

Chapter I

Introduction

Knowledge and Causality

Causality has been a pivotal concept in the history of philosophy since the times of the ancient Greeks. Besides science and philosophy of science in contemporary philosophical thinking, concept of causality has been instrumental in formulating the relationship between the psychological and the neuro-physical aspects of human behaviour. It has had an important role to play in philosophy of mind also. What is of moment for us in the context of the present work is that a category of theories in the philosophical discipline of epistemology has been christened as casual theory of knowing exploiting the notion of causality for solving problems of knowledge. Prior to any statement about the relation of causality to knowledge, which is our present concern, the nature of causality is intended to be clarified. We shall, therefore, first try to understand the nature of causality before proceeding to discuss its applicability to certain problems of knowledge as proposed by some epistemologists.

I

It is the business of the various sciences to discover particular causal relationship and causal laws; but it is part of the business of philosophy to determine what causal relationship in general are. What it is for one thing to cause another or what it is for nature to obey causal laws? This is indeed an ontological question, a question about how the world goes on. In Hume's phrase, the central problem is that of causation 'in the objects'. In approaching the ontological question philosophers are engaged in the meaning, the logic of causal statements and the uses of causal language or conceptual

analysis. There is also an epistemological dimension to this basically ontological enterprise. The epistemological question is: How can we learn about causal relationships, test, refute, establish, confirm causal claims and hypotheses? There are various theories here, the verificationist, the phenomenalist, or subjective idealist, etc. The ontological and epistemological questions are interrelated in that the possibility of finding things out may set limit to what we have any right to assert to be there. Again, on the other way, an ontological claim that lacked epistemological support would be nothing but an empty speculation. Causality is thus, taken in philosophy in a very broad sense. It covers functional dependence as well as connections between cause-events and effect-events; there may be continuous processes, which it would be not at all natural to describe in the ordinary terminology of cause and effect. There may be statistical laws, probabilistic laws working in contrast to strict causal, that is, deterministic laws. Causal relation is also described as the relation between ground and consequent. There may be human actions which do not fit into some preferred framework of mechanical causation. There may be room for teleological explanation of what goes on. Philosophers have paid attention to one, or some, or most of them according to their predilection.

Causality is used throughout the sciences and in daily life for inference and for explanation. We represent the world causally so that we can make predictions, diagnose faults, make strategic discussions, explain events and apportion praise or blame. Like all other types of explanation, casual explanation is a correlation of given phenomena, how actions and events stand in relation to one another. To understand the nature of causality, therefore, two questions need to be answered: (I) what are the characteristics of causal relation? And (II) what are the properties of causal entities?

These two questions are but relatively independent. There cannot be any crisp division between them, as the characteristics of the entities and those of relations flow into one another. For example, the essential characteristics of mind and body as *res cogitans* and *res extensa* respectively *a la* Descartes, makes possible not an one-directional causal relation from either the mind or the body, but one of interaction, although the theory of causal interaction was replaced by the theory of parallelism by Spinoza, and this theory is implied by the very nature of consciousness and extension as independent attributes.

There are different types of process or order in the world – casual, purposive, etc. An example of the casual relationship, occurring by sheer chance, would be the relation between alighting of a bird on a tree and the dropping of a fruit from the tree. In Sanskrit terminology it is expressed as *Kakataliya*. It is absolutely irregular, just a matter of accident, a matter of pure chance. Instances of causal order would be “heat melts ice”, “water quenches thirst”, “bodies gravitate towards one another”, etc., or to take Hume’s example of billiard balls, one billiard ball strikes another and the second ball moves. The above instances of causal relation exhibit three characteristics. They are non-anthropomorphic, uniform and deterministic. Let us discuss them below.

Causal relationship is a certain order of events and not an activity of an agent undertaken to serve some purpose. This is true in spite of the fact that all our knowledge about the earth and the fullness thereof arises from causal interaction, not only among earthly bodies but of earthly bodies with our bodies. In the objects of the world, causality or rather causation is seen as a relation between concrete events. But more precisely, it is it is a relation between ‘instantiated features’. We do not have one concept for physical causation and another for human actions and reactions. Cause is a

fairly unitary concept. However, an expansive view of causality accommodating human purpose, etc., may not be accepted in all quarters. A person, may, of course, be instrumental for bringing about the particular order of events in a particular situation through his activities, e.g., switching on the gas oven and putting a kettle of water on it, bringing the water to the state of boiling. Yet, with regard to the causal relation, we cannot speak of approving or disapproving purposes, ends, wishes or desires. Causal relation simply disregards them.

