

Karl Popper's Basics of Social Sciences Methodology

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Abstract

Taking in account that Popper has kept his cornerstones of philosophy of science – namely natural sciences – to make of use in social sciences philosophy, but the main of that or the axis that popperian epistemology turning around, and is being deemed as a postulate for Popper thinking in general, is his critical rationalism. Which structuring Popper social epistemology, as well, appears in every technique that Popper gave to be in social sciences methodology. What I am trying to say is that, in this article I go straightforward for Popper's basic techniques of social sciences, that's why I hint here about his rationality principle significance in his epistemology. Else, in this work, I try to sum these Popperian basics for social sciences methodology, which never came organized together in his writings. Thus my purpose here is to gather as well as analyze those main ideas. Which are represented in : the first is epistemological, it is his sustainable idea; the unity of scientific method in all sciences. The next three are methodological and technical in social sciences, they are : logic of situations or situational analysis, methodological individualism, then piecemeal social engineering.

Key words: Karl Popper, philosophy of social sciences, situational logic, methodological individualism, piecemeal social engineering.

المخلص:

يرى أغلب الدارسين لفلسفة العلوم عند كارل بوبر أنه قد حافظ أو على الأقل حاول الحفاظ على نسقه بأركانه في فلسفة العلوم الطبيعية وكذا فلسفة العلوم الاجتماعية، لكن حجر الأساس – خلال هذا الانتقال ككل – الذي تتمحور حوله ابستمولوجيا بوبر ويعد هذا الأخير مسلمة ضرورية لفكره عموما هو عقلانيته النقدية التي توطر فلسفته الطبيعية والاجتماعية، وتظهر في كل تقنية اقترحها بوبر لمنهجية البحث في العلوم الاجتماعية. ما أريد قوله هو أنني في هذا المقال اتجه مباشرة إلى التقنيات الأساسية لبوبر في منهجية البحث في العلوم الاجتماعية ولهذا كان لابد من توضيح موقع العقلانية النقدية في فلسفته. بخلاف ذلك فهذا العمل هو جمع وتنظيم لأساسيات بوبر في منهجية العلوم الاجتماعية التي لم يطرحها بوبر منظمة معا في كتاباته. لهذا فالغاية هنا هي جمع وتحليل هذه الأفكار الأساسية. المتمثلة في أربع: الأولى ابستمولوجية هي فكرته في وحدة المنهج – منهج البحث – في كل العلوم، أما الثلاث الباقية فهي منهجية تقنية خاصة بالعلوم الاجتماعية والتي تتمثل في: منطق المواقف أو التحليل المنطقي، الفردانية المنهجية، ثم الهندسة الاجتماعية الجزئية.

الكلمات الدالة: كارل بوبر، فلسفة العلوم الاجتماعية، منطق الموقف، الفردانية المنهجية، الهندسة الاجتماعية الجزئية.

Introduction

Popper is distinguished amid other philosophers of science by occupying a special place among scientists themselves, and seems to have succeeded in contributing to the progress of the philosophy of science to gain the attention of scientists in different specialties, as well to be taken more seriously. Popper's view then, also became argumentatively functioning in defending stands and attitudes, especially in social sciences, biology and quantum mechanics. Even though, this breaking through scientific debates is neither strange nor surprising for Popper's thought in philosophy of science, since it is characterized by clarity, simplicity and logically founded. Lots of criticisms between followers and opponents, can prove the importance and significance of Popper's thinking, whereat still – at the beginning of 21st century – embodying a fruitful ground of research and study.¹

When Popper opposed historicism as a poor method in social sciences, he did not only criticize it, but he was always suggesting alternative assumptions, applying his hypothetico-deductive method and his critical rationalism even to mend the scientific method in itself. These suggestions appears scattered through his books and articles, therefore I intend in this work to

1 - Peter Godfrey-Smith, Theory and reality : an introduction to the philosophy of science, Chicago: The University of Chicago press, 2003, p.57.

collect and summarize these popperian alternatives for social sciences method of inquiry in the following passages. So the main thesis of this article is: how Popper sees the method of inquiry in social sciences and politics, and how can we organize those strewn elements that he proposes ?

