



THEORIES OF KNOWLEDGE: A CRITICAL EXAMINATION OF THE VALIDITY OF DIFFERENT KINDS OF EXPLANATIONS

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ABSTRACT

The theories of knowledge are the most important areas of knowledge. The major issue in “Theories of knowledge”, is the real source of obtaining the knowledge. In the field of philosophy of social sciences, the theories of knowledge and its different kinds of explanations provides basis for conducting research. Regarding the theories of knowledge, Rationalism and Empiricism are the two main sources of acquiring knowledge. The followers of rationalism believe that logics are the primary source of knowledge for conducting research and the followers of empiricism believe that experience is the primary source of knowledge. In this regard, the paper has described that how the theory of induction and deduction works. The research paper has critically discussed the observations of followers of these two schools of thoughts and has examined the validity of different kinds of explanations i.e Scientific Explanations and Social Explanations. The research paper has thoroughly discussed the theories and models of explanation and attempted to answer the following questions; what are the problems with the theories of knowledge? What is the nature of different kinds of explanation? What is the validity of different kinds of explanations?. In the end, the paper has presented conclusion from the critical discussion in the paper.

Keywords: Theories of knowledge, Rationalism, Empiricism, Model of explanations, Social explanations, Scientific explanations.

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Contribution/ Originality

This research study is one of the few studies in the area of Philosophy of Social Sciences that has analyzed the different kinds of explanations for conducting the research in the field of social sciences.

1. INTRODUCTION

Theories of knowledge are divided into the two rival schools of thoughts i.e rationalism and empiricism. Neither rationalism disregard the primary tools of empiricism and nor empiricism disregards the primary tool of rationalism entirely. The major issue revolves around on beliefs that what is the real source of seeking knowledge? The Empiricism, Rationalism and Constructivism are known as specified theories of knowledge. In philosophy, the empiricism and rationalism are two main sources of acquiring the knowledge. The Rationalists believe that all knowledge is “innate” and that learning comes from intuition. The rationalism is concerned with absolute truths that are universal such as logic and mathematics. This is one of the strengths of the rationalism. The problem in rationalism is that it is difficult to apply rationalism to particulars which are everywhere in our daily life, because it is of such an abstract nature (Maccarelli, 2006).

According to the Empiricism, the experience is primary source of knowledge. The famous Empiricists, such as John Locke claimed that all knowledge comes from direct experience. He argued that when human born, his mind is like a “blank slate” and his experiences are written upon the slate. Therefore, there is no matter of innate experiences. The empiricism’s strengths lies are that it is regarded best at explaining daily particulars which a human encounter in his life. The problem of empiricism is that we only experience particulars; however, one cannot have direct experiences of general concepts. The Philosopher Kant has argued that there are opposing strengths and weaknesses of the empiricism and rationalism. He has endeavored to get both positions together with his best of his potential and come up with whole new position. He argued that there are 3 types of knowledge.

- The first type of knowledge is called “a priori”. It is the knowledge a human gets before experience. This knowledge corresponds to rationalist thinking. It holds that knowledge is an independent of experience. A priori knowledge is also necessary and universal and meaning true everywhere, such as space, time, and substance. These analytic statements fall under this category of always true. However, he argued that they are analytic statements that tell us, what we already know. For instance, the statement “squares have four sides” is analytic because it is true and the fact that the square has four sides.
- The second type of knowledge is called “a posteriori”. It means the knowledge after the experience. This type of knowledge is dependent upon direct experience, which cannot be certain. A posteriori knowledge is associated with the subject, who gives new information, but is not necessary. An example of an a posteriori statement is “the sweater is green.” Green is not an innate characteristic of sweaters. Therefore a sweater of a different color is still a sweater.
- The third type of knowledge is the combination of a priori knowledge and a posteriori knowledge. He thought of a statement that is both necessary and ureal and it would not be unimportant but yet it would still provide new information (Maccarelli, 2006).

