Pregledni rad
UDC: 165.73Merton(098.83).
Primljeno: 17.02.2020.
Odobreno: 04.03.2020.

Maja Korolija[1]
Institute for Multidisciplinary Research, University of Belgrade

SCIENCE AND SOCIETY: MERTON'S SCIENTIFIC NORMS IN THE LIGHT OF THE MARXIST CRITIQUE OF POSITIVISM

Abstract:

Through this paper, it is the author's intention to present Merton's (Robert King Merton) scientific norms (CUDOS), which the author finds to be representative of the positivist framework of ideal-type science activity, in the perspective of the Marxist critique of positivism. Using the dialectical method, the author also analyzes the role of science in society from a Marxist perspective, while presenting the Marxist critique of the basic elements of positivist methodology. This is important in order to better examine and to show what are the similarities and what are the differences in the interpretation and application of the scientific ethos, as well as the role of science in society in the positivist and Marxist paradigms. In the conclusion, the author shows how these differences manifest themselves in terms of the relationship of the science to the dominant political ideology and social relations.

Key words: *Robert K. Merton, positivism, CUDOS, Marxism, science, society.*

INTRODUCTION

The basic intention of the author of this paper is to grasp the position of science and its role in society in the Marxist perspective, in the context of the tenets of Merton's scientific ethos. Given the very common, in social sciences, notion of value-free and apolitical science, in this paper the author will also show the Marxist critique of the basic elements of the positivist perspective. The author will focus on the methodological aspect of the critique, the one relevant to the analysis of Merton's ethos and the treatment of the relation between science and society.

[1] Maja Korolija, Institute for Multidisciplinary Research, University of Belgrade, Email: mkorolija@imsi.rs
Acknowledgements: This work was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Contract No. 451-03-68/2020-14/200053).

Robert Merton, the founder of the sociology of science, was to an extent aware of the contradictions between the capitalist social order and the principles under which, as he saw it, the science (should) operate (Kalleberg, 2010). However, his methodology and approach to science was and remained a dominantly positivist one (Bernstein, 1978). In order to grasp his scientific ethos from the Marxist perspective one first has to acquaint oneself with the basic elements of the Marxist critique of positivism.

MARXIST CRITIQUE OF POSITIVISM

In the first thesis on Feuerbach, Marx initiates his critique of Feuerbachian materialist philosophy. The implications of these views are relevant for the critique of positivism today, and they also enable us to grasp the differences between two perspectives in methodological terms.

The chief defect of all hitherto existing materialism—that of Feuerbach included—is that the thing, reality, sensuousness, is conceived only in the form *of the object or of contemplation*, but not as *sensuous human activity*, *practice,* not subjectively. Hence, in contradistinction to materialism, the active side was developed abstractly by idealism—which, of course, does not know real, sensuous activity as such. Feuerbach wants sensuous objects, really distinct from the thought objects, but he does not conceive human activity itself as *objective activity*. Hence, in the *Essence of Christianity*, he regards the theoretical attitude as the only genuinely human attitude, while practice is conceived and fixed only in its dirty-judaical manifestation. Hence he does not grasp the significance of "revolutionary", of "practical-critical", activity [Marx, 1845/1969, p.13].

In other words, Marx (1845/1969) considers Feuerbach's materialist philosophy not materialist enough. The Marxists' view is that although the theorists of positivist orientation base their claims on the empirical data they fail to fully comprehend social reality. By not taking into account social phenomena in their relation to social totality and history the positivists lose track of the importance of practice for social analysis.

It is a fundamental thesis of dialectical materialism that praxis forms the criterion of theoretical truth. The accuracy or inaccuracy of the intellectual reproduction of objective reality existing independently of our consciousness, or rather our

degree of approximation to it, is verified only in praxis and through praxis [Lukács, 1981, p. 22].

There are various forms of positivism, but for the purpose of this paper the author will be concerned only with the elements of positivism relevant to the analysis of Merton's scientific norms. As already mentioned, this paper focuses primarily on the assumptions of positivism as a research philosophy. When considering positivism as a research philosophy it is important to know that positivism starts from (ontological) assumption that the reality exists on its own (independently from the perceiving subject) and that it can be examined using value-fee method (as a guarantee of objectivity). Thus, objective facts reflecting phenomena in nature and society are produced (McCarthy, 1988). Despite diversity and new forms positivist position assumed with time, the author's stand is that for the representation of the basic common elements of this outlook the adequate thing to do is, first and foremost, to evoke the views of the sociologist Auguste Comte and the philosopher Karl Popper.

