Indian Philosophical Quarterly Vol. XVI, No. 4.
October 1989

ON GETTIER'S NOTIONS OF KNOWLEDGE AND JUSTIFICATION

Introduction

It is generally accepted that the sufficient condition for the proposition ' S knows P ' is the set N of its following necessary conditions.

(i) S believes P.
(ii) P is a justified belief of S.
(iii) P is true.

If one is to refute this claim then he may, as Gettier claims to have done (Edmund. L. Gettier. " Is Justified True Belief Knowlege ? " *Analysis,* Vol. 23. Blackwell, 1963), present at least one imaginary situation in which all three conditions in N are fulfilled but yet it is false that ' S knows P '. This procedure, however, presupposes that we have in our mind some preconceived criteria, (other than those conditions in N), the fulfilment of which enable us to determine the truth of the proposition ' S knows P '.

Thus either to agree or to disagree with Gettier, we have to understand why, inspite of the fact that the so-called sufficient condition for Smith's knowing (e) in case I (or Smith's knowing (h) in case II) was fulfilled, Gettier does not believe that the preposition ' Smith knows (e)' (or ' Smith knows (h)' in case II) is true.

Received : 20-2-88

Though Gettier has never been explicit on this point, but at the end of his description of case I, he attempts to explain this in the following way–

' Smith does not know that (e) is true, for (e) is true in virtue of number of coins in Smith's pocket, while Smith does not know how many coins are there in Smith's pocket and bases his belief in (e) on a count of the coins in Jones's pocket whom he falsely believes to be the man who will get the job '.[1]

A careful analysis of this statement reveals that according to Gettier there are two reasons why one should believe that ' Smith does not know (e)' and those are –

(A) ' Smith does not know that (e) is true; for (e) is true in virtue of number of coins in Smith's pocket while Smith does not know how many coins are there in Smith's pocket ... '

(B) ' Smith does not know that (e) is true; for ... Smith ... bases his belief in (e) on a count of coins in Jones's pocket, whom he falsely believes to be the man who will get the job '.

During the course of subsequent discussion it will become clear that the proposition (A) is related to Gettier's notion of some one's knowing a disjunctive proposition, while the proposition (B) is related to Gettier's notion of justification. None of these two notions, it will be shown, is acceptable, implying thereby that neither (A) nor (B) is acceptable.

A. GETTIER'S NOTION OF KNOWING : A DISJUNCTIVE PROPOSITION

1. ANALYSIS OF CASE I : Let us first focus our attention on the proposition (A) quoted above.

Though Gettier never tells us about what he really means by some proposition being true ' in virtue of ' something else, but still this gives us some idea about,

(1) What proposition Gettier wants to express by the sentence, ' (e) is true ', and

(2) What proposition, Gettier thinks Smith to believe when Gettier says that ' Smith believes that (e) is true '. From the arguments presnted by Gettier which has been quoted above, we see that according to him,

(a) IF, either ' (e) is true in virtue of number of coins in Smith's pocket ' OR ' (e) is trus in virtue of number of coins in Jones's pocket ' THEN ' (c) is true '.

(b) IF ' (e) is true ' THEN either ' (e) is true in virtue of number of coins in Smith's pocket ' OR ' (e) is true in virtue of number of coins in Jones's pocket.'

Now let us call the first one of the two disjuncts in (a) (or (b)) the ' Gettier's (e)' or simply G (e) and the second one the ' Smith's (e)' or S (e).

Hence from (a) and (b) we get that, according to Gettier, ' (e) is true ' IFF ' either G (e) OR S (e)' or we may say according to Gettier, when he says ' (e) is true ' he means ' either G (e) or S (e)', i.e. to him.

' (e) is true ' $\equiv$ G (e) $\mathbf{V}$ S (e)).

Where $\mathbf{V}$ stands for ' OR ' (in the exelusive sense); for G (e) and S (e) can not both be true.

Now, I shall show that in relation to case I, Gettier was not able to show that Smith fulfilled the sufficient condition for knowing either G (e) or S (e) or (e).

1.1 SUFFICIENT CONDITION FOR THE PROPOSITION ' Smith knows S (e): Gettier writes, ' Smith bases his belief in (e) on a count of coins in Jones's pocket '. This means that Smith believes that ' (e) is true in virtue of the number of coins in Jones's pocket ' hence he believes in S (e). But Gettier

by virtue of believing that G (e) is true, believes that S(e) is false. Hence Gettier believes that.

i) Smith believes S (e)
ii) Smith is justified to believe S (e)
But iii) S (e) is false

Hence, Gettier believes that the sufficient condition for the proposition ' Smith knows S (e)' was not fulfilled.

