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NOMOTHETIC AND IDIOGRAPHIC APPROACH IN MANAGEMENT SCIENCES[2]

This article covers the philosophy of science, particularly the philosophy of management sciences. Ultimately, this study aims to determine the nature of management sciences based on a division into nomothetic and idiographic sciences. A secondary aim is to formulate prerequisites for the recognition of scientific laws and to verify their existence in the management sciences. The methods used for this study include analysis and logical construction. Results demonstrated that the management sciences are a special type of praxeological sciences that are both nomothetic and idiographic. The main conclusions of the article have direct implications for both the theory and practice of management. Treating management sciences as nomothetic significantly broadens the fields of research exploration, particularly in their implementation of the classic functions of science (i.e., description, explanation, and prediction). The implementation of these functions may lead to the creation of new organizational models and new methods focused on the description, explanation, and prediction of management processes.

Keywords: philosophy of management, laws of science, nomothetic sciences, idiographic sciences, praxeology.

1. INTRODUCTION

Nowadays, management sciences are in a period of permanent crisis (Koontz, 1961; Laurie, Cherry, 2003). One of the most important reasons for this crisis is the lack of a recognized philosophical basis for the management sciences, especially in the field of epistemology (theory of cognition).

The final aim of the article is to determine the nature of management sciences in the context of division into nomothetic and idiographic sciences by W. Windelband. The partial aim of the article is to formulate prerequisites for the recognition of scientific laws and to verify their existence in the management sciences. The article uses the method of analysis and logical construction.

The first chapter presents the process of distinguishing nomothetical and idiographical sciences in the philosophy of science. The second chapter specifies the criteria for

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recognizing selected sentences as scientific laws, while the third chapter presents a proposal to place management in the classification of sciences. In the fourth chapter, the study presents conclusions on the basic law of praxeology – law of diminishing marginal utility. In the fifth chapter, the study demonstrates how the law of diminishing marginal utility is used in the context of introducing detailed laws in the management sciences. Finally, it specifies, whether the nature of management sciences are nomothetic or idiographic.

2. DIVISION INTO NOMOTHETICAL AND IDEOGRAPHICAL SCIENCES IN THE PHILOSOPHY OF SCIENCES

At the beginning of the twentieth century, W. Wundt proposed the distinction between formal and real sciences (Wundt, 1906). Primarily, we can include logic to formal sciences and natural and human sciences to real sciences.. The main criterion for the division of real sciences was the reference either to natural or mental aspects of reality. Criticism of the classification of sciences according to the criterion of their mentality contributed to the formulation by W. Windelband of the distinction, according to the methodological criterion of the nomothetic and idiographic sciences (according to the methodological criterion) (Windelband, 1980). Nomothetic sciences (gr. nómos – law, thetós – established) was referred to by W. Windelband as sciences in which it is possible to formulate ahistorical laws, and idiographic sciences (gr. ídios – own, private, specific, gráphō – write) as those where it is impossible to formulate ahistorical laws. Thus, the function of idiographic sciences is merely a description and explanation of individual facts that are relative to place and time. At the same time, according to W. Windelband, an object may be subjected to both idiographical and nomothetical investigation. According to the division proposed by W. Windelband, the nomothetical sciences include, for example, psychology, physics, chemistry, biology etc. The idiographical sciences include, for example, history, art history, or musicology.

H. Rickert, referring to the W. Windelband classification and the philosophy of I. Kant, divides sciences into natural and historical sciences (Rickert, 1986). According to H. Rickert, the natural sciences are of a nomothetic nature, and the historical sciences are idiographic. H. Rickert's nomothetical sciences meant the ability to generalize rights, as opposed to ideographical sciences of individual interest, unique phenomena (Machlup, 2014).

3. SCIENTIFIC LAWS

As stated in Chapter One, the criterion for the division of science into nomothetic and idiographical sciences is the possibility of formulating ahistorical scientific laws. First of all, the criterion for recognizing the statements as scientific law is to be accepted.

In literature in the field of philosophy of science, it is difficult to point to a concept that is more ambiguous than “the law of science”. Independently from the understanding of the “law” concept, its etymology can be indicated in the name “regularity”. Regularity here, means repetitive relations between subjects of reality. In literature, since the time of Aristotle there has also been widespread agreement that the laws of science should call such regularities, which are not individual things and individual phenomena, but classes of subjects and phenomena (Aristotle, 1975). The laws of science are thus expressed by generic names (concepts), not individual names. In the broadest meaning of the law, it can be called a strictly general statement about the occurrence regularity. The study assumes

that to be recognized as a law of science, it should meet the following criteria (Such, Szcześniak, 1999):

1. Strict generality (universalism) – that is the universality of space-time coverage of the law. It should concern all objects in a given class, regardless of where and when they occur.
2. Inequalities of the finite class of individual sentences – this means that the law cannot be replaced by any finite number of individual sentences.
3. Ontological openness – this means that the law should cover all phenomena – past, present, and future.
4. Epistemological openness – this means that the law applies to both learned and unrecognized phenomena.