According to Auguste Comte, the founder of sociology, the aim of sociology is to determine the nature of human society, as well as to find out the principles and laws that make the basis of the society's growth and development. For Comte, social scientists should approach social phenomena the same way natural scientists approach natural phenomena. In other words, in methodological terms, sociology is supposed to follow the example of natural science. To Comte, sociology is the last stage in the study of the world around us, and its subject is society. Except for the subject of its study it should not differ from other (natural) sciences (Comte, 1856/2009).[2] Albeit renowned for its critique of (early) positivism, for expounding free conceptual constructions (see Popper, 2002), and also for its critique of Marx's historical method (Popper, 2011), the prevailing perception is that Popper's critique improved positivism (Romm, 1991), whereas for his critique of Marx's historical method the same cannot be said. Popper's claim that Marx's historical method, as also its application, is *irrefutable* and, consequently, a pseudoscience

[2] Here one should also bring up the sociologist Emile Durkheim which, although not in agreement with certain Comte's views, is responsible for improving (Comte's) positivism. He held that sociology as science is supposed to foresee the effect of specific changes in social organisation. He introduced comparative method, and advocated the view that sociology should limit itself to the study of social facts, so as to achieve objectivity (see Durkheim, 1964).

(Popper, 2002; Popper, 2011)[3], proved untenable[4]. It is also possible that both of these Popper's criticisms (along with the mode of their reception) were responsible for him being largely regarded as a positivist, notwithstanding the fact that he never saw himself that way.[5]

What positivism aims at is the science that provides reliable explanation for the subject a particular scientific discipline is designed for. Accepted assumptions are (provisorily) successful explanations—results. Results are closely linked to data, and therefore to disciplines. This link, when it comes to social science, is best observed on the example of historiography, where evidence and interpretations are indeed firmly tied (Pahre, 1995). For the positivists, with some variations, characteristic attitude is that science is the most reliable form of cognition of the world around us (see Rosenberg, 2011). The central aspects of the sociological positivist tradition, drawing upon traditions in the natural sciences, are: primacy of ontological realism, advocacy for objective value-free analysis, focus on identifying spatio-temporally invariant (*i.e.*, ahistorical) social laws, strong preference for direct empirical evidence, and distaste for overreliance on ungrounded conceptual notions (York, 2006, p. 427). For the purposes of this paper, we will address the Marxist critique of objective value-free analyses, the preference for direct empirical evidence, and a focus on the identification of ahistorical social laws.

[3] In order to find a criterion for the demarcation between scientific and pseudo-scientific theory, Popper comes to the notion of *falsifiability*, *i.e.* the position that, in order for a theory to be scientific, a theory must make predictions that can, in principle, be false. In other words, theory must be refutable.

[4] Among other things, physicists Alan Sokal and Jean Bricmont have criticized *falsifiability* because it does not describe the way science really works. They point out that theories are used primarily because of their successes, not because of the failures of other theories (Sokal, Bricmont, 1998).

[5] Significant similarities between Comte and Popper in terms of their attitude towards science speak in favor of perceiving Popper as a positivist. Both Popper and Comte believe that the task of the science is to discover "the laws governing the connections between phenomena in the universe", both criticize metaphysical thinking (Popper's critique of 'essentialism'), "both Comte and Popper call for a scientific logic which unites 'theory' with the realm of 'observation'". One of the most important differences between Popper and Comte when it comes to their methodology is that Popper, unlike Comte, emphasizes "importance of deduction as the logic of science", while Comte in the domain of scientific logic is a supporter of the "interplay between inductive and deductive logic" (Romm, 1991, p. 5).

The philosopher coming from the Marxist tradition of the Frankfurt school, Jürgen Habermas sets forth the thesis that value-free sociology, as the social science in general, does not have emancipatory character. That is why, for him, "[t]he positivistically cleansed demarcation set between knowing and evaluating of course represents less a result than a problem" (Habermas, 1988, p. 265). The thing is that the value-free science, demarcated in a positivist way, according to Habermas, "protects from the self-reflection, and thus generally questions any long-term rationalization of the power" (Habermas, 1986, p. 105). Thus, the science, and the social science in particular, turns into technical knowledge used for perpetuation of the existing social system. In sciences such as sociology this leads to examining only the regularities between particular variables, and the society as a whole composed from contradictory parts disappears (Habermas, 1988). In other words, Habermas remarks that in social science liberated from value-centred notions, and operating exclusively along the lines of theoretico-empirical principles, what is lost is the unity of theory and practice, of key methodological importance for Marxism—the fragmentation of the society as the subject of study takes place. For the Marxists, epistemology should be a theory on how the knowledge is developed through human practice, and not through immutable corpus of knowledge (McCarty, 1988).

Within the concept of society as ahistorical totality Marx could still hold together what later fell apart into the specific subjects of the separate social sciences. The consoling promise of a "synthesis" *post festum* cannot restore what must be lost in the gaps between the various sectors of economics, sociology, political science, and jurisprudence: the system of human social life as such. ... Certainly, on the basis of their division of labor, several of the social sciences have meanwhile made the proud advance in knowledge that enables them to draw abreast of the natural sciences. However, this progress has exacted a price which is imposed on the natural sciences to a lesser degree than on the sciences of society, especially when they themselves are no longer in any way aware of this cost [Habermas, 1988, p. 206].

