

Learn to Search: How to build your social science research project

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Abstract

This article aims at showing the different stages of research in the social sciences according to the thought of Gaston BACHELARD. We tend to assist all those who want to develop by themselves the different tools of the research process and more specifically, deeply understand its foundations in order to successfully undertake research work.

It should be emphasized that the concept of research covers several meanings and our meaning is however more restrictive. First, we describe it as a process, an activity, in other words: when we search, we do an activity

In addition, our communication deals with the interconnectivity between the different stages, emphasizing the activity of the Apprentice-researcher and the scientific spirit which are considered as principal and seen in the principles of Bachelard.

Finally, insist on the necessity to develop a guide and/or manual in response to the need of Apprentice Researchers.

Key words: Scientific research, Bachelard's thinking, scientific spirit, Apprentice researcher, inter connectivity.

ملخص

يقترح هذا المقال قراءة للمراحل المختلفة للبحث في العلوم الاجتماعية على ضوء تفكير أو منظور غاستون باشلار BACHELARD. G يتمثل هدفنا في مساعدة الباحثين لاسيما المبتدئين والذين يرغبون في إعداد كل خطوات دراستهم بشكل صحيح وبنجاح وفهم عميق للأسس التي يقوم عليها العمل البحثي.

مما لا ريب فيه؛ أن مفهوم "البحث" يحمل معاني عديدة، إلا أننا حاولنا في هذا الصدد، الاقتصار على وصفه كسيرورة وكنشاط، بمعنى آخر: عندما نبحث فنحن نقوم بنشاط.

وبناء على ذلك، نعرض خطوات البحث العلمي، بالتطرق إلى الجانب الاستمولوجي - باعتباره الدعامة الأساسية - ونوضح الترابط الوثيق بين المراحل المختلفة والروح العلمية التي تمثل جوهر نشاط الباحث والتي تبرز جليا في مبادئ باشلار. أخيراً، نركز ونصرّ على ضرورة التفكير في إعداد دليل عملي استجابة لحاجة الباحثين المبتدئين.

الكلمات المفتاحية: البحث العلمي، السيرورة، النشاط، منظور باشلار، الروح العلمية، الباحث المبتدئ.

Introduction:

Literature (review) methodology of research in the social sciences is immense and constitutes an important reserve of the findings of the empirical and theoretical studies, yet and paradoxically, various methodology works do not emphasize the method in its broadest sense.

These works do not contribute to the training of their readers about global stages. They often elaborate particular techniques, isolated from the theoretical thought and from steps that could justify the researcher's choice and its sense as well.

It's worth noting that the concept research covers various significances and ours is, in fact, more restrictive.

Firstly, we describe it as being a process, an activity. In other words, when researching, we do an activity which tends to reach objectivity.

Within this context, we would like to precise that those who are training in the social sciences research need a methodological common thread which may help them progress from one step to another and realize every step as correctly as possible so that to answer the questions and acquire knowledge as well. It seems, indeed, that some students who are studying sociology, have received a set of theoretical and conceptual benchmarks for practical use and more precise indications about

the significance of every step and their implementation. These students do not find any difficulty to transpose their theoretical achievement in the concrete research. While others who have received insufficient or / and less information in methodology during their course, and this is due to various reasons notably the programs' change, often find difficulty in conducting the majority of stages properly. In order to provide efficient tools of research, emphasize a critical mind and epistemological thought, we suggest the reading of different steps of the research in the light of Gaston Bachelard's thought. We tend to help, within the frame of their studies, wish to conceive a work approach by their own and have a global idea about the social research, more precisely, understand in depth its basis and to undertake a study successfully.

We insist here, on the fact that there is not any particular manual for the scientific research, in other words, a mechanic application of the procedures and everyone has to elaborate his own methodological devices lucidly, according to his/her own objectives as well as basic benchmarks.

In fact, a scientific approach is a way to progress towards a goal and every research is a unique experience since it represents a discovery process that occurs within a particular context. Consequently, the significance and the aim of these different steps may be correctly estimated if the latter are realized according their general context. Moreover, the researcher is often faced with constraints and has to adapt to many unexpected situations with flexibility from the start. So, what are the principles and the steps of the research in the social sciences?