1.2 SUFFICIENT CONDITION FOR THE PROPOSITION ' Smith knows G (e) : Now, since Gettier believes that ' Smith believes that S (e) is true ', therefore Smith does not believe that G (e) is true; for G (e) and S (e) can not both be true, i.e. S (e) $\rightarrow \neg$ G (e) or if Smith does not see this entailment and believes that G (e) is true, even in that case G (e) is not his justified belief, since he does not have any evidence for G (e). Hence,

either i) Smith does not believe G (e)
ii) Smith is not justified to belive G (e)
iii) G (e) is true

or i) Smith believes G (e)
But ii) Smith is not justified to believe G (e)
iii) G (e) is true.

In eiher of the two possibilties the sufficient condition for the proposition 'Smith knows G (e) ' is not fulfilled.

1.3 SUFFICIENT CONDITION FOR THE PROPOSITION ' Smith knows (e) : Consider the situation that Smith sees the two entailments (S (e) $\rightarrow \neg$ G (e) and ((S (e) $\wedge \neg$ G(e)) $\rightarrow$ (S (e) $\vee$ G (e)))). Now since he is justified to believe S (e), he is justified to believe $\neg$ G (e) and hence (S (e) $\vee$ G (e)) on the ground of S (e) for which he has strong evidence. So, if he really believes (S (e) $\vee$ G (e)) then.

i) Smith believes that '(e) is true ',

ii) Smith is justified to believe that ' (e) is true '

iii) ' (e) is true '

and the sufficient condition for the proposition ' Smith knows (e)' is fulfilled. As regards this situation, I claim, as I shall argue (in Sec.3), that Gettier's reasoning (A) does not establish that ' Smith dos not know (e)'.

If, however, Smith believes that (e) is true but does not see the two entailments stated above then,

i) Smith believes that (e) is true.

ii) Smith is not justified to believe that (e) is true.

iii) (e) is true.

and the suffiicient condition for the proposition ' Smith knows (e)' is not fulfilled.

2. ANALYSIS OF GETTIER'S CASE II : The problem related to the case II is a simpler one though this time Gettier is even more vague in saying why he thinks that 'Smith does not know (h)'. He only says ' imagine now that two further conditions hold. First, Jones does not own a Ford, but is at present driving a rented car. And secondly, by the sheerest coincidence, and entirely unknown to Smith, the place mentioned in proposition (h) happens really to be the place where Brown is. If these two conditions hold then Smith does not know that (h) is true'.

The proposition (h) is,

' Either Jones owns a Ford OR Brown is in Barcelona '

Now, if we concentrate our attention particularly on the sentence ' unknown to Smith, the place mentioned in (h) happens really to be the place where Brown is ', we can guess, his argument in favour of his claim that ' Smith does not know (h)' might be something like this—

Smith does not know (h), for ' (h) is true in virtue of Brown being in Barcelona ' and Smith falsely believes that ' (h) is true in virtue of Jones having a Ford '.

Thus as before, for Gettier, the proposition ' (h) is true ' is logically equivalent to ' G (h) or S (h)' i. e.

'(h) is true ' $\equiv$ G (h) $\vee$ S (h) (Notice that ' $\vee$ ' is an inclusive ' or ')

Hence the possible reason that Gettier might present to support his statement that ' Smith does not know (h)' might be that, Smith does not know that ' (h) is true ', because he does not know in virtue of which of the two disjuncts, G (h) and S (h), being true, (h) is true. Hence he would claim that ' Smith knows that S (h) is true ', or that if Smith does not know G (h) and he also does not know S (h) then he does not know (h).

I will prove that this is not true. But before going to prove it we introduce the abbreviation ' Sk ' for ' Smith knows that '.

Now it is obvious that

$\neg$ (Sk (G (h) $\vee$ S (h)) $\rightarrow$ Sk G (h)) ..... (a)

because, one may know that ' either G (h) or S (h) is true ' not knowing that ' G (h) is true '. For example, say, a black and a white cock are participating in a cock–fight. Somebody who witnesses it might know from his past experience that at least one of them (or possibly both) will die. Hence he knows that ' either the black cock will die or the white cock will die ', but that does not imply that he knows that ' the black will die '. Similarly, he also does not know that ' the white cock will die '.

