A Predominately Externalist Definition of Knowledge

Abstract: I propose a four-condition predominately externalist (PE) definition of knowledge. In addition to the traditional conditions (i.e. truth, belief, and personal justification) a 'relevancy condition' and a 'no-defeaters condition' are included. I challenge the intuitions that led to the rejection of the 'no-defeaters' condition by showing that there are two senses of 'relevance' and two senses of 'justification' that need to be made explicit. Unlike Peter Klein's (2004, 2008, 2018) no-defeater definitions of knowledge, the 'genuine' and 'misleading' defeater distinction is rejected here. The PE definition is motivated with examples from Annis, Goldman, Harman, Lehrer, and others. The applicability of the PE definition to the radical skeptical argument is addressed.

Introduction

In this essay, I introduce a four-condition definition of 'knowledge' to succeed the traditional definition of 'knowledge' as 'justified true belief.' The methodology for explaining the significance of the predominately externalist (PE) definition of knowledge is to analyze a number of classic examples from David Annis, Alvin Goldman, Gilbert Harman, Keith Lehrer, and others, in cases where knowledge is obtained, and other cases where it doesn't obtain. I assume that we can understand hypothetical cases where knowledge occurs, and that we seek the theoretical principles (and material conditions) upon which these intuitions are based. In speaking of 'intuitions' I assume that we have tentative beliefs about our normal use of epistemic concepts and the material conditions under which they apply. I contend that knowledge can be analyzed as a 'natural kind' (i.e. having unity, discreteness, and essentiality) with illuminating results. The conditions for
how and when 'S knows p' can be described in a fruitful way, without begging any questions against the skeptic. I hypothesize the following Predominately Externalist (PE) definition of knowledge where S designates a subject (i.e. a person) and p designates a proposition:

'S knows p' if and only if:

(1) p is true.
(2) S believes p.
(3) S believes p upon a set of implicitly or explicitly held reasons that are substantially relevant (i.e. truth-connecting) for why p should be believed. The evidence and the belief forming processes that generate p are why p should be believed.
(4) There exists no unresolved nor unconsidered undermining evidence, that would effectively lead S to doubt or disbelieve p, violating condition 2;

(4a) In situations of critical doubt, S must have 'adequate evidence' (i.e. strong reasons e1, e2, e3, etc.) for believing p, and S must be able to resolve (i.e. rule-out, discard) any actual or logical possibilities that would undermine (or defeat) the evidence possessed for p, and

(4b) There cannot exist undermining evidence q (no matter whether S is aware of it or not) that would significantly weaken (i.e. undermine, undercut) S's belief that p. If there does exist evidence q that suggests not-p, and if S was to be aware of this evidence, then S must have (or acquire) evidence to dismiss (or resolve) counter-evidence q.
I name this a 'predominately externalist definition of knowledge' because condition 3 is an externalist condition, 4a is an internalist condition, and 4b a mixed internalist-externalist condition. The third condition captures an insight from Alvin Goldman's "A Causal Theory of Knowing" (1967), WVO Quine's "Epistemology Naturalized" (1969), and David Armstrong's *Belief, Truth, and Knowledge* (1973) about how a justified belief can be understood as a product of objective external factors. Although the PE definition (with a no-defeaters condition) looks similar to others, the 'relevancy condition' is unique.

The four primary conditions of the PE definition (that exclude sub-conditions 4a and 4b) suitably explain non-human animal knowledge. Animal knowledge is a function of how a belief arises and the surrounding material conditions. The PE definition contends that animals can know proposition $p$: if $p$ is true, $p$ is believed, $p$ is believed upon truth-connecting reasons for why $p$ should be believed, and if there are no undermining factors that would weaken belief $p$. For human knowledge, persons should additionally have *reason(s)* for a belief if reasons are demanded by a sincere objector who wants to critically investigate a belief. Conditions 4a and 4b acknowledge the desire to learn (and assess) the reasons for a belief and how a belief is known or undermined.

**Condition 3 and the Requirement of Relevant Reasons**

Condition 3 requires that S's reasons for believing $p$ must be truth-connecting, non-coincidental, pertinent, or applicable (i.e. relevant) for why $p$ should be believed true. A 'truth-connecting' reason (or premise) is a proposition that constitutes *evidence* from an external perspective, for *why* $p$ should be believed. Evidence 'relevant' for *why* any particular $p$ should be believed true, is presumed objective and independent of
persons. Condition 3 makes no normative claim about how much relevant evidence is 'adequate' to believe \( p \), and the PE definition doesn't imply that \( S \) needs to be conscious of (or be able to recount) the reasons for believing \( p \), except in situations of critical doubt or explanation. Condition 3 and the PE definition don't imply that every proposition that is part of \( S \)'s evidence needs to be true. \( S \) can sometimes possess some false beliefs as part of one’s truth-connecting evidential premises.

Condition 3 in conjunction with 4b, resolves all Gettier situations.\(^1\) Condition 3 states that one's true belief \( p \) cannot be 'lucky' or 'accidental' relative to one's evidence. Condition 3 can be compared to and is an alternative to, the popular theory of reliabilism. Process reliabilism states that a belief is justified if and only if the belief is the result of 'reliable belief forming processes' where a belief forming process is reliable if and only if it (in fact) yields a high proportion of true beliefs (i.e. being truth-conducive) in a large and varied run of experiences that we usually encounter. Condition 3 is stronger. It says that a justified belief is a function of premises that are truth-connecting (from an external perspective) for why \( p \) should be believed and not just based upon evidence that is truth-conducive. While \( S \) may believe \( p \) upon usually reliable processes and good reasoning, \( p \) may still be contingently false, as environmental conditions for reliability are variable. Condition 3 takes 'relevance' over 'reliability' as a necessary condition for knowledge.

\(^1\) A Gettier example (1963) is a situation where \( S \) possesses a belief \( p \) and has strong evidence for believing \( p \), and \( p \) is true, but \( S \)'s evidence for believing \( p \) is (in fact) substantially irrelevant for why \( p \) should be believed.
There are at least two senses of 'relevant' found in ordinary language. Condition 3 incorporates just one sense. An example case of how a person can possess ‘relevant reasons’ for knowing the mechanisms behind a particular event makes clear the sense of 'relevant' that is being used in condition 3. The event is a house fire. Suppose that a house in a residential neighborhood is substantially damaged by a fire. The cause of the fire is initially unknown. Local fire investigators are called in to determine 'why did the fire start?' Pre-theoretically, we believe that there are relevant reasons for why a house catches on fire. We don't believe that a house suddenly combusts without a cause. When seeking the cause(s) of why a fire started, fire investigators want to discover whether an arsonist was involved, or if there was careless smoking, or whether there was an electrical problem, or a lit candle accidentally fell, or lightning struck and so on. In order to obtain knowledge of the cause, the investigators seek objectively relevant evidence and relevant reasons for why the house caught fire and wish to discard the consideration of any extraneous (and irrelevant) states-of-affairs not associated with the cause of the fire.