Causality refers primarily to the uniformly constant features of the given phenomena. One aspect of the uniformity of nature is the causal uniformity – the same cause giving rise to the same effect. The uniformities of causal relations deal with specific processes under certain limited conditions. In our daily experience or in the early stage of science, the uniformities are of a general character, one thing causing another, fire causing burning. But in advanced sciences, the uniformities may be stated numerically with precision.

The third characteristic is that causality is associated with the concept of determinism or necessity. The concept of necessity has been violently criticized by philosophers from Hume to Russell. After Hume, many have questioned whether there is (or can be) any metaphysical meaning of causality or valid inference based on it. We do not perceive any real effect of one thing upon another, that is, no causality in the classical sense. What we term 'causality' can be nothing other than mere constant conjunction of the idea of the cause with that of the effect. Without minimizing the likelihood of this criticism we may content ourselves to hold that necessity is not a myth; it has a meaning, otherwise such objections against it would have been of no consequence. Even Hume does not reject all forms of necessity. He says that

'necessity' belongs to the causal discourse, to the relation between cause and effect. The relation between cause and effect is characterized by two factors; uniformity and regularity; and in terms of these two factors Hume defines the concept of necessity. Hume equates causation as it really exists in the objects with regular succession. It is a general feature of the way the world works. It is as he says, 'the cement of the universe'. Such regularity is well fitted to play the role of necessity, that is, of something that would license causal inference, but not *a priori*, not from the knowledge of individual cause or effect on its own. "...the necessary consciousness merely a perception of the mind..."¹ "The mind feels the necessity."²

Causal relation is deterministic in the sense that something more than the sequence of events is asserted. Here, the assumption is that a given result is due to or is determined by the existence of some other fact. Some have understood the regularities of succession as probabilistic or statistical rather than deterministic.³

Hume's treatment of causality leads on to Kant. Kant's concept of causality is an answer to Hume's criticism. According to him, experience of events requires not only awareness of their intrinsic features but also that they be regarded as one after another, in an invariable regularity determined by the concept of causality. E.g., in order to experience the flowering of the chrysanthemum as an event, I must not only perceive the blossoms as they now appear but must also regard them as merely the present consequence of a succession of prior organic developments. Thus, Kant responded to Hume's skepticism by maintaining that the concept of causality is one of the conditions we determine for ourselves prior to all experiences. Causality as a pure concept of understanding is applicable *a priori* to every possible experience. We might naturally ask whether every event has a cause. Does the cause obtain in the world

itself? To these further questions Kant's answer is that it is vital to distinguish between the realms of phenomena and noumena. Phenomena are the appearances which constitute our experience; noumena are the things in themselves which constitute reality. All our synthetic *a priori* judgments of causality apply only to the phenomenal realm, not to the noumenal. What Kant claims to have shown is that the concept of cause and the principle drawn from it, for example, that everything that happens "presupposes something upon which it follows according to a certain rule" stands *a priori* before all experience and has its undoubted objective rightness though admittedly only in respect to experience.⁴

Let us now consider the nature of causal entities. In a literal sense causal entities are perceptual entities. Causality begins with perceptual experience and attempts to make it intelligible. The events or processes in the world offer problems. How does wood float? Why does iron sink in water? How do the heavenly bodies move? All causal entities can be located within the space and dated in time. Causality, in the most general way, is a type of explanation which employs only functional correlation among entities in the space-time continuum. The causal entities—the cause and the effect—are events, for events are needed to bring about other events. According to Davidson it is events that are the most plausible candidates for 'causes' and 'caused' alike.⁵ States alone cannot cause change. For example, the states, like the dryness of the ground, the density of the trees, the wind's being strong, may all be causally relevant for the explanation of a forest fire. But these states might persist for ever and the forest fire may never occur without an event to trigger it off, for example, someone's lighting a match or throwing a lighted cigarette into the dry bush. But it is also required that the states be included alongside events. The lighted match or

cigarette's being dropped into the bush would never have caused the forest fire, had not the ground been so dry, the wind so strong, the foliage so dense. The states, combined with the events are the causally efficacious entities to produce effect events. The ontology of causality is thus a two-tiered ontology of states and events.⁶

