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RESEARCHER AS SUBJECT AND AUTHORITY OF NORM

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Abstract

In this report, we examine the activities of a researcher through the lens of the universal category of a norm, which reflects the idea of the due state of affairs for a class of objects and has a set of properties and functions inherent in any manifestation of the norm. The activity of a present-day scientist is, on the one hand, the object of normalization by the state authorities and social institutions. On the other hand, when acquiring new knowledge, a scientist participates in creating new norms that can affect the lives of many people. Consequently, a scientist in the modern society is simultaneously a source, or authorityof some norms and thesubjectof other norms.

The role of a scientist as the subject or authority of a norm becomes apparent when a norm fulfills its main functions, namely informational, forecasting, regulatory and measuring (evaluation) ones. Each of the functions of a norm is implemented because a norm has a set of properties common to the whole category as well as due to the interrelation and interdependence of the functions themselves. A state of affairs compliant with the norm does not usually attract attention; therefore, it is expedient to study the action of a norm using the cases where the norm is not followed. An anomalous situation emerges, if a norm does not fulfill one or several of its functions, because some of the attributes of the situation contradict a certain categorical property of the norm.

Keywords: Norm-subject; norm-authority; informational function of a norm; regulatory function of a norm; measuring (evaluation) function of a norm.

1. Introduction

At the end of the 19th century and the beginning of the 20th century, new technologies emerged capable of triggering irreversible changes in both man himself and the world around him. This increased the responsibility of scientists for their research findings and consequences of implementing these findings. Present-day scientists have to strike a balance between the freedom they need for creative work and the

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restrictions imposed on them by possible ramification soft here search or its implications. For research findings to fulfill their technical and social functions, there should be a perfect balance between a scientist's freedom and responsibility. If this balance is disrupted by curtailing the academic freedom, this may make the findings less objective, which will undermine their scientific value. On the contrary, if the reason for imbalance is excessive freedom of a scientist leading to reckless behavior, their research may spin out of control to become dangerous for the society.

For the sake of its own safety, the society seeks to regulate the activities of a scientist by imposing various norms, including technical regulations, company specifications, safety procedures, legislative acts, and universal ethical norms. Furthermore, some scientific communities stress the need to introduce consistent basic standards for responsible behavior in the conduct of research (Mayer, & Steneck, 2007).

The multitude and variety of norms accepted in research makes it advisable to analyze them from the standpoint of the universal category of norms. The essence of this category is the idea of the due state of affairs in a society or community, in which this norm is accepted. Due to the state of affairs we mean such state of an object that is usual, desirable or preferable for this society or community.

The purpose of this research is to review some standards and rules accepted in the modern Russian scientific community for their compliance with the criteria of the universal category of norms. The research objectives also include identifying the properties and functions of a norm common to the whole category to describe the mechanisms of its action and studying the possibilities to analyze specific norms in terms of these properties and functions. In order to achieve the mentioned goals, we use the notions from the conceptual framework of modal logic and an approach to the norm as a set of certain functions, which is based on these notions.

2. Methods

To explore the problem of a scientist's responsibility for the results of their research activities and possible negative implications of its practical use, we employed the semantic apparatus of a branch of modal logic–the logic of norm. Furthermore, we developed and used the original methodology to analyze a scientist's role in creating and implementing the norms regulating the research activity from the standpoint of the properties and functions of a norm that are true for the whole category.

2.1 Functions and properties of a norm

Any norm is characterized by a set of properties common to all standards including, among other things, the following: 1) (*objective*) reflecting the properties of an object gaged by the norm; 2) relevant to the sphere, in which the norm functions; 3) (*formally definitive*) unambiguous and consistent due to clear wording of the norm; 4) *(systematic)*each norm is closely connected with other existing norms); 5) *abstract* (norm can exist as an ideal image with or without its object); 6) *optimistic*, which means that meeting the norm must involve a positive result or an opportunity to avoid repercussions. The subject of a norm always perceives it positively or, at least, not negatively.

The specific nature of the norms existing in the field of science is that each researcher is simultaneously the authority (source) of some norms and the subject (i.e. recipient) of others. The

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authority of a norm is "the agent who gives or issues the prescription". In addition, "the authority orders permits or prohibits certain subjects to do certain things on certain occasions" (von Wright, 1963). The role of a scientist as the authority of a norm has increased significantly in today's context, since their research findings often serve as a basis for important economic and political decisions that can affect the life of entire social groups. The responsibility of a scientist for their research findings dictates the need to assess their activity as the subject of a norm. By the *subject of a norm* we mean "the agent (or agents) to whom the prescription is addressed or given. The subjects are commanded or permitted or forbidden by the authority to do and/or forbear certain things" (von Wright, 1963).

Bearing in mind the complex and multifaceted nature of the category, we will confine ourselves to analyzing just one of its aspects, namely, the functions it fulfills. The most common of them, typical of all the norm varieties, are informational, measuring (evaluation), forecasting and regulatory functions.