The harmfulness of the tendency to acknowledge exclusively direct empirical evidence even in the field of natural sciences is demonstrated in the best way in the early positivism on which the Vienna circle built major part of its philosophical principles. Namely, the early positivism strongly destabilized the notions not directly predicated on empirical observation. Such attitude caused the rejection of some of the most important scientific achievements of the 19th and the 20th century. For instance, the acclaimed physicist Ernst Mach, a proponent of a stern

positivist philosophy, rejected the notion of atoms and Einstein's theory of relativity on the grounds of its dependence on a theoretical construction without immediate empirical references (Goldstein, 2005, p. 85). It should be noted that Einstein himself rejected (early) positivism because he understood that its philosophical prejudice unjustifiably limits the insight into natural phenomena (which is the reason why he was criticized by Popper, 2002). He claimed that this prejudice "consists in the faith that facts by themselves can and should yield scientific knowledge without free conceptual construction" (Einstein according to Rigden, 2006, p. 47). Regardless of the existence of a tendency towards adjusting positivist principles (through their improvement) to the specificities of social sciences, according to the Marxists such approach enables dominant structures to "not only interpret the phenomenon of science, but by employing various channels they are in a position to affect the direction and course of scientific research, particularly in the field of the social sciences, influencing theoretical analysis as well as the interpretation of the results obtained" (Mikulinski, Richta, 1983, p. 106). In the social sciences, such as sociology, the positivist tendency leads to social scientists often imitating the natural sciences at all costs in order "to do with society and history what they believe physicists have done with nature" (Mills, 1963, p. 569).

Such a view often seems to rest upon the hope that if only someone could invent for "the social sciences" some gadget like the atom bomb, all our human problems would suddenly come to an end. This rational and empty optimism reveals, it seems to me, a profound ignorance of (1) the role of ideas in human history, of (2) the nature of power and its relations to knowledge, and of (3) the meaning of moral action and the place of knowledge within it [Mills, 1963, p. 569].

Also, one of the crucial objections to positivism coming from the camp of Marxism is based on the critique of the ideas of existence of perennial immutable processes in the context of social phenomena. "Naturalistic/positivistic schemes assume that there are timeless and invariant processes in the social universe, much as there are in the physical and biological realms" (Turner, 1985, p. 25). In the context of social sciences, such as economy, this means that production relations, division of labor, money, etc., are perceived "as fixed, immutable, eternal categories" (Marx, 1969, p. 117). By that fact alone, the scientists, according to Marx (1969), are not concerned with "historical flow" creating specific production relations, but rather by taking into account given production relations they form a theoretic framework for the analysis of social phenomena. Without the understanding of the history of

the emergence of production relations, it is impossible to explain both social relations and social awareness in a specific system.

In the social production of their existence, men enter into definite, necessary relations, which are independent of their will, namely, relations of production corresponding to a determinate stage of development of their material forces of production [Marx, 1859/1976, p. 3].

In the context of the capitalist system this means that the majority of population, in order to make their living, has to sell its work to the owners of the means of production. According to Marx "[t]he totality of these relations of production constitutes the economic structure of society, the real foundation on which there arises a legal and political superstructure and to which there correspond definite forms of social consciousness" (Marx, 1859/1976, p. 3). The fact that in the capitalist system there is this type of bond between political and economical sphere is precisely what allows the creation of conditions "that facilitate the reproduction of these relationships and the continuance of the economic system (although contradictions are always present and provide the potential for radical change)" (York, Brett, 2006, p. 432).

The political economist Harry Braverman shows how the expansion of the monopoly of the capital transformed entire society, since each and every aspect of social life is integrated into the market world. Human desire and need for food and entertainment are governed through market. These structural arrangements provide stability when measured in a delimited period of time, such as tens or even hundreds of years. The capitalist mode of production acts as the fundamental condition that generates its own social dynamic and determines the relations throughout the whole world. Nonetheless, Marxism's key insight is that, although all-pervasive and seemingly enduring, underlying conditions, such as these related to capitalism, are not unchangeable (Braverman, 1998). The history of human societies testifies to the possibility of their radical change, and the shift in politico-ideological systems resulting in the improvement of the living conditions of a population. The Marxist perspective, by taking into account in its analysis of a society the historical context as a major agent for the validity of an analysis, argues that production relations in society—as much as they might seem inalterable—are the result of the organization of society and work (Marx, 1974). To see them as a physicist sees gravitation in no way contributes to the quality of the analysis. Such perspective, according to the Marxists, ends up by alienating the science from itself.

Merton himself was essentially a functionalist and a positivist. Nonetheless, to see him only through this lens would neglect in an analytic sense intrinsic specificities of his views, which sometimes even diverged from this standpoint, assuming certain positions closer to the Marxist standpoint. We will examine the Marxist thesis that Merton's scientific ethos only on first glance goes beyond positivist framework, whereas in ideological terms it essentially remains within liberal-democratic paradigm, ultimately without transcending functionalist postulates in sociology.

