DEFEASIBILITY ANALYSES

In the previous chapter, we have seen that the causal theory of knowing is clearly inadequate. Another proposal to amend the traditional analysis of non-basic knowledge is that a man knows something to be true if and only if his justification is indefeasible. That is to say, if a man knows something to be true, then his justification must be sufficiently strong so that it is not capable of being defeated by evidence that he does not possess. This theory is called the defeasibility theory of knowing. The propounders of the defeasibility analyses of knowledge differ in respect to the definition of defeasibility. A focus on their views will help us to get a total picture of this approach. In the following sections, I will discuss the theories of Keith Lehrer, Ernest Sosa, and Marshall Swain respectively.

SECTION - I : LEHRER'S THEORY

The Gettier problem has led to a number of suggestions concerning the correct analysis of S knows that h. Clark, for example, says that S's belief must be fully grounded. But this
suggestion has been proved to be defective by Saunders and Champawat and by Ernest Sosa. Keith Lehrer points out that none of these proposals give a correct analysis of knowledge. He proposes an analysis which can be regarded as the first step towards the defeasibility theory of knowledge.

LEHRER'S FIRST ATTEMPT TO SOLVE THE GETTIER PROBLEM

Lehrer tries to modify Gettier's counter-examples by means of an illustration. He examines the following three cases.

CASE - I : Suppose two persons, Mr. Nogot and Mr. Havit enter my office. Mr. Nogot gets out of a Ford and tells me that he owns it. He also shows a certificate in support of his statement and I know him to be honest and reliable. From this evidence, I would be completely justified in believing

"P 1 Mr. Nogot, who is in my office, owns a Ford."

P 1 entails the statement

"H : someone in my office owns a Ford" and I am completely justified in believing it.
Suppose further that Mr. Nogot deceives me, he does not own a Ford. So P1 is false. But the other person, Mr. Havit, owns a Ford though I have no evidence for it. Here H is true but I do not know that it is true. To avoid this counter-example, Lehrer proposes the following as a fourth condition of knowledge.

"(iv) It is not the case that S believes h on the basis of any false statement."\(^5\)

But Lehrer says that a slightly modified case shows that this condition is too strong. This is called case 2. Case 2 differs from Case 1 in that now I have strong evidence for believing that Mr. Havit owns a Ford. Here my belief that someone in my office owns a Ford is based on the false statement p1 and on the true statement p2.

"P2 Mr. Havit, who is in my office, owns a Ford."

In this case, it is correct to say that I know H. But here condition (iv) is not satisfied. For here I believe h on the basis of a false statement and also on the basis of true statement. But according to condition (iv), I should not believe h on the basis of any false statement. So it is too strong and should be rejected. Condition (iva) stated below shows that I do not know H in case 1.
"(iva) If $S$ is completely justified in believing any false statement $p$ which entails (but is not entailed by) $h$, then $S$ has evidence adequate to completely justify his believing $h$ in addition to the evidence he has for $p$."

In case I, however, I do not have evidence adequate to completely justify my believing $H$ in addition to the evidence I have for the false statement $P$ which entails $H$. So (iva) is adequate to rule out case I as a case of knowledge. But it cannot explain case 2. In case 2, I know $H$ because I have adequate evidence for the true statement $p$ in addition to the evidence I have for $p$. Suppose that in this case I also have adequate evidence for the false statement.

"P 3 Mr. Nogot and Mr. Havit who are in my office, own Fords."

So I would be completely justified in believing $P 3$. But $P 3$ entails $H$ and suppose that unfortunately I have no adequate evidence for $H$ in addition to the evidence I have for the false statement $P 3$. Thus (iva) gives us the incorrect result that I do not know $H$ in the modified version of Case 2 and so this condition should also be rejected. (iva) cannot explain the modified version of case 2, for in this case the evidence I have for $P 2$ is not an additional evidence to that
which completely justifies me in believing h. It is only a part of the evidence I have for the false statement P 3. The evidence I have for p 2 is adequate to completely justify me in believing h, but it is not adequate to completely justify me in believing p 3. p 2 provides the whole evidence I have for h, but only a part of the evidence I have for the false statement P 3. Lehrer formulates another condition (ivb) which explains this case.

"(ivb) If S is completely justified in believing any false statement p which entails (but is not entailed by) h, then S has some evidence adequate to completely justify his believing h but not adequate to completely justify his believing p." 

This condition is satisfied in the modified version of case 2. For in this case, the evidence I have for p 2 is adequate to completely justify my believing the true statement H, though it is not adequate to completely justify my believing the false statement P 3. It is only a part of the evidence I have for the complete justification of P 3. So my knowledge of H in the modified version of case 2 is based on the evidence I have for the complete justification of p 2.

But Lehrer points out that there are statements which
a person might be completely justified in believing in the absence of any evidence to support them. In case 3, Lehrer assumes that there is such a statement R and also that it is false. Now suppose that the evidence I have for P 2 is irrelevant to R and that I am completely justified in believing the conjunction of P 2 and R. However, this conjunction is a false statement, because R is false, and it entails H. Here I would be completely justified in believing H even if I were to suppose that the conjunction of P 2 and R is false. A conjunctive statement is true if and only if both the conjuncts are true. In this case, the conjunctive statement is false because one of the conjuncts (R) is false. But the other conjunct P 2 is true. Therefore, I would be completely justified in believing H on the basis of P 2 and thus I know that H is true. But condition (ivb) is not satisfied. For I have no evidence adequate to completely justify my believing H that is not also adequate to completely justify my believing the false statement which is in conjunction of P 2 and R which entails H. Here the evidence I have for P 2 completely justifies my believing H and it is also an adequate evidence for completely justifying the false statement P 2 & R. The evidence for P 2 is not a part of the evidence for P 2 & R but it constitutes the whole evidence for the conjunctive statement. For the statement R is not based on any evidence at all and the evidence
for $p_2$ is irrelevant to $R$. So I have no evidence for the conjunctive statement $p_2 \& R$ except the evidence I have for $p_2$.

So Lehrer finally suggests the following as a fourth condition in the analysis of knowledge. This condition is satisfied in case two and three but not in case one.

"(ivc) If $S$ is completely justified in believing any false statement $p$ which entails (but is not entailed by) $h$, then $S$ would be completely justified in believing $h$ even if $S$ were to suppose that $p$ is false."  

Thus Lehrer analyses $S$ knows that $h$ as the conjunction of:

i) $h$ is true

ii) $S$ believes $h$.

iii) $S$ is completely justified in believing $h$.

(ivc) If $S$ is completely justified in believing any false statement $p$ which entails (but is not entailed by) $h$, then $S$ would be completely justified in believing $h$ even if $S$ were to suppose that $p$ is false.
CRITICISMS OF LEHRER'S ANALYSIS

The above analysis of knowledge as put forward by Lehrer has been criticized by Gilbert Harman, Alvin Goldman and Brian Skyrms.

Goldman substitutes Lehrer’s theory of knowledge by a causal theory. He thinks that an adequate analysis of knowledge can be given in terms of a causal explanation of the events but in the previous chapter we have found that Goldman’s causal theory is not free from objections and counter-examples. So his theory cannot be accepted.

Harman presents a case where Lehrer’s analysis of knowledge is satisfied, but S does not know h. He supposes that S’s being completely justified in believing h depends on his being completely justified in believing g and completely justified in believing g→h and also on his being completely justified in believing f→h. He also supposes that both g and f are false. Then Lehrer’s first three conditions are satisfied but there would appear a relevant p falsifying (ivc), such as (f v g) & (f v g)→h). If S supposes this false statement to be false, then he would not be completely justified in believing h. Harman proposes the following condition (ivd) which avoids this counterexample.
"(ivd) If p is a false statement entailed by statements S is completely justified in believing such that p entails (but is not entailed by) h, then S would be completely justified in believing h even if S were to suppose that p is false."¹¹

Harman remarks that the parenthetical expression that p not be 'entailed by' h is superfluous, for h is not true and entails a false statement. Moreover the requirement that p entails h is also superfluous. Suppose that r is a false statement that follows from statements S is completely justified in believing. Then r & h is also a false statement which follows from statements S is completely justified in believing; and r & h entails h. According to (ivd), S must be completely justified in believing h even if he supposes that r & h is false. Now to suppose that r & h is false, we need only to suppose that either that r is false or h is false. But if S supposes that h is false, he would not be completely justified in believing h. So to satisfy (ivd), S must be completely justified in believing h even if he were to suppose r false. Therefore, (ivd) is equivalent to :

"(ive) If p is a false statement entailed by statements S is completely justified in believing, then S would be completely justified in believing h even if S were to suppose that p is false."¹²

Harman wants to simplify this condition further and
for this he assumes that there is at least one false statement that $S$ is completely justified in believing. So (ive) can be simplified by the following equivalent condition

"(ivf) if $P$ is any false statement, then $S$ would be completely justified in believing $h$ even if $S$ were to suppose that $p$ is false."\(^{13}\)

Harman further simplifies the above condition by assuming that there is a statement that is (or means the same as) the disjunction of all false statements. A disjunction is false when each of the disjuncts is false. Therefore, (ivf) can be simplified into:

"(ivg) $S$ would be completely justified in believing $h$ even if $S$ were to suppose false every statement that is false."\(^{14}\)

Now Harman shows that (ivg) entails:

"(iii) $S$ is completely justified in believing $h$."\(^{15}\)

For if $S$ would be completely justified in believing $h$ after making suppositions about the falsity of various statements, then $he$ would be completely justified in believing $h$
originally. Again S's complete justification in believing h depends upon why S believes h. So (iii) entails

(ii) S believes h.

(ivg) also entails (i) h is true, Otherwise S would not be completely justified in believing h and then (ivg) must be false.

Thus condition (ive) with the help of two assumptions is simplified into condition (ivg). Therefore, Harman reduces Lehrer's analysis of 'S knows h' into the following:

"(1) S would be completely justified in believing h even if S were to suppose false every statement that is false." 16

But condition (1) puts no restriction on S's giving justification. Harman presents condition (2) and condition (3) respectively to modify condition (1). But he finds that these two conditions cannot solve the problem. So he offers another condition (4) which is stated below.

"(4) S would be able to justify completely his believing h even if (without doing any further reasoning) S were to suppose false each statement that is false." 17
The parenthetical remark in (4) is explained by Harman in the following way:

"It is meant to restrict S to giving justifications on which his belief is originally based and to prevent him from thinking up new justifications of his believing h in order to show (falsely) that he originally knew h. At best such new justifications show that S knows now."

