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Basic Ethical Principles for the Development of Science (Sociology of R. K. Merton)

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Abstract: The article is devoted to the analysis of the concept of one of the most influential American sociologists of science of the 20th century, R. K. Merton. According to his teachings, the ethos of science is an emotional set of values and norms, which is considered mandatory for scientists. Norms are expressed in the form of prescriptions, preferences, permissions and prohibitions. With the growth of social conflict, divergences of norms, and ways of thinking of people develop to such an extent that the former orientation of these groups is overshadowed by great differences. They are formed in terms of institutional values. R. K. Merton identified universalism, unselfishness, skepticism, and collectivism as the basic norms of science. Ideas R. K. Merton on scientific norms are of particular relevance in those conditions when the very fact of contacts with representatives of the science of another state can turn out to be a turning point, if not tragic, in the fate of a particular scientist. Merton played a defining role in the development of sociology and philosophy of science in the post-war "golden period" of its construction, and still has great potential to contribute to modern discussions. Norms acquire particular relevance in those conditions when the very fact of contacts with representatives of the science of another state can turn out to be a turning point, if not tragic, in the fate of a particular scientist.

Keywords: Philosophy and Sociology of Science, Norms of Science, Universalism, Disinterest, Skepticism, Collectivism, Cultural Conditions, Existential Factors of Scientific Activity

1. Introduction

Scientists often wondered under what conditions the progressive development of science is possible? [1] Intuitively, each of them assumed that the growth of scientific knowledge occurs when there are such factors as freedom of opinion and freedom of criticism, when there is an open exchange of these opinions, when there are generally recognized criteria for assessing this knowledge, when these assessments turn out to be impartial, independent of belonging. to this or that scientific grouping, when there is a scientific community as such. However, such conditions were formulated at the conceptual level only in the second half of the 20th century. According to A J. Trevino, “Not long ago, at least within living memory, Robert K. Merton was regarded as one of the most prominent figures in post-World War II sociology—a “golden” era that deliberately attempted to bridge European theoretical approaches and American empirical research” [15].

One of the founders of this concept is R. K. Merton (1910-2003), the most influential American sociologist of the 20th century, taught at Columbia University for most of his career. According to K. Calhon, "Merton's influence stemmed from intellectual innovation and institutional leadership. This was facilitated by his clear prose style, which facilitated his work for teachers and research-oriented sociologists" [2]. With the name of R. K. Merton is associated with the emergence of a special area of sociological research: the sociology of knowledge (Wissenssoziologie). The term "knowledge" in this case «should be interpreted very broadly, since research in this area concerned almost the entire spectrum of cultural products (ideas, ideologies, legal and ethical beliefs, philosophy, science, technology). But whatever the concept of knowledge, the orientation of this discipline remains basically the same: it is primarily concerned with the

relationship between knowledge and other existential factors in a society or culture» [10]. Simonson speaks of mass persuasion: "Many of the book's themes remain relevant" and are relevant to the study of the contemporary media space, especially shedding light on its earlier years" [9]. At the same time A. Sica argues that Merton's writing is anachronistic, particularly in portraying a social world which is stable and more unified than fast-changing contemporary reality [8].

2. Main Components of R. K. Merton's Conception

According to Merton's concept, the sociology of knowledge acquires meaning in a certain set of social and cultural conditions. R. K. Merton describes the "real" and by no means "ideal" state of affairs in the scientific field as follows. With the growth of social conflict, divergences of norms, and ways of thinking of people develop to such an extent that the former orientation of these groups is overshadowed by great differences. Here, not only separate discourses develop, but the existence of one of them calls into question the validity and legitimacy of others. The coexistence of these conflicting viewpoints and interpretations in the same society leads to active mutual distrust between groups. In the context of disbelief, one no longer examines the content of beliefs and statements to determine whether they are valid or not, no longer substantiates statements with relevant evidence, but asks an entirely new question: how is it that these views are supported? "Thought becomes functionalized; it is interpreted in terms of its psychological, economic, social or racial sources and functions. This type of functionalization occurs when claims are challenged, when they seem so perceptibly implausible, absurd, or biased that the evidence for or against the claim no longer needs to be examined, but only the grounds for asserting it at all. Such alien claims are "explained" or "attributed" to special interests, unintended motives, distorted perspectives, social position, and so on. Within the framework of ordinary consciousness, this implies retaliatory attacks on the ideas of opponents; in more systematic thinking, this leads to mutual ideological analysis. The emphasis is on the difference between essence and phenomenon in the spheres of human thought, faith and behavior" [6]. There is an age-old problem of the consequences of existential influences on knowledge for the epistemological status of this knowledge. "Solutions to this problem, which assume that the sociology of knowledge is necessarily a sociological theory of knowledge, range from the assertion that "the genesis of thought has nothing to do with its validity" to the extreme relativist position that truth is "merely" a function of social or cultural grounds that it rests solely on social consensus and, therefore, that any culturally accepted theory of truth has a claim to validity equal to that of any other. The central point in all approaches to the sociology of knowledge is the thesis that thinking has an existential basis, since it is not determined immanently, and because one or another of its aspects can be obtained from extra-cognitive factors. In other words, any knowledge, including scientific knowledge, is sociologically conditioned" [6].

