

# **REALITY OF THE CONCEPT OF MOTION : EAST-WEST DIALOGUE**

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## Preface

Our general sense asserts that any object in this universe stands with reference to space-time continūm. To be in motion, an object has to move from one place to another place, with reference to time. It indicates the change of its position, with reference to time. Therefore, motion to be possible, there must be change of any kind. The title of the thesis of this research work is *'Reality of The Concept of Motion: East-West Dialogue'*. To examine the 'Reality' of 'The Concept of Motion', it is necessary to take a new look after the thought and views of the great thinkers and philosophers of the East(India) and the West, regarding motion.

Now, if we concentrate towards the history of philosophical thought, we see that there have been many

philosophical experiments with the thought of the East and the West and the East-West encounter has produced some interesting and fruitful results. If we are unable to grasp that philosophical progress can proceed by the proper realization of both, the Eastern, as well as the western thought, it will be a contradiction to say that Western philosophy and Eastern philosophy have the same value. Moreover, whether motion is acceptable or not, is a long standing debate among philosophers of the East and the West. Some of them admit motion whereas others reject it by claiming that it is only an illusion, it has no reality. In this work, the writer tries to re-examine the views and thoughts of both, the Eastern as well as the Western philosophers and thinkers with a new interpretation.

In this work, the writer tries to analyze the thought of ancient Greek philosophers-specially of Parmenides and Zeno

of Elea, that of F. H. Bradley and of Nāgārjuna. His purpose in this work is to examine, with a sincere experiment, whether the concept of motion implies anything and if so what is the reality of this implication.

The writer of this work, is grateful to his Supervisor, Dr. Bhaswati B. Chakrabarti. As a professor, she has served North Bengal University for a long time.

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# **Chapter One:**

## **Introduction**

Generally, people understand philosophy as synonymous with Western philosophy, which causes Eastern philosophy to be ignored. Indeed, philosophy can be properly grasped if one could have the knowledge of Eastern philosophy as well as Western philosophy.

Indeed, it will be a contradiction to say that Western philosophy and Eastern philosophy have the same value, unless the word 'philosophy' is used in two different senses, firstly, as a wisdom that is connected to spiritual experience and secondly, as mental construct, completely detached from it.

It is claimed in 'Gandhi on Non-Violence' that *"There have of course been spurious attempts to bring East and West together. One need not review all the infatuated theosophies of the nineteenth century. Nor need one bother to criticize the laughable syncretisms which have occupied the talents of publicists (more often Eastern than Western) in which Jesus, Buddha, Confucius, Tolstoy, Marx, Nietzsche, and anyone else you like join in the cosmic dance which turns out to be not Shiva's but just anybody's. However, the comparison of Eastern and Western philosophy is, in our time, reaching a certain level of seriousness and this is one small and hopeful sign. The materials for a synthesis of science and wisdom are not lacking."*<sup>1</sup>

In modern time, for a meaningful comparative philosophy to proceed, it is necessary for us to understand the

different levels of it, on which metaphysics, theology and philosophy are situated. It is required for the scholars to equip with the proper tools and knowledge of the profound differences between any traditional doctrines and the ideas of modern thinkers, to illuminate the similarities, as well as contrasts between the doctrines of the different religious traditions. It will adequately foreground the void space, which separates them and disclose the chance of fluent formulations of similarities which exist only at relatively superficial levels.

Furthermore, it is the case that *"Oriental doctrines can fulfill the basic and urgent task of reminding the West of truths that have existed within its own tradition but have been completely forgotten. Today it is difficult for Western thinkers to rediscover the whole of their own tradition without the aid of Oriental metaphysics. The fundamental doctrines and the*

*accurate spiritual techniques are hardly accessible in the West; 'philosophy' has become totally divorced from the nature of the spiritual experience.*"<sup>2</sup>

The separation of metaphysics, philosophy and religion appears in modern times, as the metaphysical realm lies beyond the phenomenal plane. The validity of a metaphysical principle can be neither proved nor disproved by any kind of empirical demonstration, by reference to material realities. The ultimate reality of metaphysics is the Supreme Identity, in which all oppositions and dualities between subject and object, knower and known, being and non-being are resolved. The aim of metaphysics is to make doctrines intelligible and to demonstrate their consistency. It is concerned with a direct apprehension of reality.

Modern European philosophy tends to be dialectical and it is analytical and rational in its modes. From a traditionalist point of view it might be said that modern philosophy is anchored in a misunderstanding of the nature and role of reason, the idolatry of reason could otherwise hardly have arisen. From *'Understanding Islam'*, we find, Frithjof Schuon claims that *"Reason is formal by its nature and formalistic in its operations; it proceeds by 'coagulations', by alternatives and by exclusions- or, it might be said, by partial truths. It is not, like pure intellect, formless and 'fluid' light; true, it derives its implacability or, its validity in general, from the Intellect, but it touches on essences only through drawing conclusions, not by direct vision; it is indispensable for verbal formulations but it does not involve immediate knowledge."*<sup>3</sup>

Metaphysics is not held to be true by those who understand it, but it might be expressed in a logical manner because it is true, without its truth ever being compromised by the possible shortcomings of human reason. In *'Stations of Wisdom'* we find that Guénon claims that *"For metaphysics, the use of rational argument never represents more than a mode of outward expression and in no way affects metaphysical knowledge itself, for the latter must always be kept essentially distinct from its formulation; and formulation, whatever form it may assume, can never be taken as anything but a symbol of that which in itself is incommunicable."*<sup>4</sup>

In *'Frithjof Schuon and the Perennial Philosophy'*, we find that *"The mode of apprehension is something quite other than the philosophical thought that believes that it can attain to an absolute contact with Reality by means of analyses,*

*syntheses, arrangements, filtrations and polishing; thought that is mundane by the very fact of this ignorance and because it is a vicious circle which not merely provides no escape from illusion, but even reinforces it through the lure of a progressive knowledge which in fact is inexistent.*"<sup>5</sup>

Infact, metaphysics is directed towards those realities which lie outside mental perimeters and which are unchanging. Most metaphysicians are eager to reformulate some timeless truth so that it becomes more intelligible in the prevailing climate.

However, the East-West encounter produces some important and beneficial results. There are many benefits that might issue from a properly-constituted comparative study of Eastern and Western metaphysics. Comparative studies allow each side to illuminate the other. At a time when the world is

rived with all manner of inter-cultural and inter-religious misunderstandings and tensions, any effort to promote mutual understanding amongst different intellectual and religious traditions is to be applauded.

Now, whether motion is acceptable or not is a long standing debate among philosophers of the East and the West. Questions relating to motion, have always attracted the attention of philosophers and scholars and since the ancient times, they find it very difficult to provide a convincing answer to the question of motion. However, they find out that motion and change are qualities different from any other quality and therefore, they pay special attention to it and propose different ideas in this regard. At first, we have to understand what motion means. In our common sense, motion implies

movement of an object from one place to another, which is possible because of change.

Aristotle (384-322 BCE) claims that Motion means change of any kind. For Aristotle, motion is '*entelecheia*', a transition. He uses the word '*energeia*' as a synonym for '*entelecheia*'. The root of '*energeia*' is '*ergonó*', from which comes the adjective '*energon*', i.e., active, busy or at work.

Sir David Ross claims that '*entelecheia*' means 'actualization,' not 'actuality'. St. Thomas Aquinas claims that actuality and potentiality do not exclude one another but co-exist as motion. Not only that, an actuality is also a potentiality, as it is a motion and whether an actuality is a motion, it is a potentiality. The two seeming contradictions cancel each other in the dynamic actuality of the present state which is

determined by its own future. But Ross and Thomas failed to explain how motion differs from rest.

In ancient Greek philosophy, we can see that while Anaximander, Anaximenes, Leucippus, Democritus and Epicurus admit the possibility of motion, Parmenides and Zeno of Elea deny it. Anaximander argues that motion is beginningless. For him, particular things are divided or separated due to motion. The root cause of the creation of the world is the process of separating out of the opposites. Indeterminate, non-particular, shapeless primary element due to motion, divides itself into two parts, viz., hot and cold through an uncertain process. Cold becomes moisture. This moisture material element accepts the form of earth which is situated in the middle of the universe. The water of the earth slowly

vapourised by heat and creates a layer of air, surrounding the earth.

According to Anaximenes, fundamental stuff of the universe is air. There are two qualities in the air, viz., unlimitedness and continuous motion. Air extends in space with having these qualities. It is changeable. He claims that the ability to be with motion inheres in the air and it is the motion by which world is created from air.

While, Anaxagoras admits intelligence in explaining motion, for atomists like Leucippus and Democritus, motion is due to the movement of atoms in empty space. Democritus and Leucippus argue that the world consisted of two things, namely, vacūm and matter. Matter is divided to tiny and indivisible particles called 'atoms'. In fact, they have attributed the origin of changes in things to their internal motions.