But Harman points out that there are two ways in which (4) as an analysis of 'S knows h' may turn out to be inadequate. In the first place, in cases where S knows h because he sees that h is true, there are two possibilities concerning the justification of his belief each of which raises problems. S's justification may be given by the argument "I see that h is true; therefore h." But in this case, to apply (4) one must know whether or not S sees that h is true, and seeing h is true involves coming to know h by seeing. So this involves circularity in some cases. On the contrary, if S's justification is given by some other argument, e.g., with premises referring to how things look to S, then S would be unable to state the argument and the sense in which S's belief can be based on an argument. Secondly (4) cannot be applied in those cases where S has forgotten why he came to believe h.
and quite unable to offer any argument for \( h \). This, however, does not always mean that \( S \) does not know \( h \). If we express \( S \)'s justification in these cases by the argument, "I remember that \( h \) is true, therefore \( h \)," this justification involves (4) in circularity of application. For remembering is only a part of knowing. Besides, no good arguments can be given for \( h \) from the premise that \( S \) seems to remember \( h \).

It is obvious now that Harman's attempted modification of Lehrer's condition (ivc) does not yield a satisfactory analysis of '\( S \) knows \( h \).' For the condition stated by Harman cannot be applied in some cases. It involves circularity in its application and hence should be rejected. Lehrer and Paxson try to avoid this difficulty by incorporating (iv) in their analysis of non-basic knowledge which will be discussed later.

Another important objection to Lehrer's earlier analysis has been offered by Brian Skyrms in his counter-example of the pyromaniac. In this case, the pyromaniac is completely justified in believing that the Sure-fire match in his hand will light if he strikes it. The evidence on which his justification is based is that he has always found these matches to light when struck. But unknown to the pyromaniac, this particular match he now holds is defective. For it raises its
combustion temperature above that which can be produced by the friction. However, let us imagine that a burst of Q - radiation lights the match immediately after his striking it. Here his belief that the match will light when he strikes it is true and completely justified by that evidence. But the pyromaniac does not know that the striking will cause the match to light. In this case, the belief is true and completely justified, still it is not a case of knowledge. The fact that this particular match contain impurities that raise its combustion temperature above that which can be produced by the friction defeats the completely justified true belief of the pyromaniac. But Lehrer's earlier analysis cannot rule out this case as a case of knowledge, for this analysis does not contain a defeasibility condition. But his modified theory (of which Thomas Paxson is a co-author) can easily rule out this case as a case of knowledge.

A MODIFICATION OF LEHRER'S EARLIER ANALYSIS BY LEHRER AND PAXSON

Lehrer's earlier analysis has been modified by Lehrer and Paxson in the article "knowledge: Undefeated justified true belief." It is the most comprehensive attempt at formulating a defeasibility analysis of knowledge. In the
previous chapter we have mentioned the distinction that is made in this article between basic and non-basic knowledge. Basic knowledge is self-justified. It does not depend on any other justification. But non-basic knowledge requires something in addition to completely justified true belief, for though a statement completely justifies a man in his belief, there may be some true statement that defeats his justification. So they add the condition that his justification should not be defeated. Non-basic knowledge, therefore, is undefeated justified true belief.

Lehrer and Paxson propose the following analysis of non-basic knowledge:

"S has non-basic knowledge that h if and only if (i) h is true, (ii) S believes that h, and (iii) there is some statement p that completely justifies S in believing that h and no other statement defeats his justification."²¹

The question is, when a statement defeats a justification? To answer this question, Lehrer and Paxson try to give a definition of defeasibility. At first, they examine the following suggestion given by Chisholm regarding the definition of defeasibility.
"When p completely justifies S in believing that h, this justification is defeated by q if and only if (i) q is true, and (ii) the conjunction of p and q does not completely justify S in believing that h."^22

This definition of defeasibility can rule out the pyromaniac case as a case of knowledge. Here the true statement that striking the match will not cause it to ignite defeats the completely justified true belief of the pyromaniac that the match will ignite upon his striking it. So if we accept this definition of defeasibility, a man has non-basic knowledge that h if and only if the justification for his belief is not defeated by any true statement.

But Lehrer and Paxson hold that such a definition of defeasibility makes the analysis of non-basic knowledge too much restrictive, for there may be true statements that are misleading. They show this by presenting the Grabit case.

Suppose that I see Tom Grabit, whom I know quite well to steal a book from the library and report that Tom Grabit has stolen the book. But Tom's mother Mrs. Grabit declares with confidence that Tom was not in the library on that day and his twin brother John actually stole the book. Suppose also that I know nothing about Mrs. Grabit's statement. But according to the above definition of defeasibility, Mrs. Grabit's statement
defeats the justification I have for believing that Tom stole the book. So I cannot be said to have non-basic knowledge that Tom stole the book. So I cannot be said to have non-basic knowledge that Tom stole the book. But suppose again that Mrs. Grabit is a compulsive and pathological liar and John is only a creation of her mind and Tom stole the book as I believed. Given this justification and information, my justification is not now defeated by Mrs. Grabit's statement and I can very well have non-basic knowledge that Tom stole the book. So the previous definition of defeasibility should be modified.

Lehrer and Paxson consider another example in which a justification can be defeated. Suppose I have strong evidence that completely justifies my belief that Mr. Nogot, who is a student in my class, owns a Ford. Therefore, I am also completely justified in believing that someone in my class owns a Ford. Here I have completely justified true belief that someone in my class owns a Ford but I do not know it. For my justification for believing that someone in my class owns a Ford is defeated by the true statement that Mr. Nogot does not own a Ford.

The difference between these two cases consists in the fact that in the Grabit case, my justification for
believing that Tom stole the book does not depend on my believing Mrs. Grabit's statement about Tom to be false, but in the Nagot case, my justification for believing that someone in my class owns a Ford depends on my being completely justified in believing it to be false that Mr. Nogot does not own a Ford. Lehrer and Paxson therefore concludes that a defeating statement must be one which, though true, is such that the subject is completely justified in believing it to be false. In Skyrms's pyromaniac case, the pyromaniac would be completely justified in believing that striking the sure-fire match will cause it to ignite. So the true statement that striking the match will cause it to light is defeating. The definition of defeasibility, therefore, takes the following form:

"When p completely justifies S in believing that h, this justification is defeated by q if and only if:

(i) q is true, (ii) S is completely justified in believing q to be false, and (iii) the conjunction of p and q does not completely justify S in believing that h."  

Lehrer and Paxson, however, points out that this definition of defeasibility, though basically correct, faces a technical problem. Suppose that there is a true statement that I was born in St. Paul which is completely irrelevant to my
knowledge that Tom Grabit stole the book and I am completely justified in believing it to be false. Now if I conjoin this statement with any statement q such as Mrs. Grabit said that Tom Grabit was not in the library, I am completely justified in believing the whole conjunctive statement to be false. For we know that a conjunctive statement is false if one of its conjuncts is false. So this statement defeats my justification that Tom stole the book. But Lehrer and Paxson think that this problem can be solved easily. One consequence of the conjunction (that Mrs. Grabit said that Tom was not in the library) undermines my justification, but I am not completely justified in believing this statement to be false. I am, however, completely justified in believing the other consequence to be false but it is irrelevant to my justification. What is needed is that those consequences of a defeating statement which undermine a justification must themselves be statements that the subject is completely justified in believing to be false. Thus Lehrer and Paxson finally defines the notion of defeasibility in the following manner:

"......if p completely justifies S in believing that h, then this justification is defeated by q if and only if (i) q is true, (ii) the conjunction of p and q does not completely justify S in believing that h, (iii) S is completely justified in believing q to be false, and (iv) if c is a logical
consequences of q such that the conjunction of c and p does not completely justify S in believing that h, then S is completely justified in believing c to be false."24

In his book "Knowledge", Lehrer distinguishes the Tom Grabit example from Harman's Newspaper example25 which illustrates that a man's belief is justified entirely by true statements, yet he lacks knowledge. Lehrer puts the Newspaper case in the following manner.

"Suppose a man reads in a newspaper that a civil-rights leader has been assassinated. The story is written by a dependable reporter who in fact witnessed and accurately reported the event. The reader of the story believes this and is completely justified in believing that the civil-rights leader was assassinated. However, for the sake of avoiding a racial explosion, all other eye-witnesses of the event have agreed to deny the assassination occurred and affirm that the civil-rights leader is in good health. Imagine, finally, that all who surround the man in question have, in addition to reading the story, heard the repeated denials of the assassination and thus do not know what to believe."26

The question is, whether we can say that the one man who, by accident, has not heard the denials, knows that the civil-rights leader was assassinated. According to Harman,
he does not know.

Now in both the Grabit case and the Newspaper case the man in question lacks some misleading information which, were it possessed, the man would not know. But while in the Grabit case, the man knows that Tom Grabit took the book, in the Newspaper case the man does not know that the civil-rights leader was assassinated although he lacks the misleading information. The man's belief that the civil-rights leader has been assassinated is partly justified by his belief that the newspaper story is generally considered to be a reliable source of information. Here he lacks knowledge, for his justification partly depends on his false belief that others believe the story. But my belief that Tom Grabit took the book does not depend on my false belief about what Tom's mother did or did not say. This is the reason why the man lacks knowledge in the Newspaper case, but does not lack it in the Grabit case. If the Newspaper case is slightly altered, that is, if the man completely trusts the reporter, determines not to shake his confidence by the doubts of others about the fact, then we can say that the man does know that the civil-rights leader was assassinated. Now his justification wholly depends on his true belief that the reports of newspapers are generally reliable.
CRITICISMS AGAINST LEHRER'S ANALYSIS OF NON-BASIC KNOWLEDGE

and

Lehrer's/Paxson's specific analysis of defeasibility has been questioned by Ernest Sosa, Marshall Swain, Bredo Johnsen, J. R. Kress among others.

Ernest Sosa agrees with Lehrer's and Paxson's analysis of knowledge in its broad outline. He admits that an account of knowledge must consist of (i) a metaphysical element (truth), a psychological element (belief) and a sui generis epistemological element (warrant, for instance, complete justification). In spite of this, Lehrer's and Paxson's analysis of knowledge seems to him to be inadequate, for the defeasibility condition suggested by them is not quite satisfactory. He raises three objections against their view.27

In the first place, the definition of defeasibility given by Lehrer and Paxson is defective. Sosa proves this by examining the Grabbit case. He says that S's complete justification (P) for believing (h) (that Tom took the book) cannot be defeated by any statement q. For even if (i) q is true, even if (ii) the conjunction of p and q does not completely justify S in believing h, even if (iii) S is completely justified in believing q to be false, yet it must always be
false that (iv) for every c, if c is a logical consequence of q such that the conjunction of c and p does not completely justify S in believing h, then S is completely justified in believing c to be false? Let us suppose that (c) is a disjunctive statement that either q is true or Mrs. Grabit said that Tom was not in the library, etc. Now c is a logical consequence of q such that the conjunction of c and p does not completely justify S in believing h but S is not completely justified in believing c to be false. A disjunctive statement is false if and only if each disjunct is false. But according to Lehrer's and Paxson's hypothesis, S is not completely justified in believing it false that Mrs. Grabit said Tom was not in the library. So the analysis is not correct. Even if we do not take c as a disjunctive statement, the account of knowledge suggested by Lehrer and Paxson can be proved to be wrong. In the case where S is not completely justified in believing any proposition r which is in conjunction with S's justification for believing h does not justify S in believing h, the same problems persist. For S's justification for believing h cannot be defeated or at least may consistently be supposed undefeated in cases where this should not be open to us. To overcome this difficulty, Lehrer and Paxson must improve their account of defeasibility and in order to this, they should give a fuller account of complete justification.
In the second place, the difference between the Grabit and the Nogot cases as pointed out by Lehrer and Paxson cannot clearly explain why S knows that Tom has stolen the book but does not know that someone present owns a Ford. Sosa explains the reason why S knows that Tom is guilty. Let us suppose that Mrs. Grabit is not a liar, that Tom has indeed an identical twin brother John, and Mrs. Grabit honestly believes that John and not Tom was present in the library at the time and at present all persons except S have heard Mrs. Grabit's declaration and have changed their idea about Tom. So the other persons have the justification that S has plus the additional information about Tom from Mrs. Grabit. Yet S knows that Tom is the offender. For, according to Lehrer's and Paxson's hypothesis, S is not completely justified in believing it false that Mrs. Grabit said the things in question. This is why Mrs. Grabit's testimony to the others is not to be counted as a defeater of S's complete justification in believing that Tom is the culprit.

