EPISTEMOLOGICAL DILEMMAS IN MANAGEMENT RESEARCH

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Abstract
Building knowledge about management processes depends on several aspects which are necessary to be taken into consideration during any research in that field. In the paper such theoretical dilemmas of creating knowledge about activities in management area can be found: specification of borders of scientific cognition, the perspectives of questions and expected answers, the differences between quality and quantity approaches, a choice of a research method, the possibilities of the verification of the hypotheses, conducting inference and the borders of an explanation in management science.
Keywords: *epistemology, facts, qualitative approach, quantitative approach, mixed method, reasoning.*

1. Introduction

If knowledge about management is scientific, it should complete the general definition of science which is understood as a competent system of phrases possible to be justified, which is used to gain and order, in some respects, the learnings about the determined field (Keller, 2010, p. 37). The knowledge is being created by examining the world, but this kind of studying is a cognitive process. Cognition is a state of information on a given matter (Marsden, 2012, p. 163). At the same time study and cognition always have some subject (Woleński, 2000, p. 172). There are also processes going on between an object and a subject (Lee & Cassell, 2013, p. 123). They are called cognitive activities which cause certain epistemological dilemmas (Woleński, 2000, p. 172).

The aim of the paper is to present the most important epistemological dilemmas in the research within management studies such as: specification of borders of scientific cognition, the perspectives of questions and expected answers, the differences between quality and quantity approaches, a choice of a research method, the possibilities of the verification of the hypotheses, conducting inference and the borders of an explanation in management science. The research method was developed through the analysis of the

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literature resources in management studies, philosophy and the methodology of science. Due to the theoretical character of the paper no research hypotheses were stated or verified.

2. Cognition in academic studies

In management studies and many other academic disciplines an epistemological approach derived from the analytic philosophy is accepted. Russels epistemology intended to be a combination of logic and natural cognition because the structure of the logic language is isomorphic with the structure of the world (Voordijk, 2009, p. 715). While Moore focused on the epistemological matters of human perception (Woleński, 2000, p. 151), the relation of the consciousness of subject to object was in the center of other scholars interests (Hofer, 2005, p. 98).

Husserl claimed that the right theory of cognition cannot be naturalistic and it cannot as well be built over the philosophy, which was another maneuver of the naturalists (Husserl, 2008, p. 44). Ingarden (1971) was also an adherent of phenomenology but the one called realistic phenomenology. He was in favor of the theory of cognition totally independent from the outside conditions (Ingarden, 1971, p. 391). Husserl (2008) described the same phenomenon by these words: *I can admittedly consider what kind of being it is and in what relation its way of existence is to the others, (…) and I can (…) lead to watching the watching itself, in which the given being is constituting (…). But the whole time now I am moving on absolute ground: this observation is something absolute and it stays like this until it lasts (…)* (Husserl, 2008, p. 44).

Midgley (2003) refers to Popper and claims that the basis of any epistemological actions is determining objects in a given reality with certain features: [an] event must be an observable event; that is to say, basic statements must be testable, inter-subjectively, by observation (Midgley, 2003, p. 80). The word event has been used by Popper as one kind of fact which is possible to be recorded. This statement means that every event must be possible to be observed and what follows the basic statements must be intersubjectively verifiable through an observation. The result is that to call the cognition of the organizational reality academic it has to be considerably divided from the observer (researcher) (McGuire, 1986, p. 5).

Another approach to cognition – rationalism – combines the cognition and empiricism and results in an approach that cognition is possible to be done by senses (Fawcett et al., 2004, p. 206). Such simplification would suggest that in both approaches the way of cognition is limited to the one of aforementioned (Gottfried, 2007, p. 27). It is not so because to every psychic experience, on

the way of phenomenological reduction, refers a pure phenomenon showing its immanent essence (taken individually) as an absolute fact (Husserl, 2008, p. 59).

However, all sensual impressions cannot be treated alike in the perception of reality (Deutsch, 2007, p. 57). It is an irrefutable fact that the people are small creatures with some inaccurate and incomplete channels by which they gain the full information about the outside world (Deutsch, 2007, p. 57).