Leucippus claims that without empty space motion is not possible. For him, space is filled with many small substances or particles which are non-perceptible for their smallness, but they are in motion in empty space. The creation, destruction and rest of things are possible due to the connection, abstraction and interaction between these small substances. Indeed, Leucippus accepts a beginningless and endless motion. Though motion of atoms can be explained in terms of their weight, Democritus, instead accepting their shape and size, does not attribute them with weight. Later Greek philosopher, Epicurus attributes atoms with weight to explain their motion. Epicurean philosophers think that it is the weight for which atoms fall continuously towards bottom in infinite space. But Democritus does not admit top, bottom or middle place in empty space by arguing that these are our imagination but do not exist in reality. In explaining the view of Democritus, Aristotle says

that atoms move as like as sunrays, scattered everywhere from the Sun.

Heraclitus is so obsessed by the world of motion and change that he regarded instability and becoming as the origin of everything and deny the existence of anything stable in the world. He assimilates the world to a river that is always in a state of motion and has no rest even for a single moment. He claims reality as change, flux and becoming.

Pythagoras defines motion as absolute otherness and becoming and tries to show that the state of the thing in this very moment is other than its states in the previous and the next moment. His definition asserts that although motion in things causes changes in their states, the existence of change in the world does not mean motion, since when compared with each other, the quality of change applies to all existents.

Some philosophers define motion in terms of otherness since it leads to a change of states and causes transformation in the already existing thing. However, they are unaware that what causes change is not necessarily otherness and what causes something is not necessarily the same as that thing. If otherness were motion, every other thing would be a moving thing whereas it is not the case.

For Parmenides, only Being is, not being is not and cannot be thought. Change means something to be created, to be with motion. But for Being, these are impossible; Being is not created, non-destructible, complete, motionless and endless. It is motionless, because, to be with motion, it has to move on empty space but empty space is void and there is nothing as void. Motion and movement are kinds of not being and it is impossible to be created something from that which is not. He

regards the world as consisting of the same substance everywhere and deny the existence of any kind of motion and instability. He considers motion and change as being illusory and unreal and believes that stability and unity govern the world, Being is always immutable and motionless. For him, what is seen as plurality and change is nothing but an illusion, since believing in the reality of multiplicity and change leads to contradiction.

Aristotle introduces Zeno as the founder of indirect reasoning. Zeno, with some famous example, argues against motion. For him, within a limited period of time unlimited distance has to be passed, which is not possible. He tries to show that a line is made up of unlimited numbers of points and anyone has to pass unlimited length of distance, which is not possible. He claims that an object cannot remain at two places

at the same time. But remaining at a place means remaining static. Therefore, it remains at a place as equal to its length at every moment and so, it is motionless, static. Aristotle says that Elea's philosophers do not accept motion, because, it is impossible to explain motion without the imagination of empty space and the imagination of empty space is not possible.

Zeno argues in various ways that there is no motion. According to one of his arguments, the arrow in flight is always at the same place, therefore is always at rest and so, never in motion.

F. H. Bradley claims that relation presupposes quality and quality presupposes relation. Change is a quality. If any relation between an object and its successive states (e.g., object1, object2 etc.), is not accepted then the object cannot change. For him, change has no reality; it is only an

appearance. As, to be in motion, an object requires to change its place either in time or out of time, without change motion is not possible.

Bradleian formulation signposts a modern conception of metaphysics shared by a good many people, philosophers and thinkers. There is no single modern philosophical posture on the nature and significance of metaphysics. Some see it as a kind of residual blight on the tree of philosophy, a feeding-ground for obscurantists, whereas some grant it a more dignified status.

The concept of motion has also been an important issue in the Eastern thought. Nāgārjuna, the great thinker of Eastern (Indian) thought, the founder of the Mādhyamika Buddhism, denies both, motion as well as rest. According to him, motion begins not at the place 'already traversed', not in



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the place 'yet to come' and even not in the place like the 'being traversed'. It is difficult to think whether the mover can be understood with or without motion and whether motion resides in a body which has nothing to do with motion. A denial of motion implies that of rest. The mover cannot rest as moving is impossible without motion, the non-mover cannot rest as it is already static and there cannot be two rests as it would involve two static bodies. Rest cannot begin when someone is at rest or not at rest.

The early Buddhists however, hold that everything is in perpetual flow, reality is pure flux. They deny the existence of any mental substance or a mover behind the movement, but they assert that all created things are changing and have characteristics of origination, duration and cessation. However, some early Buddhists, e.g., the Sāmmittīya and the Vātsīputrīya,

admit not only the reality of motion but also that of a mover or some kind of mental substance behind the movement.

The Vaiśeṣikas also admit three things, namely, substance, quality and motion. For them, motion is a reality. They think it as a duration which lasts till the cessation of motion. Motion is something different from the moving thing.

Thus, we find that there is a great controversy regarding the reality of motion in Western as well as in Indian philosophy. The present dissertation is an humble attempt to analyse and critically discuss the negative views on motion as found in the theories of Zeno of Elea, Bradley and Nāgārjuna.

## Notes:

1. *'Gandhi on Non-Violence'*: Mahatma Gandhi: Thomas Merton (ed.): Mark Kurlansky (Prefaced by): New Directions Paperbook: Canada: Penguins Books Canada Ltd: 1<sup>st</sup> Published: 1965: Reissued: 2007: p.6.
2. *'Conditions for a Meaningful Comparative Philosophy: Philosophy East and West'*: Seyyed Hossein Nasr: Vol.22, No.1: University of Hawai'i Press: 1972: p.59.
3. *'Understanding Islam: A New Translation With Selected Letters'*: Frithjof Schuon: Mark Perry & Jean-Pierre Lafouge(Trans.): World Wisdom, Inc.: Bloomington, Indiana: 1<sup>st</sup> ed. in French:1976: Last ed. in English: 2011: p.12.

4. *'Stations of Wisdom'*: Frithjof Schuon: World Wisdom Books, Inc.: Bloomington, Indiana: 1995: p.18-19.
5. *'Frithjof Schuon and the Perennial Philosophy'*: Harry Oldmeadow: William Stoddart (Foreword by): World Wisdom, Inc: Bloomington, Indiana: 2010: p.112-113.

## **Chapter Two:**

### **Zeno on Motion**

In the first chapter we discussed how controversy arises in the discussion of various thinkers regarding motion. To grasp the concept of motion, it is necessary to make a new look towards Zeno's reaction on motion. Zeno of Elea (about 489 BC), is the favourite disciple of Parmenides (about 514 BC). Zeno devotes himself in refuting the views of the opponents of Parmenides. Arguments against the possibility of motion, is first found in '*The Dialectic of Zeno*'. The ancient Greek philosophers were confused to think about space, time and motion. Zeno is the first who deeply thinks about these. His arguments, generally known as his paradoxes, seem to show that motion is simply an illusion which is not

possible in any circumstances. Of his eight surviving paradoxes (presented in Aristotle's '*Physics*'), many are equivalent to one another but four of them are the most famous. These are as follows:

1. In order to travel a distance, if an object wants to go to the other side, it has to travel an infinite number of points, in finite times. But it is not possible to travel an infinite number of points and so an infinite distance, in a finite time. Therefore, no object can travel any distance whatsoever and motion is impossible.

This argument of dichotomy claims the impossibility of motion by asserting that any object which is in locomotion, must arrive at the half way stage before it arrives at the goal. The object is required to travel an infinite series of distances, which is impossible. In order to travel each of the distances involved, the object requires an

infinite time, i.e., an infinite duration and so it can never be completed.

We find the 'dichotomy' as being intrinsically linked with the conception of the infinite divisibility of space as well as of time. Here, time is assumed as consisting of infinitively small, 'atomic' moments. During each of the atomic moments, movement cannot take place as infinitively many instances of space will have to be transgressed. The moved object also does not change during the course of motion. In this regard, what is true for one 'time-instant' is also true for each preceding and each succeeding one. Motion can never have started until there is a change in the conditions of time and space as they have been assumed. If time and space both are held to be continued, the impossible conclusions of Zeno's arguments will not follow.

2. If an Achilles and a tortoise run a race and the tortoise is given a start, Achilles, despite his greater speed, cannot reach the tortoise, for while Achilles is moving from his initial starting point to the tortoise's initial starting point, the tortoise has moved a certain distance beyond and the same holds for all subsequent intervals. This argument shows the impossibility of passing a moving goal.

The tortoise must travel at least one point of space in each moment, i.e., an infinite number of points, in an infinite series of moments, i.e., in infinite time. In order to overtake the tortoise, Achilles must travel each spatial point through which the tortoise has passed, i.e. an infinite distance.

In modern times, space and time are not regarded as separate entities. In science, scientists talk of

events or space-time continūm, while Zeno thinks space and time as separate entities. For him, infinite parts of space to be traversed will require infinite moments of time, which is not correct.

3. The paradox of the flying arrow points out a contradiction. An object cannot be in two places at the same time. Therefore, at any particular moment in its flight the arrow is in one place and not in two. But to be in one place, is to be at rest. So, in each and every moment of its flight the flying arrow is at rest. It is at rest throughout the flight and therefore, motion is impossible.