The ethos of science is an emotional set of values and norms that is considered binding on scientists. Norms are expressed in the form of prescriptions, preferences, permissions and prohibitions. They are formed in terms of institutional values. There is no clear definition of a correlative individual concept of scientific mind, scientific personality, or, to use Merton's term, "scientific consciousness". Nevertheless, it seems useful to understand this consciousness as a complex of typical worldviews, orientations, and professional qualities of a scientist's personality. Thus, scientific consciousness is an individual reflection of the non-individual (objective) and inter-individual (shared) scientific ethos.

The structure of Merton's works consists of the following components: 1) theoretical sociology (on the relationship between theory and research, functional analysis); 2) studies of social and cultural structure (anomie, bureaucracy and reference groups); 3) sociology of knowledge and mass communications; 4) sociology of science. Merton puts forward the following paradigm of the sociology of knowledge. 1. Where is the existential basis of intellectual works? a. social foundations: social position, class, generation, professional role, mode of production, group structures (university, bureaucracy, academies, sects, political parties), "historical situation", interests, society, ethnicity, social mobility, power structure, social processes (competition, conflict, etc.). b. cultural foundations: values, ethos, climate of opinion, type of culture, cultural mentality, etc. 2. What intellectual products are subjected to sociological analysis? a. domains: moral beliefs, ideologies, ideas, categories of thought, philosophy, religious beliefs, social norms, positive science, technology, etc. b. what aspects are analyzed: their choice (focuses of attention), level of abstraction, prerequisites (what is taken as data and what is problematic), conceptual content, verification models, intellectual activity goals, etc. 3. How are intellectual works related to the existential basis? a. causal or functional relationships: determination, cause, correspondence, necessary condition, conditioning, functional interdependence, interaction, etc. b. symbolic, organismic or meaningful relationships: consistency, harmony, coherence, unity, compatibility; expression, realization, symbolic expression, structural identities, internal connection, stylistic analogies, logical-semantic integration, meaning identity, etc. c. ambiguous terms for relationships: correspondence, reflection, close connection, etc. 4. Why does this connection exist? Explicit and hidden functions attributed to these existentially conditioned intellectual products. a. to maintain power, promote stability, orientation, exploitation, conceal real social relationships, provide motivation, guide behavior, deflect criticism, deflect hostility, provide reassurance, control character, coordinate social relationships, etc. 5. When do the imputed relations of the existential base and

knowledge arise? a. historicist theories (limited to specific societies or cultures). b. general analytic theories.

Discussing the normative structure of science, R. K. Merton defined universalism, unselfishness, skepticism and collectivism (communarism) as the basic norms of science. Universalism means that intellectual criteria, not the attributes of a scientist, should be the basis for judging the merit of scientific endeavor. Disinterest encourages the scientist to focus on the development of science, and not on personal gain. Skepticism suggests that the acceptance of ideas or results is based on critical appraisal rather than authority or tradition. Scientific research related to the verification of results is under the scrutiny of fellow experts. Collectivism calls for the exchange of information for the benefit of not only the scientific community, but society as a whole. Collectivism of thoughts means a community of people actively participating in the exchange of ideas in certain areas. Other authors have identified similar or related norms, mentioning honesty, objectivity, tolerance, doubts about authenticity, and selfless involvement, as well as rationality and emotional neutrality [5].

