
Economic approaches to sustainability and quality of life. an epistemological study

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The complexity and dynamics of current social and economic phenomena determined a growing body of economists to ask for a renewal of economics methods and a repositioning to the current society problems. The defining element of this new theoretical approach should probably be its multi and interdisciplinary character. By accepting and using assumptions and explanations beyond the accepted limits of purely traditional economics, quality of life studies could open a path to the new social sciences. On the other hand, such an endeavor is subject to methodological risks and pitfalls that may compromise its development. In this context, by using an epistemological approach this paper deals with a number of theories on quality of life issue in order to grasp new research methods that could be used in economics and other social sciences.

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1. Introduction

Given the current conditions, in which the responses to the crisis seem to be limited by the very inability of economic science to explain

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social phenomena, more and more voices point to an acute need for restructuring and repositioning of economics in the framework of social sciences. If, in terms of responses to the crisis, traditional economics issues have become particularly noticeable once the current economic crisis started, in other research zones these limits has been discovered for a long time. Such an area is represented by the research on quality of life, where purely economic explanations are most often incomplete and irrelevant, complaining the appeal to concepts, explanations and theories that traditionally would have been considered outside the economics field. Thus, from the complexity and social dynamics of the phenomenon studied a new theoretical approach has emerged whose defining element is its multi and interdisciplinary character. At the same time, such an approach is subject to risks and pitfalls that may compromise the methodological nature of any scientific theory. It is possible, for example, that one approach to be able to accurately and describe thoroughly a phenomenon, but in the same time to be unable to provide methodological conditions that makes turns a particular explanation into a more universal theory. In this context, the objective of this paper is to analyze in terms of methodology, a number of theories about the quality of life that combines elements belonging to various social science in order to reveal how scientific explanation can emergence from these theories. To achieve this objective, this paper will use a research methodology based on analysis of the main theories about the quality of life from the perspective of modern epistemological theories. Thus, structurally, the present paper aims will present a brief summary of modern epistemological currents, will outline the main approaches to quality of life and will apply the elements of epistemological analysis on specific approaches to quality of life.

2. Modern epistemological theories in a nutshell

The relative lull in the late 70's was shattered by a dramatic escalation of interest in the nature of scientific knowledge (Chisholm, 1966, Barnes 1977, Pollock and Cruz, 1999; Hetherington, 2001), in general and also to economics methods, in particular (Backhoe, 1994). For a significant period, economic epistemology oscillated in a delicate balance between empiricism-inductivism (Ayer, 1956; Chisholm & Swartz, 1973; Bonjour, 1985; Goldman, 1988) and positivism (Passmore, 1967; Comte, 2007; Hanfling, 1981). Nevertheless, this traditional conflict has acquired new dimensions marked by "lawyers" Popper's falsificationism (Hands, 1985, 1993; de Marchi, 1988; Caldwell, 1991), organized structures of Kuhn's (Baumberger, 1977; Barnes, 1982), Lakatos's research programs (Blaug, 1975; Caldwell, 1991), Friedman's instrumentalism (Hirsch de Marchi, 1990), Austrian praxeology and Feyerabend's epistemological anarchism. All this turmoil produced an explosion of epistemological theories applied in economics which is a science very sensitive to research methods. In the same time, the interest for the right research methods has grown exponentially as the recent economic crisis has revealed the inability of economics to provide a suitable answer thus revealing the latent conflicts hidden deep in the substrate of economics. In this context, the task to identify, classify and summarize the epistemological currents which are relevant to the development of economics is extremely difficult. However, for the purpose of this paper we consider that the identification of three fundamentals modern epistemological currents (falsificationism, organized research structure and methodology of research programs) provides a framework for an epistemological analysis of the quality of life approaches.

One of the most coherent theories of scientific knowledge belongs to Karl Popper. The impact of Popper's theory is significant as a growing number of researchers continue to criticize, reject or improve his theory (Hands, 1985, 1993; de Marchi, 1988; Caldwell, 1991). Popper's