This argument claims that a moving arrow can neither move in the place where it is not, nor in the place where it is. Anything is at rest when it is at a place equal to itself. The arrow is always at a place equal to itself; therefore, the arrow is always at rest and can never move.

In this case, it is difficult to say whether a moving thing remains same during the different instants of time when it occupies different places, or not. If a thing remains same, then it is difficult for us to assert the identity of the different things occupying separate positions of space, of what we denote as 'a moving thing'; rather, these are different things at different places, which we arbitrarily connect. 'The arrow remains the same during the motion' indicates that it remains same with all its attributes with the part of space which it occupies, for if an attribute is changed, we cannot speak of the 'same' thing. Therefore, if we assert that the moving arrow remains really the same during the movement, we feel difficulties to explain how it could ever move at all.

Zeno would have balked at the idea of motion at an instant and Aristotle explicitly denies it believing that all motion occur only over a duration of time and that

duration divides into intervals but never into indivisible instants. However, in calculus, the derivative of position  $x$  with respect to time  $t$ , namely  $dx/dt$ , is the arrow's speed, and it has non-zero values at specific places at specific instants during the flight. The speed during an instant would be  $0/0$  and so is undefined. Using these modern concepts, Zeno cannot successfully argue that the speed of the arrow is zero at every instant. Thus, we find that Zeno's Arrow Paradox has false assumptions and so is unsound.

4. At the same time, two lines, each composed of an equal number of bodies of equal size, can travel same distance, with same velocity. Among the two lines, if one is at rest and another travels by the first one, then the unit of time will be the time of travelling the length of that line. But if a third line travels from the opposite side of the

second line, then each of the two lines, will travel the length of the static line in half of the main unit.

If two lines P and Q travel same distance with same velocity, P is at rest and Q travels by P, then the unit of time(for Q) will be the time of travelling the length of P. But if a third line R(composed of an equal number of bodies of equal size to P and Q) travels from the opposite side of Q, then each of Q and R will travel the length of P, in half of the main unite. Thus, Zeno proves that the half of a certain time is equal to the whole (i.e. double) of that time.

But this type of conclusion is not possible. We have to remember that the interpretation 'half of a certain time is equal to the whole of that time' is not of Zeno but of Aristotle who misunderstands this paradox. About this paradox Sir David Ross has said that *"Very difficult to*

*follow, partly owing to use of ambiguous language by Aristotle, partly owing to doubts as to the readings."*<sup>1</sup>

Modern exponents claim that Zeno does not say that Q will pass P(stationary) and R(moving at the same speed as Q but in the opposite direction) in the same amount of time, rather he says that if Q is travelling at, e.g., a speed of one point of space per unit of time, it will pass one point of P in one unit of time, but it will pass one point of R in half a unit of time; thus dividing the indivisible unit which is impossible. Here, the issue of relative velocity is irrelevant.

In Greek Philosophy, space is thought to be either discrete or continuous. Now, if space is discrete then there should be smaller units of it and if it is continuous then it is infinitely divisible. Zeno disproves the ideas of discrete and continuous space through his paradoxes. His

'Arrow paradox' disproves how space can be discrete. The arrow is either in motion or at rest in one smaller unit of space. It can move, because for motion to occur, it would have to be in one smaller unit of space at the start of an instant and at another at the end of the instant. However, this means that the instant is divisible, which is impossible because by definition, instants are indivisible. Hence, the arrow is always at rest in one of the smaller unit of space. Space therefore, cannot be thought of as discrete, otherwise it must be continuous. 'The paradox of Achilles and the tortoise' disproves how space can be continuous. In a race, if Achilles is at the starting point of the race and a tortoise is at the halfway point, then though Achilles can run faster than the tortoise, he will never catch up to win the race; by the time Achilles reaches the halfway point, the tortoise will be in another point and this will go again and again. Therefore, Achilles will never win the race.

Space is therefore, not continuous and philosophers are left pondering upon the correct notion of it. Zeno thus shows how to take reasonable assumptions and create absurd conclusions. This is called Zeno's dialectic. He is the first to bring upon this type of reduction to absurdity which is used in all types of logic and philosophical research today.

The Pythagorean Science is basically atomistic which claims that the universe is additive, i.e., composed of atoms or minims, indivisible smallest-possible units of space and time. Pythagorians maintain both, that the world is composed of atoms and that any magnitude is infinitely divisible. But there is a contradiction, if it is taken to have definite magnitude, then, there will be lines which cannot be bisected and no magnitude will be infinitely divisible. On the other hand, if the atoms are made dimensionless to give infinite divisibility, no quantity of such atoms can

ever add up to any magnitude at all. The negation of their view of space and time, i.e., of all dividedness in space and successiveness in time, might become the fundamental thought of Zeno. Robert Brumbaugh, in *'The Philosophers Of Greece'*, claims that *"Zeno's paradoxes were designed to bring out the inherent absurdities of such a world view and to show that, however one interpreted this position, whichever of its premises one adopted, no account of motion could be given which did not end in absurdity, whether space and time were atomistic or infinitely divisible, no intelligible account of motion through them was possible."*<sup>12</sup>

Parmenides writes a poem entitled *'On Nature'* which distinguishes between two 'ways'- 'the way of truth' and 'the way of opinion'. Parmenides breaks with the older Ionic tradition by writing in hexameter verse. For Parmenides, his conversion from Pythagoreanism to Truth

is the central thing in his poem and it is from that point of view we must try to understand his philosophy.

According to Parmenides, the most basic and self-evident truth is 'it is'. This is true and one cannot deny it without falling into logical contradiction. What he means by 'it is' is that 'what is, is' which is known as the 'principle of identity', i.e., something is what it is or A is A. He makes Being or existence into a predicate, so that 'it is' means Being is real. 'What is' is and therefore, cannot be anything other than what it is. On the other hand, 'what is not' cannot be existent.

For Parmenides, reality is an absolute and unchanging whole and motion, space and plurality are simply illusions. He thinks that the absolutely real is Being, Not-being is the unreal. Not-being is not at all and it is identical with becoming, with the world of shifting

and changing things. The world is revealed to us by our senses. The essentials of the world of sense are multiplicity and change. So, the world is unreal, illusory, a mere appearance and therefore not-being. Only Being truly is and it is the Being which is the first principle of things excluding of all becoming. True Being is absolutely one, there is no multiplicity in it. It is absolutely static and unchangeable; there is no motion in it. For him, change means that something has passed from being one thing to another and therefore is not that original thing; it will soon change into something else. This constant change that we see every day does not actually happen and cannot be considered real. He claims that the universe is one which is completely unchanging with one beginning or end and there is nothing like time or motion. He thinks the universe as a sphere, completely solid, with no room for motion or ability for change. But his ideas on change are completely

wrong. Change does not necessarily mean something no longer exists. Since matter is never created or destroyed then the way we get new things is through change. Our world is in a constant state of change. Therefore, the ideas that everything we see is an illusion and that the universe is one and unchanging are false.

For Zeno, true being is to be found, not by sense, but by thought and thought shows that there can be no movement, no change. Therefore, true being is one, excluding of all motion and becoming, as Parmenides says, with no multiplicity in it. By his puzzles Zeno proves that the consequences, arising from the assumption of motion, as the Pythagoreans understand it, are more absurd than those arising from the assumption of Parmenides that motion is an irrational delusion of the senses. Zeno does not directly argue the ideas of Parmenides; he uses tricks with mathematics and infinity to attack plurality and

motion. Through his paradoxes, he goes on to prove the impossibility of motion. His puzzles can be seen as part of a comprehensive Eleatic argument against the possibility of motion. Eleatics claims that what is unintelligible cannot exist. According to them, if we suppose that the universe is additive, i.e., made up of parts, then three possibilities may be arise- firstly, the universe may be composed of bodies separated by a void. But this is impossible, because, Parmenides disposes it by arguing that the void is unintelligible and therefore, cannot exist. Secondly, the universe may be composed of indivisible, smallest possible parts (minims) and thirdly, it may be composed of dimensionless points and instants. But Zeno, through his paradoxes, claims that no conceivable assortment of minims and dimensionless points and instants makes possible an intelligible account of motion. Thus, for Eleatics, the universe cannot be additive. If the

universe is continuous, i.e., made up, not of parts, but of a continuous, unbroken substance, then, motion can only be explained in terms of compression and rarefaction which are types of change. But for Parmenides change of any kind is impossible, because it involves coming to be, i.e., arising from nothing is void, which is unintelligible and so cannot exist. So, motion is impossible in a continuous universe, too. Therefore, Eleatics claims that no intelligible account of motion can be given; motion cannot occur in any possible universe, no matter what kind of universe we suppose - additive or continuous.