1. Principles and the steps of the research in the social sciences:

According to Bachelard, the scientific fact is conquered, constructed and observed, conversely to the common experience that is facing us. (**BACHELARD. 1980**).

It is necessary to tend to see what is hidden behind the common sense.

That is to say to deconstruct the social faced by all people in the same way so as to reconstruct it more scientifically. According to Blanchard, science, he says, "realizes its objects without quite finding them, it does not fit a world to describe but one to construct" (**BACHELARD. 1934.**). Jean Ullmo for his part, in his book "Modern Scientific Thought": "science seeks for its objects, it constructs them, elaborates them, it does not quite find them" (**ULLMO.1969**).

In this conception, the scientific approach relies on the three following principles:

1.1 Rupture:

Science builds itself against the obvious and illusions of immediate knowledge. The researcher or student who is interested in a given subject necessarily has a prior knowledge. He does not start from nothing, he, sometimes, knows about the subject throughout people, his own experience or interesting texts as well. That said, personal involvement that may alter its objectivity. Nevertheless, the researcher and student engaged and motivated in a research work, has to break away from his prejudices that are built on the bases of the experienced situations. He should invent his object by permanently questioning the first experience and the ordinary knowledge as well.

According to I. Stengers, it would be more judicious to talk about "demarcation" rather than rupture.

So as to clearly mark the importance of this reflexive retreat. It is essentially a pedagogical choice (**STENGERS .1995**).

1.2 Construction:

This second principle consists in reconsidering the studied fact starting from theoretical concepts dealing with social sciences. That is to say, to refer to an organized conceptual framework that is likely to express the logic which the researcher supposes to be the basis of the phenomenon.

Thanks to this theoretical framework the research may foresee the equipment to be installed, the operations to be implemented and the consequences that may logically be expected in terms of a

valid observation and/or experiment the basics of past experience. He must create his object from a permanent questioning of the first experience and the ordinary knowledge which still exist before the scientific knowledge. In other words, the necessity to step back from preconceived ideas as much as with categories of common sense thoughts and the value system of the researcher himself.

1.3 Constataion (observation):

This third principle corresponds to the testing of facts as a proposal which cannot be attributed a scientific status unless it is verified by real and concrete pieces of information . Let us specify that the observation or experiment is linked to a theorization cycle and draws its value from the quality of the construction.

In the concrete conduct of research, Bachelard's three acts and/or principles must be the basis of the entire scientific approach. Thus, the different stages are not independent and operate mostly on a relational mode. Moreover, they are recorded within a dynamic where they are carried out during a succession of operations, which interact constantly.