epistemological theory is rooted in two fundamental issues: the demarcation criterion and the growth (progress) of scientific knowledge. Popper dealt with demarcation problem by both criticizing rationalist and inductivist points of view. According to these critics, induction cannot be used to demonstrate or justify a theory. On the other hand deductive process can be used to disprove a theory. So, one cannot prove the truth of a theory, but one can use a single inconsistent instance to dismiss a theory. Accordingly, Popper proposes not only a new demarcation criterion, but also a new scientific method: the real science should only include all synthetic statements about real phenomena that can be, at least in principle, falsified by empirical observations. Thus, theories are conjectures or assumptions which were created to solve problems posed by previous theories and to explain in a more consistent manner specific phenomena. Once a theory is set, it must be confronted with rigorous observation and experience, theories that cannot stand the test of observation or experience will be eliminated and be replaced by other speculative conjectures. Using this method, scientific progress can be described in the following manner: science begins with an explanation of empirical facts, falsifiable hypotheses are proposed by scientists as solutions, conjectures are criticized and tested and some are quickly eliminated. This was coined as the falsificationist method. Moreover Popper added a new assumption: a theory has a scientific character only if asserts or implies that certain events cannot occur. So, the scientist, author of the theory, should provide the theory and conditions under which that theory will be invalidated. Falsificationists argue that science advances by trial and error process, by conjectures and rejection, only the most appropriate theories will survive. One can never argue that a theory is perfect, but he can assume that it is the best available at this time, exceeding the previous ones. As our knowledge grows, our ignorance is infinite and overwhelming. The word problem is only another name for the constant tension between

knowledge and our ignorance. Any new theory is an explanation of “deeper” to correct or “reject” previous explanations. The progress of science involves the formulation of theories with high improbability. There isn't a theory universally true because there is no widely accepted principle of truth. A scientist cannot know if his theory is true, he can only know if it is more probable than the other previous or rival that is closer to the truth of empirically than others because better withstand empirical tests.

Almost in the same time, Thomas Samuel Kuhn sets out in his book "The structure of scientific revolutions" a new way to understand a scientific theory. One of the key points of this new theory is the emphasis on the revolutionary nature of scientific progress. The growth of knowledge is done through a scientific revolution that involves to give up a theoretical structure and to replace it with a new one which is incompatible with the previous one. In Kuhn's view, the dynamics of science knows a significant moment when disorganized and multiform activity preceding the formation of a science ends to structure and organize, when a "paradigm" assumes adherence once the scientific community. In this context, paradigm consists of general theoretical assumptions, the laws and techniques necessary for its implementation are adapted by members of a scientific community. This moment in the evolution of knowledge occurs when paradigms simultaneously meet two conditions: 1) are sufficiently new to attract a group of followers, 2) are sufficiently open to allow resolution of many types of problems. When the two conditions are met paradigm can give birth to normal science which “means research firmly based on one or more past scientific achievements, achievements that some scientific community acknowledges for a time, as the basis of her practice” (Kuhn, 1970). For Kuhn normal science is an aspect of knowledge is like solving puzzles research to solve a problem is to obtain the anticipated normal in a new way and for this to be resolved puzzles all sorts of complex instrumental nature, conceptual and

mathematical (Kuhn, 1970). Normal science will progress as long as scientists will expand the paradigm in order to integrate behavior of the real world of relevant elements, confirmed by the result of experience. Inevitably, the "paradigm" will encounter difficulties and will be confronted with inconsistencies, if not exceed the state mean that it is facing a crisis. The crisis is resolved when a "paradigm" completely new, which earns a growing number of followers, and ending when the old "paradigm" is abandoned entirely.

At the beginning of seventies, Imre Lakatos has been introduced the fundamental insights of the methodology of research programs (Lakatos, 1970). For Lakatos, Popper's falsificationism is rather a normative than a positive methodology which does not provide a demarcation criterion between theories but mere a way to divide scientific from unscientific methods. Lakatos points out that the remarkable tenacity of scientific theories and scientists to accept anomalies rather than deny theories. In this context, Lakatos proposes a new approach to scientific knowledge in which theories are no longer treated separately but as part of a research program that integrates several interrelated theories. Lakatos identifies three components of research programs: hard core, heuristics, and protective belt. Hard core is that part of the research that cannot be invalidated by decision of methodological research program representatives it represents the "ideology" meta-scientific theory of researchers. It is that part of the research program that will be defended at all costs by its followers, regardless of the scientific sacrifices. Lakatos also provides examples in the natural sciences, referring to Newton's laws of mechanics and identifies such hard-core and in the economy and competition laws or aggregate behavior of individuals. Heuristics is defined as partially articulated set of suggestions or tips regarding how to change the development of alternatives refuted theories (Lakatos, 1970). Finally, the protective belt consists of all specific theories, testable scientific reputation of

providing scientific research program. It includes those theories involving explanations or predictions that can be removed if they are refuted by the sacrifice and allow them to maintain the hard core untouched. From the perspective of scientific knowledge, Lakatos examines research programs in terms of their empirical content and their predictive ability. Progressive research programs add empirical content to their predecessors and allow prediction of new facts hitherto unnoticed whereas regressive research programs are not able to bring new predictions. The evolution of research programs seems to follow certain regularities. Progressive research programs tend to remove regressive programs and a research program is replaced only by another program that is capable to explain the success of the previous program and to provide a superior heuristic power. Moreover, scientists tend to join progressive research programs, and when they join a regressive program they do it with a desire to turn them into progressive programs.