Let us suppose that fire investigators offer this final report that explains why the fire started: 1) an upended candle was found in the bedroom of the home, where most of the fire damage occurred, 2) the pattern of how the fire spread, and resulting damage suggests that the fire started in the bedroom near the fallen candle, 3) a resident of the home admits having left a candle burning while leaving the home several hours earlier, 4) there is no other evidence (indicating arson, electrical problems, etc.) suggesting that the candle was not the cause of the fire, so therefore 5) p: the fire was caused by an unattended lit candle that fell and ignited nearby combustible materials.
Whether the premises stated by the investigators are 'relevant' for why the fire started is not something we decide. Instead, if these are the relevant reasons for why the house caught fire, it is because the reasons (i.e. evidential premises) are truth-connecting, objective, and independent of us. The objectivity and truth-connectedness of relevant evidence is presumed by physical scientists (e.g. medical researchers, chemists, physicists, etc.) seeking the causal factors for physical processes.²

There is another ordinary sense of 'relevant' that is not being used in condition 3. It is sometimes said that what counts as 'relevant evidence' is any evidence that is 'somehow related' or 'might have some significance or probability' for why p is true or false. For instance, the fire investigators at the start of their inquiry will be interested in any relevant evidence that may have a bearing on why a fire started. Pragmatic interests guide investigators to what items are considered 'relevant.' In this second sense, any and all evidence (e.g. the electrical system, smoking materials, etc.) that might have some significance (or be truth-conducive) for why the fire started and are considered as items 'relevant' to determining the cause of the fire. With this second wider sense of 'relevant,'

² It isn't necessary that one's 'relevant reasons' for believing p are the causal reasons for why p is true. Harman (1973, p. 134) illustrates where S can know that 'Omar is dead,' without knowing the causal reason. The causal reason for why 'Omar is dead' is that Omar had fallen down and later died from a heart-attack. Afterwards, a fiend spies Omar in the gutter and cuts off his head. S's sight of Omar's decapitation is a relevant reason or evidence, given ordinary background knowledge, for why S should believe Omar is dead, even if the reason (or evidence) isn't the causal reason for why p is true.
all of the possible factors leading to the cause of a house fire have a bearing, or are considered germane, material, applicable, and pertinent for why the fire started. This wider sense of ‘relevant’ is not the sense being used here. ³

Condition 4a: The Sufficiently Strong Evidence Requirement

Condition 4a is an internalist constraint that acknowledges a normative and pragmatic contextual component to personal justification. This condition implies that it is persons (and not some independent objective criteria) that determines how much evidence is 'sufficient' for S to believe p.⁴ Adam Leite (2004, 2005) and David Annis (1978) argue in favor of this position, where the standards for 'strong evidence' will vary by context (e.g. depending upon how important it is for S to know p, as opposed to merely believing p). Condition 4a requires S to have at least some minimal reasons for

³ Many philosophers are accustomed to wider senses of 'relevant.' Gail Stine (1976) says that an alternative is 'relevant' only if there is some reason to think that it is true. Stewart Cohen (1988) says that "factors pertaining exclusively to S's own evidence affect whether alternatives become relevant.... an alternative h is relevant, if S lacks sufficient evidence (reason) to deny h..." (p. 103). Jonathan Vogel (1990) says that “relevance is a function of an alternative’s probability” (p. 24). John Hawthorne (2004) says that “What counts as relevant depends on the interests and intentions of the user" (p. 55).

⁴ This goes against ‘evidentialism’ as defended by Earl Conee and Richard Feldman (2004) that posits whether S is personally ‘justified’ in believing p depends on the evidence that S has on an occasion. It is argued here that there is no ‘epistemic fact’ about whether S is personally justified in believing p, given a description of S’s evidence.
a belief when questioned sincerely by someone seeking the basis of a belief. If there are actual undermining factors present, and if S was made aware of them, then S should be able to resolve any possibilities that imply \( \sim p \) with a high degree of probabilistic and psychological certainty. Further in practice, S only needs to respond to counter-possibilities in the context of a properly motivated challenge. Michael Williams (2001) states that "entitlement to enter a challenge must be earned by finding specific reasons for questioning either the truth of the target belief or the claimant's right to hold it, which means naked challenges are out of order" (pp. 150-151).

It is assumed here that an evidential proposition e can be (1) true and relevant for why p should be believed, or (2) e is true and coincidental, and irrelevant for why p should be believed or (3) e is false and irrelevant for why p should be believed. This third possibility allows that S's body of evidence (or reasons) for believing p might contain some false propositions. Persons sometimes (unintentionally) possess false beliefs as 'evidence' (or reasons) for believing p.\(^5\)

Condition 4a is consistent with the doctrine of 'fallibilism' which posits S can know p, but that S's strong reasons for believing p do not guarantee the truth of p. Although 4a requires S to have 'strong evidence' to believe p, this requirement rejects infallibilism, as too strong, its claim, that in order to know p, S must know that counter-possibilities (implying not-p) are false. Instead, in order for 4a to be satisfied, S doesn’t

\(^5\) These assumptions are contrary to Timothy Williamson (2000) who maintains "knowledge, and only knowledge, constitutes evidence" (p. 185) and Leite (2013) who claims if e is false, then it is not evidence for anything (p. 84).
need to have knowledge that (all) potential defeating proposition(s) \( q_1, q_2, \text{ etc.} \) are false (or irrelevant to \( p \)), in order for \( S \) to know \( p \). Instead it is assumed \( S \) can know \( p \) based on assumptions against counter-possibilities that \( S \) takes for granted, without explicitly knowing them. Brett Sherman and Gilbert Harman (2011) have defend this assumption.

**Condition 4b: The No-Defeaters Requirement**

Condition 4b is a 'no-defeaters' condition similar to a condition proposed by Keith Lehrer and Thomas Paxson, Jr. (1969), Peter Klein (1971), and Marshall Swain (1974). The basic idea of the no-defeaters condition is that \( S \)'s evidence \( e_1 \) for believing \( p \) cannot be undermined by a body of evidence \( e_2 \), so that \( S \)'s body of evidence \( e_1 \) is no longer strong enough for \( S \) to be confident in believing \( p \). This idea is adopted (or copied) here.

One formulation of a no-defeaters condition is stated by Swain (1974) and is reprinted in Pappas and Swain (1978), p. 164:

\[
S \text{'s justification for } p \text{ is indefeasible (that is, there is no true body of evidence } e_2 \text{ such that the conjunction of } e_1 \text{ and } e_2 \text{ fails to justify } p).\
\]

This no-defeaters condition is a good start, but it is vague. Let us repeat condition 4b:

(4b) There cannot exist undermining evidence \( q \) (no matter whether \( S \) is aware of it or not) that would significantly weaken (i.e. undermine, undercut) \( S \)'s belief that \( p \). If there does exist evidence \( q \) that suggests not-\( p \), and if \( S \) was to be aware of this evidence, then \( S \) must have (or acquire) evidence to dismiss (or resolve) counter-evidence \( q \).

