



# **PHILOSOPHY, SCIENCE AND METHODOLOGY**

**EDITORS**

**DR K. SAHU & DR S. N. RAUL**

**An Anthology of Papers Presented at the  
UGC Sponsored Seminar**



**Organised by :**

**DEPARTMENT OF PHILOSOPHY  
B.B.COLLEGE, BAIGANBADIA**

# **PHILOSOPHY, SCIENCE AND METHODOLOGY**

*An anthology of Papers presented at the UGC Sponsored  
Seminar held on 25th and 26th February, 2012*

Editors :

**Dr. Krutibas Sahu  
Dr. Surendra Nath Raul**



**Organised by :  
DEPARTMENT OF PHILOSOPHY,  
B.B.COLLEGE, BAIGANABADIA,  
MAYURBHANJ, ODISHA**

*In collaboration with*  
**BARASAHIP.S. COLLEGE, BARASAHIP.S.**  
**Mayurbhanj, Odisha**



Copy right

Principal, B.B.College, Baiganabadia,  
Mayurbhanj, Odisha, PIN - 757 105  
Website : bbcollegebaiganabadia.org

© All rights reserved.

First Published in 2012

by the Principal,  
**B.B.College, Baiganabadia**

Under the Assistance of

**University Grants Commission**

Front Cover :

**Concept by Mr P.K. Paul**

Printed at :

Meghasanee Printers,  
Satyasahi Square,  
Baripada, Mayurbhanj



*In the loving memory of*  
**Sidhartha Bose (Chandu)**



# CONTENTS

|    |  |           |
|----|--|-----------|
|    | <b>Publisher's Note</b>  | <b>1</b>  |
|    | <b>Editorial Preface</b>   | <b>3</b>  |
| 1. | <b>PHILOSOPHIC TEMPER VIS-À-VIS<br/>SCIENTIFIC TEMPER</b><br><i>Dr Ganesh Prasad Das</i>         | <b>13</b> |
| 2. | <b>SCIENCE AND PHILOSOPHY</b><br><i>Dr Netrananda Malla</i>                                      | <b>27</b> |
| 3. | <b>METAPHYSICS OF PHYSICS</b><br><i>Dr K. Om Narayana Rao</i>                                    | <b>32</b> |
| 4  | <b>WITTGENSTEIN ON PHILOSOPHY,<br/>SCIENCE AND METHODOLOGY</b><br><i>Sushree Suchismita Sahu</i> | <b>39</b> |
| 5  | <b>PHILOSOPHY AND SCIENCE<br/>AT A GLANCE</b><br><i>Ms Anjali Chaudhury</i>                      | <b>42</b> |
| 6  | <b>SCIENCE AND PHILOSOPHY : A<br/>COMPARISON IN METHODOLOGY</b><br><i>Mr Pradeep Kumar Rout</i>  | <b>45</b> |
| 7. | <b>PHILOSOPHY AND SCIENCE :<br/>A CRITIQUE</b><br><i>Mr Sushanta Kumar Nayak</i>                 | <b>50</b> |
| 8. | <b>PHILOSOPHY AND SCIENCE :<br/>A COMPARATIVE STUDY</b><br><i>Mr Purnendu Kumar Paul</i>         | <b>57</b> |

|     |   |     |
|-----|---|-----|
| 9.  | PHILOSOPHY AND SCIENCE: THEIR<br>METHOD AND LIMITATION – A REVIEW | 61  |
|     | <i>Mr Parsuram Kar</i>  |     |
| 10. | PHILOSOPHY AND SCIENCE:<br>AN EVER DEEPENING INTERACTION          | 66  |
|     | <u><i>Dr Annapurna Dhal</i></u>                                   |     |
| 11. | PHILOSOPHY, SCIENCE AND METHODOLOGY                               | 72  |
|     | <i>Mr Buddhiram Mahakud</i>                                       |     |
| 12. | SCIENTIFIC CONCEPT OF PHILOSOPHY                                  | 76  |
|     | <i>Mr Basanta Kumar Mohanty</i>                                   |     |
| 13. | PHILOSOPHY, SCIENCE AND<br>RELIGIOUS EXPERIENCE.                  | 79  |
|     | <i>Mr Hrudananda Behera</i>                                       |     |
| 14. | THE HIDDEN DIMENSION OF SCIENCE<br>AND PHILOSOPHY                 | 83  |
|     | <i>Mr Chandra Kumar Pattanayak</i>                                |     |
| 15. | SCIENCE OF MORALITY ;<br>UNDERSTANDING THE POSSIBILITIES          | 90  |
|     | <i>Dr Satrugna Behera</i>   |     |
| 16. | SCIENCE AND PHILOSOPHY  | 111 |
|     | <i>Dr Surendra Nath Raul</i>                                      |     |
| 17. | SCIENCE AND PHILOSOPHY :<br>CO-OPERATIVE ENTERPRISES              | 117 |
|     | <i>Dr Krutibas Sahu</i>   |     |











## **PUBLISHER'S NOTE**

I express my great indebtedness to the scholars, colleagues and students who have presented their papers at the UGC-sponsored seminar held at B.B. College, Baiganbadia, Mayurbhanj, Odisha. This book is an anthology of those selected papers.

I am specially grateful to the University Grants Commission for sponsoring the seminar. I am equally grateful to Dr Krutibas Sahu and Dr Surendra Nath Raul for their sincere effort to edit this book in due time. I am also thankful to all the Staff Members of B.B.College, Baiganbadia and Barasahi P.S. College, Barasahi including the Principal, Mr Prabodh Kumar Mohapatra for their co-operation in organizing the seminar with grand success.

It was indeed our privilege to have listened to some distinguished scholars, like Dr Netrananda Malla, Retd. Professor and Dean, School of Humanities, North Eastern Hill University, Shillong; Dr Ganesh Prasad Das, former Professor of Philosophy, Utkal University and Senior Research Fellow, ICPR; and Dr Janardan Behera, Retd. Reader in Zoology whose learned lecture on the topic has been the sources of strength and inspiration for publication of this Volume.

I also wish to thank Mr Natabar Giri, whose hands were tirelessly dancing on the computer key-board for his impeccable care in correcting the DTP pages and other materials relating to the Seminar. Mr Purnendu Ku. Paul,

organizer of the Seminar and all others whom I have not named but who in different ways helped in bringing out the present Volume in right time also deserve my praise.

Though responsibility for the plan and structure of this work rests with the undersigned, any credit of merits it may have, must be shared with all of us.

***Pradeep Kumar Rout***



## EDITORIAL PREFACE

Almost all philosophers before Francis Bacon and many modern-period philosophers before David Hume engaged themselves in intellectual jargon which hardly had any appeal to man's day-to-day life. These philosophers took pride in being 'men of reason'. 'Men of action' seemed to them to be of secondary importance. Bacon deserves the title of the 'trumpeter of his time' as a great reformer in science and philosophy, by introducing a spirit of revolt against the old dogmatic authorities and a spirit of free and impartial inquiry into nature. For him, understanding should begin *denovo* with a mind free from idols like that of a little child. "Our access to the kingdom of man, which is founded on sciences, may resemble that to the kingdom of heaven, where no admission is conceded except to children" (*Novum Organum Aph. LXVIII*). Bacon deserves the credit for this positive contributions to the matter and content of science and philosophy, as well as, the right method of scientific and philosophical inquiry. In spite of this new epoch, post-Baconian thoughts were still preoccupied with prejudices and dogmas. Then Hume came and emancipated philosophy from the hands of these arm-chair thinkers, attempted to make them free from 'dogmatic slumber', threw new challenges to them and declared that to be a 'man' in the real sense of the term is more important than to be a philosopher. All sciences, says Hume, have a relation to human nature. He established philosophy on the firm back-

drop of science and wisdom such that it could guide man to develop humanity. In the development of humanity we find the synthesis of 'action' and 'reason'. The science of man, as Hume calls it 'moral philosophy', is the only solid foundation we can give to the other sciences, and must be based on experience and observation, i.e. 'the experimental method of reasoning'. Any volume containing nothing but 'sophistry' and 'illusion' is to be thrown to the flames.

The conception of philosophy has been the centre of disagreement. To some, philosophy is nothing but love of wisdom and to others it is just a quest of 'knowledge'. When Bacon says that 'knowledge is power', by 'knowledge' he meant the knowledge which science seeks to establish. It is not mere speculation or more intellectual enterprise; it is 'thinking things through'.

Many problems are tied up with philosophy relating to the concepts utilized by the sciences, like those of matter, space, time and evolution. Most problems arise as a result of a process of abstraction from particulars. We perceive a number of material objects and we formulate the question 'what is matter ?' we perceive things in spatio-temporal relations and we ask 'what is space ?' or 'what is time ?' many philosophical problems are of our own making. We coin abstractions at the back of which we have no 'idea' at all. We raise a dust and then complain that we cannot see. Thought mirrors 'all that is'. If the mirror is dirty, then the reflection would be cloudy and indistinct. The task of a philosopher is to keep the mirror crisp clean and dust free.



To the question 'what is philosophy?', there can be no single answer. Over the years, avowed attempts have been made to make philosophy scientific. The Marxist and Positivist movements are the examples of such attempts. Whether philosophy should try to be scientific, or science to be philosophic at all, remains a highly debatable question. Examination has revealed that a philosopher's programme, to delimit his own special field, to provide his own discipline a specific sort of subject-matter distinct from that of science, has failed. The failure is due to the fact that the philosophical problems, in most cases, arise when there is a clash between the various sciences. For example, mind-body-problem arises when there is a clash between psychology and physiology, problem of creation arises when there is a clash between theology and geology, and problem of origin of life arises when there is a clash between anthropology and biology... Not only that philosophy does not have any specific subject-matter, it is also not possible to specify anything as its subject-matter. In a sense, it includes everything as its subject-matter but nothing in particular. Philosophy is a 'thinking' about the world as a whole and man's place in it. It is a 'system of completely unified knowledge'. Thus, attempt to confine philosophy to science, to logic or to love of ideas is also not completely wrong.

The popular conception is that science deals with the 'how' of things and philosophy with 'why' of things. The manner of 'why' – operation which is supposed to lurk, in the happenings of Nature has an appeal to causal



explanation, but its corresponding 'how' is in the end beyond all explanation, and it is, therefore, added that 'philosophy begins where science ends'. In a sense, the dictum is not meaningless.

Some consider philosophy to be the logical analysis of the foundational concepts of science. In doing so, philosophy does not attempt to build castles in the air, rather, it is the analysis of common experience. Some says, it is the theoretical study of the statements of science, while others are of the view that philosophy cannot be a study like any other subjects, for philosophy does not result in a set of formulas, doctrines or theories. As Wittgenstein puts it, 'philosophy is not a body of doctrine, but it is an activity'.

Philosophy in the 20<sup>th</sup> century has taken a linguistic turn and became identified with the logic of language, because, the old definition that 'man is rational' cannot be ignored, since the standard of man's rationality is exhibited in his use of language. According to Wittgenstein, 'all philosophy is a critique of language' (*TLP*, 4.0031).

A dominate trend in our time is to give exclusive importance to philosophy that concerns about man in his activities. The activities of man are multifarious comprising his cognitive, emotional and practical life. Philosophical enquires cannot be restricted to language alone, for language is only a part of man's life and its use only a part of his activities. There is more to life then what can be found in language. The status of language devoid of man's activities



is almost zero. It is for this reason that the philosopher must constantly return to the field of human experience itself.

Philosophy today has become a concept of science with the emergence of scientific outlook. The all embracing comprehensive nature of philosophy is more and more realized by sciences. The physicist of this century owe as much to Kant as to Einstein. It would be a mistake to imagine that philosophy can ever be rival to science and vice versa. Logic and scientific method have deep roots in philosophy now, it is no longer a speculative discourse. Instead of asking in an old-fashioned way 'what is philosophy ?' we now need to ask a different question – 'what is it to philosophize ?'

With this contention of editorial note we have collected the papers and accordingly arranged them in this volume. We hope, readers will be able to find their issues significantly dissolved with regard to the relation between philosophy, science and methodology.

The fountain-head of the basics of all academic disciplines is philosophy. **Dr Ganesh Prasad Das**, in his article, establishes this truth. Philosophy, for him, includes in itself anything, everything and also nothing as its subject-matter, so that, philosophical questions are about everything in general and nothing in particular. Moreover, philosophy attempts to solve the boundary disputes between genuine and spurious scientific thinking, and settle long lasting quarrel between different scientific thinking, or between scientific and unscientific thinking. Besides, every organized discipline has a philosophy of its own and hence there must be a



philosopher to make implicit disputes explicit, and explicit issues to examine and solve. Therefore, philosophy in any academic endeavour, whether scientific or not, cannot be razored out, burnt down or eliminated.

**Dr Netrananda Malla** ventures into the debate relating to superiority of science and philosophy. He said, both science and philosophy are independent disciplines, they do not compete with each other and so the question of superiority does not arise at all. Though they are independent, they need each other. The epistemological and foundational questions about science are being raised both by philosophers and scientists today. Moral issues relating to scientific invention and discovery are being raised by philosophers and scientists alike.

The philosophers of science assert that the elements of scientific enterprise are a part and parcel of the absolute, and hence cannot be conceived apart from the absolute. In the back drops of all events and occurrences in the physical world lies the ultimate reality. Hence **Dr K.Om Narayan Rao**, in his article, recognizes metaphysics as the foundational stone of physics, without which most of the theories in science could have not been formulated.

**Sushree Suchismita Sahu** gives a very brief but important view regarding the nature, function and method of philosophy with regard to that of natural science as conceived by Ludwig Wittgenstein.



According to **Ms Anjali Chaudhury**, as regard to the nature of study, science and philosophy are different. In her paper, she also distinguishes between western and eastern philosophy.

The article of **Mr Pradeep Kumar Rout** is an attempt to show that, though philosophy and science deal with the same world, they differ in their methodology. There are still some questions which neither science nor philosophy can answer, and this stimulates a return to commonsense.

Philosophy is the root and bare necessity of human life. **Mr Sushanta Kumar Nayak** acknowledges it as the mother discipline. 'Philosophy' is the mark of a country's culture and civilization, but 'philosophizing' is an existential necessity. Philosophy as well as Science is part and parcel of human existence.

According to **Mr Purnendu Kumar Paul**, science and philosophy move in opposite direction. but within the same 'circle' of inquiry, where the reaching point has to be the same. The quarrels, disputes and confusions if any are found only on the way, not at the destination point. Together they merge at that point.

**Mr Parsuram Kar** states that there is a general opposition between science and philosophy as regard to their method, aim and limitation. As a second order activity, philosophy has to clarify the meaning of different concepts arising out of any problem. Basing upon these thoughts, he has pursued an attempt from a pragmatic point of view to

accommodate the essence of all problems in the emerging social order.

To **Dr Annapurna Dhal**, any creative activity of science is closely linked with philosophy and the result of that activity cannot become theoretically effective unless there is also a philosophical insight, because, it gives us a wider scope in posing and resolving problems. No science can break this ever depending interaction with philosophy.

**Mr Buddhiram Mahakud** is of the opinion that both science and philosophy undertake the task of reaching at truth, and therefore, the methodologies they adopt may be different but not contradictory. Each should proceed through a common understanding and interaction with the other.

**Mr Basanta Kumar Mohanty** says that, since 'philosophy' and 'science' spring from the same root, they have also the same aim. But from the view point of humanism the distinction between them is that, philosophy puts some value, destiny and significance to scientific knowledge by harmonizing and critically reflecting on their conflicting results.

**Mr Hrudananda Behera** describes various kinds of religious experiences and brings a distinction between philosophy and science stating that science is value-silent. The role of philosophy is to attach values to scientific discoveries.

After discussing the role, problem, attitude and method of science as well as philosophy **Mr Chandra**



**Kumar Pattanayak**, in his paper, comes to the conclusion that the goal behind science and philosophy is to explore the unknown field of knowledge and truth, and contends that, science today is going to be more abstract than philosophy, and philosophy more practical than science. This is what he feels to be the hidden dimension of science and philosophy.

According to **Dr Satrugna Behera**, at present the concern to human thinking and understanding is no more a speculative discourse. He has highlighted some strong criticisms against the theoretical ethics to find out different prospects and possibilities of applied ethics by studying the nature of moral science and moral practice. The difference between the two is only in application on human life, but not in the content of theorization.

**Dr Surendra Nath Raul**, in his paper, highlights the co-existence of philosophy and science by providing a critical examination of the two concepts- science and philosophy. He is of the view that curiosity and observation are the basic ingredients of science and philosophy. Religious and philosophical concepts can be discussed scientifically, because, every systematic knowledge is scientific. Science and philosophy are not contradictory to each other, rather both play the important role for the betterment of humanity.

**Dr Krutibas Sahu**, in his analysis, shows that both science and philosophy are co-operative to each other; the former implies the later. It is generally believed that, when

science ends, philosophy begins. In a sense it has a meaning, Dr. Sahu has interpreted this meaning in a logical way, i.e. "take any statement from natural, social or any other particular sciences, go deep into it by asking questions; sooner or later, you will find yourself in a discourse that belongs to philosophy." It is, thus, philosophy which gives us the correct and complete understanding of scientific concept or statement.

In this way, it has become a fascinating subject of inquiry as regard to the relation of philosophy to science, We do not claim that whatever have been discussed by our scholars in the above papers are final and free from criticism. In fact, nothing is final in philosophy. Philosophy, says Wittgenstein, "only states whatever one admits. "(P.I. – Sec-599)". If one tried to advance *these* in philosophy, it would never be to question them, because everyone would agree to them." (P.I.-Sec-128).

We are grateful to Mr Pradeep Kumar Rout, Principal, B.B. College, Baiganbadia for his kind consent given to us to edit this Volume for publication in a book-form. Our labour will be rewarded if the readers derive some ideas from this book that would be helpful to enrich their wisdom.

