CHAPTER IV

THE NECESSARY AND SUFFICIENT CONDITIONS OF KNOWLEDGE.

It is a widely accepted view that a person knows a proposition only if that proposition is true, the person in question believes the proposition and the proposition is justified for that person. A number of philosophers consider these three features to be not only necessary conditions for knowledge but also jointly sufficient conditions. Thus, if a true proposition is believed by some person and the belief is justified, that person is said to know the proposition in question. This account of knowledge is often referred to, somewhat misleadingly, as the 'traditional analysis' of knowledge. The view in question has its roots, perhaps, in Plato's Theaetetus. Plato rejected the idea that knowledge can be defined in terms of true belief, or even by true belief, with the explication of it. But some modern analytic philosophers have tried to analyse knowledge in terms of these conditions. A. J. Ayer, Roderick Chisholm and C. I. Lewis are among those philosophers who approve the three conditions in different forms and in doing so, they have to cope with different
problems. Here I will discuss some problems raised by their theories.

The first problem is whether there is some common feature shared by various instances of knowing. By 'Common feature' is meant some structural resemblance which may be straightforward, e.g., between some red things whose colour we call 'red' or Wittgenstein points out, only a 'complicated network of similarities overlapping and crossing in the same way as the resemblances between people of the same family or between games of different varieties.

Wittgenstein, while admitting that 'games form a family', emphasizes that they do not have any one thing in common. Ayer is quick to point out that in doing so Wittgenstein makes a difference between the question whether things have something in common and the question whether there are resemblances between them. But as a matter of fact, these two questions are different formulations of the same problem. Wittgenstein's argument only brings out that the resemblance between the things to which the same word applies may be of varying degrees. It is more indefinite and less obvious in some cases than in others. Ayer further considers the possibility that different instances of knowing may share a common factor the possession of which though not sufficient, is
necessary for their being instances of knowledge. If knowledge were always knowledge that something is the case, then such a common factor might be formed in the existence of a common relation to truth. But Ayer holds that if knowing that something is the case is taken to involve the making of a conscious judgement, then knowledge cannot always be knowledge that something is the case. For knowing that something is the case may not always involve a conscious judgement in such instances as 'a dog knows his master' etc. In fact, there are various types of knowing and of them 'knowing how' and 'knowing that' are the two main types. Ryle distinguishes between these two types of knowing and tries to establish that the intelligence of an operation is determined by the manner or style of performance and not by the conscious recognition of some rules.\(^3\)

Ayer argues that if knowing facts need not consist in anything more than a disposition to behave in certain ways, we can construe knowing how to do things as being a matter of 'knowing that,' but he thinks that if we thus extend our use of 'knowing that something is the case,' it will be misleading.

The above analysis shows that it is not possible to bring out any common feature of knowledge in a straight-
forward manner. Do we call it a 'family resemblance'? Ayer says that if things resemble each other so that we can apply the same word to them, we are entitled to say that they have something in common. In this sense, what different types of knowing have in common is their being cases of knowing. But it is not a sufficient condition. Nor can it be a necessary condition for knowledge, for, to be so, the different cases of knowing must have some common criterion without which knowledge is not possible. If 'knowing a fact' is understood in the sense of 'knowing that' something is the case', the common feature would be that all cases of 'knowing that' must have a common relation to truth. So to find out a common feature, we have to confine our attention to cases of 'knowing that'.

But having a common relation to truth is not sufficient to guarantee that one knows that P. So we have to add something else in order to have knowledge. So the next problem is, is it a necessary condition for knowledge that something is the case, not only that which one is said to know should in fact be true, but also that one should be performing some special mental act? According to some philosophers, the cognitive states or acts of knowing must be infallible. If my mental state is a state of knowledge,
I can't be mistaken about the fact which it revealed to me. If this is true, being in a mental state of this kind is a sufficient condition for having knowledge. Moreover, if one could not know anything to be true without being in this state, it would be both necessary and sufficient. Ayer raises an objection to this thesis. He says that the possession of some knowledge does not always mean the performance of it, even to the knower himself. He takes this idea from Ryle's analysis of 'knowing how'.