Therefore we also have

$\neg$ ((Sk (G (h) $\vee$ S (h)) $\rightarrow$ Sk (h)) ..... (b)

Now (a) and (b)

implies ¬ ((Sk (G (h) S (h)) → SK G (h) ∧ ¬ ((Sk (G (h) ∨ S (h) → SK S (h))

implies (Sk (G (h) ∨ S (h)) ∧ ¬ SK G (h)) ∧ (Sk (G (h) ∨ S (h)) ∧ ¬ SK S (h)

implies (Sk (G (h) S (h) ∧ ¬ SK G (h) ∧ ¬ Sk S(h))

implies ¬ ((¬ Sk G(h) ∧ ¬ Sk S(h)) → ¬ Sk (G (h) ∨ S (h)))

and this is our desired result, which means that ' Smith knows neither G(h) nor S (h) ' does not mean that ' Smith does not know either G (h) or S (h)'.

Hence, there is nothing impossible if ' Smith knows (h) ' but the propositions that ' Smith knows that Jones owns a Ford ' and ' Smith knows that Brown is in Barcelona ', are both false

3. FURTHER CONSIDERATION OF THE CASE I ; Now we consider the situation that (1) Smith believes (e), and as he sees the entailment from S (e) (which he is justified to believe on the ground of some strong evidence) to (e), (2) he is justified to believe (e) (on the ground of S (e) and (3) (e) is true.

Even though these conditions are fulfilled, Gettier does not believe that ' Smith knows (e)', because, (though he does not tell us explicity), Smith does not know that (e) is true in virtue of G (e) and since he falsely believes S (e) to be true, i e. since he believes that (e) is true in virtue of S (e), which is a false proposition, he does not also know S (e). Hence, ' Smith does not know S (e) ' and ' he does not know G (e)'. Therefore ' Smith does not know (e)'.

So, in our abbreviation, Gettier's reasoning is,

(¬ Sk S (e) ∧ ¬ Sk G (e)) → ¬ Sk (S (e) **V** G(e)).

To prove that this is false we start as before from the two premises that.

$\neg$ (Sk (S (e) **V** G (e)) $\rightarrow$ SK S (e))

And $\neg$ (Sk (S (e) **V** G (e)) $\rightarrow$ SK G (e))

These two premises jointly imply that

$\neg$(Sk (S (e) **V** G (e)) $\rightarrow$ Sk S (e)) $\wedge$ $\neg$ (Sk (S (e) **V** G (e)) $\rightarrow$ SK G (e)

implies ($\neg$Sk S (e) $\wedge$ $\neg$ SK G (e)) $\wedge$ Sk (S (e) **V** G (e))

implies $\neg$ (($\neg$SK S(e) $\wedge$ $\neg$ SK G (e)) $\rightarrow$ $\neg$ Sk (S (e) **V** G (e)))

and this falsifies Gettier's reasoning (or intuition) that if one does not know either of the two disjuncts of a disjunctive proposition then he can not know the disjunctive proposition.

Hence, when the conditions given at the beginning of this section are fulfilled then in that case Gettier's reasoning does not establish his claim that it is false that ' Smith knows (e)'

In support of my claim, I will site two examples,

(a) One knows that

$\sqrt[6]{1687542} > 6$ **V** $\sqrt[8]{1687542} \leqslant 6$

does not mean that either ' he knows that $\sqrt[8]{1687542} > 6$, or he knows $\sqrt[8]{1687542} \leqslant 6$. In fact he may even wrongly believe one of them to be true and may believe the proposition in question to be true in virtue of that false proposition; but that does not alter the truth of the proposition that he knows that $\sqrt[8]{1687542} > 6$ **V** $\sqrt[8]{1678542} \leqslant 6$.

(b) Suppose that a coin is going to be tossed. Then ' I know that either head will come up or tail will come up '. But still neither of the two propositions that ' I know that the head will come up ' and ' I know that the tail will come up ' is true. Even I may wrongly believe one of them, but that does not mean that

the proposition that ' I know that either head will come up or tail will come up ' is not true.

