

Introduction

The concepts of space, time, matter and motion are deeply entrenched in our commonsense conception of reality. We believe that material objects are capable of existing and moving in space and enduring through time. Realist thinkers have also sought to establish that reality consists of the fundamental entities like space, time, matter, motion etc. Idealists, on the other hand, refuse to admit the existence of matter. As in Berkeley's philosophy the entire material world is reduced to mind and its ideas. Absolute Idealists claim that only the Absolute is real. Absolutists like Bradley in western philosophy and Saṃkāra of the Advaita system of Indian philosophy have sought to establish that these commonsense concepts of space, time, matter, motion and causality are unreal appearances or Māyā derived from our ignorance with regard to the Absolute.

It is a curious fact indeed that the concept of time received vigorous attacks even from some realist thinkers. In the history of philosophy we have seen several attempts to reduce the number of fundamental entities. We have found, for example, the Cartesian attempt to reduce matter and motion to purely spatial characteristics. We know that some relationists have attempted to reduce time to motion. But the most frequent attacks are on time. The concepts of matter, space and motion have often tended to erase the concept of time.

Matter is something we can see, hear or touch; material objects, we believe, are causally operative on one another. Visual and tactile sensations, the realists say, justify our concept of space; visual and kinetic sensations justify the concept of motion. All these concepts refer to some external sensations. What sensory datum does time correspond to? Time can neither be touched, nor seen. It is at best apprehended in introspection. Introspection is of course a psychological state. It does not prove the objectivity of our temporal awareness. The perception of motion involves the perception of successive states of the moving body. So it appears that the concept of motion presupposes the concept of time. But we can perceive motion in the form of spatial displacement, not the time required for that. Hence motion has sometimes been regarded as the basis of the concept of time. Thus since the beginning of philosophical thinking,

there has been a tendency to eliminate time from the world of reality, or at least to degrade it to a secondary and derivative entity.

The history of the philosophy of time may, however, be characterised, as the interplay of two opposite attitudes; on the one hand, there are great thinkers who believe that temporality is not an intrinsic feature of reality; these thinkers propose the elimination of time; on the other hand, there are intellectuals of no less importance, who insist that the world has a basic temporal structure, and that time is fundamental and irreducible.

The earliest protagonists of these two view-points are Parmenides and Heraclitus. Parmenides maintained that ultimate reality is timeless, whereas the central doctrine of Heraclitus was that becoming is the only reality. For Plato time is the moving image of eternity. But according to Aristotle the world is basically temporal as there are real coming into beings. Aristotle mentions a number of paradoxes that are designed to show time's unreality, though Aristotle himself does not believe that time is unreal. For him, nature is a principle of motion and change, and it could not be understood without an analysis of time.

The peculiar nature of time has baffled the minds of thinkers of all ages. Since the days of Zeno of Elea, time has been a persistent source of puzzlement and perplexity.

Space seems to be presented to us all of a piece, whereas time seems to appear to us bit by bit. Time has three aspects - pastness, presentness and futurity. The past is known to us; it can be recalled with the aid of memory. The future is not fully known; it is hidden from us. The present alone is directly related with us. Yet as purposive agents we have some kind of awareness of the difference between future possibilities and present actual state of affairs.

The most controversial aspect of time is its passage. Time, we believe, irresistibly passes away. We cannot stop it; we cannot turn it back. We have the feeling of being carried away by it. Time is thus intimately connected with the consciousness of death. Death seems to be the inescapable consequence of the irreversible flow of time. So we feel that if we could stop this flow, perhaps, we could avoid death and extinction. Otherwise, temporality is mortality.

Man consoles himself, as does the Hindu, by his theological belief that none but the Lord of Time (Kāler adhīsvar, in Tagore's phrase) is immortal or mṛtyuñjaya. Prophets and religious thinkers have also preached that the human life with all its temporary experiences of pleasures and happiness, sorrows and sufferings, is nothing but an unreal appearance, whereas the ultimate reality is exempt

from time's flow. Hence Saṃkara's 'mokṣa' or liberation or Buddha's 'nirvāna' requires the state of mind that has been delivered from the consciousness of time's passage.

Celebrated philosophers like Zeno, Kant, Bradley, McTaggart and many other thinkers have offered brilliant arguments to prove time's unreality. Corresponding to this there has been the tendency to explain change in terms of permanence, becoming in terms of being, and time in terms of space. If Parmenides was the first among philosophers to propose a radical conversion of becoming into being, his disciple and defender, Zeno was also the earliest thinker to treat temporal intervals as geometrical segments. Although this point of view is primarily associated with the long line of idealist philosophers, it is found even in some empirically minded realists like Russell, who maintains that time is an unimportant and superficial characteristic of reality and that 'a certain emancipation from the slavery to time is essential to philosophic thought'.