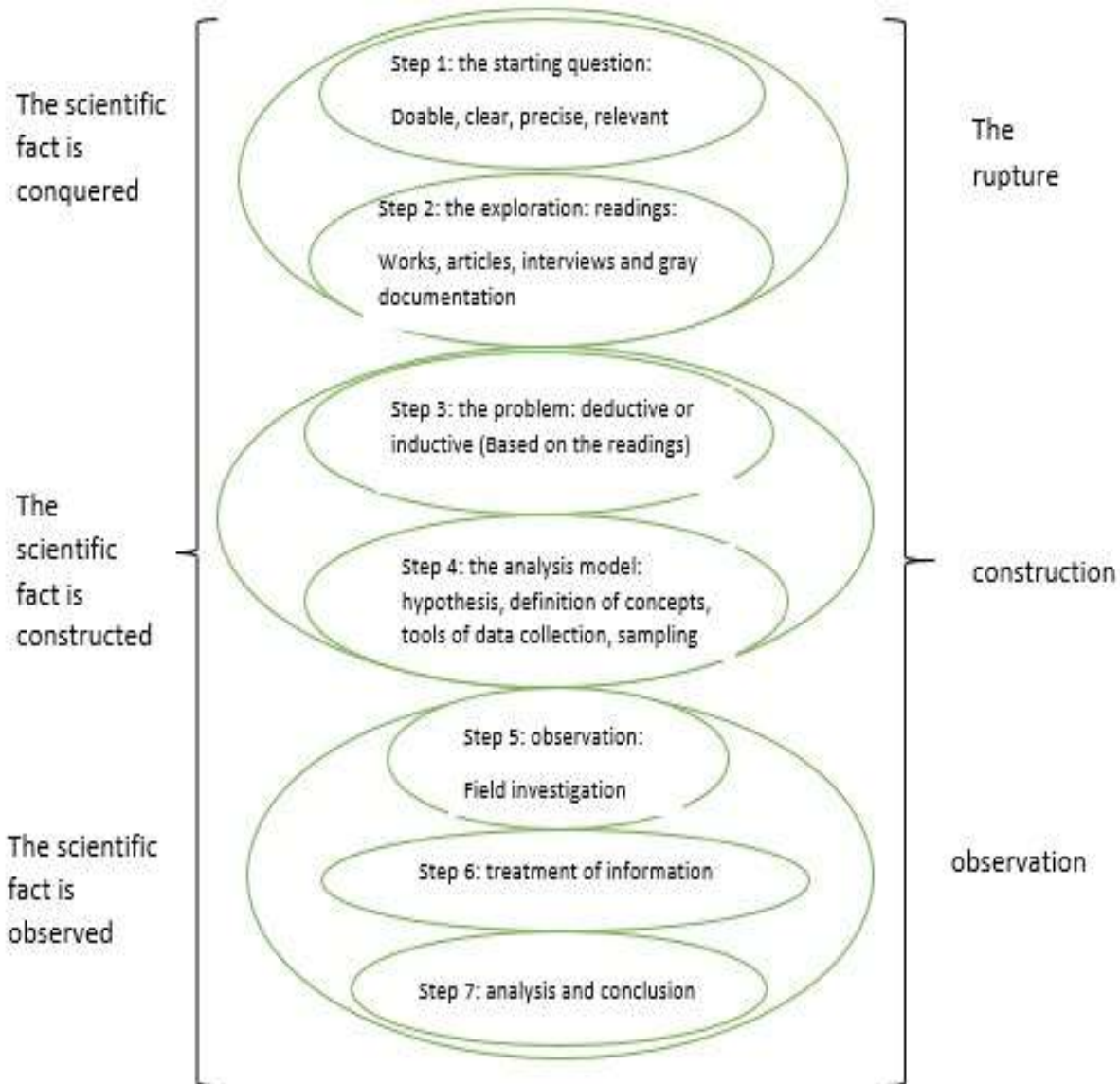
Notwithstanding, they are very often presented in our works and sometimes even in our lectures as separate operations and in sequential order. Also, the majority of the diagrams that illustrate and precisely distinguish each stage of the approach.

It's worth noting that for didactic reasons, we (book authors, trainers, teachers and others...) present these steps in a mechanical way and openly this argument is asserted by everyone. However, it is more than necessary today to show the correspondences between the stages and the acts and/ or principles of the approach are very often presented in our works and sometimes even in our courses as separate operations and in sequential order. Also, the majority of the diagrams which illustrate them precisely distinguish each stage of the process.

It must be said that for didactic reasons, we (book authors, trainers, teachers and others...) present these steps in a mechanical way and frankly this argument is put forward by everyone. However, it is more than necessary today to show the correspondences between the stages and the acts and or principles of the approach.

Even though the intellectual work is done in a discontinued manner, the scientific spirit is maintained as soon as the epistemological rupture and there is interrelation between the different parties of the research. For this reason, the necessity of a division of the steps in time is highlighted. That said, we must understand that we can identify within these times stages that will enable the evolution of the researcher's activity towards the description, the explanation and the comprehension of a fact scientifically, but to reveal the foundations of the procedures of the research inspired by the presentation schematized in Kevy and Kampenhound's manual:

Shem 01: Scientific proceedings of research and principles and steps of research:



In this scheme, we recapitulate the different stages of the research work that can be concrete only through the researcher's activity based on the principles of scientific thinking as specified by Bachelard. This is how we deliver the keys to success to an apprentice -researcher.

The scientific fact is conquered through rupture that is concretized in the elaboration of the starting question (the project statement) and following the reading of books, scientific articles (avoiding book bulimia) as well as exploratory interviews. This demarcation is realized by replacing common and non-scientific information and data such as pre-notions, value judgments, illusions... Through proven scientific knowledge. However, rupture is not only at the beginning of research but it carries on within and through construction.