Lastly, Sosa shows that if we modify Skyrms's pyromaniac example in the following way, it will involve a problem for Lehrer's and Paxson's theory. In this example, the pyromaniac has seen that sure-fire matches have always ignited when struck. Therefore, the pyromaniac is completely justified in believing that if he strikes the match which is now in his hand,
it will light. Sosa further assumes that the evidence of his past experience makes him completely justified in believing that when the match is lighted, will smell powder if it is appropriately situated and will feel pain if he comes in contact with the match etc. But as he will be struck with temporary sensory paralysis, he will not smell powder or feel pain etc. Suppose now that \( q \) is a proposition which states that the pyromaniac will not smell powder or feel pain etc. even when appropriately situated. If we conjoin evidence (p), the resulting conjunction (p & q) will not completely justify him in believing (h) that the match will light. According to Lehrer's and Paxson's definition of knowledge, this prevents his knowledge that the match will light. But Sosa says that it is a problem whether this really prevents his knowledge. A similar problem is raised by Marshall Swain in the following counter-example to Lehrer's and Paxson's analysis by which he tries to prove that it is too strong.  

Let us suppose that S flings a large stone at a window. As he sees it flying towards the window, he feels sure that the window will break as a window is apt to break under such an impact. It is obvious that S knows the window will break. S is justified in believing that the window will break and therefore he is also justified in believing that he will see the window to break and hear the crashing sound. But let us imagine that
at the moment when the stone breaks the window, a peculiar nervous disease (involving a complete paralysis of visual and auditory senses) attacks S so that he neither sees the stone striking the window nor hears the crash. Swain calls this evidence e in contrast to S's former visual evidence that the stone is going to hit the window which he names evidence e.

It is obvious that (a) e justified S in believing e' to be false, (b) e' in conjunction with S's evidence e fails to justify the belief that the window will break and (c) if q is a logical consequence of e' such that the conjunction of q and e fails to justify h, then e justifies S in believing q to be false.

Hence, in contrast to the fact that S knows that the window will break, Swain says that the fact that he will be afflicted with sensory paralysis has no effect whatsoever on his knowing that the window will break. Thus Lehrer's analysis of knowledge including the defeasibility condition is proved to be too strong.

Swain uses another example-form to prove that Lehrer's and Paxson's analysis of knowing is also too weak. Let us assume that S is justified in believing h on the basis of the evidence e. Now assume that h is true and S believes that h but he does not know h, for there is some true counterevidence e and S is justified in believing it to be false. Therefore e' overlaps his justification e. Suppose that there is another
true counterevidence $e''$ such that $S$ is not justified in believing it to be false but $e''$ in conjunction with $e$ fails to justify $h$. Now the disjunction of $e'$ with $e''$ is a logical consequence of $e$ and as every disjunct in conjunction with $e$ fails to justify $h$, the disjunction as a whole in conjunction with $e$ fails to justify $h$. Thus according to Lehrer's and Paxson's defeasibility condition, $S$ is completely justified in believing $e''$ to be false. But a disjunctive statement is false if and only if each disjunct in it is false. So $S$ is completely justified in believing that the whole disjunctive statement $(e.g., (e.e') v (e. e'') v (e. e''') ... ... ...)$ to be false if and only if $S$ is completely justified in believing each of the disjuncts to be false. But we have already assumed that $S$ is not justified in believing $e'$ to be false. Here the defeasibility condition stated by Lehrer and Paxson includes a case of nonknowledge. So it is too weak. This objection is similar to Sosa's first objection against Lehrer's theory.

Bredo C. Johnsen also shows that Lehrer's and Paxson's analysis is both too weak and too strong. First, he shows it to be too weak by elaborating the Grabit case and names it the Shrink case. In this case, after having initial evidence about Tom's theft I consult Dr. Shrink about this matter. He tells me that he knows Tom to be a fine gentleman from his recent close contact with the latter. He also informs me that
Tom's mother has died a month ago. Now suppose that Shrink's information is reliable and thus I am completely justified in believing that Tom's mother has been dead a month ago. Further, though the thought does not occur to me, I am completely justified in believing it false that Mr. Grabbit has recently said that on the day in question Tom was in England etc. Imagine that Dr. Shrink has mistaken Tom's step-mother for his mother, but this does not affect the fact that I am completely justified in believing him. Johnsen says:

"Clearly, the fact that I'm justified in believing Tom's mother to be dead, and therefore in believing that she hasn't told any lies recently, does not defeat my justification for believing that Tom stole a book from the library. But the Lehrer-Paxson analysis said that on the day in question Tom was in England, etc."

Johnsen distinguishes the Shrink case from Skyrms's case of the pyromaniac. Lehrer's and Paxson's thesis is adequate to explain Skyrms's case but it cannot explain the Shrink case. Johnsen points out that the difference between the two cases is that "the defeating proposition in Skyrms's case is one on whose falsity the pyromaniac in some way depends for his justification in believing h, whereas the subject in the Shrink case does not so depend on the falsity
of the putatively defeating proposition. It is this crucial
difference between, on the one hand, simply being completely
justified in believing a proposition false, and on the other,
completely justifiably depending on its falsity that is supp-
ressed by Lehrer and Paxson." For this, he substitutes
condition (iii) of Lehrer’s and Paxson’s analysis by the
following:

"(iii) S’s being justified in believing h depend on
his being justified in believing q false."

But it may be objected, that condition (iii ) is
Obscure and Lehrer’s and Paxson’s clear (iii) will do the
same job; So he substitutes (iii ) by the following:

"(iii’ ) there is some statement r which is entailed
by p and which completely justifies S in believing q false."

But this revised analysis is also open to precisely
the same type of objection which Gilbert Harman raised against
an earlier proposal of Lehrer’s view and Lehrer and Paxson
tried to get rid of it by introducing condition (iv) in their
analysis of defeat.

Johnson suggests that this problem can be avoided
if we suppose that p, which constitutes the justification for
believing h, does not justify me in believing false any true
proposition. But it becomes too strong and quite counter-
intuitive. Therefore, the Lehrer - Paxson analysis is not adequate to explain our non-basic factual knowledge.

J. R. Kress presents the following counterexample to Lehrer's and Paxson's theory of non-basic knowledge.

Case I Suppose that I am completely justified in believing that 'a Ford' 'H : Someone in my office owns/ and the evidence that justifies me in believing H is :

'P Mr. Havit, who is in my office, owns a Ford'.

Suppose that both H and P are true. Now suppose also that the sole reason for believing P is :

'R Yesterday I saw Mr. Havit's automobile registration certificate lying on his desk, and it specified the mark of his car as a Ford.'

But assume that R is false. In that case I do not know that H, for R is the only reason for believing that P and P is the evidence which justifies me in believing that H. Nevertheless, it fulfils Lehrer's and Paxson's analysis as (i) H is true, (ii) I believe that H and (iii) I am completely
justified in believing that H (on the basis of P which is true) and (iv) there is no true statement q that defeats my justified belief. Kress, however, thinks that one may object that in the above counterexample, P does not completely justify me in believing that H, since P, though true, is not itself something I am completely justified in believing. To avoid this objection, he constructs case 2 in which R is true. But he shows that merely requiring that R be true will not solve the problem. For suppose that unknown to me, Mr. Havitt has sold his old Ford and bought a new car since I saw the certificate and that it is also a Ford. In this case, although "(i) H is true, (ii) I believe that H, (iii) P completely justifies me in believing that H, and no statement q defeats this justification and (iv) R, my sole reason for believing P, is true", yet I do not know that H.

The problem, Kress holds, is that 'when my sole reason for believing some statement h is that p entails h, it seems initially plausible to say : I know that h only if I know that p. Further, where my sole reason for believing that h is that p completely justifies me in believing that h (but p does not entail h) it seems initially plausible to say : 'I know that h only if I know that p'. By applying this insight to Lehrer's and Paxson's thesis, Kress reconstructs it as follows:
S has non-basic knowledge that h if and only if (i) h is true, (ii) S believes that h, (iii) there is some statement p that completely justifies S in believing that h and no other statement defeats this justification, and (iv) either

a. S has basic knowledge that p, or
b. (i') p is true, (ii') S believes that p, (iii') there is some statement r that completely justifies S in believing that p and no other statement defeats this justification, and (iv') either

a'. S has basic knowledge that r, or
b'. (i''') r is true, (ii''') to which we attach the meta-analytic rule that the recursion can be allowed to terminate only when some justifying statement a is reached such that S has basic knowledge that a."

But even such revision renders the analysis to be both too strong and too weak. It may be the case that p is complex and partly false. Suppose, however, that though p is partly false, the remainder still completely justifies S in believing that h. In this case, S knows that h, though he fails to know that p and p is the only reason for believing
that h. So it is too strong. It is also too weak. To prove this, Kress introduces case 3 which is similar to case 2. Instead of R in case 2, he presents T in case 3 as the sole evidence for believing that p. The difference between R and T is that in T, my belief is based on my distinct memory that yesterday I saw Mr. Havit's automobile registration certificate lying on his desk and I can also distinctly remember that it specified the make of his car as a Ford. But suppose that as in case 2, in this case also Mr. Havit has sold his old car and bought a new car since I saw the certificate and the new car is also a Ford. Here "(i) H is true, (ii) I believe that H, (iii) p completely justifies me in believing that H and no statement q defeats this justification, (i') p is true, (ii') I believe that p, (iii') T completely justifies me in believing that p and no statement q, defeats this justification, and (iv') I have basic knowledge that T assuming that a person has basic knowledge of his belief", but S does not know that H. So it is too weak.