The first sentence of condition 4b maintains that in order for \( S \) to have knowledge, there cannot exist additional evidence not possessed by \( S \), such that if this evidence were
possessed by S, this evidence would substantially undermine S's personal justification, causing S to seriously doubt p. The second sentence of condition 4b states that if there does exist undermining evidence e2 (no matter whether S actually considers it), then S needs to be able to resolve the counter-evidence with evidence S already has, or seek additional evidence (if the proposition is of importance) in order to maintain knowledge of p. This sentence is a subjunctive conditional about what S's belief would be if contrary-to-belief evidence e2 were to be introduced as additional evidence or as counterevidence. The truth value of a subjunctive conditional is understood to be determined by the specific content of its components and is to some degree speculative. The truth of such a conditional is judged by imagining circumstances that are close to the ways things actually stand, and how things would go in alternative circumstances.

Condition 4b maintains that if there exists undermining evidence, even if it is misleading and inaccessible to S, and if S is (or would be) unable to discard this undermining evidence so as to retain a firm belief that p, then 4b is unsatisfied and S does not know p.6 For many philosophers (especially naturalists) it is unacceptable that unconsidered (and inaccessible) misleading undermining evidence could block what are normally instances of knowledge. A no-defeaters condition is criticized since it might allow the spurious existence of misleading evidence as 'undermining' for S. On the contrary intuition, I maintain that (sometimes inaccessible) misleading evidence can

6 If there exists putative counter-evidence e (i.e. a proposition that raises doubt about the truth of p) and S is capable of resolving evidence e (as being false or misleading), given S's background knowledge (and beliefs), then S would continue to know p.
(sometimes) *prevent* knowledge. Some example cases below (i.e. Steve and the Ford truck, Tom Grabit, and Stanley's daughter) will confirm this.

**The Two Senses of 'Justification'**

Traditionally knowledge has been defined as 'S knows p' where 1) p is true, 2) S believes p, and 3) S's belief that p is justified. An important feature of the PE definition of knowledge is that the term 'justification' is eliminated. *We can describe what 'knowledge' is, without using the word 'justification' at all.* But why eliminate the word 'justification' from the definition of knowledge?

The crucial reason for eliminating the word 'justification' from the definition of knowledge is that the term is ambiguous. The term conflates two concepts. As suggested by Mylan Engel, Jr. (1992), the word 'justified' is capable of being understood in more than one way. When speaking of epistemic justification, we can speak either about a *person* S being justified in holding a belief, or about a *belief* p being justified. The first sense is concerned with what it takes for a person S to be justified in believing a proposition, and the second sense is concerned whether a belief p has the property of being justified from an external perspective. Let us define these distinctions:

**Personal justification (sense PJ):** 'S is justified in believing p' if p is acquired as an immediate non-inferential belief, or S has reasonably (non-recklessly) acquired strong evidence and used good inferential reasoning for believing p.

**Belief justification (sense BJ):** 'p is a justified belief' if p is believed from inductive evidence (or deductive, abductive reasoning) that is relevant (i.e. truth-connecting, pertinent, non-defective) for why p should be believed true.
These two senses of 'justification' are not arbitrary stipulations. They reflect a real difference in the domains of discussion: persons and beliefs. Williams (2001) acknowledges Engel's distinction and observes (pp. 21-22):

> We need to take account of two ways of understanding the phrase 'justified belief.' What exactly is supposed to be 'justified': a *person's believing* some particular proposition, or the *proposition* that he believes? There are two standpoints from which epistemic assessments of a person's belief can be made, corresponding to these two possibilities. Sometimes we focus on the person's entitlement to hold a certain view. But sometimes we are interested in whether the grounds on the basis of which he holds it are objectively adequate, whether they establish its truth, irrespective of whether he would be culpable for defects.

Let us continue to elaborate upon this distinction.

*Personal justification (PJ)* is where *persons are judged*, given their internal set of evidential premises. When evaluating whether a person is justified in believing \( p \), we are asking whether they are warranted in believing \( p \), given the evidence they possess. In cases of perception, 'non-inferential' beliefs are normally taken to be spontaneously justified (e.g. seeing a chair in a classroom). Otherwise, \( S \) is usually judged to be justified, or warranted in believing \( p \) if \( S \) is diligent in assessing available evidence, and if good inductive, abductive, or deductive reasoning are used.

*Belief justification (BJ)* is about a proposition \( p \), and whether the *belief* is justified. Being knowledge seekers, we wish to have beliefs based upon relevant, truth-connecting evidence for why \( p \) is true. If \( S \) believes a proposition \( p \) upon a set of
premises that are not relevant for why \( p \) should be believed, then \( S \) doesn't possess a justified belief. Whether a belief is justified, is external to \( S \)'s subjective conception of her epistemic situation. If \( S \) possesses a justified belief, this implies that there is no defeating (i.e. rebutting) facts that render \( p \) false.

In summary, the PE definition of knowledge explicitly excludes the use of the term 'justification' but condition 3 implies the BJ sense/concept of justification and condition 4a implies the PJ sense/concept of justification. In other words, the concept of justification is maintained, but is recognized as being two related concepts (personal justification and belief justification).

**#1 Mary believes that 'Someone in my office owns a Ford truck'**

Suppose that Mary works at a small office. Suppose that Mary has strong evidence for \( p \): 'Some people in my workplace own a Ford truck.' Mary believes that five people in her workplace own Ford trucks. She enumerates her evidence: Tom owns a truck, Jennifer owns a truck, Fred owns a truck, and so on. These five fellow employees have been long-time Ford truck owners, and Mary knows them well. In fact, Mary saw two of these co-workers park Ford trucks in the parking lot this morning.

**Situation #1:** Unknown to Mary, one of the five workers sold his truck yesterday, and presently owns no vehicle. Does Mary still know that some people in her workplace own a Ford truck? Does one false belief (i.e. premise) make it false that Mary knows \( p \)? From both ordinary intuition and the rules of logic, we maintain that Mary still knows \( p \). She knows that someone in my workplace owns a Ford truck, even if one of her evidential premises is false. Mary's strong evidence can consist of four true (and
relevant) premises for why \( p \) should be believed without every single proposition being true or relevant for why \( p \) should be believed. In order for condition 3 to be satisfied, Mary's reasoning need not be flawless, but it must be substantially truth-connecting for why \( p \) should be believed.

**Situation #2:** Suppose unknown to Mary, four of her co-workers suddenly sold their Ford trucks, so that only one remaining co-worker owned a Ford truck. Even if four out of five evidential premises are false, *condition 3 would still be satisfied* because Mary would still possess objectively (weak) relevant evidence for the claim that 'some people at my workplace, own a Ford truck.'

