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## **MANAGEMENT SCIENCES**

### **Abstract**

*This paper reflects on the development of management sciences. The author presents which a contemporary researcher encounters during his attempt to explain organizational reality and also some main approaches to theoretical and empirical research in sciences. The reflections are effects of several year of studies on the system of organizational terms.*

*Key words: management sciences, ontology, epistemology, sources of knowledge, scientific standards*

### **1. Introduction**

The goal of this paper is to present a sketchy picture of management sciences from a methodological of view. The paper contains the following items:

- a short historical feature of this scientific discipline and a description of how several philosophical approaches have affected the development of management sciences as well as sources of knowledge in this discipline,
- a discussion on rating management sciences as one of the scientific fields,
- the role of mathematics in management sciences,
- the phenomena of the utopian feature of management sciences and the dilemma of using different research approaches,
- doubts about keeping to scientific standards in management sciences.

This paper is an essay. On the basis of previous literature on the topic of management sciences and methodology, the author addresses issues which concern basic aspects of management science development.

### **2. Influences**

At the start of management sciences – in the first years of the 20th century – researchers focused their work on a selected manufacturing plant. They tried to collect data and draw conclusions from a technical, physiological and economic point of view. And the next step was to research human relations in an

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organization [Krzyżanowski 1999, s. 133]. As time passed the number of sub-disciplines and specific scientific subjects surrounding this topic increased significantly. However, each of them seemed to go his own unique way. As the result there have been few common fields of scientific study.

On one side representatives of main management schools have an empiric approach. August Comte claimed that a real and true science consists of laws governing facts. From the other side many researches have a deep humanistic way of thinking about a man in an organization. They say it is essential to determine conditions, correlations and sources of the facts in human environments [Miś 2006, s. 20 i 221].

Researchers in management sciences have been influenced by several philosophical approaches since the revolutionary paper of F. Taylor was published. His approach concerned ontological and epistemological issues. One of such approaches was rationalism, which excludes any indirect connection between a researcher and reality. In the same way irrationalists are blamed for the effects from their ideas and for theories” were derived knowledge [Motycka 2009, s. 103]. In management sciences this division is deemed to be inappropriate.

It is obvious to say that the development of management sciences has been determined by other social sciences. Such terms as “the interaction theory”, “the theory of an organization” and “social roles theories” derived from sociology. Many researches claim that the basis of management sciences is just sociology. All processes in organizations have sociological features. One of the main parameters of this process is that it is possible to observe it directly. Despite the fact that in order to observe the process we need introspection, it is acceptable to record data from outside researchers [Nowak 1970, s. 29-31].

Since the development of management sciences was shaped by other scientific disciplines, it is possible to find some features of methodological behaviorism and materialism in management sciences. One of main assumptions of this approach is that scientific statements should be able to be controlled during objective experiments. However, objective facts about human behavior are allowed to be reckoned only through human actions [Seattle 2000, s. 57]. This positivism approach is the basis of most theories in managements sciences, especially those concerning an organization [Cole, Chale, Couch, Clark 2011, s. 141].

Another approach which influenced management science was that of physics analogies. This can be treated as a type of materialism. This approach forces researchers to make a research model based on empirical definition not only theoretical definitions [Searle 2000, s. 61].

Readers aware of this can find research work about management schools focused on resources. The analogy implies that an organization is like a mind and an organization's resources are like a brain. It is possible to quote the opinion of A. Glińska-Neweś and B. Godziszewski, who stated that a resources' approach in management sciences is present in research which indicates the correlations between the success of an organization and its features and between the number and the configuration of resources [Glińska-Neweś, Godziszewski 2010, s. 242].

S. Cyfert and K. Krzakiewicz Clair state that knowledge in management sciences is open. It means the knowledge is still being developed and this phenomena in an organization can be found to be only in a certain context. The aim of research is to interpret facts in their environmental background [Cyfert, Krzakiewicz, 2009, s. 10].