Ryle holds that the verb 'to know' is a 'capacity verb'. To have knowledge of something is having the ability of performing or displaying it, not actually showing the performance. What is surely necessary is that the dispositions which are said to constitute knowledge must occur at least once. And the occurrence of such dispositions must be through the existence of a special mental state. If we suppose its character to be unique so that it cannot be analysed in terms of anything else, then there would be a problem about the evidence for its existence. Ayer says that if we claim to know something, we must be completely sure about it, otherwise there would be a self-contradiction. This, according to him, is one of the basic distinctions between knowledge and belief. But woofly shows instances where a man knows that something is the case but is not
completely sure about it. In these instances, the reason for not being sure is one's hesitation, from whatever caution or irrational source it may spring, in admitting as sufficient evidence where clearly is sufficient evidence. It is true that this will cover a limited number of cases. But from this it follows that in some special cases, one can know without being completely sure, so there is no contradiction. Ayer says that though to be convinced of something is, in a sense, to be in a particular state of mind, it does not consist in any special mental occurrence. It is obvious from our experience that such feelings of conviction exist, but having a feeling of conviction is not always a sufficient condition for being sure. For a conscious feeling of complete conviction may co-exist with an unconscious feeling of doubt. And clearly it is not necessary, for even without this feeling one can be sure of something. Its presence is equally not necessary for the possession or even for the display of knowledge.

But Ayer seems to be wrong in saying that our conscious feeling of complete conviction may co-exist with an unconscious feeling of doubt. It may very well be the case that there is doubt in our conscious mind and the feeling of certainty in our unconscious mind. Whatever may
be the case, it is not possible for us to know our unconscious feelings. Then, how can we tell whether there is doubt or certainty in our unconscious mind? Therefore, as we cannot know our unconscious feelings, Ayer is not justified in saying that our conscious feeling of complete conviction may be accompanied by an unconscious feeling of doubt. So he fails to prove that the feeling of conviction is not a sufficient condition for being sure, for the argument by which he tries to prove it is invalid. Ayer wants to show that from the fact that someone is convinced that something is true, however firm his conviction may be, it never follows logically that it is true. There would surely be a contradiction in saying both that he knows the statement to be true, and that it was false; but this is because it steps into the meaning of the word 'know' that one cannot know what is not true. It is not his state of mind that guarantees its truth. My justification for accepting an empirical statement like 'I have a headache' is not that I have a cognitive or any other attitude towards it, it is simply that I am having that experience. What makes it true that the conclusion of a syllogism follows from the premises is that the inference exemplifies a law of logic. And if we are asked what makes a law of logic true, we have to provide a proof. But this proof in turn relies upon some law of logic.
There will come a point when we have to say of some logical statement simply that it is valid. It is valid in its own right. Its validity does not follow from the fact that the person considering it is in a special state of mind. So truths of logic cannot be established by the mere description of some person's mental state. The above analysis leads Ayer to conclude that "knowing should not be represented as a matter of being in some infallible state of consciousness; for there cannot be such states."

Thus it is proved that being in a special state of mind is not a sufficient or necessary or both sufficient and necessary conditions of knowledge. The question immediately arises, what then, are the necessary and sufficient conditions of knowledge which can give us a complete account of knowing that something is the case? These conditions are stated by different philosophers in different manners. Here I will discuss the views of Lewis, Chisholm and Ayer.

Lewis uses the term "knowledge" in two senses—in the wider sense and in the narrower sense. The term "Knowledge" in the wider sense means empirical knowledge. Empirical knowledge is an instrument enabling transition from the actual present to a future which is desired and
which the present is believed to signalize as possible. This type of knowledge, according to him, is essentially utilitarian and pragmatic. He says, "the primary and prevasive significance of knowledge lies in its guidance of action: Knowledge is for the sake of doing." He prescribes three conditions for empirical knowledge. First, knowledge must be apprehension of or belief in what is true or is fact, as opposed to what is false or is not fact. He distinguishes between cognition in general and knowledge. Cognitions may be true or false, but only true cognitions can be called knowledge.

Secondly, there must be some meaning or significance of cognition in general, or the content of it, which lies outside the cognitive experience. A veridical cognition which is called knowledge must correspond to or accord with or be true of what is thus signified or affirmed.