This fact is constructed after the exploration, and follows certain stages (see diagram). First, the problematic, which is the approach or theoretical perspective adopted by the researcher, tends to

deal with the problem posed by the starting question. It is elaborated, worked on, transformed and refined during the research.

It represents a junction stage between rupture and construction. We once again emphasize that any research work is part of a continuum and can be located in or in relation to the currents of thought that precede and influence it. The second stage consists of the hypotheses that are presented as answer proposals to questions raised in the problematic. These temporary responses will guide the data collection and analysis and will need to be tested during observation.

They must necessarily be registered within the dynamic of the problematic. Conceptualization is an abstract construction that aims to take into account reality. For this purpose, it does not hold all aspects of the concerned reality, but only what expresses most of it from the researcher's point of view. So it is about determining the dimensions and then the indicators, which take into account the real. **(CAMPENHOUDT. QUIVY, 2011, pp120-123).**

Our view includes the constitution of the sample according to the objectives and/or hypotheses, taking into account the delimited analysis field and the selection of the observation units, as well as the construction of the instrument or instruments of investigation (in case of methodological triangulation).

In short, the researcher develops his toolbox, which will serve him for the observation, which is actually only a mediation between three theoretical, empirical and methodological fields. In this regard, and according to Rejean Ladry, there are few writings on the theory and method of the analysis models elaboration **(LADRY in GAUTHIER 1997, p 437).**

Scientist's works emphasize formal procedures and how to talk about observations rather than creating models.

Finally, the scientific fact is set and involves testing the facts. This corresponds to the collection of quantitative and/or qualitative data, then the processing of these data followed by a fundamental stage, which is the elaboration of an analysis strategy designed to test its hypotheses and respond to its problematic.

Although observation is the operational level of research work, it must be admitted that it implicitly refers to the general conception.

In other words, all observation is modulated by theory, even if science has no epistemological guarantee. Also, the researcher cannot simply observe the behavior of the actors from the outside, because he would lose what is characteristic of the human subject: reflexivity within a system of symbolic exchanges. It is the actors who provide him with his raw material, and as organizer of meaning. The researcher is in reality only the interpreter, the translator of meanings whose first authors are the actors in the field, **(VAN DER MAREN. 2004, p09.)**

Indeed, and as Philippe Cibois so well underlines, even if the sociologist produces his own data, he knows well that he introduces his own (chosen) theory into the facts he observes. **(CIBOIS. 1990, p11)**

However, this idea, which promotes a subjective link between the researcher and his object, hardly clashes with the principle of neutrality and objectivity since the fact is a construct. However, the construction of hypotheses would itself prove to be the product of certain values, because it originates from a theoretical problematic in which the researcher has decided to integrate or reject certain questions or certain objects. The development of hypotheses cannot be achieved by asking the researcher to completely ignore what he knows. As Gingras sums it up well: While it is important to be wary of common sense, we must also realize how much the values (personal of the researcher and collective of society) condition scientific research. They do not necessarily constitute obstacles, but lead the choice of the themes addressed, the problematic, the orientations, the

instruments, the data and therefore the conclusions, that is to say the new knowledge that will be drawn from them. However, science is knowledge that is based on conventions and refers to a common research logic and universal scientific syntax rules, and thus to a method unity to ensure faithfulness (**GINGRAS. In GAUTHIER 1997, p 34**).

We emphasize here that social research is not, therefore, a succession of fixed methods and techniques which would be sufficient to be applied as they are and in an invariable order.

By this position, we join Delruelles-Vosswinkel, for whom methods constitute the route of research, and encompass both the stages of selection, production, collection, processing, analysis (or interpretation) of data, etc. (**VOSSWINKEL.1980**). This is why an assemblage is introduced into the scheme to symbolize the interactions that actually exist between the different phases of the research.

In the first part of this communication, it was about to clarify first the interrelationship between the scientific fact, the stages of the approach as well as the research activity, being ensured by a complex set of mediations and complementarities. This renewed interest in the overall dynamics is accompanied by a further interest for certain epistemological and practical aspects of the research activity. In this regard, we will detail, in the context of this second part, a few points very often addressed by our students (the Apprentice-researchers), in a way that is explicit enough to provoke reactions and discussions.

