CHAPTER – I

INTRODUCTION

In presenting the thesis, it has been my intention to offer some sort of clarifications to the concept of causality in philosophy and science and thereby I have tried to remove some ambiguities involved in the concept as well as in its use. My standpoint here is never historical, that is, I have not included within the purview of my discussion each and every aspect of thought relating to the development of the concept of causality, rather I have been selective all along in my attitude towards the issue by focusing on some major problems of it. It is an undeniable fact that all most all the branches of knowledge, whether philosophical or scientific, have been using as well utilizing the concept of causality very widely. In spite of the enormous work already done in the field, it appears to me that the philosophers as well as the scientists have rendered the concept of causality to an ambiguous one and, therefore, no accuracy in the meaning of causality has been reached so far. Consequently, this sort of impreciseness, rather the ambiguity, has been responsible for the generation of the long term dispute among the philosophers and the scientists.

Not only philosophy but also science are, somehow or other, engaged in search of causal explanations of things. Science, as we know, is a knowledge which claims to be exact, certain and fully organized. It is better to call it as well organized real knowledge, "Mr. J. Arthur whose little book entitled *An Introduction to science* is recommended to the reader, following Pearson and many other modern scholars, defines science in this way. "Science is the complete and consistent description of the facts of experience in the simplest

possible terms."[1] What this specification implies is that a scientist in his study of a group of natural phenomena first collects the facts, analyses and classifies them, and then he studies the conditions under which they occur, that is, he tries to find out their causes and formulates their causal laws on its basis. In other words, the scientist is giving here a kind of explanation of a thing to show the conditions under which it occurs, that is, its causes, for example, the explanation of typhoid by the invariable presence of a certain kind of bacillus. On the other hand, the philosopher like a scientist is also in search of knowledge which is equally certain, exact and well organized. But what is worthnoticing is that philosophy does not remain content merely to determine the invariable sequences of phenomena and formulates their manner of behaviour. Rather it tries to provide some ultimate explanation of things – their first cause, their moving cause, their teleological cause, and so on. This shows that philosophy is also interested in giving an explanation of the world in terms of causality. Obviously, not only science but also philosophy has the same purpose of discovering the causal relation and formulating laws governing the phenomenon. In this connection, it is to be noted that common people also have the conviction that whatever happens is due to some causes whether they are known or unknown and deal with the world around them on the basis of such conviction. However, man is both an agent and a patient such that he not only tries to adapt himself to his environment but also tries to adapt environment to his needs and purpose. But the essential requirement for doing this is the knowledge of the cause and effect, i.e., the knowledge without which he is not properly able to deal with the things around him. Therefore, the search of causal connection in this sense is theoretically and practically important, but it is admitted that the discovery of this causal relation has posed a great problem to the philosophers as well to the scientists.

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[1] Patrick : *Introduction to Philosophy*, p. 20

In the light of the foregoing discussion, it is obvious that the most important question giving troubles to us is concerned with the search of what this causal relation is, that is, with the inquiry into what the nature of this causal relation is. In this connection, philosophers have used the concept of causality in different senses, viz. anthropomorphic sense, logical sense, metaphysical sense and empirical sense. The anthropomorphic sense of causation is defined as an animistic type of explanation of the causal relation. It has tried to interpret the nature of the causal relation on the basis of the analogy that when we do things or suffer things done to us, there is a feeling or experience of power or force which acts as an agent. Therefore, when we see things happening in nature, we carry over our inner experience of the effort or power or agency which causes things to happen, and assume that causation is just such a case of power or enforcement . This also resembles the idea of the common man who is not trained regarding causality because he equally believes causality as a relation in which the cause produces an effect. The consequence of this position seems to be that the causal relation is a process where the cause as an agent enforces the effect to be produced. This is a view which holds that the cause as a substance necessarily produces the effect so that this cause is conceived of something as inevitably giving rise to the effect through transference of its power. If so, when we speak of mechanical causes, it is very hard to believe that even in such cases there is no such enforcement and necessary connection between a material cause and its effect. On the version of the anthropomorphic sense of causality we must admit that there is certainly a necessary causal relation in this case. The concept of cause as 'power' is not only admitted by the common sense people but also supported by the philosophers like Locke. Locke is of the opinion that the causal relation is the expression of "power" which does possess two aspects, viz, the capacity to produce a change and the capacity to receive a change. According to him, the idea of power is necessary for the apprehension of the changes and seems to

allow the necessary connection in causality. He says that in our every day life we have a justification for this notion when we experience fire that melts the gold, and the gold that is melted by the fire. He thinks that in our day to day experience of volition we are directly aware of the operation of power or cause with reference to its effect. This anthropomorphic sense of causation is very obvious when Locke says, "The idea of the beginning of motion we have only from reflection on what passes in ourselves, where we find by experience, that, barely by willing it, barely by a thought of the mind, we can move the parts of our bodies which were before at rest."[2] But this experience of volition or the psycho-physical interaction is one which we know by means of experience. This experience fares no better than the ordinary experience which cannot help us to know clearly the mode of our mind's operation on the physical substance. That is why, Hume argues that we cannot get this causal relation in the physical world.