Evolution in management sciences means that this fragile system of terms is going to be ruined. We can find many past authors who have tried to present coherent and comprehensive systems of terms [Zieleniewski 1978, Kotarbiński 1965]. We could discuss their ontological and epistemological assumptions as they kept very close to a scientific ideal model. Nowadays it seems there are many destructive processes in management sciences. Even academic handbooks carry on the dispute over what management means [Stoner, Wankel 1994, s. 361].

### **3. Origins of knowledge**

William Petty said a hundred years ago „Making politics without knowledge of measurement, structures and features of society is as superficial as practices of charlatans and wizards” [Ball 2007, s. 70]. When we change the word “politics” into “managing” and the term “a society” into “an organization”, it is easy to see troubles in managements sciences.

Such an interpretation of Petty's could be found in the works of A. Koźmiński and A. Zawisłak. Their two-role book formed 30 years ago shows that a society and an organization are very similar. The authors wrote that “management processes are always held in the social structure which creates its content (...)” [Koźmiński, Zawisłak 1982, s. 114].

It seems that in management sciences the origin of knowledge simply comes from human senses, which are represented from a technical point of view by empirical research. What is more interesting, knowledge is being developed based on surveyed participants of organizations gathering opinions about facts an organizational reality. This statement is just an assumption of the author based on inductive reasoning. However, if this holds true, management sciences have a noisy human “buffer” along the way between the real world and their scientific description.

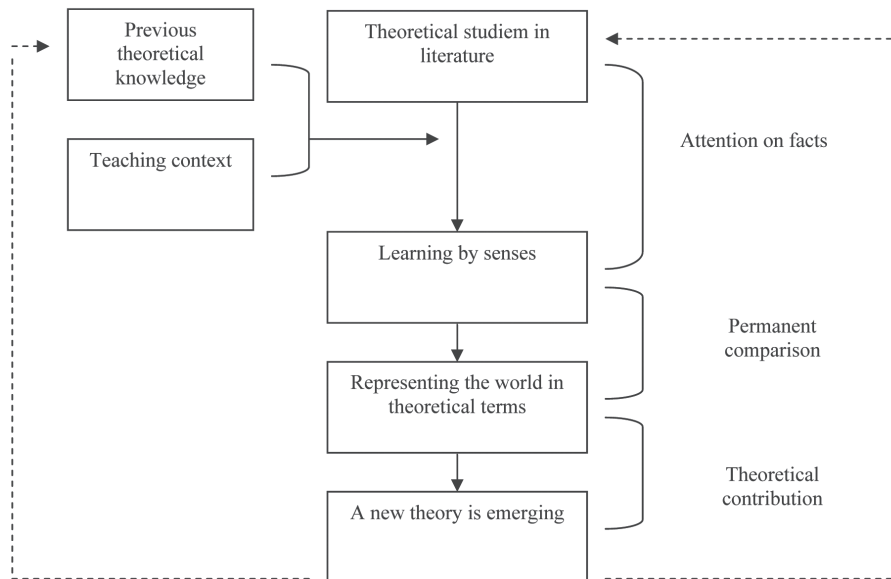
R. House put forward some questions concerning the future of management sciences. The first question is essential and it concerns minimal requirements in order that we may define management sciences as being “scientific”. The second question is about differences between utility and reliability of theories in management sciences. Physics is an ideal example of this. The third question concerns practical requirements of management sciences. There is also an additional issue about what way empirical research influences the theoretical background of management sciences [House 1971, s. 7]. One must admit, that R. House does not address these questions.

A. K. Koźmiński and D. Latusek-Jurczak draw attention to the point that management science, such as many social sciences, have many different paradigms and different points of view on this phenomena may exist [Koźmiński, Latusek-Jurczak 2011, s. 25]. S. Sudoł wrote that the main role of any science, especially management science, is to help people to foresee the future in an organization. Another role is to determine practical rules and ways of acting [Sudoł 2010, s. 11].