Heraclitus claims reality as change, flux and becoming. His philosophy is fundamentally different from that of Parmenides. He admits logos as the basic order of things. Parmenides believes in the oneness of the universe which is somewhat of a similarity and his point of view is much more scientific than Heraclitus. Parmenides

uses logic and reason to draw conclusions from truths. Though the conclusions that the Eleatic philosophers reaches are wrong, it is their methods that has a lasting influence. They are trying to use reason to determine truth. Instead, the one-sided doctrine of Parmenides is unacceptable, as also is the one-sided doctrine of the Pythagoreans. To get the knowledge of the universe, both factors, i.e., the One and the Many, Stability and Change, are valuable. Though Heraclitus is trying to solve in a philosophy that claims to do justice to both elements, one and many, through a doctrine of Unity in Diversity, Identity in Difference, his philosophy is also unsatisfactory. We have to give importance to the stable element in things, as well as to the flux or change of things, otherwise, a confliction between the materialistic monism with the immaterial highest being, may arise.

Zeno defends the doctrine of Parmenides in an indirect way, by composing a prose treatise. His refutation of the general conception of the world is so acute that Aristotle calls him the inventor of dialectic. His proofs are directed partly against the assumption of a multiplicity of things and partly against motion. As a disciple of Parmenides, Zeno believes that motion is an illusion and is impossible. Beside this, through his arguments, his aim is to prove that even on the pluralistic hypothesis, motion is equally impossible. He says that *“The Real is a plenum, a complete continuum and motion is impossible. Our adversaries assert motion and try to explain it by an appeal to a pluralistic hypothesis. I propose to show that this hypothesis does nothing to explain motion, but only lands one in absurdities.”*<sup>3</sup>

His all attacks against multiplicity and motion are based in the principle of contradiction and the

presupposition that the same thing must not be affirmed and also denied. Though this principle and presupposition is not abstractly expressed but applied with clearness and certainty. His arguments are so logically well arranged, having a crucial role in the developed technique of refutation that the Eleatic school get an evidence to attain the technique.

Indeed, by saying that motion and multiplicity are not real, Zeno wants to say that certainly there is motion and multiplicity but they are not true. Accordingly, the world is here, is present to our senses, but it is not the true world. It is not reality but mere appearance or illusion which hides the real being of things. For him, the objects around us have existence but not self-existence, not self-substantiality; they are rather beings whose being flows into them from another, i.e., from reality which itself is self-existent and self-substantial. Motion and multiplicity

are mere appearances of the reality. Though Zeno does not speak of appearance and reality in this way but this is what he is looking for. His philosophy is the completion of the Eleatic principle, as well as, the beginning of its end. He takes up the antithesis of being and non-being so acutely that the inner contradiction of the principle become much more prominent with him than even with Parmenides.

F. H. Bradley shows that the categories of human thought are puzzled with contradiction. Likewise, Nāgārjuna claims that the categories of space, time and substance are shot through with contradiction. Hence, the arguments of Zeno against motion succeed to create a deep impression on our mind. Zeno wants to support the view of Parmenides, but his method to achieve this goal develops his dialectic and give importance to the discussion of the problems regarding the ideas of space, time and motion.

Zeno's all arguments are based upon the one argument which may be called the antinomy (i.e., a proof that since two contradictory propositions equally follow from a given assumption that must be false) of infinite divisibility. But in our times, we know that the fallacies of his proofs, the confusion of the infinite divisibility of space and time with infinite dividedness, he does not notice himself. He argues from the geometrical line to the actual line. Indeed, a geometrical point has no magnitude and a geometrical line is infinitely divisible. But in everyday life the movement between any distance, is not infinitely divisible, nor any observed time which we live through as short or long, is infinitely divisible into moments. Hence Zeno's paradox is due to the confusion of two standpoints. In other words, we can say that Zeno confused an analytic proposition with a synthetic proposition. An analytic proposition does not require any

observation to confirm or disconfirm its truth while a synthetic proposition can be true if it corresponds to an actual state of affairs. A distance or time is infinitely divisible, is only an analytic proposition but actual distance traversed in same observed time is not infinitely divisible.

Henri Bergson revives the metaphysics of Heraclitus by accepting the ever-changing vital process as the supreme reality. Zeno and Bergson's theories to the study of time have inter-related the perspective calculus and added to the knowledge base of abstract thought. Calculus, the theory based on experimental data and analysis, describes motion or any rate of change. Mathematicians claim that calculus is not abstract mathematics but is exact the prediction which may be of falling bodies or particles' motion. Indeed, we can understand the nature of time, but when we speak, words

fail to describe the abstract image of time. Beside this, we can see that philosophers and scientists observe many common attributes of time but draw different conclusions. Thus, time is a paradox by the various valid theories and images made, though none of them can be fully accepted.

The most important paradox in mathematics is the motion of an object at an instant. Our common sense binds us to think that the speed of an object at an instant is zero, as there is no change in time. In order to find the derivative, the instantaneous rate of change of an object's position, one must have a continuous function, i.e., continuous time and space. Zeno's paradox of the arrow states that if everything is either at rest or at motion, when it occupies a space equal to itself, every instant of its flight the moving arrow is at rest. Thus, Zeno's thought experiment of the arrow excludes the idea of speed of an object at an instant. In terms of calculus, an instant is a

point. A point has no dimensionality but there is unlimited number of points in the arrow's flight. Bergson, in terms of cognitive and subconscious processes, advances the philosophical response to non-motion within motion. He says that "*We express duration in terms of extensity, and succession thus takes the form of a continuous line or chain, the parts of which touch without penetrating one another.*"<sup>4</sup>

For Bergson, duration is a continuous sequence, just as calculus requires a continuous function in order to derive the function. He argues that space alone is homogeneous, pure duration can only be experienced in the mind through intuition; the inability to identify the rate of change in the present instant is the evidence of the limiting ability of our perception. He realises the importance of the paradox of motion at an instant, his concept of pure duration gives philosophical content to the

abstract world of calculus. Indeed, Zeno and Bergson approach the problem of the derivative in different ways but they give support to the principles of calculus to better enrich the abstract image of time. Bergson, from his metaphysical standpoint, criticises the notion of spatialised time. For him, real time is duration in which each moment of time melts into another without a break. So, it might be said that Zeno confuses real duration with the unreal spatialized time. Again, he confuses the legitimate distinction of space and time in thought with inseparable space-time continūm. According to linguistic convention, movement is always related with parts of a distance and moments of time, movement cannot be reduced to separate parts of space or moments of time. Space and time can be distinguished in thought, but cannot be separated in reality.

Now, it is important to see that whether Zeno's theory of motion has any similarities with that of other

great thinkers or it is it-self contradictory. David Hume does not admit the infinite divisibility of space and time by claiming that they are composed of indivisible units having magnitude. But it is impossible to conceive of units having magnitude which are yet indivisible and it is not satisfactorily explained by Hume.

Kant argues that the contradictions that Zeno shows are immanent in our conceptions of space and time. Space and time are forms of our perception, they are not real; they do not belong to things as they are in themselves, but rather to our way of looking at things. Our minds impose space and time upon objects, but objects do not impose space and time upon our minds. Kant claims that comprehending the infinite is beyond the capacity of human reason, when we try to think the infinite, whether the infinitely large or the infinitely small, we fall into contradictions. His first publication, *Thoughts on the True*

*Estimation of Living Forces*' (1746), attempts to solve controversy that has been contested ever since Leibniz's attack on Descartes' laws of motion in the '*Acta Eruditorum*' (1686). Kant argues for changes of bodily states by maintaining that mutual changes of state require mutual interaction. Through his '*Physical Monadology*' (1756), he reconciles the infinite divisibility of space. The first chapter of his '*Metaphysical Foundations of Natural Science*' (1786), the '*Phoronomy*', considers the quantity of motion of matter and how it is to be constructed in a-priori intuition. Kant claims that due to the relativity of space "*The composition of two motions of one and the same point can only be thought in such a way that one of them is represented in absolute space and instead of the other, a motion of the relative space with the same speed occurring in the opposite direction is represented as the same as the latter.*"<sup>5</sup>

It considers three possible cases for the composition of two motions, they are: (i) the two motions are in the same direction, (ii) the two motions are in opposite directions and (iii) the two motions enclose an angle. Kant tries to show how one can construct a-priori intuition in a single motion out of the two motions, described in the three cases mentioned above. The third chapter, the '*Mechanics*', concerns how it is possible to experience matter as having a moving force, i.e., how one matter communicates its motion to another by means of its moving force. Kant states his First Law of Mechanics as "*The total quantity of matter remains the same throughout all changes in matter.*"<sup>6</sup> Kant's Second Law of Mechanics is "*Everybody persists in its state of rest or motion, in the same direction, and with the same speed, it is not compelled by an external cause to leave this state.*"<sup>7</sup>

It is much closer to Newton's 'Law of Inertia' but not identical with it. The 'Law of Inertia' asserts that an object at rest will remain at rest unless acted upon by an external and unbalanced force, as well as, an object in motion will remain in motion unless acted upon by an external and unbalanced force. Kant's Third Law of Mechanics asserts the equality of action and reaction in the communication of motion. Through the final chapter, the '*Phenomenology*', Kant focuses on how the motion of matter can be experienced modally.