Summarizing, there are many different approaches to human cognition. Management science is based mostly on empiricism. This fact has a great impact on other issues in management epistemology. Firstly, it is necessary to understand the essence of a phenomenon or an object which is going to be examined. Secondly, it is also about setting the components and relations between them. Thirdly, the synthesis of these elements and their relations must occur to make an entirety that becomes a conceptual object to research.

3. Questions and answers

The cognition in academic management studies is made by questions asked in a specific language (Midgley, 2011, p. 3). Wittgenstein claimed that the solution or a complex description of the world is correct and can be made by the logical analysis by reaching elementary sentences (Gottfried, 2007, p. 125). Wittgenstein assumes that the language is used for building the sentences about the world of facts (Day, 2005, p. 631). At the same time he creates a uniform logic structure. Wittgensteins logic is a logic of sentences and predicates. Logical sentences are associated with logic atomism by Russell (Gottfried, 2007, p. 125).

There are certain assumptions hidden in every question (Bendixen et al., 2004, p. 70). They are hidden in the sentence part and as well as in the concepts and the basic words referring to them in that part. If the assumptions are true (the idea of the truth is not the subject of this paper) then we accept the question as appropriate or, otherwise, accurate (Przybyłowski, 2002, p. 155).

In the context of the considerations about the languages influence on building academic theories in management studies it is worth to show the influence of the conventionalism on research results (El-Diraby, 2012, p. 54). Popper wrote that if someday it turned out that the researchers doing the observation cannot reach the agreement concerning the basic sentences it would result in a discomfiture of language as the means of common communication. The new Babel tower would come into existence: the scientific discoveries would turn into an absurd. (Gottfried, 2007, p. 117).

Similarly as Gottfired (2007), Popper considered conventional character of the basic sentences trying to investigate if they can be accepted or rejected to the same extent. Poppers basic sentences also had different names according to

the authors of the concept. Schlick was talking about the observative sentences. Carnap and Neurath called them the protocol sentences (Gottfried, 2007, p. 116).

These sentences should have the status of findings, not academic theories. Carnap added one more feature: the basic sentences are entitled to the conventional components as well as to components based on an observation (Gottfried, 2007, p. 116).

This raises consequences for an inference in management studies. Namely, there cannot be a complete certainty about the truth of the sentences predication based on the organizational reality. Additionally, Popper denied the possibility of accepting synthetic (general) sentences, which causes the necessity of avoiding generalization in management studies (Gottfried, 2007, p. 116). It can be concluded, that every synthetic sentence (generalization) is assumed to be less probable than the basic sentence.

4. A qualitative and quantitative approach

The next field of dilemmas consider a dominant approach in epistemology of management research. There are two main options: a qualitative or quantitative approach. In management studies it is believed that a positivist paradigm is characterized by the quantitative research methods and an imperative paradigm by the qualitative ones (Koźmiński & Latusek-Jurczak, 2001, p. 31). The qualitative approach in management studies has already a few decades of history (Blackler et al, 1983). During the recent years its meaning has been raised in the literature (Lee, 1992, pp. 87-94). Some authors emphasize the real importance of the qualitative methods in academic research on organization (Cassel et al., 2006, p. 5). The qualitative methods are not better from the quantitative ones, they are just different (Cassel et al., 2006, p. 5).

In the interpretative approach the researcher (…) is some kind of an interpreter of the meanings (…).(Koźmiński & Latusek-Jurczak, 2011, p. 31). The main stress is made on an interpretation of the phenomena in the organizational reality (Dilley, 2004, p. 128). The description itself is not so important anymore (Gordon, 2011, p. 173) and the discovery of truth about an organization is not possible (Koźmiński & Latusek-Jurczak, 2011, p. 30)

The quantitative approach makes the identification of the causes of phenomena more difficult (Woźniak, 2010, p. 8). It is also a ground for a conflict between management studies and so-called economic praxis (Edmondson et al., 2007, p. 1155).

In the qualitative approach a measure of quality of the research is the control of subjectivism by an intensive autoreflection of the researcher (Dilley, 2004, p. 130) who is aiming at the division of his own feelings from the feelings of an organization members he tests (Koźmiński & Latusek-

Jurczak, 2011, p. 31). However, this sentence suggests that in the interpretative approach there is a hidden contradiction (Fawcett et al., 2014, p. 202). On one hand, the interpretation is subjective as the word interpretation itself indicates. Previously the authors said that the researcher (…) recognizes the tested reality subjectively (Koźmiński & Latusek-Jurczak, 2011, p. 31).