***Dr Krutibas Sahu***  
***Dr Surendra Nath Raul***



## **\*PHILOSOPHIC TEMPER VIS-À-VIS SCIENTIFIC TEMPER**

***Dr Ganesh Prasad Das***

The noblest of all academic disciplines, the fountainhead of the basics of all academic disciplines is philosophy. Philosophy is now in grief. Plato, the great and grand expositor of European philosophy, pronounces that philosophy falls into grief because of its votaries. Those of us who are in the profession of philosophy, by choice or by chance, are the first-order votaries of philosophy. So it is incumbent on us to look within to see whether we contribute in any way to the grief of philosophy. The 5<sup>th</sup> century B.C. Greeks alleged apropos of Socrates not that the philosopher is unproductive, but that he is counterproductive as like as the gadfly that obstructs the ox ploughing the field. But Socrates is a great exemplar, as he shows how people are driven by sentiments and unanalyzed beliefs. People in general are afraid of and averse to thinking. Bertrand Russell remarks pungently that we do not think for half a minute even in six months. He does not mean to say this in the sense in which Descartes says that thinking is the *sine qua non* of existence ("*cogito, ergo sum*", or "I think, therefore I exist"). His view is that to think is to think logically, analytically and critically in order to put forth or set aside a point of view. Socrates is the creator of open-minded dialogical mode of thinking that aims at discovering the truth in the matter at issue without any fear or favour.

Thinking is there at three different levels: common sense, science and philosophy. G. W. Cunningham has in his problems of Philosophy a topic with this caption. Commonsense – I mean the pre-scientific commonsense



– has a world-view with a set of ideas regarding existence of things and happening of events. In Greek mythology and Indian *purāṇas*, there is postulation of Gods and Goddesses as the authors/controllers of things and events. The Sun moves round the cosmos in a golden chariot pulled by seven horses, Indra showers rain for the wellbeing of creatures, lashes lightening and thunder to punish the evil-doers and the rest of it. Science altered this world-view. This is effected by providing explanation of things and events with the minimum number of categories and principles. Such categories and principles are not speculative, and retrospective; they are objective and prospective. This is a task of organization, systematization and purification of thinking. Philosophy furthers this task. It seeks to reorganize and reshape the world-view by logical examination and articulation of these categories and principles. The purpose is : (1) to make them applicable not only to the actual, but also to all possible cases and (2) to make them universal, unifying and all-comprehensive. Man has many more vital queries than those mapped out by science. Philosophy maps them all in one unitary framework.

A very short but significant definition of philosophy is provided by G.T.W. Patrick. According to him, "Philosophy is thinking things through". There arises in the mind of man, the thinking beings, certain questions which are not asked in ordinary moments of our lives. They are concerned with the basics, such as the very first beginning and the very ultimate end of the world. These questions are like.

Am I?

Who Am I?

Where from have I come?



Where to shall I go?

Whereto will everything go?

What do I get at the end?

These questions are extremely general, very much abstract, but extremely pertinent and very much grueling. They are recurrent and they torment the human mind at times. If a thinking being neglects or nullifies such questions as he does in the busy years of his job during the prime time of his life, he behaves wildly when the 'load of work' is off his neck. Some turn to 'babas', some commit suicide, some others turn to literature and still some others to religion and morality thinking them to be philosophy with the hope to get liberation.

Anything, everything and nothing can constitute the subject-matter of philosophy. In other words, philosophical questions are concerned with everything in general and nothing in particular. The things, with which our routine life is concerned, are thought through ordinary, that is, empirical categories. But the above mentioned questions having stake over everything or nothing are thought through the categories forged and articulated by philosophers. It is philosophy that provides categories of pure thinking and principles of understanding. The philosopher is out there for setting the direction of the mind (*a la* Descartes), or for correction of the intellect (*a la* Spinoza), or for restructuring the understanding (*a la* Kant). Descartes lays down the first rule 'for the direction of the mind' thus: "The end of the study should be to direct the mind towards the enunciation of sound and correct judgments on all matters that are before it". Thought mirrors reality. If the mirror is dirty, then the reflection would be cloudy and indistinct. The task of philosophy is to keep the mirror crisp clean.



In the 20<sup>th</sup> century philosophy, we have words like 'meta-language', 'meta-logic', 'meta-philosophy' and 'meta-ethics', where the prefix 'meta' signifies 'beyond'. Accordingly, the word 'metaphysics' is expected to signify a study that goes beyond the study of physics – the studies conducted by a Newton, or an Einstein, or a Heisenberg. But this would not be wholly correct. One would at once remember that first of all John Locke, and then, following his lead, Berkeley and Hume, and in the 20<sup>th</sup> century philosophy, the philosophy of logical positivism and the philosophy of Wittgenstein in the *Tractatus Logico-Philosophicus*. They sought to go beyond the findings of the scientists, who created paradigms in their times. The above named philosophers took the findings of science and added internal and external correctives with the sole aim of making knowledge about the world pure and perfect. They did not find what has so far been accepted as 'metaphysics' and as 'physics' as delivering pure and perfect knowledge.

In the 17<sup>th</sup> century Newton discovered the Law of Gravitation and formulated three laws of motion. Newtonian mechanics with these laws gave a world view in which some of the mysteries of nature prevailing heretofore were pulled down. At the same time Newton discovered the imperfections involved in the mechanistic explanation of the universe coming down from Descartes.

The status of scientific theories as well as that of Laws of Nature is questionable. Wilhelm Ostwald wrote in the beginning of the 20<sup>th</sup> century that the atomic or molecular element of kinetic theory is an unproved assumption and rejected the 'hypothetical representation of heat as a mode of motion' of material particles. Ernst Mach, a notable physicist, psychologist and philosopher of science wrote



towards the end of the 19<sup>th</sup> century that atoms are 'things of the thought' that merely present a mathematical model to facilitate the mental product of facts. Mach is also of the view that in nature there is no law of refraction; there are different cases of refraction only. Similarly, Max Planck, the founder of the first quantum theory says that we have no right to assume that any physical laws exist, or if they have existed until now, that they will continue to exist in a similar manner in future. Thus the views are originally concerned with empirical problems came to turn on non-empirical considerations concerned with the conception of existence.

These scientist presuppose that nothing can count as real or existent except the element of sensation. Max Born calls the idea of atom and the idea of laws of nature as questions of faith. If, what is entertained on faith is stated formally as a principle, it becomes a 'metaphysical principle'. The doubt with regard to the nature of an idea in science is regarded as a 'metaphysical doubt'. In the 18<sup>th</sup> century, Berkeley sought to point out the limitations of Newton's mechanics by saying that his laws were not more than rules which are observed in the production of natural effects, the efficient and final causes which are not of mechanical consideration. Berkeley and Mach are doing the same thing, but in different idioms. Berkeley rejects Newtonian forces, because they are not sufficiently like substantial *connectives*. Mach rejects them, because they are not sufficiently like substantial *elements*.

Science makes much of the objective and objectivity. It must be remembered and it is Kant's contribution to perennial philosophy that the subjective and the objective are interrelated in the evolution of human thought. A conceptual framework devised in one epoch is found to be



inadequate in another epoch. A new conceptual framework is devised to accommodate the emerging new facts. Thus an otherwise subjective fantasy becomes objectified and continues as a reliable guide till the emergence of further new facts and dilemmas in thinking created by them. Junctures are not perceived by anybody and everybody. It is the prophet called the philosopher who gets the feel of such dilemmas, paradoxes and antinomies as they touch the basics of thinking and try to bring out revision in the conceptual structure in the most general and abstract terms. The scientist then plays the second fiddle and seeks to repair the fractures in his domain by borrowing the ideas from the philosophical prophets. He borrows and he forgets that he is a borrower.

E.A. Burt thinks that the day when the philosopher can play this prophetic role of revising the conceptual framework of science is probably over, because of the vast explosion of scientific knowledge. This work of revision is being performed more and more by theoretical scientists themselves. The old scientific concepts motion, causality, space, time, matter, energy, etc., were created by philosophers. The new scientific concepts field, gene, relativity, space-time, behavior, etc., are created by scientific theorists. But it may be admitted that analytic philosophers are more adept than scientists in logic. They can thereby help them in providing valuable aid for reconstruction of the criteria of evidence which is so much important for science.

Scientists today are also prey to adventures of speculation as they were in the days of yore. The Big Bang experiment is a glaring instance of the recent days. They contrived to arrive at the primitive position of the universe by staking the entire globe. Thank God, some of their



instruments went wrong. It is not possible to arrive at the primitive position of the universe by laboratory experiment. It is well nigh possible for the metaphysician to arrive at the primitive concepts of the whole universe of discourse in his library. Newton did not prepare his blue-print of the working of the universe in a laboratory.

Gilbert Ryle is of the view that if the metaphysician is not an ontologist, he is not a metaphysician. As things stand, ontologising appears to be out. The reason that Ryle adduces is that assertions of existence or occurrence cannot be founded on conceptual considerations. But the philosopher is not going to be out of service. There are two important tasks which he alone can fix and those are in connection with keeping the scientific enterprise on rails. Firstly, the philosopher has to solve the boundary disputes between genuine scientific thinking and spurious scientific thinking of which astrology, palmistry, numerology, *vāstu*, are few familiar examples. Secondly, the philosopher has to settle internecine feuds within scientific thinking between different scientific thinking or between scientific thinking and commonsensical thinking. Russell said in his *An Inquiry into Meaning and Truth*, "Naïve realism lead to physics, and physics, if true, shows naïve realism to be false. Therefore naïve realism, if true, is false; therefore it is false". The disparity between ordinary perception of reality and scientist's perception of sub-atomic reality and the apparent clash between the causal framework, according to which anything that happens is the effect of something that happened antecedent to it and the legal framework, according to which people are made responsible for their acts meriting prize and punishment, between science and religion (as between causality and Divinity) and between



morality and law (as in the case of the recent Mangalore pub incident) are examples of the second.

Ryle says elsewhere that a philosopher cannot invent conceptual stress and strains. He has to feel them and fix them. Here he suggests that more attention should be given to the philosophical problems raised by the scientific study of human society. Some such problems as invite the philosopher's attention and deliberation are due to (i) the complexity of the subject-matter, (ii) the observer being part of what he observes, (iii) the impact of his theory on the domain which he refers to, (iv) supposed uniqueness of situations that human beings are involved in, and (v) limited applicability of experimental and quantitative methods to human society.

Philosophy is a critique of other modes of thought. Every organized subject has a philosophy co-ordinated with it. Philosophy is seen in the plural, not in the singular. There are philosophies. Thus we have philosophy of science, philosophy of religion, philosophy of mathematics, philosophy of technology, philosophy of history, philosophy of economics, philosophy of mind, philosophy of morality, philosophy of art, etc. The west makes a dichotomy of human knowledge: 'know that' and 'know how'. But it forgets the 'know ought' without which these two turn out to be vacuous. So it is a tri-chotomy of human knowledge: know that, know how and know ought. They are now coming up to emphasis the quotient in human personality.

Will this alter the negative mindset of policy-makers and affairs managers towards philosophy that it is an academic discipline which has no application value and hence deserves elimination from the curricula? They cry that



there is at present heavy meltdown of values – meltdown of economic values and moral values both. Let me show what the philosopher can do about these. I come first to moral values. To be sure, the philosopher is not a moralizer. He is not the right person to prescribe do's and do not's. The philosopher has before him such questions of ethics and morality as follows:

- Why should we be moral?
- What things are valuable and why?
- Is everything that is desired desirable?
- What is the criterion of value and what end?
- Are values absolute or relative to circumstances?

In the present scenario, everybody feels that there is a meltdown of values. The reaction of a philosopher to the scenario of meltdown of moral values would be in the precise words of Berkeley: "You raise the dust and complain you cannot see". The purpose and the end of education are not clear. There are frequent and arbitrary changes in the format of education and there is overemphasis on certain subjects that study how to spin money and fill up the coffers. The CABA studies – computer application and business administration – are the first and the best choice of your youth today. There is an ad for a brand of bath-room fitting with the slogan: "Redefine your needs" and there is another ad for a brand of soft drinks with the slogan: "*ye dil mange more*" ("The heart needs more"). The need for acquisition and accumulation of money is hammered into the mind of the youth day in and day out. There is vulgarization of concepts and precepts in the world of business, which has



become the model of human activity and the successful biz person the role model. [*'tamaso mā jyotirgamaya'*, '*karmanyevādhikāraṣte*', freedom to be healthy..]

In the process, the liberal art subjects with philosophy at the top of the list, fall victims in this rat race. They dub and despise philosophy as a sun-set subject and a dust-bin subject. But if you try to kill philosophy, you kill yourself whole and sole- your heart, your mind your good (moral) self. The only demand of philosophy is to make people aware of the necessity of thinking.

In an age when one is not sure about one's relatedness, to one's own ground, one can sway any side, set aside anything, slay anybody, and sell anything. Who then cares for philosophy? Who else if not the first-order votaries of philosophy? They must be happy with the fruits of philosophy and spread the message of happiness and keep on sowing the seeds of philosophy in the face of all adversities.

Philosophy thinking is critical thinking that seeks to keep everything in place. If it pulls down anything, it is only a house of cards. Dr. Kalam, popularly known as the Missile Man of India, put emphasis on critical thinking in his address at the 99<sup>th</sup> session of Indian Science Congress, Bhubaneswar. "Critical thinking gives a path to achieve success. A creative mind has the uniqueness of discovering anything and imagination is the beginning of the creation. Invention and discovery come from creative minds".

KIIT launched a journal entitled *Scientific Outlook*. The editorial of its first issue reads: "There are divergent views both in favour of the broad spectrum of science and humanities. For many people, science and the benefits



resulting from technological innovation are inseparable from the idea of human progress. Others focus on the social context of science, political culture and science, understanding nature and mind, approaches to knowledge and science in cultural context. There is concern for commodification of knowledge. There is, as a result, a growing divide between pure and applied research (in) science and humanities. This is a dangerous trend.

There is an instinct to possess the throne by killing the father-king. In psychology this is known as Oedipus instinct and we may call it the Kamsa instinct. (Kamsa wanted to become the king without any waiting period; drew his sword to have a duel with his father, the sitting king, Ugrasena. Some such instinct is there in some scientists and some persons empowered by designations and erroneously inspired by scientific temper. But philosophy is somewhat like the mother insect *asvatari* or mother banana plant that ceases to be after giving birth to the progeny. Stephen Hawking said in his book *The Grand Design*, "Philosophy has not kept up with modern developments in science, particularly physics. Scientists have become bearers of the torch of discovery in our quest for knowledge".

There are perennial tensions in science and about science as well, which would engage the attention of thinkers at every turn of time and run of events. There is likely to be new tensions as and when new studies are accredited as science and there emerges in course of time new branches of science and their application like micro-biology, population biology, nano-technology and new phenomena like surrogate mother, harvesting of limbs, gene transformation and plantation, IVF and such others. Issues and disputes like the following would come up now and again, implicitly or



explicitly. The philosopher in any name and mode would be there to make implicit disputes explicit and explicit issues examine and solve/dissolve.

### **(1) Emergence & Reducibility**

Life emerges at a certain level of evolution, or is it reducible to inorganic matter? What about consciousness?

Reductionist: Sodium is highly corrosive when exposed to air/water. Chlorine is a poisonous greenish gas. Sodium chloride is ordinary table salt.

Emergence Theorist: For any number of propositions about inorganic matter, you could never logically deduce any proposition about living things. There is an unbridgeable gap.

### **(2) Creation vs. evolution**

### **(3) Problem of induction**

**(4) The causal principle:** Einstein- "God does not play dice in the universe. Heisenberg- Nature is indeterministic at the sub-atomic level.

**(5) Freedom and determinism:** The Gitā- "*yathā ichasi tathā kuru*" and "*māmekam saranam braja*," Spinoza and Leibnitz. Russell: We can act as we please, but we cannot please as we please.

Swami Vivekananda declared that in the ultimate analysis, "the whole universe, mental and material, will be fused into one". (CW, VI, 5) Historians of science a century apart admit the importance of the declaration. Amaury. D. Reincourt says in his well-known book, *The Eyes of Shiva*,

*"From its modern awakening with Sri Ramakrishna and Swami Vivekananda, eastern mysticism has begun to adopt its revelations to the entirely different*



*cultural framework provided by science and technology, without in any way sacrificing what is valid in the traditional understanding of the phenomenon itself."*

(New York, William Morrow & Co., 1981, P.15)

Swami Jitatmananda in his article "Vedanta and Science" has drawn our attention to a statement made by a scientist to show that what science says today was said by the Vedantins centuries back. [By laboratory observation? Which lab did Newton use?] Geoffrey Chew wrote in Aug., 1996 in *Prabuddha Bhārata*.

According to quantum theory, even if you do not talk, even if you do not look at each other, you affect me, and I affect you. Your electrons and my electrons are only approximately distinguishable. In denying objectivity, quantum mechanics denies absolute status to your individuality. The only individual is the entire universe.

Edwin Schrodinger affirms Advaita Vedanta holding the final truth.

In all the world, there is no kind of framework within which we can find consciousness in the plural. This is something we construct because of the temporal plurality of the individuals, but it is a false construction. The only solution for the conflict, in so far as any is available to us at all, lies in the ancient wisdom of the Upanisads. (My view of the world, Cambridge University Press, Chapter-IV).

Aldous Huxley (Ends and Means, London, Harper and Brothers Publishers, 1937, P.291)

Men live in accordance with their philosophy of life, their conception of the world. This is true even of the most thoughtless. It is impossible to live without a metaphysics. The choice that is given us is not between some kind of metaphysics and no metaphysics; it is always between good metaphysics and a bad metaphysics.

Bradley adds, "The man who is ready to prove that metaphysical knowledge is wholly impossible.. is a brother metaphysician with a rival theory of first principles". Thought is a harmonious system of first principles.

In an article "Explaining Explanation", D.R. Khasaba made it patently clear that science gives us facts, gives us truth, but no understanding, whereas philosophy does not give us truth but gives us meaningfulness.

---

*\* An abstract of Keynote Address by Dr. G.P. Das*

*Former Professor of Philosophy,  
Utkal University,  
ICPR, Senior Research Fellow,  
'Rutayani', 396, Paika Nagar,  
Bhubaneswar.- 751003*



## **\*SCIENCE AND PHILOSOPHY**

**Dr Netrananda Malla**

The English word '*Science*' is derived from the Latin word '*Scientia*' which means knowledge. If this definition of science is accepted it will be difficult to make distinction between science and non-science. So another definition was floated and it is this science is systematic knowledge. This definition is again too wide for the simple reason that even literary criticism and study of fine arts and music are likely to come under it. Historically speaking in due course of time science was identified with study of Nature and natural phenomena and the method that it employed was the method of observation and experiment. So 'empirical science' was another name used for natural sciences. Profuse use of mathematics and geometry in the study of Nature made scholars treat geometry and mathematics as branches of natural science.

The founding fathers of modern science such as Kepler, Copernicus, Galileo and Newton were the upholders of such a view. Under their leadership physical science developed like anything. That is why A.N. Whitehead characterized that period in history of science as the century of genius. It is Newton who synthesized and put into comprehensive system the pre-Newtonian physical sciences.