MERTON'S NORMS SEEN IN THE LIGHT OF MARXISM

By dealing with the relation between science and society for the first time explicitly in his paper *Science and the Social Order* (Merton, 1938/1973), Merton mentions the ethos of science, composed of the following norms: intellectual honesty, integrity, organized skepticism, disinterestedness, and impersonality. Although he does not include ethical attitude towards practical social functions of science into the ethos of science, he however perceives "the contradiction of this viewpoint and its unwelcomed consequences for science" (Milić, 1995, p. 126). Merton finds that this reflects in the incapability of scientists to prevent the abuse of science in its practical application, and so "social uproar against such abuses transfers also onto science, deemed their root cause" (Milić, 1995, p. 126).

Thus, when newly discovered gases or explosives are applied as military instruments, chemistry as a whole is censured by those whose humanitarian sentiments are outraged. Science is held largely responsible for endowing those engines of human destruction which, it is said, may plunge our civilization into everlasting night and confusion. Or to take another prominent instance, the rapid development of science and related technology has led to an implicitly antiscience movement by vested interests and by those whose sense of economic justice is offended [Merton, 1938/1973, p. 261-262].

For Merton (1938/1973), the contradiction springs also from increasingly lesser possibilities for an average individual to understand science. "Average individual has to take assertions offered as scientific knowledge at face value, and thus favorable conditions are created for mysticism to thrive alongside esoteric science, and for various propaganda misuses on the behalf of science" (Milić, 1995, p.126).

With the increasing complexity of scientific research, a long program of rigorous training is necessary to test or even to understand the new scientific findings. The modern scientist has necessarily subscribed to a cult of unintelligibility. There results an increasing gap between the scientist and the laity. The layman must take on faith the publicized statements about relativity or quanta or other such esoteric subjects [Merton, 1938/1973, p. 263-264].

Finally, he considers that the norm demanding organized skepticism (to be discussed in greater length further on), *i.e.* the request for the re-examining of everything deemed "sacred", is also a reason for the hostile attitude towards science in society (Merton, 1938/1973). According to the sociologist of science Vojin Milić (1995), confronted with these contradictions Merton (1938/1973) does not try to find a solution in asking the question of existing social relations. His aim is to preserve social stability, and the solution consists in separating these incompatible "sentiments" one way or another. Given that liberal systems permit this separation, with the preservation of a limited autonomy of science, Merton chooses them as the most adequate environment for the development of science. He believes that "with time provisorily incompatible elements of social awareness will gradually integrate" (Milić, 1995, p.127). It is interesting to stress that Merton's essay ends with the following remark:

This paper does not present a program for action in order to withstand threats to the development and autonomy of science. It may be suggested, however, that as long as the locus of social power resides in any one institution other than science and as long as scientists themselves are uncertain of their primary loyalty, their position becomes tenuous and uncertain [Merton, 1938/1973, p.266].

The taking of this stand is a consequence of his theoretical position in sociology in general. Since Merton was under greater influence from (neo-)positivism than from Marx's theory (see Holton, 2004), his approach to the analysis of social phenomena was essentially a functionalist one. He thought that the social system, just as any other system (*e.g.* an organism), is made of parts mutually connected, exerting through their activity an impact on a society as a whole (Elwell, 2013). But, as opposed to "old" functionalists, Merton emphasized that beside institutions there are also *functional alternatives*, which are capable of performing the same functions as the institutions specially tasked to do so. In his opinion, it is impossible to understand properly the emergence and persistence of alternatives without taking into account social aspects which are dysfunctional. And, for this

reason, aiming at dynamizing the functionalist approach, Merton introduced also the notion of the dysfunction [6]. The concept itself of the functional alternative is important, for it diminishes the tendency to necessarily approve *status quo* when subscribing to the perspective of functionalism (Ritzer, 2010). Thus, albeit he did believe that institutions, in the last resort, are useful to society, Merton held that certain phenomena in society at times can be functional for one population, and dysfunctional for another (Elwell, 2013).

It is worthwhile to also underscore that in his speech delivered on the occasion of the receiving of Bernal's award, Merton stated that Bernal's book *The Social Function of Science (1939*) had massive impact on his thought. According to Stephen Turner, this book was obviously a source for Merton's norm regarding "communalism" too (Turner, 2007)[7]. In his later and much widely read paper, *The Normative Structure of Science* (Merton, 1942/1973), Merton speaks about institutional imperatives indispensable for a society that wants to develop science along the lines of scientific achievements, and these imperatives are: universalism, communalism, disinterestedness, and organized skepticism, known also in the form of the acronym CUDOS (communalism, universalism, disinterestedness, organized skepticism)

[6] The three main flaws of functionalism according to Merton are: *the postulate of the functional unity of society, the postulate of universal functionalism and the postulate of indispensability*. The postulate of the functional unity holds that all standardized beliefs and practices are functional for society as a whole as well as for individuals in society. This perspective implies that the various parts of a social system must show a high level of integration. Merton maintained that this generalization cannot be extended to more complex (modern) societies. The postulate of universal functionalism holds the idea that all standardized social and cultural forms have positive functions, but according to Merton for example "rabid nationalism can be highly dysfunctional in a world of proliferating nuclear arms". The postulate of indispensability leads to the idea that all (current) structures and functions are functionally necessary for society. But Merton believed that there are various structural and functional alternatives to be found within society (Ritzer, 2010, p. 252-253).