2. Dualism and/or methodological pluralism:

To begin with, two major methodological orientations in social research are currently predominant, one objectivist, deriving from the positivist approach, and the other, subjectivist, associated with the hermeneutic approach. The first, advocates an objective viewpoint to know the reality (**GRAWITZ.1993, p 284**).

The phenomena, conceived in terms of behaviors, then become cause-to-effect relations, where each action is determined by a previous one or determines a subsequent one within a set of successive events. To know the reality and to describe it accurately, it is necessary to cut it into its smallest components, to attribute quantitative measures to it. (**LESSARD-HÉBERT. And al.1990, p36**).

This so-called quantitative method is suitable for systematic research, most often linear (hypotheses-investigation-conclusions). It is carried out on a large number of data (extensive character) requiring statistical processing. It is a method that generally consists of explaining the phenomenon studied at a given time. (**LIVIAN.2015**).

Relying on the hypothetical-deductive logic, the research becomes synonymous with the explanation and the posture of the researcher is more objective. In other words, he must focus on the observable behavior of the phenomenon and must continuously confront reality with the theoretical model.

Furthermore, the hermeneutic orientation believes that the achievement goes beyond what may be observed and that theoretical orientations never prove to be neutral. Furthermore, in order to study social behavior, we must look for the meaning of social reality in the very action in which it proceeds without denying the fact that every phenomenon has a cause.

We may also note that the purpose of the hermeneutic approach is to understand the interactions between the actors and between them and their environment. This approach results in an even subjective inductive process that would be based on the certainty that knowledge is acquired not

only by validating a hypothesis, but also by inference and intuition (**LESSARD-HÉBERT and al. 1990. p40**).

This way of doing involves qualitative research.

In summary, the research activity can take different forms. In a deductive approach, an elaborate theoretical construction precedes any observation and the particular is deduced from the general. Paradoxically, in an inductive approach, concepts and hypotheses continue to be elaborated during observation, here; the general is induced by the particular.

In short, the presentation of these two major approaches is not intended to engage in a debate, but rather to emphasize the quarrels around methods and approaches. From the two major trends, there are epistemological differences between long-standing opposing qualitative and quantitative researches. An opposition that seems to be still present today, although a important debate has been launched, after crucial moments such as the work of the School of Chicago and Stoffer. Let us just stress that several authors find it unacceptable to combine the two approaches and consider them from a dual and irreconcilable perspective.

Others such as Becker, Miles, Henwood, Pidgeon, Lessard-Hébert, Goyette, Boutin, and Huberman... support a new thesis, that of the continuum rather than that of the dichotomy. In other words, they believe that it is possible and even beneficial to reconcile them and that a harmonious arrangement between the two can contribute to a better understanding of certain realities (**DRAPEAU. 2004/2**).

Methodological pluralism, i.e. complementarity or integration of methods has become necessary to better understand social phenomena characterized by their complexity, variation and indetermination. In order to make this pluralism operational, several authors have proposed concepts. (19) For Denzin (1978), triangulation, in as research strategy, can take the different directions on the conceptual and methodological levels. During this strategy, the researcher combines several data-gathering techniques in order to compile the bias inherent in each one of them. This also allows to verify the accuracy of the results produced. The use of triangulation also reflects a state of mind of the researcher who tries to support, agree and confirm the results of his study. In addition, Denzin identifies four forms of triangulation: the researcher's data, theories and finally the methodological triangulation (**MUCCHIELLI. 1996, p 261**).

Thus, the co-concept seems to be increasingly recognized. We have voluntarily avoided putting too much emphasis on this aspect, although it deserves clarification and reflection that will allow to define alternatives within a field of research or the interest is very often shifted to technical aspects of the detriment of epistemological and theoretical dimensions.

