Relevance and Criticism of Social Scientific Methods: Positivist Views

Himansu Sekhar Samal

Abstract. The central debate within the philosophy of the social science has concerned with the methodological unity of natural and social science. However, the way in which the debate has been conducted is fundamentally misconceived. This is because of one particular conception of science, that of positivism. The main criterion is to study of the social phenomena and argue that a neglected position in the philosophy of natural science, theoretical realism, or realism, should be explored as an appropriate framework for the social science.

Keywords: Positivism, realism, naturalism, methodological monism, deductive-nomological model, law-like generalizations, hypothetico-deductive method.

The positivist conception of science is extended to the application of humanities. Social sciences are nothing but a systematic study of human being in society. In other words, social sciences try to study in a meaningful way the action of human beings. Thus, the study of meaningful action of man is the real objective of every social science. Human action is very complex phenomena, and therefore, every social science tries to shed light of its scientific characteristic features, thus economics considers economic activities in terms of production, distribution etc., whereas psychology considers the mental attitudes and anthropology studies ancient-man, on the other hand sociology studies the social-actions and inter-actions of men and politics throws light on the political activities. The most important characteristics features of social sciences is that hey study human action in a most systematic manner, in such, that they attain the status of what we call a science.

The view that social sciences could be modelled on natural sciences, for example, the paradigm, the guide in physical science. Positivists see that social sciences are one of those like physical sciences. Therefore, in order to study human-actions in a meaningful way, we should apply rules, methods, procedures commonly used by empirical sciences in to the social sciences. In other words, human beings are like natural entities. But the question arises as to why should we apply these methods and rules

to the social sciences? The positivist would argue that, as compared with social sciences, natural sciences have a longer history and the tradition. Moreover, they have developed a very sophisticated technique is being used with an utmost care and precision. The methodology of physical sciences is very sound and secured one and that is why we shall apply and use this methodology in the area of humanities. Thus, in this way we have a certain, definite and reliable knowledge of human phenomena. That is the reason why there is no harm if we extend the method of natural science to the social science.

Thus, positivism of social science is nothing but to see the law-like generalization of actions of man and see the regularity between the actions and whether their actions could be empirically observed and verified. We have seen that logical positivism is nothing but the verified form of empiricism. So, the epistemology of positivism is an experience, but this experience must be firmly established as one of the verifying instances on which all will agree. The ontology of verifying factual statements is what is often known as scientific method. According to Ted Benton

"Positivism has claimed the territory of human social relations and their history as a proper object for scientific study. In the name of the 'Unity of Science', they have identified the task of capturing this domain as a matter of applying methods of investigation, forms of explanation and standards of proof already established in the physical sciences to this new field."

In his one of the articles called 'Two Traditions' Von Wright described three such tenets of the positivists' social science. According to him one of the tenets of positivism is 'Methodological Monism', or the idea of a unity of method. This method is the same whether it is a natural or social science. Karl Popper and Comte also are in agreement with Von Wright in this regard. Second tenet is the view that the exact sciences like mathematics, astrophysics, set a methodological ideal or standard which measures the degree of development and perfection of all the other sciences, including humanities and social sciences. Finally, the third tenet which is a characteristic view of scientific explanation such explanation, in a broad sense is 'Causal'. The attitude towards finalistic explanations, i.e., towards attempts to account for facts in terms of intentions, goals,

I Ted Benton, *Philosophical Foundations of Three Sociologies*, 1977, pp. 74-87.

purposes, is either to reject them as unscientific or to try to show that they can, when duly matured and purified of 'animist' or 'vitalist' remains be transformed into causal explanations. But one important problem of Von Wright is that he has not covered one more tenet, which is important for the positivists. It is value-neutrality or we can say value neutral observation. According to this tenet we can first of all separate facts from values. Values are our own assessments, judgments, intention wishes and will etc. That means, when we study scientifically, we should look at things whether they are physical or social as completely neutral and dispassionate manner as is possible. Having delineated the characteristic features of positivistic social sciences, I will now embark upon to show the positivistic theories of social science.

August Comte was the founder of positivism. Positivist movement in general advocated the development of new positive outlook or positive philosophy, founded upon the certainties of science. Comte sees the natural sciences positivistically and is naturalistic characterization of sociology is also positivist. He emphasizes two distinctive theses. First, there is historically a progression from theological to metaphysical, to positive mode of thought and related types of social organization. Second, there is a hierarchy of the sciences with mathematics at the bottom and sociology at the top and each of them pass in turn through the three stages, theological, metaphysical and positive.