“There are parallels between these norms and components of the Protestant ethic of the seventeenth century. The norm of unselfishness, for example, could be reinforced by its resemblance to the idea of government or "calling"; gospel implications of a desire to glorify God by revealing and publicizing His plan of work. These same ideas were later reflected in the ideals of communism. There is strong support for the norm of universalism in the Calvinist emphasis on the equality of souls before God, and it can be assumed that organized skepticism could have received a significant impetus from the existing mutual suspicion. among those who could never be sure which of their family and friends were "saved" and who were "cursed." [6] At the same time, Merton paints a somewhat idealized picture of the system of informal influence. He seems to forget that this system is equally open to various forms of pathology. It suffices to mention nepotism, academic cliques and factions, hidden networks of exchange of favors, exploitation of one's position for selfish purposes, plagiarism, etc., to see other cases of deviation from the ideal of science prescribed by the scientific ethos.

Merton's work shows how human activities, attitudes and beliefs are regulated in ways of their "social position". Merton founded the study of science as a social institution in which behavior, rules, evaluation systems, and reward processes are socially localized and determined. “Like other social institutions, the institution of science has its own characteristic values, norms and organization. As in other institutions, in science there is a system of distribution of rewards for the achievement of goals” [7]. Merton's "cumulative advantage" theory helps draw attention to the feedback processes through which, for example, an initial academic assignment influences productivity and, as a consequence, subsequent patterns of employment and productivity. In this way, those who are successful early on can dispose of the funds to support continued publication and success. Once these resources are obtained, they can have an independent effect on the acquisition of additional resources and rewards. In other words, Merton drew attention to the organizational context of participation and performance in science—the ways in which the characteristics of work, work groups, and work environments affect scientific outcomes.

3. Place R. K. Merton in the Framework of Modern Philosophy and Sociology of Science

"It's hard to imagine the world and sociology without Robert K. Merton, - writes M. F. Fox, - such is the influence of his ideas... Captures the scale and consistency of his ideas about social structure and explanation of social processes" ([4], p. 47). Current standard descriptions of the development of American sociology often, but not always, include Merton, who is occasionally seen as a major proponent in contemporary theoretical debates. This partial silence is the fate of many American theorists of the mid-twentieth century. The theoretical basis of many modern "European" social theories lies in the "founding fathers" (K. Marx, E. Durkheim and M. Weber) and in the intricately intertwined threads that stretch from them. The line of transmission of the main theoretical ideas seems to go largely past those decades of the early and mid-twentieth century, when the development of sociological knowledge was largely conditioned by American scientists. In addition to the inevitable passage of time, psychosocial mechanisms may also be at work that prevent closer attention to Merton's work. It is not yet "ancient" enough to be extensively studied for historical work. There has not been a particular case where a broader consideration would have been required other than potential centenary "anniversaries", and perhaps there is a structural resistance stemming from traditional scientific patterns. This inertia towards the previous intellectual generation is well emphasized in the preface to Stinchcomb's The Construction of Social Theories.

North American sociology of the postwar period is usually characterized by the use of one or two labels - "structural functionalism" and "empiricism". This approach is portrayed as a vision of a social order stemming from socialized conformity to cultural ideas, with a self-governing social system striving for balance, rapidly restoring any deviations from the status quo. But Parsons' direct influence on sociological theorizing and research was perhaps more limited than is often assumed. After all, his work did not lead to ready-made research problems or the easy formulation of theoretical explanations. Another strand of post-war American sociology is often seen as "abstract empiricism," in which the micro-problems associated with explaining the social distribution of attitudes and behaviors have been attacked through countless social studies, without sufficient attention to understanding the structural features of anchoring these social minutiae in the broader social context In this context, the integrated combination of theory and research

developed by R. C. Merton and his colleagues has since become the most important source of much development.

After the youth riots of the 1960s, the picture of the sociology of science must be expanded to include "loyal opposition" to symbolic interactionism and the associated qualitative field research methodology, which was followed throughout the period by the older generation of the "Chicago School" (Howard Becker, Irving Hoffmann, Anselm Strauss, Gary Fine, etc.) Added to this was the flourishing of Marxist "radical sociology." Both tend to "overshadow" functional sociology, although the research side of positivist work continued to develop actively. for the development of social theory was then localized among European scholars. This social theory tended to be broad in scope, examining the social order in abstract terms, and not particularly oriented towards empirical area. "Arming a more sophisticated exposition of the concept of Merton and other representatives of American sociology would facilitate active new interaction with more modern theory to the benefit of both parties" [3].