The concept of causality in the logical sense has been propounded especially by the rationalist philosophers. These philosophers have identified causal relation with the logical implication or the relation of entailment which has been interpreted in terms of logical necessity. The concept of deductive method, which Descartes calls ' mathematical' and Spinoza calls 'geometrical' leads to this identification as mentioned above. In a deductive inference, the premise which is said to be the logical ground implies its conclusion logically and, therefore, the relation between as the premise and its conclusion is logically necessary. It is like the necessary way in which the properties of a triangle are entailed by the definition of the triangle. The relation between cause and effect has been explained analogously to the relation of logical entailment between the premise and its consequence in an inference. Therefore, the effect is derived necessarily from the very nature of the cause in the same way in which the conclusion is logically derived from its premise. If so, such an

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[2] Locke : *An Essay Concerning Human Understanding*, p. 138.

interpretation has reduced the concept of causality to an analytic concept and, hence, to an apriori principle. On this version, the concept of causality implies two things. First, when we say 'A causes B', we mean that whenever A occurs, it is followed by B. Secondly, it is not only the case that B follows A but it must follow A. This shows that the causal relation is a necessary relation. Now it is usually pointed out that the cause is regarded as the antecedent event which comes before the effect, and the effect is the consequent which comes after the cause. Hence, we generally refer to this temporal relation of before and after between the cause and the effect. But the logical view of causality does not imply this time – gap between the events because both of them, strictly speaking, are only simultaneous in time. However, the rationalist philosophers have reduced this notion of causality to the metaphysical concept in so far as they have consciously identified the cause, i.e., the logical premise (the ground) with the Divine Mind or Causa Sui and made it a source of all causal necessities. The rationalist philosophers, therefore, argue that the whole universe is full of order where the effect follows with strict logical necessity and universality from its Causa sui or the Divine Being and, consequently, such a view leads ultimately to the causal determinism. Again, since the rationalist's identification of the cause with the logical premise (i.e., the logical ground) has made the cause and effect simultaneous, it goes against the time-gap (i.e., the relation of before and after) which is an indespensible part of our concept of causality. It seems obvious that this time-gap can be maintained on condition our mind can proceed in finding out that events on the basis of particular experiences and not from any logical premise. Jevons says, "Endow mind with the power to travel about, and compare part with part, and it could certainly draw inferences concerning the similarities of forms, the co-existence of qualities, or the preponderance of a particular kind of matter in a changeless world. A solid universe, in at least approximate equilibrium, is not inconceivable, and then the relation of cause and effect would evidently be no more than the

relation of before and after. As nature exists, however, it is a progressive existence ever moving and changing as time, the great independent variable, proceeds."[3] Hence the rationalist's interpretation of causality is not satisfactory. The rationalist's interpretation of causality is not satisfactory and the modern view of causation is that which brings about a change in a thing and which can be known empirically. It should be mentioned here that modern epistemology and science are in favour of finding out the causal relation on the basis of facts, and therefore, they are trying to solve the problem not by any appeal to any such mystic approach as the rationalists have adopted.

Sometimes the concept of causality has been used in the metaphysical sense such that it admits one ultimate cause which is no other than the Divine Mind or Absolute. According to this view, the things and beings in the world follow with metaphysical necessity from this Divine nature. It is, in fact, the rationalist's consequence of the identification of the logical ground with the Divine Being whose nature necessarily entails the finite things as its effects. Now this metaphysical causality has been understood usually in two senses, viz, the First Cause or the Causa Sui and the Final Cause or the teleological cause. In so far as the concept of the First Cause is concerned, it has been interpreted as the uncaused cause which is the cause of everything but which is caused by nothing outside it. Now, science remains satisfied with the belief that every event has a cause and finds this assumption fully justified on the basis of the First Cause. Philosophy adopts a different attitude to this problem and goes back over an infinite series from effect to cause. To stop this infinite regress in the causal process, philosophy accepts the First Cause at the back of this causal chain. Here we say (approximately naively) that in the beginning god has created this world and introduced everything which seems even perplexing to us. On the other hand, there is another sense of the metaphysical causality