Thirdly, knowledge must have a ground or reason. In the absence of any warrant or justification our true beliefs cannot be called knowledge even if they accord with or be true of facts. Thus what we call knowledge must be distinguished not only from false belief but also from that which
is groundless or mere lucky guess. So knowledge is belief which is not only true but is also justified in its believing attitude.

Lewis enquires whether we can add another condition for knowledge in the strict sense—the condition of certainty. Empirical knowledge is not certain, for the grounds are not sufficient to attain theoretical certainty. They are merely probable. But logical and mathematical knowledge may be certain (though these have been sometimes challenged); they can have a sufficient ground or reason, and the distinction of correct from incorrect or mistaken applies to them.

Lewis recognizes three types of apprehensions:

"(1) of directly given data of sense (not excluding the illusory),

(2) of what is not thus given but is empirically verifiable or confirmable,

(3) of what is implicitly or explicitly contained in or entailed by meanings."Of these three types of apprehensions, only the second and the third can be called knowledge. He says,"that what is 'knowledge' must be contrasted with some corresponding kind of possible error,"Whatever is subject to such possible
mistake will be classified as cognitive, and as knowledge if it is correct or veridical. Apprehension of what is sensuously given is essential to empirical knowledge, but it is not itself knowledge, for there could not be mistake about it. The determination of what we are, in consistency, committed to by what we mean, is a kind of apprehension which contrasts with a corresponding kind of possible mistake, and hence is classifiable as a type of knowledge. This type of knowledge presents the explication of our own intended meanings, which is found in logical and mathematical knowledge, and it includes the analytically true in general. But even this type of knowledge is not absolutely certain. The doubt here would concern the sense in which they can be said to mean or point to anything beyond and independent of the cognitive experience itself. So according to Lewis, the difference between empirical knowledge on the one hand and logical and mathematical knowledge on the other is a difference in degree and not a difference in kind.

Chisholm also uses the phrase "knowing that" in two different senses. He uses 'know' to signify "knowing that" in
The broader sense and uses "Certain" for the narrower sense.

His definition of "know" is as follows:

"S knows that h is true" means:

(i) S accepts h;
(ii) S has adequate evidence for h; and
(iii) h is true."

The term 'true' can be avoided if the above definition is substituted by the following:

"S knows that .........." means:

(i) S accepts the hypothesis (or proposition) that ...............;
(ii) S has adequate evidence for the hypothesis (or proposition) that ............; and
(iii) .........."

He also speaks of another alternative. 'S accepts h' is replaceable by 'S assumes that h is true' and 'S accepts
the proposition or hypothesis that is f is replaceable by 
'S assumes that x is f'.

Though Chisholm gives three alternative forms, his definition of knowledge is generally represented by the first one.

According to Chisholm, the definition of knowing that should be adequate to the distinction between knowledge and true belief. He enquires whether knowing entails believing truely. He brings out three different senses of 'believe'. In one sense 'S believes that h is true' means S accepted but does not know that h is true. On this interpretation, we cannot say that knowing entails believing. He gives the following example. "If I know that La Paz is in Bolivia, I'm not likely to say, "I believe that La Paz is in Bolivia, for "I believe that La Paz is in Bolivia" suggests I don't know that it is". In the second sense of 'believe', 'I believe' (the expression in the first person) entails 'I know' or at least entails 'I have adequate evidence.' Chisholm shows that 'if a man says, "His policy, I believe, will not succeed," the parenthetical expression may be intended to express the claim to know or the claim to have adequate evidence that the policy will not succeed.' In the third sense of 'believe' (in which 'believe'
is the same as 'accept'), knowing entails believing. But it does not mean that 'knowing', in this sense, is a species of 'believing' or 'accepting'. One can believe something firmly or unwillingly or hesitatingly. But no one can be said to know firmly, or unwillingly or hesitatingly. In this context, he notes Austin's remark that although we may ask "How do you know?" and "Why do you believe?" we may not ask "Why do you know" and "How do you believe?" Chisholm compares the relation between knowing and believing to the relation between arriving and travelling. Arriving entails travelling, for a man cannot arrive unless he has travelled, but arriving is not a species of travelling. In the same way, although knowing entails believing, the former is not a species of the latter.