But does Mary *know* \( p \) despite the fact that most of her reasons for believing \( p \) are false, and irrelevant for why \( p \) is true? For most of us, if Mary believes this true \( p \), with just one of her five premises being true, we are inclined to say that Mary no longer knows \( p \), based upon a violation of condition 4b. If Mary was made aware that four co-workers recently sold their trucks, and if Mary hadn't confirmed the status of the fifth person's ownership recently, she would likely have immediate doubt whether anyone in her workplace owned a Ford truck. Mary would likely deny knowing \( p \) if she became aware that four out of her five reasons for believing \( p \) were false. In this case, even though \( p \) is true, \( S \) believes \( p \), \( S \) has strong evidence to believe \( p \), and \( S \) has a relevant reason for believing \( p \), \( S \) does not know \( p \) because of undermining counterevidence not considered. Because Mary is unaware of undermining (but not defeating) counterevidence, knowledge conditions 1, 2, 3, and 4a are all satisfied, but condition 4b is not.
In contrast to a ‘Gettier situation’ this second situation is a ‘Harman situation.’ Harman (1973, pp. 142-150) presents a series of examples where S possesses belief p and has strong evidence for believing p, and p is true, and despite the fact that S's evidence is relevant for why p should be believed, there exists evidence (sometimes misleading) that if known to S, and might lead S to doubt (and not know) that p. Most philosophers conflate Harman cases (4b violated) as a Gettier case (3 & 4b violated).

**How Knowledge is Possible**

The virtue of the PE definition is that it shows how knowledge is possible. It suggests that there are instances where S can believe a true p based upon relevant true propositions and where there are no states-of-affairs undermining or defeating to S's belief that p. Thus, S knows p. Condition 4b implies that the mere logical possibility that there might be undermining or defeating evidence that may lead S to doubt p, or make p false, does not uniformly count as undermining evidence and the denial of knowledge.

**#2 Do You Know Where Your Car is Parked?**

Suppose that you have legally parked your car on the side of a street thirty minutes ago, in a large city in the United States. You are asked, 'Do you know where your car is?' You respond p: 'Yes, I know that my car is parked at the corner of Maple and Nelson, about six blocks away.' We are inclined to say that you know where your car is, if your car is stationary where you parked it, and if your memory is good, and if you have some premises (or implicit memories) for recalling where your car is now parked.

However, it is true that thousands of cars are stolen every day in the major cities of the United States. Do you know that your car has not been stolen? Many people would respond that they would not know whether their car had been stolen. Is it
consistent to both know where your car is, and admit that you don't know whether it has been stolen or not? The PE definition shows how this is consistent. Let us consider a set of conditions in case #1 that are sufficient for knowledge in an ordinary situation:

**Material Case #1:** S knows where his car is. This is an example of a normal situation.

(a) S's car is exactly where S believes it is parked: The car is parked at the corner of Maple and Nelson Streets.

(b) S believes that the car is parked at the corner of Maple and Nelson Streets.

(c) From memory of where he parked the car, S has premises describing (or memory for finding) where his car is. S acknowledges that there is a small statistical chance that his car has been stolen, or in some other way moved, but S has no significant doubt that the car is at the corner of Maple and Nelson.

(d) There exist no undermining facts (e.g. the existence of a nearby car thief, or another car crashing into it and moving it, etc.) that would weaken S's belief p.

In such a case, we affirm that the conditions for S's knowing where his car is parked are obtained. Although S doesn't possess infallible evidence (premises) that eliminate the logical possibility of the car being moved, the material conditions for S's knowing p can be described, as we are assuming that p (i.e. the car is parked at Maple and Nelson) is true. In this example, S is not required to know that there are no undermining facts (e.g. a car thief has spotted the car) nor defeating facts (e.g. a car thief is now moving the car), there just exist no facts that undermine S's premises for p.

**Material Case #2:** An example of additional evidence that may violate condition 4b is the fact that an auto thief has actually entered into S's car and intends to take it. If S were
to be made aware of this fact about the car and its environment, this might constitute unresolved undermining evidence for S that brings doubt about where his car is.

However, if S was confronted with this evidence q, and S believes that the car with its sophisticated anti-theft devices, are sufficient to stop any would-be thief, this fact when brought to S's attention, might not constitute undermining evidence for S (since anti-theft devices are counter-evidence). So, condition 4 and the other three conditions would all be in place, and S knows where his car is parked.

**Material Case #3:** An example of a fact that would eliminate S's knowledge of where his car was parked, would be if a joyrider stole S's car and drove it around the block and quickly parked it in the same spot at Maple and Nelson, and then fled. If it is true that the car is parked where S believes it is parked, but S is unaware of the joyrider; then S would not know where his car was since conditions 3 and 4b are violated. S's premises for having a true belief where his car is parked would be coincidental to where his car is. (This is a Gettier case).

**Material Case #4:** Examples of defeating facts that would eliminate S's knowledge of where his car is parked, is if a thief moved the car to another location, or if S's car was hit by another vehicle and pushed it away from its original location. Not only would conditions 3 and 4b be violated, condition 1 would be violated, since p would be false.

These four material cases about knowing where one's car is parked, involve our intuitions about *when it is true* that 'S knows where his car is parked.' They jointly illustrate an intuitive principle which can be called the 'axiom of knowledge contingency':
The Axiom of Knowledge Contingency: When $S$ knows $p$, $S$ is not required to know that there are no unconsidered facts that defeat $p$, or unconsidered facts that would undermine $S$'s belief, leading to doubt that $p$, there just are (i.e. exist) no unconsidered facts (i.e. true propositions) that defeat (or substantially undermine) $S$'s premises for believing $p$.

This intuition is consistent with the following epistemic principles found in the literature:

1. The acceptance of the principle of fallibilism where 'S can know $p$ upon strong reasons, but S's strong reasons for believing $p$ do not guarantee the truth of $p$.' In other words, S can know $p$ upon strong evidence, based upon assumptions against counter-possibilities that S takes for granted without knowing these counter-possibilities to be false.

2. The denial of the KK principle that says, 'For any $p$, if one knows that $p$, then one knows that one knows it.' The above cases of knowledge and non-knowledge show that is intuitive that in order for $S$ to know $p$, $S$ does not need to know that all defeating counter-possibilities are false; they just are false. In order to know $p$, you are not required to 'know that you know $p$.' Knowing that one knows would require $S$ to be omniscient of all pertinent facts related to a proposition, including an externalistic perspective of one's own material situation.

3. The denial of the epistemic closure principle which states 'If $S$ knows $p$, and $S$ knows $p$ entails $q$, then $S$ is in position to know $q$.' The standard principle of propositional deductive closure (modus ponens across true propositions) is truth-
preserving, but the principle of epistemic deductive closure (modus ponens across knowledge states) is not truth-preserving.

We will tentatively accept these principles, but all require further argument.

#3 Does Steve Fail to Know 'Joe Bought a Ford from the Local Dealer?'