The subject of discussion in literature, however, is the status of statistical laws, and therefore the regularities between objects of reality, which occur with some probability. From the point of view of extreme epistemological rationality, the status of laws is admitted exclusively to deterministic laws. An example of the law of science expressed in such a view is the law of universal gravitation, whereby "between any pair of bodies of mass there appears the force of attraction which acts on the line joining their means, and its value increases with the product of their masses and decreases with the square of the distance" (Newton, 1999). This law is universal, necessary and permanent, fulfilling the criteria of strict generality, inequalities of the finite class of individual sentences, and the ontological and epistemological openness.

Considering that statistical laws do not meet the indicated requirements of scientific law, it is assumed that statistical laws do not, in fact, constitute scientific laws. This approach is consistent, on the one hand, with the treatment of scientific laws by Popper (2005) and, on the other hand, with the famous aphorism of E. Rutherford, who argued that "If you need to use statistics, then you should design a better experiment". K. Popper also considered that statistical hypotheses are non-falsifiable; therefore they are unscientific and metaphysical (Popper, 2005).

4. MANAGEMENT SCIENCES AS A PRAXEOLOGICAL SCIENCE

From the point of view of the purpose of this publication, it is necessary to present the assumptions concerning the position of management sciences in the classification of sciences. It is assumed, by W. Wundt, that the division of science into formal and real (Wundt, 1906). The formal sciences primarily include mathematics and logic. Real sciences are divided into two categories: natural sciences and praxeological sciences (human sciences). Biology, chemistry, physics, etc. can be distinguished among natural sciences. The praxeological sciences include sociology, political science, history, cultural studies, economics, management, ethnography, law etc.

The subject of praxeological sciences is human action (Mises, 1998). Praxeological sciences, as their subject, are chosen by the various types of action (Nowak, 2015). And so, the subject of economics is generally the relationship of exchange between entities (as a specific type of action), the subject of sociology is all social phenomena (as a special type of action), and the subject of management is formation and development of the organization (as a special type of action).

Every human action can be considered from two points of view. The first is the description of the history of human activity or the history of the effects of human activity.

The other is the formulation of scientific laws for human action. According to the first approach, the praxeological sciences is analyzed in idiographic terms, and the second approach – in terms of nomothetic. The main problem in this paper is to determine whether management science as a particular type of praxeological science can be considered in a nomothetic approach. In other words, is it possible to formulate scientific laws satisfying the criteria of strict generality, the inequalities of the finite class of individual sentences, ontological openness and epistemological openness in management science?

Praxeology is a science developed in two basic approaches – Polish School of Praxeology (so-called classical school) and Austrian School of Praxeology. On both sides, it is assumed that the primary purpose of praxeological sciences is to formulate the laws of science. Representatives of the Polish Praxeological School have stated, however, that they have not been able to formulate scientific laws yet, but that this should be a fundamental aim. The formulation of scientific laws would allow to define the basic axioms of praxeology and constituted deductive reasoning. Unlike the Polish praxeologists, representatives of the Austrian Praxeological School differed in opinion. They stated that in a deductive way, from the axiom of human activity, they formulated several laws of science specific to praxeology. The most important of these laws was the law of diminishing marginal utility.

5. SCIENTIFIC LAWS IN PRAXEOLOGY

The most important theoretical constructs of praxeology are above all: action, means of action and aim of action. Action refers to every intentional behaviour of man (Mises, 1998; Kotarbinski, 1969). The cause of any action is the discomfort experienced by the actor. Discomfort is an immanent human trait. The situation of not having any discomfort is impossible, in which there would be no premises for action. The aim of the action is called the planned effect of the action. So the purpose of any action is to avoid any sense of discomfort. Two types of resources can be used to achieve the objectives. First, those in a given situation are abundant, are widely available, and from the perspective of the entity of action, they are infinite. These resources are referred to as general or common acting conditions. An example of this type of resource is air. The second resource group is the means of action (Rothbard, 2009). Means of action are defined as limited resources which, in the opinion of the actor, will enable the intended purpose of the action to be achieved.