Kress suggests that the problem of Lehrer's and Paxson's analysis can be solved if and only if we can provide an exact interpretation for 'P completely justifies S in believing that h' but himself does not give any such interpretation. Nor does he explain what he means by an 'exact
interpretation'. But unless the idea of 'exact interpretation' is clear, Kress's suggestion is fruitless.

**LEHRER'S CRITICISMS OF SOME INADEQUATE SOLUTIONS OF THE GETTIER PROBLEM**

Having found the inadequacies of constituting a fourth condition of knowledge, some philosophers try to defend the 'justified true belief' analysis of knowing. Irving Thalberg, Joseph Margolis, and Charles Pailthrop among others, are the most renowned defenders of the traditional view of knowledge.

Thalberg questions Gettier's thesis which he names 'principle of deducibility for justification (PDJ)'. This principle is used by Gettier to refute the traditional justified-true-belief analysis of knowledge. In Gettier's terms, (PDJ) reads:

"For any propositions P, if (a person) 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."

Gettier's two counter-examples are based on (PDJ) and his assumption that it is possible for someone to be justified in believing a proposition that it is false. In each case, the person S justifiably accepts a proposition P, which turns out
to be false, $S$ also deduces from $p$ another proposition $Q$, which
by sheer coincidence is true; consequently we must deny that $S$
knows that $Q$ is false. Thalberg does not admit Gettier's
conclusion that a justified true belief is not a sufficient
condition of knowledge. He raises objections to the deductive
step from justified belief in $P$ to justified belief in $Q$. He
says that like Gettier, apparently, Lehrer was too impressed by
the principle (PDJ), and failed to notice that his evidence
did not justify belief in the true proposition "someone who
works in my office owns a Ford". So Lehrer also fails to
demonstrate that justified true belief is not knowledge.

Joseph Margolis says that Gettier's principle seems
prima facie plausible, but 'its plausibility is really borrowed
from the force of the deduction'. Gettier's argument, to a large
extent, depends on the application of purely formal entailment
rules to semantically interpreted epistemic contexts. Therefore,
Gettier's argument itself requires justification. But he has
not offered any justification for these rules and Margolis
shows that no such justification is convincing for the principle
he posits. But it does not mean that the justification condition
provided by the traditionalists are adequate or that we
need a fourth condition to get rid of the Gettier's problem.
The problem is that the minimal conditions for justified
belief cannot be so strong that they entail either
the truth of what is believed or the believer's knowledge of what he believes; on the other hand, they cannot be so weak that they do not bear at all on the truth of what is believed or the validation of what is believed or the ascription of knowledge to the believer. But there is no plausible intermediary position between these two extremes. Margolis says that "the ascription of knowledge and the appraisal of one's belief as justified are informal; and some proposed set of necessary and sufficient conditions must obscure the difficulty inherent in the justification condition." The justification condition is "so vague" that we cannot say whether Gettier's counter-examples are really counter-examples to the justification condition and "so open-minded" that we cannot present a rule for determining whether one's belief is or is not justified.

Charles Pailthrop examines the counter-examples of Gettier and others e.g., Chisholm, Lehrer and Brian Skyrms to the 'justified-true-belief' analysis of knowledge and shows the standard principle of justified true belief analysis is not affected by them. We shall confine our discussion to his objection to Lehrer's view. He says that the counter-examples to the traditional analysis of knowledge very often involve a man being completely justified in believing something on the basis of some inference or reasoning having a
false premise. Pailthrop argues that such inference does not completely justify the conclusion if the false premise is necessary for its justification. He says that such alleged counterexamples to the justified true belief are not examples of completely justified belief and therefore fail to refute the justified-true-belief analysis.

Lehrer uses two arguments for showing the inadequacies of Pailthrop's argument and also defending the fourth condition of knowledge presented by himself.\[24\]

First of all, Pailthrop admits that we may be completely justified in believing something that is false. But Lehrer points out that whatever we are completely justified in believing may be used as a premise in justificatory reasoning, unless it is excluded by special assumptions. Therefore, the false premises which a man is completely justified in believing may ordinarily be employed to completely justify his believing some further conclusion.

Secondly, there are counterexamples in which reasoning does not involve false premises. Lehrer says that in his own example of Mr. Nogot, there is no false premise in the justificatory reasoning or inference. Pailthrop argues that this example fails because "I must either believe there is
someone in my office, just who I do not know, who owns a Ford, in which case my evidence fails to completely justify what I believe, or I must believe of someone in my office that he owns a Ford, in which case what I believe will be false because the someone is Nogot." Lehrer points out that C. G. New used the same line of argument to attack his theory, but was promptly refuted by James Smith and Gilbert Harman. Lehrer says that I may believe that someone in my office owns a Ford without accepting either alternative Pailthrop offers.

"I believe that there is at least one person in my office who owns a Ford, or to put it negatively, I believe that it is not the case that no one in my office owns a Ford. This belief does not have the logical consequence that I do not know who it is who owns a Ford any more than it has the consequence that Nogot owns one. I may assert and believe that there is at least one person in my office who owns a Ford without this statement logically implying that I do not know who or that Mr. Nogot is the man." 35

Pailthrop questions whether Lehrer's argument in defense of the conclusion need pass through the false premise that Mr. Nogot owns a Ford. But Lehrer replies that his inference is direct and warranted from the true premises
alone to the conclusion that there is at least one person in
my office who owns a Ford. He argues that on Pailthrop's own
assumptions, the inference may be shown to be warranted if we
appeal to the concept of probability. According to Pailthrop,
an inference is warranted if it takes us from a true premise to a
true conclusion, "either necessarily or in all likelihood."
Lehrer says that if we equate "in all likelihood," with "in
'all probability" (as it is done in ordinary usage), Pailthrop's
argument completely fails. With the help of the calculus of
probability, he proves that when an inference from evidence to
hypothesis will, in all probability, take us from a true premise
to a true conclusion, then the inference from that evidence
to any other hypothesis entailed by the first hypothesis, will
also, in all probability, take us from a true premise to a true
conclusion. Thus Lehrer shows that on Pailthrop's own assumption,
the inference in question need not proceed through any false
premise. It is, however, a direct inference from a true
warranted premise to a true conclusion. A man who believes that
conclusion on that evidence may be completely justified in his
believing but still may have knowledge. So Pailthrop's argument
cannot undermine Lehrer's counterexample to the justified-true-
belief analysis of knowledge. Lehrer adds the following fourth
condition to the three conditions given in the justified-true-
belief analysis.
for any false statement $F$, $X$ would be able to completely justify his belief that $P$ even if he were to suppose, for the sake of argument, that $F$ is false."  

This fourth condition is a variation of Lehrer's earlier proposals discussed above. This condition is not satisfied by the proposed counterexamples including his own and so the fourth condition is necessary. Lehrer shows that Pailthrop's own example of Mr. Austin does not satisfy this condition. Suppose Mr. Austin examines an animal who is just like a pig but is not in fact a pig. Suppose further that afterwards suddenly the animal is transformed into a pig but its appearance remains the same. Now Mr. Austin is completely justified in believing that it is a pig but he does not know that it is a pig. Thus Lehrer proves that a fourth condition is necessary to get rid of the proposed counterexamples.

In 'Knowledge', Lehrer shows that all solutions of the Gettier problem are 'superficial' and 'ad hoc'. According to Thalberg, Margolis and Pailthrop, the Gettier problem can be solved by requiring that for a man to know, his justification must not involve deduction from a false premise. But Lehrer says that though Gettier's counterexamples involve deductions from false premises, they need not do so. A man may be completely justified in believing the statement
(d) Smith owns a Ford or Brown is in Barcelona, the reason not being that he has deduced it from

(s) Smith owns a Ford, but that (d) 'is believed to have a better chance of being true than its competitors'. This consequence can follow even if (s) has almost no chance of being false. And as (s) logically implies (d), (d) has almost no chance of being false. If (s) is false, the conclusion that 'I know (d)' is defeated, but the deduction of (d) from (s) is not essential. In Lehrer's terms: "My inference to (d) may be a non-deductive inference from perfectly true beliefs that completely justify me in believing (s)". But still there may be counterexamples showing that there are other propositions which have a better chance of being true than (d). Therefore the solutions of the Gettier puzzle proposed by the defenders of the justified-true-belief analysis are all proved to be inadequate.

LEHRER'S FINAL ANALYSIS OF KNOWLEDGE

Having found the inadequacies of the previous attempts at solving the Gettier problem, Lehrer proposes the following as the final analysis of knowledge:
"(AK) S knows that p if and only if (i) it is true that p, (ii) S believes that p, (iii) S is completely justified in believing that p, and (iv) S is completely justified in believing that p in some way that does not depend on any false statement."

The explication of the fourth condition is provided on the basis of the notion of the Verific alternative V to the corrected doxastic system D of a subject S. Lehrer gives a formal analysis of the notion of 'verific alternative' in the following lines:

"Every statement in D is of the form: S believes that p. Form a set V from D by retaining all such statements of D in V when it is true that p, and when it is false that p substitute in V the statement that S believes the denial of p. We shall call V the verific alternative to D. The verific alternative to a doxastic system is one in which each belief of a true statement is retained and each belief of a false statement is replaced with the belief of the denial of that false statement."}

Lehrer now presents condition (iv) in the following manner:

"S is completely justified in believing that p in a way
that does not depend on any false statement if and only if S is completely justified in believing that p in the verific alternative to the corrected doxastic system of S."

The notions of the doxastic system and the corrected doxastic system as defined by Lehrer are stated below: -

"The doxastic system of a person S, is a set of statements of the form S believes that P, S believes that q, and so forth, which describes what S believes. The corrected doxastic system of S is the subset of the doxastic system resulting when every statement is deleted which describes S as believing something he would cease to believe as an impartial and disinterested truth-seeker." 40

Lehrer says that when a man is completely justified in believing some true statement but fails to know, the belief that the statement is true will be contained in the verific alternative. If some false statement is used as a premise to deduce a true statement, the belief of the denial of the false statement retained in the verific alternative would undermine the original justification. So the man would not be completely justified in believing the true statement that was the conclusion of the original deduction in the verific alternative. It must be noticed that belief in every true statement should not be attributed to S in the verific alternative to his corrected doxastic system. For if the verific alternative is construed in this
way, then in most of the counterexamples, S would be completely justified in believing those statements in the verific alternative whose original justification was based on some false belief. Therefore, the statements of what S believes retained in the verific alternative to his corrected doxastic system should be limited to the original true beliefs of S and the denials of the original false beliefs of S. Thus Lehrer concludes that if a man is completely justified in believing that P in his corrected doxastic system and he is also completely justified in believing that p in the verific alternative of that system, then his being completely justified does not depend on, nor is his justification defeated by, any false statement or belief. With this explication, Lehrer suggests that the Gettier problem can be solved by adding a fourth condition that a man only knows something when his complete justification for believing it does not depend on false beliefs.