The theological stage for Comte is one in which people explain events and phenomena in the world in terms of supernatural forces, such as particular Gods or Sprits; in the metaphysical stage, all phenomena are explained in terms of abstract forces or personified entities; and in the positive stage, explanation is given by the establishment of regular law-like connections between empirically observable phenomena. Positive science is concerned only with observable phenomena and consists of the establishment of law-like relations between them through the careful accumulation of factual knowledge. Science cannot inform us of the essence or the underlying structure of such phenomena. The relationship between observable, either of coexistence or of succession, are seen by Comte as constant or regular sequences. Phenomena are thus regularly linked with each other in sets of invariable and universal laws. Our knowledge of such

laws is always tentative, provisional and corrigible.2

Comte argues that we can demarcate scientific from non-scientific statements, not in terms of their testability. Thus, scientific statements are those that make general claims about nature or society, which are open to empirical control. This means that statements are only properly scientific if they have predictive consequences that can be tested. He emphasizes that such predictions do not have to be about the future. Past, present and future events can all be used to test predictions. Prediction is merely the leap from the 'known' to the 'unknown'. Further Comte suggests that there is symmetry between prediction and explanation. He discussed that every law-like connection discovered between any two phenomena enables us both to explain them and foresee them, each by means of other³. However, he discussed two important points, first, although he argues that the scientific method is that of induction, he does not think that how scientific theories are actually arrived at is particularly important rather 'their scientific value depends entirely on their conformity... with the phenomena'. Second, Comte argues that we only know that there are universal and invariable laws because when we test certain laws, they turn out to be invariable. We cannot prove such invariability; only assert that the testing of laws shows us that some are invariable. In Comte's positivist philosophy of science, the role of scientific theory is that we construct hypotheses and test them against our observations. But he does not clarify what counts as an adequate confirmation or verification. Scientific theories consist of linking together the facts relating to the observed phenomena in the constantly conjoined sequences of coexistence and succession. We can only attribute reality to observable phenomena where reference is made in scientific theories to unobservable entities and processes these are at best only useful fiction. They may help us to see how phenomena are linked together, but the crucial issue always is whether we can observe the lawlike relations between observable.4

According to him the main positive knowledge of science is its practical applicability. Science is an instrument of control over our phys-

² Russell Keat and John Urry, 'Social theory as science', Routledge and Kegan Paul, London, 1975, P.72.

³ Ibid., p. 73.

⁴ Ibid., pp. 73-74.

ical and social conditions. Certainty of true or positive knowledge for Comte is that it is practical use to people in their day-to-day lives. He rejects as metaphysical large sector of science such as theory of probability, investigation into the structure of matter or the theory of evolution, which are realms of enquiry lacking practical exploration. Comte employed the historical method. Thus, consists of the comparison between successive states of human development or of humanity. So, it reveals the laws of the inevitable transition from one to another. Sociology also used to varying degrees the methods of the other sciences, which are ordered hierarchically: observation (as in astronomy), experimentation (as in Physics and Chemistry) and comparison (as in Biology), of which the historical method is a subcategory. Mill was in different ways influenced by the Comtean positivist movement. Although Mill was motivated by his beliefs but he made an important criticism of the system that Comte had not lived up sufficiently to his positivist principles. Mill did not produce any sociological analysis and methodology of social science. He discussed that the nature of things in them or the hidden cause of phenomena are inaccessible to the human mind. Nothing can be the object of knowledge except our experience and what can infer from our experience. Such experience yields sets to particular facts about individual events. In relation to the study of man in society Mill argues that the new social sciences should be modelled upon Newtonian mechanics. There are three important reasons. Firstly, it is linked to his desire that science, particularly social science, should enable to us to predict events so that they can be more effectively controlled. Secondly, Newtonian mechanics can be seen as confirming well to the positivist ideal of explanation and as exemplifying a non-necessitarian view of causation. Thirdly, Mill holds to an atomistic view of the universe, which can be seen, specifically in his methodological individualistic interpretation of the social sciences.