Immanuel Kant, the great German philosopher, made an attempt to provide a metaphysical or philosophical foundation to Newtonian science. At this juncture there was an effective interaction between science and philosophy.



Space, time, matter, motion and rest are chief categories of Newtonian Science. Kant vehemently supplied justification for these categories of science. The idea of absolute space and absolute motion in space and time became the watch word of physical science. Kant further argued that knowledge is impossible without space and time. So Kant argued that space and time are pure forms of sensibility. In other words, they are pure intuitions. Thus Kant argued that the two forms of sensibility, that is space and time and twelve forms of understanding make scientific knowledge possible. This is how Kant drew a boundary line to scientific knowledge. Further by drawing a distinction between noumenon and phenomenon Kant drew a boundary line between science on the one hand and other cognitive enquiries such as religion, morals, theology, art, music and so on. Later Wittgenstein went a step ahead. For him scientific and non-scientific discourse criss-cross and overlap.

The interaction between science and philosophy became very sharp, penetrating and effective in the first part of the last century.

For many many years scientists and philosophers were very much worried over the nature of mathematics and geometry particularly, Euclidean Geometry. One view was that mathematics and geometry give synthetic a priori knowledge. The other view held by the empiricist was that mathematics and geometry are the result of empirical generalization. The Greek philosopher Zeno was highly critical of one of line and point. If between two points there are infinite number of points then motion becomes impossible, because to move means to move from one point



to another, but there are infinite number of points between two points and infinite points cannot be covered in finite period of time. Hence motion is impossible. This has been exemplified in the episode relating to competition between the marathon runner Achilles and the tortoise.

Another phase of creative interaction took place between the science and philosophy in the beginning of the 20<sup>th</sup> Century. The epistemological doctrine of Berkley and Hume, and the philosophical ideas of Ernest Mace and the ideas of philosophically oriented mathematicians and geometers like Gauss, Reimann, Frege and some others gave rise to such revolution and it ultimately resulted in what is known as the movement of logical positivism. The positivistic division of significant and meaningful propositions into analytic and synthetic gave a mortal blow to the idea of synthetic a priori position. The view that mathematics is a necessary truth about the world crumbled to pieces. The analysis of the concept of simultaneity by some philosophers and philosophically inclined scientist had its impact on Einstein. It made Einstein rethink on the Newtonian concepts of absolute motion and absolute rest. Motion and rest are relative of the position of the observer. If there is no observer the idea of rest and motion become meaningless. The Newtonian and Kantian absolutism began to disappear from the intellectual map gradually. Such ideas made their entry to philosophy through reflections and writings of Ludwig Wittgenstein. As a result absolutism from discussions of meanings and semantics started disappearing.

As a date science is being used in a very wide sense so as to include even History, Economics and so on within



its fold. But the so called sciences are not of the same type. Sciences may be divided into the following types :

- (i) Physical science such as Physics, Chemistry, Geology and etc.
- (ii) Biological sciences such as Zoology, Botany and Herpetology etc.
- (iii) Formal Sciences such as Mathematics, Mathematical logic and etc.
- (iv) Social sciences such as History, Economics, Politics Sociology, Psychology and social anthropology etc.

It is noteworthy to mention in this convention that application of causality and empirical method that distinguish science from non-science is not uniform in all the sciences. To begin with, these concepts are not applicable in the field of mathematics and other formal sciences. Further causality is very loosely used in the field of social sciences.

### **Proto Science, Natural Science & Philosophy :**

It is noteworthy in this connection to distinguish between proto science, natural science and philosophy. Perhaps the blooming buzzing confusion of the outside world created what is known as an initial wonder in man. In ancient Greece such wonder made Thales Anaximander, Anaximanes and such others to philosophise. Accordingly they thought it is either water, air, fire or certain basic elements that constitutes the original or basic stuff of the universe. The basic question about the origin of the universe gave rise to both philosophy and science both in the West and in the East. The *Anuvāda*



of Nyāya Vaisesika in ancient India gave rise to a particular type of scientific and philosophical reflection.

The debate relating to superiority of science and philosophy is misplaced for the simple reason that they do not compete with each other, they are two independent disciplines. Today in the modern world rapid development in science and technology has not undermined the importance and significance of philosophy as was expected years back. Rather today science and philosophy need each other which was not so in the past. The epistemological and foundational questions about science are being raised both by philosophers and scientists today. Moral and ethical issues relating to scientific invention and discovery are being raised by philosophers and scientists alike.

*\* This is an abstract of the speech delivered by the Chief Guest, Dr. Netrananda Malla.*

*Retd. Professor and Dean,  
School of Humanities and Education,  
NEHU, Shillong.*

# METAPHYSICS OF PHYSICS

Dr K. Om Narayana Rao

A contention usually goes, "why bother about metaphysics when there is enough physics?"<sup>1</sup> Since metaphysics is traditionally associated with a vast speculative world that lies beyond the scope of observation and experiment, many go on with this contention. But the label 'Metaphysics' has undergone a sea-change over a period of time. Metaphysics is greatly recognized today as the foundational stone of all sciences in general and physical science in particular. Without a strong metaphysical base, most of the sciences could have not been theoretised. To add to it more, most of the theories could have not been formulated without the formal metaphysical articles. The  $\Psi$ -function, for example, in microphysics is a formal metaphysical entity supposed to explain or predict the existence of a microscopic particle.

In mechanics, we do find a number of metaphysical pre-suppositions. The important ones being that *firstly*, Nature is equivalent to matter which by itself is inert and changeless; *secondly*, the physical world can be reducible to a mathematical formalism to represent the physical reality; and *thirdly*, the mathematical formalism is quantitative and not qualitative. Such suppositions made at the beginning of an inquiry are called metaphysical as nothing is known of them except that they are taken as the working hypotheses, conventions, postulates or axioms of a system for constructing a physical theory. A physical theory thought to explain physical reality then has its base on the fundamental and basic assumptions. These assumptions are mere mental creations of a scientist which he intends to theoretise by putting them at the core of a physical theory. They take



the roots deeper on the successful explanation of physical reality by the given theory; and become still stronger in finding coherence with other well-established theories. The metaphysical suppositions that are the foundations of any physical theory are so simple and fundamental that it becomes really difficult on one's part to subject them to verification as we do for any empirical notion or fact. Though every physical theory is based on suppositions in some way or the other, yet it is not always the case that they turn to be logical as sometimes the mathematical formalism built on these suppositions fail to really account for a physical phenomenon or event. This situation arises when something is illogically supposed or when the suppositions are abruptly made; and here the postulates so assumed become suspect. As such, the metaphysical formalism built on spurious ground and suppositions to represent physical reality brings in adequate metaphysics.

Even though the physical theories are based on strong logical suppositions, yet they cannot be guaranteed as final and binding. They keep on changing giving way to new hypotheses, theories and laws. This makes one to assert that science will always fall short of framing a theory that is truly complete. It is hence said that a metaphysical ideal in some form is needed to support the cognitive results of science to give a true picture of the world as a whole. Today science is in such a stage that a mechanistic explanation or a piece-meal view of the universe is finding difficult to establish itself on a strong footing. The Bell's Theorem has shown with great precision that at the fundamental level different aspects and parts of the universe are interconnected, interdependent and inseparable. The wave-particle duality, for example, in quantum mechanics and the discovery that a particle is nothing but a wave-packet



point out that a microscopic particle is a unity of waves. This probably has made Heisenberg to hold the world as a complicated tissue of events, in which connections of different kind's alternate, overlap or combine to constitute the texture of the whole.

The facet of unanalysable wholeness can also be seen in the observation of microscopic particles by instruments. On account of the interaction involved in the measurement of variables associated with the micro-particles, there can be no sharp distinction between the measuring apparatus and the object under measurement. Thus, during the observation of a microscopic particle, the particle (object), the measuring instrument and the act of observation are not separate, but do constitute a unitary whole (a closed system) known as Bohr's Principle of Unanalysable whole. Any attempt to separate the measuring apparatus from the object under observation violates wholeness and results in a new complementary phenomenon. A similar thing is reported of a mystical experience where a mystic finds himself one with the Ultimate Reality or gets submerged in Him and any attempt on his part to set himself loose to describe the ultimate becomes impossible. This points at an interesting feature that unanalysability and wholeness are exhibited in both scientific and spiritual domains. Here a question arises: Does any sort of connection hold on between these two? The philosophers of science assert that the elements of the scientific enterprise are a part and parcel of the absolute and hence cannot be conceived apart from the Absolute. They seem to suggest that in the backdrop of all events and occurrences in the physical world lie the Ultimate Reality as the source and strength of physical, biological and spiritual realities. Even Newton for example, believes that such a



reality is not delinked and detached from the physical world that science attempts to know. He was of a strong conviction that the world of science is in no way the world in its totality. For him, every true step in natural philosophy and science brings one closer to the knowledge of the First Cause. He was so much impressed by the teleology and arrangement in the universe that he attributes this to the divine power. The gravity may put the planets in motion but without a divine principle and arrangement, their circular motion around the sun is hard to conceive. Again, the fixed stars that would have ordinarily collapsed in the free space are prevented from such a collapse by an unseen metaphysical force putting them at specific distances. It is again interesting to see that the various systems viz., the planets, sun, moon, etc. that are made up of matter in the form of gas, dust particles, etc. could have not sustained without the divine force and power. It would hence be dangerous to detach the metaphysical principle from the plan, arrangement, order and the course of the universe. Newton goes on to hold that such a principle or reality is scientifically important to account for all creation, motion, changes, etc. Further, Eddington who interprets the metaphysical reality as God writes, "*.....some billions of years ago, God wound up the material universe, and has left it to chance ever since*"<sup>2</sup>. To add more, though Einstein was a scientist in his work place, he had a spiritually oriented personal life, for which the metaphysical entities have self-verifiability in themselves.

The Metaphysical Reality is like a wheel in which the spokes are the various truths. The truths are deciphered, though not in a complete sense, by one or the other specialized sciences. The reason why the individual sciences fail to give evidence concerning the metaphysical reality is that their scope is limited to their own specialized



branches of study and hence unable to transcend beyond the limits to gather details of the Absolute. This limitation on the part of the sciences should not be taken to deny the existence of the Absolute. If done so, it would reduce the whole world into chaos, disarray and disharmony, purely because a lot of explanation relies on the First Cause or Principle.

The First cause is the prime cause of all causes that operates in Nature and science by the help of some models imitates Nature of understand Nature. The success of these models depends on the degree to which they imitate the natural arrangement. However high the degree of imitation may be, they fall short of the true explanation as they fail to reflect the hidden or the veiled reality. But slowly from the adamantine barriers of science, the modern scientists are coming forward to recognize the existence of a non-physical, spiritual, super-natural reality beyond all the events and occurrences, but still responsible for all of them.

The de-materialization of matter that has taken place in quantum physics with the discovery that matter is nothing but energy packet points that Nature is monistic and not pluralistic. This is because energy, to which all matter is convertible, whether continuous or discrete, is regarded as single and one. A search for unity in science resonates with the Theory of Everything (TOE), which aims to unite all the forces or energies in the universe by a single equation. But the solution to this equation cannot be expected in pure physical terms as there remains a lot of metaphysical baggage that needs to be sorted out before any final solution to this be given. Here one may raise a valid point concerning the non-finality of a scientific theory or law: Why is that a scientific theory can never be said complete and final ? The most probable reason being that the sphere of unknown



region is so wide that something new may emerge from any side at anytime. Hence opinions, views, ideas, theories, laws, etc. keep on changing. The scientists may interpret this change as progress, without which the scientific enterprises will become static and stagnant. But if we look at this from a more critical angle than that science provides, it may not be wrong to hold that science itself is unaware of the reality of Nature and it is just speculating Nature and those speculations that come true are rated as theories and laws. Thus, science is constructing laws from speculations (or hypotheses), which though turn true fail to remain so for all times to come. Had there been reality grasped by the tools of science then there would have been no change of platforms, no rejection of theories or modification of laws. The shifting suppositions, patterns, methods, etc. do clearly point that science is striving hard to reach at the ultimate, but could only reach at the partial truths (as it would be wrong to say that science has achieved nothing). If at all science frames out a much discussed Unified Theory, then also it in the view of Stephan Hawking *"would not mean that we would be able to predict events in general, for two reasons. The first is the limitation that the uncertainty principle of quantum mechanics sets on our powers of prediction. Second, there is nothing we can do to get around that. In practice, however, this first limitation is less restrictive than the second one. It arises from the fact that we could not solve the equations of the theory exactly, except in very simple situations (we cannot even solve exactly for the motion of three bodies in Newton's theory of gravity, and the difficulty increases with the number of bodies and the complexity of the theory)"*<sup>3</sup>. Further, he writes *"..... if we discover a complete theory, it should in time be understandable in broad principle by everyone, not just a few scientists. Then we shall all,*



philosophers, scientists, and just ordinary people, be able to take part in the discussion of the question of why it is that we and the universe exist. If we find the answer to that, it would be the ultimate triumph of human reason- for then we would know the mind of God." <sup>4</sup> These are the concluding lines of Hawking in his work 'A Brief History of Time' which leave behind certain questions that need to be answered. If at all we have a complete theory and if in the interpretation of Hawking the mind of God means the whole mechanism that makes the universe work, then such a mechanism will remain unknowable in all its intricate details by a theory however complete it may be. This makes one (including the scientists) to go on the quest for the metaphysical reality.

#### REFERENCES :

1. Margenau, Henry : 'Metaphysics of Physics' in "Physics and Philosophy : Selected Essays". D. Reidel Publishing Co., Holland, 1953, pg.105.
2. Eddington, A.S.: "The Nature of the Physical World' as quoted by M.N. Roy in "Science and Philosophy', Ajanta Publications, Delhi, 1984, pg.107.
3. Hawking, Stephen: 'A Brief History of Time', Bantam Press, Transworld Publishing Ltd. London, 1988, pg.179.
4. *Ibid.*, pg.185.

---

*Lecturer in Philosophy,  
Niranjan Govt. Women's College,  
Aska, Ganjam.*



## WITTGENSTEIN ON PHILOSOPHY, SCIENCE AND METHODOLOGY

Sushree Suchismita Sahu

This paper is a brief attempt to deal with Wittgenstein's view on philosophy and science. His view on science can be traced out in both *Tractatus (TLP)* and *Philosophical Investigations (PI)*, while he discussed about the nature and function of philosophy.

Wittgenstein's notion of philosophy has a logical basis. In *TLP*, we find that language is the only concern of philosophy. According to him language is the totality of propositions and language represents the world. All propositions are either 'descriptive' or 'tautologies' or 'contradiction'. The last two say nothing. So it is only first one which is substantial, which says 'something' and therefore significant. These propositions, according to Wittgenstein, are the propositions of the natural sciences, that can possibly be said, Tautologies and contradictions are not significant for the simple reason that they do not give us any information about the facts and therefore they are not the pictures of reality. Only the propositions of the natural sciences are the pictures of reality.

Philosophy is different from science, though philosophy deals with, analyses the propositions of them. In *TLP*, 4.111, Wittgenstein says: "Philosophy is not one of the natural sciences". The place of philosophy is above or below the natural sciences, but not beside them.

In *TLP*, 4.1212, Wittgenstein brings a distinction between 'What can be said' and 'what cannot be said', between 'what can be said' and 'what can be shown'. According to him, what can be shown (by logical analysis), can not be said. The function of philosophy is to distinguish between 'sayable' and 'showable'. Its reverse is 'unsayable'. Wittgenstein remains silent about what is 'unsayable'. In *TLP*, 6.53 Wittgenstein says, 'The correct method in philosophy would really be the following : to say nothing except what can be said, that is, propositions of natural sciences.

According to Wittgenstein philosophy is not meant to discover new truths or new facts. Natural science is concerned with discovering the new truths or new facts. So early Wittgenstein says, 'Philosophy is not a body of doctrine, but an activity'. A Philosophical work consists essentially in elucidations. [*TLP*, 4.112 (3)]. Philosophy aims at logical clarification of thoughts. [*TLP*, 4.112(1)].

As regard to the method of philosophy, Wittgenstein in *TLP*, 4.113 says that philosophy settles controversies about the limits of natural sciences. Philosophy is a clarifier and arbitrator. Philosophy is all form and no content. But in *PI*, Sec.51 Wittgenstein's method of philosophy deals with the 'details of what goes on'. Again in *PI*, Sec.133, he says, 'there is not a philosophical method, though there are indeed methods like different therapies'. His philosophy widely discusses the logic of language-game.

Thus philosophy has no different method and it never provides final conclusion. Wittgenstein says, 'the problems



are solved not by giving new information, but by arranging what we have always known. (*PI*, Sec.109).

Philosophy is an activity. Investigation is an explanation. Philosophy is what philosophy does. In *PI*, Sec.38, he says, "....philosophical problems arise when language goes on holiday'. The word 'holiday' has been used by Later Wittgenstein in a technical sense, that means when we don not use a particular word in an appropriate context. Philosophical problems are neither psychological problems nor scientific ones. They are logical problems.

Thus we can conclude that the aim of philosophy and that of science are different. Philosophy does not adopt any method. It studies and analyses the nature, meaning and limits of the propositions which are discovered by natural sciences.

### References :

1. Wittgenstein's *Tractatus Logico-Philosophicus*.
2. Wittgenstein's *Philosophical Investigations*.

---

P.G. Part-II, Philosophy,  
M.P.C. (Autonomous) College,  
Baripada

# PHILOSOPHY AND SCIENCE AT A GLANCE

*Ms Anjali Choudhury*

The nature and scope of philosophy is very vast. Philosophy is known as the wisdom or knowledge. There are various branches of philosophy : Ethics, Aesthetics, Epistemology, Logic, Metaphysics, Applied Ethics, Applied Philosophy, etc. There is a difference between science and philosophy. Philosophy is theoretical but science is practical. Western philosophy is mainly theoretical but Indian philosophy is both theoretical and practical. Philosophy in India is never confined to mere speculative analysis, but endeavored to find out the riddles of life. The philosophy of Buddha, the philosophy of Mahavir, Nyaya philosophy, Sankhya philosophy and Yoga philosophy are both theoretical and practical. There is a good compromise or happy blending between theory and practice in case of Indian philosophy. But western philosophy gives us theoretical knowledge only. It deals with the super sensible entities like God, world, soul, mind etc.