B. GETTIER'S NOTION OF JUSTIFICATION

1. TWO SENSES OF JUSTIFICATION : The two example cases may be capable enough to falsify Gettier's contention in (A); but one may not accept them as being exactly similar to Gettier cases on the ground of Gettier's contention in (B). The reasoning may be as follows -

In none of the two example cases given here the subject depends for his knowledge of the (disjunctive) proposition on his belief in one of the two disjuncts : In fact, here in each case, the subject had other justifications for believing the (disjunctive) proposition. For each of the two Gettier cases, on the other hand, the subject depends (or ' bases his belief, ' as Gettier says) for knowing the (disjunctive) proposition on one of its disjuncts which is false. Thus Gettier's reasoning in (B) is like this—

Smith does not know that G (e) **V** S (e); for he bases his belief in G (e) **V** S (e) on the gound of S (e) which is false.

Now let us ask, what, according to Gettier, is wrong in it ? If he means that it is not *permissible* for Smith to base his belief in G (e) S (e) on the ground of a false proposition then how can he (Gettier) say that Smith is *justified* to believe G (e) S (e) on the ground of S (e)? Also notice that if according to Gettier Smith can not base his belief in (e) on the ground of S (e) for the reason that S (e) is false, then he can not also base his belief on (e) on the ground of (d) for the same reason that (d) is false.

This short argument conclusively shows that if Gettier believes that ' one may be justified in beliving a proposition that is in fact false ', then he can not establish his claim in (B).

The present author is thankful to Prof. Simon Blackburn (Editor, *Mind*, Oxford) for his comments in this context. He writes,

'You are quite right that it is a faelacy to argue

$(-K\,p\ \&\ -K\,q) \rightarrow -K\,(p \vee q)$

But Gettier cases do not, we think, depend upon that inference for their force. The reason why, in these cases, the subject does not know that A where A is disjunction p v q is that the cases are so set up that in some sense it is an accident that the subject is right. This is so inspite of his belief being justified (the trick is that belief in p. and hence in A is justified, but it is q that makes A true). I think you will see that when this point is added to, Gettier cases do retain their importance inspite of what you say'.

The 'trick' which he has referred to within perentheses is the same as Gettier's reasoning in (A) and it has already been shown that this 'trick' does not establish Gettier's claim

But Prof. Blackburn concludes the proposition 'Smith does not know (e)' on the ground that it is an accident that the subject was right ... inspite of his belief being justified'. It is, however, difficult to see how one could believe that a proposition is some one's justified belief and at the same time it is by accident that he is right. By 'a proposition being some one's justified belief' we generally mean that he has (and we too believe that he really has) certain good reasons for believing that the said proposition is true. But when we say that 'some one is right by accident in believing the proposition', we mean that he believes the proposition, the proposition is true, but he does not have any good reason for believing it. Though Prof. Blackburn did not explicity write why he thinks that Smith is right by 'accident', but the obvious answer may be that Smith bases his belief in (e) on a count of coins in Jone's pocket whom he falsely believes to

be the man who will get the job. But it was Smith who got the job and by chance, had ten coins in his pocket - a fact that made (e) true. This reasoning is similar to that of Gettier in (B); but the proposition that '(e) is Smith's justified belief' is a conclusion forced by Gettier's claim that 'in that sense of justified in which S's being justified is a necessary condition of S's knowing that P, it is possible for a person to be justified in believing a proposition that is in fact false'.

However, the present author believes that the sense of justification which is commonly accepted is not the same as that of Gettier. In the subsequent section of this article we will first try to establish the basic difference between these two senses of justification and then try to understand why Gettier holds that a person may be justified in believing a proposition that is in fact false.

2. JUSTIFICATION IN THE STRICT SENSE : Strictly speaking, the proposition 'S is justified in believing P' can not be true unless the following two necessary conditions are fulfilled :

i) e is true
ii) e is adequate evidence for p.

e is an adequate evidence for p if and only if e implies P. Otherwise it is inadequate or partial evidence.

It is obvious that if the above two conditions hold then it is impossible that P is false. Or, in other words, if some one is justified to believe that a proposition P is true then P can not be false.

Therefore, if in some case, e is true and p is false than e may be at the most a partial evidence for p.