He argues that the laws governing the behaviour of the people in social interaction can be inferred from the laws, which govern the behaviour of individuals apart from society. That means, he says laws of the society are derived from the individuals in the society as a whole. The law-like relations between social phenomena cannot observe in any simple sense, nor can they in general be arrived at important tool for the society of human sciences. The laws of psychology are the only secure basis for social sci-

ence. Every social phenomenon could be reduced to psychology. This is called the theoretical reductionism, which we do not find in Comte. Again, Herbert Spencer is holding a positivist view of science but he himself denies that he is a Comtean positivist or that the positivist movement had any important influence upon him. Spencer undertakes empirical comparative research which involves systematic documentation and team work research and classification of data. In this sense his position is different from Comte. He believes that sociology is not the queen of the science. Moreover, Comte attaches too much important to men's ideas, as opposed to the organization of society.

Spencer criticizes Comte's hierarchy for being serial, maintaining rather that the sciences have developed in coordination. Spencer sees⁵ the observation and laws within different disciplines as influencing each other, rather than one science being the condition for the development of the next. Spencer classifies those sciences which consider the forms in which we come to know phenomena (logic and mathematics) and those sciences which study the phenomena either in their individual elements (mechanics, physics, chemistry etc.) or in their totalities (astronomy, biology psychology, sociology, etc.). Spencer also distinguishes between common sense and scientific knowledge. Common sense knowledge takes a fairly systematic form and it can understand and explicate only those combinations of phenomena that are directly apprehend by our senses. We can predict those phenomena which are in constant, direct and simple causal relations with each other. But scientific knowledge is also based on sense-impression. It arises where the relations between phenomena are not a direct and unproblematic kind. Scientific thought is found where inference and reasoning have to be applied to give a plausible account of how phenomena are linked together a law-like relationship. The sole function of scientific inference and reasoning is to enable us to establish lawful relations between phenomena and the relations not being immediately apparent to our sense. However, it is more important that Spencer believes some unknowable entities like, religion and metaphysical things. He noticed universality of religious beliefs and practices. Also, he believes that religion must perform some useful function for human life. A set of religious and metaphysical forces or noumena that can be felt, not known and

⁵ Ibid., p.77.

which are ultimately incomprehensible.

Spencer's social theory is principally based upon organic analogy and the process of evolution. Spencer says that there is no perfect, direct and specific analogy between the social body and the human organism. They both start as small aggregates and increase in mass, both develop a more complex structure as they grow. Both the functionally differentiated parts become increasingly interdependent. One major difference between the two is that in an animal organism only a particular part is endowed with feeling and consciousness while in society all individuals are endowed with consciousness. This is why Spencer's use of models is positivist. That is to locate his employment of the organism source of the model of society within his general positivist desire. It is to identity and establishes the law-like regularities of social life existent between empirically observable phenomena. It will provide us with the means of describing underlying mechanisms and processes productive of observable regularities.

Durkheim has developed his theory of society by taking some threads from Comte's sociological method. His theory is holistic which is modelled on organic model of biology. Durkheim describes himself is a scientific rationalist. He wishes to extend the study of human behaviours the method and procedures of natural sciences. Science is the careful and clear establishment of law-like relations of cause and effect. Durkheim distinguishes social facts from other facts. He gives to sociology 'a method and a body', a realm of phenomena to be studied scientifically by the sociologist. That realm consists of social facts, those morphological, demographical, and ecological features, legal rules and institutionalized norms, established beliefs and practices and uninstitutionalised social currents, which constitute the organization of society where any member is born and continues to act.

According to him social facts are external. It is a feature of social life that there are sets of external expectations and obligations, beliefs and practices, outside our individual consciousness. It is not the fact that he is reifying society as something external to all constituent individuals since there is nothing in society but individual or individual consciences. He is giving importance to the social properties which results from the organization of these individuals. Secondly, social fact is general. It is general in

society irrespective of individual manifestations. And the final feature of the social facts is the coercive power which they impose upon each individual independent of the person's will. These last two distinguish features are seen by Durkheim as empirical criteria. They are means by which we can identify the presence and nature of social facts. Durkheim discussed that the cause of one social fact must be another preceding social fact. So, all the instances of the phenomenon classed together by our particular definition. If they appear to be different causes of the same phenomenon this is because there are in fact different phenomena in question. The same effect according to Durkheim cannot be produced by different causes. The same effect must always be produced by the same cause.