Hegel compares Zeno with Kant by saying that "*Kant's antinomies do no more than Zeno did here.*"<sup>8</sup> Hegel believes that, to be satisfactory, it is necessary for a solution to make room for both sides of the contradiction. A satisfied solution is only possible by rising above the level of the two opposite principles and taking them both up to the level of a higher conception, in which both

opposites are reconciled. He regards Zeno's paradoxes as examples of the essential contradictory character of reason. For him, all thought and reason contain immanent contradictions that they first posit and then reconcile in a higher unity. The contradiction of infinite divisibility is reconciled in the higher notion of quantity which contains two factors, i.e., one and many.

It is clear that Hume, Kant and Hegel are trying to give solution to solve Zeno's paradoxes. Their solutions have been very stimulating to subsequent thinkers but ultimately have not been accepted. In modern times, mathematicians, physicists and philosophers are eager to know what steps are necessary in order to escape the contradictions shown by Zeno's fruitful paradoxes. The concepts of space, time and motion have to be radically changed and the mathematical concepts of line, number, measure and sum of a series have to be given a new look.

Indeed, Zeno's integers have to be replaced by the contemporary notion of real numbers. The new one-dimensional continuum, the standard model of the real numbers under their natural order, is a radically different line than what Zeno imagines. The new line is the basis for the scientist's notion of distance in space and duration through time and it is no longer a sum of points, as Zeno supposes, but a set-theoretic union of a non-denumerable infinite number of unit sets of points. This is the way through which we can make a sense of higher dimensional objects like the one-dimensional line and the two-dimensional plane, being composed of zero-dimensional points. Zeno argues that a simple sum of an infinity of zeros would never total more than zero. But the density of points in a line is so high that no point is next to any other point and the infinity of points in the line is much more than any infinity Zeno could have imagined. Now, the sum

of an infinite series of numbers can have a finite sum, unlike in Zeno's day.

Moreover, the fallacies of Zeno paves the way for new philosophical thought and are proved very fruitful in farther thinking about motion; there emerge in us, a capacity to think about the reality of the concept of motion. Now, we shall discuss critically the Bradlian view of motion.

## Notes:

1. *'A History of Philosophy'*: Vol. I: Part 1: Frederick Copleston, S.J.: Image Books: Garden City, New York: 1962: p.74.
2. *'Zeno and Naagaarjuna on motion'*: Philosophy East and West 26, no.3: Mark Siderits and J.Dervin O'Brien: The University Press for Hawaii: 1976: p.282.
3. *'A History of Philosophy, Vol. I'*: Frederick Copleston: Garden City, New York: Paperback ed.2003: p.58.
4. *'Time and Free Will: An Essay on the Immediate Data of Consciousness:Vol.1'*: Henri Bergson: F.L.Pogson(Trans.): George Allen and Unwin Ltd., London: Humanities Press Inc.,New York: 1<sup>st</sup> ed.1910, 3<sup>rd</sup> ed. 1913: p.101.

5. *'Metaphysical Foundations of Natural Science'*:  
Immanuel Kant: Michael Friedman (ed.): Cambridge  
University Press: Cambridge: 1<sup>st</sup> ed.2004: p.26.
6. Ibid: p.80.
7. Ibid: p.82.
8. *'Conspectus of Hegel's Book: Lectures on the History  
of Philosophy'*: Volume XIII: Volume I of *The  
History of Philosophy: History of Greek Philosophy*:  
Vladimir Ilyich Lenin: Stewart Smith (ed.): Progress  
Publishers: Moscow: 4<sup>th</sup> ed.1976: p.326.

## Chapter Three:

### Bradley on Motion

In the second chapter, we critically discussed the arguments offered by Zeno. The dialectic of Zeno has a close similarity with the arguments of Francis Herbert Bradley which would be evident in this chapter. Bradley (1846-1924), born in Clapham of Surrey, is famous among the British Idealists and becomes best known for his Metaphysics. Bradley's metaphysical view is unique; it has its own intrinsic value. Here, we are concerned about his view regarding motion.

We know his metaphysical thought from his most famous writing '*Appearance and Reality: A Metaphysical Essay*' (1893), which discusses many

important aspects of his philosophy of Absolute Idealism. He describes the ways in which appearance is inseparable from reality and explains what this means for our understanding of the universe. This writing is divided into two books, viz. '*Appearance*' and '*Reality*'. The aim of the first book '*Appearance*', is destructive and has twelve chapters, viz., 'Primary and Secondary Qualities', 'Substantive and Adjective', 'Relation and Quality', 'Space and Time', 'Motion and Change and Its Perception', 'Causation', 'Activity', 'Things', 'The Meanings of Self', 'The Reality of Self', 'Phenomenalism' and 'Things in Themselves'. We know from this book that through the ideas of cause, motion, change, self, space, time, thing etc. we try to understand the universe but when we try to think of their implications, we fall into contradictions. In this book he criticises the intellect and the world of experience and reaches at paradoxical conclusions so acutely that he

is called the 'Zeno of modern philosophy'. The second book '*Reality*' is long and its aim is to provide a positive account of the Absolute-the ultimate, unconditioned reality as it is in itself. It has fifteen chapters, viz., 'The General Nature of Reality', 'The General Nature of Reality (*cont.*)', 'Thought and Reality', 'Error', 'Evil', 'Temporal and Spatial Appearance', 'The This and The Mine', 'Recapitulation', 'Solipsism', 'Nature', 'Body and Soul', 'Degrees of Truth and Reality', 'Goodness', 'The Absolute and Its Appearances' and 'Ultimate Doubts'.

Bradley tries to show that those concepts of common sense, through which we usually understand the world, lead us to contradictions. He argues that if secondary qualities are appearances then primary qualities cannot stand by themselves; as a matter of fact, materialism, as a theory of reality, ceases to be tenable.

Therefore, the reality of things, in terms of qualities, becomes incoherent.

If we take a statement, e.g., 'a human being is rational, intelligent and bipad animal', we find that the reality of the statement cannot be just a plurality of qualities in a relation. If we think so, we will be led to say that P is being related to Q means either that P is P or P is other than P. It is not easy to discuss about qualities without relations or to discuss about them as having them. Qualities can be shown both, to make their relations and to be made by them; while relations can be shown to be nothing or it gives rise to an infinite regress. Bradley claims that space and time must be both, more than relations and yet a set of relations, there is nothing left to the notion of things as such. Therefore, discussion relating to primary or secondary qualities, relations, space and

time, causation, motion etc. must therefore belong to the world of appearance.

Chapter III of the book '*Appearance*', entitled '*Relation and Quality*', caused great controversy. According to Bradley, all finite things and all aspects of the universe which we try to grasp, are riddled with contradictions and are, therefore, appearances. The very nature of relation indicates that, it essentially involves contradiction and therefore, unintelligible. For him, relations are unintelligible either with or without qualities (terms) and likewise, qualities are unintelligible either with or without relations. Thus, qualities cannot exist without relations and relations cannot exist without qualities. An attempt to separate qualities and relations is to reaffirm a relation between them, which is self-contradictory. New relations are required to link the relation with each of its terms - "*The links are united by a link, and this bond of*

*union is a link which also has two ends, and these require each a fresh link to connect them with the old.*"<sup>1</sup>

An infinite chain of relations is required to link any two qualities. Since this is unintelligible, he argues that "*A relational way of terms and relations – must give appearance and not truth. It is a makeshift a device, a mere practical compromise, most necessary but in the end most indefensible.*"<sup>2</sup>

It is the fact that the absolute cannot be described as having a degree of truth, because it is perfect truth. An idea is real insofar as it does not contradict itself and agrees with reality and is false insofar as it disagrees with reality. Truth and falsehood are aspects of reality. On the other hand, appearances may be true or false but they have a degree of reality. Appearances depend for their existence upon absolute reality and are, therefore,

impossible without reality. All appearances can be experienced as a unity in absolute reality. Bradley argues that there are degrees of possibility and contingency as well as there are degrees of truth in the world of appearance.

This third chapter of his book is very much important. For, by the same arguments Bradley establishes his thesis that concepts like space, time, motion, change etc. are full of self-contradictions. Let us now concentrate upon Bradley's view regarding motion.

In chapter V, entitled '*Motion and Change and its perception*', Bradley explains the impossibility of motion by arguing that motion implies that a moving thing is in two places at the same time. These places are successive, but the thing moved must be one and also the time is one. Hence, it is not possible for the same thing to

be in two places at the same time, i.e., motion is not possible. He argues that the problem of change underlies that of motion. Change points out to the confliction between the one and the many, the differences and the identity, the adjectives and the thing, the qualities and the relations. Change must be change of something and contains diversity. If an object changes, then it is either in time or out of time. Now, if it is out of time, then it is timeless object, but it's various successive states, e.g., object1, object 2, object 3 etc. are in time. For him, relation presupposes quality and quality presupposes relation. Change is a quality. He emphasises that if any relation between an object and its successive states, is not accepted, then the object does not change. If a relation is accepted between them, it is not possible for timeless object to be related to a succession of that object in time. Now, if it is assumed that the object is in time, the problem

arises as whether it itself has or has not duration. If it has duration, then it falls apart into its successive states and therefore, change does not occur. As change implies diversity or a succession of before and after, the non-acceptance of the duration of any object in time, implies no change at all.

