Philosophical Problems in Natural Sciences in 1958. These germs, however, often outwardly resembled the corresponding figures typical of ideological science: unfounded reprimands of bourgeois philosophers and scientists, constrained assurances of loyalty to Marxism–Leninism and the decisions of the Communist Party, its recent congresses, and plenary sessions of the Central Committee meetings. Dialectical materialism continued to be considered as the only true methodology of science.

Meanwhile, some thinkers constructed post- or even non-Marxist philosophical systems by using selectively handpicked aphorisms from Marx, Engels, and Lenin. They actually denied the alpha and omega of the Marxist–Leninist philosophy: the Theory of Reflection, held up as Lenin’s most important, and genial, achievement. In *Materialism and Empiriocriticism* he characterized it as the result of his analysis of “the recent revolution in science and physics.”

How was this “revisionism” possible under such ideological pressure and control in the 1970s? What concepts, ideas, and approaches, did it represent? How can we claim that those concepts and ideas were post- or even non-Marxist? What was the logic behind this revisionism? Finally, why did it escape the attention of zealous Marxist–Leninists at the time?

¹ For example, even as late as the end of 1979, a powerful “blow” was struck at logical studies in the USSR. This happened at a time when logic was taught in all law schools, and even at the University’s specialty of “scientific communism.” In 1979, the leading ideological journal “Communist” published a lengthy article (as often happened in such cases) by a completely unknown author, who, in the spirit of the true Bolshevik maximalism, proclaimed a class approach to logic and partisanship in logic (and, therefore, partisanship is based on its politics). The article said that for *any* statements, including those made in logic, we must “seek the interests of certain classes, in the words of logic—the logic of thought...” we cannot tolerate attacks on the “algebra of revolution” which are typical for “petty-bourgeois narrow-minded ways of thinking” of logical positivism and its followers (Sadovskij 1979, 63). As a doctrine of “external forms of thought,” formal logic is hostile to dialectical materialism’s conception of logic as the science of universal development and the unity of opposites, which is the “soul of the revolutionary theory.” Here, in the author’s opinion, we have two opposite types of thinking—“proletarian-revolutionary bourgeois and petty-bourgeois”; the first reveals the laws of social development, and the second is used to falsify the ideas of scientific communism, being “professorial phrase-mongering” and “philosophical and mathematical antics,” smuggles idealism into a true science (Sadovskij 1979, 69, 65, 70–71).

Let me begin with the last question, because it sheds light on the causes that undermined the the grip of Marxist–Leninist orthodoxy.²

First, there were a greater number of iconoclastic Soviet philosophers engaged in the epistemology and/or philosophy of science in the mid-1970s than there were orthodox thinkers (see also Ogurtsov et al. 2005). By that time, many of the philosophers who had firmly advocated the orthodox point of view in the late 1950s had become unorthodox in their views. For example, in 1951, M. E. Omel'janovskij considered N. Bohr's principle of complementarity as "idealistic falsification of the actual content of quantum mechanics" (Omel'janovskij 1951, 151) and in 1956 he wrote about "the struggle between materialism and idealism in the field of quantum mechanics." In his words, "[m]any prominent physicists have not confronted the philosophical analysis of quantum phenomena" claiming, furthermore, that they were "philosophically helpless." He argued that "the principle of complementarity stems from subjective idealism," and that their notion of physical reality is positivist (Omel'janovskij 1956, 8–10, 17, 23). He abruptly changed his views in 1970. He discovered a "dialectical meaning" in quantum theory and argued that "the Copenhagen interpretation of quantum theory is not positivistic." The concept of complementarity has an "evident philosophical significance" that had been "developed for many years on the basis of a deeper understanding (than that in the West—V. B.) of dialectical materialism" (Omel'janovskij 1970, 25). Earlier well-known philosophers like B. M. Kedrov, I. V. Kuznetsov, and N. F. Ovčinnikov similarly revised their standpoints. However, their epiphanies came to them later than to S. A. Janovskaja, who in 1930 vigorously opposed "idealism" in mathematics, but in the 1940s undertook Herculean efforts to revive logico-mathematical research (Bazhanov 2001, 2007). This was the result of a painful rethinking of the real state of affairs in the relation between science and politics. A reevaluation of primitive ideological dogmas came about most probably due to intensive self-education (Akčurin 2000; Ahundov and Baženov 2000; Kuznetsova and Rozov 2000).