Thus, we can see that Durkheim is part positivist and part essentialist. There is various reasons why we do not think his approach is realist. First, Durkheim aims to discover through Millian causes the essence of phenomena; while the realist seeks to discover essences or structures so that they may then causally explain the observable. Second, the realist does not identify such essences or underlying structures. Third, while Durkheim likes together a single cause and a single effect, the realist argues that any such effect results from the complex interrelations between mechanism, structures and background conditions.

By considering Durkheim's injunction to see social facts as things, facts and things are problematic. However, the injunction involves considering social facts as having characteristics independent of the subjective inclinations and desires of both the observer and the actor. These characteristics can only be discovered by empirical observation and investigation and not through a priori reasoning or intuition. It is not by relying upon the concepts and ideas which people hold about their own social activities.

Some American positivists have shown that it is possible to explain social event, like suicide, by applying C. G. Hempelian model on it and so prediction is possible. Durkheim's theory of suicide could be explained by Hempelian model. Durkheim's law of suicide states: 'Suicide varies inversely with the degree of integration of the social groups of which the individual forms apart'. From this it is possible to derive three lower-level laws that suicide varies inversely with the degree of integration of religious society, domestic society and political society. Finally, from these lower-level laws we can deduce, with the help of initial conditions, empir-

ically testable hypotheses. Thus, schematically we will be in a position to show the Durkheimean theory of suicide.⁶

L1 Suicide rates very inversely with the degree of integration of

Domestic society.

Explanans C1 There are two groups, one of married, one of unmarried People.

C2 Married people are more integrated.

Explanandum E There is a lower suicide rate among the married group compared with the unmarried group.

Thus, positivists argue that we will be in a position to predict that in certain groups there is a lower-level suicide rate. But even if positivists have shown with the model of explanation, that social events are explainable like natural events. Moreover, in social sciences, we cannot make controlled experiments and also prediction is highly impossible. Here in the cause of suicide, rather uncritically positivists have used statistical data. Also, the use of operational definitions seems to be vague. They have been rather imported from other discipline. E. Nagel also claims that most of the explanations in the social sciences are statistical probabilities, as against the strict universalisations. This is because the relatively youthful stage of the development of social sciences.

Finally, we will switch over to the positivists thesis of 'The Unity of Sciences'. According to this thesis there is a complete '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 (Karl Popper). Nearly all positivists and realists like Popper were advocates of this view. Here method means scientific method. Popper argues that instead of verification, falsification is important in segregating science from non-science. Method is one of the deductive and the falsification criterion, which is eliminative in its nature, is very easy to apply.

Popper further discussed that the method always amounts to deductive causal explanation, prediction and testing. This is sometimes called the hypothetico-deductive method. It is more often the method of hypothesis. Because it does not achieve absolute certainty for any of the scientific statements which it tests; rather, these statements always retain the charac-

⁶ Ibid., p. 87.

ter of tentative hypotheses or provisional in character. It is provisional in the sense that they have ultimately to be replaced by proved theories. They are proved or they can be proved to be 'high probable'. Popper argues that there are tentative hypotheses, together with well-established laws, experimentation and observation. This is common to physics and sociology. This method applies to all disciplines. Popper argues in his book 'The Poverty of Historicism' in the name of 'The Unity of Method' Popper described nature of such a method. He asserts:

"What is important is to realize that in science we are always concerned with explanations, predictions, and tests, and that the method of testing hypotheses is always the same. From the hypotheses to be tested for example, a universal law together with some other statements which for this purpose are not considered as problematic for example, some initial conditionswe deduce some prognosis. We then confront this prognosis, whenever possible, with the result of experimental or other observations. Agreement with them is taken as corroboration of the hypothesis, though not as final proof; clear disagreement is considered as refutation or falsification."

Popper also suggests that social sciences are less complicated than those of natural sciences, since the element of rationality is to be found in the social sciences. Here we can speak and talk with men but in natural sciences it is not possible. The inductivist interpretation which holds that, in the natural sciences we proceed systematically from observation to theory by some method of generalization. We verify or perhaps even prove our theories by some method of induction. But Popper advocates differently that an interpretation of scientific method as deductive hypothetical, selective by way of falsification etc. This description of the method of natural science agrees perfectly the method of social science. It is undoubtedly true that we have a more direct knowledge of the 'inside of the human atom' then we have of physical atoms; but this knowledge is intuitive. In other words, we certainly use our knowledge of ourselves in order to frame hypotheses about some other people, or about all people. But these hypotheses must be tested; they must be submitted to the meth-

⁷ K. Popper, *The Poverty of Historicism*, Routledge and Kegan Paul Publication, 1957, pp. 132-133.