The History of Western philosophy is not a cabinet of antiquities but a museum of typical products of the human mind. We may find the cradle of this intellectual pursuits in the masters likes Plato, Aristotle and Socrates. Thought was held to be the noblest and the divine function. Sometimes philosophy is known as the philosophy of science. Philosophy of science is a discipline which attempts to relate philosophy to the fields of scientific enquiry depending upon the orientation of the philosopher and the area of science. The goal of philosophy of science is to discover the nature



of science or the nature of scientific method or the logic of science or to explore the interfaces of the fields of science or to axiomatize the sciences; such as Mathematics, Physics, which are axiomatizable. In one sense, philosophy of science extends back to the origins of Western philosophy, from the origin of philosophy until the period of the sophist. The emphasis of philosophy was all scientific knowledge. Plato and Aristotle devoted attention to science and its method. But the development of philosophy of science as a discipline required a prior development of the sciences. Hence it is more appropriate to regard philosophy of science as beginning with remarkable development of the sciences in the modern period.

Ethics is called as the science of morality. It deals with character or conduct of man. Ethics is also called as moral philosophy. It literally means as the science of conventions or practices. Ethics is the science of human conduct. It is called as normative science. It studies what is right and what is wrong. It is the science of highest good and highest ideal. It is different from natural and factual sciences. Ethics is the science of rightness. It searches for ethical laws. All the aims and activities of human life are directed to the ideal or good. Physics, Chemistry, Sociology, Economics, etc. are positive or descriptive sciences. But Ethics, Aesthetics and Logic are normative sciences. Natural sciences study facts while the scope of normative science is the study of values. The judgments of positive sciences are factual while those of normative sciences are axiological. Thus the judgements reached by the two types of sciences are different from each other. Science is a



systematized body of knowledge. It is based upon observation and experimentation, generalizations and conclusion therefrom. Science is a study of exactitude. Science establishes cause-effect relationship. Law of Gravitation, by Sir Issac Netwon which states that anything thrown into the air gets attracted to the earth because of the gravitational pull of the earth. The theory of verification which holds good in case of science and operates at full length is conspicuous by its absence in so far as philosophy is concerned, simply because it deals with metaphysical entities like God, soul, world and the like. We can't prove the existence of God even if many people believe in the existence of God. Therefore theism or atheism rests on the state of mind only.

Scientific statements can be verified either directly or indirectly. But metaphysical statements are beyond sense experience. These are pseudo concepts. They are neither verified directly nor indirectly. Science is ethically neutral, but philosophy is based on values and reflects all the positivities of human existence.

Science is a study of both biotic and abiotic world, but we find the pre-ponderance of human behavior in the domain of philosophy.

Therefore it can be concluded that philosophy is more a study of human behavior which looks forward for highest good or highest ideal of life. Science gives us fruits but philosophy gives us light which enlightens our life for realization of highest values of life.



## **SCIENCE AND PHILOSOPHY : A COMPARISON IN METHODOLOGY**

***Mr Pradeep Kumar Rout***

From time immemorial, it has been understood that both philosophy and science speak about the nature of the world. Thus science means a systematic knowledge of the physical world and philosophy means nothing more than that. But in what way they are different ? This article is an attempt to show that though both science and philosophy deal with the same world, they differ in their methodology.

The problem with which philosophy begins is like, say, 'Are space and time relative? Or 'Is an effect entailed in its cause'? This means that the problem of philosophy, unlike science is suggested to be different. The real point of comparison is as follows: When the scientist uses his hypothesis for the actual exploration of nature, a philosopher has to remain content with a mere hypothesis. This distinction between the two disciplines is perhaps the most fundamental of all.

Another distinction is that the real world for the scientist is the measurable world with a particular field for observation and experiment. But the real world of a philosopher is the "world as a whole".

There have been philosophers like Hume who have done their best to introduce the experimental method of reasoning in to philosophy. The desire to find a method which should be as fertile for philosophy as experiment is in the case of science has been dominating motive in



philosophers. But it is not surprising to note that both science and philosophy have different kinds of methodology.

There was a time when science was called "Natural Philosophy". Science has come to have a special meaning in the notion of its methodology. The method includes the choice of a problem, the collection of facts relevant to solve the problem, making of hypothesis, organization of an experiment to establish the hypothesis and their results summarised.

Karl Popper recounts his experience of asking physics students: "Take pencil and paper, carefully observe and write down what you have observed "Naturally the first they asked was what shall we observe". It is necessary to have a problem and to make a hypothesis before saying what observations are relevant to its solution. What exactly meant by 'relevant' in this context is not easy to pin down. To assume that some things are not relevant to particular investigation presupposes the principle of the isolation of system. If for example for one engaged in medical research and trying to find out the causes of cancer it will not be relevant to bring in calculations about the movements of the heavenly bodies. And if one is a botanist working in a field in which the chlorophyll content of leaves has to be taken in to account, for him, color will be relevant. If he is a nuclear physicist then colors will be irrelevant. This serves to bring out the highly selective character of the sciences.

The most striking contrast we usually come across when we compare the two disciplines is the absence of any single characteristic method in the case of philosophy. There is nothing in the history of philosophy comparable to the



growth of the experimental method which we found to be the dominant theme in the history of science. The desire to find a method which should be as fertile for philosophy as experiment is in the case of science has been the dominating motive in philosophers like Descartes, Bacon and Kant.

It is not surprising that philosophy should search for a method of its own. We have seen that scientist's results really amount to a kind of description, a highly technical kind of description. In order to describe, scientists have evolved their own kind of methodology. Some contemporary philosophers like Wittgenstein think that the philosopher's business should be with description and what they usually mean by this is that philosophers should describe or analyse the various use of language. Strawson develops this thesis in his distinction between 'descriptive' and 'revisionary' metaphysics in his book *"individuals"*.

The main trouble with philosophy is that the speculative instruments used by the philosophers are not such that any particular experience is relevant to their verification. For example if I burn sugar, carbon dioxide will be given off. This is some thing that I can test for myself by going in to the labrotary. But a Philosopher's hypothesis that the Absolute is real or that the perceptual world is a world of appearances, there is no possible experience which could tell him whether he is right or wrong. If the Philosopher defends himself by maintaining that the sorts of things he says are of a special order which cannot be verified, then the onus of proof rests on him and it is incumbent on him to tell us exactly what he does mean.



One thing we find about science is its intimate connection with mathematics. Now the rationalist philosophers have all shared the conviction that the method of demonstration, which belongs peculiarly to geometry, is something which would be fruitful for the philosophers too and that its utilization would make philosophy "Scientific". But on the other hand there are branches of philosophy like ethics, aesthetics, epistemology, and philosophy of religion, which have no relation to mathematics at all, and if to be scientific means to be connected with the possibility of measurement then all these disciplines are very far indeed from science. It is mathematics that has given science its precision of language. But philosophical language cannot have such precision. If ordinary language has an 'open texture' philosophical language has this characteristic even more. Think of, say, the philosopher's use of the word 'real'. This is a word which is capable of bearing a myriad connotations.

However, many philosophers feel that, in spite of the success of science in investigation the realm of the relational, there is no occasion for philosophy to abandon the search for the 'natures' of things. Many of our concepts can perhaps be analyzed in term of their function in experience, and it was precisely in this way that Kant attempted to bring back philosophy in to her own as queen of the sciences. But ontological questions are still posed in the works of Whitehead and differently, by many existentialists. If the scientist must be given pride of place where investigating physical nature is concerned and there are perhaps no philosophers today who would wish to resurrect for



philosopher's one time task is of speculating about the cosmos. There are problems to do with man himself and his nature about which science has no prima facie authority to pronounce judgment. "What is man?" This is still a question about which neither science nor philosophy has been able to say the last word. This stimulates a rebound movement, a return to commonsense.

*Principal,  
B.B. College, Baiganbadia.*

## **PHILOSOPHY AND SCIENCE : A CRITIQUE**

***Mr Sushanta Kumar Nayak***

"Philosophy" in academic circles is acknowledged as the mother discipline. It constitutes the basis of every systematic enquiry and the end of all knowledge because every form of human enquiry matures in the form of Philosophical conclusions. It is to be reckoned as cognitive enquiry, calculation of the thinking skill par-excellence. The birth of philosophy cannot be dated. However, the philosophic consciousness is bound up with the nature of human mind. Philosophy is grounded in the very basics of human mind and finds its inevitable expression in the inveterate disposition of man to 'why' 'what' 'how' about fundamental concepts and issues in every branch of human pursuit to philosophy. Philosophy embedded with zest and devotion sharpens our cognitive apparatus and imparts sanity to our realm of thinking and action. Thus philosophizing yields its precious dividends.

Philosophy is the root and a bare necessity of human life. It is the mark of a country's culture and civilization but philosophizing is an existential necessity. The Philosopher is a scientist having a scientific bent of mind. Philosophy and Science are part and parcel of human existence in the world. In general, philosophy is love of knowledge or love of wisdom and a philosopher is he, who is a lover of knowledge or wisdom. Accordingly, knowledge is an activity, an attitude, a born quality and natural tendency of a rational being. She/ he lives in-accordance with his/her knowledge of himself/ herself and the world around taking and adjusting with the circumstance and the society, in particular and the world, in



general. So man, as a rational animal, cannot live without his knowledge and the society. Every human being is a philosopher in the true sense of the term and philosophy is a way of life. Likewise, science is generally defined as well systematized, doubtless and well specific knowledge of a definite object or discipline of nature. Both science and philosophy have greater relevance and output for the smooth run of human existence and the growth, progress and development of the world. Just as without the breath of oxygen human existence is impossible, in the same manner, without our thought process being logical and philosophical, our acquisition of knowledge and existence as well as surviving in this world is impossible. Hence, both science and philosophy are important and fruitful for us in the present scenario.

Science is knowledge. To be more precise, science is that knowledge, which is certain, exact and fully organized real knowledge. So, scientific knowledge is said to be well organized. However, the aim of science like philosophy is seeking of knowledge. But sometimes it is said that science describes while philosophy interprets. Mr. J. Arthur Thomson defines science as "the complete and consistent description of the facts of experience in the simplest possible terms". The scientist, in his study of any group of phenomena, first collects his facts, analyses and classifies them, studies the conditions under which they occur, ascertains their uniform model of behaviours and sets all of this down in the form of a systematic treatise where his work ends.

In philosophy and science, our reflective thinking must be free from the errors of "system" and subjective



interest, those idols of theater and cave, as Bacon called them. This freedom from prejudice is an ideal which is very difficult to realize. In physical sciences, it has been realized in a remarkable fashion which has made knowledge fruitful.

A man of philosophy is no longer frightened away by a comparison of the meager fruits of philosophy with the richer fruits of science. If, by philosophy, we mean not a system of metaphysics of futile discussion about the Absolute, rather the search for wisdom, search for truth, the appraisal of values and the careful logical analysis of concepts, it seems to be just what the world needs now.

But, after all it is not what needs which interest us, but what we want. One of the deep impulses of human mind is the craving to know. Curiosity is a character's instinctive reaction. Scientific curiosity has always been a powerful incentive to scientific research. We have to pry in to nature's secretes; we wish to understand the world around us – its source, meaning, probable future.

Part of the values of science is intellectual. It would be a dull mind that could see the rich variety of natural phenomena without wondering how they are inter related quite apart from all questions of practical utility, the modern mind feels strongly urged to synthesize the phenomena it observes, to try, to combine happenings in the external world under general laws.

We recall the words of poet Lessing, "Did the Almighty, holding in his right and truth and in the left, search after truth, deign to tender me the one I might prefer in all humanity, but without hesitation, I should request search after truth".



However, both philosophy and science seek knowledge which is certain, exact, well organized and comprehensive. The human mind is not contained merely to determine the invariable sequence of phenomena and to formulate their manner of behaviours. It craves some explanation of things – their first cause, their moving cause, purpose, meaning and value. It is this attempt to interpret the world, then, which is the task of philosophy, while science classifies, formulates and describes. According to Mr. Broad, the object of philosophy, "is to take over the results of the various sciences, to add to them the result of the religious and ethical experiences of mankind and then to reflect upon the whole". The hope is that, by their means, we may be able to reach general conclusion as to the nature of the universe, and as to our position and prospects in us.

It is no doubt this ambitious enterprises this hope to get a synoptic view of the work of the special sciences, and then to find some meaning in the whole that has in the past led to the unfavourable criticism of philosophy by scientist. But, of course, neither the attempt to gain a synoptic view of the whole nor the attempt to interpret its meaning would be itself an occasion for criticism for the human mind which has a primary interest in both these things. Any object of human interest, whatsoever, is a legitimate subject of scientific inquiry, provided that scientific methods are used.

However, both science and philosophy have two different tasks, of which both differ from the work of science and both of which are clearly legitimate fields of human thought. The fairest then is the conscious reflection upon



the world as a whole, particularly as to its meaning, purpose and value. The second is the critical examination of the concept made use of both by science and commonsense. The first has been called the speculative philosophy, the second critical philosophy.

As regards the first of these two fields, it is noticed that one of the profound synoptic views of life which philosophy attempts is not merely a quantitative view of the world that we desire, its mathematical relationship, its predictability. We want rather we must have some knowledge or at least some theory of its "intrinsic qualitative character".

Science today is quantitative rather than qualitative in some cases as may be. It expresses the relationship of the intensities of the two phenomena e.g. the intensities of the electric and of the intensities of an incandescent lamp and compensates for its inability to answer the question, "How" by its wealth of data as to "How much".

The scientist is forever measuring, weighing, computing and marking sketches of details. "This" says one philosopher, "is all useful and necessary work, but I would like to get a picture of the way the house is going to look when it is done-or at least a glimpse of it. I am truly grateful to the scientists for all their labours' works but I am – at times away – a little weary of studying all these details – and I long for some picture of the whole".

Philosophy tries to put this picture puzzle of a hundred curiosity shaped bodies of knowledge together, to see what sort of universe they make. This is the sense in which philosophy, as Bacon so audaciously said "take all knowledge



for its province". It does not – it should not – presume to supersede, or to short – circuit the labourious work of the scientists, the psychologists, the historians, it aims to synthesize their work and focus it upon human being's ultimate needs. Philosophy is the integration of knowledge, the synthesis of the science.

The mechanic will tell you the meaning of every part of the machine but what is the meaning of the machine itself? But such a conclusion could be arrived at only after reflective inquiry and such reflective inquiry could be philosophy. So it will not be a travesty of truth that philosophy is an embodiment of reflective inquiry. The demand that science should be supplemented by philosophy is becoming more and more urgent as science withdraws more and more in to the mysterious background of symbols and mathematic equations and forces itself to be indifferent to what lies behind the symbols. To understand the phenomena of the physical world, according to Arthur Eddington, "It is necessary to know the equations which the symbol obeys but not the nature of that which is being symbolized. But the philosopher might reply that the same intellectual satisfaction which the scientists get from his equations and symbols, the philosopher gets from his hypothesis of what the reality behind the symbols really is. It is the background of phenomena that our personality and conscious belong".

However, the intimate relationship between science and philosophy is indispensable. The ever widening fields of those sciences make it more and more difficult for the philosopher to be in mastery of them, which is conducive to

healthy humanity. Readymade systems constructed without due regards to the result of observation and experiment are held in less and respect. Therefore, philosophy is at present time tending rather in the direction of the critical analysis of concepts and the study and meaning of value to logical and humanistic studies. Nevertheless, the ideal philosopher must be a master of all the special sciences.

---

*Reader in Philosophy,  
Barasahi P.S. College,  
Barasahi, Mayurbhanj.*



# **PHILOSOPHY AND SCIENCE : A COMPARATIVE STUDY**

***Mr Purnendu Kumar Paul***

Philosophy is the study of general and fundamental problems relating to knowledge, values, reason, language, mind and existence. These problems are distinguished from other problems by their critical and systematic approach with rational insight. But "Science" is the study of systematic knowledge of facts and thus it is the study of Nature or Natural phenomena, based on the method of observation and experiment. There can be no science without observation and experiment. So science refers to the study of information or knowledge whereas philosophy refers to love for knowledge or wisdom. Many philosophical theories are true in the light of science and logic as the art of reasoning bridges the gap between science and philosophy. Science may be ranked as a branch of applied philosophy. Science and philosophy are the outcome of human thinking process. Many concepts are baseless and some concepts are true in the light of science. Some of such concepts are proved with examples.

However, philosophy which gives us the spiritual knowledge, moves in one direction in the field of inquiry. On the other hand, Science gives us the physical knowledge and moves in the opposite direction in the same "circle" of inquiry. So a philosopher or a scientist should move so extensively that they reach the same destination. But it is seen that when they are on the way of their inquiry, they



oppose to each other with regard to their views and therefore, they fight with each other and quarreled among themselves. The philosopher says the ultimate reality or God is beyond this world. He is invisible and inexplicable. On the other hand, the scientist says that if there is God, then it is nothing but this world or universe itself and accepts what is inexplicable only in the things of Nature. The philosopher says that God pervades all over the world. The scientist accepts the inexplicable of the world, though many things in this world are explicable or visible. That God is invisible is the very characteristic nature of God. In this sense philosopher ascribes explicability to the creation of the world that we observe directly. And the inexplicability is ascribed to what we call God which is not directly observed.

The visible or explicable part of the world is agreed by both scientists and the philosophers. But invisibility or inexplicability part which is called as God is accepted by the philosophers, and the scientists accept it in another way. The following analogy shall clarify the point of our discussion. There is wire and heat in a hot wire for scientists but philosophers say that the fire and the wire are co-existing in nature. Here the dispute is verbal, not real. Hence the difference lies in words only, not in things. When Scientists call something as heat, the philosophers call it as fire. So here, the wire is the visible or explicable part of the world, which is agreed both by the philosopher and scientist. A scientist calls the invisible or inexplicable part as a "property" i.e. heat, whereas the philosopher calls the same as the "possessor of the property" i.e. fire. Thus the "possessor of a property" and the "property" are one and the same thing.



The scientist accepts the independent existence of the inexplicable power in the field of energy. On the other hand, the philosopher accepts that there is a substratum of energy, i.e., substance which is also called God. Here the philosopher infers the existence of the substratum in such a deeper state-of-affairs. Here the argument of the philosopher is that power can not exist independently. It needs always a possessor. Suppose the sun is not seen due to overlapping clouds in the sky, but it is not to be concluded that the ray coming through the cloud has independent existence. But the scientist may see the sun after penetrating sharply through the cloud. So that is the main difference between the philosopher and the scientist.