Primarily, the knowledge is understood in terms of theoretical and observational insights which are gained by theorists or experts in the field. However, this is not the only useful source of knowledge. Similarly, empirical observation, theoretical research, and systematic testing of methodologies are not only sources of knowledge but it also embraces personal experience, intuition and imagination that is learned from traditional socialization processes (family and peer groups), word of mouth, mass media, political and religious leaders, and literature. (Theory of Knowledge—Guide, 2006). The figure mentioned below presents the area of knowledge and ways of knowing to the knower.



Source: (Theory of Knowledge—Guide, 2006)

The above figure describes that the knower obtain the knowledge from the four sources i.e emotions, reasons, sense of perception and languages. These sources of knowledge encompass an exploration and interpretation of the world.

2. VALIDITY OF DIFFERENT KINDS OF EXPLANATIONS

In research, there are two methods of reasoning; Induction and Deduction. The deduction moves from the general observation to the specific and Induction moves from the specific observation to broader generalization and theorist. Popper seeks to solve these two basic problems with his theory of falsifiability. He argued that the inferences made in science are not inductive but deductive. He said that science does not start with observations but with the problems and proceed to generalize it. He has started a new era in the philosophy of science with the introduction of a book “The Logic of Scientific Discovery” written in German in 1934 and translated in 1959. He rejected the idea that scientific knowledge was based on a induction method in which theories are verified by observations. He has further argued that the logical process of induction simply does not exist. The most useful function of observations is to act as tests or attempt of falsifications of theories. Popper's ideas promoted creativity and effective problem-solving in science and elsewhere. Popper's evolutionary epistemology is based on the four-step problem-solving schema: (Hansen, 2008)

$$P \longrightarrow TS \longrightarrow EE \longrightarrow P$$

In the above four steps, the P problem is the starting point, which evokes tentative solutions (TS). These are subjected to the process of error elimination (EE) by way of critical discussion and experimental testing. In the course of these activities new problems emerge (P).

The induction theory claims that the scientific laws or generalizations are derived from repeated observations. These observations are only useful, if they are related to a problem and in practice. The inductive method can lead to simply accumulation of data. It tends to hamper the imaginative search for new ideas, encourages over-specialization and provides no incentive to explore the wider theoretical, technological and moral implications of problems and theories. Thomas S. Kuhn in his book “The Structure of Scientific Revolutions” rejected the view that science grows in a steady fashion as observations accumulate. He claimed that when whole world-views are changing in the process, the periodic revolutions occur. He called these world views as paradigms and he called the period between revolution a ‘normal science’ (Hansen, 2008).

Proceeding on the ideas of Imre Lakatos, it has been observed that he has followed Popper in resisting Kuhn's ideas about paradigms. In contrast to the reciprocal relationship between Kuhn and inductivism, Lakatos has formed a parasitic relationship with both Popper and Kuhn. He took the idea of research programmes from Popper and from Kuhn that the central part of the program should be protected from criticism. He has used some exciting new terms; ‘hard core’ and ‘protective belts’. According to his rationale, a ‘protective belt’ of lesser theories can be modified or discarded. This seemed to prohibit the most important and fruitful criticisms which are directed at the framework assumptions of the program (Champeon, 2009). In deduction, the truth of premises guarantees truth of conclusion.

Example; Sample Deduction rules;

| | |
|---------------|--------------|
| If P then Q | P or Q |
| P | ~ P |
| ----- | ----- |
| Therefore , Q | Therefore, Q |

In induction, the truth of premises supports the conclusion but does not guarantee the truth of conclusion. The relation of support is called confirmation.