David Annis (1973) provides an example where unconsidered and inaccessible misleading evidence that is irrelevant to the truth of $p$ could prevent $S$ from knowing, and this is believed to be a counterexample to condition 4b:

1) Suppose that Steve is told by his friend, Joe, that he bought a new Ford truck from the local Ford dealer. Steve knows Joe well and Joe is reliable and honest. It is also true that Joe bought the truck from the local dealer. Steve has a true belief based upon strong evidence.

2) However, suppose Fred overhears Joe's statement, and decides to ask the dealer how much Joe paid for the truck. The salesman at the dealership, who is generally reliable and honest, responds to Fred that 'Joe did not purchase a Ford truck from them.' Fred believes the salesman, and says nothing to Steve or Joe, believing that Joe didn't buy the truck from the dealership, and Joe was lying.

3) As it turns out, the reason that the salesman at the dealership asserted that Joe did not purchase a Ford truck from them, was that the salesman confused Joe with Jim who was in the building on the same day but didn't make a purchase.

4) In this case, Steve has a true belief that 'Joe bought his Ford truck from the local dealership' but there exists unconsidered evidence: 1) the salesman denies that the dealership sold Joe a truck, and 2) Fred believes that Joe lied to Steve.
Here there exists two undermining propositions not considered by Steve, and according to the PE definition, Steve might fail to know that Joe bought the Ford truck from the local dealer because of a condition 4b violation. Does the unconsidered undermining evidence prevent Steve from knowing Joe bought the Ford from the dealership?

Whether this undermining evidence (i.e. the salesman's testimony, Fred's belief) is strong enough to weaken Steve's belief, given the testimonial evidence from Joe is variable in part upon Steve's background beliefs. For instance, if Steve was strongly convinced of Joe's honesty, Steve might be able to discard the salesman's testimony if he was aware of it, because he might dismiss it as being a mistake or lie. Steve would continue to have a personally justified belief and know that Joe purchased the truck from the local dealer, even if he had access to and considered the spurious information.

On the other hand, it is entirely conceivable that Steve might not be able to dismiss (or resolve) this contradictory evidence, if he was made aware of it. In such a case if Steve was to have serious doubt about how Joe acquired the Ford, then Steve would not know Joe purchased the truck from the local dealer. Although Steve possesses strong and relevant truth-connecting reasons for believing $p$, if Steve were to have doubt that $p$ given counter-evidence $q$, then Steve would not know $p$. Unconsidered evidence, even if it is misleading and irrelevant to the truth of $p$, in this case, could prevent S from knowing that $p$.

For Annis, Harman (1973), Keith Lehrer (2000), Fred Dretske (1981) and many philosophers, this second possibility denying knowledge to Steve is an unacceptable result and is taken as solid evidence that any no-defeaters condition is false. It seems
intuitive to these philosophers that state-of-affairs that are irrelevant to S's having a true belief produced by reliable (and truth-connecting) information should not disallow S's knowing that p. It is said to be 'inappropriate' or 'unfair' that knowledge can be lost in situations where there are extraneous facts that S is unaware of.

While I have sympathy for these philosophers' intuitions, I don't agree. We need to admit that sometimes in cases where there actually exists conflicting (and misleading) evidence that we are unaware of, our personal justification would be substantially undermined, denying us knowledge. The ignorance of misleading evidence may prevent S from having knowledge in otherwise normal situations. If Steve remains unaware of the undermining evidence, and if Steve would be unable to dismiss its importance, if presented to him, Steve's lack of knowledge that p has no practical implications. He has a justified true belief upon relevant reasons, but not knowledge.

Admittedly, it is an epistemic oddity that misleading evidence not considered by Steve, may prevent Steve from knowing in this case. Despite that there are easily imaginable scenarios (i.e. logical possibilities) where a true belief based upon relevant evidence could be undermined by the existence of inaccessible misleading evidence, it can be taken for granted that in most situations (e.g. ordinary perceptual beliefs; historical facts), there does not exist misleading evidence that might lead S to doubt p, given one's strong evidence. The unconsidered evidence of a salesman's error can prevent S from having knowledge, but this situation is undoubtedly rare. The problem of non-accessed misleading evidence can be considered a 'technicality,' 'peculiarity,' or 'oddity,' but not a counterexample to no-defeaters condition 4b.
#4 Does the Student Know that 'Tom Grabit Stole the Book?'

The Tom Grabit case is perhaps the classic case that is understood by many philosophers to defeat the no-defeaters condition. The example is originally from Ernest Sosa (1969) and is discussed by Lehrer and Paxson (1969). It involves Sean, a student who witnesses a fellow student, Tom Grabit, steal a book from the library. Sean is convinced that he sees Tom steal the book and reports it to campus security and the case is turned over for a hearing before the judicial council. But unknown to Sean, at the hearing, Mrs. Grabit, the mother of Tom, solemnly testifies that on the day in question, Tom was not in the library and that Tom's identical twin brother, John Grabit, a kleptomaniac, was in the library. If Sean believes he saw Tom Grabit take the library book, but Sean isn't aware of Mrs. Grabit's convincing conflicting testimony that John stole the book, most people are inclined to believe that Sean's justification is undermined. The existing statement from Mrs. Grabit brings doubt that Tom is guilty of the theft.

However, Lehrer and Paxson add the following information. They finish the story by adding that Mrs. Grabit is a compulsive and pathological liar. John Grabit is a fiction of her demented mind. Tom Grabit took the book. Once this is added, they state that it should be apparent that Sean did know that Tom Grabit removed the book. The fact that Mrs. Grabit said what she did should not be allowed to defeat Sean's (perceptual) justification. Lehrer and Paxson believe that since Sean hadn't considered (nor had access to) Mrs. Grabit's testimony, her testimony should not count as undermining evidence, and Sean knows that Tom stole the book based upon his perceptual evidence and background knowledge. Harman (1973) maintains that Sean knows Tom Grabit stole
the book, even though there is evidence that if Sean were aware, would cause S not to be justified in believing his conclusion (p. 146). Pappas and Swain (1978) follow with the same conclusion (pp. 26-30), as does Lehrer (2000, pp. 158-159).

The consensus claim is that Sean knows that Tom stole the book, even if there is misleading undermining evidence that Sean hasn't considered, and that Sean could not dismiss. It is contended that knowledge is retained by Sean as an eyewitness, even with the existence of Mrs. Grabit’s (misleading) testimony. Misleading evidence (i.e. a lying mother) shouldn’t play any role in this case of what seems to be an example of simple perceptual knowledge. I entirely disagree. If Sean didn't have the background belief that Mrs. Grabit is a liar and didn't know that Tom didn't have a twin brother, then the existence of this unconsidered misleading testimony to exonerate Tom may prevent Sean from knowing that Tom stole the book. For other persons that might have witnessed Tom’s theft and having background information about Mrs. Grabit's habitual lying, and her obsessive defense of Tom, the unconsidered testimony would not be undermining evidence. These witnesses would have justification and know that Tom stole the book.