Second, the "revisionists" cleverly mimicked the orthodox Marxists, and secured themselves against ideological attacks by impressive shields of statements from the classics of Marxism–Leninism. To refute their ideas actually meant opposing the classics.

Third, the professional qualifications and position of these orthodox Marxists noticeably did not reach the professional level, or the philosophical and cultural skills of the later generation. This generation was inclined to forget the sharply negative assessment of the principle of complementarity of their older colleagues and shunned inappropriate (and hardly credible) ideological debates. For example, the introductory article of a collection published in the Institute of Philosophy,

² On the non-governmental level, individuals who adhered to Marxism sometimes made unexpected and productive contributions to science and philosophy (in terms of results and of value for the future). Let it suffice to recall that we owe the assimilation of logical positivism and the beginnings of research in the field of philosophy of science in America to the Communists, emigrants from Russia (see McCumber 2001; Reisch 2005). Sometimes, false premises imply fruitful corollaries. For instance, I. E. Orlov was eager to find a dialectical logic of natural sciences; he did not find this logic but rather accidentally constructed the formal system that became the starting point of so-called relevant logic (see Bazhanov 2003).

Academy of Sciences of the USSR, “The Principle of Complementarity and the Materialist Dialectic” (Moscow 1976), by Omel’janovskij (1947) in many ways ran counter to the remaining content. In the book, it is referred to as revealing the “dialectical nature” of this scientific ideology (Baženov 1976, 5).

It is not accidental that the break with dogmatic Marxism began with the philosophy of science. It seems that the causes that gave rise to the phenomenon of ideologized science gave rise as well to the causes that overcame it. Lenin proclaimed the principle of party-minded philosophy, meaning by “parties” Idealism and Materialism. However, adherents of the new ideology “developed” a literal understanding of party ideology regarding Marxist philosophy in the era of the dictatorship of the proletariat. Nevertheless, V. I. Lenin proclaimed the principle of union of Marxist philosophers and representatives of the natural sciences as well, which in the 1950s was “developed” to become the principle of the union of philosophy and natural science. This union turned out to be beneficial both to philosophers and to natural scientists. Both were anxious to free themselves from ideological pressure; scientists and philosophers alike were frustrated by the immovable, granite-like doctrine of orthodox Marxism–Leninism.

For a long time, almost to the beginning of the era of perestroika and glasnost’, the major ideological heavyweights were actual members of the USSR Academy of Sciences, like L. F. Ilyičev (1906–1990), F. V. Konstantinov (1901–1991), M. B. Mišin (1901–1987), and P. N. Fedosejev (1908–1990). They not only constituted a philosophical community but were also influential functionaries within the USSR Academy of Sciences. They chaired all major meetings, their informative articles were treated as “editorials,” and their influence spread to the community of the so-called *istmatčiki* (adherents of historical materialism), who listened keenly to the state heralds of the truth. True philosophical life for those who shied away from the ideologically saturated problems waned under the influence of their “aura.” Nevertheless, it is worth noting that the Soviet philosophical community consisted, in its majority, of *istmatčiki*. This group shifted to post-modernism in the post-perestroika years admiring Heidegger and Deleuze. The poverty of historical materialism and the primitive method of its analysis pushed *istmatčiki* to the periphery of Soviet philosophical life.

Who at present remembers and reads the works of the above-mentioned members of the USSR Academy of Sciences? *Sic transit gloria mundi!*

The concept of a “philosophy of science” had long been considered—in fact, up to the start of the 1990s—as bourgeois ideology expressing the pathos of “scientism.” This was due to a “focus on positive science (mainly natural science) under the pretext of combating speculative philosophies while excluding traditional philosophical problems, thus eliminating the ideological importance of science” (Mitrokhin 1974, 22–23). Bourgeois philosophy of science was interpreted as a kind of modern positivism. The official Soviet scientific thesaurus and Marxist philosophy employed the concept of “philosophical problems of natural sciences.” The same concept figured in the nomenclature of the Higher Attestation Commission as the title of the relevant specialty. The more appropriate “philosophy of science and technology” came officially into use only in the post-Soviet era.

