Abstract

Without epistemology there is no possible scientific reflection. And this holds true for any discipline. However, in the management science literature, we can notice that the term epistemology has not the same sense or at least does not at first sight seem to cover the same concept. In contemporary Anglo-Saxon countries, epistemology is “a philosophical term meaning ‘theory of knowledge’. On the other hand, in the French philosophic tradition epistemology is defined as the theory of science in general. After discussing the issue - what does epistemology really mean – the paper gives an overview of some French speaking authors who are attempting to answer the question: which 'epistemology' seems the most suitable for tackling the complexity of modern organizations?
1. Introduction

Without epistemology there is no possible scientific reflection. And this holds true for any discipline. However, in the management science literature, we notice that the term epistemology has no same sense or at least does not at first sight seem to cover the same concept.

In contemporary Anglo-Saxons countries, epistemology is defined as a philosophical term meaning ‘theory of knowledge’. Epistemology concerns itself with the analysis of what is meant by the term ‘knowledge’ itself, and with questions about the limits and scope of knowledge, its reliability, and what constitutes justification for holding a knowledge.”(Edgar & Sedgwick, 2003).

In the French language philosophic tradition epistemology is defined as the theory of the science in general. In addition, we have for example, epistemology of the physical and chemical sciences, of biology or even of logic. It is this last one – the epistemology of logic that joins the Anglo-Saxon approach because it is interested in the various forms of thought seen through a theory of knowledge. A theory which tries to understand the foundations of the knowledge, its development, its object, its purposes and its objectives.(Dortier, 1998)

Then, what does epistemology really mean? Is a philosophical term designating ‘theory of knowledge’, or it means ‘philosophy of science’?

2. Complexity of epistemology

2.1 Philosophy of science

The philosophic dictionary gives the following definition of epistemology:

« [From Greek: épistêmé, science, and logos, study]. Study of the scientific knowledge from a critical point of view. » Cuvillier (1966)

In other words, the epistemology makes the critical study of the principles, hypotheses and results of the sciences to determine their value. In the French language tradition the epistemology became more particularly the philosophy of sciences which means that it asks the questions concerning science in general:

Epistemology concerns the thought, the intelligence, the knowledge, the consciousness, the imagination, the perceptions, the sensations … It raises questions about the foundations of the scientific discourse from a historic and linguistic point of view, as for example: which is the reach of the concepts (space, time, subjects, events); questions about important advancements, debates and scientific revolutions, such as the evolution theories, the chaos theory; questions about the method, the value and the limits of the results, as for example: what is the meaning of the interpretation and the logical processes of construction of models; questions about the relations between the sciences and the other forms of knowledge or the other forms of culture, the relations between sciences and economy, sciences and philosophy, the current situation of...
culture influenced by the scientific and technical approach and finally the figures and the important philosophies of the sciences such as the positivism, the Anglo-Saxon empiricism… (www.nv2r.com)

2.1 Theory of knowledge

In the Anglo-Saxon literature, the term epistemology covers the theory of knowledge. Robert Audi (2003) defined in fact the word epistemology in the title of his book: Epistemology, a contemporary introduction to the theory of knowledge. He distinguishes scientific knowledge, moral knowledge, and religious knowledge. But the word knowledge is used as synonym for epistemology:

« Epistemological problems and theories are often interconnected with problems and theories in the philosophy of mind... There is, then, much discussion of the topics in the philosophy of mind that are crucial for epistemology, for instance the phenomenology of perception, the nature of belief, the role of imagery in memory and introspection, the variety of mental properties figuring in self-knowledge, the nature of interference, and the structure of a person’s system of beliefs. »


Adam Morton (2003) proposes three basic questions of the theory of knowledge:
− What qualities should our beliefs have?
− What qualities do our actual present beliefs have?
− What qualities could our beliefs have?

2.3 Philosophy of knowledge

We can notice that both definitions agree on the word philosophy. A philosophy which nevertheless originates from several traditions, according to Dortier (1998):

An important tradition goes from Socrates to Ludwig Wittgenstein, via Kant:
« Philosophy does not necessarily claim to reveal the ultimate truth. It wonders about the conditions of the knowledge, about its forces and its limits. It wants to have a critical consciousness, a school of doubt and relativism. » (p. 431)
The second tradition which goes from Plato to Martin Heidegger via Friedrich Hegel: « philosophy is metaphysical, a knowledge of a superior order to the opinion, to the faith or to the science. » (p.433)
According to the third tradition, philosophy is considered to be an art of living. (Etymology of the word philosophy: the friend of the wisdom). For this movement, philosophy sets as ultimate goal the human happiness.