As regards the question whether causal entities are facts no easy answers are forthcoming. J.L.Mackie, while considering the nature of the entities that are thought to stand in causal relationship, distinguishes two types of causes, (1) producing causes which are related to events and (2) explanatory causes which are related to facts. Mackie will thus, accommodate both events and facts into causal relationship.⁷ There is another strong view. We shall see that Alvin Goldman has very emphatically asserted that causal relationship holds among facts only.⁸ Another philosopher, Steven Luper-Roy assumes that matters involving causes and effects can be dealt with in terms of facts, so that there is no need to introduce the ontological category of events.⁹ However, to regard the causal chain as a series of events each link of which causes its successor and is caused by its predecessor is pretty strong.

Having recourse to grammar, we find that events or states may be referred to by singular terms such as names, definite descriptions or demonstratives. When we express them in sentential structures or propositional constructions, we introduce "fact," as for example, "the fact that the lighted cigarette butt was thrown into the dry bush (*p*) caused...", or, "the fact that the lighted match was dropped in the dry bush (*p*) caused ." The fact is counterfactually relevant for the occurrence of some effect. We ask ourselves the question, "Would the effect still have occurred if *p* (the lighted match...' etc.) had not been true?" Or, "Would the effect have been as likely to occur if *p* ('the lighted match ...' etc.) had not been true?" What we observe from the above

discussion is that our causal claims are heterogeneous. Sometimes, it is a claim of being in a certain state, or a claim about a particular occurrence or, event or an accounting of the fact that such and such which is counterfactually relevant in the production of the effect. In whatever way it might be interpreted our causal claims are causal explanations in which two events are linked by the verb 'to cause'.

Apart from the ontology of causation, there is the employment of causality in epistemology. Causality is not only explanatory; the explanation is the cementing of the *explanans* and the *explanandum*, so that no chance factors can intrude. It is necessary for knowledge that what is known causes the knowledge – the true belief, that is to be styled as knowledge. Ordinarily, we argue that someone could not have known this or that, by showing that he or his sense organs could not have been termini of any causal chain emanating from the thing allegedly known. According to G. Vlastos, Plato himself held this view.¹⁰

Our question naturally becomes: "What contribution does causality make towards having knowledge?" or "Why do we need such a notion for our analysis of knowledge?" The most common answer that is being given by the causalists in epistemology is that it is to prevent arriving at knowledge in an accidental or lucky way. Now, the 'chance' factor may be relevant in the sense that paradigm cases of true belief may fail to count as knowledge. Suppose that I believe something and am correct in my belief, but my true belief may not qualify as knowledge. My belief may merely happen to be true. The possibility that our beliefs can be true 'by chance' leaves us unsatisfied with an account of knowledge as mere true belief. What is needed is to define knowledge in the following way:

- a) S believes that p.

b) P is true and,

c) the conjunction of (a) and (b) is not a matter of chance.

But how do we test that 'chance' has been eliminated? Such a characterization of knowledge, hence, automatically requires justification to be the criterion to ward off true beliefs held by chance. Yet, that may not be the end of the trouble. Though, one has a true belief that is justified, it is nevertheless plausible, at least *prima facie* plausible, that one has ended up having a true belief as a matter of chance. So justified true belief cases are not really different from ordinary cases of believing truly. If so, then what is needed is yet another condition that wards off true beliefs which are 'chancy' in this new way. That additional condition is said to be the causal factor in one's belief-forming practices. This is how some epistemologists have introduced causality in theory of knowledge, rather, in how the traditional analysis of knowledge is to be carried out. In what follows we shall discuss the traditional or classical theory of knowledge, and how a reorientation of epistemology has been suggested in causal terms, in the light of the issues raised by Edmund L. Gettier.¹¹ This will concern us in the next section.

II

A lion's share of epistemology in contemporary philosophy investigates what is perhaps epistemology's main question: "What is knowledge?" Epistemologists today have taken closer look at this question. Not only that; most of what has been written in epistemology over the ages may be said to be a quest for an answer to the question: "What is knowledge?" For example, in the *Theaetetus*, Plato considers the thesis that knowledge is true opinion that can be backed up with adequate evidence or explanation, thus, providing an answer to the question above. It can also be argued that

some answer or other to the question was presupposed in the epistemological writings of the philosophers of the 17th and 18th century Europe.