[7] According to Turner (2007), the term "Science as Communism" is from J. D. Bernal (1939: 415). Also, Merton emphasizes anti-secrecy, the theme from the "The Social Function of Science" (1939: 150-1, quoted directly from Merton, 1942: 122), and the incompatibility of the scientific ethos with technology if it is someone's property (which is according to Turner (2007) topic of debate in the "frustration of science" (1935)).

Merton's norm calling for *universalism* implies that assertions on truth, notwithstanding their source, should be exposed to impersonal criteria, previously determined and necessarily in keeping with the observations on the basis of a previously ascertained knowledge. This norm refers to the view that the acceptance of a particular scientific insight as true should not depend on personal or social profile of a scientist. Merton regarded universalism as "rooted deep in the impersonal character of science" (Merton, 1942/1973, p. 270), whereas he perceived the very institution of science as a part of a broader social structure in which this norm is not always fully integrated.

When the larger culture opposes universalism, the ethos of science is subjected to serious strain. Ethnocentrism is not compatible with universalism. Particularly in times of international conflict, when the dominant definition of the situation is such as to emphasize national loyalties, the man of science is subjected to the conflicting imperatives of scientific universalism and of ethnocentric particularism [Merton, 1942/1973, p. 271].

Likewise, the deprivation of the possibility to advance in scientific career on any other grounds except the absence of competence, according to Merton, implies obstructing the progress of knowledge (Merton, 1942/1973). Merton also noted that the ethos of democracy implies as its supporting norm universalism, which is "deviously affirmed in theory and suppressed in practice" (Merton, 1942/1973, p. 273). According to Merton, possible obstacles in the application of the ideals of scientific ethos should also be sought in *laissez-faire* democracy, which "permits the accumulation of differential advantages for certain segments of the population, differentials that are not bound up with demonstrated differences in capacity" (Merton, 1942/1973, p. 273). In such conditions, Merton believes, "new technical forms of organization must be introduced to preserve and extend equality of opportunity. The political apparatus may be required to put democratic values into practice and to maintain universtalistic standards" (Merton, 1942/1973, p. 273).

The Marxist perspective in some elements can express agreement with the spirit of this Merton's norm. However, Merton's refusal to situate his norms in the context of social class analysis make some of his views unacceptable to the Marxists. According to the Marxists standpoint, under the mask of a value-free attitude the particular ruling class interest to preserve existing economic order is smuggled. For the Marxists, when the science is openly put in the service of the proletariat only then it starts to link its value-orientation to the „commonality", because for

them it is precisely the interest of the proletariat that corresponds to the commonality, *i.e.* the true universality (see Bernal 1952).

All previous historical movements were movements of minorities, or in the interest of minorities. The proletarian movement is the self-conscious, independent movement of the immense majority, in the interest of the immense majority. The proletariat, the lowest stratum of our present society, cannot stir, cannot raise itself up, without the whole superincumbent strata of official society being sprung into the air [Marx, Engels, 1848/1986, p. 44].

According to the Marxist theory, capitalist production relations are the key reason behind the impossibility to put to practice in a satisfactory way aforementioned universality in such a system (Bernal, 1939). Given that the capitalist system lies on private ownership, jeopardizing it in capitalist system means jeopardizing the system itself. The key function of the state is to protect the existing order, even if it demands to limit the rights of the capitalists themselves in order to carry out the pacification of the (scientific) workers (Ianoni, 2013). On this issue more will be said when it comes to the analysis of the disinterestedness as a norm.

Communalism is the norm which Merton (1942/1973) linked with the societies in which there are possibilities for open communication. "The institutional conception of science as part of the public domain is linked with the imperative for communication of findings. Secrecy is the antithesis of this norm; full and open communication its enactment" (Merton, 1942/1973, p. 274).

This norm implies the belief in common possession of the results of scientific work. In the broadest sense, this norm is about scientific achievements being a product of social collaboration and a part of social community. The rights which a scientist who discovered something has at his/her disposal are severely limited.

The scientist's claim to "his" intellectual "property" is limited to that of recognition and esteem which, if the institution functions with a modicum of efficiency, is roughly commensurate with the significance of the increments brought to the common fund of knowledge. Eponymy—for example, the Copernican system, Boyle's law—is thus at once a mnemonic and commemorative device [Merton, 1942/1973, p. 273].