1 - The idea of the unity of method

In his sources, Popper always emphasizes the unity of method for all sciences, which is the hypothetico-deductive method, where there is no induction nor universal generalization on the basis of a number of observations and single statements. Though he argues against the traditional imitation of social scientists to the natural sciences methods because of their misunderstanding of the proper method.¹ Popper in this case, have also been aware about the special features and differences between sciences with non contradicting the unity of the method of inquiry. So, how does Popper explained these differences and what he means by the unity of method?

Popper mentions this unity of method hypothesis in his first english edition introduction of Logic of Scientific Discovery, to be comprising all rational discussions, whichever in natural sciences as in philosophy. according to Popper, this general method including the stating one's problem clearly and of examining its various proposed solutions critically. He defines the critical rational discussion as the attitude that whenever we propose a solution to a problem we have to try critically hard to falsify our solution rather to defend it. In another source - The Poverty of Historicism- Popper offers another formula the unity of all practical empirical sciences, and calls attention to the significance of criticism in scientific method. where he said in that chapter, that he is going to propose a doctrine of the unity of method; that is to say, the view that all theoretical or generalizing sciences make use of the same method, whether they are natural sciences or social sciences. We find also in his Open Society and its Enemies hints that the social sciences have to face its problems with the help of the theoretical methods which are the same in all sciences.²

Then Popper admits the difference in methods between sciences, or the singular special features of each science according to its subject, which does not prevent the unity of method – of course according to his understanding – where about he utters “I do not intend to assert that there are no differences whatever between the methods of the theoretical sciences of nature and of society; such differences clearly exist, even between the various natural sciences themselves, as well as between the various social sciences... But I agree with Comte and Mill and with many others, such as amount to deductive causal explanation, prediction, and testing,... . This has sometimes been called the hypothetico-deductive method, or more often the method of hypothesis, for it does not achieve absolute certainty for any of the scientific statements which it tests; rather, these statements always retain the character of tentative hypotheses, even though their character of tentativeness may cease to be obvious after they have passed a great number of severe tests.”³

Popper seems to be so tenacious of his critical rational method every stride in his philosophy of social sciences. He proclaims his basis of his idea of the unity of method in this paragraph : “My view of the method of science is, very simply, that it

1 - William A. Gorton, Karl Popper and the social sciences, Albany: State University of New York Press, 2006. P.52.

2 - Carlos Verdugo, “Popper’s Thesis of the Unity of Scientific Method: Method Versus Techniques”: *Boston Studies in the philosophy of science: Rethinking Popper*, Boston: Springer Science, 2009, Volume 272, pp.155,156.

3 - Karl popper, The Poverty of Historicism, London: Routledge, 1999. pp.130, 131.

systematizes the pre-scientific method of learning from our mistakes. It does so by the device called critical discussion. My whole view of scientific method may be summed up by saying that it consists of these four steps:

- We select some problem perhaps by stumbling over it.
- We try to solve it by proposing a theory as a tentative solution.
- Through the critical discussion of our theories our knowledge grows by the elimination of some of our errors, and in this way we learn to understand our problems, and our theories, and the need for new solutions.
- The critical discussion of even our best theories always reveals new problems.

Or to put these four steps into four words: problems – theories – criticisms – new problems.¹

So, the scientific method in Popper's thought is only one, and simply it is embodied in the learning method of trial and error, which he conceptually starts it from a bold explanatory conjectures to the encountering problems, then we proceed hardly to falsify it through criticism and tests to emend it. That is; in this method, all are temporal, either the explanation, the prediction or the test, and the difference is only in its confirmation degree, because we are searching an explanation we are deducing a prediction, and we are going to predict when we are studying and observing, in which we apply our scientific results. Then we are testing when we are trying to eradicate the false prediction and determining the weak parts in it, through experimentation.²

This is in short, the method of all experimental science, which will may be more applicable in social sciences, where the objects are abstract ones, they are theoretical constructions used to interpret our experience. In this case, the task of social sciences becomes the construction or the building of models just like the natural sciences (where we construct our models of atoms, molecules, solids, liquids, etc.). This – social – construction is backed by the rationality principle, i.e. that the individuals or the social unites are acting according to what the situation requires. These theoretical models in words and expressions that refers to the individuals, their attitudes, their hopes and relationships... etc. are on the basis that they are acting pushed by reason or at least by some rationality. Thus, these models serve as explanatory experimental hypotheses, and could be subjected to criticism and testing, including differentiation between them.³