3. The relationship between methodology and epistemology:

The examination of the literature concerning the construction of its research object, encourages us to address the issue of the epistemological posture from which our interest in the scheme of De Bruyne, Herman and Schouteete (1974). It discusses the relationship between methodology and epistemology by distinguishing four interdependent principles that characterize any scientific research approach:

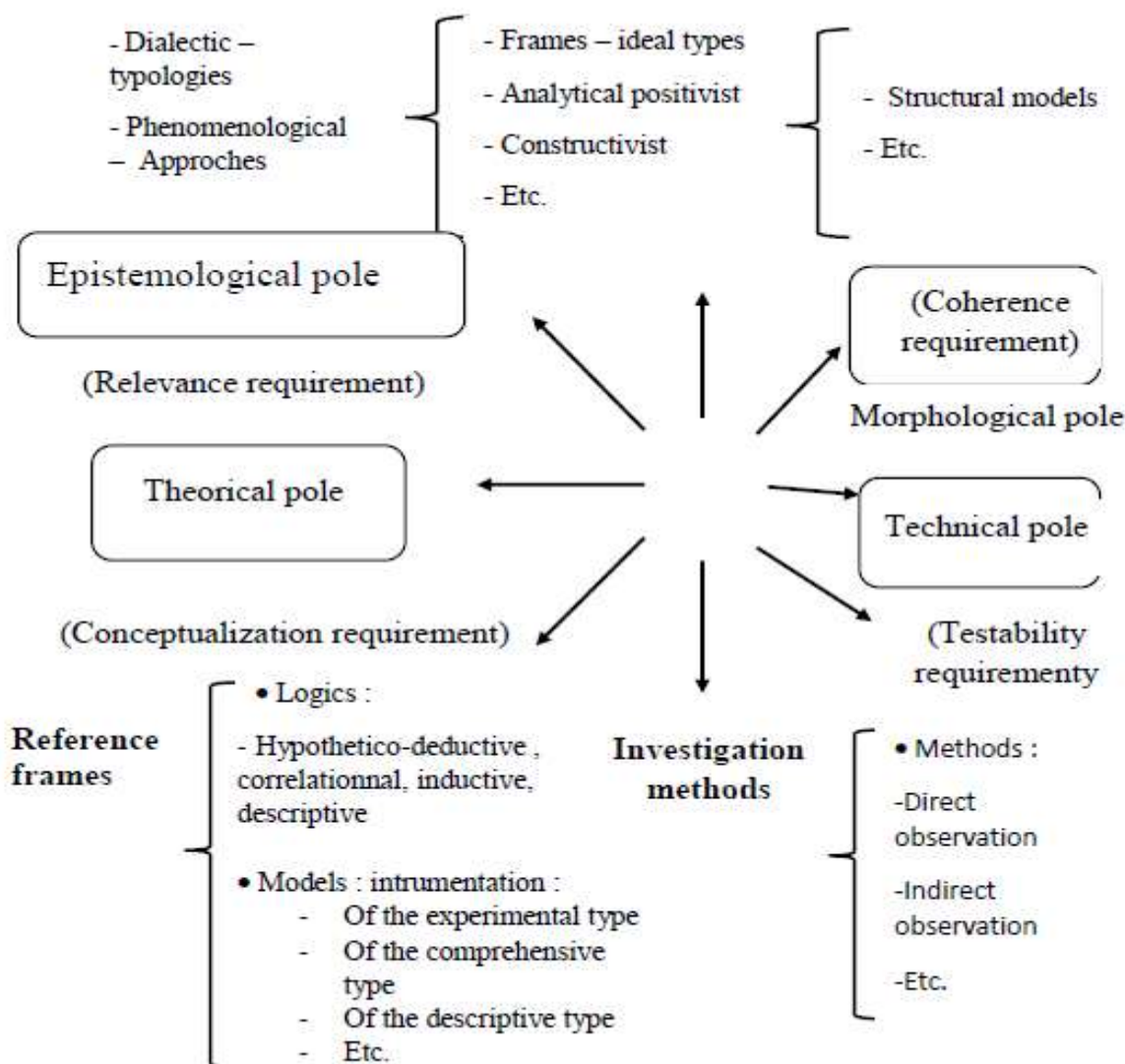
3.1 The epistemological pole: which guarantees the production of the object of research. that is, its translation into a scientific language, or the break between a prescientific state and a scientific state of knowledge.