Stewart Cohen says that Lehrer's theory of verific alternative to the corrected doxastic system of S relies on a version of "the ideal conception of justification". It does not seem to be clear to him whether the set of beliefs deleted in order to correct the doxastic system of S is coextensive with the set of S's unjustified beliefs. He constructs a counterexample to Lehrer's thesis. 4
"Tom Grabit has an identical twin John who, as most people know, never enters the library. S agrees that this is generally true of John; but S also believes — albeit with no really good reasons — that on June 1st, John will depart from his customs, enter the library and steal a book. Now on the day that happens to be June 1st, S learns that reliable sources report that a Tom Grabit-like person has stolen a book from the library. (But this thief is Tom himself, not John). S does not know it is June 1st but suspects that it might be. Since S believes John (Tom's twin) will steal a book from the library on that date, he refrains from drawing any conclusions about who stole the book until he checks his calender. Unfortunately S has a defective calender which lists the present day as May 31st. After checking his calender, S reasons in the following manner: "Reliable sources report that a Tom Grabit-like person stole a book from the library. It is not June 1st. Therefore, it could not have been John who was seen stealing the book. Therefore Tom Grabit stole the book".

Cohen examines whether in this case, S is completely justified in believing that p in the verific alternative to the corrected doxastic system of S. First of all, he determines that the following relevant beliefs will be contained in that system.
(1) S believes John will steal a book from the library on June 1st.

(2) S believes a Tom Grabit - like person stole a book from the library.

(3) S believes it is not June 1st.  

It may, however, be the case that (1) is held because of a bias. And so, as this system is corrected, (1) will be deleted. (2) is justified, for S got this information from reliable sources. So it is part of the system. (3) will be replaced with

"(4) S believes it is June 1st" as we are here concerned with the verific alternative.

According to Lehrer's theory of verific alternative, it seems that S knows that Tom stole the book while in fact S does not know. Cohen points out that as Lehrer relies on the notion of a corrected doxastic system which idealizes justification, his intention to explain Gettier cases by the notion of verific alternative is undermined. Once (1) has been deleted, the move to replace (3) by (4) becomes inefficacious. So Lehrer's view cannot explain why S fails to know in this case.
Ernest Sosa suggests that if we compare Lehrer's explication of condition (iv) with

"(cj) \( S \) is completely justified in believing \( p \) if and only if within the corrected doxastic system of \( S \), \( p \) is believed to have a better chance of being true than the denial of \( p \) or any other statement that competes with \( p \).

It can apparently be explicated as follows:

"\( S \) is completely justified in believing that \( p \) in a way that does not depend on any false statement if and only if, within the verific alternative to the corrected doxastic system of \( S \), \( p \) is believed to have a better chance of being true than the denial of \( p \) or any other statement, that competes with \( p \)."

We have to examine whether this analysis of knowledge solves the problem of the Gettier-type counterexamples discussed above. Ernest Sosa shows that in the Nogot case, I am completely justified in believing that someone in the room has a Ford but I do not have knowledge of the fact. Condition (iv) is supposed to give an explanation of why I lack knowledge in that case. In this case, it is clear that although the first three conditions of AK are fulfilled, I do not know that someone in the room owns a Ford. So, if AK is to give the correct result, its fourth condition must be violated. (iv) is violated in the
Hogot case only if the verific alternative of my corrected doxastic system does not contain the statement that I believe that someone in the room has a Ford to have a better chance of being true than its denial or any other statement that competes with it. But it is not clear how this can be shown to follow from the fact that the verific alternative to my corrected doxastic system in that example does contain the statement that I believe that Hogot has no Ford.

Sosa, however, raises another problem for AK by giving the following example.

"Suppose I see a small creature wriggling in my direction. At first I can't make out what it is, but gradually it looks more and more like a Chameleon. At length I conclude that it is indeed a bare Chameleon, and hence something with an occasionally deceptive appearance. It turns out to be a Chameleon all right, but one smaller than I thought since it has a Chameleon suit on, so that even had it been a solamander it would still have looked just the same as it does now. Surely in that case I do not know that it is a Chameleon before me, nor do I know anything that I had based essentially in that belief, such as, for instance, that it is something whose appearance, is at least once deceptive."
Sosa points out that it is not clear how AK is to handle this case, for though the verific alternative to my doxastic state will contain the proposition that I believe that the creature is not a (bare) Chameleon, still it will not contain the proposition that I believe it appears like a Chameleon while it is not a bare Chameleon and hence from the contexts of my beliefs it still follows that the creature is something whose appearance is at least one deceptive.

The above objection shows that even with the explication of condition (iv) by the notion of verific alternative to one's corrected doxastic system, Lehrer cannot fully solve the Gettier problem, for there are cases which cannot be clearly explained by the notion of Verific alternative. We will now see whether the other propounders of the defeasibility condition provide a better theory.

SECTION - II SOSA'S THEORY

Ernest Sosa says that S has non-basic knowledge that p if and only if there is a set of propositions which fully and nondefectively render p evident for him. Here a piece of counterevidence does not defeat a justification if there is yet further evidence which is strong enough to abolish the
defeating effect of that counterevidence, Sosa's earlier analysis of knowledge includes several inessential and confusing elements. So he abandones it later and formulates a more precise definition which requires that knowledge is a correct belief supported by a nondefective pyramid. Finally, he substitutes a tree of knowledge for a nondefective pyramid.

Sosa says that the counterexamples given by Gettier and Clark to the traditional analysis of knowledge are genuine. But he shows that Clark's solution to the problem is inadequate. Clark suggests that a correct analysis of knowledge requires that our justified true belief must be fully grounded. The word 'justified' is preserved in Clark's analysis even after the addition of the clause 'fully grounded', for a belief might be fully grounded and true but still not produce knowledge if the believer is unaware of the grounds as 'good grounds'. Sosa points out that there may be other disqualifying circumstances to justified belief. Suppose, for instance, that S, in addition to his belief in the truth of what are good grounds for \( p \) and in the goodness of these grounds, believes too in the truth of what are good grounds for \( \sim p \) and in the goodness of these grounds, then clearly S may not be justified in believing that \( p \). And if Clark intends to say that

\[ \text{aware of the grounds as} \]

good grounds exhausts the content of 'justified' in the present context, then he is wrong. For an adequate analysis of knowledge must contain some conditions which prevent such disqualifying circumstances. But if he does not want to say this, his theory will be incomplete. Besides, Clark's definition of knowledge leads to an odd consequence that one cannot know basic propositions because they are not at all grounded.

Thus finding out the inadequacy of Clark's analysis, Sosa puts forward his own view. He thinks that if p is 'basic', S's belief that p needs no justification, subjective or objective. S knows it simply because p is true and he believes that p. 'I have two hands and am now writing with my right hand' is a basic proposition in an ordinary context. Sosa admits that a proposition which is basic in one context, may not be so in another (for example, if it conflicts with the whole body of truth). But it is a fact that we do recognise basic propositions, though it is a difficult question as to how one would identify a 'basic' proposition. However, Sosa points out that the term 'basic' like 'knowledge' is partly a normative term which means "worthy of credence without any need of grounds." So in case of basic knowledge, no ground or justification is required.

But if p is non-basic, S has to fulfill some conditions which constitute the subjective and objective justifications for his belief that p.
The necessary and sufficient conditions for S's subjective justification for his belief that $p$ are the following:

"Sj1: There is a set of statements, $e_1, e_2, \ldots, e_n$, each of which S believes to be true.

Sj2: S's belief that $e_i$ is true is itself subjectively justified whenever $e_i$ is not a basic statement requiring no justification.

Sj3: S believes that the truth of the $e_i$s provides strong-enough evidence for $p$, and either is subjectively justified in having this belief or the belief is a (basic) "canon" or "axiom" (Strong-enough is elliptical for "strong-enough in a 'neutral' context," i.e., in the absence of any evidence for the contradictory of the proposition in question).

Sj4: There is no set of statements, $f_1, f_2, \ldots, f_n$, which S believes to furnish strong-enough evidence for $\sim p$ and to be true.

Sj5: S is justified in not believing that there is in any set of $f_i$s with true members, which casts sufficient doubt on $p$ to make it false in its context that the set of true $e_i$s supplies strong-enough evidence for $p$; or else his not believing this requires no justification given the situation.
Sj6: S is subjectively justified in believing each of the eis in the context of the others to have positive evidential force for p, unless his belief requires no justification.

Sj7: S would regard as not strong enough, in the context of the disconfirming evidence he might reasonably be expected to have, any set evidentially weaker vis-a-vis p than the set of eis.¹⁴⁹

The definition of objective justification is formulated by making use of the concept of subjective justification. Sosa presents the following necessary and sufficient conditions for the objective justification of S's belief that p:

"Oj1: There is a set of eis which subjectively justifies S in believing that and such that each of the eis is as a matter of fact true.

Oj2: This set of eis does not support belief that p with sufficient strength and there is no superfluous ei, i.e., none in the context of the other lacking all evidential connection with p; nor is there any which, in the context of the others, supports $\sim p$. Further, S is objectively justified in believing each of the eis to have positive evidential force
for p, in the context of the others, unless his belief requires no justification.

0j3: There is no set of fis which discredits p even in the context of the eis, and the members of which are true and such that S could reasonably be expected to have found out or otherwise know the truth.

0j4: If there is some evidence for ~P which S believes, the contrary evidence of the eis overcomes it, i.e., is still strong-enough even in this context to justify belief that P.

0j5: If S's belief that P is true is based substantially on a report that p or that one or more of the eis is true, then the reporter has objective justification for the belief that p is true or that the eis in question are true, respectively."50

Condition 0j5 is included in order to avoid counterexamples like Clark's. Here S's justification for believing p to be true is fully grounded as it is 'based substantially on a report that P or that one or more of the eis is true'. Conditions 0j5 and 0j3 are "strong-enough" to preclude the cases where S is not justified in not believing that there is any
counter-evidence to his belief.

Sosa thinks that besides justification for 'believing that' or for 'believing not...........', justification for 'not believing that........' is also involved in the concept of knowledge. But he does not analyse the notion of 'justification for not believing' because he thinks that (1) there is no intermediate conceptual connection between it and either subjective or objective justification for believing that P; and (2) this notion is too vague to be subject to a systematic and precise analysis.

Sosa now formulates what he thinks to be the correct (recursive) definition of knowledge that p.

"S knows that p IFF

(i) p is true.
(ii) S believes that p;

If p is "basic" in context C, and S justifiedly thinks of it and as in context C, (i) and (ii) are both necessary/sufficient for S's knowing that P. If P is non-basic, (iii) too is needed; (iii) S is objectively justified in believing that P; that is,

(i) There is an Sei : such that : S knows that the
members of Sei are true, and that Sei → P, where none of the
eis is superfluous or supports ¬P in the context of the others,
and S does not believe otherwise, being in fact justified in
believing each ei to have positive evidential force for P, in
the context of the others, unless his belief requires no
justification; and S would regard any weaker Sei as not strong
enough in the context of the disconfirming evidence he might
reasonably be expected to have.