Of course, if it was later learned by Sean that both 'Mrs. Grabit testified on Tom's behalf' and that 'she is a chronic liar,' these additional premises when added to Sean's stock of premises (including his perceptual belief) would allow Sean to (now) know that Tom stole the book. Both conditions 4a and 4b would be satisfied. In some cases, it is possible for S to know p, and then not know p pending a resolution of conflicting evidence and then again know p upon successful resolution of undermining evidence. Robert Fogelin (1994, p. 38) expresses similar intuitions when assuming S is acquiring
information piecemeal in a sequence of times. Both Fogelin and I agree that since S’s initial grounds for believing p are justified (in both the PJ and BJ senses), then we can later say that S did know (or had known) p, because Mrs. Grabit’s testimony q was discarded with additional information r (i.e. Mrs. Grabit is a liar).

Eliminating the Task of Defining 'Positive,' 'Undermining,' or ‘Defeating’ Evidence

Let us further respond to critics of no-defeater conditions. According to these critics, the challenge is that there is typically (and perhaps always) some evidence that is ‘negatively-relevant’ to S's justification for p such that if accessed, it could undermine S's justification. Pappas & Swain contend that for most of the propositions that we think that we know, there will be isolated negative facts, which if taken out of context, would undermine a putative instance of knowledge (e.g. Harman's lottery, 1973, p. 147). This objection also offers the possibility that there could be a regress of negative non-accessed evidence that undermines S's personal justification. It is said to be the duty of a defeasibility theorist to specify what true propositions function as legitimate defeaters.

Is this correct? Is there an abundance of misleading undermining evidence that prevents S from having knowledge in apparently normal situations? Are there a multitude of inaccessible misleading (or irrelevant) physical facts that limits the extent of ordinary and scientific knowledge? I don't believe so; these speculations seem false. Is it incumbent upon a no-defeater theorist to provide an exact account of what counts as 'undermining evidence' and 'defeating evidence?' Harman (1973, p. 150) and John Pollock (1986, pp. 36-39) think so, demanding clarity to these concepts.
On the contrary, I suggest that developing rules and distinctions for what counts as 'positive,' ‘undermining,’ ‘misleading,’ or ‘defeating’ evidence isn’t required. The evaluation of the quality and quantity of evidence to warrant S’s personal justification for a belief p varies among individuals and contexts. A person’s standards of caution/risk, in part, determines what overall evidence is determined 'sufficient' in a context. Also, S’s assessment of the strength of evidence for p is contingent upon one’s natural (and acquired) intelligence, background beliefs, capacities, dispositions, and concern for self-consistency. There are no neutral algorithms, systematic decision procedures, or epistemic norms, if applied properly, that would lead persons to measure the same evidential propositions in the same way as to 'support' (or 'disconfirm') a non-deduced p.

Philosophers such as Swain (1981) and Klein (1981) who attempted detailed theories of 'defeating' (or 'undermining') evidence were led to incredibly complex statements of the no-defeaters condition. With the PE definition, we can take 'undermining' and 'defeating' evidence as primitive and understandable in context. There is no generalized non-contextual definition to be described for what true proposition(s) count as undermining evidence making S personally unjustified in believing p. Philosophers who require a generalized account of 'genuine defeaters' from 'misleading defeaters' issue a demand that cannot be met; and misrepresent the personal judgments that are a part of evaluating what should count as undermining evidence.

Peter Klein (2004, 2008, 2018) is among the majority of philosophers who have intuitions that an inaccessible piece of misleading evidence should never legitimately interfere with what seems to be a straight-forward example of knowledge. A definition
of knowledge should seek to eliminate the possibility of misleading truths from affecting
a person’s true belief based upon strong and relevant (i.e. truth-connecting) evidence.
Klein stipulatively defines ‘genuine defeaters’ as those that defeat through truth and
rejects the admissibility of ‘misleading defeaters’ as truths that defeat only through
falsehoods, or 'pseudo-defeaters' being truths that really don't defeat (2018, p. 53).

But I respond that Klein's complex defeasibility conditions aren't at all helpful for
evaluating everyday questions about knowledge and 'undermining evidence.' For
example, suppose that on a Friday afternoon a father, Stanley, is diligently working at his
place of employment and thinks \( p \): his teenage daughter is presently attending her Friday
high school classes. She is usually trustworthy, conscientious, and gets good grades. But
\( S \) later hears from another father at work that \( q \): a majority of the students in that high
school have just participated in a Friday-school-skip-day and are now at the beach.

Does \( S \) know that his daughter is in class, given the undermining fact \( q \)? Or is \( q \) a
defeating proposition for \( S \)? Or is \( q \) a proposition that is irrelevant to \( p \), and misleading,
to \( S \)’s belief that \( p \)? No matter whether Stanley has epistemic access to proposition \( q \) or
not, we cannot say that Stanley knows, or doesn’t know \( p \) (i.e. ‘his daughter is at school’)
without assessing Stanley’s reasoning and his external circumstances (i.e. the PE
conditions). Whether \( q \) (i.e. ‘a majority of students are participating in Friday skip day’) is
a misleading fact, and irrelevant to belief \( p \) isn’t within \( S \)’s ken, no matter whether \( S \)
has access to \( q \) or not. Any genuine-misleading distinction isn't useful to \( S \).

But we can say this. Whenever there exists a true evidential proposition \( q \) that is
misleading, there are two possible outcomes: Either \( S \) has a personally justified true
belief based upon relevant reasons, but not knowledge (if S would be unable to dismiss the importance of q as worthy of concern and doubt). Or otherwise, if S was made aware of evidence q, S might dismiss q as either false or misleading, and thus irrelevant, given the strength of a whole body of other evidence (e.g. his daughter's studiousness) and retain knowledge. With the PE definition, S need not forsake a strong personal justification (and knowledge) that p just because there is undercutting (sometimes misleading) evidence q that S is (or isn’t) aware of.

The same situation is true with regard to the physical sciences. If there are some unknown conflicting physical facts that might warrant (if known) serious investigation of a hypothesis/theory that was currently widely accepted, then this theory is based upon scientists personally justified true beliefs and relevant (truth-connecting) evidence, but these scientists wouldn't possess knowledge. On the other hand, in cases where it is known that there are apparently conflicting physical fact(s), scientists may or may not investigate the contradictory evidence without a loss of knowledge. Whether conflicting evidence is sufficient to undermine a scientific proposition (or empirical theory) depends upon a scientist's judgment. In “The Essential Tension” (1977) Thomas Kuhn states that there are practical reasons for a prima facie commitment to current widely accepted theories and that "Pursuit of an anomaly is fruitful only if the anomaly is more than non-trivial" (p. 236). Kuhn emphasizes that whether 'conflicting evidence' is believed to undermine a theory, depends in part on anticipated fruitfulness of further investigation. Scientists are free to investigate, or not to investigate conflicting evidence, by deeming the evidence 'anomalous' or misleading, and retaining a (known) theory.
An example popularized by Goldman (1976): While driving his car in an apparently normal rural setting, Henry migrates into an area with 99 barn facades where there is just a single genuine barn. Henry happens to see the genuine barn and says, 'there is a barn.' Most philosophers agree that although Henry possesses a personally justified true belief, he doesn’t have knowledge. Why doesn't Henry know that he sees a barn?