3. Epistemological analysis of current approaches in quality of life

Epistemological analysis of current approaches in quality of life involves finding answers to some methodological questions derived from epistemological trends previously synthesized. Thus, such an analysis should try to provide answers to the following questions: 1) Is there a scientific revolution triggered by the new approaches to quality of life?; 2) The current research on quality of life should be considered as a new paradigm?; 3) Are these approaches on the quality of life falsifiable?; 4) What is hard core and heuristics for current approaches in quality of life?; 5) These approaches are able to ensure the progress of scientific knowledge? or, in other words, current research programs on quality of life are progressive? But most of all, the answers to these questions are subject to identification, in the first phase, of the most

relevant conceptual specific to the multi ant interdisciplinary character of quality of life research.

3.1 The main conceptual approaches in quality of life

Clearly, the complexity and importance of a social phenomenon of such scale as the quality of life drew attention of many researchers from other social sciences different from economics. In this context, it is useless to say that analysis of this phenomenon is exclusively in the focus of economists, but in the same time, it is impossible not to note that economic science has made a defining influence on quality of life analysis. On the other hand, pure economics has quickly reached its limits in this area and was compelled to resort to different research methods which made possible the expansion of scientific knowledge about the quality of life. Scientific approaches in quality of life are bound not only to explain this complex phenomenon by its very nature, but especially to provide viable methods for assessing the phenomenon that can be used by public policies. These tasks include, obviously, the coexistence of research methods from various areas of social sciences and combining them into a new area of research characterized by multidisciplinary and interdisciplinarity. Moving towards this new form of research has occurred gradually from simple economic approach to current approaches. Within this development can be identified at least three stages that have been the defining landmarks in the advancement of knowledge. They are 1) purely economic approach inspired by consumer theory which is trying to provide some viable economic explanations to non-material aspects of life, 2) subjective well-being derived from the utilitarian theory which aims to explain specific phenomena through the individual subjectivity, and 3) the capabilities approach inspired by Amartya Sen's theory that aims to assess the quality of life through objective indirect observations on the actions and status of a person.

In short, the utilitarian approach underlying the first two components identified above is based on the following premise: quality of life depends essentially on the welfare of the individual, and this level can be assessed through pleasure or satisfaction that someone feels by consuming goods or, more generally, resources. This hypothesis provides a leading role in addressing economic study of quality of life as it provides a direct relationship between the quantity of goods that an individual possess and its level of wealth (welfare depends on individual satisfaction and individual satisfaction is derived from consumption of goods which means that welfare should result in a relationship directly proportional to the individual's ability to acquire and consume goods and resources) (Serban-Oprescu, 2011). In the same time utilitarianism has provided not only an economic approach in quality of life research method - marginal analysis, but also a unit of measurement - utility. Nevertheless, the utilitarian approach requires an aggregate analysis of welfare blurring, thus, the importance of resource distribution and different perceptions on the utility of resources. On the other hand, the capabilities approach is based on a hypothesis different from that of utilitarianism: the individual seeks not only the well-being as defined in the classical sense (utilitarian), but a superior condition which is not given by the amount of owned resources or welfare level (Serban-Oprescu, 2011). Other variables, such as social responsibility of the individuals and firms should also be taken into account (Boboc, Dumitru & Stancu, 2009). In this context, the concept of quality of life undergoes a transformation of meaning through a new approach defined in terms of a person's ability to do valuable acts or reach valuable states. (Nussbaum & Sen, 1993). The capabilities approach takes a concrete form by identifying and organizing the various aspects that influence quality of life in several relevant dimensions such as material wealth, health, education, personal activities, political voice and governance, social connections

and relations, environmental conditions, economic and personal insecurity.