(2) There is no Sfi;

(a) which is true and discredits P to such an extent that Sei →
P, while true in a neutral context, is not true in the context
of Sfi, and

(b) the truth of which S could reasonably have been expected to
have found out, or otherwise know, together with the truth of
(a);

(3) S does not believe that there is any Sfi which fulfils 2(a)
and justified or not so believing unless his not so believing
requires no justification; and

(4) If S's belief that P is based substantially on the report
that p, or that ei, then the reporter knows that P or that ei.
LEHRER'S OBJECTION

Lehrer shows that Sosa's analysis is both too strong and too weak. He proves that it is too strong by slightly modifying case 2 of the Nogot example. Suppose that Mr. Nogot reports me that he owns a Ford while he actually knows that he does not own a Ford. But unknown to himself, Mr. Nogot becomes a Ford owner and therefore his report comes true. Suppose also that Mr. Havit reports knowingly that he owns a Ford. Here my belief that H (someone in my office owns a Ford) is true is based substantially on the unknowing report of Mr. Nogot as well as the knowing report of Mr. Havit. In this case, I know that H is true but it does not fulfill Sosa's fourth condition which requires that if S's belief that p is based substantially on the report that P (or a part of the evidence S has for P) then the reporter knows that P (or the part of the evidence S has for P). So it is too strong.

Again Lehrer proves that Sosa's analysis is also too weak by slightly modifying Case I of his Nogot example. Suppose that here my evidence for P (Mr. Nogot owns a Ford) is not based on the report of anyone. Now I have seen Mr. Nogot to drive a Ford on many occasions. Suppose also that I have discovered a certificate containing the proof of his ownership of the Ford in his wallet which he left at my house. But
suppose that $P_1$ is false ('due to some legal technicality') and $P_2$ (Mr. Havit owns a Ford) is true but I have no evidence for it. Here I do not know that $H$ is true. But all of Sosa's conditions are satisfied. For (1) $H$ is true, (2) I believe that $H$ is true, (3) I am objectively justified in believing $H$ on the basis of my evidence for $P_1$ and I am justified in not believing that there is any counter-evidence to my belief. This case proves that Sosa's analysis is too weak.

Sosa has subsequently shown that the requirement of his analysis of knowledge is not satisfied by Lehrer's example. We shall discuss this argument later.

**Sosa's Later Analysis of Knowledge**

In a later article Sosa formulates the following analysis of non-basic knowledge:

S knows $P$ iff

(i) $P$ is true;

(ii) S believes $P$;

(iii) $P$ is evident to S; and

(iv) there is a set of propositions that
(a) fully renders $P$ evident to $S$, and (b) includes no subset that is epistemically defective with respect to $S$ and $P$. This analysis contains some technical notions such as "fully renders evident" and "epistemically defective." According to Sosa, a set of propositions $A$ fully renders evident a proposition $p$ to someone $S$ if and only if "$A$ renders $p$ evident to $S$, and for every proposition $q$ such that it is a member of $A$ that $q$ is evident to $S$." A set renders evident a proposition to a person if and only if "the set together with epistemic rules but not alone entails that the proposition is evident to that person". Epistemic rules are rules like: "If a proposition is evident and it is evident that its truth entails the truth of a second proposition, then the second proposition is evident." If someone is quite justified or reasonable in accepting a proposition, then that proposition is evident to him. The second technical notion to be explained is "epistemically defective". A set of propositions $A$ is epistemically defective with respect to $S$ and $p$ if and only if "it is a (nonempty) set of propositions such that, for some falsehood $f$, either $A$ contains the propositions that $f$ is evident to $S$ or $A$ renders $f$ evident to $S$ but $\{P \text{ is evident to } S\}$ does not."
SOSA'S OBJECTION TO THIS ANALYSIS

In another article Sosa finds out some difficulties of the above analysis.

In the first place, he examines a purported counterexample to his analysis which he calls a case of Miss Take. In this case, Miss Take remembers that at an earlier time it was evident to her that something was black or brown and she also knows that meanwhile there has not appeared any disconfirming evidence. Sosa inquires whether it is now evident to her that something was then black or brown. He says that generally in case of remembering the past experiences, we forget about the details of proofs and reasons etc. and only remember that we had the best reasons to believe something. If there is no new disconfirming evidence, this is sufficient for the present knowledge. If Sosa is right, then in the present case "there is a set of true propositions (based on memory) that (a) fully renders it evident to Miss Take that at t something was black or brown, and (b) includes no subset that is epistemically defective with respect to her and the proposition 'at t something was black or brown'. In that case so long as Miss Take correctly believes it, she knows at t that at t there was something black or brown present. But
actually at t it was evident to her that there was something black present whereas in fact there was only something brown present. Or it may be the case that she knows it according to the present account. The examination of this case makes it clear to Sosa that although his definition is adequate for cases where there is no nested epistemic modalities, it is not always adequate for cases where there is nesting. So he feels the necessity of making special provision for nested epistemic modalities. But he has not explained the notion clearly.

In the second place, let us suppose that a proposition to the effect that some other proposition, x, is evident itself renders evident by the proposition that y is evident. Now z is a proposition which is rendered evident by the proposition that x is evident and is fully rendered evident by the set $A \{ \text{that x is evident and y is evident} \}$. If we suppose that although x, y and z are evident but not self-evident, then the existence of $A$ does not completely explain how it is that $Z$ is evident because the problem arises how x and y come to be evident. Thus set $A$ is not nondefective and therefore the person in question does not know z.

Lastly, a set may be defective if it renders evident a falsehood in addition to fully rendering it evident to S that P, where the falsehood rendered evident is, in a sense,
epistemically irrelevant to the proposition.

By advancing the above criticisms against his own definition of knowledge, Sosa proves that it is inadequate. He now requires a more comprehensive and satisfactory account of knowledge which avoids the problems mentioned above.

**SOSA'S ACCOUNT OF KNOWLEDGE IN TERMS OF A NON-DEFECTIVE PYRAMID**

Sosa's account of knowledge in terms of a non-defective Pyramid is a modified version of his earlier accounts of knowledge. In this improved version he requires that for S to know that P there must be a non-defective pyramid of knowledge for S and the proposition that P.\(^5\)

An "epistemic pyramid" must fulfill the following conditions.

1. (Let us call node x a successor i.e., a direct successor) of node y relative to pyramid P provided there are A and B such that (i) A stands for x on P and B stands for y on P; (ii) A and B are connected by a straight line on P; (iii) B is closer to the apex node than A; and (iv) there is no C such that C stands for a proposition on p and A, B, and C are connected by a straight line and B is closer
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to the apex node than C, and C is closer to the apex node than A.) The set of all nodes that (directly) succeed a given node must ground that node.

2. Each node must be a proposition that is evident to S.

3. If a node n is not a proposition that is self-evident to S then it must have successors, it must be succeeded by further nodes that ground the proposition n.

4. Each branch of an epistemic pyramid must terminate.

Sosa says that there is at least one epistemic pyramid for S and x corresponding each set that fully renders x evident to S. But he shows that even if we substitute the 'justification' condition by the notion of 'epistemic pyramid', it will be closely equivalent to the traditional account and therefore will be inadequate. He considers the following pyramid (schema) for S and the proposition that p v q.

\[
p \lor q
\]

\[
p
\]

\[
w_i
\]

\[
u_i
\]

If S correctly believes that p v q, the three clauses in Sosa's
account of knowledge are satisfied. For (1) it is true that \(pvq\); (2) \(S\) believes that \(pvq\); and (3) there is an epistemic pyramid for \(S\) and the proposition that \(pvq\). But even then \(S\) may not know that \(pvq\) if \(P\) is false. If there were another kind of pyramid, where instead of \(p\) we found \(q\), then in spite of the falsity of \(p\), \(S\) might still know that \(pvq\).

To avoid this difficulty Sosa suggests that "epistemic pyramids must be non-defective, i.e., must contain only true nodes".

He now puts forward his analysis of knowledge in the following manner:

\[S\text{ knows that } P \iff (a) \text{ it is true that } p; \quad (b) \text{ } S \text{ believes that } P; \quad \text{and (c) there is a nondefective epistemic pyramid for } S \text{ and the proposition that } p.\]

Each node of such a pyramid is true and evident. Moreover, for each node \(n\) that has successors, the successors must serve as grounds for the rational justification of \(S\)'s believing \(n\). Sosa here tries to give a reply to Lehrer's
objection to an earlier version of this theory that it is too weak. The counterexample by which Lehrer proves this has been discussed above. Sosa objects to Lehrer's statement that "evidence E consisting of true statements would completely justify my believing $P_1$, and therefore, $H$. He says that this inference cannot be accepted. For one may believe axioms of a theory and believe a theorem on their basis and still may lack sufficient justification for believing that theorem. In order to be completely justified in believing a theorem on the basis of some axioms, one must find a real connection between the two. In this case also, whether I am completely justified in believing $H$ on the basis of $E$ depends on whether I see a real connection between $E$ and $H$. But here the connection is made by way of a falsehood, because $P_1$ is the connecting link between $E$ and $H$ but $P_1$ is false. In Sosa's new terminology, in that case there would be no nondefective pyramid for me and $H$. Thus Sosa proves that his requirement would not be met by Lehrer's example. So it is not too weak.

Though the present account has some merits, Sosa himself shows it to be too narrow. He describes two types of situation in which one's fully warranted belief falls short of knowledge owing to no neglect or faulty reasoning or false belief. In the first case, i.e., in the Magoo situation, Mr. Magoo fails to know due to faulty cognitive equipment. In the second case, i.e., in the newspaper example, the man (who
reads in a newspaper the news of the assassination of a famous person but does not read the next edition of the paper where all reports of the assassination are denied by authoritative and reliable people) fails to know that the famous person was really assassinated for he misses the generally known information. In this context, Sosa agrees with Harman (who originally gave the newspaper example) that knowledge has a social aspect and does not depend on one's missing or ignoring the generally known information. These are, however, the two ways among others in which a person may fail to be in a position to know. These cases are immune to Gettier examples, for in these cases the justified true belief is not supported by faulty reasoning. But yet a man may fail to know simply because he is not in a position to know.

To get rid of this difficulty Sosa adds the notion of being in a position to know (from the point of view of K, e.g., a normal human being) to his previous analysis of knowledge. Now a proposition P to be evident for a person, S, two conditions must be fulfilled: (1) S must be rationally justified in believing P and (2) S is in a position to know (from the K point of view) whether P is true. With this new requirement, Sosa's analysis takes the following form:
"S knows (from the K point of view) that P iff:

a) it is true that P; (b) S believes that P; and (c) there is a nondefective epistemic pyramid (from the K point of view) for S and the proposition that P."  