But the comparison of the relation between knowledge and true belief with the relation between arriving and travelling is not appropriate. Arriving is not a species of travelling. But from Chisholm's own definition of 'know', it follows that knowing is a species of believing. To prove this, we have to explain the nature of genus and species. The class whose membership is divided into subclass is the genus, the various subclasses are species. A class is a collection of entities having some common characteristics. For example, animal is a genus and the common feature of all animals is...
animality. The members of all species of a given genus have some attribute in common, the members of any one species share some further attribute that differentiates them from the members of any other. The characteristic that serves to distinguish them is called the specific difference. For example, the genus 'animal' is divided into cats, dogs, human beings etc. The species human is subsumed under the genus animal and the difference between it and other species of animal is said to be rationality. In the case of knowledge and belief also, the species knowledge is subsumed under the genus belief and the difference between it and other species of belief is said to be the justification of it. So to have knowledge we have to add something more to belief and that is the justification or evidence for believing something truly. But in the case of arriving and travelling, the former is not a species of the latter. We do not get the concept of arriving by adding something more to travelling. So Chisholm's analogy is proved be wrong. The fact is that in one sense of 'believe', knowing entails believing truly and knowledge is also a species of belief.

Chisholm says that we have to find some criteria for adequate evidence. According to him, a satisfactory criterion of evidence would refer to some mark of evidence. He suggests
three marks of evidence. First, a mark for any subject S, that S has adequate evidence for a given proposition or hypothesis h, would be some state or condition which could be expressed in epistemically neutral language, i.e., could be described without using 'know', or 'perceive', or 'evident' or any other epistemic term. Secondly, it would be a state that S could never be said to believe falsely either that he is in that state. Thirdly, it would be a state or condition such that, whenever S is in that condition, S then has adequate evidence.

He then suggests some criteria for 'adequate evidence' and examines them, for example, the empirical criterion, the taking criterion, the sensibly taking criterion etc.

According to the empirical criterion, there are certain ways of "being appeared to" which can be described by using 'appear words' noncomparatively and which are such that, whenever any subject S is "appeared to" in one of those ways, S then has adequate evidence for the proposition that he is being appeared to in that particular way.

The empirical criterion provides us with a mark that fulfills the three conditions (marks of evidence). But
Chisholm says that unless the appear statement is accompanied by some appeal to independent information, it will not support any perceptual claim. The empirical criterion is closely associated with scepticism. Empiricism in its extreme form seems to imply, as Hume had seen, that it is in vain for us to ask whether there is a body.

He then examines the 'taking' criterion. Chisholm says that the locution "S perceives something to have such and such a characteristic" means: there is something which has such and such characteristic and which appears in some way to S; S takes the thing to have that characteristic; and he has adequate evidence for the hypothesis that the thing does have the characteristic. "Taking" in the sense in which it is intended here, is related to "perceiving" in the way in which "accepting" or believing" is related to "knowing".

Chisholm formulates the following definition of taking.

"S takes something to be f" means S believes

(1) that x's being f is a causal condition of the way
he is being appeared to and

(ii) that there are possible ways of varying \( x \) which would cause concomitant variations in the way he is appeared to.\(^6\)

The 'taking' criterion also meets the three conditions of evidence. It can also avoid the sceptical consequences to which the empirical criterion seemed to lead us. But this criterion leads us to another undesirable extreme. For, if we accept the 'taking' criterion, then we must say, of what seem to be the most unacceptable of prejudices, that they are constantly made evident in the experience of those who have them. "Where the empirical criterion does not seem to allow us enough evidence, the 'taking' criterion, in its present form, seems to allow too much."

Chisholm now considers the following compromise criterion—or group of criteria; "(a) whenever we take something to have, or not to have, a certain sensible characteristic, or whenever we take a group of things to stand, in a certain sensible relation, we then have adequate evidence for the propositions we thus take to be true.

(b) Whenever we take something, which we believe to be
appearing to us in one way, to be the same as, or to be different from, something we believe to be appearing to us in another way, we then have adequate evidence for the proposition we thus take to be true.

(c) This criterion should also include the original empirical criterion: any belief, expressible in a non-comparable statement describing the ways in which we are appeared to, is a belief for which we have adequate evidence.

(d) Finally, a reference to beliefs concerning the similarities and differences among the ways of appearing should be added.  