3.2. Scientific revolution and paradigms in the study of quality of life

One of the questions raised from the epistemological analysis proposed by Samuel Kuhn refers to the quality of life research ability to produce a revolution in social science. First of all, the solution to this problem lies in finding answers to other two complementary questions. The first refers to the possibility of applying Kuhn's methodology in social sciences in general and particularly in economics, and the second, which arise only if the answer to the first is affirmative, concerns in which extent is possible to identify a "normal science" in economics. Clearly the answers to the first complementary questions are both affirmative and negative. The affirmative arguments are derived especially from the way in which economists refer to their science. One can easily see that the specific language of economics embedded the kuhnian key terms. Paradigm has become the most common way to express a theory or a way of thinking in economics and one of the defining moments in the evolution of economic science is known among historians of economic thought as the marginal revolution. Moreover, J. A. Schumpeter, one of the most famous and respected historians of economic thought, identify the existence of circumstances during development economics, named classic situations which corresponds to times when one could talk a normal economic science. On the other hand, the series of negative answers to the possibility of a kuhnian methodology in economics is consistent. First, it should be noted that the kuhnian philosophy is limited by its own creator only to physics as Kuhn himself was skeptic about applying this epistemological philosophy to the social sciences. Moreover, in a relevant article, Mark Blaug (Blaug, 1975) shows that the evolution of

economic thought corresponds rather to the philosophy of research programs proposed by Imre Lakatos than kuhnian methodology, noting at the same time, the ability of economic theories to compete with each other. In this context, applying kuhnian epistemology to the approaches on quality of life, even if is not entirely possible, could produce some interesting results.

In this way, we can go further to the second question: can we talk about a currently "normal science" or such a "normal science" existed at one time during the history of research in economics and quality of life? Such a "normal science" could be identified in the utilitarian approach, which was, in fact, the main paradigm of economic welfare for a significant period of time. As Sen noted, "Utilitarianism was for a very long time the 'official' theory of welfare economics in a thoroughly unique way" (Sen, 2008) being accepted as the dominant philosophy not only in economics of welfare but also in economic science in general. The great advantage which imposed utilitarianism as the dominant paradigm in the study of quality of life was its ability to provide a viable method of analysis of social phenomena that have ensured the universality and objectivity of theories, on the one hand, and the need to theorize the analysis of human behavior, on the other hand. Using the paradigm of the efficient allocation of resources through the market various economist as V. Pareto, Y F. Edgeworth, A. Marshall and others have created the economics of welfare as a branch that focuses on how individuals can get resources and on how they are distributed in society. However, supporters of this paradigm have developed methods and analysis tools that were enshrined in the economics of welfare such as Pareto optimum or the utility function. So, at least for a limited period, utilitarianism has the ability to perform at least part of the criteria to be as a kuhnian normal science: utilitarian assumptions are sufficiently articulated to represent a coherent social reality that can be studied using a specific methodology, which allowed solving the puzzle represented by economics of welfare.

On the other hand, methodological limitations have led to a serious crisis of the utilitarian approach as a dominant paradigm economics of welfare. The insurmountable problem of utilitarian paradigm seems to consist of its inability to draw boundaries which can protect the interests of certain individuals from those of others and, accordingly, to ensure a well-defined framework in which someone should be able to pursue those interests meaningful to his life (Serban-Oprescu, 2011). The obtuse and uncompromising logic of utilitarianism which argues that, at some point on, happiness can be achieved by someone else distress and quality of life is reduced to a mere matter of distribution of resources and income and expenditure account money seems not to be too easily accepted today. In this context, this normal welfare economics based on utilitarian paradigm seems to be in crisis both at the explanation level where the wellbeing-welfare confusion caused the ignorance of non-material aspects that decisively determines the quality of life, and at the descriptive (measurement) level where there is failure of traditional economic indicators to capture the essential elements and to describe the dynamics and complexity of a phenomenon such as quality of life. Thus, traditional utilitarian paradigm became the target of criticism especially from the 50s of last century. Some of the major criticisms are related to the need to expand the economy beyond the limits imposed by initial approach under which "the value of the living standard lies in the living, and not in the possessing of commodities, which has derivative and varying relevance" (Sen, 1987). This new approach started to gain new supporters by demonstrating its ability to become if not a dominant paradigm, a paradigm at least strong enough to cause deposition of normal science. In addition, we can talk about an interesting phenomenon in the history of economic thought: the overlapping of economic crisis and the crisis of economics which reveals weaknesses in traditional approaches to economic analysis. Traditional paradigm seems to be unable to provide a plausible

explanation and a viable answer to current economic crisis. So the arguments presented above are sufficient to demonstrate that in kuhnian terms, economics in general and quality of life analysis in particular is in crisis for some time, but it is difficult to say that, while, and a revolution occurs because, unlike the social and political revolutions, scientific revolutions can be seen up retroactively, and this revolution, if any, is unlikely to impose a new science normal context in which economics goes to interdisciplinarity and transdisciplinarity.