The number of goals that can form an actor is limited only by his or her imagination. It is certain, however, that the entity cannot achieve all the objectives. Considering the limitation of the means of action, the entity of action decides to work towards one goal at the expense of the other. The mechanism that leads to the selection of objectives is the process of evaluating and ascribing values to individual goals. L. von Mises refers to such a process as valuing statements (Mises, 2001). Making statements of this type is individual (it is subjective) and follows the scale of the entity of action preferences. The result of this process is not values assigned by cardinal numbers, but only ordinal numbers. A person, therefore, determines which goals are more important to him/her than others, which is the basis for the actions taken. The inability to objectify valuational statements or to express them through numbers results from the impossibility of formulating an objective unit of measure. It is impossible to say that achieving objectives 1, 2 and 3 the entity of the action will be 2.5 times happier, than, for example, if it attains objectives 1 and 2 on its individual preference scale. Moreover, the scale of preferences of each object of action is subject to

numerous changes, e,g. with regard to age. Changes in an individual's preferences cannot be predicted exactly in the same way just as future knowledge can not be predicted, for example in 2 years.

The most important conclusion in the foregoing considerations is, therefore that value or utility are not objective quantities and therefore cannot be expressed in numbers and thus cannot be subject to basic algebraic operations such as addition, subtraction, multiplication, or division. The indispensable performance of valuing statements leads to the scheduling of the goals that an entity intends to achieve. This ranking can only be expressed using ordinal numbers, not cardinal numbers.

Similarly, the entity of the action is making valuing statements in when selecting means of action. From the time of C. Menger, however, attention is not paid to the usefulness of the whole class of a given good, but only to one of its units. It is this marginal analysis that has allowed the founder of the Austrian praxeological school to solve the paradox of water and diamond values. C. Menger clarified this paradox as follows. If a person is on a desert island where no other goods are available to put it simply, in the face of the choice of one unit of water and one unit of diamond, he or she will choose one unit of water. On the next decision one may assume that he or she will again choose a unit of water. After repeating this experience n times, when choosing n+1, when the subject finds that water is now abundant will decide to choose a diamond. The most important conclusion from C. Menger's thought experiment is that each unit of a given good is valued individually (Rothbard, 2009). Humans never make a valuing statement about the means of action as the whole class of a given good, but only within the scope of the individual that is the object of action.

By determining that people make valuing statements for each unit of a given good, it is necessary to reflect on the implications of this fact. So let's take a look at a good such as water. It does not matter whether we analyze water in this case as a mean or as an objective of action. The entity of action assigns utility to the first unit of water in the context of achieving the highest order. Once it has been achieved, each consecutive unit of water will allow it to achieve the goals that are ranked below in the classification of goals. Taking into consideration that every person in the act of action prioritises goals in relation to their needs, the following statement is appropriate: Each unit of a given good satisfies less urgent needs of the entity of action. Following the same reasoning, C. Menger formulated the law of diminishing marginal utility, which can be presented as follows: With the increase in the quantity of a given good, the value attributed by the entity of action to each successive unit of the good is smaller. It falls because each successive unit of water allows achieving a less important goal according to the individual preference scale created during the valuing statement. The next step is to verify the fulfillment of the formal requirements of scientific law by the law of diminishing marginal utility:

1. Strict generality – the law of diminishing marginal utility refers to all types of activities and to all goods that are valued by the actor. Thus, the law of diminishing marginal utility applies to any object in a given class (and therefore actions) irrespective of where and when they occur. Accordingly, the law of diminishing marginal utility meets the criterion of strict generality.
2. Inequalities of the finite class of single sentences - the law of diminishing marginal utility, as it covers all actions, cannot be replaced by any finite number of individual sentences describing unitary actions. Consequently, the law of diminishing marginal utility satisfies the criterion of inequalities of the finite class of single sentences.

3. Ontological openness – in the law of diminishing marginal utility there is no time limitation for its use. It means that the law of diminishing marginal utility describes both past and future actions. Thus, the law of diminishing marginal utility meets the criterion of ontological openness of scientific law.
4. Epistemological openness – the law of diminishing marginal utility does not formulate any limitations on the cognition status of individual actions. That is to say, the law of diminishing marginal utility describes both actions already known and those not yet known. Accordingly, the law of diminishing marginal utility fulfills the criterion of epistemological openness.

In summary, the law of diminishing marginal utility meets all the formal criteria of scientific laws and should be regarded as such.

6. THE LAWS OF SCIENCE IN MANAGEMENT

In chapter 4 it is stated that praxeology makes it possible to formulate the laws of science with strict generality, inequality of the finite class of individual sentences, ontological and epistemological openness. An example of such a law is the law of diminishing marginal utility. Another question to be resolved is whether such laws exist in a specific praxeological science, such as management science.

The subject of management science is the creation and development of organizations as a special type of human activity. In the cybernetic approach, an organization can be called a deliberate system containing at least two components, one of which is of a managerial character. Management is most often characterized by planning, organizing, motivating and controlling (Griffin, 2016).