Sosa requires such a pyramid must contain true and evident nodes from the K point of view.

But this account of knowledge is circular as pointed out by Sosa himself. For to be in a position to know is nothing but to be in a position to believe correctly in order to know. He saves his account from this circularity by making it obscure. He defends his theory by saying that the traditional account is equally obscure and needs clarification as his own theory does.

Now Sosa says that even if the epistemic pyramids are non-defective (from the K point of view), they may face other problems. First of all, "they may mislead by suggesting that terminal nodes provide a 'foundation' in one or another undesirable sense, or by suggesting that terminal nodes must come first in time, so that one may later build on them."

Secondly, "........there is an unacceptable vagueness in the very idea of such a pyramid, which derives mainly from the vagueness of the grounding relation in terms of which pyramids
were defined. To solve these problems, Sosa turns these pyramids into trees and gives a more precise definition of these trees. For this, he defines three concepts:

"(I) $\mathcal{C}$ fully validates $S$-epistemic proposition $e$ if and only if there is a set of subsets of $\mathcal{C}$ that form a sequence, $C_1, \ldots, C_n$, such that (i) $C_1$ validates $e$, (ii) each $S$-epistemic member of any subset $C_i$ is validated by the immediate successor of $C_i$, $C_{i+1}$, and (iii) no member of the last subset, $C_n$ is $S$-epistemic."

We have to make it clear what he means by $S$-epistemic propositions and validation. These two concepts are explained by Sosa in the following manner.

"(II) $S$-epistemic propositions: of these (i) some are to the effect that some other proposition $x$ has some epistemic status relative to $S$ (i.e., to the effect that $S$ believes $x$ and how reasonably), and (ii) others are to the effect that $S$ is in a position to know whether a certain proposition is true, (i) and (ii) are the varieties of "positive $S$-epistemic propositions." Logical compounds of such propositions are also $S$-epistemic, but no other propositions are $S$-epistemic."
"(III) Epistemic validation. Let $A$, $B$, $G$ and $C$ be sets of propositions.

1. A **epistemically implies** that $p$ if and only if $A$ and the epistemic principles together logically imply that $p$, but neither does so alone.

2. A **absolutely validates** $S$-epistemic proposition $e$ if and only if $A$ has only true members and epistemically implies $e$.

3. A **confirms** $S$-epistemic proposition $e$ if and only if (a) $A$ is a set with only true members, and (b) supposing the true, positive $S$-epistemic propositions are at most those entailed or absolutely validated by $A$, $e$ follows epistemically from this together with $A$.

4. A **validates** $S$-epistemic proposition $e$ if and only if $A$ confirms $e$, $A$ has only true members, and for every $B$ with none but true members, such that $AUB$ does not confirm $e$, there is a $C$ with none but true members such that $AUBUC$ does confirm $e$.

With the above concepts in mind, Sosa constructs the following tree of evidence, the ranks of which ($R_I$, $R_{II}$, and
Every node of this tree is a proposition. For example, the "root node is the proposition that \( P_1 \), and the first terminal node (from the left) is the proposition that \( P_{111} \).

A tree of evidence must fulfil the following conditions:

(1) "The set of all nodes that (directly) succeed a given node must validate that node."

(2) "If a node \( n \) is an S-epistemic proposition, then \( n \) must have successors, it must branch out into a set of further nodes that validate \( n \)."

(3) "The proposition that \( \neg P_1 \) must be S-epistemic."
(4) "Each branch of a complete tree must terminate."

(5) "A nondefective tree of evidence for S must attribute no false belief to S."

Now if the root node of a nondefective tree of evidence is the proposition that it is evident to S that P, then it will be called a tree of knowledge for S and the proposition that P. Therefore, Sosa formulates his final analysis of knowledge in this way:

"S knows that p iff

(a) S correctly believes that p; and

(b) there is a tree of knowledge for S and the proposition that P." 61

In Sosa's tree of Knowledge, the nodes that (directly) succeed a given node must validate that node according to the rules of epistemic validation and the trees correspond to the fully validating sets defined by (I) above. Validation is a logical relation. So the succeeding nodes objectively justify the preceding node. In the case of pyramids, the objective justification is made in terms of the "grounding" relation, while in case of trees, it is made in terms of
"epistemic validation." Sosa claims that as the trees are based on epistemic validation, they can overcome the defects of the pyramids. But a little observation will show that the nondefective trees also cannot provide an adequate account of knowledge.

In the first place, it only tells us that S knows that p only if there are fully validating sets of S-epistemic propositions such as he suggests and such that the trees correspond to these sets. But even though there are such sets, nobody can tell us whether S is in a position to know that P. For there may always be an unknown factor which defeats S's justification.

Secondly, the necessary and sufficient condition prescribed for epistemic implication is an impossible condition. Sosa says that a set "A epistemically implies P if and only if A and the epistemic principles together logically implies that p, but neither does so alone" and he uses the mechanical tree method to prove this condition. The mechanical process can decidedly prove the logical implication of propositions only in propositional logic and in case where monadic quantification is used. But Richard C. Jeffrey shows that the tree method cannot give a mechanical decision procedure for quantificational validity of inferences. The tree method is used to test the validity of inferences by a mechanical process. But in quantificational logic, this mechanical
procedure is appropriate only in the case of a valid inference where only a finite number of steps prove the validity of the inference and the tree will eventually close. But in case of an invalid inference, the tree will not eventually close. It may go forever and so here the tree will be infinite. In a valid inference, the machine can adequately give an affirmative answer to the question whether an inference is valid. But in an invalid inference, it cannot adequately give a negative answer if the same question is asked. For it is beyond the capacity of a machine to decide that any one node of the infinite tree does not logically imply its succeeding node.

Jeffrey says:

".....every mechanical routine is inadequate: there can be no adequate "no" machine for quantificational validity. It follows that there can be no adequate mechanical routine for determining whether inferences have finite or infinite trees. Confronted with any particular inference whose tree is infinite we may be able to recognize, after some finite number of steps, that the tree will never stop growing. But there is no uniform mechanical procedure for doing this; a procedure that works for some inferences must fail for others, so that there is always place for human ingenuity in the matter of recognizing invalidity." 

Therefore, in case of quantification theory, mechanical procedure can never (correctly) classify an arbitrary inference
to be valid or invalid. Jeffrey deduces this fact from Church's thesis (construed as a thesis about Robinson's arithmetic). Kurt Godel also presents the incompleteness theorem (1931) on the limits of axiomatic method. Both of them show the limits of mechanical procedure in logic and mathematics.

Thus we see that Sosa demands a condition of epistemic implication which is impossible to fulfil. By applying the mechanical tree method, we can never know that a set of propositions and the epistemic principles logically imply another proposition, but "neither does so alone." In case of infinite trees, nobody can tell that a particular node does not validate its succeeding node.

SECTION-III : SWAIN'S THEORY

Marshall Swain examines various suggestions concerning the concept of defeasible justification and rejects them. He shows, for example, that the analysis of defeasibility by Chisholm, Lehrer & Paxon, Ernest Sosa, Risto Hilpinen and Peter Klein are all inadequate. He intends to give an improved analysis of the same concept. He accepts the following as a partial criterion of the concept of defeasibility and shows that his own analysis of knowledge is in conformity with this criterion.
(C) An explication of defeasible justification is adequate only if for any person S, and any proposition h, if (1) h is true and (2) S is justified in believing h and (3) S believes that h on the basis of his justification, then S knows that h if and only if his justification for h is indefeasible in accordance with that explication." (p.161).

In order to give an adequate account of the concept of defeasibility, Swain introduces the notion of an evidence-restricted alternative to a given epistemic framework. An epistemic framework is a set of epistemic state and value ascriptions which truly and completely describe the epistemic state of affairs of a person at a given time. To use Swain's language:

"An epistemic framework is a set of epistemic descriptions of the forms, "S believes that P," S knows that P," S is justified in believing that P," and so forth, such that the set completely describes the epistemic state of affairs of the person S at a given time." 65

These sets contain several subsets. Among them is the evidence component of a person's epistemic framework which consists of all and only the epistemic value ascriptions such
as 'h is evident for a', 'h is reasonable for a', and 'h is unreasonable for a'. The evidence component will contain some value ascriptions whose propositional objects are false, and some whose propositional objects are true. As long as some of the propositions that are either evident or reasonable for a man are false we can say that he is less than ideally situated with respect to the evidence available to him. We can then ask how his situation would have to be different if he were to be ideally situated. Swain suggests that we ought to answer this by considering an alternative evidence component which is generated from his actual evidence component by making the following changes: (1) the denial of every false but reasonable proposition should turn out to be evident, (2) no other changes are made except what is needed to presume epistemic consistency. A set of value ascriptions which achieves this is what Swain calls an evidence-restricted alternative. Swain gives the following definition of an evidence-restricted alternative:

\[(D)\text{ Fs* is an evidence-restricted alternative to an epistemic framework Fs if and only if (i) for every true proposition q such that 's is justified in believing not-q', 's is a member of the evidence component of Fs, 's is justified in believing q', is a member of the evidence component of Fs*, (ii) for some subset c of members of Fs such that.}\]
c is maximally consistent epistemically with the members generated in (i), every member of c is a member of Fs*, and (iii) no other propositions are members of Fs* except those that are implied epistemically by the members generated in (i) and (ii)."66

Swain uses two more technical notions in the definition of evidence-restricted alternative, e.g., a) epistemic consistency and b) maximal epistemic consistency.

a) "Relative to a given set of rules of epistemic inference, two epistemic descriptions E and E' are epistemically consistent just in case neither of them implies epistemically the denial of the other."67

b) "A subset C of members of Fs is maximally consistent epistemically with the members generated by (i) if and only if (a) the union of the set of members generated by (i) with the members of C is epistemically consistent and (b) for any other subset C' of Fs such that C is a proper subset of C', the union of the set of members generated by (i) with C' is epistemically inconsistent."68

With these technical notions in mind, we can now present Swain's suggestion concerning the fourth condition of knowledge.
"(ivg) S's justification for h is indefeasible (that is, there is an evidence-restricted alternative Fs* to S's epistemic framework Fs such that (i) "S is justified in believing that h is epistemically derivable from the other members of the evidence component of Fs* such that (a) the members of this subset are also members of the evidence component of Fs and (b) "S is justified in believing that h is epistemically derivable from the members of this subset." 69

The notion of epistemic derivability is to be explained. According to Swain, "a sentence P is epistemically derivable from a set of sentences, Δ, if and only if some finite subset of sentences in Δ plus propositional logic, meaning rules, inductive logic, and epistemic rules entails P."