Example;

Sample Induction rules.

| | |
|---------------------------|----------------------|
| All observed A are B | All Observed A are B |
| ----- | ----- |
| Next observed A will be B | All A are B |

Salman argued that philosophers have not solved the problem of induction. He has also rejected the deductivism. He argued that, in the basic problem, there are many unfalsified

hypotheses to choose. Deductive rules out falsified hypotheses but provides no reason to prefer corroborated hypotheses over a completely untested hypothesis. He argued that there ought to be a rational basis for preferring one unrefuted to generalization for use in a predictive argument (Hansen, 2008)

The Theory of knowledge is a subject which is partly logical and partly psychological. The connection between these parts is not very close. The logic and mathematics on the one hand, and the facts of perception on the other hand, have the highest grade of certainty; where memory comes in, the certainty is lessened. The certainty is further lessened where unobserved matter come in. The attempt of increasing scientific certainty by means of some special philosophy seems hopeless

The explanations aimed to achieve a better understanding of phenomenon within the sciences and the humanities. The people and philosophers think of explanation in terms of causation. It can simply say that for explaining event or phenomenon, it is essential to identify the cause of the event or phenomenon. The nature of causation is one of the perennial problems of philosophy. In philosophy, the terms "truth" and "explanation" have both realist and epistemic interpretations. The true and explanatory theory gives us insight into the causal structure of the world. However an epistemic interpretation expresses only the power of a theory to order our experience (Friedman, 1974). Generally there are two kinds of explanations; 1) Scientific explanation 2) Social Explanation.

2.1. Scientific Explanations

The scientific explanation involves several different questions; what is purpose of scientific explanation? What is the logical form of explanation? What are the pragmatic requirements of explanation? What are the criteria of adequacy of an explanation? And what role do general laws play in scientific explanation. In the category of scientific explanation, we begin to examine the covering law model of explanation. According to this model, an event or regularity can be subsumed under one or more general laws. The central idea is that the event or regularity is not an accidental but it is derived from more basic general laws which are regulating the phenomenon. This insight is developed in the form of the Deductive-Nonmological (D-N) Model of explanation. According to this approach, an explanation is a deductive argument. Its premises include one or more testable general laws and one or more testable statements of facts (Friedman, 1974).

The fact is that all scientific explanations do not depend on universal generalizations. Some scientific laws are statistical rather than universal. The D-N model has been adapted to cover explanations involving these sorts of laws. The inductive statistical model describes one or more statements of particular facts and inductive argument to the explanandum. In the deductive argument, the premises guarantees the truth of the conclusion while the I-S argument transmit only inductive or probabilistic support to the explanandum, where it is perfectly possible for the

promises to be true and yet the conclusion false. It was noted that the D-N model interprets scientific explanation of a phenomenon as showing why the phenomenon was necessary in the circumstances. In spite of the formal parallel between D-N Model and I-S Model, the I-S model is sharply distinguished from the D-N Model because a statistical explanation of an event does not show, why it was necessary but rather why it was probable. The relevance and asymmetry are the two major problems with the Hempel's model that exposed the difficulty of developing a theory of explanation and makes no reference to causal relations. It would also undermine his view that explanation should be understood as an epistemic rather than a metaphysical relationship (Pitt, 1988).

However, this account of explanation is considered not sufficient by the philosophers. Wesley Salmon shows that statistical explanations of an event do not even lead to the conclusion. Salmon develop his own account of "Statistical – Relevance" explanations to explicate this feature of probabilistic explanation. The S-R model does not stay longer because it involved only statistical correlations without appeal to casual relations. Hence, reacting to Hempel's I-S model, Salmon believed that statistical relevance relations are important to scientific explanations because they constitute important evidence of causal relations. It is pointed out that assemblage of relevant factors along with the appropriate set of probability values is not an argument of any sort whether deductive or inductive. The acceptance of S-R model thus requires the abandonment of third dogma of empiricism that "every bona fide scientific explanation is an argument (Salmon, 1984).