However, the argument is that the philosophic concepts are based on the perceptions relating to the explicable or visible part of the world, but a scientist does not believe these concepts. Because, according to him, it is not a perception of the direct object. Both the scientist and the philosopher have not seen the sun in the sky. But both the philosopher and the scientist accept the perception of light of the sun. At his particular stage, the philosopher infers the sun, whereas the scientist does not, but still accepts that the final truth is yet to be achieved after perceiving through cloud in the sky. At this point the philosopher talks of the existence of the substratum. The scientist accepts the alternative path and becomes the final authority about the existence of the possessor of such invisible power.

It is said that

*Errors like straw on surface they flow,  
Those who search for Pearls must dive below.*

Errors, disputes, contradictions etc. are like straws that flow on the surface of ocean. Truth is "one" and it is like a pearl. Those who want it, must dive into the ocean. Only a philosopher can do that. If the scientist has enough patience to dive below, he will finally find the pearl and become a philosopher. But an impatient scientist, staying halfway of the destination, remains either as a skeptic or an atheist.

*Lecturer in Philosophy,  
B.B. College, Baiganbadia,  
Mayurbhanj.*

**Mob: 09861440475**



## PHILOSOPHY AND SCIENCE: THEIR METHOD AND LIMITATION – A REVIEW

Mr Parsuram Kar

Holistically speaking, philosophy reflects the way of human life in the society from different perspectives. Thereby every thinking-person asks himself: "*What am I?*", "*Why am I here?*", "*What is my duty?*" etc. these questions certainly give rise to the nature of existence of both self and the world. In this respect the divisions are made, for better understating, in to matter, life, and society relating respectively to the physical, biological & social sciences. So far as philosophy and science are concerned, they are divided into three groups such as,

- (i) Metaphysics – Relating to the nature of existence,
- (ii) Epistemology – Relating to the nature of knowledge,
- (iii) Axiology – Relating to the nature of values.

These divisions can help to describe the systematic study of different branches of knowledge with a definite purpose. Thus, Metaphysics is the systematic study of the fundamental problems referring to the nature of reality. Philosophy begins with metaphysics. It refers to a definite attitude of human mind distinct from moral, religious and aesthetic attitude.

Metaphysics implies a belief that there is more in the world than what appears to our sense. Therefore metaphysical speculations spring from two basic impulses i.e. a desire to know the real and a desire to construct a



comprehensive view of the nature, origin and future of the world including man. A metaphysician does not completely rely on perception but rather discusses other forms of knowledge. In this sense man does not satisfy with the conclusion of science, although it is conclusive, he wants to know the absolute reality. So metaphysics aims at providing an integrated view of reality, unlike science which presents fragmentary knowledge.

Science is generally opposed to philosophy and religion because of its distinctive aim and method. Its aim is cognitive and its method is empirical. Experience in science means observation, experimentation and verification. Religion, on the other hand, is a matter of faith and belief. It aims at liberating man from the bondage of materialistic life. The science and religion seem to tread different paths for reaching different goals. Hence philosophy has a separate locus being different from science and religion. It does not rely entirely on observation and analysis for discovering Truth. Philosophy, science and religion taken together, develop right understanding of life and the world by critical reflection according to their own method and limitations on the basis of analysis.

In addition, philosophy as a second order activity, comprises two functions - clarity and understanding the concepts arising out of philosophical as well as social problems in the way of human actions. Basing upon these thoughts, an attempt has been pursued to establish the method and scope in a new dimension from pragmatic point of view to accommodate the essence of all philosophical,



sociological and scientific problems in the emerging social order, that prevail in the society.

---

*Dept. of Philosophy,  
T.T. Mahavidyalay,  
Ghattagaon, Keonjhar  
e-mail- pkar08@rediffmail.com*

## **PHILOSOPHY AND SCIENCE: AN EVER DEEPENING INTERACTION**

**Dr Annapurna Dhal**

The word *science* has its origin in the Latin verb *scire*, meaning "to know". The method of science is distinct in its notion of inter subjective certification. In other words, it should be possible for other investigators to ascertain the truth content of scientific explanation(s).

### **The role of Science in Knowledge Creation:**

Hunt (1991, p.17-18) argued that the major purpose of science is to develop laws and theories, to explain, predict, understand, and control phenomena. He suggested that a science must have a distinct subject matter, a set of phenomena which serves as a focal point for investigation. The discovery of the underlying uniformities among these phenomena yields empirical regularities, law like generalizations, laws, principles, and theories. Through this process, science aims to produce knowledge of the world by establishment of generalizations governing the behavior of the world (Chalmers, 1990).

In science, all knowledge claims are tentative, subject to revision on the basis of new evidence. Although science cannot provide one with hundred percent certainties, yet it is the most, if not the only, objective mode of pursuing knowledge (Hunt, 1991: p,200-201). This pursuit is dependent upon the imagination as well as critical and analytical skills of the scientist. It is generally believed that the goal of the pursuit is the discovery of truth.



## Science and Truth:

Two conceptions of science embody two different valuations of scientific life and of the purpose of scientific enquiry. According to the first conception, science is above all, an imaginative and exploratory activity, and the scientist is a person taking part in a great intellectual adventure. The alternative conception suggests that science is above all a critical and analytical activity and the scientist is pre-eminently a person who requires evidence before he or she delivers an opinion, and when it comes to evidence is hard to please (Medawar, 1991, p.30-31).

In the first conception, truth takes shape in the mind of the observer: it is his imaginative grasp of *what might be true* that provides the incentive for finding out, so far as he can, *what is true*. This viewpoint is supported by other scholars of science.

According to the second conception, truth resides in nature and is to be got at only through the evidence of the senses: apprehension leads by a direct pathway to comprehension, and the scientist's task is essentially one of *discernment* (Medawar, 1991: p.30-31).

These two sets of opinions contradict each other. It seems hardly possible that they should both be true; but anyone who has actually done or reflected deeply upon scientific research knows that there is in fact a great deal of truth in both of them. A scientist must indeed be freely imaginative and yet skeptical, creative and yet a critic. What are usually thought of as two alternative and indeed competing accounts of the two successive and



complementary episodes of thought that occur in every advance of scientific understanding. This general conception of science which reconciles the two sets of contradictory opinions is sometimes called the '*hypothetico-deductive*' conception (Medawar, 1991 : p.32-33, p.231).

Besides these two accounts of the purpose of scientific inquiry, there are two other (mutually competing) conceptions that provide direction to the process of scientific inquiry: consensual view of science and the dissension view of science.

### **Science as Consensus :**

According to this approach, scientific knowledge is the product of a collective human enterprise to which scientists make individual contributions which are purified and extended by mutual criticism and intellectual co-operation. According to this theory *the goal of science is a consensus of rational opinion over the widest possible field* (Ziman, 1967). The two concepts of *consensibility* and *consensuality* need to be differentiated for understanding of this goal.

Scientific knowledge is distinguished from other intellectual artifacts of human society by the fact that its contents are *consensible*. This implies that each message should not be so obscure or ambiguous that the recipient is unable either to give it whole-hearted assent or to offer well founded objections. The goal of science, moreover, is to achieve the maximum degree of *consensuality*. Ideally the general body of scientific knowledge should consist of facts and principles that are firmly established and accepted without serious doubt, by an overwhelming majority of



competent, well-informed scientists. A *consensible* message is one which has the potentiality for eventually contributing to a consensus, and a consensual statement is one which has been fully tested and is universally agreed. We may say, indeed, that consensibility is a necessary condition for any scientific communication, whereas only a small proportion of the whole body of science is undeniably consensual at a given moment (Ziman, 1978).

Whereas philosophers located the source of the consensual character of science in the scientist's adherence to the canons of logic of scientific inference, sociologists argued that science exhibited so high a degree of agreement because scientists shared a set of norms or standards which governed the professional life of the scientific community. Based upon the consensual view of science, science was thought to be strictly cumulative (Laudan, 1984).

### **Science as Dissension:**

There are four lines of argument which undermine the classical preoccupation with scientific consensus: the discovery that scientific research is much more controversy-laden than the older view would lead one to expect; the thesis of theory incommensurability; the thesis of the underdetermination of theories; and the phenomenon of successful counter normal behavior (Laudan, 1984).

The ubiquity of controversy is succinctly captured by Kuhn (1977) in his objection to the consensual approach: the emergence of new scientific ideas "requires a decision process which permits rational men to disagree, and such disagreement would generally be barred by the shared



algorithm which philosophers have generally sought. If it were at hand, all conforming scientists would make the same decision at the same time." Kuhn maintains that it is only the existence of differential preferences and values among scientists which allows new theories to flower. What makes the broad degree of agreement in science even more perplexing is the fact that the theories around which consensus forms do themselves rapidly come and go (Laudan, 1984). This philosophy of science as dissonance would benefit from a brief elaboration of objectivity and its contribution to knowledge.

### **Philosophy and Science:**

The touchstone of the value of philosophy as a world-view and methodology is the degree to which it is interconnected with life. This interconnection may be both direct and indirect, through the whole system of culture, through science, art, morality, religion, law, and politics. As a special form of social consciousness, constantly interacting with all its other forms, philosophy is their general theoretical substantiation and interpretation.

Can philosophy develop by itself, without the support of science? Can science "work" without philosophy? Some people think that the sciences can stand apart from philosophy, that the scientist should actually avoid philosophizing, the latter often being understood as groundless and generally vague theorizing. If the term philosophy is given such a poor interpretation, then of course anyone would agree with the warning "Physics, beware of metaphysics!" But no such warning applies to philosophy in



the higher sense of the term. The specific sciences cannot and should not break their connections with true philosophy.

Science and philosophy have always learned from each other. Philosophy tirelessly draws from scientific discoveries fresh strength, material for broad generalizations, while to the sciences it imparts the world-view and methodological in pulses of its universal principles. Many general guiding ideas that lie at the foundation of modern science were first enunciated by the perceptive force of philosophical thought. If we trace the whole history of natural and social science, we cannot fail to notice that scientists in their specific researches, in constructing hypotheses and theories have constantly applied, sometimes unconsciously, world-views and methodological principles, categories and logical systems evolved by philosophers and absorbed by scientists in the process of their training and self-education. All scientists who think in terms of theory constantly speak of this with a deep feeling of gratitude both in their works and at regional and international conferences and congresses.

Some people think that science has reached such a level of theoretical thought that it no longer needs philosophy. But any scientist, particularly the theoretician, knows in his heart that his creative activity is closely linked with philosophy and that without serious knowledge of philosophical culture the results of that activity cannot become theoretically effective. All the outstanding theoreticians have themselves been guided by philosophical thought and tried to inspire their pupils with its beneficent influence in order to make them specialists capable of comprehensively and critically



analyzing all the principles and systems known to science, discovering their internal contradictions and overcoming them by means of new concepts. Real scientists, and by this we usually mean scientists with a powerful theoretical grasp, have never turned their backs on philosophy. Truly scientific thought is philosophical to the core, just as truly philosophical thought is profoundly scientific, rooted in the sum-total of scientific achievements. Philosophical training gives the scientist a breadth and penetration, a wider scope in posing and resolving problems. Sometimes these qualities are brilliantly expressed, as in the work of Marx, particularly in his *Capital*, or in Einstein's wide-ranging natural scientific conceptions. So the connection between philosophy and science is mutual and characterized by their ever deepening interaction.

## **References**

- Chalmers, A. (1976), *What is This Thing Called Science?* St. Lucia, Australia: University of Queensland Press.
- Chalmers, A. (1990), *Science and Its Fabrication*, Minnesota Press.
- Hunt, S.D. (1990), "Truth in Marketing Theory and Research" *Journal of Marketing*, 54 (July), 1-15.
- Hunt, S.D. (1991), *Modern Marketing Theory: Conceptual Foundations of Research in Marketing*, Southwestern Publishing.
- Laudan, L. (1977), *Progress and Its Problems*, Berkeley, CA: University of California Press.



Laudan, L. (1981), "A Configuration of Convergent Realism," *Philosophy of Science*, 48 (March, 19-49).

Laudan, L. (1983), "The Demise of the Demarcation Problem," in *The Demarcation between Science and Pseudo-Science*, Vol. 2, ed. Rachael Laudan, Blacksburg, VA: Center for Study of Science in Society, Virginia Polytechnic Institute.

Laudan, L. (1984), *Science and Values*, Berkeley, CA: University of California Press.

Medawar, P. (1990), *The Threat and Glory: Reflections on Science and Scientists*, Oxford, U.K.: Oxford University Press.

Spirkin, A. (1978), *Dialectical Materialism*.

Ziman, J. (1967), *Public Knowledge*, Cambridge, U.K.: Cambridge University Press.

Ziman, J. (1978), *Reliable Knowledge*, Cambridge, U.K.: Cambridge University Press.

---

Dept. of Zoology,  
B.B. College,  
Baiganbadia, Mayurbhanj.  
E-mail-annapurna\_dhal@yahoo.com

## PHILOSOPHY, SCIENCE AND METHODOLOGY

*Mr Buddhiram Mahakud*

Philosophy can have a universal definition: a bit of deep thinking, unwavering thinking, dispassionate thinking. Philosophers in every age are engaged in pondering over the century-old questions, such as who am I ? What do I know? What should I do? What shall I get? But no progress is registered so far in their pursuit. These types of questions are very primitive. After all the human being is the same amidst all change in names and forms, dreams and desires, vestures and values.

Moreover philosophy is verily relevant for shaping of human society and culture. Objective reality which the scientist is in search for is a myth. Prof. Dr. G.P. Das asserts that appropriate action ensues proper knowledge of human situation which is not the same as data input. David Hume said: "Be a philosopher, but amidst all your philosophy be still a man". According to Aurobindo, "the first Principle of true teaching is that nothing can be taught".

Philosophy in any way confines itself to rational reflection. Philosophy in India (darsana) is said to be trans intellectual, supra-rational and mystical awareness-be it self-realisation (atmanubhuti / Moksa) or the other. Philosophy is considered to be an abstract speculative enquiry, darshan is claimed to be a vision or aparoksanubhuti. According to Bradley, "Philosophy is concerned only with reality as such and science is limited to appearance. Philosophy is to confine itself to the study of the logic of sciences".



Philosophy is not a subject of practical utility. It is theoretical as it has no relevance with human affairs. Still it is a matter of fact that philosophical issues are not completely concerned with the society, human affairs and human living.

There are some philosophers who have emphasized one mechanistic interpretation of man for which some people did not hesitate to treat humans in the pattern of mechanics to achieve their targets. This mechanistic attitude has created a type of teaching that the animals like those of the machines can be utilized for the comfort of the human being. According to Hegel reason is not only a guide for the realization of absolute reality, in addition it also serves as a guide for social and political laws. "Reason rules the world and that things have happened reasonably in the world history".

Philosophy can not be considered as completely unconcerned with human living or the society though the variation in the degrees of influence can not be denied as compared to natural or social sciences. If it is true that philosophy has influenced human living time to time, then what has led people to say that philosophy contains the armchair thinking? It is probably due to their dissatisfaction regarding the methodology adopted by the philosophers. There is a craze for quantitative data-based methodology which is usually followed by natural scientist and also by the social scientist to some extent.

It is the reason to consider philosophy as having no reference with human affairs. There seems a need of throwing some light on the methodology adopted in philosophy.



Francis Bacon rejects the views in ancient period at both East and West. His views were in favour of scientific approach that emphasized on the method of Induction. But inductive method could not satisfy other philosophers who were aiming at absolutely certain knowledge and it was the limitation of the inductive method to provide absolutely certain knowledge.

Another significant method is linguistic or conceptual analysis. One may consider that philosophy is linguistic analysis. Here the subject is defined through its method. Important philosophers like Ryle, Russell, Austin, Ayer, Wittgenstein use this method very widely. Very often it is noted that a deep commitment to linguistic analysis resulted in non-commitment to the core issue of ontology and one may significantly raise a question as to its failure as a method of philosophy. The method of analysis may be a successful guide for determination of conceptual boundaries or the conceptual geography of concepts. Mere analysis can not satisfy those who want to know "reality as it is" or the those who consider metaphysical construct in describing the structure of experience or to those who consider the method of philosophy to be intuitive.

Methodology is adopted both in philosophy and science as well. Some philosophers are conservative to adopt any methodology in philosophy because philosophy starts where sciences come to an end. No philosophical knowledge is ever possible through any scientific method.

Philosophers tend to assume that (1) Time and Space are absolute real entities, and (2) that statement about



Energy is the statement of physics and according to some, it is the statement of physics and metaphysics and thus metaphysics is always an indispensable part of science. This thesis is well attested in the work of Koyre, E.A. Bruth, R. Harre, Marx Wartofsky and others.

Both science and philosophy undertake the task of reaching at truth. So each should proceed through a common understanding of interactions between two disciplines because philosophy in scientific perspective and science in philosophical are not contradictory. We get better understanding of the concept of 'Mass' only in relation to a specific scientific conceptual system. Philosophers have used some expressions like synthetic world view or the life-view which may be found to be meaningless expression in the sense that there can not be the final account of any synoptic world view.

---

*Dept. of Logic and Philosophy,  
Dhamnagar College, Bhadrak*

## SCIENTIFIC CONCEPT OF PHILOSOPHY

**Mr Basanta Kumar Mohanty**

The concepts like science, philosophy and religion seem to be disconnected. But from the stand point of humanism, they bear a close link among themselves. Both science and philosophy spring from the same root viz "love of knowledge" and therefore, have the same aim of systematic explanation of the world. It is said that philosophy cannot seek to know something other than what is known by the special sciences like physics, biology, astronomy etc. But the view that science is the proper object of knowledge is gradually losing ground.

The distinction between science and philosophy is that scientific knowledge is systematic, methodical, accurate and certain, whereas philosophic knowledge adds some value and destiny and significance to this. Thus a science systematizes and interprets common knowledge and philosophy culminates such scientific endeavour. Cunningham said, "in passing from the science to philosophy, we are not entering upon a wholly new and untouched territory, on the contrary, we are still dealing with the same environment."

As regard the subject-matter, science and philosophy are almost the same. Each particular science investigates into a definite portion of the world. It looks at the world of facts from a special angle of vision. Thus what is relevant in one special science becomes irrelevant in another. For example, from the standpoint of physics, colour is not



important when it studies the mass of the object, whereas colour is important for a botanist who studies the chlorophyll of a flower. Each science attends to a particular aspect of the thing. This attitude is necessary so far as the progress of knowledge is concerned. Therefore, though scientific view point is selective, its knowledge is not full and complete. Facts may be criss-cross from the field of one science to that of another. Our world is such that its various aspects cannot be separated. This character of science points to a more comprehensive knowledge of the world from all possible points of view and by combining the results of all the special sciences, we get a synthetic view of the world, which is called philosophy. Thus philosophy is not merely the aggregate of scientific knowledge. Philosophy is the critical reflection on sciences, which seeks to harmonize their conflicting results. Philosophy interprets the full meaning and implication of scientific achievements with a view of solving the riddle of the "world as a whole". It does not take the 'world piecemeal' as the special sciences do.

