

# Imre Lakatos: Scientific Ideology and Democratic Education

## (A Reply to Vilmos Csiszár's Paper)<sup>i</sup>

[Translated by Gábor Kutrovátz]

Natural science is among the greatest achievements of human mind, therefore it is no wonder that its authority has ever been used in social struggles to support the combatants' own opinions. The ideological<sup>ii</sup> preparers of the French Revolution, lead by Voltaire, used Newton to fight against feudal backwardness. In the ideological wars of the nineteenth century, Darwin fortified the progressive fronts.

But the twentieth century brought a new situation. Findings of modern science are used to support reactionary standpoints. In physics, some believe that the total freedom of individual humans is 'verified' by Heisenberg's relation, just as the society of professions 'equating' in class peace is verified by the organism concept of biology; not to mention how biology becomes an ideological principle in racial theory. Typical of this ideological confusion is one of our excellent biology professors who writes: "...the entire modern world of ideas has been dominated by the mechanical picture of classical physics, which reached its completeness with the atheist, socially destructive doctrines of Bolshevism."

Thus we must be absolutely distrustful of any recent attempt at drawing ideological conclusions from the natural sciences. But this is what Csiszár does. The ideology "rooted in the material and spiritual laws of the cell life of animals and plants" is said, by him, to "deny one-sided materialism, and admit the priority of spirit over the matter it rules."

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First of all, what does the author mean by "one-sided materialism"? It is a materialism according to which freedom, consciousness, and religion are mere reflexes, where "soul is but a symbolised form of physiological functioning", restricted eventually to the understanding of the physico-chemical structure of things. He also objects to this materialism that it "carefully separated phenomena", while a "perfect explanation can only be achieved by a unifying attitude".

Readers might believe that when Csiszár criticises this one-sided materialism, he invalidates materialism *in general*. But it is not so. The materialism depicted by Csiszár is just an old and outdated form of materialism, refuted by modern science indeed. However, materialism was essentially modernised by Marxism, contrasting modern "dialectical" materialism with old "vulgar" materialism.

A modern materialist view confronts the thesis that every phenomenon can be reduced to the laws of atoms or other elementary particles governed by the mechanical laws of motion. "Dialectical materialism does not find it legitimate to apply mechanical-physical laws to special areas of biological and social phenomena." (Erik Molnár: *Dialektika*, p. 80)<sup>iii</sup> But already Engels writes that "the obsession with trying to reduce everything to mechanical motion results in obscuring the special character of particular forms of motion" (*Naturdialektik und Naturwissenschaft*).<sup>iv</sup> Modern materialism emphasises the extreme diversity and complexity of material reality, which cannot be crammed into *narrow* frames of determination. Each new discovery modifies our concept of matter, and vulgar materialism made a mistake when defining the matter in such a narrow way that many phenomena were excluded from it, finally making the materialist standpoint an obstacle to scientific progress with its infinite perspectives and surprises. Therefore the only content in the definition of matter, now reformulated by modern materialism, is the demarcation from idealism: "For the sole 'property' of matter with whose recognition philosophical materialism is bound up is the

property of being an objective reality, of existing outside our mind.” (Lenin: *Empirio-kritizismus und Materialismus*, p. 213)<sup>v</sup>

This new type of materialism is immune to Csiszár’s accusations. It does not “require” us to “examine carefully separated phenomena”, moreover, it “does not regard nature as an accidental agglomeration of things, of phenomena, unconnected with, isolated from, and independent of, each other, but as a connected and integral whole, in which things, phenomena are organically connected with, dependent on, and determined by, each other.” (Stalin: *Problems of Leninism*, p. 587)<sup>vi</sup> Or, according to György Lukács, “Totality is the bearer of revolutionary principle in science.”<sup>1</sup>

Naturally, the question must be addressed how it is possible that modern materialism, relying on new scientific results and unifying them,<sup>2</sup> has not been able to reach the scientific public. The answer is that this modernisation was achieved by Marxism, and Marxism was not available to the Hungarian intelligentsia in the previous system with its censorship—indeed some part of this intelligentsia still feels emotional antipathy for Marxism. But today there can be no complete scientific literacy either without the knowledge of Marxism.

To sum up: the ideology that, above all, “denies one-sided materialism” wages war upon dead things, and thus cannot be put at the centre of our education.

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Let us examine now to what extent modern biology supports “the priority of spirit over the matter it rules”. Csiszár claims, in contrast with modern materialism according to which things are moved by essential contradictions *inherent* in them, that the motion of nature is determined not by nature itself, but by a divine design *external* to it: “Individuals in nature exist not for themselves but to serve some purpose. The purpose of matter is not set by matter itself, since the existence of individuals cannot be explained from the matter. The purpose of matter is set by some design. The designer created his design with purpose, and he implanted into matter all the conditions of the unfolding of its design .” This argument relies on vitalism. This time it is not our intention to appraise vitalism. However, so much is certain that the vitalist fever is subsiding in the scientific public, and an increasing number of most excellent scientists claim that in order to explain phenomena such as those of regeneration mentioned by Csiszár, there is no need to resort to vitalism.