In spite of all the ingenious arguments, the denial of time's reality seems to be self-defeating, for this denial also requires at least a minimum stretch of time for making the negative judgment. It reminds us of Descartes' famous analysis showing the denial of one's own existence or of one's own thinking as self-defeating. We are intimately engaged with time in our daily life, in our thoughts and conversations; hence it betokens a departure

from commonsense to say that time is unreal. The fundamental nature of time in relation to ourselves is evident from the fact that our judgments concerning time themselves appear to be in time, whereas our judgments concerning space do not appear to be spatial. It thus seems that any paradox of time suggesting its unreality must not be superficial but wrong.

The paradoxes cannot of course be ignored. No serious thinker will be able to rest contented unless he finds solutions to them.

The present project of research is intended as an attempt to solve the paradoxes of time. Hence it is primarily a study of time. But the problem of time is not an isolated issue; rather it is a group of intimately connected core of questions concerning space, motion, change, becoming, causality etc. that seem to be equally basic to our conception of reality. It is impossible to study time apart from them. Hence the present work is also a study of some of the fundamental concepts that are closely bound together with 'time'.

The concept with which time is most intimately connected is 'space'. Time and space are similar in many respects. The same sorts of expressions are used to denote spatial and temporal attributes and relations. A brief discussion of our commonsense conception of space and time

may be quite helpful to start with. Chapter 1 of this thesis introduces an account of our commonsense conception of space and time.

The commonsense conception involves some confusions with regard to the nature of space and time. They are both conceived as absolute and independent entities, and as relations between objects and events. These generate confusions, and are largely due to two opposed classical theories - the absolute and the relational theories of space and time. A brief account of the two theories has been presented in chapter 2.

Chapter 3 is concerned with the problem of defining 'time'. The definitions of 'time' given by Aristotle, St Augustine and Plotinus have been analysed and examined. Each of these definitions has been ultimately exposed to be circular. We have examined attempts to define the 'past', 'present' and 'future' times by ancient Indian thinkers and even by modern linguist philosophers. The upshot of the whole discussion has been that 'time' admits no logically perfect verbal or ostensive definition of itself.

Chapter 4 of the present thesis is a study of Zeno's paradoxes of motion. Zeno constructed these paradoxes with the aim of showing that motion is impossible, that change and becoming are illusory. His ultimate aim was to

establish the Parmenidean conception of Being as timeless. Zeno's paradoxes attracted the attention of all kinds of thinkers — philosopher, physicists and mathematicians. The present writer is however concerned with the metaphysical answers to Zeno's problems.

In Chapter 5 Kant's antinomy with regard to the infinity of time has been discussed. The antinomy consists of a pair of conflicting propositions about time; each of these propositions is supported by seemingly conclusive arguments. Kant seeks to prove that these two contradictory propositions are equally plausible ; that the universe must have a beginning in time, and that the universe must have existed for ever. We have examined his proofs thoroughly. On analysis time is found so intimately connected with change, that the conception of the beginning of time with that of the beginning of the world appears to be more convincing.

Chapter 6 is devoted to considering McTaggart's famous paradox of time. McTaggart's analysis shows that time has a dynamic and a static aspect. The dynamic aspect involves contradiction. But any attempt to avoid the contradiction leads to an infinite regress of temporal determinations. McTaggart's analysis is aimed at showing the incompatibility of temporal determinations, thereby proving the unreality of time. To solve this paradox of time the underlying assumptions in McTaggart's thesis have been elicited and examined.

Chapter 7 is a study of the twentieth-century debate on McTaggart's paradox. The dynamic aspect of time is expressed in sentences that are called A-statements. Those who believe that A-statements express real characteristics of time are called A-theorists. B-statements express the static aspect of time, and B-theorists are those who hold that temporal passage is a myth. The central issue concerns the translatability of A-statements into B-statements. The B-theorists offer apriori and empirical grounds in support of their thesis. All these arguments have been examined.

Chapter 8 consists of some general observations on the problems of 'time' in connection with other allied concepts, viz., 'change', 'causality', 'process' etc. Time appears to be something objective and essentially related with the world-process. The present writer, however, dare not penetrate deep into the modern process philosophy of Prof. A.N.Whitehead, or into the scientific speculations of Hans Reichenbach, Stephen Hawking and other scientists. An adequate discussion of them would demand a certain degree of familiarity with mathematics and modern physics. The present writer does not think herself competent enough to discuss them properly.

On the basis of the discussions in the earlier chapters, in chapter 9, some concluding remarks have been made. The present thesis is after all an humble attempt to deal with one of the most difficult of philosophical problems by way of analysing them. No pretension, however, to give definite answers to them is at all made.