Here, we must point out what Popper means with the main thesis in his article the Logic of Social Sciences, which on its basis - the main thesis - the logic of social sciences is the same as of natural sciences, including the try to propose the best experimental solutions to those problems that we are investigating. If this proposed solution is not opened to objective criticism then must be eliminated because it is not scientific, if it is open to objective criticism then it will be falsified and replaced with another proposition or it will stand; therefore, we accept it temporarily for some considerations will may show up lately, where this solution becomes invalid. As a result, the scientific method is generally our attempts to solve our problems, faced by cruel criticism. In other words, it's the development of critical consciousness of the method of trial and error.⁴

The previous paragraph indicates that Popper means by the unity of method; the method of trial and error systematically organized by rational criticism in all sciences, with keeping attention to the special features of each science under what's called

1 - Carlos Verdugo, Op.cit. p.156.

2 - كارل بوبر ، عقم المذهب التاريخي: دراسة في مناهج العلوم الاجتماعية، تر: عبد الحميد صبرة، الإسكندرية: دار المعارف، 1959، ص 161، 162.

3 - Karl Popper, The Poverty of Historicism, pp.134, 135.

4 - كارل بوبر، أسطورة الإطار: في دفاع عن العلم والعقلانية، تر: يمنى طريف الخولي، الكويت: عالم المعرفة، 2001، ص 88.

the techniques of inquiry, i.e. the difference between the natural sciences methods and the social sciences methods is only on a secondary level, in points that are related to the subject matter itself, which does not prevent this unity of method.¹

2 - Situational Logic

This concept can be found in other terms which are Situational Analysis, logic of situations. Popper labels in such terms because it is analyzing the social situation when studying the social phenomenon, on the basis that individuals are acting according to the reason or what's the situation calls for. Popper sees that this idea of analyzing social situations and constructing approximate models helps us in clarifying some of the social sciences particularities.²

This situational analysis appeared in Popper's lecture at Harvard university 1963, as an essential property of the social sciences methodology, which corresponds with a statement of initial conditions in the natural sciences; and the models of theoretical social science may be understood as "typical social situations."³ Popper acknowledges that, within the social sciences, the use of "what may be called the method of logical or rational reconstruction, or perhaps the 'zero method' " accounts for "perhaps the most important difference" from the methods of the natural sciences.⁴ He means the situational analysis.

Popper in his emphasis on the unity of method, starts in that lecture of 1963 by comparing the concept of "models" between social and natural sciences. He ended up with; building explanatory models – as temporary theories – to solve a social problem is the same as in natural sciences, all follows his famous pattern: $P1 \rightarrow TT \rightarrow EE \rightarrow P2$. He sees that "the social situation" as the key term in explaining and understanding – studying – the historical social phenomenon. From which he deduces the importance of his "situational analysis" of a social problem P1, proposing a temporary theory model TT, analyzing, reconstructing and eliminating errors EE, and so on to the next P2.⁵ Thus he demonstrates the idea of the unity of scientific method.

To explain this concept – situational logic – popper starts firstly with excluding psychoanalysis, and showing the difference of individual situations analysis. Doing so, he said that psychology is a social science, because our thoughts and acts depends highly on the social conditions, such as, simulation, language, family. Moreover, it's obvious that psychological processes like learning and thinking can never be found without using one of these social notions. Psychology then presumes primarily social notions – concepts, ideas – whereof it appears that situational analysis goes beyond psychological terms to explain the society, furthermore, we cannot see psychology as the basis of social sciences, because it assumes foremost human nature laws.⁶ Whereas the situational analysis presumes the zero method, rational-logical construction method, and that is the difference from the psychologism.⁷

Popper sees that this method – zero method – which we can label objective understanding method, meaning the deductive rational analysis of situations and constructing models. Because of its rationality – these analyses – it can be a subject to criticize and development, herewith, this method is completely independent from all initially subjective-psychological assumptions, because it relies on objective rational analysis of the situation of the person subject of the study, on the basis that

1 - Carlos Verdugo, Op.cit. pp.155-160.