2.2. Social Explanations

In this kind of explanation, social scientists commonly distinguished between empirical and theoretical explanations. The distinction between theoretical and empirical explanation is not drawn well, because it is argued that for any good explanation, the theoretical explanation must be empirically supported. In social science an inductive explanation- empirical explanation of an event involves subsuming the event under previously established regularity and deductive explanation involves driving a description of the event from a theoretical hypothesis (Daniel, 1991). For instance; we would like to know that why Pakistan is facing a problem of high infant mortality rate.

For answering this question, we may seek to explain this problem by examining the income level of the country that those countries who has low per capita income always has a high infant mortality rate. The Pakistan is possessing high infant mortality rate because the nation has a low per capita income below 100\$. In this explanation, the question arises, what is the relation between per capita income and infant mortality rate? It is noted that there is negative correlation between infant mortality rate and per capita income. In this example, we have explained the feature of infant mortality rate by discovering another feature 'low per capita income" with which that features is usually associated.

A deductive explanation (theoretical explanation) in the social science is based on a hypothesis about underlying social mechanisms (Daniel, 1991). Supposing, we are interested to know that why low-income group of people stimulated to violent protest in Pakistan? We may try to explain this occurrence in term of the theory of relative deprivation. This is theory of individual political motivation that focuses attention on the gap between what the individual expects from life and what he or she is able to achieve. In the application of this theory to the above problem, we may find that low-level income group of people have formed their expectations by comparing with their more privileged class of people. We determined that the current economic environment has created a downward pressure on the unskilled wages. Now we deductively drive a conclusion about the political behavior of low-income group of people.

In the light of both given above examples, it is noted that in social science an inductive and theoretical approaches to social explanation are confronting particular difficulty. In the case of deductive explanation, we must ask whether the discovery of a more general empirical regularity embracing the event to be explained is really explanatory. We can arrive at the adequate explanation of Pakistan's infant mortality rate when we discover the regular relationship between income and infant mortality rate. It will take further steps to hypothesize the mechanism that connect these variables. Generally, the inductive explanations come out to be of intermediate explanatory value. They promote our explanatory quest by identifying some more variables that appear to be relevant to event in question. But they should be supplemented by further efforts to provide a theoretical explanation of the empirical regularities that they stipulate.

In an inductive explanation, the main task is to provide empirical support for the explanatory hypotheses and its application to the particular case. This involves two sorts of investigation, 1) Examination of theory itself in a variety of circumstance and 2) the examination of the application of the theory in this particular case (Daniel, 1991). In the case of low-income group of people, we must confront several questions for the adequate explanation of that occurrence. The further investigation would probably find that theory describes one of the large numbers of mechanisms of political motivation. In some circumstances, the individual behavior may conform to theory, while in another circumstances it may not. This does not validate the theory, unless the theorist has made rash claims of generality for the theory

In the light above discussion it can be concluded that theoretical explanations are essential in social sciences but at the same time it is important to emphasize the need for careful empirical evaluation of these theoretical hypotheses. In the category of social explanations, there are several models of explanations, such as causal explanation, rational-intentional explanation and interpretive explanation. They represent the main alternative models of explanation in the social sciences. These models are thought to be in opposition to each other due to variety of reasons.

The causal explanation is thought as inappropriate in social sciences because they presume a form of determinism which is not found in social phenomenon. The Casual explanation is one of the three central models of explanation which is regarded as main alternative models of

explanation in the Social Sciences. In causal explanation, the social scientists have shown their keen interest in establishing causal relation among the social phenomenon. (Daniel, 1991)

The broad range of social explanation depends on the causal reasoning with certain qualification. These are;

- The causal assertion do not depends on simple generalization but they depend on simple inductive generalization.
- Causal claim depends on an analysis of specific causal mechanism that connects cause and effect.
- The mechanism that causal explanation postulate, involves reference to beliefs, wants , powers and the action of an individual that influence the phenomenon to occur.