Then, what to say about knowledge? We can define knowledge as an act of someone who makes an effort to capture an object by thoughts and to form a proper representation of this object and the understanding resulting from this action. This joins the more detailed definition given by the Larousse dictionary: knowledge in general, is the capacity to know, the way of understanding and of perceiving. It is also the self-awareness. In philosophy, we speak about theory of knowledge which is a system to explain the connections between the thoughts and the outside world.

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The theory of knowledge is also the philosophic study of sources, contents and processes of the human knowledge: It « tries to define in a very general way the conditions which allow the acquisition or the discovery of the understanding (which should be distinguished from opinion and from belief). We distinguish generally forms of knowledge according to their origins (empirical or intellectual), according to their object, which can be mathematical, physical or metaphysical, and according to their degree of certainty. The theory of knowledge has sometimes a 'critical' vocation, when it suggests determining the limits or the borders of the possible knowledge. » (Encyclopedia Encarta 97)

By underlining the critical vocation of the theory of knowledge, the definition of this encyclopedia, joins the critical way of thinking of the philosophy of sciences of the French tradition where the knowledge results in understanding. This reflection on the knowledge allows to reconcile both surrounding areas of epistemology which becomes philosophy (of the science) and (theory) of knowledge. At least both definitions agree on the word knowledge, even if they take different orientations. As pointed out by Dortier (1998):

« The theories of knowledge are divided into two important movements: for one group, knowledge forms in contact with the outside world and for the other group, it supposes a production of ideas which allows the reconstruction of the world.
Another orientation taken by the philosophy of knowledge concerns the scientific method. In the 20th century the philosophy of sciences or epistemology appeared with great names such as, Popper, Kuhn, Lakatos, Feyerabend and Bachelard. »

(Dortier, J-F, 1998 p.435)

3. The epistemology of complexity

However, it remains that in the French tradition of research, the cognitive sciences belong to the sciences which are examined by the epistemology in the same way as the other sciences. It is especially since Bachelard that the term epistemology appears as philosophy of sciences. For him, the progress of the contemporary scientific thinking transformed the principles of the knowledge. « For the philosopher, methodologies, so different, so mobile in the various sciences, originated nevertheless from an initial method, a general method which has to inform all knowledge, which has to treat all objects in the same way.» (Bachelard, 1971, p.121).

This is exactly the object which is, in its relation with the subject, the fundamental problem of the epistemology for Morin (1986, p. 22). It is necessary he says « to face this complex problem in which the knowing subject becomes object of its knowledge while remaining subject. ». To support his statement, Morin quotes von Foerster (1980, p.17) who says that we need « not only an epistemology of the observed systems, but also an epistemology of the observing systems ».

The epistemology of complexity, adds Morin (1986) « will have a vaster competence than the classical epistemology » (..) « It will be opened upon a certain number of key cognitive problems already raised by the epistemology of Bachelard (the complexity) and of Piaget (the biology of knowledge, the joint between logic and psychology, the epistemic subject). » (Morin 1986 p.23)
3.1 The epistemology of Bachelard

Bachelard emphasizes the complexity of thinking and of being in their relation with knowledge:

« Thinking is a force, it is not a substance... Thus at the moments where a human broadens his experience and coordinates his knowledge, he is really established in his dynamics of thinking being (...). The thinking being thinks an understanding thought. He does not think of an existence. » (p. 15)

« The progress of the contemporary scientific thinking has determined the alterations in the principles of knowledge (). A thesis as ours, which puts knowledge forwards as an evolution of the mind, which accepts variations concerning the unity and the perpetuity of the ‘I think’ has to disturb the philosopher. Nevertheless, such a conclusion will be necessary if we want to define the philosophy of scientific knowledge as an ‘open philosophy’, as the consciousness of mind which arises by working on the unknown, by looking for what contradicts previous knowledge in the reality. » p. 121)

Bachelard (1971)

3.2 The epistemology of Piaget

With Piaget we enter the genetic epistemology which he defines even as follows:

« The basis of the genetic epistemology is trying to reveal the roots of the different varieties of knowledge from their most elementary forms and to follow their development at later levels until scientific thinking. »

« The great lesson brought the study of the origin(s) is to show on the contrary that there are never absolute beginnings.»