⁸ Ibid., p.140.

od of selection by elimination.

Popper refuted the changes levelled against the social sciences that they are not precise and there is no exactitude. Popper says same kind of inexactitude could be found in the natural sciences also. It means that by using of artificial experimental isolation we can predict physical events. For example, the solar system is an exceptional case- one of natural, not of artificial isolation; once its isolation is destroyed by the intension of a foreign body of sufficient size; all our forecasts are liable to break down.⁹ Even in physics, we are very far from being able to predict the precise result of a concrete situation, such as a thunderstorm, or a fire.

Positivists' social sciences and realists like Popper and Marx have the following characteristics. First, knowledge of the society is possible through sense-perception and observation. Action and interactions of men could be empirically observable. Second, there is regularity and the law-like generalizations among the social events. Third, scientific method is to be applied to the social sciences. Fourth, physical science is the paradigm-case, and ideal-symbol for the human-science. Fifth, there is a complete unity of method between natural and social sciences and lastly, facts and values are to be separated; social scientist should observe the social event in a dispassionate manner.

Criticism

If we see the whole argument of positivists then we could see that they have tried, though in a vague way, to give a meaningful account of the human actions which could be empirically observed by the criterion of verification or falsification. So in the context, the first criticism is to be found from the hermeneutic school.

- 1. According to hermeneutics, meaningful action of individual is such when we have not only described and explained his action; but we interpreted and understood it as well. Instead of empirical method (verification or falsification), we have to adopt the method of empathy, i.e., entering into the mental field or others through imagination. This is Dilthey's position.
 - 2. The method of the social sciences is radically different from the

⁹ Ibid., p.139.

natural sciences. The subject matter of social sciences is altogether different from the subject matter of natural sciences. For a natural science the study is concerned about physical objects; whereas for the social science, the study is concerned about the mental and subjective elements namely, the meaningful actions of human being. So if the very subject matter is different, then so is also the method of these two disciplines altogether different. Positivists have failed to notice this dilemma. This is again the criticism by Dilthey.

- 3. There is yet another criticism from the anti-positivism on the value-neutrality of positivists. According to positivists, we should make a distinction between value and facts. Our observations should be value-neutral. But in actual, positivists when they observe, they pass value judgments. Especially value-laden observation is very necessary in the social sciences. For the very observation requires some kind of value judgment.
- 4. One important criticism in the positivists is that they make a distinction between theory and facts and give priority of observations over theory, but they are wrong unless and until we have a presupposed theory or an idea, we cannot make any observation at all. We will not in a position to make selections in observations. This was even recognized by Karl Popper.
- 5. One more important criticism is levelled against positivism, in their notion of the law-governed character of social phenomena. ¹⁰ Positivist hold that human beings are simply law governed entities, like physical objects, they are being governed by natural laws, but human beings are 'free', they have a free will and therefore, any such laws cannot govern them.
- 6. One important criticism is at the hand of 'Critical Theorist'. Habermas in his book 'Knowledge and Human Interest' criticizes positivists on the ground that they study actions, which Habermas calls, 'instrumental actions'. Here the approach is one of the monolithical. He gives example of psycho-analysis. Here the therapist applies rules and processes of biology and psychology to such an extent that it becomes a part of the medical science. There is only a monolithic one-way approach, but there

Ted Benton, Philosophical Foundations of Three Sociologies, Routledge and Kegan Paul Publication, London, 1977, p.19.

is no dialogue established with the patient. Only the therapist is interpreting and explaining and not taking any help from the patient.

So, the positivists are so much engrossed with their rules, are busy with their methods that they have forgotten the communication or dialogue with which they are studying.

Criticism against Positivist conception of Social Science:

Positivist cannot help having social preferences. That social preference is an interest in social policy, which led somebody to the social field and it is bound to determine, very largely, the kind of problem on which he concentrates. This will seem a fatal objection only if we think that physical science is an exercise in pure reason where the scientist lays aside all human passions. Certainly, anti-theoretical passions are more likely to be stirred up in the social than in the purely physical field. This makes social science difficult but not impossible.