There are different aspects of this question like “What is the *concept* of knowledge?” or “What is the definition of knowledge?” or “What are the truth-conditions of a statement of the form S knows that p, where S is some subject and p stands for some sentence expressing a state of affairs. Of these different formulations, the formulation of the question in terms of the truth conditions, i.e., necessary and sufficient conditions of the truth of a statement of the form S knows that p is as follows:

S knows that p if and only if

(i) P is true

(ii) S believes that p and

(iii) S is justified in believing that p.

This formulation, incorporating the necessary and sufficient conditions of knowledge – the true-condition, the belief-condition and the justification-condition – is also called the traditional or the classical account of knowledge because it is alleged to be traditionally accepted by philosophers. Here the idea is that the conditions (i), (ii) and (iii) are individually necessary and jointly sufficient for the truth of S knows that p. Versions of this account of knowledge have been advanced by A. J. Ayer¹² and R. M. Chisholm¹³ and is strongly suggested in Moore’s *Some Main Problems of Philosophy*.¹⁴ These versions, although different in important aspects, agree in formulating the question “What is knowledge?” in terms of stating the necessary and sufficient conditions of knowledge. According to Ayer, “S knows that p” iff,

1. P is true

2. S is sure that p is true, and
3. S has the right to be sure that p is true.

Chisholm's analysis goes thus:

"S knows that h is true" means

- (i) S accepts h
- (ii) h is true,
- (iii) S has adequate evidence for h.

This justified-true-belief analysis of knowledge has been criticized by Edmund Gettier in his article, "Is Justified True Belief Knowledge?" In this article, which is regarded as a turning point in the history of epistemology, Gettier puts forward two counterexamples¹⁵ to show that the traditional account of knowledge, the account of the truth-conditions of knowledge-ascribing statements given above, is insufficient. These examples show, according to him, that it may be true of a person S, a sentence p that p is true, S is justified in believing that p is true and yet it is not the case that S knows that p. Let us state the two counter-examples.

Case I: Suppose that Smith and Jones have applied for a certain job. And suppose that Smith has strong evidence for the following conjunctive proposition:

(d) Jones is the man who will get the job and Jones has ten coins in his pocket.

Smith's evidence for (d) might be that the President of the Company told him that Jones in the end would be selected, and that he, Smith, had counted the coins in Jones' pocket ten minutes ago. Proposition (d) entails:

(e) The man who will get the job has ten coins in his pocket.

Let us suppose that Smith sees the entailment from (d) to (e) and accepts (e) on the ground of (d), for which he has strong evidence. In this case, Smith is clearly justified in believing that (e) is true.

But then imagine further that unknown to Smith, Smith himself and not Jones, gets the job. And also, unknown to Smith, he himself has ten coins in his pocket. Proposition (e) is then true, although (d) from which Smith inferred (e) is false.

In this example, then, all the following are true, though the proposition (d) from which Smith inferred (e) is false, (i) (e) is true, (ii) Smith believes that (e) is true, and (iii) Smith is justified in believing that (e) is true. But it is equally true, says Gettier, that Smith does not know that (e) is true, for (e) is true by virtue of the number of coins in Smith's pocket, and Smith bases his belief in (e) on a count of the coins in Jones' pocket, whom he falsely believes to be the man who will get the job.

It is to be noticed that no skeptical problem is involved here, since everything that has been said, however, is compatible with the idea that if Jones *had* got the job, we would have granted Smith that he *knew* that Jones would get the job.

Case II: Suppose Smith has strong evidence for the following proposition:

(f) Jones owns a Ford.

Smith's evidence might be that Jones has at all times in the past within Smith's memory owned a car, and always a Ford, and that Jones has offered Smith a ride while driving a Ford. Let us imagine now that Smith has another friend Brown, of whose whereabouts he is totally ignorant. Smith selects three place-names quite at random, and constructs the following disjunctive propositions:

(g) Either Jones owns a Ford, or Brown is in Boston.

(h) Either Jones owns a Ford, or Brown is in Barcelona.

(i) Either Jones owns a Ford, or Brown is in Brest-Litovsk.