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[3] Jevons : *The Principles of Science*, pp. 220-221

which is used to mean the Final cause. The expression "final cause" is used by Aristotle in a special sense in which it does not mean any first or last cause, but only to the end or teleos. In the case of human affairs the end or purpose of an action or production is spoken of as a cause, for example, the observation of an anticipated eclipse of the sun is the cause of setting up a telescope in a certain place. So, the question arises whether in nature there is an end which may be regarded as determining all the natural processes. If by the world 'teleos' we mean the end or goal, then this interpretation also resembles that of the idealist thinkers who also maintain that there is an end or purpose in this world. According to this standpoint, causality in this sense is an eminent purposiveness in the heart of all things and explains all the changes in the universe. It holds that there is an ultimate spiritual reality which realizes its own self in and through the things of the universe. The uniformity or the unity of nature already reveals the fact that the world or the universe is directed towards this end which is the embodiment of all values. The idealists have identified this end with the Absolute or the Divine Mind. If so, this teleological causality is known as finality and, therefore, causality in this sense is always finality. This shows that the concept of causality in nature cannot be explained without this final causality which is identical with the Absolute or the Divine Mind. In this sense, it may be accepted that the nature of everything has an innate tendency or capacity for developing in a certain direction. We may call it the power of response to the right stimulus. But it is not the proper explanation of the changes because without an external cause or stimulus no internal potency can manifest. Commenting on Aristotle's view of cause. Guthrie says, "Something else must act in the threefold capacity of efficient cause (as initiating the motion), formal cause (for in natural generation the start must come from a number of the same species) and final cause (a representing the goal to which the development will

be directed)."[4] However, we can say that the concept of causality in the sense of teleological cause is only a metaphysical notion and does not have any common usage. Besides, modern scientific researches are no more concerned with the teleological cause in Aristotle's sense.

The empirical concept of causality has been propounded strictly by the empiricist philosophers. This concept, as the very name indicates, is said to be derived from our experience of the events. The exponents of the empirical concept of causality hold that the so-called necessary relation, whether logical or metaphysical, is obviously groundless in so far as it is not available through sense-experience. The most distinguishing philosopher in this connection is Hume who claims that knowledge of causes must come from experience. But we know nothing of what kind of thing it is that causes another to happen or whether every event must have a cause, except in so far as we can justify our claims by reference to actual experience of constant regularities. We only perceive that one event is followed or preceded by another, for example, firing of the gun followed by the death of a man or the later is preceded by the former. We do not perceive any "power" by virtue of which the first necessarily produces the second and, hence, we do not experience any such necessary relation between the two events. In this sense the empiricists do not admit that cause is any kind of "power" nor do they admit any necessary relation between cause and effect. The inevitable outcome of this empiricistic standpoint is that it goes against both the anthropomorphic notion of causality and the rationalist concept of causality. However, the positive view in this connection is that the concept of causality is merely the regularity or uniformity in the succession of events. On the Humean version, when we experience that one event is uniformly followed by another, the ideas of them become associated in our mind so that whenever we think of the former, we cannot but expect the latter. This

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[4] Guthrie : *The Greek Philosophers*, p. 135.

shows that causality is nothing more than "uniformity of succession" of events, and cause in this sense is to be regarded as only the "invariable antecedent" of the effect. Secondly, our experience of the constant regularities in the succession of events begets in us the habit of expectation that since one event A has happened the other event B will follow and thus we jump to the idea of necessary connection between A and B. If so, this necessary relation is that which does not really exist in the external world but exists as a habit in our mind. This perspective is otherwise called the regularity view of causation. It is, as Russell holds, almost like an inductive truth; if it fails to work, we are required to collect more instances to establish the causal connection more strongly. But this empiricistic view of causality is not satisfactory because the arrangement of cause and effect is not a matter of imaginative construction or habitual expectation in our mind. On the contrary, the happening of one event is well connected with its previous stage, and, hence, it is based on fact and the root of this necessary connection is the fact itself. Bosanquet says, "Reality being a system of reciprocally determining parts, every part of feature of reality may be regarded as a consequence to which other part or parts, or ultimately the whole, stands as ground. Every consequent, so this law tells, has a ground from which it necessarily follows. Necessity indeed means nothing but the inevitableness of the consequent when the ground is given."[5] Here we cannot but admit that Nature is a coherent system such that it does not allow any accidental or whimsical happening in it, and so there is a sufficient ground for the happening of one event after another.