The law of diminishing marginal utility is appropriate for every human action, and should therefore also be appropriate for planning, organizing, motivating and controlling. So far, no attempts are known to apply the law of diminishing marginal utility on the grounds of management science. This niche in the author's opinion seems incomprehensible. The use of only one praxeological law can lead to the formulation of several specific laws.

The purpose of this study is not, however, to derive a number of laws of management science based on the axiom of human action, and in particular the resulting law of diminishing marginal utility. It goal is to indicate whether it is possible to formulate laws characterized by strict generality, inequalities of finite class of individual sentences, ontological and epistemological openness. To accomplish such a goal, it is enough to point out an example of a law concerning the planning, organization, motivating or control of the law of diminishing marginal utility.

The article has arbitrarily articulated a detailed law on motivation. Motivation can be called influencing the subject’s behavior through stimuli that are transformed into motifs. According to the law of diminishing marginal utility “with the increase in the quantity of a given good, the value attributed by the entity of action to each successive unit of this good is smaller”. As already stated, this law applies to every human action. In the case of motivation, this right can be analyzed both from the perspective of the employee and employer. One of the most important motivational tools is pay.

The pay earned is a good thing for the employee. As an actor, an employee may treat salaries as a means of action. Depending on the amount of pay received, it can be used for a variety of purposes. Certainly, for almost all employees, the basic purpose of remuneration

is to provide basic consumer goods such as food, housing, clothing, etc. They are the most important goals of the action from the perspective of almost every individual. Upon providing the basic means of subsistence (and achieving the most important goals), an em-ployee may devote the remaining funds to less urgent needs. Expenditure of this type can be, for example, entertainment or education.

Since the law of diminishing marginal utility is applicable in every action, it should not be surprising that it works when valuing a resource that is financed by an entity performing work activities. According to the analysis of the fundamental praxeological categories, such as action, purpose of action, means of action and the inferred law of diminishing marginal utility, it is possible to formulate a specific law of motivation:

L: Each successive monetary unit motivates the employee to a lesser extent.

This law constitutes an exemplification of the law of diminishing marginal utility on the ground of the motivational process. Thus, it is characterized by strict generality, inequalities of the finite class of single sentences, ontological and epistemological openness. It, therefore, fulfills all the prerequisites for recognizing it as a law of science – according to the strict criteria for the recognition of given clauses as the right to learn, or not.

Each successive monetary unit received for work enables the worker to meet less urgent needs. This law, although derived from the fundamental praxeological categories, which describes the behavior of an employee; it is an important prerequisite for the creation of effective motivational systems by employers. Without further analyzing the consequences of the formulated law, it should be recognized, in line with the aim of this study, that it is possible to formulate scientific laws in management sciences and thus state that management sciences can be treated as a nomothetic science.

Management sciences can be analyzed not only through the prism of their nomothetic character, but also in the context of describing and explaining individual facts that are relativized to place and time. Hence, what seems to be outside the subject of theoretical dispute; management science is also idiographic. The statement shows that human activities in organizations can be both nomothetic and idiographic.

7. SUMMARY

The final aim of the study was to determine the nature of the management sciences based on division into the nomothetic and idiographic sciences. The partial aim of the article was to formulate the prerequisites for the recog-nition of scientific laws and to verify their existence in the management sciences.

By accepting the position of epistemological rationalism, four premises have been formulated for the recognition of certain regularities as scientific laws: strict generality, inequality of the finite class of individual sentences, ontological openness and epistemological openness. According to K. Popper's philosophy, such a restrictive approach led to the exclusion of statistical laws from the field of scientific laws.

Subsequently, using the division of sciences into formal and real sciences, management sciences are classified as a special type of human action – praxeological (human) sciences. Then, the basic praxeological categories are presented, in particular action, purpose of action and means of action. It was found that the law of diminishing marginal utility derived from the fundamental praxeological categories fulfills all the requirements of the law of science and can serve as a model for the elaboration of specific laws, in particular, praxeological disciplines.

Management is presented as a process consisting of four functions: planning, organizing, motivating and controlling. For the motivating function, based on the law of diminishing marginal utility, the following detailed law has been formulated: "Each successive monetary unit motivates the employee to a lesser extent". It has been found that this law is characterized by strict generality, inequality of the finite class of individual sentences, ontological and epistemological openness. Thus, the basic thesis of the article is that management science can be treated as a nomothetic science. At the same time, it was pointed out that management science can be viewed from the standpoint of individual, unique phenomena. Accordingly, management science can also be treated as an idiographic science. The presented conclusions of the study provide the basis for concluding that the aim of the article has been reached.

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