Meanwhile, those who engaged in the philosophical problems of the natural sciences provoked the open hostility of the *istmatčiki*. I am reminded of an episode from my own experience.

I graduated (with honors) from the Physics Department of Kazan University, and immediately thereafter entered the graduate school of philosophy, which was actually working in the field of philosophical questions of natural science. Because of my reluctance to pass another Ph.D candidate's exam, I defended my dissertation at Leningrad University in "dialectical and historical materialism." My Ph.D thesis, "A Logical and Epistemological Analysis of the Completeness of Formalized Knowledge" (Leningrad 1978), did not ignore the classics of Marxism–Leninism. However, I did humbly attempt to defend "the philosophical problems of natural science" at the Institute of Philosophy in the USSR a decade later. I had used only one quote—from K. Marx. After my Ph.D defense I worked intensively and in 1981 presented a manuscript for the book, *The Problem of Completeness of Quantum Theory: The Quest for New Approaches*, for discussion at the Philosophy Department. An *istmatčik* was present who had recently defended his doctoral dissertation in "scientific communism"—a recognized scholarly specialty—and was in charge of our department. He was as dry as dust and scientifically unproductive, but a decent human being. I remember that before the discussion, he secretly inquired of reviewers, "Is it a positivistic manuscript?" I happened to overhear his question and was not sure that the results of the discussion would have been positive had the reviewers not been able to dispel his grave doubts.

A much more unpleasant story unfolded at about the same time (1982). An already fairly well known group of Soviet philosophers—N. I. Kuznetsova (the daughter of I. V. Kuznetsov mentioned above), M. A. Rozov, and Y. Schreider—had signed a contract with a publishing house (Politizdat) to prepare a popular book on the "science of science." The publication of such books was informally supported by some members of the Central Committee of the CPSU. However, certain reviews of the finished manuscript of the book saw in its content "ideologically alien, anti-Soviet, anti-Marxist, anti-Leninist ideas." V. S. Gott, who was very influential in those days and who usually held moderate ideological views, noted, "The shortcomings of the manuscript included a lack of consistency and clarity in the conduct of the dialectical materialist methodology throughout...." He said that the authors "did not show the fundamental differences between the culture of developed socialism and contemporary bourgeois culture," and, moreover, that the manuscript "shows emphatic non-partisanship and the reevaluation of the role of bourgeois philosophers of science." The anonymous reviewer, choking with anger and suspecting ideological sedition, assessed the manuscript as "ideologically harmful (Kuznetsova et al. 2012, 11, 17, 18, 21). Fortunately, the authors of the manuscript managed to avoid "organizational" outcomes, which would have been very likely a decade ago.

Terminological inconsistency with the Western philosophical tradition, however, did not prevent Soviet philosophers from generating and developing concepts that were in the spirit of Western epistemology (gnoseology) and the philosophy of science. Presumably, they developed these ideas within a Marxist context. Sometimes they demonstrated virtuosity with Marxist nomenclature. Behind the fence of quotations from Marx, Engels, and Lenin, they often hid non-trivial content

that did not quite fit the traditional canons of Marxist–Leninist doctrine, and even contradicted it on occasion. However, the shield of quotations from Marx and Lenin was not always brandished. For example, V. P. Branskij, in his book on the philosophy of physics published in 1973, referred to Lenin only twice and Marx and Engels are entirely “ignored” (Branskij 1973). However, Branskij did develop the idea of epistemological non-geocentrism (Branskij 1973, 95) having to do with the specific knowledge of a world disproportionate to us, but limited to the scope of physical knowledge, without claiming far-reaching philosophical conclusions (and thereby arousing the suspicion of ideological Boeotians).