3.3 Falsificationism and research programs in quality of life approaches

Are quality of life approaches falsifiable? The answer depends on a probably more general question: are economic theories are falsifiable? This question could guide us on the right path. In general, just a few theories, and particularly less economic theories provide that special methodology required by the Popper's falsifiability criterion. Clearly approaches on quality of life are not an exception to this rule. A brief analysis of these approaches shows that both traditional and modern approaches do not provide the required Popperian testing methodology. Difficulties in offering these tests derived primarily from research method used in these kinds of approaches. Empirical observation completed sometimes by deductive, but more often by an inductive analysis of a complex phenomenon interconnected in all aspects of social life far exceeds the capacity of the observer to correlate all the data. In this context, for the researcher it is extremely difficult to determine which data are inconclusive, especially in order to identify verification tests. Secondly, in quality of life research there is a type of behavior that Popper called it auto immunizing and which in Popper's vision should be avoided at all costs. This autoimmunity derives from embedding value judgments in the very founding assumptions of the theories about the quality of life. On the other hand, such a phenomenon cannot be avoided. The specific research

on quality of life requires the appeal to ethical and moral considerations derived from the behavior considered normal in the society. Given these observations, we can say that most researchers in the field of quality of life does not behave as they would like Popper: they do not provide falsification tests of the theory but rather try to protect their theories of any attacks. This behavior corresponds rather to that described by Lakatos methodology of research programs.

Currently research into quality of life is characterized by the existence of competitive theories sustained by various researches which are trying, on the one hand to demonstrate the supremacy of their theory and, on the other hand, to pull out practical benefits offered by that theory. Thus, research programs arise. Such a research program could be considered the capabilities approach. By analyzing its structure and content, one can speak about a hard core of this approach, a heuristic and a protective belt.

The hard core of capabilities approach consists mainly in the ideological rejection of the traditional economic model in which emotions of individuals involved in economic act seem to be irrelevant. In this respect, the capabilities approach aims to rehabilitate the role of ethics in economic analysis incorporating moral considerations which are fundamental in assessing quality of life. Quality of life research is an area so vast that it cannot be reduced to analysis of material wealth. On the contrary, material wealth is only a small factor in all non-material elements that can assess quality of life. Finally, supporters of this research program seem to understand a phenomenon so complex and dynamic cannot be captured adequately by the analysis methods provided by one scientist and the only way to extend the limits of knowledge in this area is the inter and transdisciplinary approach.

The followers of this research program are moving towards a different paradigm: traditional economic utilitarianism seems to be replaced by a procedural utilitarianism in which not only final satisfaction is

important but also how this satisfaction is achieved. Observation remains the primary research method for this approach, but the statistical empiricism combines induction with advanced theoretical deduction. Heuristics proposed by this research program involves completing a three-step methodology through which the dimensions considered significant quality of life are identified and systematized. These dimensions are analyzed in terms of structural and qualitative methods to deduce their quantitative assessment. Finally the last step is to collect statistical data and add new interpretation by drawing attention to the impossibility of the existence of a single aggregate indicator to measure quality of life. Around research program hard core through positive heuristics described above, a protective belt is created. This protective belt consists mainly through studies conducted recently by the Commission of measurement of economic performance and social progress (CMPEPS) which aims to discover the limits traditional economic evaluation methods and provide new approaches for measuring social phenomena. The commission published its work in September 2009 report proposing a series of recommendations on addressing specific economic performance and especially the quality of life. These recommendations were immediately implemented by a french and german joint team which in January 2011 published a case study on the two countries which constitute a methodological guide for implementing recommendations CMPEPS.

Finally the last question that we try to formulate a response refers to the ability of these theories and research programs to ensure the growth of scientific knowledge. The answer to this question can be formulated in both Lakatos and Popper terms. Thus, in terms of popperian methodology, there are several arguments supporting the role of these theories in the progress of scientific knowledge. First, it is clear that current theories in the field of quality of life were developed based on previous theories and criticisms made to incorporate them as

earlier theories but offers while extending new responses in this way, the scope of explanation of the theory. Second, current theories expand the empirical content of quality of life. Finally, from the lakatosian perspective, it may be noted that most current research programs on quality of life appeals to a positive heuristic prediction expanding the capacity of current theories.

4. Conclusions

Although in this paper a lot of questions were formulated and just a few answers were offered, the short analysis conducted especially in subchapter 3, reveals at least two interesting results both epistemological and practical in terms. First, the analysis during subchapter 3 reveals that none of the epistemological trends can fully explain modern approaches in quality of life. This result shows, on the one hand, the limits of modern epistemology and on the other hand, the ongoing innovation methodology necessary for a sustainable approach to quality of life. Second, methodological innovation, although it is able to provide some interesting answers should be linked with the need for rigorous methodology. So while theories seem more advanced than the economic epistemology, there is still need to provide methodological grounds for quality of life approaches.

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