In most sciences a permanent conflict exists between entirety and rigorousness [Deutsch 1997, s. 27]. In management sciences such terms as “social capital”, “talent management” or “entrepreneurship”, are contrary to Taylor’s rule, which was to recollect an object into pieces, let these pieces develop and then again put them together.

One of the approaches to creating theories in management science we can find in papers by D.A. Shepherd and K.M. Sutcliffe. In their opinion all the work on any theory starts from literature, which studies previous research done. This knowledge must be analyzed critically and transformed in a researcher’s mind in order to change it into a theoretical representation of the real world. Afterwards it can be developed further by new factors, research effects or intuition. As the result of this process a new theory emerges.

The procedure of creating new theories is shown in the figure 1.



**Figure 1.** Creating theories in management sciences [Shepherd, Sutcliffe 2011, s. 367].

When we understand figure 1, it is easy understand the issue addressed by D. Deutsch: Is the structure of reality is always unified and understood for researchers?" [Deutsch 1997, s. 34].

In the case of management science reality means organizational reality, which is only a mere part of the whole world. This question arose from the intuition of researchers.

At first the answer is: Yes. But why? If mathematics – which we can understand as the most unified and simple representation of the world – is able to be an essential part of the structure of the world, why should it not be part of the structure of organizations? Why is organizational reality not mathematical?

A further question can be asked: If this is not so, why wouldn't organizations be objects from this real world?

#### **4. Mathematical subtlety or wide-spreading erudition**

In his latest book K. Zimniewicz started the discussion about a connection between theory and practice in management sciences and he put forth the question as to if management sciences belong to idiografic or nomotetic sciences? [Zieniewicz 2008, s. 137]

An unequivocal answer to this question would lead to several consequences in the field of methodology of research. It seems that researchers are very rarely aware of this dilemma. For example, those, who use the case study method, should be classified in the idiographic field, while researchers who use “quantitative methods” belong to the school of nomotetic research.

One could say that some phenomena need to be treated in one way and others in another. Yet, if we take this all for granted, one could easily question the integrity of management sciences.

In other literature we can read about researchers, like J. Niemczyk, who claims that management sciences are interdisciplinary and that it's not easy to determine if they are idiographic or nomotetic. They may simply be treated in both ways [Niemczyk 2009, s. 4].

J. Rokita draws our attention to problems faced by researching companies. Firstly, such research is based on a one-time-only study. This means researchers become familiar with the situation only at one point in time. J. Rokita calls this methodological approach “a static assessment of reality”. Secondly, most research is not focused on reasons for the effects noted. The results of research contain mostly correlations between items in time and do not concern reasons [Rokita 2010, s. 258].

When noting the results of this research, one might ask oneself: Are the conclusions derived from the data still scientific and do they verify the hypothesis or allow us to establish scientific theories?

H.G. Hicks and F. Goronzy claim that each theory in management sciences possesses multiple features related to personal values of the researcher creating it. This is certainly not a positive aspect in development of management sciences [Hicks, Goronzy 1967, s. 383].

It is worth quoting A. Grobler, who wrote about the problems of Francis Bacon. This classic philosopher had many troubles when he tried to give his assumption based on inductive methods. A. Grobler claims he did not take into consideration mathematics to assist him in his research. Mathematics and astronomy were considered to be something for nobility. Other fields of knowledge were treated as common doxa [Grobler 2008, s. 28]. It seems that management sciences are divided this way.

In turning to the point of whether management sciences should be called idiographic or nomotetic, it is worth citing a question formed by J. Niemczyk: Is it better to use mathematical subtlety or wide-spreading erudition in management sciences? [Niemczyk 2009, s. 5]

## 5. Utopia and pluralism

Ł. Sułkowski wrote about management sciences in a very fine manner and defined them as utopian. On one hand they show an explicit or implicit vision of a better world. On the other hand researchers claim it is possible to get know this world in detail [Sułkowski 2005, s. 7].