As regards the method, science and philosophy are different. This cannot be denied. Science gives report of the phenomenal world which is within the range of observation and experiment. Philosophy does not seriously adopt such empirical method. It seeks to co-ordinate the results so as to discover the ultimate principle which explains them all. The method of philosophy is both empirical and speculative. But sheer speculation is not enough. True philosophy must be built upon the solid rocks of scientific achievements.

From the view point of humanism, as mentioned in the beginning, philosophy is a pursuit of ultimate truth,

ultimate reality and ultimate value of life. Science can supply us the truth of the particular thing from a particular angle, but cannot give us the ultimate truth and thereby fulfill the ultimate purpose. Thus philosophy gives us a system of "one-world value" welded together by common plan or purpose created and continually expanded by sciences through investigations.

Philosophy and science are two distinct studies though they both give us the knowledge of the world. They are distinct in the sense that while science gives us the knowledge of "worldly thing" philosophy on the other hand gives us the knowledge of the "world of things". While science deals with particular parts and special problems of the world, philosophy is concerned with its most general problems and examines them more critically than any of the special sciences. This is what we may call the scientific concept of philosophy.

---

*Dept. of Philosophy,  
Saraswata Mahavidyalay,  
Kuamara, Mayurbhanj.*



## PHILOSOPHY, SCIENCE AND RELIGIOUS EXPERIENCE

**Mr Hrudananda Behera**

We all understand what we mean by experience. We experience many things in day-to-day life, which are sometimes pleasurable and sometimes painful. Our experiences are cognitive, affective and connative, respectively concerned with knowing, feeling and willing.

But religious experiences are very much different. It is therefore necessary to define religious experiences and circumscribe their dimension for a significant study.

Religious experience often covers moral experience. Moral experience is primarily concerned with conduct and obligation in interpersonal relationship, say relationship to parents, brothers, sisters and friends in life. The kind of moral life depicted in Ramayan, for example can relate to one's vocation in life. All this is rightly referred to varna dharma, ashram dharma and sadharan dharma. Morality can be extended to the animal as well as the plant world. However one may extend one's conduct in these relations without being a religious man. To be religious one must commune with some divinity in the form of worship, adoration and absorption. There are men who are honest in their professional works they look after their aged parents, and help their brothers, sisters and their neighbours and share some social welfare works. They accept no guru, read no scriptures, and worship no God. They are very such secular in their out look with no trace of religion.



It is true that moral life of integrity, chastity and disinterested service to others is essential to religious life but it does not cover the entire religious life.

Religious experiences pertain to rituals too. Every religion, primitive or advanced, theistic or non-theistic has a system of worship of its own. For example, Hindu religion has most complex system of ritualism. A Hindu offers flowers to his Istadev by chanting devotional song. But a Muslim condemns such ritualism of Idol worship.

The Muslims have a different form of worship which involves observance of a lot of physical postures. The Christians have different rituals in different Churches.

There is another sphere of religious experience which pertains to institutional order. It is about personal religious experience that we will say something. We will take instances of personal religious experience from different spheres of life at random. A person can be a Rishi leading a house-holder's life.

Very often a misconception ordinarily arises in our mind regarding the role of philosophy in the context of human development. This misconception is due to the perpetual misconception regarding "Philosophy" itself since it is impossible to provide an answer which is both concise and accurate to the question- "What is Philosophy"? It has happened for two reasons. First of all, the issues with which philosophers have engaged themselves, till today are varied in nature. Secondly, there are different opinions among philosophers regarding its features. This result in an atmosphere of misconception raised about "Philosophy". Philosophy is a quest for the truth of the Universe.



Science, as understood is based upon the causal relation among events. That is, it is engaged with 'what' and 'how' questions relating to the occurrence of natural events.

In order to solve these questions it discovers the laws operating behind the events, some of which are natural and others the inscrutable laws. One of such laws for example, is determinism and another is the principle of indeterminacy. Accordingly, the operation of the laws is clearly spelt out. Sometimes science starts theorizing on the basis of certain presumptions and sometimes it proceeds through the process of induction.

This effort of science is geared to the explanation of events in the universe. This is what science does.

Philosophy of course plays a different game, though at times scientific laws influence philosophical discussions directly or indirectly. For example, determinism-uncertainty-controversy in science influence causal necessity-freedom-controversy in philosophy. However the treatment of the controversy is different in every case. While science aims at the explanation of events and the direct impact of these principles on the behavior of atoms or other such phenomena, philosophy describes the ways these principle operate and the impact of their operation on human affairs in moral and social life. The obvious question before the philosopher is, whether determinism eliminates freedom altogether or whether the principle of uncertainty is absolutely opposed to causal necessity. Another point of difference is that when science is value-silent, philosopher of science studies scientific discoveries in a wider human perspective

and for which philosophy is not value-silent, though it may be value-neutral. The issue before a philosopher of science is, in what sense a scientific discovery is valuable or in what sense a discovery adversely affects the entire social fabric in general and the human movement in particular. This is how the function of a philosophy is second order one. Thus while a philosopher is concerned with these questions of science he is not a scientist but a philosopher. A philosopher does a second order analysis of the impact of certain scientific achievements.

**Books of Reference :**

1. P.K. Mohapatra and Panigrahi- Perceptive in Analysis Philosophy.
2. R.C. Pradhan – Philosophy of self understanding.
3. G. Galloway- The Philosophy of Religion.
4. Pitcher – The philosophy of Wittgenstein.
5. James. M – A study of Religion.

---

*Lecturer in Philosophy,  
Bonaigarh College, Bonaigarh.  
Mob.: 9938335639*



## THE HIDDEN DIMENSION OF SCIENCE AND PHILOSOPHY

**Mr Chandra Kumar Pattanayak**

There are many questions that stir the minds of intellectuals with regard to the origin and creation of this world as well as the origin of life in it. How in this world created? How life came into being? Etc. Philosophy began to grow with these questions. The philosophy of Veda, Upanishads, Puranas, and Bhagbat Gita in ancient India are the intellectual treatise in this regard. So the concepts of theism, pantheism, monotheism polytheism and henotheism have been developed in different forms of spiritualism and animism. Philosophy of Gautama Buddha began in discontentment with the sufferings and miseries of human life. Even in the West the philosophy, as Plato said, began with wonder. These wonders instigate human being to know the hidden truths of life and nature for which he has been trying to discover its underlying principles. These intellectual sentiments and curiosities prompt the human mind to philosophize. As a result we enriched ourselves with new knowledge, poetry, philosophy, science, art, and literature. But in modern period, the science emerged diverging from philosophy though it was initially one having no separate entity. The first incentive of philosophical enquiry in modern period started in west with Descartes who advocated Universal Doubt to have clear and distinct knowledge. Thus philosophy is due to the natural craving of the human mind which seeks to bring out the mysteries of this vast and manifold universe. This present topic is an attempt to find



out the hidden relation between philosophy and science by discussing their goal, method, attitude and problems and examining their inter relation in the context of humanism.

Dr. Paulsen said, "Every nation and every normally developed man has a philosophy. Philosophy is not an idle pursuit. Rather it is an academic and intellectual discipline which raises fundamental, primary and basic questions about everything including itself. Originally it stood for love of wisdom, pursuit of knowledge and search of truths. So it is now commonly used that philosophy means the attempt at a rational unification of knowledge, the endeavour to organize the truths furnished by different branches of study and thereby to arrive at rational explanation of universe as a whole. Generally it is the second order activities of a man who tries to explain the mystery around the world. It raises questions about mind, matter, reality, knowledge, value and beauty and so on. G.T. Patrick defines "Philosophy is the art of thinking things through, or the habit of trying thinking through". It is man's peculiar power and prerogative to think. Most of the real progress which the world has made in every field has come through the medium of reflective thinking, especially the thinking of great men of all times. When it becomes serious, sustained and logical and directed towards questions of life and values, it becomes philosophy. So philosophy deals with the universe as a whole and man's place in it. Wittgenstein said it is not a body of doctrines, but an activity. It deals within some specific cases of logical analysis of concepts and propositions. Though Philosophical answers are inconclusive for certain specific problems i.e. does God Exist? What is the meaning of life? And some



philosophical questions remain unanswered as to the cosmological questions regarding origin of universe; still these answers impel the scholars and scientists to overcome prejudices and dogmas.

But on the other hand as we are living in an atomic age, science is more in need of philosophy. A moral and spiritual problem and its solution require a philosophical insight and understating. What is Science than? As we know Science is a particular subject matter of a field of knowledge. It is a systematic enquiry into some particular department of the world which is an attempt to understand the nature and operation of the phenomenon of some special class. The scientists deal with the phenomenal aspect of things as they appear to human experience. In other words every science seeks to discover the laws governing the phenomena which constitute its province. Thus they are empirical in the sense that it gives us only experimental knowledge. Simply I can say science is a means to discover the underlying laws which govern the natural world using empirically generated data as well theories and models to explain that data. It may be pure science and applied science. The pure science is so-called material science and biological science, but applied science is known as technology. In case of applied science the truth discovered by science is applied for the enrichment and enhancement of human life.

Now there are questions. Are they related? Can philosophy develop by itself without support of science? Can science work without philosophy? Although it seems controversial but some people think that science can stand apart from philosophy. In real sense it is not true, for in certain



areas both agree with each other. Philosophy and Science are different with regard to problems, attitudes, methods and conclusions. Philosophy is reflective and critical in different issues but that of science is experimental which makes man realist and pragmatist. The scientist tries to arrive at more or less definite conclusions regarding particular issues; the philosopher on the other hand does not so much worry to arrive at certain definite conclusion as to continue his philosophical thinking while one finds unanimity of opinions regarding scientific issues among the scientists. The philosophers are found to disagree about almost everything. So Russell rightly said science is what we know and philosophy is what we do not know, because philosophy here is metaphysics and related to mysticism. The function of philosophy is logical clarification of thought by correct analysis of language. But to say science as clear, definite and philosophy as vague, indefinite is based on ignorance. The method they employ though are different yet they possess some common elements in search of knowledge of reality, truth and values. Philosophy includes philosophical science like, epistemology, axiology, and philosophy of science and logic which has intimate relations with positive sciences. Each supplies something that the other wants, in order to be complete. Philosophy depends on the sciences for its materials. It deals with ultimate principles pre-supposed in, and general results yielded by the sciences. In other words we can not fully understand the subject matter of any science without philosophizing. Prof. Weber says the sciences without philosophy, are an aggregate without unity, a body without soul. Philosophy without sciences is a soul without



a body, differing in nothing from poetry and its dreams. Prof. R. G. Collingwood has rightly said, "Any attack on metaphysics is an attack on the foundation of science". It is because the foundation of both the science and philosophy lies in experience for search of truths while science studies Becoming, philosophy studies Being. Being and Becoming are closely related to different science, search for truths in their particular field. Philosophy gathers these scattered researches and integrates them to present a total picture. So science can give us only means and not the solutions of fundamental problems of human being. Without the knowledge of our existence and our ends, science proves more fatal than useful. In absence of philosophy, a purely scientific foundation of culture may lead to annihilation of the human race. Gilbert Ryle says philosophy is relevant to science in two important ways viz; Internally it helps to articulate concepts, principles and methods to collect and collate its data and formulating theories to explain and predicate and externally it helps to determine its scope and limits and to short out internal quarrels and resolve dilemmas to one field of study and another.

So science and philosophy have always learned from each other. Philosophy draws fresh strength from scientific discoveries, materials for broad generalizations. Many general guiding ideas that lie at the foundation of modern science were first enunciated by the perceptive force of philosophical thought. The idea of atomic structure of things voiced by Democritus which is an example of many. Similarly the Cartesian reflex and the philosopher's proposition on the conservation of motion in the universe. On the



philosophical plane Spinoza gave grounds for the universal principle of determinism. The idea of the existence of molecules as complex particles consisting of atoms was developed in the works of French philosopher Pierre Gassendi. Truly scientific thought is philosophical to the core. So the connection between philosophy and science is mutual and characterized by their ever deepening interaction.

What is the method they employ for investigation? In ancient times as we have seen, nearly every notable scientist was at the same time a philosopher and every philosopher was to some extent a scientist. The connection between science and philosophy has endured for thousand years. At one time it was commonly held that philosophy was the science of science, their supreme ruler. As a whole, philosophy and sciences are equal partners assisting creative thought in its explorations to attain generalizing truth. Both philosophy and science equally use the methods of induction, deduction, analysis and synthesis. In both, the data are observed, hypothesis are formulated and then hypotheses are verified to find out truths. Besides the above methods philosophical thinking involves another method known as dialectic. That is thesis, antithesis and synthesis as Hegel the most idealist philosopher propounded. Who said the real is rational and rational is real. It may appear to some scientist that they are using the logical and methodological means strictly within the framework of their particular speciality. In reality every scientist whether he realizes or not, makes use of the overall results of the development of mankind's cognitive activity enshrined mainly in the philosophical categories. Knowledge of the course



and results of such historical development of cognition, of the philosophical view that have been held at various time by using various methods. So philosophy plays a tremendous integrating role in scientific knowledge, particularly in the present age when knowledge has formed an extremely ramified system.

Hence, I may conclude that the hidden aim of scientific activity is not only empirical and logical, it also has moral and socio-political implications. The goal behind philosophy and science as noted above is to explore the unknown field of knowledge and truth. Because knowledge arms man with the means to achieve his end. Although there are still many questions of our time that cannot be answered by the supreme science of physics, chemistry, cybernetics and biology still we are hopeful for solution by new trend of scientific philosophy. Science today is going to be more abstract as philosophy was earlier and philosophy more practical when value based. This is the hidden dimension as we feel in present scenario.

---

*Lecturer in Philosophy,  
Kaptipada College, Nuasahi,  
Mayurbhanj*

# SCIENCE OF MORALITY : UNDERSTANDING THE POSSIBILITIES

*Dr Satrugghna Behera*

The concern to human thinking and understanding is no more a speculative discourse now. It is characterized by 'a community of philosophers' as practical or applied philosophy<sup>1</sup> relating to human practical problems those come up from his practical living situations. Ethics as a human science has also a good concern to human beings as well as human values. As the human being himself aspires for a conducive and meaningful living, he feels that certain values are desirable and certain values not desirable according to his living conditions. His living conditions include both positive and negative situations. In this connection the ethicists cannot obviate undesirable values because they have a firm faith in the absolute infallibility of a value system. They have always lodged a frontal attack upon changing perspectives of a value system. But the recent criticisms against theoretical morality have come up mostly from the practical ethicists<sup>2</sup>. Practical ethics aims at the application of moral judgments on human actions arising out of the problems of his real social, political and moral life. The main objective of this paper is to highlight some strong criticisms against the theoretical ethics, and also find out different prospects and possibilities of what exactly a perspective of practical ethics aims at.

## **1. Nature of Moral Science (Theoretical Ethics)**

Ethics to me, is an attempt to understand and systematically explain a value system. This is done in description of the



nature of moral science. The description of the nature of moral science reflects on moral content using the structure of normative philosophy, relying on basic principles to make choice between "right" and "wrong". At every age the individual is judged by how he conforms to the standards of the group. These judgments lead society to attribute him as 'moral' or 'immoral' depending on the context to which he conforms. The expectations of the social group are expressed according to rules, customs and traditions of the social group. However, to describe or to interpret these social customs or expectations or to tell about what human beings do is not the task of moral thinkers. Moral thinkers serve different works: first they have to answer the practical questions and, secondly, they have to evaluate human actions and behaviours as right or good and wrong or bad according to existent moral standards or values.

So many moral theories follow from this evaluating position. Two major theories are characterized as *teleological theory* and *deontological theory*. According to teleological theory the definition of the notion of duty, justification and obligation are given in terms of goodness and end or they are dependant on such concepts of goodness and end in another sense. According to deontological theory obligation is not explained in such manner. Moral theory starting from Plato to next trend of morality is to be treated as teleological whereas intuitionistic moral theories are always characterized as deontological<sup>3</sup>. With reference to these theoretical stances we also observe traditional moral theories like hedonism, rigorism, altruism, perfectionism, utilitarianism, etc. Moreover, we also see meta-ethical



theories like ethical naturalism, non-naturalism, ethical non-cognitivism etc. Hedonism, for example, explains the ethical philosophy of that which considers pleasure as the determinant factor for evaluating something intrinsically good or worthfull, and all human actions satisfying this condition are treated as morally right. Similarly, rigorism as apposed to hedonism claims the pain-infliction in evaluating human actions. Perfectionism propounds the self-realisation as the fundamental moral standard. According to the perfectionist view, the only thing that is worthwhile for its own sake is a person's development of his best capacities as a human being. Besides, ethical egoism tells us that the goal of a person's actions should be his own self-interest. As distinct from ethical egoism, utilitarianism awares us that the kind of world we find to be most valuable is the world containing the maximum pleasure or happiness. It explains the dictum: "Act so as to bring about the greatest good possible". This implies that not just your own good, but the good of everyone affected by the action, is what you should try to produce. Far from these ethical theories, meta-ethical theories are developed with a purpose to explain the logical boundary and implication of moral concepts and expressions. These are analytic discourse that determine the meaningfulness and meaninglessness of moral language. The following features make a moral stance theoretical.

- (a) For any stance which is to be called theoretical morality, there must be a definite moral standard. Hedonism, as we just put above, explains the notion of pleasure, rigorism emphasizes on pain, perfectionism exalts self-realisation and utilitarianism upholds the doctrine of benefit for all. Here,



the moral standard exposes the field of moral study as definite as well as objectives. But this need not always be the case i.e. the field of study may be conceptual and not perceptual. If this happens, some subjective elements or other get mixed up in our studies. The more concrete and definite our moral object of study the more ethically justifiable as it is and the more unanimous and universal its findings are likely to be.

(b) The motive behind every ethical pursuit is to understand the moral standard in all possible details. We try to establish interrelationship in its parts and also attempt to establish relationship of the given moral objects with some other socio-human objects. In this connection our observation would not be final. We may also try to corroborate our findings with the findings of various ethical thinkers both retrospective and prospective. The result is a general uplift in moral awareness. Ethics attempts not only to establish new values but it also tries to find out significance of these values in governing human actions. For human actions are paradigms in the field of ethical studies. Gaining more moral awareness brings in numerous ethical commitments and obligations. But they are its side effects. The real motive behind every moral study is to gain knowledge of the moral standard in all its entirety. Man has an innate tendency to lead a moral life and morality is the reflection of that tendency. However, human tendency is unpredictable and no moral theory, thus, is a final one.