In conflict with this norm is the position of technology as private ownership in the capitalism. "Patents proclaim exclusive rights of use and, often, nonuse" (Merton

1942/1973, p. 275). That is why Merton (1942/1973) points out that scientists in this situation advocate some form of socialism or patent their works in order to ensure their public use. “Einstein, Milikan, Compton, Langmuir have taken out patents“ (Merton, 1942/1973, p. 275).

With regard to the fact that science in modern society is an extremely important agent for the development of that society, as well as that, like the scientist him/herself, it draws both resources and ideas from the history of entire human community, the notion that the use of patents can be limited by the will of the “owner“ is perilous, for both the society and the development of the science as such (see Bernal, 1939). In this way not just the society but also the science itself subordinates to the principle of profit. Reasoning along the lines of business logic suggests that “it is more profitable for us to keep digging the coal if we want to warm ourselves”, despite the science telling us that one gram of uranium gives the same amount of energy as three tons of coke (Savić, 1978, p. 99). To come to this conclusion it suffices to start “assessing investment costs of installations, extraction of ore, human resources education, amortization, etc.” like a businessman would do it (Savić, 1978, p. 99).

The conclusion of a business making American, Englishman, or some other businessman, contains that same logic according to which many inventions lie for decades in drawers of big companies. And this logic is not in keeping with the logic of scientifically proven facts … So, as long as humans produce for the market, as long as they produce merchandise, they will remain slaves of this work by which they always produce more then they obtain [Savić, 1978, p. 99].

In the present era an echo of this norm can be recognized in projects and scientific efforts, such as the one made public in the Berlin Declaration on Open Access to Knowledge in Sciences and Humanities.[8]

When he speaks about *disinterestedness* as a norm, Merton underlines that it must not be equated with altruism, nor should “disinterested” action be understood as synonymous with egoism. Here, the issue at stake is not personal or individual

[8] *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* is an international declaration on open access and availability of knowledge signed on October 22. 2003. in Berlin. It is the result of three day conference on the subject of open access organized by the German Max Plank Society, and as its goal it has promoting the internet as a platform enabling “a vision of a global and accessible representation of knowledge“.

motives of the scientists, but rather institutional (and also methodological) attribute. The equation sign between these notions would bring about the confusion between the institutional and motivational level of analysis. There is no evidence to support the claim about the scientists as the people who, by themselves, are endowed with an extraordinary moral integrity.

A passion for knowledge, idle curiosity altruistic concern with the benefit to humanity, and a host of other special motives appears to have been misdirected. It is rather a distinctive pattern of institutional control of a wide range of motives which characterizes the behavior of scientists [Merton, 1942/1973, p. 276].

According to Merton (1942/1973), the request for this norm has its basis in both public and testable character of science, which greatly contributed to scientists' integrity. Also, Merton (1942) remarks that a scientist does not have vis-à-vis relationship with his/her "client" the same way a physician or a lawyer has, and thereby the possibility of the exploitation of ignorance, as well as "client's" dependency, is lessened in scientific profession. "The abuse of expert authority and the creation of pseudo-sciences are called into play when the structure of control exercised by qualified compeers is rendered ineffectual" (Merton, 1942/1973, p. 277).

As with the *universalism* as a norm, Merton underscores the importance of institutions in the implementation of this norm. Nevertheless, taking into account the Marxist understanding of the relation between science and society, the change in institutions is not sufficient (and sometimes not even possible) in order to have the implementation of the norms of disinterestedness (as well as universality) carried out in today's social order. As already touched upon, disregarding all distinctive interests of the state or political authorities in relation to the capitalists, its key function according to the Marxist perspective is to protect private ownership, *i.e.* to upkeep the power of the ruling class.

However, the power the state has *per se* is not enough to perform these functions. Their implementation demands the use of the state apparatuses—the institutions, among which cultural and political ones as well. The Marxists consider that despite the existence of (manifestly) opposed functions between different institutions, as also between institutions, on one hand, and the state and the capital, on the other, their common (latent) function is the perpetuation of the existing order (Ianoni, 2013). Thus, if a specific interest of a certain institution gets into a conflict with its state apparatus function it will most probably be put aside, as, by the way, all other

elements not complying with the urgent needs of the capitalist system. According to the historian of science John Desmond Bernal, this is why it is essential for the scientists to become socially, economically, and politically aware, since the science in a considerable measure affects the mode of production, and thus its influence on the social system itself is indeed enormous. Bernal hoped for a resistance to such a state of affairs from his colleagues the scientists. Yet, the majority of scientists still display the tendency either to conform to such state of subordination, or to abandon the world of science (Bernal according to Cross, Price, 1988).

Buying out patents, supporting obsolete plants, fixing cartel prices according to manufacturing costs of the worst plants, secrecy in scientific research work, fear of innovations that threaten depreciation of the old capital stock, etc.—such are everyday facts of industrial reality in the epoch of monopoly capitalism [Rubinstein, 1931/1971, p.48].