The compromise criterion requires that we have evidence for all our sensible takings. It avoids the extremes of empiricism and of the unqualified 'taking' criterion. If we accept the 'sensibly taking' criterion, then, apparently, we can describe as evident just those propositions which we want to describe as evident. So the 'sensibly taking' criterion seems to be acceptable. But Chisholm adds that we cannot evaluate a criterion with any significant degree of exactness unless we make use of the logic of confirmation
or probability.

Chisholm says that the relation of evidence to what he calls "marks of evidence" is like that of right to what philosophers have called the "right-making" characteristics, the moral philosopher is not providing a definition of "right"; he is providing criteria for applying this ethical term. In the same way, Chisholm wants to find some criteria for applying 'adequate evidence'. But he adds that a description of them would not constitute a definition of 'evidence'.

As we have already said, Chisholm uses the word 'certain' to signify 'knowing that' in the narrower sense. According to him, the word 'certain' can be used in a number of ways. Sometimes the phrase 'S is certain' is used to mean merely that 'S feels sure'. But another way of saying 'I am certain' is to say 'I know' with emphasis. According to him, the following is the most important epistemological sense of 'certain':

"'S is certain that h is true' means:"
(i) S knows that h is true and

(ii) there is no hypothesis i such that i is more worthy of belief than h."

Chisholm says that the negative expression "I am not certain that.........." is often used to mean, not simply, 'It is false that I am certain that..........', but more strongly, 'I do not believe, and am inclined to doubt that....'

Ayer requires the following conditions for knowing that something is the case (He uses these conditions to cover all types of knowledge). The first requirement is that what is known should be true. But this is not sufficient, nor even if we add another condition that one must be completely sure of what one knows. In some cases of belief, though one affirms or accepts it or is completely sure about it, still he cannot be said to have knowledge. Ayer gives the example of a superstitious man. When this man walks under a ladder, he becomes completely sure that he is about to face some calamity, and he might accidentally be right. But he cannot be said to know that he is going to be hit by some misfortune. Thus many true and confident beliefs may fail to attain the
standards necessary for knowledge. The question is, what are the standards of knowledge? Truths of mathematics or logic can be known if we can provide some valid proofs of them. In case of empirical statements, claims for knowledge may be upheld by a reference to perception, or to memory, or to testimony, or to historical records or to scientific laws. But such backing is not always strong enough for knowledge, because our sense organs may be defective or memory may be poor, witness may be unreliable and so on. Even if we grant the theoretical possibility of intuitive knowledge of other's minds, the problem of maintaining the difference between knowledge and true belief still remains. So he adds another condition. It is, however, the right to be sure.

Ayer holds that the necessary and sufficient conditions of knowing that something is the case are first that what one is said to know be true and secondly that one be sure of it and thirdly that one should have the right to be sure. But he adds that the necessary and sufficient conditions of knowing cannot be turned into the definition of knowledge. Here we have to make it clear what Ayer means by the 'definition of knowing'. For this we have to explain what is the definition of a term. A definition states the meaning of a term. The word 'meaning' can be used in two senses;
extensional or denotative meaning and intensional or connotative meaning. A general or class term denotes the objects to which it may correctly be applied, and the collection or class of these objects constitutes the extension or denotation. The collection of attributes shared by all and only those objects in a term's extension is called the intension or connotation of a term. The extensional or denotative definition of the term 'know' can be given in terms of the necessary and sufficient conditions of knowing that something is the case. When Chisholm defines 'know' in terms of the three conditions of knowledge, he also gives an extensional definition of knowing. But Ayer is not satisfied with an extensional definition of knowledge and wants to give an intensional definition of the term 'know'. Intensional definition of a term is the explication of the meaning of that term. Ayer seems to imply that an intensional definition of 'knowledge' is not possible in terms of these conditions. He says that even if one could give a complete description of the various ways of earning the right to be sure, it would be a mistake to try to build it into a definition of knowledge, just as it would be a mistake to try to incorporate our actual standards of goodness into a definition of good.