The moral aim to understand the values is realized with the help of ethical method which has mainly three constituents : (i) action (ii) intention and (iii) obligation.



(i) Actions are primarily objects of moral study. Actions are considered as moral actions, they are neither just bodily movement nor reflexive actions. Rather these moral actions are willingly performed by any moral agent. Moral thinkers who attempt to make out and interpret the nature of action from the standpoint of ethics, jurisprudence and social sciences select their paradigms in one way<sup>4</sup>. Though by action is, often, meant only such of our doings which can be the objects of moral evaluation, but sometimes anythings we do without caring whether or not it can be morally evaluated. Ethics deals only with the actions in the former sense. That is, the voluntary actions ensure the moral foundation and truthfulness of our moral judgments in an evaluative system.

(ii) Another factor that plays a significant role in ethical procedure is intention or volition. Actions done without intention are called non-moral actions or just as bodily movements. An action to be the object of moral evaluation, must be done with intention. Prof. Rajendra Prasad evidentially points out: "Every action is different from every other action. Two actions remain different even if the bodily movements involved are different, if the intentions to fulfil by them are different. In fact, it is the intention of the action which determines the identity of an action"<sup>5</sup>. Intentions are vital and must be taken into account for passing a moral judgement on human actions. Because 'reference to intention is also necessary in delimiting the boundary of an action'<sup>6</sup>. Though it is naturally difficult to know intention of a moral agent, "intentions or purposes of actions are known from the contexts in which actions are done. It is not



necessary to have any special access into the mind of the actor. Every action is done in a certain context, and the context very often provides sufficient clues as to the intention behind the action"<sup>7</sup>. Ascertainment of moral worth is dependent on intention-explanation as it takes account of the whole context in which the action is done.

(iii) Furthermore, in theoretical ethics obligation or obligatoriness receives good credit in justifying morality. Moral obligation as related to inclination serves as a moving force in performing moral actions. Obligation may be moral or non-moral, positive or negative, but without obligation nobody can be inclined to do something. So, as Prof. Rajendra Prasad aptly observes, "the acknowledgement of an obligation to do something involves necessarily some inclinations to do it and also that he is inclined to do what his acknowledgement of the obligation requires him to do"<sup>8</sup>. Obligation guarantees not only that action is bound to be moral or non-moral, but also that it makes clear about what is morally justified to do an action. Obviously then obligatory actions are bound to be the objects of moral judgment. Theoretical ethics accentuates this fact and develops different considerations in the light of already established moral standards or prevailing ones.

Theoretical ethics, thus, attempts to answer certain theoretical moral issues related to the nature of human actions, moral awareness and moral judgments. Although the need of moral awareness is an innate tendency and it has been functioning since back of the history of moral system, yet new moral theories as such are formed or formulated in the last few decades. But even this much of



moral awareness has changed man's mode of thinking and his way of living tremendously. Man becomes self-confident and optimistic regarding his ability to adhere to moral values which are suited to his ambitions for leading a good moral life. New moral standards begin to be applied from every perspective. Rationalism, humanism, cosmopolitanism, value-based scientism etc. become the dominant moral tones in the world. The unethical is condemned as meaningless or non-sense. Conservatism and egoism, since they were unethical become meaningless. What is not amenable to universal ethical treatment is condemned as trash. It is against such arrogance of ethical revolution that the pseudo-ethicists and the critics of theoretical ethics direct their attack. We may now turn to see their combined criticism.

## **2. Criticism of Theoretical Ethics :**

The following are some of the main criticism of theoretical ethics :

(a) In traditional view of ethics ethical thinkers are only interested in putting a set of prohibitions. These prohibitions are very commonly found in Christian ethics. Peter Singer points out that in such ethical discourse ethical thinkers regard morality 'as a system of nasty puritanical prohibitions, mainly designed to stop people having fun'. In this system of morality, old items are very often replaced by some new prohibitions. But the possibility of replacement is always minimal in relation to practical problems of human life. Hence, all ethical awareness about this dogmatism may be condemned as unreliable by the critics of theoretical ethics.



(b) Secondly, in a theoretical perspective the whole ethical pursuit is based upon an ideal system which seems not to be relevant in practice. Mere inculcation of a value system or prescriptivism without any application becomes redundant. The reason is very simple. As saying only moral judgments like 'This ought to do', 'You should do this' or 'This ought not to be done', makes no sense except their application into our practical situations. Moreover, accepting ethics as an ideal system involves certain theoretical defects, as the whole point of ethical judgment is to guide practice and following moral principles blindly may not result in moral actions. Moral advice or imperative breeds no fruit if it is not obeyed by any moral agent in practice.

(c) Peter Singer raises the question on rationality of theoretical ethics as an ideal system. According to him "those who hold the view of ethics as a mere ideal system should also believe that ethics is not suited to life's complexities. In unusual situations, simple rules conflict; and even when they do not, following a rule can lead to disaster"<sup>9</sup>. To this cause Prof. P.R. Bhatt also observes that when we are in need of a rational ethics, the theoretical problem occurs from explaining and evaluating a rational action. For "acting morally is more difficult than being rational"<sup>10</sup>. Singer also observes that 'the deontologists – those who think that ethics is a system of rules can rescue their position by finding more complicated and more specific rules that do not conflict with each other, or by ranking the rules in some hierarchical structure to resolve conflicts between them'<sup>11</sup>. Moreover, Singer indicated another point that threatens the theoretical ethics. According to him, "there is a long-standing approach



to ethics that is quite untouched by the complexities that make simple rules difficult to apply. This is the consequentialist view. Consequentialists start not with moral rules but with goals. "They assess actions by the extent to which they further these goals"<sup>12</sup>. This consequentialist view as it is popularly known as utilitarianism, Singer says, "can never properly be accused of a lack of realism, or of a rigid adherence to ideals in defiance of practical experience"<sup>13</sup>.

(d) In traditional perspective of morality, it is a very common claim that ethics would not be possible without religion. Ethical principles and prescriptions follow from religions and religious scriptures. Justification and intelligibility of ethical principles depend upon religions, and religions provide motivations to the people to act morally or to lead a moral life. This is, to most practical ethicists, a dogmatic view of ethics. Prof. Rajendra Prasad and Peter Singer, for example, effectively repudiate this dogmatic claim and suggest that ethics is entirely independent of religion. Neither God nor any religion provides motivation or acts as ground for justification of morality<sup>14</sup>. There are groups of secular minded people such as atheists, rationalists, humanists who argue against a theistic approach to morality. Peter Singer categorically says: "It is enough to say that our everyday observation of our fellow human beings clearly shows that ethical behavior does not require belief in heaven and hell"<sup>15</sup>.

(e) Theoretical ethics exalts both ethical relativism and ethical subjectivism. Ethical consequentialists believe in the thesis of ethical relativism. According to them, as Peter Singer observes, "actions that are right in one situation because of their good consequences may be wrong in another situation



because of their bad consequences"<sup>15</sup>. But Singer claims that "this is only a superficial form of relativism" and "the more fundamental form of relativism" became popular in the nineteenth century when data on the moral beliefs and practices of far-flung societies began pouring in"<sup>17</sup>. Marxist ethical thinkers uphold this form of relativism according to which "the morality of a society is relative to its dominant economic class, and thus indirectly relative to its economic basis"<sup>18</sup>. The problem with ethical relativism is, as Peter Singer very aptly points out, "it has most implausible consequences"<sup>19</sup>. According to him, "if our society disapproves of slavery, while another society approves of it, we have no basis to choose between these conflict views"<sup>20</sup>.

Ethical subjectivism presents an odd situation in which the objective claim of moral standards proves to be meaningless. An ethical thinker may go beyond the predicaments of relativism to ascertain objective basis for why should we be moral in particular and the value system in general. But what should one do in a moral situation? The answer would be just as he approves or disapproves ethical judgments according to his own attitudes as a person of society. This situation, indeed, makes the moral context more greivous and problematic. The people who are trapped by this "are faced with an aggravated form of one of the difficulties of relativism: the inability to account for ethical disagreement"<sup>21</sup>, according to Peter Singer. Singer further adds: "What was true for the relativist of disagreement between people from different societies in for the subjectivist true of disagreement between any two people. I say cruelty to animals is wrong. Someone else says it is not wrong. If



this means that I disapprove of cruelty to animals and someone else does not, both statements may be true and so there is nothing to argue about"<sup>22</sup>.

In theoretical ethics we also see that ethical thinkers like C.L. Stevenson<sup>23</sup>, R.M. Hare<sup>24</sup>, etc. develop ethical theories to overcome the above difficulties. But, they are really caught in another form of ethical subjectivism distinguished from crude form of subjectivism that sees ethical judgments as descriptions of the speaker's attitudes<sup>25</sup>. As Singer remarks: "So what has to be shown to put practical ethics on a sound basis is that ethical reasoning is possible.... From a theoretical point of view it is unsatisfactory because we might find ourselves reasoning about ethics without really understanding how this can happen and from a practical point of view it is unsatisfactory because our reasoning is more likely to go astray if we lack a grasp of its foundations"<sup>26</sup>.

Hence, due to these limitations critics feel that theoretical ethics has no longer remained faithful to mankind for solving all the moral issues that occur in the modern life situations. Theoretical ethics becomes fashion of creating ideologies over ideologies without committing to any practical application of such ideologies for the better consequences that we intend to reap. And if we as conscious human beings feel to inculcate these ideologies for any practical purpose(s), it would be the matter of providing justifications on the basis of universal beneficiary motives. It is further emphasized by critics that theoretical ethics has created more problems than it has solved. The critics feel that people are no more interested to go with mere moral judgments or



prescriptions. Rather people are more interested to apply these moral standards what would be objectively sufficient to solve some practical problems. For example, if the moral prescription 'Don't kill' or 'Act according to interest of all' is not used to save mankind or wild animals, practically it has no value to human society. So, in fact, at present day social conditions, we are in need of a practical ethics.

### **3. Prospects of Moral Practice (Practical Ethics)**

The foremost fact on which any prospect of practical ethics emphasizes is human life, quality of life, and its sustainability. So, to practical ethicist, the general questions are: how ought a man to live? What sort of life is best? Has life any meaning? These questions invite many subsidiary questions which are still to be answered by ethicists from the universal aspect of ethics. Since we are now living in a complex order of society, we encounter many ethical ideals like individual rights, the sanctity of life, justice, purity, peace, animal rights, value of biodiversity, etc. To these ideals, certain moral questions seem difficult to answer, and, hence, the controversies arise on the issues like abortion, non-killing, mercy-killing, animal welfarism, trade morality, etc. These issues are about the very meanings of the concepts that we employ in our deliberations about moral and social problems.

For example, on the concept of abortion some people claim that a fetus is a person, and thus is entitled to all the protections that are due to a person. At the same situation, others claim that a fetus, before it is born, is not a person at all but only a part of his mother's body or 'a tumor



in the stomach (as one group of French women put it). To resolve this debate practically we need to ask what a person is. Similarly, we all think that death is a bad thing. That is partly why we think murder and war are bad. But what is death? Moreover, the very concepts of killing and not-killing are problematic. When we say that killing something is wrong or as some say killing is right, are they merely expressing their personal feelings about it, and nothing more? Or is there some objective moral structure to the world, independent of our feelings? These questions are practical and concrete moral questions about the value of life and death, and about the proper relations between living creatures and social policies. And many moral thinkers, philosophers, intellectuals, religious people, sociologists, psychologists, anthropologists, social reformers etc. approach these questions from several aspects.

The fact is that, if human lives are precious, when do they become precious? Some may answer like 'it happens at the time of conception'. If so, aborting a pregnancy is no less serious than killing a child. And it bears the most claim of justification with reference to human rights, rights of women, doctor's duty according to the laws of the state. We could no more abort a pregnancy for reason of the mother's convenience than we could kill children for their mother's convenience. Abortion on demand is a murder on demand. Others say that the fetus's life becomes precious only at birth, or when it becomes a baby. This justifies a much more permissive attitude on abortion or not also. This point poses a greivous problem for us, so far as the medical ethics is concerned<sup>27</sup>.



Similarly, when there is a case of deliberate killing to another person, opinions are sharply divided about the ethics of killing one-self. That is, are suicide and euthanasia ever permissible, and if so, how and when? Different conceptions about suicide<sup>28</sup> and euthanasia<sup>29</sup> are possible. The moral judgment we make about it depends on what conception we have. Of course, other difficult moral and social problems are created by recent progress in medical science and practice. These problems attract many practical ethicists and make them more serious for providing plausible moral considerations according to human interests and value of survival. Assumed that, if we feel life of human beings is vital important, euthanasia or mercy-killing would raise some crucial moral issues from utilitarian grounds and oath of medical ethics.

Moreover, so far as the concept of life is concerned, would we not equally morally responsible to save the life of animals? Do animals have equal rights to live as of human beings? Is killing animals morally justified? All these questions are very significant and bear some practical implications with regard to considerations of environmental ethics<sup>30</sup> as well as intrinsic value of nature. Environmental ethics emphasizes on our moral responsibility towards the total biodiversity which has a significant role for ecological harmony and for our peaceful living. So, environmental ethics as a subject of applied ethics explores the moral basis of environmental awareness and responsibility. What is moral basis? How does it prevail? How does it satisfy interests of human beings as well as interests of non-human world? Ecologists, environmental ethicists, Bio-scientists and alike



have attempted to answer these questions from different point of views. To this concern, environmental anthropocentrism, anima-centrism, ecocentrism, environmental synergism<sup>31</sup>, etc. are of some fundamental approaches which need intensive study for establishing a universal moral prospect of relations between environment and human values<sup>32</sup>.

True to say, the solution of the practical problems of our environmental crisis lies in practice itself. But practice alone will be blind without first a change in our conceptual environment which is also a part of Nature<sup>33</sup>. Our job is "to teach fellowmen to love Nature first" with a hope of avoiding ecological disaster. Deep ecological advancement in morality which regulates conduct between humans and the environment is what Aldo Leopold calls the Land Ethic<sup>34</sup>. What follows, as Singer observes, 'behind many attempts to derive values from ecological ethics at this level lies some form of holism –some sense that the species or ecosystem is not just a collection of individuals, but really an entity in its own right. This holism is made explicit in Lawrence Johnson's *A Morally Deep World*'<sup>35</sup>. This involves a radical shift in how humans perceive themselves in relation to the environment. However, our anti-ecological bias is best seen in the education we all receive in one shape or another. We are brought up to regard man as the sole actor in history, in relative insulation from the influences of environment. History is presented as primarily the social record of man, with only incidental reference to environment. The bifurcation implicit in this goes a long way to account for the perpetuation of the ecological crisis of our time.



The aspect of human progress in a civilized society constitutes the significant prospect for practical ethics. That is the demand for equal rights for women, although it is not new, has taken a dramatic new form in recent years. No one can deny that women are victims of many injustices. Though they have only been allowed to vote in the elections of certain democratic states, they are still not full participants in the political processes. They are denied jobs for which they are clearly qualified in spite of the act of the civil rights and reservation policy proclaimed for interest of them. Even when they do get jobs they are not paid as much as men for the same kind work. In recent year, the analysis of women's plight and miseries has been extended beyond the level of those obvious inequalities. The difficulty, it is now argued, lies at the very heart of our conception of gender identity and equality. The very conceptions of 'masculine' and 'feminine' assign men to certain roles a distinguished from the assignments to women. Until we rid our thinking of gender difference or inequality (not in physical sense), we will never be free to live and have justice according to our choice. This applies to man as well as woman. It is worthstating that Thomas Nagel<sup>36</sup> analyses the nature of sexual relations and Bertrand Russell<sup>37</sup> finds several problems with the traditional concept of marriage. Simone de Beauvoir<sup>38</sup> offers an analysis of the present situation and John Plamenatz<sup>39</sup> explores the philosophical concept of equality that underlies the whole discussion about sex, marriage and women's rights.

By virtue of social being, man is the ethical animal in three senses. First, it is man who makes moral judgments.



Second, it is man who is morally responsible for his actions. Third, it is the welfare of man that has the highest priority in our moral codes and practice. Clearly, we need to know a lot about what sort of creature a man is, if we are to understand the nature of morality. Our contemporary understanding of 'what men are' has been shaped in large measure by the theory of evolution, the human animal has developed slowly, through the ages, to what he is today. Now, however, because of our newly acquired knowledge of eugencies, it appears possible, through the manipulation of genes, to deliberately alter the nature of the species, even we can be able to create new forms through cloning mechanism. But should we? At any rate Catherine Roberts holds that "positive eugenics as advocated by twentieth century scientists would do mankind more harm than good"<sup>40</sup>. Moreover, A.H. Maslow<sup>41</sup> suggests, the best sort of life for man is just that which does fulfill his basic needs and interests, given his development upto the present time. These views create certain stimulations in the minds of the practical ethicists. Consequently, they attempt to provide better possibilities for understanding and solving the existing human problems with due respect to scientific progress<sup>42</sup>.

#### **4. Conclusion :**

To conclude, it can be said that human life as the central focus of the practical ethics, is both social and natural. Hence, it is taken within a framework of moral values along with limitations. Much of the irksomeness voiced against the idea of limitations on the individual has come because so many limitations have reflected the imposition of arbitrary human design, and have not been based on sound socio-



moral limitations. The picture of a human society based on practically moral sanctions is not one in which freedom is reduced. On the contrary it represents the only basis on which genuine development of the individual to the fullest is possible. It is not surprising to find that we have practical issues like the treatment of ethnic minorities, rights of women, killing of animals for food and research, the preservation of the natural environment, abortion, euthanasia, suicide, morality of cloning, morality in management and commerce and development of secular attitudes in modern civilized societies which on the whole naturally ignore theoretical controls, and which in practice are committed to perfect application of prevailing moral values and norms in wide prospect of practical ethics. To that extent since we are ourselves part of the moral circle, our interest in all attempts is to employ values as means of noble ends, for the accumulation of the results in concrete social situations. Practical ethics is moved with this sole objective, so far as we have a positive look at it in spite of our all changing attitudes and limitations. Moreover, we should not leave the basic idea 'that theoretical ethics and practical ethics are not so different from each other that the former can dispense with the latter or vice-versa. Rather in a moral circle both of them work and move together to resolve the problems that we come across in our everyday life. The difference between the two is only in application, but not in content. This difference leads us to be involved in a moral circle for gathering vast moral awareness which has wholesome effects on human life, development and sustainability.