Indeed, to be in motion, it is required that an object should change and for change there must be present two characters at once, i.e., a successive diversity and one time (not divisible). Change consists in the union of these two aspects. In asserting that an object is different at different times, we bring this diversity into relation with that object's qualitative identity symmetrically. But in spite of this, still, the identity of that object, in some sort of relation with diverse moments and varying states, is not what we understand by change. Change occurs when the

oneness of a quality, i.e., the unity of duration, is in temporal relation with the diversity.

Bradley concludes that change has no reality, it is not possible upon any hypothesis, it is only an appearance and accordingly motion is not acceptable. In this regard, it can be said that the use of the word 'appearance' often leads us to grasp the distinction between the absolute and the appearances, but actually, in every case we know only the absolute and an 'appearance' is nothing but the manner in which the absolute appears to us.

Bertrand Russell, a great fan of Bradley, becomes the most serious critic of Bradley in later years. The logic-based approach of Russell and the Analytics is highly influenced by Bradley and there are close ties between the two approaches. Bradley's philosophy itself is

both highly logical and highly informal. In later years, metalogicians like Godel, Church and Turing discover that Bradley recognized many of the limitations.

Moore and Russell reject Bradley's doctrine of internal relations and most philosophers today would agree with this criticism. Bradley, most famous for his book *'Appearance and Reality'*, defines what is ultimately real as what is wholly unconditioned or independent. In other words, what is real must be complete and self-sufficient. Bradley also thinks that the relations a thing stands in, e.g., being to the left of something else, are internal to it, i.e., grounded in its intrinsic properties and therefore, inseparable from those properties. It follows from these two views that the subjects of relations considered in themselves, are incomplete and dependent and therefore, ultimately unreal. For instance, if a chair is to the left of the desk and if the relation 'being to the left of' is internal

to the chair, then, being to the left of the desk contributes to the identity or being of the chair just as being six feet tall and being brown too. Consequently, it is not unconditioned or independent, since its identity is bound up with that of the desk. Since the truly real is independent, it follows that the chair is not truly real. This sort of argument can be given for every object that we could conceivably encounter in experience: everything stands in some relation or other to something else, thus everything is partially dependent on something else for its identity; but since it is dependent, it is not truly real. Bradley thinks that the only thing truly real is the whole network of interrelated objects that constitutes what we might call 'the whole world'. Thus he embraces a species of monism: the doctrine that, despite appearances to the contrary, no plurality of substances exists and that only one thing exists: the whole. What prevents us from

apprehending this, he believes, is our tendency to confuse the limited reality of things in our experience with the unconditioned reality of the whole, the Absolute or One. Hence, Bradley is unsympathetic to the activity of analysis, for by breaking wholes into parts it disguises rather than reveals the nature of reality.

In the early twentieth century a philosophical debate took place between F. H. Bradley and Bertrand Russell concerning a range of connected issues of apparently technical significance: the nature and unity of the proposition, the proper account of truth, and the status of relations. The historical outcome was momentous: the demise of the philosophical movement known as British Idealism and its eventual replacement by the various forms of analytic philosophy. Since then, a conception of this debate and its rights and wrongs become entrenched in English-language philosophy.

The early Russell, who is familiar with Bradley's work through his teachers at Cambridge, is only partly sympathetic to F. H. Bradley's views. Russell accepts the doctrine that relations are internal but, unlike Bradley, he does not deny that there is a plurality of things or subjects. Thus Russell's holism, e.g., his view of the interconnectedness of the sciences, does not require the denial of plurality or the rejection of analysis as a falsification of reality, both of which doctrines are antithetic to him early on.

Russell complains that Bradley tries to reduce metaphysics to mere logic. But Bradley's working recognises any possibility as an existing thing. If it is grasped that logic and mathematics are capable of describing any possibility, then, indeed metaphysics becomes merely logic and mathematics.

A criticism that may be made of Bradley's Absolute Idealism is that it assumes that reality must be in harmony with itself. This may be a questionable assumption and it is possible that disharmony and disunity are as much a part of reality as harmony and unity.

Another criticism that may be made of Bradley's philosophy is that it has a very negative view of metaphysical reality. For him, motion is merely an appearance of the absolute as well as space and time. He declares that reality is unchanging.

It is claimed that there is some inconsistency between the implications for self, space and time, and so on of Bradley's account of predication as identity (*'Appearance and Reality'*, Book I), which he rejects in his *Logic* and his account of degrees of reality in Book II. Moreover, his concept of the absolute itself is not clearly

defined, being described only in terms of transformed appearances. Real cannot be known except through appearance. Bradley admits that any notion of truth which excludes any of the possible worlds from reality is inconsistent. Though Bradley is not the first one for holding this basic argument as we know the view of the ancient Greek philosopher Parmenides but Bradley's argument is much more sophisticated than that of Parmenides.

Bradley's metaphysical arguments basically depend upon relations and qualities. An Analytic philosopher like Russell, strongly opposes Bradley's view and believes in an absolutely real world of experience. Russell sees categorical judgements not in merely subject-predicate terms but as relational structures. Russell and Moore interpret the doctrine in terms of the word 'internal'. Russell's sense of the word 'internal', i.e., reducibility to

qualities, shows Bradley's doctrine as non-comprehensive and rejects the subject-predicate account of judgment; while Moore's sense of 'internal', i.e., holding relations necessarily, shows it comprehensive. In 'Appearance and Reality', Bradley's application with this word 'internal' to relations not always has connection with the doctrine of internality except Chapter III in his book. It is natural that Bradley rejects the reality of external relations, though to interpret this as a commitment to the doctrine of internality is not logically inevitable.

Bradley argues that neither external nor internal relations, nor yet their terms, are real. For him, if a relation is a further kind of real thing along with its terms, then, a further relation would be required to relate it to its terms and so on ad infinitum. He thinks 'real' as a technical term. Like Descartes, Leibniz and Spinoza, Bradley realises that to be real is to be an individual substance and

therefore, to deny the reality of relations is to deny their independent existence. A thinker may claim that the denial of the reality of relations amounts to the assertion that all relational judgments are false. But for Bradley, no ordinary judgment is ever perfectly true; truth admits degrees. A perfect truth is one which do not abstract from reality and identical with the whole of reality. For him, *"The Absolute is not many; there is no independent reals"*.<sup>3</sup>

Generally, various objects are related in various ways to each other. These objects and relations are real and atomic, not reducible to anything else. But Bradley claims that relations are not atomic, not real in themselves. For him, a relational structure is static and objects connected by relations are illusory.

Indeed, relations exist only insofar as the objects within the relational structure get manipulated, used or processed to form such relations. Bradley argues that we need a second relation to connect the first relation to the objects it supposedly connected. But then the second relation is another object and we need a third relation and so on, ad infinitum. This is called Bradley's Regress which is a variation on the ancient Eleatic paradoxes of Parmenides and Zeno. Bradley's Regress is applied to relational structures rather than objects in space-time continūm.

Bradley's views on relations are both highly controversial and central to his thought. Commentators of different grounds have not found it easy to defend him. In 'An Introduction to Bradley's Metaphysics', C.D. Broad comments that "*Charity bids us avert our eyes from the*

*pitiabile spectacle of a great philosopher using an argument which would disgrace a child or a savage.*"<sup>4</sup>

In '*Appearance and Reality*', Bradley reduces the whole phenomenal world with its things and selves, its orders of space, time, motion and causation, to a mass of incoherence. Mr. Wollheim, the writer of the '*Review of F. H. Bradley*', criticises his doctrine of negation and his view of the contradictory as the sum of the contraries. Wollheim disagrees with Bradley at every major point, e.g., logic, metaphysics, knowledge, ethics and truth. For Wollheim, Bradley's philosophy is more negative than has been commonly supposed and says that "*We have the sense in studying it that it is built on a series of denials, of negatives, of rejections.*"<sup>5</sup>

Bradley's strict monism ultimately precludes any relations at all, but this can be understood as the

intensification of internal relations. Certainly it is quite distant from any theory of external relations. Whitehead's theory of prehension is a pluralistic version of internal relations, the many being held apart in that some of the terms are held apart by external relations. For him, reality itself admits of degrees, a phenomenon being the less real the more it is just a fragmentary aspect of the whole. He thinks all judgments to be defective in that representation can proceed only on the basis of separating in thought what is not separate in reality.

From the above discussion, it can be noted that there are two assumptions of Bradley which are as follows: (1): *It can be said that, if the process itself is one state then the moments are parts of it and they can be related in time to one another, otherwise they cannot be related and ultimately the object remains same through a period of any length and is not changed.*

This Process-Production Assumption of Bradley is not always acceptable. It will be clear if we take a biological instance, e.g., the process of an embryo within its mother's womb. Though, there are various moments in the process of embryo within its mother's womb, the process and the production(the baby) is not same. The embryo comes out as a new born baby which is different in its characteristics.