Either of these propositions is entailed by (f), since any proposition entails the disjunction of itself and any other proposition ('p' entails p or q). Imagine that Smith realized that each of the disjunctions he has constructed are entailed by (f), and proceeds to accept (g), (h) and (i) on the basis of (f). Smith has correctly inferred (g), (h) and (i) on the basis of (f), and he is therefore, justified in believing each of these three propositions. But, of course, he has no idea where Brown is.

Imagine now that Jones does *not* own a Ford, but is driving a rented one, and secondly, that Brown is, by pure coincidence, in Barcelona. We have now a situation in which (h) is true; Smith believes that (h) is true, and is justified in believing (h). But still Smith does not know that (h) is true. Gettier's conclusion is that justified true belief is not adequate for knowledge.

Let us take note of some features of Gettier's critique of the traditional or JTB analysis of knowledge. Gettier's analysis purporting to demolish the traditional account does not consist in saying that the three conditions, characterized as the truth-condition, belief-condition and justification-condition are not necessary; it consists in showing that they are not sufficient. "The purpose of the counter-examples is to show that even if all the conditions are fulfilled, by a person and a proposition the person might *not* have knowledge with respect to that proposition; it is *not* to show that we could have knowledge even if some of these conditions were not fulfilled."¹⁶

The question whether the conditions are necessary may be raised and in fact, has been actually argued out by some philosophers. We may be allowed some digression to discuss this issue at this stage.

Thus, against the truth-condition, it can be said that this is a condition which can be laid down only for propositional knowledge, but not all knowledge is propositional. The non-judgemental awareness of children, knowing someone or something through acquaintance or knowing in the sense of having an experience cannot be expressed in propositions.

We now consider the conception of knowledge as entailing a belief. Such a condition has not played a central role in the history of philosophy. Let us consider several key figures in the historical tradition. For Descartes,¹⁷ that which is known is that which is clearly and distinctly perceived. Locke¹⁸ holds that knowledge “is the perception of connection and agreement, or disagreement and repugnancy of any of our ideas.” For Berkeley,¹⁹ knowledge seems to be a relation between a knowing mind and an idea that is known. That is, it appears that knowledge is for him the perceiving of an idea. And Hume²⁰ says that knowledge is “the assurance arising from the comparison of ideas”.

What is interesting is that all these historical figures are concerned with knowledge understood as a species of perceptual or intuitive awareness and not a species of belief.

Some philosophers, notably John Cook Wilson²¹ and H.A. Prichard²² have argued not only that knowledge was not historically construed as a species of belief, but rather that it is a mistake to construe it as such. The main argument is that knowledge is *sui generis*, indefinable and therefore, not to be understood in terms of some other thing which is not itself knowledge.

It is also maintained against the justification condition that we cannot demand justification for every belief or every knowledge-claim on pain of infinite regress.

Again, let us consider the following kind of case. In D.H. Lawrence's short story "The Rocking-Horse Winner", a young boy could accurately predict which horse will win by riding his rocking-horse. This, of course, is an unlikely scenario. But it is at least *imaginable*. We might come to say of him, "We have no idea how he does it, but somehow or other he does know which horse will win the race." This will be an example of knowledge without justification, since the only reason the boy had of being confident that his next prediction will be correct is his past run of successes. But a past run of successes gives one a good reason for being confident that he will be successful in future provided that he has reason to think that the past run would not give out on him. And the rocking-horse winner has no such reason. If this line of argument is correct, we have to dilute the justification condition.

We shall not, however, stop to consider these views in any detail, and shall come back to the features of Gettier's counterexamples. The most natural way of looking at the critique of Gettier and his followers is that each of the three conditions may be necessary for knowledge but they are not jointly sufficient. Another feature of Gettier's critique is that it depends upon some presuppositions:

First ... it is possible for a person to be justified in believing a proposition that is in fact false. Secondly, for any proposition p , if S is justified in believing p , and p entails q , and S deduces q from p and accepts q as a result of this deduction, then S is justified in believing q .²³

There is a third unacknowledged presupposition involved, namely, that even if a proposition is false, it can justify our belief in another, at least in those cases in which the first proposition entails the second.

It has been observed that Gettier's critique, the very force of his counterexamples, depends upon these presuppositions. If anything is wrong with these presuppositions, Gettier's counterexamples would cease to exist.