A typical naturalist-reliabilist explanation is provided by Hilary Kornblith (2002, pp. 63-64). In short, Henry has entered an environment where his perception can no longer discriminate between barns and barn-facades. With reliabilism we are required to determine what belief processes are reliable (and in what environments) for S to reliably discriminate barns from barn-facades. Scientific and philosophical investigations into the reliability of belief processes (and environmental factors) involve detailed analysis of various subjunctive (counter-factual) what-if considerations. Reliabilist theories often attempt to generalize about the conditions needed for a person to possess knowledge in terms of the 'reliability' of sensory input and environment.

In contrast the PE definition suggests that the fact that Henry has a true belief based upon truth-connecting and pertinent evidence is not sufficient for Henry to know that 'There is a barn.' The reason why Henry doesn’t know is because that there is undermining evidence that Henry is unaware of in this situation. If Henry was to become aware that the other 99 nearby objects were barn facades, then Henry would acknowledge that he couldn't distinguish a real barn from a barn facade. Henry would concede that his
belief that he was presently seeing a barn had weakened considerably. He would admit that he does not know whether he is seeing a barn or not. Condition 4b is violated.

It is because humans with natural language and a familiarity with probabilities and counter-factual situations that Henry fails to know in this environment. Condition 4b explains Henry's loss of knowledge. If the no-defeaters condition is rejected, this simple and straight-forward explanation is no longer available. While it is acknowledged here that humans are physical entities in a physical universe, the human ability to acquire perceptual knowledge isn’t satisfied with a completely physical explanation.

A Response to Radical Skepticism

One received criticism of the PE definition is that whenever we assess individual epistemic situations, and assert 'S knows p,' it is just left as an assumption that condition 4b is satisfied. As was stated above, when considering the possibility of undermining evidence in mundane situations "it can be taken for granted that in most situations, there simply does not exist unconsidered misleading evidence that might lead S to doubt p; given one's adequate evidence." A critic has countered (assuming 4a is satisfied) that the upshot of taking for granted when 4b is satisfied "leads to an utterly uninformative account of knowledge, no more informative than simply assuming when a case of knowledge is a case of knowledge and when it isn't." This isn't true. The PE definition explains how knowledge is possible and when it occurs. It says that conceivably, there are instances where S believes a true p substantially based upon relevant true propositions, and where there are no existing states-of-affairs that would undermine S's justification that p. In such a case, any non-accessed counterevidence is not defeating.
The PE definition also has major implications for the radical skeptical argument. With the denial of the epistemic closure, it is acknowledged that the 'skeptical hypothesis' in the argument is true. The skeptical argument makes reference to 'I' assuming a single conscious thinker, and o that designates an ordinary proposition (e.g. I have two hands):

(#1) I do not know that 'I am not a brain-in-a-vat.' (Skeptical hypothesis).

(#2) If I do not know that 'I am not a brain-in-a-vat,' then I do not know o.

(#3) Therefore I do not know o.

With a narrow sense of 'relevant evidence' as that of possessing truth-connecting reasons for why p should be believed (from an external perspective), I argue that S cannot have relevant evidence to deny the truth of premise #1. If S cannot possess relevant evidence to know 'I am not a BIV' is false, then premise #1 is entailed true:

(1) In order to know the BIV possibility is false, S must possess relevant reasons for believing the BIV possibility is false.

(2) For S to have 'relevant' reasons for believing that the BIV possibility is false, those reasons must be germane, material, applicable, and pertinent (i.e. truth-connecting) for why the BIV possibility should be believed false.

(3) As an assumed material condition of the BIV possibility, S cannot possess relevant (i.e. pertinent) reasons to believe that the BIV possibility is false, because any objective and independent evidence for testing the falsity of the BIV possibility is cognitively inaccessible. The phenomena of one's experiences are the same, no matter whether one is or isn't a BIV, so S cannot have adequate reasons or evidence to deny the physical possibility of being a BIV.
(4) If S cannot have relevant reasons for believing that the BIV possibility is false, then the proposition 'I do not know that I am not a BIV' is true.

(5) Therefore, the hypothesis (i.e. I do not know that I am not a BIV) is true.

In this deductive argument: Premise 1 affirms that PE condition 3 must be satisfied, as necessary for knowledge. Premise 2 defines what a 'relevant' reason is. Premise 3 states the nature of the BIV possibility. Premise 4 states that if S is unable to possess strong and relevant reasons for believing the BIV possibility is false, then 'I do not know that I am not a BIV.' The truth of the skeptical hypothesis is entailed by the truth of the four premises. Given that the skeptic's premise #1 is proven true, it is implied that premise #2 (i.e. epistemic closure) must be false, if the radical skeptic's conclusion is to remain false.

But with the explicit acceptance of the skeptical hypothesis (i.e. I do not know that 'I am not a BIV'), a major concern remains: How can I know that there is an external world, and that I am an independent conscious entity? This is Descartes' problem. The question of 'How can S know that there exists an external world?' has a concise answer. The PE definition states S can have knowledge that 'there exists an external world' if the following material conditions are satisfied:

a) S believes that 'there exists an external world.'

b) S has many premises with references to experiences of pain, happiness, interaction with other people, intentional action, touching external objects, distinguishing waking and sleeping, etc. that are relevant for believing there exists an external world.
c) S believes that the existence of an external world is the best explanation for her premises and dismisses the BIV possibility as being an unlikely defeater.

d) It is true that there is an external world. There is no defeater (e.g. evil demon). With the contingent satisfaction of these four conditions, it happens that S (in fact) knows that there exists an external world. It is true that 'I am not a BIV' if these propositions are true, even if I don't know that I'm not a BIV. While material conditions b and c may be relevant for affirming that there exists an external world, they are entirely irrelevant for asserting that I am not a BIV. These premises are ruled-out as evidence in the skeptical BIV scenario. So, while it is possible to know that I am an independent living creature in an external world (if conditions a-d obtain), it is impossible for me to know that I am not a BIV. Against Keith DeRose (1995), it is not an abominable conjunction that I know that I have hands, but I don't know that I am not a handless BIV.

**Propositional Closure and Epistemic Closure**

The sound deductive argument above, showing that the skeptical hypothesis is entailed as a true conclusion should be enough to refute epistemic closure. So why does premise #2 (which presumes epistemic closure) in the skeptical argument seem plausible? First, there is a strong epistemic intuition that in order to know any proposition, it's apparent that you should know of your independent self-existence as an entity in the natural external world. Knowing that 'I have hands' implies that I'm not a BIV. Further, if you don't know that you're not a BIV, how can you be sure you know anything? In addition, many logicians believe that strong closure principles are needed to account for how deduction can be used to extend one's knowledge (e.g. Hawthorne, 2005, p. 29).
Let us quickly distinguish between propositional closure and epistemic closure. The principle of propositional closure is found in mathematics and propositional logic. Closure is a property of sets. The members of sets in propositional logic are that of 'true propositions.' With respect to propositional logic, a set of true propositions is closed under a valid deductive argument because true propositions will entail other truths. When reasoning by modus ponens across true propositions, it is accepted that if \( p \) is true, and if \( p \) implies \( q \), then the truth of \( q \) is entailed by the truth of \( p \).