What is interesting, the representatives of the qualitative approach blame positivists for seeking the truth. Despite the assumptions of objectivity the real impediment was perception of reality in a subjective way. However, the same scientists propose applying a more subjective research method – an interpretative qualitative approach (Malina et al., 2011, p. 60).

The qualitative approach can apparently mean a description of a given phenomenon with the omission of any numbers or statistics. However, it is not so, but it is more about the multidisciplinary and multi-perspective approach, based on a deep interpretation of the phenomena (Cassell et al., 2006, p. 161).

The empirical data set can be explained by infinitely many internally consistent but mutually exclusive theoretical interpretations (Heller & Życiński, 2011, p. 195). There are strong voices in the current state of art that are in favor of the quantitative methods (Krogh et al., 1994, p. 53). Woźniak (2010) refers to meteorology, which also works on the phenomena that are difficult for conceptualization, especially for modelling and where the quantitative approach is commonly developed (Woźniak, 2010, p. 9).

It is worth quoting that in management studies cases of combining these two different epistemological attitudes appear seldom. Each of these methods (approaches – authors note) *requires (…) different type of sensitivity and a different workshop. (…) The image we get by studying different theories of organization seems broken into two parts: objective and subjective. (…) There is no connection between them and there is no synthesis* (Koźmiński & Latusek-Jurczak, 2011, p. 31).

However, it is also worth stressing that the division of the scientific matters, generally speaking, into qualitative and quantitative is not right and if we surrender to it, we may start making a lot of harmful simplifications (McGuire, 1986, pp. 6-8). As an attempt of connection of both approaches a mixed method (Tashakkori & Teddlie, 2010), described further in the paper, has arisen in management studies.

5. Research methods

Within the approach of research there is a necessity of choosing an appropriate research method. The creation of knowledge depends on the techniques of collecting, analyzing and interpreting data and the way they are implemented (Pinsonneault & Kraemer, 1993, p. 78).

The research method usually strongly depends on an accepted scientific theory explaining the given phenomenon (Adam, 2007, p. 104). The choice of a research method is not only a technical matter (meaning the research technique – authors note), but also an expression of philosophical beliefs. It is mainly about supporting a positivist approach or being its opponent (Bryman, 2008, p. 161). The research method should also not disturb performing actions provided for this method (Grzybek, 2006, p. 23).

In the current state of art for management studies there is an approach to empirical research to be found and it is called a mixed method (Molina-Azorin et al., 2012, p. 426). Its aim is to combine two often contradictory research methods – qualitative and quantitative (Zachariadis et al., 2013, p. 865), as well as a reversion to the observation as a basic research method (Symonds & Gorard, 2010, p. 121). The mixed method is defined as a method in which the researcher applies quantitative and qualitative methods, techniques, approaches and research ideas alike (Mkansi & Acheampong, 2012, p. 133). Applying the mixed method concerns all stages of the research process (Abowitz & Toole, 2010, p. 108).

Creswell and Plano Clark (2007) write about the mixed method using the following words: The mixed method is a research idea based on philosophical assumptions and on the information gathering techniques alike. (…) As a method, the mixed method focuses on gathering, analyzing and combining the data gained from the qualitative and quantitative perspective concerning the same phenomenon.(Creswell & Plano Clark., 2007, p. 5)

Azorin and Cameron provide a few definitions of the mixed method formulated by different scholars. The mixed method is defined as:

- a research approach which contains at least one qualitative and one quantitative method (Greene et al., 1989, pp. 255),
- such research approach where tested phenomenon is treated in a qualitative and quantitative way (Tashakkori & Teddlie, 1998),
- as above, but additionally the language of description is qualitative and quantitative alike (Johnson & Onwuegbuzie, 2004, p. 15),
- a qualitative-quantitative integrated approach for gaining data as well as analysis within one phenomenon (Plano, 2005).