It is doubtless that biology as a science is being born only right now, developing its own methods, creating its fundamental conceptual system. During a phase like this, teachers of biology can adopt one of two attitudes: *Either* they train students for humbleness towards facts, for scientific ethos, to avoid being superficial in assessing the realm of concrete, to try and address *reality* itself instead of *opinions*, and to remain silent about those things of which they have no clear and demonstrable knowledge. The original democracy of natural science has to be emphasised: its facts and theories are testable by anyone, and its progress is achieved through this testability. This is how scientific education becomes democratic education. *Or* they set as a goal of natural science, instead of a ceaseless examination of facts, to provide a “well-arranged and comforting *final* explanation”, which “makes our existence meaningful and purposeful”. But this educational attitude is *anti-scientific* and *anti-democratic*. It is anti-scientific because it strives for immediate *final* explanation, and thus it tries to make science, at a certain degree of knowledge, as stiff and ideological as was aimed by vulgar materialism at its time. It is anti-democratic because democracy does not need biology to make life “meaningful and purposeful”: a democrat wants to achieve it through

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<sup>1</sup> Of course, this totality is not the same as Csiszár’s false totality concept borrowed from vitalism.

<sup>2</sup> Such a radical revision of materialism, since it expands the concept of matter, reopens the possibility of a great monist unity of phenomena.

social existence. He can have only one norm in science: to boldly face the facts and never to view any result as final. Only through such an attitude could man gain his increasing power over nature.

Finally let us address the question: what makes a part of intelligentsia “get rid of the domination of matter in natural science” and find a “meaning of life” there?

It is the fact that during the Horthy-regime,<sup>vii</sup> the better part of intelligentsia was not able to see a way out of the terribly unfriendly and money-grubbing society, since there was no progressive internal force to give the promise of finding the meaning of its existence in social struggle. This is why its revolt was shifted from the world of social action into literature—or into the natural sciences. This romantic, anti-capitalist revolt, unsoothed in social struggles, is the root of the attitude that expects ideology from the natural sciences. This attitude, despite its benevolence, has never been progressive, and by today it has lost all its *raison d’être*: today the meaning of our existence is provided by the building of people’s democracy, a better society; and science can regain, in a certain sense, its autonomy.

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## Translator’s notes

<sup>i</sup> The paper appeared in 1947 in the journal *Embernevelés* [Human Education] (3/2: 63-66), which was the journal of the Hungarian Pedagogical Trade Union. The paper is a reply to an article published in the same issue (pp. 56-63), written by Vilmos Csiszár, a professor of biology and veterinary science. In his paper entitled “Élettudomány és világnézeti nevelés” [Life science and ideological education], Csiszár argues that higher level education has the task of providing students with “general biological knowledge synthesised by a uniform ideology”, and that this ideology “can hardly lack the spiritual element” (57). He argues that a purely materialistic ideology does not suffice because some phenomena, such as the cell-division of spermatozoa, cannot be explained on purely materialistic terms. Rather, one has to see that processes follow a design not inherent in matter, and that this design realizes the purpose conceived by the designer.

<sup>ii</sup> The word ‘ideology’ in the title, as well as in the text below, is meant to express a ‘world view’ in the sense of the German term *Weltanschauung*. In the title, and at some other occurrences, Lakatos uses a Hungarian term [*világnézet*] which is the German’s literal translation, having no exact match in English, but at other places (like where the mark is) he also uses the term “ideológia”. While this term tends to have a negative connotation (i.e. distorted, misleading world view), I am not able to identify any intention of the author to differentiate between the senses of the two terms, so I translate both of them as ‘ideology’.

<sup>iii</sup> My translation. Erik Molnár’s *Dialektika* was a collection, compiled in 1946, of papers written by him in the 1930s. These papers provided the chief Hungarian source on Marxist dialectics to the then largely illegal Communist movements. Lakatos, who seems to have learnt much of his Marxist knowledge from these writings, published a highly praising book review of the collection (*Valóság* 2/3-5: 75-78), at least by his strictly critical standards.

<sup>iv</sup> My translation. Unfortunately, I was not able to identify the quotation in Engels’ *Dialectics of Nature*.

<sup>v</sup> Translated by Abraham Fineberg. See Lenin: *Materialism and Empirio-criticism*, Ch. 5 (“The Recent Revolution in Natural Science and Philosophical Idealism”), Sect. 2 (“Matter Has Disappeared”). <http://www.marxists.org/archive/lenin/works/1908/mec/five2.htm#v14pp72h-258>

<sup>vi</sup> Translation taken from: Stalin: *Problems of Leninism*. Foreign Languages Press, Peking, 1976. P. 837. (Lecture: “Dialectical and Historical Materialism”. <http://www.marx2mao.com/Stalin/DHM38.html>)

<sup>vii</sup> Miklós Horthy was the Regent of Hungary between 1920 and 1944. He governed Hungary in a conservative authoritarian fashion (especially after 1938), which contributed to the country’s siding with Germany in World War II.