What is more, in his opinion this utopian feature means management sciences follow a positivistic way of thinking and try to discover the only truth about the organizational world [Sułkowski 2005, s. 7]. Utopia in social fields is defined as the attempt to create a better world similar to the projected one and equal to theoretical assumptions [Sułkowski 2005, s. 7].

Ł. Sułkowski claims this is impossible to achieve. Hence the question: Is it possible to get to the truth and if not (according to Sułkowski), are management sciences still scientific?

Another opinion is stated by P. Darmer's. He expressed a very interesting opinion concerning management sciences, announced in 1975 by Becker. He claimed that in 1970s there was overproduction of "the truth", or basically there was an eruption of huge numbers of research results. This mean that it was virtually impossible for a common researcher to explain all the different theories in management sciences, not to say, become familiar with them all [Darmer 2000, s. 337].

Another paper which was important in the field of management sciences and their development was published in 1980 by H. Koontz. He proved that in management sciences many shallow topics are presented by sophisticated words and understandable statements. He called this language of doubtful rules and assumptions, " the jungle of theory of management" [Koontz 1961].

As A. Koźmiński and D. Latusek-Jurczak wrote, in the decades of development in the management science, many methodological schools have been established. They were created by people who did not always used reasonable arguments to prove their assumptions. The authors wrote about S. Ossowski, who in 1967 was a good example of such behavior. In this case demonstrating power and an unwillingness to compromise in this field took priority over presenting scientific effects [Koźmiński, Latusek-Jurczak 2011, s. 25].

E. Mastyk-Musiał said in his very divisive opinion that "the strength of management sciences lies in their diversity" [Mastyk-Musiał 2010, s. 15]. Unfortunately, it is not easy to agree that this is an advantage of this science and that allowing it to develop by adding pieces of knowledge one to the other is a important.

D. Deutsch wrote that many scientific theories are gradually diminishing from a level which explains the world, to the level of simple statements about general rules which facts follow [Deutsch 1997, s. 19].

P. Verschuren and R. Hartog are critical of the trend in management science present over the last decade. They published their paper in 2005 and called this trend as “looking for knowledge in order to look for knowledge”. They claim that many researchers create a description of the world and they do not progress further to the reasons. This is destructive to the development of management sciences [Verschuren, Hartog 2005, s. 733].

„The breaking away from scientific features” nature of management sciences is very often explained as a stage in the life cycle of this scientific discipline. S. Sudoł pointed out that management sciences are quite young compared to pure sciences and even to social sciences. He indicated that many terms and phenomena still have a very soft nature. This means that management sciences do not have strict definitions and stable research methods. He wrote: „There is too much subjectivity” [Sudoł 2010, s. 8-9]. S. Sudoł also wrote that now it is very easy to form new theories in management sciences. They do not have any support from verified methods of analysis and they should be treated only as hypothetical [Sudoł 2010, s. 8-9].

Ł. Sułkowski added that “ management sciences at this stage of development should not be universal and too objective” [Sułkowski 2005, s. 8]. Of course there is a question of if at this stage researchers should stop attempting to create stable and objective knowledge instead of forming subjective opinions.

Returning to the utopian feature of management science Ł. Sułkowski enumerates several assumptions which create this utopia. They are as following:

- a) there is the need to believe in continual scientific development,
- b) a universal and foolproof research method is in the process of being developed,
- c) the need for mathematic and statistic representation of the organizational world,
- d) using a “reduction into pieces” approach instead of a holistic approach,
- e) aspiration to create a finished and deterministic explanation of the organizational world [Sułkowski 2005, s. 8].

These arguments are enumerated by Ł. Sułkowski as being a negative epistemic approach to conducting research in management sciences. He admits that the advantage of contemporary management sciences has a social scope and departs from positivistic values. Such an assessment is not common in science.

## **6. Conclusions**

This paper is one of many voices to be heard in the discussion about developments in management sciences. It is also an effect of theoretical research

done by its author during several years of studying the methodology of science in order to build a system of organizational terms. The problems mentioned here might be better solved if such a system existed.

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