In causal explanation, the evidence of an association gives us strong reason to believe that there is a causal relationship of some kind affecting the variables under study, but it does not establish the nature of that relation. Similarly, the rational model of explanation is thought as different in kind from causal explanation. According to this model of explanation, the general idea is to explain specific social phenomenon as the aggregate result of large number rational persons making choices within a specific social and natural environment. Here, the problem is that, social science requires interpretation of culturally specific norms, values and meanings. Therefore, it is viewed as a fundamental flaw because it attempts to abstract from the culturally specific content of agency and replace it with an abstract universal model of rationality. The Interpretive Model of explanation some time is viewed as inconsistent with both rational and causal account of explanations. This model of explanation said that all human action is mediated by a subjective social world view. No social science is possible that does not penetrate the individual. Thu all social action is framed by a meaningful social world. The interpretive model of explanation is deemed as a legitimate approach to some problems in social science. However, it is argued that all social enquiries cannot be conducted in this manner (Daniel, 1991).

3. CONCLUSION

The above analysis on the theories of knowledge and the validity of kinds of explanations has provided insight view that philosophers and social scientist are divided on the source of knowledge. Theory of knowledge is a subject which is partly logical and partly psychological.

In this respect, Philosopher Kant has mentioned three types of knowledge “priori” and post-priori and third is combination of both. He has argued that these are innate sources of knowledge a human obtained before and after experiences in the world. Philosopher Popper has presented his own theory called “Theory of Falsiability”. In his theory, he argued that science is a deduction, not an induction. According to his given theory, every theory in this world can be falsified by repeated observations. Similarly, Khun presented his own theory of knowledge called “Structure of Scientific Revolutions”. He argued that the periodic revolution occurs with the changes in the world views. These revolutions bring new knowledge to the world and development occurs. These world views are paradigms. Every revolution bring new paradigm.

The philosopher Lakhatos followed the idea of Popper and has resisted the Khun's theory of research progress. He argued that theory is consisting of hard core and protective belts. Hard core is central part of theory which should not be modified and the protective belts is external parts of the theory that can be modified or discarded. The above mentioned disagreements between these philosophers and social scientist fall under the two categories i.e Metaphysical disagreements and meta philosophical disagreements. In Metaphysical disagreement, non-realistics and non-realistic opinions continues to differ on ontological commitments in accepting an explanations and in meta-philosophical disagreements, a naturalistic and non-naturalistic opinions are at odd due to the relevance of scientific enquiry. The explanation helps in achieving the better understanding of the phenomenon. In this respect different kinds of explanation have been critically discussed i.e Scientific Explanations and Social explanations. It has been concluded that scientific explanation is helpful in better understanding the scientific phenomenon and social explanation is helpful in better understanding the social phenomenon.

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REFERENCES

- Champeon, R., 2009. Popper's evolutionary theory of knowledge. Available from <http://www.the-rathouse.com/poptheoryknow.html> [Accessed 19 December 2009].
- Daniel, L., 1991. Varieties of social explanation: An introduction to the philosophy of social science. Westview Press. pp: 199.
- Friedman, M., 1974. Explanation and scientific understanding. *Journal of Philosophy*, 71(1): 5-19. [Accessed Jan. 17, 1974].
- Hansen, T.E., 2008. The two fundamental problems of the theory of knowledge. Routledge.
- Maccarelli, S., 2006. Rationalism vs empiricism. Available from http://www.associatedcontent.com/article/19580/rationalism_vs_empiricism.html?cat=47 [Accessed 20th Dec, 2009].
- Pitt, J.C., 1988. Theories of explanation. Paperback | 14 July 1988. Oxford: Oxford University Press.
- Salmon, W.C., 1984. Scientific explanation and the causal structure of the world. Princeton: Princeton University Press.
- Theory of Knowledge—Guide, 2006. Printed in the United Kingdom by Antony Rowe Ltd, Chippenham, Wiltshire
Published by International Baccalaureate Organization (IBO)Peterson House.

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