(2): *To unite two objects into a relation, a process of abstraction is required; without abstraction there is nothing to connect two related objects.*

This assumption is, however, unwarranted- this can be solved by the Nyāya-Vaiśeṣika point of view. If we concentrate on the Nyaya-Vaiśeṣika Theory of Inherence (Samavāya), we find that Samavāya refers to the inseparable relation (ayutasiddha) between substances.

Kanāda says that Samavāya is the relation between the cause and the effect. Prasastapāda defines the concept of Samavāya more accurately by saying it as the relationship that exists between those substances or objects which cannot be separated. The Vaiśeṣika School of Philosophy states that even the smallest perceptible matter is composed of the finite structure atoms and atoms are the indivisible and eternal reality of all substances. Here, the relation between the substance and its atoms, is Samavāya, substance and its atoms cannot exist without each-other. No direct connection through the relation of Samavāya is possible between the objects which are connected through it. If we take an instance for example, we can find that the motion of the sun inheres in the sun and is connected with the sun alone. It is distinct from the relation of conjunction (Samjoga), i.e., the temporary relation between two objects, e.g., the relation between a branch of a tree and a

bird. The objects connected through the relation of Samavāya are inseparable, they are related in such a way that nothing can separate them. The relation between the container and the contents, between cause and its effect, between red rose and its redness, between cloths and threads, between the whole and its parts is Samavāya. The objects in these instances are inseparable and cannot thought without each-other and therefore, process of abstraction is not applicable here to connect them.

We find that the views of Zeno and Bradley regarding motion, can be criticised with reasonable arguments. Now, to get a solution in this issue, we shall discuss the view of Nāgārjuna.

## Notes:

1. *'Appearance and Reality'*: F. H. Bradley: Oxford: Clarendon Press: 1<sup>st</sup> ed. 1893: 2nd ed. 1897: p.27.
2. Ibid: p.27.
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## Chapter Four:

### Nāgārjuna on Motion

In the third chapter, we find that Bradley's argument can be answered with the help of the Nyāya-Vaiśeṣika point of view. Now, to establish the reality of motion, we have to discuss the view of Nāgārjuna (C.150 - C.250) for he categorically repudiates the reality of motion as well as rest. He is considered to be one of the most famous thinkers of Indian Mahāyāna Buddhism, specially, in the Tibetan tradition and referred to as 'The Second Buddha'. He is known as the founder of the Mādhyamika school of Buddhist thought, the school of the middle way. The middle way avoids both the extremes of eternalism as well as of nihilism. The main theory of

Mādhyamika is the doctrine of 'emptiness' or 'śūnyatā' which shows that all phenomena lack a permanent, unchanging and independent self-existence. Phenomena possess a conventional existence in which they appear to have a self-nature, although in reality they do not. This teaching is also found in the Four Noble Truths of Buddha. Just like all other Hindu philosophical schools, according to Buddha too, all sentient beings live in an infinite cycle of suffering which is caused by their ignorance concerning the true nature of phenomena. Beings do not realize the emptiness both of things as well as of mental phenomena and adopt attitudes of like and dislike, which creates the process of suffering. But it can be stopped if the appearance of phenomena and their true nature is realised. In '*Mūlamadhyamakakārikā*', Nāgārjuna tries to provide a philosophical rationale for the notion of 'emptiness', which is

the key term in the '*Prajñāpāramitā Sūtras*', the earlier Mahāyāna literature.

By means of various arguments concerning motion, Nāgārjuna reaches the conclusion that no intelligible account of motion is possible. For him, it is impossible to give an intelligible account of motion, because to do so, is an attempt to make an analysis designed to cope with a certain limited practical problem apply far beyond its sphere of competence.

Indeed, he denies both, motion as well as rest. For him, space is divided mainly into two parts - the one is 'already traversed' and the other is 'yet to be traversed'. There is no space which is 'being traversed', because there, we have to admit two motions - motion in the space covered and motion in the moving body. Besides this, we have to admit two moving bodies, since it is not possible for the same body to be in two

places at the same time. Not only that, when a body is at rest, before the beginning of the activity, motion does not occur. It is not possible to say that motion begins where it does not exist and therefore, motion cannot be thought in the space yet to come.

Now, if we go through the '*Mūlamadhyamakakārikā*', we find that Nāgārjuna devotes the second chapter of his book to point out the inherent contradiction of the concept of motion (gati). According to him, considered from every aspect, the notion of gati or motion cannot be explained.

For him, "*What has been moved, in the first instance, is not being moved. What has not been moved is also not being moved. Separated from what has been moved and has not been moved, present moving is not known. (Gatam na gamyate tāvad*

*agatam naiva gamyate/gatāgatavinirmuktam gamyamānam na gamyate.)*”<sup>1</sup>

Let us clarify this argument with an example as given in the commentary ‘Prasanyapadā’ written by Candrakīrti. “In the time of walking, when we put a step, a portion of the track of that movement is already traversed by the front portion of the foot which should be called ‘gata’ or ‘what is already traversed’, that is to say, there is no motion in that portion. Again, the back portion of the foot must be called ‘agata’ or ‘what is not yet traversed’. The portion of the track of the movement is not yet traversed by the back portion of the foot. Therefore, there is no motion there. Thus, in the time of walking, the so-called movement is not found anywhere. As a matter of fact, on a close scrutiny, there cannot be any

movement. The concept of 'motion' must be regarded, therefore, as unreal.”<sup>2</sup>

It is to be kept in mind that the arguments of Nāgārjuna are directed against the Buddhist schools called 'Sarvāstitva Vāda'. The Sautrantikas and Vaibhāsikas belong to this school. According to them, an object is nothing but the collection of atoms only. It is different from the Vaiśeṣika view called 'Avayavi Vāda', viz., an object is something over and above the parts.

It might be objected however from the opponents standpoint that *“Where there is movement, there is motion. For which reason movement is in the present moving, and not either in the moved or in the not moved, for that reason motion is available in the present moving.(Cestā yatra gatis tatra*

*gamyamāne ca sā yataḥ/na gate nāgate cestā gamyamāne gatis tataḥ.)*”<sup>3</sup>

It is to be emphasised here that Nāgārjuna anticipates the opponent’s objection. To this objection, Nāgārjuna says that this objection presupposes two movers which is absurd. To explain, to assert ‘gamyamāne gati’ or ‘motion in the present moving’, two motions have to be accepted for without motion there cannot be the act of present moving. The act of the present moving presupposes a mover. Again, the concept of ‘motion’ is intelligible if a mover is presupposed. As a matter of fact, if there were two motions, then, two movers also ought to be accepted.

Against this view, it might be objected that it may be granted for the sake of argument that if there are two motions there should not be any trouble. To accept two motions, it is not

necessary to accept two movers. It can be treated as different actions of the same agent (mover). Do not we see a man walking and talking at the same time?

To this, it has been replied by Candrakīrti that “the self-same agent may perform two types of different actions at the same moment. But it would not be logically possible to perform two actions of the same type simultaneously. It is difficult to admit that the self-same person, say, Devadatta is the agent of the action of moving as well as the ‘motion’ at the same time.”<sup>4</sup>

Further, the Mādhyamika thinkers, mainly Nāgārjuna and Candrakīrti repudiate the reality of the mover (gantā) also. The term ‘mover’ only be understood with reference to motion and again, the term ‘motion’ only be understood with reference to the mover. So, there is obviously vicious circle and

therefore, the concept of motion turns to be absolutely unintelligible.

Again, the notion of mover itself is unintelligible further, for the following reason: A mover is understood only with reference to his motion. A person cannot be called a mover if he does not move. But Nāgārjuna points out that ‘a mover moves’ is nothing but a tautology because the word ‘moves’ becomes meaningful only in respect to his movement.

For Nāgārjuna, we cannot say that ‘Devadatta goes’ or ‘gantā gacchati’, because, there is nothing other than ‘gata’ (what is already traversed) and ‘agata’ (what is not yet traversed). If we say that Devadatta gacchati or Devadatta moves, we have to say either gata moves or agata moves. But it is not acceptable. Therefore, all is void, what we see is apparently true but not absolutely true.

Against this view, it might be said that movement exists, as *kāla* (time) exists. The moment when a movement is going, is called the present. The moment when the movement ended, is called the past and the moment when a movement will occur, is called the future. Different agents like singers, cooks etc. perform their duties when needed. It is true in the case of a mover also. 'A person is a mover' does not imply that he always moves.

This argument, however, would be summarily rejected by the Mādhyamika thinkers as the very concept of 'time' or '*kāla*' itself has been denied by them.

It might be claimed that motion exists, because it has a beginning, e.g., Devadatta is standing and then, starting to walk. But for Nāgārjuna, as there is nothing like motion, there is no beginning and end of it. What is done, i.e., 'what is

already traversed', has no beginning. There is nothing like 'being traversed' and therefore, has no beginning. Again, 'what is not yet traversed', has no motion and therefore, has no beginning and end. Therefore, the concept of 'motion' cannot be established by the concept of 'beginning and end'.