3.2 The theoretical pole: which guides the development of hypotheses, the construction of concepts and defines the dynamics of conceptualization.

3.3 The morphological pole: which is related to the form of research. In other words, "it articulates concepts, theories and models of objects in schemes or Explanatory and interpretative systems. It also constitutes the operational framework of the representation and structure of scientific object"(De Bruyne, 1988, p. 12).

3.4 The technical hub for the implementation of research procedures, in other words, the collection and processing of data, By "method", we have already written (Lenoir, 1993), we mean "an organized set of thoughtful interventions pursued by thought, interventions that relate to a specific object in order to reach through a succession of stages to a pre-determined goal" (p. 48). The following schematic figure this quadripolar structure of the practice of scientific research from a methodological point of view.

4. The quadripolar structure of the methodological practice



(Strongly inspired by: De Bruyne, P., Herman, J. and De Schoutheete, M. (1974). Dynamics of research in the social sciences. The poles of methodological practice (p. 36). Paris: University Press of France), in Lenoir Yves, Research and train: what has become of practice? Educational conference, When research is reflected in our training practices, Faculty of Education, University of Sherbrooke, February 3 and 4, 2005,p11.

These four pivots are according to Charmillot and Dayer "a support for thinking in an interdependent manner the different gestures of research, without settling them, making it possible to clarify the position of the researcher.... >> (CHARMILLOT. 2007, pp131-132).

It should be clarified that the implementation of the methodology approach chosen is a first guarantee, as it represents a legitimate framework recognized by the scientific community. Also, let us assume that the activity of the researcher is essentially strategic, both in the choice of its object and in its approach to research. Added to that, good research, a good thesis implies a proper balance between theory and observation.

For Bachelard, all scientific approach is inventive and constructive for a scientific mind, all knowledge is an answer to a question. If there is no question, there can be no scientific knowledge. Nothing goes from evening is not given, everything is built (Bachelard, G. *La formation de l'esprit scientifique*, Paris, Librairie philosophique Vrin, 1999).

A research is often a process of discovery, an intellectual adventure that takes place in a concrete and to a large extent, unpredictable context. In order to learn the richest lessons possible, the researcher must demonstrate flexibility and adaptability. He will regularly have to go back, reformulate an overly summary or inadequate hypothesis, redefine a concept more accurately, return to the ground and make additional observations to gather missing information not included in his work plan, or even ask himself new questions that he could not ask before the observation itself imposed them on him. (JUIGNET 2015).

Conclusion

In a more synthetic way, we initially tried to set the conceptual milestones in order to build a research object, for the use of those who would like to go further and be able to practice the scientific approach in social sciences themselves.

In an attempt to establish what we believe to be the foundations of scientific thinking in social sciences, we sought to identify the issues addressed while presenting the elements that we thought were unanimous in the research community. We are well aware that so many questions relating to the identification of the reference framework within which research work is carried out have not been addressed in this article. We only made an editorial choice like the articulation of the research process and the scientific spirit of Bachelard.

In this way, we find ourselves in the position of an Apprentice-Researcher faced with the elaboration, formulation and resolution of a research problem in Social Sciences, which has a need for methodological identification.

After an epistemological deviation, we are referring here to a great discomfort expressed by the fact that research socializations differ according to the institutional background as well as the basic training, which involves different readings with the working language and consequently different interpretations, without rejecting any way of doing or reading or even the different formations, but this finding remains relevant since it reflects today gaps in methodology and often incoherence that question the results of a research work and sometimes the whole design.

In this regard, the development of a pragmatic model for the management of research work is an absolute necessity. This proposal is strongly supported by the suggestion of our students, discussions with colleagues as Roland Barthes (1964), wrote "the same ones who emphasize the most on methodology are often those who contribute the least to Research.. It is more a guide to the conduct of research, a supporting document to facilitate the planning, execution and writing of a master's thesis or doctorate thesis".

Furthermore, we are convinced that coming out of this meeting with only one recommendation, that of proposing a framework of reference, of paths to follow to carry out the research work would

already be a success. Waiting for implementation by forming a core that would work on the development of a manual or guide rather than a methodology book in the usual sense in order to help the Apprentice-Researcher.

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