We are now in a position to make a comparative analysis of the theories of Lewis, Ayer and Chisholm. Both Lewis and
Chisholm distinguish between the wider and the narrower senses of 'knowing that'. Though Chisholm has not declared like Lewis that 'knowing that' in the wider sense means empirical knowledge, it is clear from his analysis of 'know that' by 'knowing that' in the broader sense he means empirical knowledge. But unlike Lewis, Chisholm nowhere clearly says what type of knowledge must be certain. Another difference between Chisholm and Lewis is that while by 'certain' Chisholm means absolutely certain, Lewis means by it 'certain' in some degree or what he calls 'practically certain.'

There is a similarity between Ayer and Chisholm. Both of them compare the justification condition with ethical terms. We cannot provide a definition of the ethical terms like 'good', 'right' etc., but can supply some criteria for their application. In the same way, it is not possible to give a definition of 'adequate evidence' or the 'right to be sure', but we can suggest some criteria for their application. Like Chisholm, Ayer is also conscious of the problem of the 'criteria' but he has not given us any solution. But Chisholm has suggested some criteria for 'adequate evidence' and discussed a lot on this topic.

Ayer's theory is different from Chisholm and Lewis in one important respect. Ayer has not differentiated two senses
of the phrase 'knowing that'. His necessary and sufficient conditions are applicable to all types of knowledge. According to him, empirical statements cannot be separated from statements of logic and pure mathematics by tampering with the meaning or the application of the verb 'to know'. They are different on some other grounds. So far as knowledge is concerned, there is nothing to distinguish between statements of logic and mathematics and empirical statements. For statements of logic and mathematics are equally subject to doubt like empirical statements. Although mathematical statements have been said to be necessarily true every schoolboy may have doubt about it. In reply to Ayer, we can say, however, that if one really knows a mathematical truth, one cannot doubt it. Schoolboys have doubt about mathematical truth because they do not know it. So Ayer's argument cannot be accepted.

From the above analysis of theories propounded by Lewis, Ayer and Chisholm, it seems to me that Chisholm's theory is by far the best. Lewis states some conditions for knowledge in the broader sense, i.e., for empirical knowledge and adds another condition for knowledge in the strict sense i.e. for logical and mathematical knowledge. But Chisholm gives two separate definitions for two different senses of 'knowing that'. He points out the different senses in which the
epistemic words 'know', 'believe', and 'certain' can be used and explains clearly the relation between knowledge and true belief. Again, his explanation of the justification-condition is better than Lewis and Ayer. Lewis only states that our true belief must be justified in order to reach the status of knowledge. But he has not given us any clear idea of this condition. Ayer gives a hint that we need some criterion for the 'right to be sure' but does not suggest any such criterion. Chisholm, however, clearly states some possible criteria for 'adequate evidence' and examines them. Although we cannot give an intended meaning of the term 'know' by supplying those criteria, we can at least describe some conditions under which we may apply our 'adequate evidence.'

D. M. Armstrong states a common form of the necessary and sufficient conditions of knowledge.

"A knows that P if, and only if:

(i) The truth-condition is satisfied:
   P is true.

(ii) The Belief-condition is satisfied:
   A believes that P or A is certain that P, etc."
(iii) The Evidence condition is satisfied:
A has adequate evidence for F or A has good reasons for believing that P, etc. ³

We have seen that the necessary and sufficient conditions of knowledge give us only an extensional definition of 'knowing that' something is the case. These conditions cannot explain the intensional meaning of the term 'know' but it may still be asked whether these conditions are sufficient to account for knowledge. Edmund Gettier proposed two original counter-examples to the sufficiency of these conditions. These counter-examples prove that the 'justified true belief' analysis of knowledge is too weak. ⁹

Gettier notes two points. First, "if the word 'justified' means that S's being justified in believing that P is a necessary condition of S's knowing that P, it is still possible for a man 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 S accepts Q as a result of this deduction, then S is justified in believing Q." Gettier gives two counter-examples where the conditions stated in (a) are true for some proposition, but it is at the same
time false that the person in question knows that proposition.

In the first example, Gettier supposes that two persons, Smith and Jones, have applied for a job. He also supposes that the President of the company, a thoroughly reliable person, has told Smith that Jones will get the job. Smith, however, has found ten coins in Jones's pocket a few minutes ago. So he has strong evidence for the following proposition.