3. JUSTIFICATION IN THE LOOSE SENSE : GETTIER'S NOTION : Philosophers have more or less accepted as a fact

that the proposition 'S is justified in believing P' is a necessary condition for the proposition 'S knows P'. Chisholm has substituted the former by the condition 'S has adequate evidence for P'[2] and Ayer by 'S has right to be sure that P is true.'[3] Gettier has considered all these conditions as equivalent.[4]

As we have already noted, Gettier's sense of justification permits the possibility for one's being justified in believing a proposition that is in fact false. This means that Gettier refers to that sense of justification in which the proposition 'S is justified in believing P' does not necessarily mean that S's evidence for P should be adequate. If this is his sense of justification then, as he does, he can not substitute 'has adequate evidence for' or has 'right to be sure that' for 'is justified in believing that'.[5]

Moreover, in his case I, Gettier claims that Smith has 'strong evidence' for the proposition (d) and yet (d) is false, which means, that his sense of 'strong evidence' is not the same as that of our 'adequate evidence' or 'conclusive evidence' of Cohen and Nagel.[6] Hence, if adequacy of evidence is a necessary condition for some one's being justified in beliving a proposition then clearly, Smith was not justified in beliving (d). The same arguments may be applied to show that in Gettier's case II, Smith's belief in the proposition (f) was not justified either.

4. KNOWLEDGE AND PARTIAL EVIDENCE : If in accordance with the discussion in Sec. B2 we accept that the proposition 'S is justified in believing P' should imply that 'P is true' then the following conclusions are inevitable : (a) The couple of conditions (i) and (ii) at the beginning of this article would alone constitute the sufficient condition for the proposition 'S knows that P' and the condition (iii) i.e. 'P is true' is redundant.

(b) If P is either a future contingent proposition or a general proposition of empirical science then we can never be justified in believing that P is true.

I believe that both of the above two conclusions are right. Moreover, for the conclusion (a) I would like to add further that for the proposition 'S knows P' the condition (i) is redundant too; for if S sees the entailment from e to p and if he knows that e is true then how it can be possible that S still does not believe that P is true ? Or, even if it may be possible to forcibly separate belief from justification, but that concept of justification must be strenge and artificial, there is no reason why the proposition (ii), i.e 'S is justified in believing P' should not be considered as the sufficient condition for the proposition 'S knows P'.

Now, in relation to the question of our being justified in believing a future contingent proposition let us consider the proposition 'Tomorrow will be a cold day'. Suppose that a meteorologist has strong evidence for this proposition. But, however, strong the evidence might be, it can never be adequate for concluding that the proposition in question is sure to be true. At least in principle, it is always possible to falsify such a proposition by some deleberate action; for example the proposition 'tomorrow will be a cold day' may be falsified by exploding an atom bomb at the place to which the proposition really refers.

As regards the general empirical propositions of science the situation is only slightly different. If 'P is false' implies that one can not be justified believing that P is true then we have to conclude that the propounders of all such scientific theories or laws as have been afterwards proved to be false had no justification in believing these theories or laws to be true.

But, that will be too strong a conclusion; for, though their evidences were not conclusive for the theories or the laws, but still it is true that they had 'some' justification or 'partial' evidence for believing that those theories or laws were 'certainly true'. Or the same thing can be stated in a different way as — they had conclusive evidence for believing that those laws or theories were possibly true'. Or we may say that they were justified in believing that those laws or theories were 'possibly true'.

In fact, the sentence 'P is possibly true' may be considered as another way of expressing the same proposition as 'there is some strong but partial evidence for P'. The proposition 'S is justified to believe that P is possibly true' may be interpreted as that 'S has strong but partial evidence for P'. Some one's having evidence (partial or conclusive) for a proposition is really his knowing that the proposition called evidence is true and that the evidence implies the proposition P.

Henceforth, in this article, for proposition x, we shall use the abbreviation 'p (x)' to mean that 'x is possibly true'.

Now, I would like to mention the following point :

i) "S is justified to believe P" and "S is justified to believe p(P) are different propositions.

ii) An evidence which is partial for P, may be conclusive for p(P).

iii) If P is false then the proposition 'S is justified to believe P' is false. But the proposition 'S is justified to believe p(P)' may be true even if P is false.

For most of the empirical propositions, as we have discussed earlier, the evidences are necessarily partial. What should be considered as the sufficient condition for the proposition 'S is

justified in believing P', is a separate issue; but it is definite that a necesaary condition for the said proposition is that 'if e is true then P should be necessarily true. If this condition is not fulfilled, i.e. if e is true and yet P is found to be false then e may be, at the most, a partial evidence for P.

However, the fact that we do not have conclusive evidence for every proposition, can not be considered as a problem to be solved, for, in principle, we can not solve it. It is a reality, an unsurmountable limitaiion imposed by nature on our possibility of knowing. We should accept it as a fact and give up all such attempts as to encompass some of our inevitable ignorances by artificially widening the scope of the term 'justification' and hence 'knowledge'. At least this will not transform our ignorance into knowledge. Therefore, it is desirable that our enunciation of the sufficient condition for the proposition 'S knows P' should be such that it should be necessarily false for such proposition P, as in principle, can never be known.