2 - Karl Popper, The Poverty of Historicism, pp.140, 141.

3 - Paul Knepper, "Situational logic in social science inquiry: From economics to criminology", Springer Science + Business Media, 2007, p.31

4 - Bruce J. Caldwell, "Clarifying Popper", Journal of Economic Literature, Vol. 29, No. 1, 1991, p. 14.

3 - كارل بوبر، أسطورة الإطار: في دفاع عن العلم والعقلانية، تر: يمنى طريف الخولي، الكويت: عالم المعرفة، 2001، ص، 171.

6 - كارل بوبر، بحثاً عن عالم أفضل، تر: أحمد مستجير، الهيئة المصرية العامة للكتاب، 1999، ص 101.

7 - Karl Popper, The Poverty of Historicism, p.141.

this person is following a specific aims or acting according to some memories which distinguishes his situation as he is provided with special theories and information. Popper says that the situational analysis method is certainly individualistic method, but it is – also – and certainly not a psychological method because it excludes – in terms of its principle – all the psychological factors and replaces it with situational objective elements.¹ i.e. the constructed analytical models which explain experimental hypotheses can be testable, that is rational analyses can be experimentally criticized and improved. Popper then aims to analyze the social situation as an observer not as a participant seeking the objectivity.²

According to popper, the situational logic presupposes generally a physical world where individuals have different actions. This world contains also physical sources and obstacles, which we have got some information about. As well it assumes a social world inhabited by other people, with their intentions. Social institutions arise of the overlap of these two worlds. These social institutions define the social character that distinguishes our social environment, that psychologism cannot explain, because there is no way of introducing subjective, private states of individuals to empirical tests. Feelings, sensations, and emotions—although clearly part of the mind—are excluded from situational models. Only reflective acts which are purposive and intentional comprise the subject matter of social science.³

In other words, Popper giving a resemblance of models constructed in social sciences with the known models of molecules built by chemists, which represents the order of a group of atoms held together by chemical bonds, different in number and kind. However, this bonding is not the laws on which the atoms held together, but it is a typical modeling to get grasp the abstract laws that govern the interaction between particles. This example in social sciences intending to explain and understanding the historical-social events throughout models.⁴

3 - Methodological Individualism

Most social philosophers of social science are either individualists or holists: they see either the trees or the forest, never both. Popper adopts the ontological individualism fathered by the 17th- and 18th-centuries liberal political theorists and utilitarian moral philosophers, and upheld by the neoclassical micro-economists and Max Weber. This is the view that Margaret Thatcher summarized in her famous dictum: "There is no such thing as society: There are only individuals."⁵

This doctrine is contrast to methodological holism, which sees that it is not possible to restrict the concept of the society in the sum of its individuals, if it's possible, then there wouldn't be an independent subject-matter to study in sociology as E.Durkheim (1917-1858) asserts, Because it reduces the social phenomena to individual psychology. Marx also claims from his standpoint that the logic of modes of production, even it is leaning on individuals yet however not being accomplished unless through the economical, political and ideological conflicts. In their turn, and in different degrees, the constructivists and

1 - كارل بوبر، بحثاً عن عالم أفضل، ص 102، 103.

2 - Paul Knepper, Op.cit. p.31.

3 - Ibid. p.31.

4 - كارل بوبر، أسطورة الإطّار: في دفاع عن العلم والعقلانية، ص 196.

5 - Mario Bunge, "The Seven Pillars of Popper's Social Philosophy", *Philosophy of the Social Sciences*, Vol. 26 No 4, Sage Publications, Inc. December 1996.pp. 531,532.

functionalists insists on the priority of the whole rather than the individual. Where is the attention to social phenomenon is an attention to the social determinants that explain the individual behaviors.¹

On the other hand, the methodological individualism sees that all the social identities dropped down under Occam's razor principle, and the only prominent truth is the individual factor. The neoclassic economic theorists and the adherent socialists of Raymond Boudon (1934 -) make out that all social phenomena result from the aggregation of individual behaviors, and to study these social phenomena must start from the act causatives. The methodological individualists rejecting that point of view that seeing the individual actor as only an environmental - social - production.²