Subject and object in the context of Marxist formulas: the approach of I. S. Alekseev

Igor Seraphimovič Alekseev (1935–1988) was a specialist in the philosophy of physics and especially the history of the idea of complementarity. In his book, *The Conception of Complementarity: An Historical and Methodological Analysis* (Alekseev 1978), he discussed in detail the circumstances and motives of the birth of the principle of complementarity as well as the analysis thereof in foreign and domestic literature. I. S. Alekseev considered himself, as he repeatedly assured the author of these lines, “the faithful Borovets” (follower of Niels Bohr), and he very carefully interpreted Bohr’s ideas. However, he was a supporter of the activity approach as well, the basis of which he claimed to be the idea of complementarity. Therefore, in his book, he offers a very original conception of the cognitive process in the context of the activity approach. The relevant section is entitled “The Experience of the Dialectical Materialist Interpretation of the Concept of Complementarity” (Alekseev 1978, Chapter 5, § 2); it begins with a quotation taken from Marx’s first thesis on Feuerbach. In consideration of the fact that only “the form of an object” is associated with the “contemplation” typical of pre-dialectical materialism, there is a need to consider reality as the outcome of practice, human sensuous activity. “If the role of practice was limited only to the active influence on reality, the contemplation of pre-Marxist materialism would have remained unresolved, changing only the shape of the display....” “Passive” contemplation would be replaced by “active” contemplation and “practice would fit into material reality beyond itself without being a reality” (Alekseev 1978, 210). Alekseev quotes Lenin: “(Practice) not only has a phenomenal significance (in the Humean and Kantian sense), but also an objectively real significance” (Lenin, *Collected Works*, vol. 18, 106). There are “two forms of the objective process: that of and goal-positing human activities” (Lenin, *Collected Works*, vol. 29, 170). Therefore, concludes I. S. Alekseev following the classics, “*practice is also material being...*” It is the impact of one form of objective reality on another; the impact of material being “in the form of activity” upon another form, “in the form of object.” The subject is included in “material reality as its specific fragment and ceases to possess consciousness as its only constitutive property” (Alekseev 1978, 210–211). Alekseev then quotes Marx and Lenin profusely in connection with the notions of “object,” “objectivity,” “objective,” “subject,” “subjective,” etc., with

every step in his argument supported by the relevant quotations. These quotes hide a well-kept revision of Lenin's thesis that the object exists independently of the subject, whereas in the epistemological sense the status of the object is determined by the activity of the subject. Cognition is the process of immersion of the subjective into the objective, and the objective truth characterizes the "depth" of its immersion; the degree of coincidence of subject and object relates to truth, it breaks, "removes" the original (for knowledge) opposition between the objective and the subjective. "In the course of the practical impact of the material on the outer objective world, the latter responds (positively or negatively) to the questions posed by means of subjective concepts..." (Alekseev 1978, 214–215). He reinterprets the phenomenon of commodity fetishism according to which the objective characteristics of the activity objectified in the properties of its products are interpreted as intrinsic to these products... (Alekseev 1978, 218). Further, the author posits the most far-reaching thesis: that the ontological status of activity is more fundamental than the existence of individual objects-things.

After reaching this conclusion, Alekseev returned to the concept of complementarity, interpreting it from the perspective of the activity approach. The wholeness of the "phenomenon" that Bohr treated as a piece of "full reality" consisted of a division of the process of observation between the object (a "thing") and the tools of observation (instruments). As an analogy to the division of the object and the subject, a physics experiment is defined as a form of practice, etc. (Alekseev 1978, 226–227).

This paragraph, as expected, ends with another volley of Lenin quotation in order to show that the classics of Marxism–Leninism can provide support for almost all of life's occasions.

Just as Alekseev argues his case on the basis of numerous Marxist–Leninist ideas, V. P. Hutt also (though not in such a radical fashion) examines the relationship between the objective and the subjective, their unity in knowledge, and considers the problem of "hammering of subjectivity" in quantum mechanics (Hutt 1977, 108–115). The concept of complementarity has provided many opportunities for epistemological and even cultural studies. Thus, Hutt sought to analyze Dostoevskij's stylistic method in the light of Bohr's complementarity thesis (Hutt 1977, 166–179).