Piaget (1970) p.6,7

The relevance of the genetic epistemology of Piaget lies in the fact that it not only reminds that it is necessary to go back to the origins by showing the existence of an undefined construction where no phase has the privilege to be the first and where all the sources of information are indispensable, but also that it is interdisciplinary. Complexity thinking has the same ambition to recognize the joints between the disciplinary domains.

3.3 Morin and complexity thinking

Complexity thinking is for Morin a way of thinking, a thought that has no ambition to master the reality, but on the contrary, ‘to have a dialogue’ with it. He distinguishes two important principles which organize our thinking. There is a principle of simplicity which is based on the separation of the domains of the knowledge and in which we believe to know the object if we isolate it from its context (disjunction). But this principle also reduces the knowledge we have of an entirety while knowing the parts, without taking into account the qualities of the "entirety" which are not present in the parts (reduction). On the contrary, the principle of complexity connects objects of knowledge, while distinguishing from each other. (Benkirane, 2002, p. 25)
However « complexity thinking is not new. » argues Morin (1994, p.317). He mentions philosophers such as Descartes, Kant, but also historians and novelists such as Proust, who practiced it, to show that it is from now on different by the fact that it «was always 'spontaneous', unconscious of its own problematic. » And exactly « the consciousness of what mutilates the knowledge and makes thinking deficient, is necessary for us to know to reform our thinking. ». For him, it is essentially the principle of simple explanation of complex phenomena of the classic science which differs from the current science.

The most important problem of « the ‘normal’ sciences, including cognitive sciences », is the fact that they « base themselves on the disjunctive principle, which excludes the subject (the knowing person) from the object (here the knowledge), in other words that it excludes the knowing people from their own knowledge. » (Morin, 1986, p. 22). We have already seen with Morin that this complex problem of the relation subject / object has to be to faced by allowing the knowing subject to be at the same moment object and subject of its knowledge. This brings us to the fundamental question on the knowledge put forward by the constructivist epistemology. The constructivism does not allow the division between objective knowledge, thus scientific, and subjective knowledge thus philosophic. The knowledge « is conceived as being scientific and philosophic at the same moment » (Moigne, 1995, p. 115).

Summarizing, we can say that the point of view of Morin defends an open epistemology:

«In this time of epistemology full of rules, epistemology is not a strategic point to be taken to have absolute control over all knowledge, to reject any opposing theory, and to claim the monopoly of verification, thus of the truth. Epistemology is neither pontifical nor legal; it is the place at the same moment of uncertainty and of dialogic. » (p. 64)
«The complex concept we are trying to elaborate, gives the means of the self-criticism. It calls in a natural development for the second epistemological look; it carries the truths which are biodegradable, or in other words mortal, thus alive. » (p. 66)

Morin (1990)

We can conclude with Morin (1990, p.11), that complexity thinking « is animated by a permanent tension between the pursuit of a knowledge that is neither fragmented nor compartmentalized, and the recognition of the incompletion and incompleteness of any knowledge. ». Conscious of the risk of error, because knowledge is perceived from the subjectivity of the knowing who, by means of language and thought, translates, reconstructs, and interprets the outside world. (Morin 2000, p. 18)

Although knowledge cannot be reduced to science, not even to understanding, says to us Lyotard (1979 p. 36), because « science would be a subset of knowledge » and because the term of knowledge can get mixed into « ideas of know-how and of savoir-vivre », it seems interesting to us to deliberate about the link which exists between knowledge and science.

3.4 Foucault and the formation of knowledge

In the scientific domain, Foucault suggests calling 'knowledge' a set of elements indispensable to the formation of a science and connected to a discursive practice:

« Knowledge, is what we can speak about in a discursive practice and which is specified there: the domain established by the various objects which may acquire or not a
scientific status (the knowledge of the psychiatry, in the 19th century, is not the sum of what we considered true, it is the ensemble of behaviors, peculiarities, abnormalities about which we can speak in the psychiatric discourse); knowledge is also the space in which a subject can take position to speak about objects he has to deal with in his discourse (in this sense the discourse of clinical medicine is the ensemble of the functions of seeing, interrogation, decoding, recording, decision, which the subject of the medical discourse can practice); knowledge is also the field of coordination and subordination of the statements where the concepts appear, are defined, applied and transformed (at this level, the knowledge of the natural History in the 18th century is not the sum of what was said, it is the ensemble of ways and positions according to which we can integrate any new statement into those already said); finally, knowledge is defined by possibilities of use and appropriation offered by the discourse (so, in classic times, is knowledge of the political economy not the thesis of the various steady theses, but the ensemble of articulation points with other discourses or with other practices that are not discursive). There are forms of knowledge which are independent from sciences (…), but there is no knowledge without a defined discursive practice; and any discursive practice can be define by the knowledge which it develops. »

Foucault (1969) p.238

Foucault sees in the discourse the obligatory passage which gives knowledge its status. This postmodern philosophic approach where language is build and models the discourses can be, according to Larrasquet (1999, p. 285): ‘the tool of cognitive modeling’ which will allow to build models from what has been said, told or written. However, he warns us, with certain other philosophers who reflected about knowledge, not to consider a model or a system – for example a system of information - as a really existing reality, since this model or system is only a mental construction. (p. 337).

These reflections on the epistemology of complexity bring us to questions about the organizational sciences. When we adopt the principle that ‘there is no scientific reflection without epistemology’, then what kind of epistemology prevails in the organizational research?

4. Epistemology and organizational research

Martinet (1990, p. 9,10) tells us that the most frequent discourse about companies and their management is that managers have no time to lose with epistemology. However, he adds, management sciences are facing an epistemological crisis. There are serious questions about the dominating paradigm that was prevailing during the entire 20th century. Péron (2002, p.17) notices that in the same period in Anglo-Saxon management, pragmatism was the reigning method, which leads to the utilitarianism, in search of happiness in the company through innovation and creativity. It is in fact David (2000, p.83) who meets the challenge of the detractors by raising the question ‘what in management can be considered coming from science’, while pointing to the works on genetic epistemology of Piaget, on complexity from Morin, on engineering sciences, which all give the sciences of management a specific epistemology.

If we consider with Bachelard that the major problem is ‘the epistemological obstacle’ which we can define as a « preliminary knowledge or custom way of thinking which, at some point, prevents the science from formulating correctly a problem » (www.cyberphilo.com), what can
then be the contribution of epistemology towards the change of organizational research? In this 'epistemological obstacle' due to the change from the managerial and organizational positivist paradigm to the complexity paradigm, Larrasquet (1999) proposes a contribution to a better effectiveness of the complexity thinking in the field of management by combining epistemology and action:

« The experience of management we have from education and training, from the literature, and also from numerous interventions in companies, brings us to think that all questionings about organizations which appear today, and which the classic thinking often considers as paradoxical aspects, express in fact the emergence of new manners to grasp management. » (p. 13)

« Our ambition is thus to propose reading keys and modes of organizational development, which, by staying as good as possible free from classic positivist illusions, envisage this essentially as a dynamic cognitive process of construction of sense by all actors, from their autonomy envisaged as basis of the dialogic identity / otherness. » (p. 12)

Larrasquet (1999, p.12, 13)

5. Conclusion

Which 'epistemology' seems the most suitable for tackling the complexity of modern organizations? Does the Anglo-Saxon way to approach the organizational research differ from that of the French way? Is it the notion of thinking which dominates or is it the knowledge?

Further research on these issues is necessary to answer these questions. We can argue that the problem of management sciences does not really lie in the choice of an epistemology belonging to the French or Anglo-Saxon tradition, but rather in the choice between the positivist and the complexity paradigm.

The reflections will bring us to suggest rephrasing the title of this paper into: Epistemology: Duality or dialogy?

There is no real incompatibility between both definitions, except that the Anglo-Saxon definition emphasizes more knowledge than scientific thinking. This thinking, central in the works of Bachelard (1971, p. 15) « thinking is a force, it is not a substance » forms the foundation of the complexity thinking by Morin (1990, 1994). He sees the complexity « as a challenge and as an instigation to think ». One of the principles of complexity thinking - the dialogic principle - gathers both epistemological approaches because it offers the opportunity to maintain duality, while at the same time transcending that duality and creating a unity from the whole. It takes into account both Anglo-Saxon and French logics which join in an inseparable way while being additional, competing and opposing.

References


Websites :
www.nv2r.com
www.cyberphilo.com