### Notes and References

1. See, for example, Jacques P. Thiroux, *Philosophy: Theory and Practice*, (New York: Macmillan Publishing Company, 1985).
2. See Peter Singer, *Practical Ethics*, (London: Cambridge University Press, 1979), and see also Michael Banner, *Christian Ethics and Contemporary Moral Problems*, (London: Duke University Press, 1999).
3. P.H. Nowell Smith, *Ethics*, Chapt. 10
4. Joel Feinberg, "Action and Responsibility" in *Doing and Deserving*, (Princeton, N.J., 1974), p.149.
5. Rajendra Prasad, "Intention and Action" in *Karma, Causation and Retributive Morality*, (New Delhi: ICPR Publications, 1989), p.111.
6. *Ibid.*, p.112.
7. *Ibid.*
8. *Ibid.*, p.85.
9. Peter Singer, *Practical Ethics*, p.2.
10. P.R. Bhatt, "Moral Principles" in *Existence and Ethics*, A. Raghuramraju (Ed.), (New Delhi: D.K. Print World (P) Ltd., 2000), pp. 231-250.
11. Peter Singer, *Practical Ethics*, p.3.
12. *Ibid.*
13. *Ibid.*
14. See Rajendra Prasad, "God and Morality: A Conceptual Exploration" in *Causation and Retributive Morality*, pp. 142-156, and see also Peter Singer, *Practical Ethics*, pp. 3-4.
15. Peter Singer, *Practical Ethics*, p.4.
16. *Ibid.*
17. *Ibid.*, p.5.



18. Ibid.
19. Ibid., p.6.
20. Ibid.
21. Ibid., p.7.
22. Ibid.
23. C.L. Stevenson claims that ethical judgements express attitudes than describe them. For him, we disagree about ethics because we attempt to bring our listeners to a similar attitude by expressing our own attitude.
24. According to R.M Hare ethical judgements are prescriptions and thus more closely related to commands than to statement of fact. On this view we disagree because we care about what people do. See R.M. Hare, *Moral Thinking*, (Oxford: OUP, 1981), p.4.
25. Peter Singer, *Practical Ethics*, p.7.
26. Ibid., p.8.
27. See Roger Wertheimer, "Understanding the Abortion Argument" in *Philosophy and Public Affairs*, (Princeton: Princeton University Press, 1971), pp. 67-95 and S. Behera, " Ethical Problems in Medicine Practice: An Indian Perspective" in *Philosophy of Language and Ethics*, (Anu Books, Meerut, 2000), pp. 131-138.
28. See R.F. Holland, "Suicide" in *Talk of God*, G.N.A. Vessey (Ed), (Canada: St. Martin's Press, 1967), pp. 72-85.
29. See L. Beachamp and A. Davidson, "The Definition of Euthanasia" in *Journal of Medicine and Philosophy*, Sept. Issue, (1979).
30. See Rick O'Neil, "Animal Liberation Versus Environmentalism: The Care Solution" in *Environmental Ethics*, Vol. 22, No. 2, (2000), pp. 183-190 and see also Eric More's "The Unequal Case for Animal Rights" in *Environmental Ethics*, Vol. 14, No. 3 (2002), pp. 295-312.



31. See Peter S. Wenz, "Environmental Synergism" in *Environmental Ethics*, Vol. 24, No. 4 (2002), pp.389-408.
32. See Clare Palmer, *Environmental Ethics and Process Thinking*, (Oxford: Clarendon Press, 1998).
33. John Passmore explains this point in his *Man's Responsibility for Nature*, London: Duckworth, 1974).
34. See Peter Singer, *Practical Ethics*, p.280. According to Singer, Leopold summed up the basis of his new land ethic thus: 'A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong, when it tends otherwise.'
35. Ibid., p.282.
36. Thomas Nagel "Sexual Relations" in *The Journal of Philosophy*, Vol. 76, No. 1, (1969), pp. 8-16.
37. Bertand Russell, "Problems with Marriage" in *Marriage and Morals* (Liveright, 1929), pp. 130-144.
38. Simone de Beauvoir, *The Second Sex*, (Alfred A. Knopf., Inc, 1952), pp. 682-715.
39. John Plamenatz, "Equality of Opportunity: in *Aspects of Human Equalit*, Lyman Bryson (Ed), (Harper & Row Publishers Inc., 1957), pp.79-107.
40. Catherine Roberts, *The Scientific Conscience* (New York: George Braziller, Inc., 1967), pp. 19-32.
41. A.H. Maslow, "The Good Life of the Self-Actualising Person" in *The Humanist*, July-August, (1967), pp. 127-129.
42. R. Winkler and J.R. Combos (Eds), *Applied Ethics: A Reader*, (Cambridge, Mass: Blackwell, 1993). Introduction.

Principal, Saraswati Vidya Mandir  
Nalco Township, Damanjodi, Koraput



## SCIENCE AND PHILOSOPHY

*Dr Surendra Nath Raul*

Science as everybody knows is a systematic study of nature. And this systematic study comes by observation of nature and logical correlation of observed things. As such science could be better described as the discovery of truth, a truth free from any bias or prejudice. In such a situation, it is observation which has to be accepted rather than anything else. Science is where observation is. There can be no science without observation.

Sitting in the auditorium of National Planetarium, one would appreciate the point that systematic scientific observations began from the time of the Greek Astronomer, Galileo-in the modern age in the west. Prior to that, the authority of highly placed person was more important than observation.

So, we can say that simply logical speculation does not constitute science-unless it is corroborated by observation. Nowadays scientific equipments are just to make our observations more accurate. The equipments only aid our senses. From philosophical point of view, this spirit was followed but our ancient scholars went one step further and they found curiosity is more important than observation. Simply observation without curiosity to find the hidden truth does not give knowledge.

Everybody had seen things falling, but it was Newton's curiosity towards the falling apple which gave us the law of gravitation. That is why our ancient *Brahmasutra* begins with



(*Athātho Brahma Jijnāsā*) meaning that a genuine desire for the knowledge of Brahman must arise in one before one begins to study Vedānta.

In fact, it will not be out of place to say that 'curiosity is the father of knowledge'. Hence it should be the first lesson both for science and philosophy that whenever curiosity arises in anybody's mind, one should make every effort to get it reasonably satisfied. It is because of the curiosity both the philosophy and science has given new ideas and development respectively to the present civilization. Because curiosity has the power to develop mediocre intelligence to a higher intelligence and then assist one to get what the he/she is seeking.

Though scientific observation and curiosity is objective and philosophical curiosity is subjective, yet for the humanity both kinds of observations are complementary. In other words, scientific observation is for the progress of the society. Philosophical observation is for instilling bliss to the progress of society. So both science and philosophy can work jointly for the welfare of the mankind.

Observation, Experiment, classification, explanation, analysis, synthesis, deduction and induction are the methods of science. It explains particular facts by ascertaining their causes and formulating laws or uniformities of behavior or by hypotheses. It is important to note that the method of philosophy is also not different from science. Like science the method of philosophy is rational reflection and framing hypotheses. So philosophy and science are not different. We cannot spin out the web of philosophy by sheer



speculation. It must be grounded upon sciences. Philosophy without science is inadequate. Science, too are incomplete without Philosophy. "The sciences without philosophy are an aggregate without unity, a body without soul: Philosophy without the sciences is a soul without body, different is nothing from poetry and its dreams." (Weber, History of philosophy, Page-22)

Many philosophers and scientists accept both philosophy and science are the two pillars of knowledge. Comte, one of the philosophers is of the view that "philosophy is the science of sciences," and Paulsen, another great Philosopher is of the remark that "Philosophy is the sum total of all scientific knowledge". Logical positivists categorically regard philosophy as the sum total of sciences and reject the possibility of metaphysics. For them, metaphysical knowledge is meaningless. Of course, it is a difficult proposition to reject metaphysics for which logical positivists are also not free from criticism. However, our task is to see that the co-existence of philosophy and science are logically possible.

According to some scientists, science can be looked upon from different points of view. Such as, science as an extra science, science as a descriptive science, science as a product, science as a process and so on. Physics and Chemistry are stated as the exact sciences due to the possibility of exact measurements and mathematical analysis, Taxonomy, Botany and Zoology have been stated as descriptive sciences. Again as product, science is an organized systematized body of knowledge about the physical world. It is the record, what has been discovered



about order in the Universe. As a process, science is exploring, searching, discovering and experimenting the vast variety of thought process for acquiring knowledge. The Progress in physical sciences has made the scientists to forget about the internal nature of things i.e. the self expect in particular. For them, knowledge gained by the physical sciences is the only knowledge and that any knowledge outside the field of physical sciences is not capable of being called scientific.

But we think, every systematic knowledge can be called scientific. Not only this, all activity of mind has to be scientific if it is to lead to some authentic knowledge. Thus, the systematic knowledge outside the field of physical sciences or the systematic knowledge beyond the reach of the physical sciences is scientific. In this sense, the religious knowledge which is systematic and organized in character is also scientific.

If we observed on human rationality, we find that the rationality is of two types, viz, religious rationality and scientific rationality. The religious statements are therefore knowledge statement. The statement cannot be stated to be emotive only. If anyone questions the rationality of religious statements, he should witness the life of a saint. The life of a saint is full of rationality. He understands the real meanings of religious statement, which are rational in character and capable of being called knowledge statement.

Of course, the controversy between science and religion is historical. Many thinkers hold the view that science and religion cannot go together. But it is a fact that science



can save man in solving the empirical problems. But science has its own limitations. Why science strives for the improvement of man, physical nature, religion strives to improve his inner self, has spiritual nature. Both are in different realms.

But Radhakrishnan, emphasizes the need for a creative synthesis of science and religion for a better world. Science can conflict only with a dogmatic religion. But a truly creative religion a religion of insight cannot conflict with the spirit of science. Both have the same goal – the search for the truth, even if they approach in different ways. Radhakrishnan says that both can go together and co-exist for a better world.

It is not out of place of discuss the view on religion by Albert Einstein, one of the greatest scientists of all time, who thinks otherwise. He describes religion to be of three types: religion of fear, religion of morality and religion of cosmic religious feeling. Religion of fear is of primitive type, borne out of ignorance. As civilization developed, religion of morality is necessary for the proper functions of society. The next stage of religious development is culminated in the religion of cosmic religious feeling. This according to Einstein is the highest form of religion. This form deals with the experience of the Universe as a single whole; that there is something behind if that unites it. Einstein does not accept a personal God, but he is not atheist as he categorically states that he accepts Spinozian God. The most serious scientists are religious in this sense. It is the feeling that drives sciences. It is the feelings that keep science pure. Science can provide us with answers to the questions of



'how'. Religion provides us with the answer to all the questions of 'why'. In this sense, it is easy to see how science and religion are complementary to each other than at odds with one another.

What follows from the above exposition, there is, science and religion are not contradictory in nature, their goal or the ultimate aim being one, the betterment of man. The synthesis of both science and religion is must for the betterment for human welfare. Science alone is not enough, not is religion sufficient by itself. If science is taken out from the society that remains sheer primitivism and if religion is taken away from the society, what remains is simple barbarism. Where science can create a healthy external environment for man, religion can create healthy internal environment for him. Thus man can hope to achieve his total fulfillment.

---

*Reader in Philosophy,  
U.N. College, Nalagaja,  
Mayurbhanj.*

*Mob: 09437404750*



## **SCIENCE AND PHILOSOPHY : CO-OPERATIVE ENTERPRISES**

**Dr Krutibas Sahu**

Both science and philosophy spring from the same root, viz. love of knowledge. Of course, it doesn't logically follow that two words coming from the same root do have similar meaning. But in most cases they do. Therefore, it is not a fashionable task to consider both science and philosophy as two distinct and different enterprises. The purpose of this paper is to show that science and philosophy can't be placed under two independent and different water-tight compartments. The study of one implies the other. I shall take an attempt to establish it from two facts : i) the fact of specialization and ii) the fact of generalization. In the process of learning, science becomes the specialized form of philosophy and philosophy, the generalized form of science. Moreover, I shall attempt to show that the dictum that, when science ends philosophy begins, has a very strong logic in this context. In doing so, two other important assumptions are bound to enter into this discourse : i) that philosophy is an organized system of all man's knowledge of the world, that is, a vision of world's unity, and that ii) philosophy is the process of analysis of concepts.

The common view of philosophy is that it is a search for understanding the world as a whole. For such a vision of world's unity, philosophy has got subdivisions in it. There are philosophies of nature, of ethics, of politics, of logic, of heavenly bodies, and indeed of medicine. Moreover, a single man, if he had sufficient opportunity for learning, could speak



on all these subjects. Plato and Aristotle are two burning examples.

From the fact of specialization, as stated earlier, it can be said that science deals with specialization of facts. In the process of specialization many particular sciences have come into existence, but our learning process has been narrowed. Nowadays, a biologist, for example, not only does not know all of science, but he does not even know all of biology. He knows only his own 'field' botany or perhaps parasitology or genetics or even a section of that. It looks like a deliberate narrowing of range. It is not that the scientist's individual range is narrowed, but that total range is narrowed. The bottle which once held all man's knowledge of the world is now just a pint to ocean. If we allow the process of specialization to continue, it would logically follow that a true specialist ultimately knows everything about nothing. This ultimate concept of "nothingness" falls in the realm called metaphysics, a part of philosophy, the realm out side the science. This is where philosophy begins when science ends.

The more we specialize, the more we narrow the range of learning. But this indicates triumph, not defeat. It proves the immensity of man's knowledge, not the poverty of it. The systematic and connected study of each particular department gives rise to special sciences. Thus, in the particular department of Biology, for instance, we have the special science of Zoology, Parasitology, Herpetology, Genetics and so on.

Corresponding to the two great divisions of things, matter and mind, we have two great divisions of science :



material and mental. The long centuries ago, philosophy embraced all the knowledge there was. Time came when young sciences took what they needed and left the rest to philosophers. Thus "natural philosophy" became physics, chemistry, astronomy and so forth; "political philosophy" became sociology and "mental science" became psychology. As history reveals, the content of philosophy is what is left over after the sciences departed. Nobody took ethics, not even the sociologists; nobody took logic; nobody took aesthetics; nobody took metaphysics too. Ethics, Epistemology, Aesthetics, Logic, Metaphysics..... remain part of philosophy's content. Thus it can be said that when sciences departed, the remains became the subject matter of philosophy.

Similarly, from the fact of generalization, as mentioned earlier, it can be said that philosophy deals with the generalization of science, that is, philosophy is the generalized form of sciences. A science is interested in particular facts; only to bind these various facts in a coherent system by discovering the universal law behind them. Science is thus a partially unified knowledge within its own sphere. Philosophy reflects on the results of science and deals with the larger generalization and therefore seems remote and often terrible. The following example shall clarify the point why it is called philosophy when the generalization becomes larger. Suppose, when you say, "I shall have a dish of bread-paneer for dinner", you are dealing with a particular dish of food and a particular dinner. Now, if you further say, 'I shall have a dish of bread-paneer for dinner because it is nourishing', you have gone a little ahead. If,



next, you detail reasons why bread-paneer is nourishing, you enter into a number of sciences like chemistry and physiology. Pausing a little at this point, you say, 'the more nourishing my diet, the healthier I shall be.' Here you add medicine to the sciences you already have; and the generalization is of a wider range. But now suppose it occurs to you to ask, 'how is it possible that a collection of plant seeds (wheat, out of which bread is prepared), milled and baked mixing with few slices of paneer and eaten and digested, can transform themselves into bone and tissue?' It is like asking the similar question which Annaxagoras asked twenty-five centuries ago: 'how can hair come from just what is not hair, or flesh from what is not flesh?' But how it does? The answer lies beyond the sciences in philosophy.

Let us take the thing in another direction. You just said, 'the more nourishing my diet, the healthier I shall be.' If some one asks, 'why?', you have to answer: it is a good thing to keep healthy; a good thing for everybody.' The expression 'for everybody' indicates that your position is not purely 'egoistic'. Thus you are driven into a certain kind of ethics. Ethics being a part of philosophy, you necessarily find yourself philosophizing even before the bread or paneer has entered your mouth. We are again in the realm of philosophy. This is where philosophy begins when science ends.

If the dialogue continues a bit longer, say, 'why is health a good thing for everybody?' 'Because, you feel good when you are healthy.' It is now perceived that, you are a hedonist first, particularly a utilitarian; since you evidently want or desire (by saying 'for everybody') the greatest



amount of pleasure for the greatest number of people. The critics would say, there are many things wrong with it, at least, the hedonistic paradox, for example. And then you will change your ground and say, 'I think that every one has a duty to keep healthy' and here you definitely become a Kantian. But if you are asked, 'do you really think that health-seeking can be logically inferred from categorical imperative?' You are now puzzled and you say, 'pleasure or no pleasure, duty or no duty, everybody wants to be healthy.' And it is good. Your use of words, 'wants to be healthy' gives a confusion between 'fact' and 'value' that needs to be clarified through correct analysis. The use of the word 'good' and its analysis give rise to what we call meta-ethics, that 'good' is not definable as G.E. Moore did. And thus we are in a process of analyzing concepts instead of having a slice of bread in the mouth.

The contention that, philosophy is a process of analysis of concepts, now becomes prominent in a 'vision of world's unity'. This kind of analysis is a philosophical process par excellence. From it, three results are obtainable : (a) we discover whether a term or statement has any meaning; (b) we discover what that meaning ultimately is; and (c) we discover what other statements must be presupposed if the given statement is to be true.

Thus all attempts to workout the meaning and the presuppositions of statements, as far as thought can carry them, are philosophical. The dialogue which began with a dish of bread-paneer is now seen to have passed entirely into philosophy. No single science can answer the entire question. The sciences all together cannot answer the



question. The question can be answered only by someone who is able to examine all the evidence. That would be genuinely philosophical. Thus there need be no great difficulty in deciding when an inquiry is philosophical. Only philosophy can tell us what we mean when we are talking, or whether, while talking, we indeed mean anything.

Thus it can be concluded that philosophy without science is empty and science without philosophy is blind. Great scientists and philosophers as well realized this. Both science and philosophy are required to make learning coherent and complete. Therefore, it is desirable for everybody to consider both science and philosophy as co-operative enterprises, because, it is very likely that most of us will get there in the end.

---

*Reader in Philosophy,  
Bhadrak Autonomous College,  
Bhadrak-756100*





**Design : HITECH Master**