Since Gettier's construction of his two counter-examples, very little has been written in epistemology which does not respond in some manner or other to the problem, they raise for the so-called classical account of knowledge. Various attempts have been made to amend, refine or improve upon the account to solve the problem, which has now come to be called "the Gettier Problem".

The solutions proceed along different lines. We shall here content ourselves with mentioning the different attempts to salvage the traditional account of knowledge from Gettier's objections. Although aware of the nature of the problem Gettier raised and the various attempts at solving it, we shall desist from elaborating upon them, we intend also not to consider the questions whether and to what extent the problems can be solved, whether the solutions are acceptable or whether the problems themselves are genuine. We wish, rather, to pursue our main concern in course of this work—the relation between knowledge and causality as a specific response to Gettier's counterexamples. Before we embark upon this task, we shall take a quick look at the reactions against Gettier's critique.

Some of these consist in showing that one or more of Gettier's presuppositions are wrong. Robert Almeder²⁴ has questioned the first presupposition. He is criticized by William Hoffman,²⁵ and Almeder defends his position in his *Philosophia* article.²⁶ The second presupposition, which is called the principle of deducibility for justification (PDJ), has been rejected by Fred Dretske.²⁷ Irving Thalberg²⁸ has criticized the PDJ *via* the counter-examples. He has challenged the genuineness of

Gettier's counter-examples to undermine the principle itself. And in this task he is in good company with C.G.New.²⁹ However, Michael K. Hooker³⁰ points out flaws in Thalberg's arguments against Gettier. The third presupposition has been called into question by R. G. Meyers and K. Stern³¹. Michael Clark³² not only attacks the unacknowledged third presupposition but also attempts to remedy the defect in the traditional account of knowledge by adding one more condition to the three already listed. Turk Saunders and Narayan Champawat³³ are, however, critical of this solution. Likewise, both R.M.Chisholm³⁴ and Keith Lehrer,³⁵ two leading philosophers of the West, have responded to the problem over the last three decades by offering a fourth condition formulated differently by them within the framework of their respective theories of justification.

One important message of the Gettier counterexamples is that for genuine knowledge and not just fortunately true belief, luck ought to be ruled out and there ought to be an appropriate connection between the fact that p and the believer's belief that p. Such a solution is put forward by Alvin Goldman in his article "A Causal Theory of Knowing".³⁶ To understand the force of Goldman's views we need to see that in all the contrary examples produced to show that knowledge is not JTB, if we look at them with care, we find, in all of them, not only produced by Gettier but also those which cropped up in the course of the literature that what makes the subject believe that p, and what makes the belief true fall apart. And this introduces the element of chance in the knowing process. This becomes clear if we look at Gettier's clarifications of his counter-examples. He says:

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But it is equally clear that Smith does not know that (e), i.e., (The man who will get the job has ten coins in his pocket³⁷) is true, for (e) is true in virtue of the number of coins in Smith's pocket, while Smith does not know how many coins are in Smith's pocket, and bases his belief in (e) on a count of the coins in Jones' pocket whom he falsely believes to be the man who will get the job³⁷.

The reason why the counter-examples arise is the following:

“What causes Smith's belief is not that in virtue of which Smith's belief is true; they fall apart, so, if we want to exclude Gettier's counter-example[s] we shall have to prevent these two from falling apart”³⁸.

The chance factor has been taken note of in a slightly different way by Sibajiban Bhattacharyya.³⁹ He says that the traditional definition of knowledge “is a conjunction of several sentences which are, of course, intended to be logically independent of one another. That ‘*p* is true’ is one of them shows that it cannot be deduced from the rest. Its addition to them looks very much like an ad hoc measure only to ensure the truth of *p* if known”⁴⁰. This is so because the problem of knowledge has been posed in terms of finding out, what factor, if any, is necessary and sufficient to turn a *true* belief into a state of knowledge. Bhattacharyya elaborates on this saying that “‘*X* believes truly that *p*’ is analysed into the conjunction ‘*X* believes that *p* and *p* is a true proposition.’ That is, in believing truly that *p*, *X* does no more than simply believe that *p*, the rest is left to chance, a factor beyond his control.”⁴¹ Bhattacharyya says further that even when we have supplemented other sentences to determine the nature of the belief the position is

no better. We can do no more than holding a justified belief which happens to be true. “Whether p is a true proposition or not is a matter of chance; so when I hold a justified belief that p , it is an accident which turns out my believing into knowing that p ”.⁴²