Merton (1942/1973) then invokes *organized skepticism* as a norm. The crucial matter for this norm is stressing scientific criteria when accepting a theory. In science, this norm acts as a shield against frauds and nonsense (*e.g.* pseudoscience). It is of key importance for both scientific methodology and scientific institutions.

The scientific investigator does nor preserve the cleavage between the sacred and the profane, between that which requires uncritical respect and that which can be objectively analyzed. As we have noted, this appears to be the source of revolts against the so-called intrusion of science into other spheres. Such resistance on the part of organized religion has become less significant as compared with that of economic and political groups [Merton, 1942/1973, p. 277-278].

At the end of the outline on this norm, Merton (1942/1973) concludes that what one finds at the basis of the perception of this norm as a threat is much more an interest for preserving a particular power distribution then a specific clash regarding church or economic dogmas.

In this norm too it is possible to recognize a certain kind of compatibility of the very understanding of science in the Marxist and the positivist perspective. Yet, when it comes to the understanding of the relation between science and society these two perspectives show divergences. Although in the Marxist perspective there might be an agreement that the very maintaining of the power is an intrinsic argument leading to organized skepticism being perceived as a menace, the basic reason for the power distribution being the way it is—the Marxists find in the economic system

as such. Hence, conceiving the power distribution as a factor independent from economic parameters is, according to the Marxist perspective, wrong.

The economy, according to the Marxists, is precisely what basically constitutes the position of power in a given society (Palermo, 2019). Thus, any threat to the existing economic system threatens to undermine aforementioned positions of power, *i.e.* the ruling class, whose interest is set on keeping the *status quo*. Also, in relation to the question of the norm of *organized skepticism* it is of interest to note that Merton cited anti-rationalism and centralized control of institutions as the basic hallmarks of a totalitarian society (in direct collision with this norm). The question arose as to whether these are the characteristics of the Soviet Union too? Through insisting on the anti-rationalism as one of the characteristics it can be inferred that Merton, as a matter of fact, excludes the Soviet Union from his treatment of the totalitarian society and has Nazism in mind (Turner, 2007).

In the context of Merton's essay *The Normative Structure of Science* it is worthwhile to go back to the theses of Vojin Milić. Although he does not ignore elements of this essay (*e.g.* the norm of communalism) which from the Marxist perspective can be positively assessed, Milić argues that this paper in the context of the development of Merton's ideas is his distancing from the Marxist theoretical position.

From this paper any relation of science with society is almost left out; more precisely, it is reduced to a concern of the scientific community with the scientific quality of the results of its own work that are presented before the society. Everything else is the scientist's professional ethics in scientific work. Even group and institutional moments in general scientific organization, without which the position of an individual scientist cannot be integrally comprehended, are sidelined. This nominalist approach is characterized, at the same time, by unilateral relying on value-normative aspect of social activity, typical for contemporary functionalism. Most of Merton's later research in the sociology of science will be undertaken in this thematic framework, of which only one went public before the end of the 1950s [Milić, 1995, p. 128].

And indeed, not going into the analysis of previous Merton's works, if one is to criticize from the Marxist perspective Merton's conception of scientific ethos in general (*Science and Social Order*), and especially his later focus on defining scientific norms (*The Normative Structure of Science*), this would be the key focus of that critique. Merton's primary focus in these lines is on the question of the way in

which it is possible to improve integration of scientific results and the profession of scientist into the existing social system by not jeopardizing some of the basic scientific principles, codified into scientific norms in his work. His considers that in the liberal-bourgeois order this can be done only with particular socio-economical reforms. Merton does not acknowledge an irremediable split between aforementioned principles, *i.e.* the norms and the capitalist order, which for the Marxists is reflected in the existence of the private ownership and the state as an obstacle to complete realization of the Enlightenment ideals (Bernal, 1939).

According to the Marxist perspective, it is necessary to raise the question in whose interest and with what results is the science used today? The sociologist Charles Wright Mills considers that at issue here are the interests of the state and corporations (Mills, 2000). That way the science becomes a tool available mostly to the rich (at the same time the most powerful) minority using it for the perpetuation of its oligarchic power. "[W]hen men of knowledge do come to a point of contact with the circles of powerful men, they come not as peers but as hired men" (Mills, 2000, p. 351). Such situation is in contradiction with the social importance of the "work done by the people of knowledge", since their duty is not solely to know "what is real and what is unreal", but also to communicate in public and to publicly rebut any statement providing inadequate information on the real state of affairs (Mills, 2000).