We are going to review the realization of these functions by norms accepted in the field of science predominantly using the cases when these functions are not fulfilled, since the moment a norm is followed, it does not attract that much attention and often remains unnoticed.

2.2 An informational function of a norm and its role in a scientist's activity

Of all the functions of the norm, the logically primary one is the function of information transfer: any norm incorporates certain information about the object it is related to. For a norm to fulfill this function, the data it incorporates must be *objective* and *relevant*. In terms of scientific research, it means that the results of the creative work of a scientist as the *authority of a norm* producing new knowledge must be true, i.e. reflect the actual state of affairs, and possess scientific novelty. Deviations from this requirement in the form of fabrication, falsification and plagiarism have become so frequent that sanctions are proposed to fight them (Steneck, 2007). In Russia, no comprehensive studies of research misconduct have been performed so far, but the growing commercialization of research and scientists' motivation to obtain tangible results that have replaced selfless interest in science, will inevitably lead to more frequent violations of ethical norms.

The activities of a scientist as the subject of a norm bound to comply with certain rules are also evaluated in terms of a norm. Let us illustrate this by the example of ranking a researcher by means of an h-index. The objectivity of the information a norm contains is not always evident, and in this case a norm is based on indirect data: how widely spread and renewable this information is (Popitz, 1980). This is exactly the case for the h-index. While being an unconditional norm for the modern world, the h-index only possesses a limited information value for a number of reasons. Among other things, it is calculated in international databases mostly using the number of publications in the English-language periodicals and ignoring the creative work of scientists who write in other languages.

2.3 A measuring function of a norm in scientific work

A measuring or evaluation function is fulfilled when the norm serves as a unified common measurement scale or a basis for the assessment of every single object in this class. In order to fulfill the measuring function, the norm must be highly *abstract*, which enables one to apply this norm to as many objects as possible, and *formally definitive*, for the norm to be perceived and understood by its subject

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(Schaefer, & Lamm, 1989). These properties of a norm manifest themselves most clearly when assessing quantifiable data. However, even if a norm cannot be expressed in any units of measurement, it still fulfills the evaluation function by setting the limits of the object variation, beyond which it ceases to comply with the norm.

An example of how the measuring function manifests itself in the activities of a researcher as the *authority of a norm* can be the research practices traditional for this scientific community. In particular, these practices imply accurate presentation of information, references to reputable sources, and the discussion of one's research findings in the academic community. In all of these cases, scientists are guided by time-proven criteria when evaluating their work. On the contrary, the measuring function of a norm is not executed when the so-called questionable research practices are used (Steneck, 2006; Davis, Wester, & King, 2008). The reason why the norm of following these practices does not execute the said function is the formal uncertainty of the norm. In order to overcome this disadvantage, it was necessary to formulate the content of the norm and derive the evaluation criteria for research misconduct (Federal Research Misconduct Policy, 2000; Integrity in Research, 2007).

An example of a norm not performing its measuring function with regard to a scientist as the *subject of this norm* is the system of effective contracts. This system implies the same approach to the activities of all the researchers. However, these are seemingly equal opportunities, since the criteria of the effective contract primarily consider the relevance of the result obtained to the modern economy, which makes them non-universal. In particular, the starting point of researchers in the field of humanities, whose achievements cannot be used for immediate commercial gain, is clearly inferior to that of the researchers working in engineering sciences.

2.4 Forecasting function of a norm and its role in the work of a scientist

The forecasting function of a norm means that a norm can be projected on not only the existing objects but also on those that do not exist (yet or anymore). This property of a norm allows its creator and agent to form a view of the most probable outcome of this or that situation and evaluate this outcome by reference to the norm. The forecasting function of a norm is directly relevant to the deontically possible world (Divers, 2002) and is implemented, because a norm is *capable* of dissociating from its object and existing independently of it *in the form of an abstract image*. This capability, in its turn, allows norms to replace the phenomena that do not fall under direct observation but are recreated from the patterns in the system of notions of the reality reflected in the worldview. This is what makes a norm *systematic*.

The *systematic* nature of a norm can take different forms. Firstly, each norm has the system-wide nature, since it is not isolated but is an element of the reality organized in a special way and integrated in the system of norms reflected therein. A malfunction of this system may become a reason for *anomie*, which manifests itself in the normlessness, where norms lose their functions or contradict each other (Messner, & Rosenfeld, 2006). Secondly, some norms can form specific microsystems of their kind that make it possible to determine how much an object complies with the norm. Deviations from the norm within a microsystem are an anomaly, which consists in falling short of the norm or exceeding the norm (see examples of such microsystems in Efanova et al., 2015). Various anomalies are a usual phenomenon for nature and societies and can be simulated as part of a scientific experiment. At the same time, a high level of anomaly of a phenomenon or an unusual increase in the number of anomalies in this or that

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sphere can become a reason for the emergence of an anomie. Determining the prospects of one's research and projecting the impact of the newly discovered regularities on the future state of affairs is the necessary condition of the activities of a responsible scientist as the *authority of a norm*, since erroneous scientific forecasts may have repercussions for not just any one person but the whole community.