Epistemology as an empirical science, science as a social exchange: M. A. Rozov's activity approach

Another original researcher in Soviet/Russian epistemology and philosophy of science was Mikhail Aleksandrovič Rozov (1930–2011). In the early 1970s, he set about developing an empirical epistemology of science (Rozov 1977).

M. A. Rozov discovered a kind of paradox (he calls it the Midas paradox), according to which analysis (knowledge) is a necessary condition for the existence of the analyzed object (Rozov 1977, 41). This means that (in epistemology) we are not able to separate ourselves from the object, as is the case in natural science, and therefore we cannot claim to obtain truly objective knowledge. What we need

therefore is a over-reflexive³ position as a methodological model for natural science that will enable us to break out of the vicious cycle the paradox describes. This position will allow us to formulate reflexively the rules that determine the development of the system and the knowledge that becomes the system will determine itself. The main purpose of reflexion (establishing the standards that ensure the functioning of the system) is to understand such an act; then we can formulate methods for the solution of the corresponding problem (Rozov 1977, 107, 123).

M. A. Rozov had come in contact with G. P. Ščedrovitskij whose influence caused him to reassess his own ideas. He notes that in 1960 he and Ščedrovitskij came upon the idea that a theory of knowledge should be developed as an empirical science, and that scientific and engineering activities are one and the same. Moreover, it was Ščedrovitskij who brought Rozov to the idea of “social relay,” the key idea in his philosophy (Rozov 2012, 303). He expressed acute dissatisfaction with the current state of the philosophy of science, which he metaphorically compares with anatomy and physiology (Rozov 2012, 15). Remembering his initial steps down the philosophical path, he cites the anecdotal divisions of Soviet Russian philosophers at the middle of the twentieth century, those who knew English and those who did not. Although Rozov dealt mainly with the critique of Western philosophy⁴, he did pay attention to original ideas of the latter, associating himself and Ščedrovitskij with them. Nevertheless, Rozov and Ščedrovitskij’s writings do not quote the original texts of their Western counterparts. Moreover, they rarely invoked their Russian colleagues. It is probably worth remembering Rozov’s reasoning about “philosophy without community” in which he laments the “atomization of our philosophical community, and that we are silent about our own results” (Rozov 1988).

“We were working in the tradition of Marxism,” claimed Rozov (Rozov 2012, 306), “but we were looking for a fresh trail, which did not coincide with the main line of orthodox Marxism.” Rozov called this trail “shadow” philosophy, but it would be better referred to “unorthodox” or “peripheral.” “Shadow,” according to Rozov, is used in the literal sense, in that it does not glorify the Soviet State, and not in the sense that has to do with the “shadow economy” or “shadow science.” Moreover, he rightly points out that self-respecting Soviet philosophers eschewed social issues and engaged in logic, epistemology (gnoseology), and the philosophy of science science (Rozov 2012, 252). Still, it was not a “shadow philosophy” and not even “shadow science,” but a true, honest path, which in the last third of the twentieth century was reaching the level of Western standards (cf. Bazhanov 1991a, b).

³ The idea of the over-reflexive status of science fascinated some Soviet scholars. Such a position appealed to the “dialectic of knowledge,” which implies not only the difference, but also opposition to the positions of epistemology and natural science. And so, he did his best to find J. A. Schreider (see Schreider 1983, 174–175).

⁴ Indeed, if we attend to work done in the 1960s and 1970s of the prominent, non-conformist scholar, sharply critical of the Soviet regime, the philosopher of science A. P. Ogurtsov, then we notice the predominantly descriptive writing style. However, unlike his fellow Marxists, Ogurtsov avoided and virtually excluded references to the classics of Marxism-Leninism (See, for example, his bulky article with only one quote from Lenin: Ogurtsov 1984, 186).

Philosophy (including gnoseology) should be constituted as an empirical science, wherein a 'social relay' is a certain kind of 'atom' making up its 'body' (Rozov 1986). At the heart of this concept—a key concept for Rozov—lies an understanding of social activity, programs implying the presence of forms of action. However, a separate sample of action never identifies a clear set of its implementations; the implementation itself is directly linked to a concrete context (Rozov 2012, 21). Activity itself can be described as a wave process, a sort of "kumatoid," pervasive in the social environment. Objects of knowledge are not directly manipulated objects, but rather our activities. Objects of knowledge, as the author stresses, are "a product of our hands," the activity itself in contact with the world, and the content of knowledge is social by its nature (Rozov 2012, 41).