The foregoing considerations are evident enough to show that the concept of causality has been the main issue of dispute between the two traditions of rationalism and empiricism; the former accepts the necessary connection, while the latter denies it, thus leading to the imprecision in the

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[5] Bosanquet: *Logic or Morphology of Knowledge*, pp. 212-213.

concept of causality. In this connection, Kant has tried to synthesise these two contentions by introducing the concept of transcendentatism in philosophy. As opposed to Hume, Kant argues that the relation of causality is never contingent but a strict necessary connection between cause and effect. According to Kant, the origin of the idea of cause does not lie in the repetition of facts (i.e., in succession). On the contrary, its origin is apriori representation by virtue of which the causal relation happens to be universal and necessary. He holds that the validity of universality and necessity of causality can be judged with reference to experience because any experience of objective succession is of the necessary connection. However, Kantian standpoint of causality goes against our common sense and scientific views of the concept. This is so because in common sense and science there is no room for any such apriori idea for the origin of causality. Both of them have layed an emphasis on the factual and dynamic character of causality, and this is what is lost in the Kantian interpretation of the concept. According to Kant, the logical ground to connect cause and effect cannot be found in the empirically given time series but only in a non-temporal world. In this way, Kant goes beyond the common sense use of the word "cause". The contemporary scientists also do not favour this idea of causality as they are interested in analyzing the concept on the basis of scientific research and logical articulation of the facts. What is more important to note here is that Kant's interpretation of the causal synthesis in terms of transcendentalism bears the stigma of being a psychological concept. Paton says, " The other way is simply to assert that Kant's doctrine of transcendental sysnthesis is a mistaken kind of psychological doctrine which need not be taken seriously."[6] However, this dispute continues in the modern sciences as well. An advanced scientific understanding of the world is not in need of such transcendental notion of causality in the Kantian sense of the term. Most of the scientists like Jeans,

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[6] Paton : *Kant's Metaphysics of Experiences,* p. 280.

Hiesenberg, Eddington and others argue in the line of Human tradition that causation is a mere sequence of events. The causal law is like a statistical law because it is constructed on the basis of the observation of the average behaviour of atoms. The observation in question shows that there seems to be no strict causality in the atomic behaviour, and, hence, these taws are indeterminable. These scientists are more in favour of eliminating the concept of strict causality from the domain of science. What goes here under the name of causality is based on the observation of the regularity or uniformity in the sequence of the behaviour of the atom. On the other hand, Planck, Einstein and other argue in favour of the strict causality in the domain of science. According to them, it may happen that experimental difficulties do not always help us to find out the strict causal relation in the subatomic processes. But this does not mean any causal indeterminism in the field. Whitehead has made an attempt at synthesizing these two opposite views of determinism and indeterminism by saying that we can directly perceive the causal relation when we observe two events in succession, and our consciousness understands this common ground (causality) when it observes the similarity of relation on various occasions. If we stick to this position, then it involves the fundamental claim that we depend here on both observation and understanding. But Venn argues that our understanding itself has a limit, while the empiricists hold that observation (sense-experience) gives us only the regularity in sequence. In this connection, I shall say that the nature of causal connection is such that not any type of interpretation is able to discover its nature, and so it is theoretically difficult to establish this causal relation. Secondly this relation is such that it cannot be demonstrated mathematically or deductively to make the people wholly convinced of it. But there are so many facts which cannot be proved in the sense required and, therefore, they remain almost outside the scope of our proof – techniques. For this reason alone, we cannot come to the conclusion that they do not exist or they are not valid. Similarly, though it is not possible to observe the

connection and physical connection belong to two distinct categories. In chapter III, I have put the empiricist approach to the concept of causality. Here I have argued that the philosophers of this tradition have faced a lot of problems in handling the concept of causality adequately. I have said that none of them has been able to supersede the Humean conclusion that causation is only a de facto regularity in the succession of events. Hence , this standpoint cannot explain the objective connection in the concept of causality. In chapter IV, I have presented Kant's transcendental idealism which has tried to synthesise the rationalist and the empiricist views of causality. Kant says that we begin with the observation of empirical facts and then our understanding synthesises them by introducing the universal and necessary relation of cause and effect. On this version, the events are chained by the necessary succession in time-determination. But my contention is that it has been a psychological doctrine and so it fails to explain how this causal relation is imposed on the succession of events in the external world. Kant's merit is that he has laid an emphasis on the necessary relation of causality without which we cannot experience the world which changes in one homogeneous and continuous time. It is also the underlying assumption in common sense and science, i.e., the assumption without which science cannot make any progress. In chapter V, I have addressed the problem of causality from the standpoint of modern science. In this connection, I have raised the issue of determinism and indeterminism. My conclusion is that though all the persons who are very tough-minded realists will insist on determinism or absoluteism of the law of causality, yet we may argue that we do not have the logical ground to assert this causal determinism from the standpoint of positivism. Rather, we should admit that what we experience is the regular sequence of events in time. If so, this principle of indeterminism has led itself to go for the Humean concept of causality. In chapter VI, I have come to the conclusion that the major source of the ambiguity is due to confusing the two concepts of causality, viz., epistemological concept of causality and ontological concept of causality. My

argument is that the ontological causality, i.e., the causality as it is in itself goes beyond our human discovery, and therefore it should be kept separated from the causality for us, i.e., the causality as we know it. The conclusion is that causality in this later sense is still a working hypothesis.