Anti-positivists argue that a positivistic social science must distort the facts because values, aspirations, principles are part of the substance of social life. The positivist need not at all deny, but only that in order to study morality it is necessary to moralise about it. The vital point for the positivist is to show that there are non-trivial theoretical problems in the social sciences. They are as a first approximation, theoretical problems, technical problems and problem of policy. Theoretical problems can be settled by finding out what happens. In this case we propose hypotheses, make observations and if possible, we solve problem. Not everybody may agree with us but if our facts and our hypotheses are accepted then the problem has been solved. A problem of policy, which is not solved in this way, for example, 'ought we to establish class distinctions?' Two disputants might agree that the abolition of class distinctions would decrease servility but diminish cultural variety. If some people say we ought to abolish them and some say we ought not to do so. Here, how can we decide what is right? In a way, neither; for nothing follows from observations of this sort about what ought to be done. Our decision to make after the theoretical work is finished. Our policy is determined in the light of

II H. Feigl and May Broadbeck (edt.), *Readings in the Philosophy of Science*, University of Minnesota, 1953, pp. 674-76.

the facts, but it is not deduced from them. If all the questions in the social field were problems of policy, then a positive social science cannot answer them; but also, unless there are theoretical issues problem of policy would be quite undiscussable. To discuss a policy is to make testable assertions about its character and consequences. But that there are such testable assertions at all that the positivists account of social science is concerned to assert. Anti-positivists have really to deny the possibility of social discussion; but it clearly takes place, even if often in a rather muddled sort of way, with no clear distinction between what is discussable and what is not.

Technical problems are of the form: How can something be constructed to such and such specifications? A technical question is only a particularized theoretical question, but serious confusion may be caused because problem of policy are often framed as if they were merely technical. For example: How can child-delinquency be prevented in wartime? It would be answerable by naming a method. But suppose we answer: We devoting one third of the total manpower to child-care. We would be told: 'How ought we to deal with child-delinquency?' To give a 'satisfactory' answer, we should not only have to solve the theoretical question 'what social changes would prevent child delinquency?' but also to find changes which would not conflict with an unstated social policy. Scientists sometimes progress to be giving 'merely technical advice' when in fact they are tacitly assuming a particular social policy. This gives encouragement to the view that 'positive social sciences' are a sham. But, of course, genuine technical problems can also be found within the sham sort. These problems even if they are not quite the ones it pretends to be deciding.

Lastly, the anti-positivist claims that although there are theoretical problems in the social sciences, these problems are all of a trivial kind. The actual effect of positivism in the social sciences is to lead to the production of a vast quantity of work, which boasts of being scientific but is empty and commonplace. When the social sciences are called trivial, sometimes all that is meant is that they fail to tell us many of the things we should particularly like to know. This is, of course, is not a serious objection. But a good deal of positivistically inspired social science is also trivial in a methodological sense. This sometimes because the scientist wrongly believes that science is the collection of information, sometimes

¹² J. Passmore, Can the Social Science be Value-Free, p.674-676.

because he thinks that to be a scientist, he must leave moral issues alone. In the sense of avoiding any question which involves them or which might stir up the passions of the investigator. These are usually the facts of central importance to the understanding of social life. Unfortunately, positivists have sometimes held very simple-minded view about morality. They have thought it is just a matter of taste and have glossy underestimated its social importance. The positivist has to do is to produce theories about the structure of morality which are genuinely theories and do not involve the advocacy of any particular social policy.

A positive social science must be value-free in the sense that it is not social advocacy in disguise, but not in the sense that it has nothing to say about values. Such a theory will have the limitations characteristic of the physical sciences. It will not (usually), any more than physics, tell us when a particular event is going to occur, but it will not be trivial, any more than physics is trivial.

From the whole of positivists conception of social science and the subsequent criticism on their account shows that the concept 'positivism' lacks something. Positivism does not allow us to go beyond observations and does not allow to peep through behind what lies. Therefore, the view it expresses is a naïve and crude one. Through this concept we cannot go to the origins of any science. Thomas Kuhn could see this and originality of Kuhn lies in the fact that he has tried to reach very deep level from where any science begins. This is evident from his concept of a paradigm. According to this notion, paradigm is not mere observation of a theory but also reaches behind and beyond theory. Therefore, paradigm is more than theory. It is a way of seeing. If we have this kind of outlook, then we can have a proper perspective of that science which we study.

Dr. Himansu Sekhar Samal

Department of Philosophy Ravenshaw University, Cuttack, Odisha