Lots of sociologists have been calling for to exceed this debate, from the standpoint that taking at the same time the individual acts as well the social factors or the social context where the individual behaviors and social interactions occur. This will can be found also in the thoughts of French contemporary sociologists such Bourdieu Pierre (1930-2002) and A.Tourain (1925 -) who suggests the methodological relativism for social structure.³

From several texts of his, Popper seems to be a methodological individualism adherent. However I see that his ideas practically more inclining to the methodological relativism, which what I am going to clarify through analyzing some of his texts about this subject matter. He used this concept for the first in his "The Poverty of Historicism" in a section titled "The Unity Of Method" where he affirms to distinguish it from psychologism, which is the theory that sees all the social life laws must be completely reduced to the human nature psycho laws. That's why it's possible to mix up with methodological individualism notion - which depends on reason in analyzing not on psychology laws, without ignoring the social situation - in one way or another with psychologism that agrees with methodological individualism in their objection to holism. Also because of psychologism affirms that communities acts and behaviors must reduced to human individual acts and behaviors.⁴ On the other hand there are some texts shows that Popper denies human nature laws i.e. psychology laws, But not what derives from the rational analysis to the situation, which is changing every time according circumstances and the formation of the individuals. This is the core difference between the two notions, that Popper clarifies through his criticism to Mill's reduction method, or inverse deduction. Popper says that he agrees with Mill but the laws that Mill's analysis work with is human nature laws and that's the difference.⁵

Then, Popper defines methodological individualism elsewhere without referring to what's called human nature laws - psychology - while he confirms rational analysis in this passage : "methodological individualism lends support to the important doctrine that all social phenomena, and especially the functioning of all social institutions, should always be understood as resulting from the decisions, actions, attitudes, etc., of human individuals, and that we should never be satisfied by an explanation in terms of so-called "collectives" (states, nations, races, etc.)."⁶

1 - خواجه عبد العزيز، "النقاشات المنهجية التأسيسية الكبرى في فلسفة العلوم الاجتماعية"، الواحات للدراسات والبحوث، العدد 4، مارس 2009، الجزائر: المطبعة العربية، ص 142.

2 - نفس المرجع، ص 142، 143.

3- نفس المرجع، ص 143.

4 - William A. Gorton, Op.cit. p.15.

5 - Karl Popper, The Poverty of Historicism, pp.120, 121.

6 - William A. Gorton, Op.Cit. p.16.

We must notice that Popper used here the word “understood” not “explained” on the basis of a natural law of humanity like psychologism, but it's analyzed to its individualistic situations rationally, so, the analysis suits the actual circumstances of the situation, and it changes every time and those data changed in each study. This shows Popper's emphasis on his objection to the believe that psychoanalysis is a necessary postulate to methodological individualism, which Popper tells about that it is the quite unassailable doctrine that we must try to understand all collective phenomena as due to the actions, interactions, aims, hopes, and thoughts of individual men, and as due to traditions created and preserved by individual men. But we can be individualists without accepting psychologism. The 'zero method' of constructing rational models is not a psychological but rather a logical method.¹

Popper means here by the zero method the nihility of any presuppositional explanation based on previous psychological knowledge, and starting only from the rational logical construction of models, taking in account the rationality of individuals during the situations. This method doesn't need anyway any psychological assumptions, because psychology is itself just one of the social sciences. Then Popper means by being individualistic that being analytical to the situations not to psychoanalysis.²

We can discern here that situational logic and methodological individualism are the two sides of the same coin. Thanks to the first we avoid to mix the second with psychologism which its explanations depends on the theory saying that there is such matter that all individuals share, and call this common things as laws of human nature. But we can see that with the late developments on philosophy of science especially methodology. It becomes unreasonable to accept these unproved assumptions, that all people are governed by psychology laws because it's already based on previous hypothesis. By contrast, the zero method extracts the explanations from the rational analysis of the situation. If two persons faces the same situation, then according to what psychology laws assume, these two persons are going to act exactly in the same way, if not, then, they are certainly facing different situations.³ based on that, we can say that psychology laws are mere hypothetical plan for the analysis. It can be labeled in Popper's words; the invalid model because of the absence of rational elements in its agenda, and it must be replaced with a new model. With such critical view we develop and differentiate between models. For that, Popper suggests his relativistic situational methodological individualism.