These ideas clearly indicate that, contrary to the title of the book, Rozov is talking not only about the philosophy of science, but about a new *epistemological* philosophy, fully realizing the activity approach, which is naturally also applicable to the philosophy of science. It is a conception which drastically revises the understanding of knowledge as reflection ("reflection" here meaning a description of activities) from the point of view of orthodox Marxism; it is a purely subjective idealism (Rozov 2012, 107). If we use the metaphor of "the book of nature," in the course of research a person does not simply read (thus discovering the secrets of nature), but actively writes in collaboration with nature. This metaphor allows Rozov to offer a new interpretation of the classic, correspondence theory of truth, and to find an argument in favor of its validity. Knowledge creates reality, and is a result of human activity. "We are comparing our knowledge with what we are ourselves are creating," writes Rozov (Rozov 2012, 51). Knowledge comes not from the senses, but from our activities; our activity extracts from a general background a set of properties and relationships and binds them into a coherent picture. This is why there is a kind of isomorphism of theory and practice, of scientific and engineering creativity. This is why facts do not exist without a certain interpretation of observation preceding that direct observation.

Goal-setting activities related to the reflection that defines the change of goals converts the objects of scientific knowledge into disciplinary systems. Scientific knowledge appears as a result of verbalization of patterns of activity. Reflexive transformation, which is expressed in the change of goals (various acts of awareness of the same invariant content), alternately shift the focus from the theoretical level of knowledge to the empirical, and vice versa. Empirical and theoretical knowledge may be regarded as different reflexive "projections" of the same constantly functioning social relay structure. Reflexive transformations come to expression in the peripheral assimilation of operations as well as in the transformations of the objects of investigation of which they are means (Rozov 2012, 104).

The mechanism of scientific knowledge can accurately describe the scope of applicability of a given concept. This description presupposes a definition, which in turn indicates the presence of an idealizational construct. Rozov says that appropriate idealization cannot define clearly the extent of its implementation. This situation falls within the scope of Bohr's principle of complementarity; the practical use of the concept prevents its precise definition, and its precise definition means a loss of opportunities for its practical use. This is understandable, because

here we are talking about the subtle cognitive phenomena about which Kant raises questions, viz., the boundaries of reliable knowledge and recognizing the *objective* presence of those limits, which depend on the nature of our activity.

Social relay is an unstable system. This instability is responsible for innovations in cognition and/or practice. Innovations are often a kind of “borrowing,” a transfer of methodological principles, developed for one area, to another. There is a corresponding reduction of the experience which can be conceptualized in terms of metaphor. Here Rozov means a change of context, which is one of the most common mechanisms for innovation, in addition to the interaction between varieties of disciplines (Rozov 2012, 181). It is no accident that “aliens,” who are not burdened with established points of views, are often innovators in their fields presenting fresh and even “crazy” ideas. As these ideas enter the arena, they are collected, systematized, and organized into arrays of empirical data and, ultimately, they help to create and unite the scientific community (Rozov 1987, 10, it should be noted that Rozov’s concept of a research program significantly differs from the corresponding concept of Imre Lakatos).

Scientific research is similar to construction engineering, especially in view of modern scientific research, which is “solid design.”

Rozov’s approach to epistemology and philosophy of science may be called *phenomenological* (presumably in the spirit of *externalism*, dating back to B. M. Hessen, the ancestor of this Marxist trend in philosophy). His perspective offers general orientations, attitudes, and principles that have yet to be projected on specific situations in the development of science. Research in the genre of case studies from the perspective of the conception of social relay is, largely, a project for the future.

As I hope to have shown, Soviet philosophical and methodological thinking in the years 1970–1980 was quite diverse and was present in neutral forms with regard to Marxist approaches to science. There were still other approaches to these issues, but that is a story that will have to wait for a separate discussion.

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