Swain claims that (ivg) is an adequate analysis of epistemic defeasibility and it is compatible with (c). S's justification changes in some sense under the evidence-restricted alternative and (ivg) permits the desired kind of changes. The false parts of S's justification are determined and eliminated in the alternatives. But S's justification does not change in the sense of being replaced by a new line of justification, for the main part
of his justification is preserved. Although the subset which carries over to the alternative be sufficient to justify h, it does not make up the whole body of justifying evidence that S has under the alternative. S must have the additional evidence that his justification for believing h is "epistemically derivable from the other members of the evidence component of Ps*." Ernest Sosa points out that given (ivg), (D 8) does not give us the correct result. For "........ if S's evidence E renders some false statement F evident, then in the evidence-restricted alternative it will be evident that non - F, which is incompatible with its also being evident in the alternative that E, which in turn implies that E is not in fact known by S. Swain replies that this defect can be remedied if we revise (D 8) to guarantee that there is some R in the alternative which is evident for S and it also renders evident both not - F and E.

Swain's analysis of knowledge in terms of the notion of defeasibility has been criticised by R. B. Scott as too weak. He shows that (ivg) does not meet the condition (C) which Swain himself presents as a partial criterion of defeasibility and he requires that a correct analysis of knowledge must satisfy this criterion.

Scott shows that Swain's theory cannot explain the pyromaniac case. In this case,
" (1) $p$ (this match will light) is true.

(2) There is a true body of evidence, $c$, whose members are

- $e_1$ sure - fire matches have always lit in the past except when wet,
- $e_2$ this match is a sure - fire,
- $e_3$ This match is not wet,

such that the pyromaniac is justified in believing $e$ and $e$ justifies $P$.

(3) The pyromaniac believes that $P$ on the basis of $e$.

(4) As the pyromaniac is justified in believing that $P$ on the evidence $e$, it follows that the sentence "the pyromaniac is justified in believing that $P$ is epistemically derivable from the other members of the evidence component of the pyromaniac's original epistemic framework. If we suppose that there are no true statements whose denials the pyromaniac is justified in believing to be true - and that the pyromaniac's original epistemic framework will be an evidence restricted"
then the pyromaniac's original epistemic framework will be an evidence-restricted alternative to itself in accordance with Swain's definition of evidence-restricted alternative. Hence there is an evidence-restricted alternative to the pyromaniac's original epistemic framework such that the sentence "the pyromaniac is justified in believing that $P$ is epistemically derivable from the other members of the evidence component of the evidence-restricted alternative. Moreover, set $e$ is the relevant subset of members of the evidence component of the evidence-restricted alternative to the pyromaniac's original epistemic framework such that

\[ (a) \quad \text{the members of } e \text{ are also members of } \{ \text{the evidence-} \]
\[ \text{component of the pyromaniac's original epistemic framework} \] and \( (b) \text{the pyromaniac is justified in believing that } p'' \text{is epistemically derivable from the members of } e. \]

Thus, according to Swain's analysis of knowledge, the pyromaniac's justification is indefeasible. But even then he does not know that $p$ (this match will light). Therefore, Swain's analysis of knowledge fails as a sufficient condition for knowledge and consequently, his analysis of defeasibility does not satisfy the condition (C).

In reply to Scott's criticism, Swain defends his theory by showing that his account of defeasibility assumes the following principle (P), but in Scott's example the consequent of (P) is not satisfied.
"(P) If the justification of P by e is defeasible, then there is at least one true statement, q, such that (i) the conjunction of e and q fails to justify p and (ii) e justifies not-q."

Scott's example entirely depends on the assumption that the evidence e consisting solely of (e 1), (e 2), and (e 3) does not justify any false statement. But Swain argues that in this example there is some false statement justified by the evidence such that its denial is also defeating counterevidence. He suggests that the evidence statement (e 2) "This match is a Sure-Fire" along with (e 1), justifies

"(q 2) This match is like previously struck Sure-Fire matches in all respects relevant to ignition."

And (q 2) justifies

"(q 3) This match has the same composition as previously struck Sure-Fire matches."

But (q 2) and (q 3) are both false, for the match has impurities in it. Besides, the denial of both statements, in conjunction with the pyromaniac's evidence, would fail to
justify the belief that the match he now holds will light. Thus by Swain's account of knowledge, the pyromaniac's justification is proved to be defeasible and this is why he does not know that the match will light.

Swain concludes that a detailed examination of the cases of defeasible justification will bring out the fact that in such cases the subject is 'justified in believing some false but essential statement, although this statement is not always a part of the evidence on which the subject bases his belief.'

Swain's concept of 'evidence-restricted alternative' is similar to Lehrer's concept of 'verific alternative'. In both cases, the authors try to remove the defects of the defeasibility condition by introducing an alternative situation to the original one. In a 'verific alternative' to the corrected doxastic system of S, "each belief of a true statement is retained and each belief of a false statement is replaced with the belief of the denial of that false statement." In an 'evidence-restricted alternative', "the denial of every false but reasonable proposition should turn out to be evident", and "no other changes are made except what is needed to preserve epistemic consistency."
Stuart Cohen holds that Swain's theory of evidence-restricted alternative is subject to the same counter-example as Lehrer's theory of 'verific alternative' for analogous reasons.

Cohen says:

"Since S's belief that John will steal a book from the library on June 1st is unjustified, "S is justified in believing that John will steal a book from the library on June 1st" will not be a member of the evidence component of Fs*. So even though "S is justified in believing it is June 1st" will be a member, "S is justified in believing that Tom stole the book" will still be epistemically derivable from the other members of the evidence component of Fs*. Thus S's justification for "Tom stole the book" will be indefeasible and S will know."

Although Swain's analysis shows that S will know in this case, S, as a matter of fact, does not know. His theory fails to explain this case. So Swain's theory cannot properly analyse the concept of knowledge.

A COMMON OBJECTION TO THE DEFEASIBILITY ANALYSIS

From the foregoing analysis of the Defeasibility
theories, we see that most of the philosophers who propose this view argue that a person's justification must be non-defective in order for him to know that he claims to know. This is apparent in the theories of Keith Lehrer, Marshall Swain, Peter Klein and Ernest Sosa.

Swain distinguishes between defective and nondefective justification and holds that a justification is nondefective if the justificatory reasoning does not involve an inference from a false premise. However, he later points out that the concept of nondefectiveness is circular, for in this context, 'defective' means 'not capable of producing knowledge'. To characterize the situations in which a man's justification is capable of producing knowledge in a non-circular way, he uses the notion of an evidence-restricted alternative to a given epistemic framework. But the concept of nondefectiveness of justification is still implicit in his discussion.

Keith Lehrer says that a justification is defective when it is defeated by some false statement even if it does not function as a premise in the justificatory reasoning. If the false statement which defeats the justification is one such that if we suppose it to be false, the person would no longer be completely justified in his belief that p. Therefore,
what really defeats the justification is the existence of some true proposition such that if it were conjoined with x's evidence, x's belief that p would not be completely justified.

Peter Klein also suggests that in order to attain knowledge, our justification must be nondefective. He claims that a satisfactory definition of nondefectiveness can be given by the following principle: 'If there is any true proposition d such that it and S's evidence for p would make it unreasonable to expect that p is true, S does not know that p.'

Sosa holds that an account of knowledge is indefeasible if it contains conditions under which a set of propositions can be said to fully and nondefectively render a proposition evident for a person. He makes this condition explicit in his nondefective epistemic pyramid and tree of knowledge.

But we have seen that the above accounts of nondefectiveness provide a satisfactory analysis of knowledge, for there may always be an unknown defeater. Robert Almeder suggests that if the true statement which defeats a justification is unknowable, this deficiency can be remedied. He says, "so stated, this revised condition could be satisfied only by a
justification which is entailing; for as long as the justification is non-entailing, it is possible that there be an unknown defeater. But the 'defeasibility approaches' hold that a person can know that p only if the evidence which he cites in favour of p entails p. So in this theory, the concept of knowledge is taken in its strongest possible sense. But it is quite obvious that this sense of 'knowing' is too strong to admit of legitimate application with respect to non-basic factual knowledge claims. This is why the attainment of non-basic factual knowledge is impossible in principle for a defeasibility analysis of knowledge and so defeasibility theories naturally entail scepticism.

Almeder says that there may be a 'weak sense' of knowing such that we can correctly say of x that he knows p even though the evidence which x cites in favour of p does not entail p. This sense of knowledge admits of legitimate application with respect to non-basic factual knowledge claims and so will not involve scepticism. He also says that if we interpret the classical account of knowledge as an analysis of the weak sense of knowing, it would not be subject to counter-examples. He mentions in this connection that inductive knowledge is also a type of knowledge.

But if knowledge is possible only in the weak sense, that is, if S's evidence in favour of p never entails p, then
there will be no distinction between knowledge and mere true belief or lucky guess. So the defect of the defeasibility theory cannot be remedied by introducing a 'weak sense' of knowing. Hence, scepticism is the inevitable result of all our above analyses of knowledge.

NOTES


5. Ibid., p. 170.

6. Ibid., p. 171.

7. Ibid., p. 172.
8. Ibid., p. 174.


11. Ibid., p. 243.

12. Ibid., p. 243.

13. Ibid., p. 244.

14. Ibid., p. 244.

15. Ibid., p. 244.

16. Ibid., p. 244.

17. Ibid., p. 246.

18. Ibid., p. 246.


21. Ibid., p. 149.
22. Ibid., p. 149.
23. Ibid., p. 152.


35. Ibid., p. 125.

36. Ibid., p. 127.


38. Ibid., p. 21.

39. Ibid., p. 224.

40. Ibid., pp. 189 - 90.


42. Ibid., p. 271.
43. Ibid., p. 271.


46. Ibid., p. 818.


50. Ibid., p. 4.

51. Ibid., pp. 7 - 8.


56. Ibid., pp. 188 - 189.
57. Ibid., pp. 196.
58. Ibid., p. 196.
59. Ibid., p. 199.
60. Ibid., p. 200.
61. Ibid., p. 200.
64. The notion of an "evidence-restricted alternative to a given 'epistemic framework'" has been explained by
Marshall Swain in "The Consistency of Rational Belief" (published in Induction, Acceptance, and Rational Belief, pp. 27 - 32) and "An Alternative Analysis of Knowing" (published in Synthese, 1971 - 72). In a later article "Epistemic Defeasibility", Swain analyses the concept of epistemic defeasibility in terms of this notion. In our discussion of Swain's view of defeasibility, we follow his analysis presented in "Epistemic Defeasibility."


66. Ibid., p. 176.

67. Ibid., p. 176.

68. Ibid., p. 176.

69. Ibid., pp. 181 - 182.

70. A short version of the paper "Epistemic Defeasibility" was read at the Eastern Division meetings of the American Philosophical Association, December, 29, 1972. Ernest Sosa was the commentator of this paper. Swain quotes it in the footnote (20) in "Epistemic Defeasibility". Pappas & Swain edited Essays on Knowledge and Justification, p. 183.


74. Ibid., p. 273 (note).