We have see how does Popper distinguishes methodological individualism from other invalid methods – according to him – although this subject is still in today's debates.

Popper cites some passages of Hayek* – within his “Poverty of Historicism” – to explain his idea of the unity of method and defends the methodological individualism. Hayek wrote in the first passage : “The physicist who wishes to understand the problems of the social sciences with the help of an analogy from his own field would have to imagine a world in which he knew by direct observation the inside of the atoms and had neither the possibility of making experiments with lumps of matter nor the opportunity to observe more than the interactions of a comparatively few atoms during a limited period. From his knowledge

1 - Karl Popper, The Poverty of Historicism, pp. 157, 158.

2 - كارل بوبر، بحثاً عن عالم أفضل، ص 101.

3 - Lawrence A. Boland , The Foundations of Economic Method: A Popperian Perspective, Second edition, London: Routledge, 2003, p.36.

* - Friedrich August von Hayek (1899-1992): British economist, well known of his criticism to the communist and totalitarian ruling systems. He adopted popper's idea of the open society. He won Noble Prize in economics 1974. He invited popper to lecture in logic and methodology in London School of Economics, as well helped popper to publish his Open Society and its Enemies. Hayek was a lifelong friend of Popper.

of the different kinds of atoms he could build up models of all the various ways in which they could combine into larger units and make these models more and more closely reproduce all the features of the few instances in which he was able to observe more complex phenomena. But the laws of the macrocosm which he could derive from his knowledge of the microcosm would always remain "deductive"; they would, because of his limited knowledge of the data of the complex situation, scarcely ever enable him to predict the precise outcome of a particular situation; and he could never verify them by controlled experiment, although they might be disproved by the observation of events which according to his theory are impossible."¹

This passage explains the idea of the unity of the method and trying to bypass the difference in methods of inquiry between social sciences and natural sciences. That it suggested a common methodology which originated from the learning method of trial and error organized by rational criticism and analysis, even when it comes to human units.

Then Hayek resumes – according to Popper – in another section subjected to social phenomena: "... our knowledge of the principle by which these phenomena are produced will rarely if ever enable us to predict the precise result of any concrete situation. While we can explain the principle on which certain phenomena are produced and can from this knowledge exclude the possibility of certain results, e.g. of certain events occurring together, our knowledge will in a sense be only negative, i.e. it will merely enable us to preclude certain results but not enable us to narrow the range of possibilities sufficiently so that only one remains".²

Popper sees in this lines that describing the method of enquiry here, is not devoted only to social sciences. By contrast, it contains an extensive account to the natural sciences laws features, which is merely an exclusion to the wrong invalid possibilities to restrict the truth. We also cannot predict approximately, except with the use of experiments, observations and analysis. Undoubtedly, that we have a straight intuitive knowledge of the inside of the human atom' than we have of physical atoms. we certainly use our knowledge about ourselves in order to frame hypotheses about other people. But these hypotheses must be tested, they must be submitted to the method of selection by elimination. The physicist, it is true, is not helped by such direct observation when he frames his hypotheses about atoms; nevertheless, he quite often uses some kind of sympathetic imagination or intuition which may easily make him feel that he is intimately acquainted with even the 'inside of the atoms' with even their whims and prejudices. But this intuition is his private affair. Science is interested only in the hypotheses which his intuitions may have inspired, and then only if these are rich in consequences, and if they can be properly tested.³

So, it must get rid of any kind of previous knowledge before going through the analysis, to not, firstly, limit our rational creativity because of these prejudices that may invalidly founded. Secondly, for other considerations, let it be political for example, thus we have to be methodologically individualistic in our analysis, to avoid – maybe –the calling unconsciously for any holistic ideology such Communism, Marxism or any other trend that we can use to interpret posteriorly our social studied phenomenon.

4 - piecemeal social engineering

Popper came up with this notion, after his attach to historicist doctrines. Which are utopian, prophetic, divine, interpretational, and historical laws tended, when dealing with social change. Well, in his both; "The Open Society and Its

1 -Karl Popper, The Poverty of Historicism, pp. 136, 137.

2 - Karl Popper, The Poverty of Historicism, p.139.