On the other hand, anomalous situations may emerge in the course of the activities of a scientist as the *subject of a norm*. Being a member of a research team, a scientist is an object of the normative action, for instance, by means of measures planned by the administration of their institution. Since the performance of tasks set by the senior staff is perceived as a norm in this case, the administration must be responsible for the quality of planning if their forecasts exceed the possibilities of the team. Impossible tasks assigned to the staff may cause the state of anomie stemming from the absence of real norms or links between them, similar to the one the Russian population experienced at the end of the 20th century (Swader, & Kosals, 2013).

2.5 A regulatory function of a norm and its role in the work of a scientist

The main and most often specified function of a norm is the regulatory function, which is implemented when a person organizes their own activities and manages the activities of other people by means of laws, rules, instructions, etc.

The ability of a norm to serve as a means of regulation of human actions and behavior is affected by two properties of this category. One of these properties consists in the ability of a norm to exist in the form of an ideal image. At the same time, due to individual traits of each person, who is the authority or agent of a norm, and uniqueness of each state of affairs, in which a norm comes into use, there can never be a perfect *match between the ideal norm and its real implementation*. In research activities, the discrepancies between the ideal and real norms are the sphere where the creative individuality of a scientist as the *authority and agent of a norm* can manifest itself. This is why the findings or methods of different researchers involved in the solution of the same problem will always be different in some ways. The awareness of this peculiarity of the scientific creative work already helps experts fight plagiarism in publications.

The ability of a norm to perform a regulatory function is also affected by the *optimistic nature* of a norm, which has been repeatedly outlined by psychologists and sociologists (Schultz et al., 2007). Due to this property, the state of affairs a norm aims to achieve is usually perceived positively even if it does not promise any tangible benefits. It is this quality of a norm that encourages a researcher as the *authority* of a norm to struggle selflessly to solve a scientific problem. On the other hand, a scientist as a subject of the norm will perceive only such rules and regulations as a guideline to follow that will provide an apparent positive result of applying them. This explains the reasons behind some scientists' antagonism to reforms in the research management system.

3. Results

In particular, a necessary condition for a norm to fulfill its *informational function* is its relevance and ability to objectively reflect the reality. If these conditions are not fulfilled, the norms will not hold, which information value is not evident to their subject. Such situations often appear when norms

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are reformed or when a new norm is introduced that has not been fully established yet. At the same time, the instability of a new norm is the condition that allows one to affect it in order to improve it. A way to overcome the *informative insufficiency* of many of the norms acting in the modern academic community would be their joint discussion and explanation as well as publicity and transparency of introducing reforms.

For a norm to fulfill its measuring function fully, the criteria it incorporates must be generalized in terms of content but quite definitive in terms of form. The seeming contradiction between the abstract character of the evaluation criteria and the specific nature of their wording is overcome by establishing the correspondence between these criteria and the properties of the object being evaluated. In the cases when the measuring tool does not match the properties of the object under evaluation, a different basis should be used for evaluation. One can eliminate the reasons for a norm not fulfilling its measuring function by using generalized evaluation criteria as a measuring tool and, when there are no such criteria, using a flexible differentiated evaluation system. This function of a norm is executed by a scientist as the authority of a norm when they use the research practices accepted in this field of knowledge. It is also implemented in relation to a scientist as the norm-subject if the evaluation of their activity is based on the criteria that match this activity.

The forecasting function of a norm consists in creating the idea of such state of affairs, where the object of a norm would comply with the requirements of this norm. Only such norm can fulfill this function that will seamlessly enter the system of existing norms without disrupting the balance established between them. On the contrary, a norm will fail to act if it contradicts the norms and patterns of the real world and attempts of its forceful introduction may lead to dire consequences. The emergence of anomalous situations due to a poorly planned norm may only be prevented if the numerous system connections of a norm are taken into account at the planning stage, which, in turn, requires systems thinking and high professionalism (knowledge and experience) from all the participants of the process – the norm-subject and norm-authority.

Finally, for a norm to be able to fulfill its primary, regulatory function, it must not only be informative, correctly planned and based on a balanced evaluation system, as well as positive. This imposes the obligation on a researcher as a norm-authority to ensure that the results of his/her activity are not destructive. In relation to a scientist as the norm-subject, the positive nature of a norm means that it must be optimistic enough so as not to provoke rejection in the agent.

4. Conclusions

Our research makes it possible to present the universal category of a norm as a predominantly functional one, i.e. its role in the activity of a scientist is implemented when it fulfills a number of functions. The analysis of the role of these functions when studying the conditions of compliance with a norm or reasons for its violation in each specific situation can not only contribute to our knowledge of a norm but also give specific recommendations on how to correct the state of affairs that does not correspond to a norm.

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