There are several main lines of interpretation of the nature and scope of Merton's scientific work. All of them agree with the recognition that Merton produced a lot of value for the sociology and philosophy of science, but differ in their interpretations. Responses to Merton's work fall into separate axes, in which his concepts are general or specific, conservative or radical, and modern or obsolete. The "orthodox" interpretation makes Merton Parsons' junior partner in a "structural-functional" enterprise. Those who hold this view can point to any or more of a wide range of concepts especially associated with Merton: explicit and implicit functions, link groups, role sets, etc., but these are not considered to constitute an alternative approach. The second line of interpretation sees Merton as politically conservative. This line draws on radical sociological theory and was promoted in particular by Randall Collins. Collins believes that Merton's high-profile writings fit well with after Second World War period and that their long-term value is limited because they were not based on key explanatory factors of class conflict. Taylor et al characterize Merton as a morally cautious rebel. They believe that Merton is willing to make certain, albeit limited, social judgments. “A similar position in relation to his theory was put forward by a group of philosophers of the second half of the 20th century who believed that Merton focused on a structural perspective adjacent to Parsons's functional analysis” [1]. Sika argues that Merton's style is anachronistic, especially when it comes to depicting the social world of science as stable and more unified than the rapidly changing modern reality allows. It is clear that Merton's examples are becoming increasingly obsolete, and, of course, his vocabulary of the mid-twentieth century. seems old-fashioned (e.g., "deviant behavior", "opinions of supporters"), “and even Merton himself, looking back at his earlier work, found something similar” [8]. Simonson speaks of the popular belief that many of Merton's topics remain relevant [9].

Merton's ideas about the "existential factors" that determine the development of science anticipated further research in the field of philosophy and methodology of science. In the early 1960s, major changes took place in English-language epistemology. The dominant influence of neopositivism in the field of philosophy of science during this period was subjected to revision by representatives of the so-called post-positivist trend: N. R. Hanson, S. Toulmin [13], T. Kuhn [11], P. Feyerabend [14] and others. The theses expressed by them are a natural reaction to narrow empiricism supporters of the philosophy of neopositivism. Representatives of the post-positivist trend saw the main goal of the philosophy of science in studying the conditions for change in science (scientific shifts), while resorting to the extensive use of materials from the history of science. Instead of the "standard" ideas about science, developed within the framework of neopositivism, the concept of the theoretical "loading" of empirical results is formulated. The emphasis was not so much on the logical aspects in the study of scientific knowledge, but on the study of personal worldview and socio-cultural factors in scientific knowledge. At the same time, the role of imagination, the ingenuity of a scientist in scientific research was especially emphasized.

Since the advent of the Mertonian paradigm in the early 1960s, most research in this area seems to fit T. Kuhn's definition of "normal science." [12] Not only Merton's own work, but also the work of many others in the field, has focused primarily on problems that turn out to be directly related to issues explicit or implied in the paradigm. In other words, the sociology of science has matured to such an extent that many studies involve "puzzle solving". As Kuhn emphasized, describing research as "solving puzzles" does not mean that it is not creative, satisfying, or important. Several fundamental questions generated by the paradigm have led to serious research. For example, an attempt to develop a comprehensive concept of the reward system in science - partly through an intensive study of the meanings involved in the search for priority - helped to focus on how professional recognition in science is achieved and show how the reward system is related to the normative structure. This line of research also includes social organization and evaluation processes, which are seen as central to science. This leads to the exploration of such empirical issues as how the quality of scientific contributions is assessed and the general adequacy or inadequacy of this process to promote a fair distribution of rewards for these contributions.

4. Conclusion

Thus, Merton played a defining role in the development of sociology and philosophy of science in the post-war "golden period" of its construction, and still has great potential to contribute to modern discussions. As N. Storer wrote, "It will be at least several decades before Whitekadian's dictum that "a science that does not dare to forget its founders is lost" will have any bearing on R. Merton's sociology of science [10]. These the words are mentioned only as an argument that Norms acquire particular relevance in those conditions when the very fact of contacts with representatives of the science of

another state can turn out to be a turning point, if not tragic, in the fate of a particular scientist.

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