Summarizing the dilemmas concerning the use of qualitative and quantitative approach as a base for creating the research method in management studies, it can be stated that the most appropriate approach is the mixed method. Such epistemological standing, intentionally chosen from the presented options, gives an opportunity to observe the organizational reality with the highest accuracy and honesty.

6. Verifying knowledge

The effect of applying a research method is a verification of the knowledge about the world that is usually based on hypotheses testing (Bartunek et al., 1993, p. 1363). At this point Feyerabends beliefs on seeking the knowledge about the world are worth quoting: A hypothesis, that universally important and imposing rules of cognition and action exist, is a special case of belief whose influence extends much further than the field of academic disputes (Onfray, 2010, p. 330).

A verification theory of meaning with the roots in the Vienna Circle has still a strong influence on the way of verifying the hypotheses in management studies (Nodoushani, 2000, pp. 73-74). This theory proclaimed that determining whether a sentence is true or false can be conducted by the method of empiric verification. However, Quine stated that our claims about the outside world stand not individually but collectively before the tribunal of sensation experience (Nowaczyk, 2008, p. 89).

Popper made the researchers think about the matter of existence of the formation which seems not to exist, namely the probabilistic hypotheses (Dolby, 1998, p. 230). The probabilistic hypotheses are often a subject of verification in the works in management studies. Popper accepts that science needs such hypotheses (Dolby, 1998, p. 230).

Typical hypotheses in management studies are the casual hypotheses. Otherwise it can be said that (…) the sense of the sentence is specified by its empiric verifiability (Heller & Życiński, 2011, p. 185). It means that they include an assumption about the influence of one phenomenon on another. Then the phenomena are usually called depended variables. Czakon (2010, p. 10) calls the hypotheses, assuming casual links – strong and the statistical links (which talk about the coexistence of the phenomena – authors note) – half-strong. A choice of the way of formulating the hypotheses, referring to the accepted research approach or the research method, must be then preceded by the choice of the knowledge verification method in management studies.

7. The inference

The inference is a mental process during which we reach the acceptance of the next sentence (the conclusion) on the basis of the recognition of certain sentences (the premises) as real (Wieczorek, 2005, p. 47). The inference is closely related to the concept of logical implication. The inference is correct only when the conclusion follows logically from premises (Wieczorek, 2005, p. 47). However, there is a question: can the inference be used to create the knowledge in management studies?

There are two ways that scientific statements may be evaluated from the epistemological point of view. The first one assumes the reference to the standards of a given scientific discipline. The second one assumes reaching the philosophical roots lying at the basis of the formulation of a given statement (Adam, 2007, p. 93).

The deductive inference, progressive and regressive alike, takes place on the ground of formal logic (Przybyłowski, 2002, p. 159). Woleński (2000) writes that epistemology deals with the material truth and the logic with the formal truth. However, it seems that both truths should not be demarcated with some artificial borderline. The formal truth, proved by logic rules, can also be a material truth. It can be like this when the condition of material veracity of premises is met. The formal logic is then, in some sense, a tool to use the epistemological effects (Woleński, 2000, p. 181).

Faber and Scheper (2003) write that the belief that formal logic can be used to infer about the surrounding world is based on assumptions that in the reality there are certain indisputable rules and laws (Faber & Scheper, 2003, p. 137). A question can be asked, when the rule of the inference is reliable. So, when and only when the premises are true, the introduced conclusion based on this rule is also true (Bocheński, 1993, p. 79).

If so, can the inference in management studies occur only on the basis of the rules of logic thinking? Quine undermined the role of the deductive inference in seeking the nature laws. He had two serious objections. First, he thought that deducted laws describe casual correlations rather in a given context of events and not the generality of a given type of phenomena. Second, the nature laws are always based on certain assumptions. Without them they can appear as totally untrue (Faber & Scheper, 2003, pp. 137-138).

Czakon (2006) writes, referring to Popper, that to draw conclusions about some phenomenon, the existence of many confirming phenomena is not enough and the conclusion is not valid already. He touches also the immemorial problem of inductive inference, strictly speaking, an incomplete induction. (Czakon, 2006, p. 9) Popper himself did not claim that, and his interpreters are reserved towards uncritical adoption of superiority of the falsification rule over verification (Popper, 2002).