4. FURTHER CONSIDERATION OF GETTIER CASES : Both of the two Gettier cases are founded on the very assumption that some one is justified to believe that P is true does not imply that P is true. During the course of his presentation of case I he writes –

'... 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...

But imagine, further, that unknown to Smith, he himself, not Jones, will get the job.

And from Case II we get :

'Let us suppose that smith has strong evidence for the following proposition :

f) Jones owns a Ford...

... But imagine now that ... Jones
does not own a Ford.

The point is, we may 'imagine' that a proposition is true though, in fact, it may be false. But, if the phrases 'imagine further' and 'imagine now' have the same meaning as that of the phrase, 'it is true', then in his two cases Gettier's claims reduce to the following two statements –

for case I :

Smith has strong evidence for (d) and (d) is false.

and for Case II :

Smith has strong evidence for (f) and (f) is false.

Clearly then, the strong evidences referred to by Gettier in these cases may be only partial evidences and not conclusive ones. Therefore on the bosis of those evidences Smith was neither justified to believe that '(d) is true' nor that '(f) is true'. But of course, he was justified to believe that 'p(d)' and 'p(f)'.

Therefore, for case I, p(d)entails p(e) i.e. 'it is possibly true that Jones is the man who will get the job and Jones has ten coins in his pocket', entails 'it is possibly true that the man who will get the job has ten coins in his pocket'. If Smith sees this entailment then, on the ground of his partial evidence for (d) which is conclusive for p(d), he is justified to believe p(e) and hence, in that case, he really knows p(e). Here, I want to make it clear that though Smith's belief in (e) was right by 'accident', but the truth of the proposition that his belief in p(e) is right, does not depend on the rightness of his belief in (e). His belief in p(e) is right in virtue of his having strong evidence for (e), no matter whether his belief in (e) is right by accident or not.

OBJECTIVITY OF JUSTIFICATION : Another point should be mentioned in this context that ' S believes that he is justified to believe p ' does not imply that ' S is justified to believe p '. In fact, by the latter statement we claim not only that S is satisfied with his own reasonings for p, but also that it is true that his reasonings are logically sound. Suppose, S claims that he is justified in believing the proposition that :

a) Tomorrow will be a rainy day, on the ground of the evidence that

b) Jones saw a black cat on the street.

But even if S may be satisfied with his own reasonings, possibly nobody else will accept that S is really justified in believing that (a) is true.

Now what would be our reasoning for not accepting that ' S is justified in believing that (a) ' ?

The most plausible answer to the question is that we can not accept (b) as an evidence for (a) because there is no causal relation between (a) and (b). A proposition (a) is said to be the cause of (b) if it is true that whenever (b) is true (a) is true. Unless such a relation really exists between (a) and (b), S can not be justified in believing (a) on the ground of (b). Whether such causal relations ever exist, or if they do whether and how they can be known-are problems of knowledge and not in any way related to the notion of it. But again, it is definite that if (b) is true but (a) is found to be false, then there can not exist any causal relation between (a) and (b). In fact that is the only way for our falsifying a proposition of the form '(b) is the cause of (a)'.

Clearly then, Gettier does not believe that there is any causal relation between the evidence and the propositions (d) and (f)

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(in cases I and II respectively). But we have already discussed that the proposition ' S is justified in believing p on the ground of some evidence e ' demands that S' s reasoning should be logically sound and logical soundness of the reasoning demands the that e should imply (either formally or materially) that p. is true. Therefore Smith was not justified to believe (e) in case I, or (f) in case II Whether causal relations are really knowable or not is a different question. If the answer to the question is ' yes ', then it may be possible for us to be justified in believing certain proposition. If the answer is ' no ', we can not be justified in believing those propositions I believe that knowing a proposition in the sense of it's being some one's justified true belief may not be possible for all propositions But, any way, Gettier's cases do not establish his claim that a justified true belief may not be knowledge.

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NOTES

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3. Ayer, A. J. ; *The Problem of Knowledge*, Macmillan, New York, 1963. p. 34.

4. Gettier, Edmund. L.; " Is Justified True Belief Knowledge ?" *Analysis*, Vol. 23, Blackwell, 1963.

5. *Ibid.*

6. Cohen., Morris. R. & Nagel., Ernest; *An Introduction to Logic and Scientific Method*, Allied Publishers Pvt. Ltd. 1968, p. 5.