3 - كارل بوبر، عقم المذهب التاريخي، ص 166، 167.

Enemies”, and, “The Poverty of historicism”, he introduced piecemeal social engineering to distinguish from historicism and utopian social engineering.¹

Popper tried to build his whole intellectual system, he remains loyal to his basics that formed his philosophy of – natural – science to move it on to politics and society. Through the previous analysis we touch his commitment to his hypothetico-deductive method based on learning from trial and error method. To end up finally that his analytic-critical study of closed societies and dogmatic steady utopian states, corresponding exactly point by point the growth of knowledge process, that is science cannot establish a certain knowledge so that it remains true. Popper in both cases aims to use a sort of feedback procedure, on its basis we suggest bold conjectures, then, with all efforts we critically scrutinize to eliminate errors in the light of testing, Which leads to a new problems, conjecture, solutions, and so on. That’s what Popper means with critical rationalism and the possibility of rational social reform embodied in progressive piecemeal social engineering in politics and society.²

Popper makes the role this piecemeal technology or engineering to discover obstacles that interrupt the typical social action, i.e. it studies the flexibility and responses of social items to different forms of adjustment, because it’s the task of social sciences to try to establish technological basics that permit the development of sociology efficiency in adjustments and re-adjustments of institutions and reforms of social situations. This patch up process based on the criticism of social hypothesis to construct a reformative model to the social situation, that is the practical implication of the theoretical results of piecemeal technology, as well trying to design new social models, as well reconstruct and reorganize the previous ones considering this models as instruments to achieve specific goals.

Technological sociologist doesn’t take in what’s called historical laws because he believes in human ability to control at least a part of his destiny, he believes too that humans choose things consciously that he is not obliged by those evolutionary historical laws. Thus he wants achieving his goals with making piecemeal adjustments and keep on improving it, by contrast holistic engineering that aims to reconstruct the whole of the society.³

“Because our knowledge of society rarely matches our ambitions, wide-scale social experiments are to be avoided in favor of experiments that are limited and local. Popper’s argument for “piecemeal social engineering” can be summarized in four propositions. First, any purposeful political reform to remedy a problem relies on certain social theories about reforms the measure will bring about. Second, as the sociological knowledge required for wide-scale social planning does not exist, we cannot be certain of the result. It is possible that the sociological theory is false (it will not bring about the desired result) or is incomplete (the measure will bring about some result less desirable than the original problem). Third, if policy-making is rational, rather than random tinkering with people’s lives, political reformers should position themselves to learn as much as they can from their mistakes. Fourth, it will be next to impossible to identify and correct specific policy mistakes during

1 - karl popper, The Open Society And Its Enemies, Complete: Volumes I and II, Fifth edition (revised) 1966. pp. 20,21. See also: Karl Popper, The Poverty of Historicism, pp.41-51.

2 - عادل مصطفى، كارل بوبر مائة عام من التنوير ونضرة العقل، ط 1، بيروت: دار النهضة العربية، 2002. ص 189.

3 - فؤاد محمود ناصيف خير بيك، من الابستيمولوجيا إلى المجتمع: التاريخية والمجتمع المفتوح عند بوبر، ط1، دمشق: منشورات وزارة الثقافة السورية، 2002. ص 141، 142.

revolutionary change in society. Dramatic social change makes it difficult to trace the source of a particular problem to any specific policy.”¹

Piecemeal technology goals may be modest, but at least it's real applicable, realizable and profitably of use regarding that it's patching the whole not reconstructing all of it at once. Thus it's distinguished by its rationality, consciousness and realistic ends. Social piecemeal engineering starts from the society in its actual state, then suggests conjectural testable solutions that suits social problems. After that we adjust or replace these proposed solution one by one and part by part because that way matches the nature of the social phenomenon. This Popperian methodology in social sciences corresponds the truth approaching by method of trial and error organized by rational criticism that Popper sees in it the scientific progress process.

Piecemeal engineering does not aspiring to reconstruct the whole society as the totalitarian closed systems, however, it is satisfied only to intervene to reform and fix problems by suggesting realistic, testable, efficient solutions gradually successes. These solution are not holistic, non utopian and not believing laws of history. But it is based on situational logic criterion, which presenting a problem requires a solution that capable of practical measurement. Contrary to holistic tendencies which cannot achieve – realize – its utopian dreams, not to mention it's results.