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

Now Gettier notes that the following proposition (e) is entailed by (d) and as Smith has strong evidence for (d) he is also justified in believing (e).

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

It happens, however, that Smith himself gets the job and coincidentally, but unknown to Smith, he also has ten coins in his pocket. This (e) is true and Smith justifiably believes (e). But proposition (d) from which Smith infers (e) is false. Thus although the three conditions required for
S's knowing that P have been satisfied, still Smith does not know that (e) is true, for (e) is based on a proposition containing Smith's false belief that Jones is the man who will get the job.

In the second example, Gettier supposes that Smith has a strong evidence for the following propositions: -

"(f) Jones owns a Ford."

Smith's evidence might be that Jones always owned a Ford in the past and has just offered him a lift while driving a Ford. Gettier imagines that Brown is a friend of Smith but Smith does not know where he is at present. Smith selects three place-names quite at random and constructs the following 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."

Each of these propositions is entailed by (f) for which Smith has strong evidence. Gettier here applies the
principle of addition. According to this principle, if \( P \) is true, then the truth-functional disjunction of \( P \) and \( q \) is also true whatever \( q \) may happen to be. By a truth-functional disjunction of \( P \) and \( q \) we mean that a disjunctive statement is true if and only if \( P \) and \( q \) are not both false. Smith is therefore completely justified in believing each of these three propositions, although he has no idea where Brown is.

Gettier adds two further conditions. First, Jones is at present driving a hired car and does not own a Ford; Secondly, unknown to Smith, the place mentioned in proposition \( (h) \) accidentally happens to be really the place where Brown is. These two conditions show that Smith does not know that \( (h) \) is true, although the three conditions (mentioned in the 'Justified true belief' analysis) are satisfied.

For

(i) \( h \) is true,

(ii) Smith believes that \( (h) \) is true,

and

(iii) Smith is justified in believing that \( (h) \) is true.

Gettier, therefore, concludes that the traditional definition of knowledge and similarly its reformulations do
not give us a sufficient reason for saying that one knows a given proposition to be true. In both of the examples given by him, the three conditions are satisfied, even though the man in question does not know the proposition to the true.

The problem for the traditional definition of knowledge was first noted by Gettier. The problem has since become known as the "Gettier problem". It is also called 'the problem of the fourth condition', since it leads one to ask "Is there some suitable fourth condition which may be added to the three that are set forth in the 'traditional definition of knowledge'?"

Gettier's paper has released a sting of ingenious counter-proposals and augmentations. Gettier's striking counter-examples to the customary conception of knowledge as 'justified true belief' have brought forth a flurry of discussion on the subject. During the last decade, epistemologists have been inspired by the highly recalcitrant problems raised in his brief epoch-making paper. Consideration of Gettier's examples has led epistemologists to question virtually every aspect of the traditional analysis. The
greatest effort has gone into the attempt to revise the traditional analysis in ways that will render it immune to the problem raised by Gettier (and to other problems that have since been discovered). The causal and defeasibility theories of inferential knowledge emerge in response to the Gettier and Gettier-inspired counter-examples to the 'justified true belief' (henceforth referred to as JTB) analysis of knowledge. Both theories claim to add a new criterion to the JTB analysis and avoid at the same time the Gettier type counter-examples. A number of philosophers, on the other hand, have contended that Gettier's counter-examples to the JTB analysis rely on a certain false principle. Several revised definitions have been put forward, and counter-examples have also been given to these revised definitions. The next two chapters will contain a critical estimate of this topic.
NOTES


5. According to Chisholm, there are three uses of 'appear words'. (1) Epistemic use, (2) Comparative use and (3) Non-comparative use. When 'appear words' are used in the epistemic sense, then such locutions as 'X appears so-and-so to S' may be taken to imply that the subject S believes or is inclined to believe, that X is so-and-so. But when we use the word "appear" in its comparative sense, we may say that the way things appear
to us depends not only on the conditions under which we perceive them. When we take the locution "X appears so-and-so to S" noncomparatively, we can say that the subject S, referred to in such a statement, can know whether the statement is true even if he knows nothing about things which are so-and-so. Such statements describe marks of evidence.

6. Roderick Chisholm, Perceiving: a philosophical study, P. 77.

7. Ibid. PP. 84-85.