Deutsch (2007) gives an argumentation by Russell for the fact that induction itself cannot be a justification for any conclusion (Deutsch, 2007, p. 57). What is more, the repeating results of observations, not only cannot justify the theories, but there is something more. The biggest mistake – as the author says a fundamental notional mistake – is that the inductive extrapolation of facts cannot lead to rising of new theories. The induction yet has no verification power but so far the illustrative one (Czakon, 2006, p. 9). The reason is clear:

the extrapolation of the observation results is not possible without revealing the explanation of the phenomenon (Deutsch, 2007, p. 59).

According to Deutsch the claim that the new theory results from the generalization of the effects of conducted observations is wrong. He believes also that the veracity of theory can be proved thanks to systematically repeated observations is neither true (Deutsch, 2007, p. 59). However, if we want to understand the true nature of knowledge and its place in the structure of reality we have to accept the fact that the inductionism is entirely untrue. No scientific reasoning and in fact no proper reasoning of any nature surrenders to the inductionist description (Deutsch, 2007, p. 60). In management studies such reasoning is also impossible to be conducted. This view is crucial for treating the inference in management studies. That is why the knowledge in management studies always bears the marks of being probable in the way Popper understands (Popper, 2002).

8. Explanation

The last dilemma closes all effort in the research: can every conclusion that is a result of inference and claiming something about the organizational reality be an explanation of a phenomenon in management studies (Hassell, 2002, p. 186)? It should be remembered that every explanation in social studies must be set in a certain context (Faber a& Scheper, 2003, p. 141).

White and Takets (1996) opinion may be quoted here: The difference between it is and it may be assumed that it is really huge. That is why the epistemological claims do not say anything about the world as such, but about the one we know (White & Taket, 1996, p. 50).

While explaining the phenomenon we choose the theory which should contain three features. It should be based on an empiric data, be as simple as possible and as conservative as possible (fixed – authors note) (Creath, 1998, p. 110). That the seeking for such theory (originally – the first rule) always contains antinomy in it. It means that such theory must be complete to some extent and agreed among the persons sharing it. And this again assumes something which should exist earlier – the theories (rules) to fix that first theory. And so on. (Valone, 1988, p. 87).

To summarize, it is worth saying that the explanation means such a kind of reasoning which is based on indication of argument for the sentence defined as true. A sentence to explain is an *explanandum* and a set of explaining sentences – *explanans*. Any sentence telling about a fact can act as an *explanandum*. An *explanans* may be constituted by sentences expressing (…) laws or regularities or sentences claiming a phenomenon of a fact or group of

facts alike (Przybyłowski, 2002, p. 165). That is why not all facts collected together and made by interference create a real explanation.

9. Conclusion

The epistemologic dilemmas in management science consider seven main areas. Firstly, there are many different approaches to human cognition. Additionally, management science is mostly based on empiricism which is the area of other issues and dilemmas in management epistemology. Secondly, the cognition of management is made by questions asked in a specific language. This raises consequences for an inference in management studies. Thirdly, there is a strong division of scientific cognition into qualitative and quantitative approach. Fourthly, in both approaches there is a need of choice an appropriate research method. It can be stated that the most appropriate approach is the mixed method. Such epistemological option gives an opportunity to observe the organizational reality with the highest accuracy and honesty. Fifthly, knowledge verification is based on the way of formulating the hypotheses, referring to the accepted research approach or the research method. Sixthly, in management science reasoning is very difficult and sometimes impossible to be conducted. That is why the knowledge in management studies always bears the marks of being probable in the way K. Popper understands (Popper, 2002). Seventhly, an explanation in management is always constructed by sentences expressing laws or regularities, but there is no place for the certainty.

Being conscious of these choices in management studies gives the chances for theories (formulated by different scholars in different time – authors note) meeting the requirements to a further extent than ever before and these are: accuracy, cohesion, generality, simplicity and fruitfulness (Krzyżanowski, 1992, p. 251)

Any choices will be made in the field of epistemology of management studies it is worth remembering that …science is not common sense, and its most basic ideas and frames of reference require development through complex intellectual processes which involve not only interpretations of observation but also theoretical and partly philosophical conceptualization (Parsons, 1968, p. 429).

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