Again, Nāgārjuna's thesis cannot be repudiated by admitting that motion exists as rest exists. For Nāgārjuna, motion would exist if its opposite rest would exist. He denies rest. To explain, according to him, "it is not the mover or the non-mover (static) which is at rest and there is no third body which is at rest. The non-mover is not at rest, as it is already stationary and there cannot be two rests as this would involve two stationary bodies. As it is impossible for a mover to be without motion, it would be a contradiction to say that mover is at rest. Indeed, rest is not possible by cessation from motion,

because cessation or stopping is an opposite activity of a mover. A mover cannot stop from the space 'already traversed' or 'yet to be traversed' or 'that which is being traversed'. Rest cannot begin when someone is at rest or is not at rest."<sup>5</sup>

In *'Mūlamadhyamakakārikā of Nāgārjuna: The Philosophy of the Middle Way'*, Kalupahana comments that *"Prior to the commencement of movement, there is neither the present moving or the moved from which the movement is initiated. How could there be a movement in the not moved?"*<sup>6</sup>

To explain, If a runner cannot get started in the present moment, it is not possible for him to get started for ever, either because he has to transgress an infinite series of space-segments or because the atomic moment in which the movement should have started cannot be atomic for it has to consist of two moments, one in which the object is at rest and

one in which it moves and also not in any following present moment.

Kalupahana also comments that *"When the commencement of movement is not being perceived in any way, what is it that is discriminated as the moved, the present moving, or the not moved?"*<sup>7</sup>

To explain, before an object can start to move in an atomic time-instant 'commencement of moving', it has to be in some state concerning motion and non-motion in the preceding moment. This cannot be the present moving, because this moment precedes it; it cannot be another 'moved', because the preceding moment has to be a state of non-motion for the object starts to move.

The moment in which the movement should begin, is not perceptible as an atomic entity, because in this case it ought

to be in two opposite states, namely, moving and not-moving. Nāgārjuna does not want to refute the possibility of perceiving motion as such but only in relation to a certain conception held, i.e., the infinite divisibility of moments of time. The thought of an unchanging, permanent substance in phenomena being one of the basic conceptions Nāgārjuna wants to refute. For him, a moved object cannot possess a substance remaining really the same throughout the course of motion. Nāgārjuna emphasises further that if it should be granted for the sake of argument that motion exists, then, the question is: What is the relation between a mover and his motion? There may be two types of relation between them-‘motion with mover’ or ‘motion without mover’. The first relation, i.e., ‘motion with mover’ is not accepted, if it is accepted, then, motion and mover would be identical and for Nāgārjuna, *"If movement were to be identical with the mover, it would follow that there is identity of agent*

*and action. (Yad eva gamanam gantā sa eva hi bhaved yadi/  
ekībhāvah prasajyeta kartuh karmana eva ca.)*<sup>18</sup>

To explain, motion cannot be comprehended as identical with the mover for the mover (agent) and its activity (motion) cannot be distinguished then. If we have the conception of an inherent identity of the agent and its attribute(activity), the agent cannot really change its attribute. The mover is identified with reference to motion and therefore, it would be a contradiction to say motion with mover.

The second relation, i.e., 'motion without mover' also, is not accepted, if it is accepted, then, motion would be absolutely different from the mover. Nāgārjuna claims that "*If the discrimination is made that the mover is different from motion, then there would be movement without a mover, and mover without movement. (Anya eva puṅar gantā gateḥ yadi*

*vikalpyate/ gamanam syād rter gantur gantā syād gamanād  
rte.)'<sup>9</sup>*

To explain, it is not possible to admit the activity of 'motion' as absolutely different from the mover, for then, the 'movement', i.e., the action of moving cannot be predicated to the 'mover' as it is difficult to see how two absolutely different things can be predicated to each other. If we conceive the two as inherently different, we cannot explain the continuity of the one moving object. For Nāgārjuna, both, the mover and the motion do not exist, as they cannot be comprehended either as identical or as different from each other.

For Nāgārjuna and other Mādhyamika thinkers, therefore, it is not possible to establish the reality of the concept of 'motion' by any means. It is found to be riddled with contradictions and it is nothing but 'śūnya'.

There is another equally strong assumption held by the Nyāya-Vaiśeṣika thinkers which is, viz., a thing is something over and above its parts. The discussion so far shows that according to Nāgārjuna, the concept of motion is unreal. But it might be emphasised here that the underlying assumption of Nāgārjuna's argument is, a thing is nothing but a cluster of atoms. This is the basic assumption of the Buddhist philosophers like Sautrāntikas and Vaibhāṣikas and it is really very difficult to re-establish the concept of motion if this assumption is accepted. It might be pointed out however that this assumption is accepted by all the Indian philosophers.

In other words, a thing is entirely a new product which is different from its component atoms. If this assumption is accepted, then, the repudiatory argument of Nāgārjuna mentioned in kārikā 1, falls to be ground.

We find that the argument refuting the relationship of a mover and its motion has also logical defects. We have seen in the previous chapter that the argument of Bradley can be refuted by introducing the Nyāya-Vaiśeṣika notion of Samavāya or Inherence. So, this Mādhyamika argument can also be refuted in the same way.

The movement is an action and the mover is an object. A predicate is related to its subject by the relation of Inherence (Samavāya). Here, the ‘mover’ is the agent and the action ‘movement’ is the predicate. It is obvious that they are not identical but the action is predicated to the object and these two are related by the relation of Inherence.

Thus, it is found that Nāgārjuna’s thesis that ‘motion is unreal’, has no legs to stand upon. He argues that the mover cannot be motionless in himself apart from the motion, as it is a

contradiction to say a mover without motion. It is also impossible to say that it has a motion other than the motion which inheres in it, because it implies two motions, for it is a mover that moves. Therefore, it is difficult to explain whether the mover can be understood with or without the motion. It is also difficult to say whether motion resides in a body which is itself independent of motion or not.

Nāgārjuna states that *"An existent mover does not carry out the movement in any of the three ways. Neither does a non-existent mover carry out the movement in any of the three ways. Nor does a person carry out the movement, both existent and non-existent, in any of the three ways. Therefore, neither motion, nor the mover, nor the space to be moved is evident.* (Sadbhūto gamanam gantā triprakāram na gacchat/nā sadbhūto'pi gamanam triprakāram sa gacchati/gamanam

*sadasadbhūtam triprakāram na gacchati/ tasmād gatiś ca gantavyam ca na vidyate.)"*<sup>10</sup>

To explain, The 'three ways' are the assertions 'what has moved is being moved', 'what has not moved is being moved' and 'what has both moved and not moved is being moved'. The first implies a stable, substantial entity; the second a completely different, unconnected entity and the third implies both of these. All three of these are impossible and 'motion', 'mover' and the 'space to be moved' - all are unintelligible.

We find that the views of Zeno, Bradley and Nāgārjuna regarding motion are highly questionable. Now, it is the time to find a conclusion regarding this issue.

## Notes:

1. *'Mūlamadhyamakakārikā of Nāgārjuna: The Philosophy of the Middle Way'*: David J. Kalapuhana (Trs.): Motilal Banarsidass Publishers Pvt. Ltd.: Delhi: 1<sup>st</sup> edn.1991:p.118.
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7. Ibid:p.125-126.
8. Ibid:p.128.
9. Ibid:p.129.
10. Ibid:p.130-131.

## Chapter Five:

### Conclusion

From the earlier chapters it is clear that Zeno, Bradley and Nāgārjuna paves the path for us for further thinking about the reality of motion, though their views are questionable. All these philosophers are monist. They do not admit plurality, they believe in one Reality.

Parmenides denied change, saying it was appearance only, and interestingly out of the same principle taught that existence or being is ultimately one. Zeno and Parmenides both advocate a single reality of oneness, they believe that the plurality of things is nothing but appearance and Reality is one unmoved and cannot be realized by discrete thinking.

For Bradley, Reality is one, self-consistent, harmonious system and the consistent concepts of our thought is full of contradictions. The Reality can be realized only through intuition or immediate experience.

According to Nāgārjuna also, the things around us are apparently true and the reality of Absolute true is śūnya.

By means of various arguments concerning motion, Zeno, Bradley and Nāgārjuna have reached the conclusion that no intelligible account of motion is possible. But if there is no motion how could they be able to write that there is no motion, as movement of their fingers would indicate motion. If it is said that they did not write but they said verbally that there is no motion, then, the question arises how could they became able to speak as movements of their tongues and lips in a word, the vocabulary organs would indicate motion.

In practical life, human beings and other animals change places for various purposes, e.g., food, shelter, learning, etc.. If there is no motion how would it be possible for them to lead a normal or usual life, as without movement they cannot change their places.

In our times, we know from science that Earth, Sun and other planets and stars move on their own orbits. If motion is not accepted, then, it would not be possible and astronomy would become false. Hence, this discussion proves that motion has reality and it does exist.

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