CONCLUSION

Regardless of the disputes between the Marxist and the positivist perspective, these two perspectives are not necessarily in collision on some of the basic assumptions of CUDOS. Their divergence is obvious primarily in the context of the search for the causes of the issues emerging in the very implementation of CUDOS. The rationale for the growing gap between these two perspectives is not in the poorly applied scientific method of one scientist as opposed to another, but in different philosophical or political perspective from which this question is approached. In the case at hand the important point of content is, as perceived by the Marxists, the positivist adoption of the idea of perennial immutable processes when dealing with social phenomena. Thereby, the capitalist system, along with the underpinning idea of the private ownership, are seen essentially as something in itself pre-given and immutable or, at least, as elements of a functional socio-economic order. This is

the reason behind firm reluctance of the scientists like Merton to engage with the basic postulates of the system, and their persistent claim that correcting certain elements of the system is sufficient and possible. According to Habermas, they do not think critically about the existing social order, because when "we disavow reflection *is* positivism (Habermas, 1972, p. vii). Such a position prevents them from distinguishing ideology from objective reality, which brings with it a series of difficulties in their theoretical production.

The Marxist theorist Bernal (1939) considers that if scientists want science to be the main force in the transformation of the civilization in a progressive direction it is necessary to expand among them the awareness of the social implication of their work, as well as the awareness of the need to change the position and the organization of the science along these lines. The prerequisite to do this are the scientists with the understanding not only of their scientific field, but also of the field of politics. Consequently, it is necessary for the scientist to become aware that it is impossible for him/her to be neutral in the conflicts with the anti-scientific tendency of fascism, or in the struggle for economic system based on equality. According to Bernal (1939), the scientists occupied by the analysis of the social and economical matters, also taking into account the critique of the existing military and civil programs, could easily come to the additional understanding of everything else necessary to be changed so as to secure scientific and social progress.

On the other hand, we currently face the hegemonic perspective of positivism that stresses the importance of evidence first and foremost. However, as much as evidence is important it is not sufficient, because the theoretical orientation within which this evidence is interpreted is "determined by our notion of this field and… our aims in its systematization" (Elgin, 1982 according to Suvin, 2009, p. 346).

The Marxists like Bernal, who accept the fact that what we deal with is a social system which can and must be changed, unhesitatingly argue that the final cause driving the scientific community towards making compromises when it comes to their own principles—is precisely the survival of the system based on the monopoly over the means of production. From the class perspective the positivists with theoretical aversion to politics, explaining it with the concern for the preservation of scientific objectivity, seam to act as enabling exactly the opposite. Not only can the science, in this manner, be seen as a slave to the ruling class, but due to the subordination to the profit and the state interests its development is to a great extent limited by the needs of the ruling class. According to the Marxist theorist

Georg Lukács (György Lukács) "self-understanding of the proletariat is therefore simultaneously the objective understanding of the nature of society" (Lukács, 1972, p. 149). Lukács (1972) claims that the superiority of taking class position in epistemological terms lies in that an ideologically mature working class—aware of its position and ineluctable need for its liberation—is the only one capable of understanding the totality of social relations, and consequently it's perspective is the only one identifiable with the scientific truth about society.

Due to all this, it seems useful to examine the possibility of revising the idea of value-free science with Marxist insights about society, because firm argumentation supports the position that only through participation in political life scientific community can truly protect scientific principles from abuses emerging as consequences of various ideological processes and particular interests.

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Maja Korolija[9]
Институт за мултидисциплинарна истраживања
Универзитета у Београду

НАУКА И ДРУШТВО: МЕРТОНОВЕ НАУЧНЕ НОРМЕ У СВЕТЛУ МАРКСИСТИЧКЕ КРИТИКЕ ПОЗИТИВИЗМА

Резиме:

Намера аутора је да се из перспективе марксистичке критике позитивизма, користећи дијалектички метод, осветле Мертонове (Роберт Кинг Мертон) научне норме („КУДОС“), које налази као репрезентативне за позитивистички оквир идеално-типске научне делатности, што се експлицира у самом Уводу рада. У поглављу Марксистичка критика позитивизма аутор указује на елементе који према марксистичкој перспективи представљају недостатке позитивизма као истраживачке филозофије, као и на непремостиви раскол, који из те перспективе постоји између пожељних научних норми и капиталистичког поретка. У поглављу Мертонове норме размотране у светлу марксизма аутор показује да је Мертонов примарни фокус усмерен на питање на који начин је могуће побољшати интеграцију научних резултата и професије научника у постојећи друштвени систем не угрожавајући неке од основних научних принципа. Он решење проналази у друштвено-економским реформама грађанског поретка, што марксистичка перспектива критикује као утопизам. У Закључку рада аутор сумира сличности и разлике у тумачењу и примени научног етоса у позитивистичкој и у марксистичкој парадигми, те како се оне манифестују и у погледу перспективе односа науке према владајућој политичкој идеологији и друштвеним односима.

Кључне речи: *Роберт К. Мертон, позитивизам, КУДОС, марксизам, наука, друштво.*

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[9] Maja Korolija, Институт за мултидисциплинарна истраживања Универзитета у Београду. elektronska adresa: mkorolija@imsi.rs
Acknowledgements: This work was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Contract No. 451-03-68/2020-14/200053).