Bhattacharyya refers to Gettier’s own gloss on his counter-examples. “In the first example, he says ‘But imagine, further, that *unknown to Smith*, he himself, not Jones will get the job. And, also, *unknown to Smith*, he himself has ten coins in his pocket.’ In the second example, he says ‘And by the *sheerest coincidence, and entirely unknown to Smith*, the place mentioned in proposition (h) happens really to be the place where Brown is’”.⁴³

The account of knowledge, due to Alvin Goldman, seeks to prevent what causes Smith’s belief and what makes it true from falling apart. This he achieves by acknowledging a causal connection between them, and thus, also proposes to eliminate the chance factor in our analysis of knowing. The pioneering effort of Goldman is followed by important defenses from other causal theorists. The consideration of Goldman’s causal theory of knowing and allied causal theories will occupy us in the chapters to follow.

Before we conclude we intend to cite one very relevant comment on the chance factor vitiating knowledge. “Writers on Gettier normally do not say what they think is wrong with chance, but Aristotle does when he says, ‘To leave the greatest and noblest of things to chance would hardly be right.’ Aristotle is here referring to *eudaimonia* or happiness, but his point is a general one about goods, at least great goods, and knowledge is surely a great good. It is incompatible with the value of knowledge that the aim of the knower, namely, getting the truth, occurs by chance.”⁴⁴

Notes and References

1. David Hume, *A Treatise of Human Nature*, ed., P.S.Ardal, London Fontana /Collins, 1972, p.148.
2. *Ibid.*, p.147.
3. J.L. Mackie, *The Cement of the Universe – A Study of Causation*, Oxford, 1980(paperback edition), Preface, p.IX.
4. Immanuel Kant, *Prolegomena* (1785), tr., by P.G. Lucas, Manchester University Press, 1953, Section 36, p.80. Also *Critique of Pure Reason*, (1780 & 1787) tr. by N. Kemp Smith as *Immanuel Kant's Critique of Pure Reason*, London: Macmillan, 1929, A 202, B 234/247.
5. D. Davidson, "Causal Relations", *The Journal of Philosophy*, LXIV, 21, pp.691-703.
6. Helen Steward, "Causality Philosophically Speaking", *Aristotelian Society*, 1997, p.1-28.
7. J.L. Mackie, *The Cement of the Universe – A Study of Causation*, *op.cit.*, Introduction, p.12.
8. Alvin I. Goldman, "What Is Justified Belief?", *Justification and Knowledge*, G. S. Pappas, ed., D. Reidel Publishing Co., 1979, pp.1-23.
9. Steven Luper-Roy, "The Reliability Theory of Rational Belief", *Monist*, 68, 1985, pp. 203-225
10. G.Vlastos, "Reasons and Causes in the *Phaedo*", *Philosophical Review*, LXXVIII 3, 1969, pp.291-325.

11. E.L. Gettier, "Is Justified True Belief Knowledge?" , *Analysis*, 23, 1963. Reprinted in *Knowledge and Belief*, ed., A.P. Griffiths, Oxford: Oxford University Press, 1969, pp.144-146.
12. A.J. Ayer, *The Problems of Knowledge*, Penguin Books, 1956.
13. R.M. Chisholm, *Perceiving: A Philosophical Study*, Cornell University Press, 1968.
14. G.E. Moore, *Some Main Problems of Philosophy*, New York: Collier Books, 1953.
15. *Op.cit.*, pp.145-146.
16. P.K. Sen, Unpublished article "A Note on Current Researches on Knowledge and Justification", p.4. Emphasis is authors',
17. René Descartes, *Meditations on First Philosophy in Philosophical Works of Descartes*, Vol. I, trans. by E.S. Haldane and G.R.T.Ross, New York: Dover, 1955, p.158.
18. John Locke, *An Essay Concerning Human Understanding*, ed., Peter H. Nidditch, Oxford: Clarendon Press, 1974.
19. George Berkeley, *A Treatise Concerning the Principles of Human Knowledge*, Part-1, Secs: 1 and 2 in *Philosophical Works*, ed. M.R. Ayers, London: J.M. Dent & Sons, 1975.
20. David Hume, *A Treatise of Human Nature*, Book 1, part ii, Sec.I; Peter H.Nidditch Version of the L.A. Selby-Bigge edition, Oxford: Clarendon Press, 1974, p.124.
21. John Cookwilson, *Statement and Inference*, Oxford: Clarendon Press, 1926, Part-1, Chapters 2 and 3, part – II, chapters 1 to 3.
22. H.A. Prichard, *Knowledge and Perception*, Oxford: Clarendon Press, 1950.
23. E.L. Gettier, "Is Justified True Belief Knowledge", *op.cit.*, pp.60-65.