The above hints about Popperian social epistemology leads to say that this epistemology is characterized by its flexibility, since it mainly adopts critical rationalism either in social sciences or in natural sciences. It boils down to the absence of a law to evolution, because natural and social problems differentiate, thus the suggested solutions differs in time, place and between scientists. As well society movements are continuous and intentional which makes it hard to monitor its course, or the aims of individuals seek to achieve. So, it's impossible to represent the social change in any society with one fixed law – such as the laws of succession or historical materialism laws – because the society is a collection of interacted different trends during its development. Based on this analysis, social piecemeal engineering presents a suitable method that fits the social phenomenon characteristics to study it. Aiming to attain a realistic efficient reforming system to mend and improve our social institutions.²

Conclusion

what characterizes Popper's epistemology - Besides his criticism to the historicist doctrines - is that it's more practical than theoretical, obviously, from the nature of the elements he suggests for social sciences scientific method. Although it's a little bit still have got some methodological ambiguities, but at least it starts from something real, from the society, intending to implicate his critical rationalism principle and epistemological falsification in studying the social phenomenon. It's approaching the typical realistic social models, as we are falsificationally approaching the truth in the growth of knowledge. It provides insight into the nature of social inquiry and practice as well.

1 - Paul Knepper, Op.cit. p.30.

2 - ماهر اختيار، المرجع السابق، ص 319.

References

A/ - In English:

- 1- Peter Godfrey-Smith, Theory and reality : an introduction to the philosophy of science, Chicago: The University of Chicago press, 2003.
- 2- Carlos Verdugo, "Popper's Thesis of the Unity of Scientific Method: Method Versus Techniques": Boston Studies in the philosophy of science: Rethinking Popper, Boston: Springer Science, 2009, Volume 272.
- 3- Popper Karl, The Poverty of Historicism, London: Routledge, 1999.
- 4- Popper Karl, The Open Society And Its Enemies, Complete: Volumes I and II, Fifth edition (revised) 1966.
- 5- Paul Knepper, "Situational logic in social science inquiry: From economics to criminology", Springer Science + Business Media, 2007.
- 6- Bruce J. Caldwell, "Clarifying Popper", Journal of Economic Literature, Vol. 29, No. 1, 1991.

- 7- Lawrence A. Boland , The Foundations of Economic Method: A Popperian Perspective, Second edition, London: Routledge, 2003.
- 8- William A. Gorton, Karl Popper and the social sciences, Albany: State University of New York Press, 2006. P.52.
- 9- Mario Bunge, "The Seven Pillars of Popper's Social Philosophy", Philosophy of the Social Sciences, Vol. 26 No 4, Sage Publications, Inc. December 1996.pp. 528-556.

B/ - In Arabic:

- 1- بوبر كارل، أسطورة الإطار: في دفاع عن العلم والعقلانية، تر: يمنى طريف الخولي، الكويت: عالم المعرفة، 2001.
- 2- بوبر كارل، بحثاً عن عالم أفضل، تر: أحمد مستجير، الهيئة المصرية العامة للكتاب، 1999.
- 3- بوبر كارل، عقم المذهب التاريخي: دراسة في مناهج العلوم الاجتماعية، تر: عبد الحميد صبره، الإسكندرية: دار المعارف، 1959.
- 4- خواجه عبد العزيز، "المنشآت المنهجية التأسيسية الكبرى في فلسفة العلوم الاجتماعية"، الواحات للدراسات والبحوث، العدد 4، مارس 2009، الجزائر: المطبعة العربية.
- 5- عادل مصطفى، كارل بوبر مائة عام من التنوير ونضرة العقل، ط 1، بيروت: دار النهضة العربية، 2002.
- 6- فؤاد محمود ناصيف خير بيك، من الاستيمولوجيا إلى المجتمع: التاريخية والمجتمع المفتوح عند بوبر، ط 1، دمشق: منشورات وزارة الثقافة السورية، 2002.
- 7- ماهر اختيار، إشكالية معيار قابلية التكذيب عند كارل بوبر في النظرية والتطبيق، دمشق: وزارة الثقافة السورية، 2010.