24. Robert F. Almeder, "Truth and Evidence", *Philosophical Quarterly*, 24, 1974, pp.365-368. In this paper, Almeder gives two arguments to prove his point. But in a later paper "On being Justified in Believing False Propositions", *Philosophia*, 1985, he gives three arguments in support of his position.
25. William E. Hoffman, "Almeder on Truth and evidence," *The Philosophical Quarterly*, 25, 1975, pp.59-61.
26. Robert F. Almeder, "On Being Justified in Believing False Propositions", *Philosophia*, 1985, p.276.
27. Fred I. Dretske, "Reason and Consequences", *Analysis*, 28, 1968, pp.166-168.
28. Irving Thalberg, "In Defense of Justified True Belief", *Journal of Philosophy*, 66, 1969, pp.795-803.
29. C. G. New, "Some Implications of 'Someone'", *Analysis*, 26, 1986, pp. 62-64.
30. M .K. Hooker, "In Defense of a Principle of Deducibility of Justification", *Philosophical Studies*, 24, 1973, pp.402-404.
31. Robert G Meyers and Kenneth Stern, "Knowledge without Paradox", *Journal of Philosophy*, 70, 1973, pp.147-160.
32. Michael Clark, "Knowledge and Grounds: A Comment on Mr. Gettier's Paper", *Analysis* 24, 1964, pp.24-48.
33. J.T. Saunders and Narayan Champawat, "Mr. Clark's Definition of Knowledge", *Analysis* 25, 1964, pp.8-9.
34. R.M. Chisholm, *Theory of Knowledge*, 1st ed., Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966, p.21; *Theory of Knowledge*, 3rd ed., New Delhi: Prentice-Hall of India, 1992, p.3; *The Foundations of Knowing*, Minneapolis: University of Minnesota Press, 1982, p.47.; "On the Nature of Empirical Evidence' in R.M.

Chisholm and R.J. Swartz, eds., *Empirical Knowledge: Readings from Contemporary Sources*, Englewood Cliffs: New Jersey, Prentice-Hall, Inc., 1973, 240.

35. Keith Lehrer, "Knowledge, Truth and Evidence"; *Analysis*, 25, 1965, p.170; K. Lehrer and T. Paxson, Jr., "Knowledge: Undefeated Justified True Belief". *Journal of Philosophy*, 56, 1969, p.227; *Knowledge*, London: Oxford University Press, 1974, "The Gettier Problem and the Analysis of Knowledge", 1980, "The Coherence Theory of Knowledge", 1986, "Meta Knowledge: Undefeated Justification." 1988 and *Theory of Knowledge*, London: Routledge, 1990, p.11.

36. Arvin I. Goldman, "A Causal Theory of Knowing", *Journal of Philosophy*, 64, 1967, pp.355-72: Reprinted in *Essays on Knowledge and Justification*, Pappas and Swain, eds.; Cornell University Press, 1978.

37. E.L. Gettier, "Is Justified True belief Knowledge?" *op.cit.*, p.145.

38. Sen, P.K, *op.cit.*.

39. Sibajiban Bhattacharyya, *Doubt, Belief and Knowledge*, ICPR, New Delhi in association with Allied Publishers, Calcutta, 1987, p.37.

40. *Ibid.*

41. *Ibid.*, p.39.

42. *Ibid.*

43. *Ibid.*, p.39. The quotation is from Gettier, *op.cit.*, pp.145-146. Emphasis is Bhattacharyya's.

44. Linda Zagzebsk, "What is Knowledge?" , in *The Blackwell Guide to Epistemology*, ed. John Greco and Earnest Sosa, Blackwell Publishers, 1999, p.100, The citation from Aristotle is in *Nichomechian Ethics* 1109B25.