In contrast, in the case of epistemic closure, the members of the set are 'the items of knowledge.' With the principle of epistemic closure, it is maintained that if \( S \) knows \( p \), and \( p \) implies \( q \), and if \( S \) is aware of this implication, then \( S \) knows that the entailed proposition \( q \) is true. This extension of the principle of propositional closure to epistemic situations has been argued against by Dretske (1970) and Nozick (1981). I agree with Dretske and Nozick that the alleged entailment among 'known propositions' using modus ponens is not a truth-preserving form of inference. (But other epistemic closure principles e.g. conjunction elimination, are truth-preserving: If \( S \) knows \( p \) & \( q \), then \( S \) knows \( p \)).

With an interest in accepting propositional closure, but denying epistemic modus ponens closure, we contrast the following definitions:

**Principle of Propositional Deductive Closure (Modus ponens across true propositions):** If \( p \), and \( p \) implies \( q \); then \( q \).

**Principle of Epistemic Deductive Closure (Modus ponens across knowledge states):** If \( S \) knows that \( p \) and \( S \) knows that \( p \) implies \( q \); then \( S \) is in a position to know that \( q \).
The Argument against Epistemic Closure

Is the principle of epistemic deductive closure truth-preserving? A good principle of reasoning (or rule of inference) should be truth-preserving, so whenever the principle is combined with other true premises in a deductive argument, the truth of the conclusion is always entailed. If a principle of reasoning fails to be truth-preserving, it should be rejected. With the parked car cases, we maintained that the following argument is unsound. Premise 3 assuming epistemic closure is false, and the conclusion is false:

1) S knows that his car is parked on Nelson Street.
2) S knows that it is contradictory for his car to be parked, and simultaneously being stolen and driven down a street.
3) If S knows that his car is parked on Nelson Street, then S knows the car has not been stolen and driven down a street.
4) Therefore, S knows that his car has not been stolen and driven down a street.

In a case of knowing where my car is parked as in Material Case #1 above, I can know where my car is parked, but at the same time I do not know whether (1) a car thief has just spotted my car, or (2) another auto has just smashed into my car moving it several feet away, or (3) a car thief has driven my car a mile away from its former location.

Whether I know where my car is parked is contingent upon the belief-forming mechanisms that lead to my belief, and the contingent conditions that surround me. It was concluded from the four parked car scenarios, that when S knows o, S does not know the falsity of every proposition that is undermining (or defeating) to belief o.
Dretske's 'Zebra at a Zoo' Example

To continue the argument against epistemic closure—modus ponens, and to advocate fallibilism, let's consider how Dretske's (1971) well-known 'zebra at a zoo' argument lends support to the thesis that the closure principle is false. His example:

You take your son to the zoo, see several zebras, and when questioned by your son, tell him they are zebras. Do you know that they are zebras? Well, most of us would have little hesitation in saying that we did know this. We know what zebras look like, and, besides, this is a city zoo and the animals are in a pen clearly marked 'Zebras.' Yet something being a zebra implies that it is not a mule and, in particular, and not a mule cleverly disguised by zoo authorities to look like a zebra. Do you know that these animals are not mules cleverly disguised by the zoo authorities to look like zebras?

When epistemic closure is assumed, this example can be stated in the same form as the 'parked car' example, with S observing the animals at the zoo:

1. S knows that 'I see a zebra.'
2. S knows that a zebra is not the same thing as a disguised mule.
3. If S knows that 'I see a zebra' then S knows that 'I am not seeing a disguised mule.'
4. Therefore, S knows that 'I am not seeing a disguised mule.'

Dretske asks what are the circumstances that make the first premise true? He says that in an ordinary zoo, S would spontaneously believe (by perception) that she is seeing a zebra, without having any conscious inference about why she sees a zebra. Likewise, S
wouldn't consciously rule-out the proposition 'I am not seeing a disguised mule.' This possibility is so bizarre that it wouldn't enter S's conscious thought process.

Dretske then asks what if someone walked up to S and suggested that she might be seeing a mule that is cleverly disguised as a zebra. Dretske suggests that S, from her distance and perspective, might concede that she would not be able to distinguish a zebra from a cleverly disguised mule. She would likely admit that she couldn't rule-out, and know that this bizarre possibility is false, based upon perceptual reasons alone. Given that S does not know that this error possibility is false, does it follow that S no longer knows that she sees a zebra in the public zoo?

Dretske maintains that S can still know that she sees a zebra, even if she doesn't know that the (defeating) proposition that she sees a disguised mule, is false. Premise 3 in the above argument is false. It is false that if S knows that 'I see a zebra' then S knows 'I am not seeing a disguised mule.'

Dretske (2004, p. 181) has subsequently offered a similar example. This is where S can know that she is seeing oranges (a kind of fruit) in a grocery store, with visual evidence; but still not have visual evidence (from a distance) to know that the objects aren't wax imitations of oranges. In this case, it is possible for S to know that 'I'm seeing oranges' but not know that 'I'm not seeing wax imitations of oranges.'

We conclude: In order to know that 'I see a zebra' or that 'I'm seeing oranges' I don't need to know that all possible defeaters are false. The PE condition 4a allows S to fallibly resolve possibilities that would otherwise undermine (or defeat) S's premises for believing and knowing p. One can discard improbable possibilities (e.g. disguised mules,
wax imitation oranges) based upon one's background beliefs, and assume them false, without knowing that every undermining possibility is false.

It is again emphasized that these arguments are against the principle of epistemic deductive closure, and not against the principle of propositional deductive closure. The principle of 'propositional closure' under modus ponens is true. The following valid argument states, 'If S knows that she sees a zebra, then S does not see a disguised mule':

1. S knows that she sees a zebra.
2. S sees a zebra. (Implied from the truth of the first premise).
3. S knows that a zebra is not the same thing as a disguised mule.
4. If S knows that if she sees a zebra, then S does not see a disguised mule.
5. Therefore, S does not see a disguised mule. (Modus ponens from 1, 4).

The next invalid argument states that 'If S knows that sees a zebra, then S knows that she does not see a disguised mule.' Premise 4 (i.e. closure) is false, and so is the conclusion:

1. S knows that she sees a zebra.
2. S sees a zebra. (Implied from the truth of the first premise).
3. S knows that a zebra is not the same thing as a disguised mule.
4. If S knows that if she sees a zebra, then S knows that she does not see a disguised mule. (False).
5. Therefore, S knows that she does not see a disguised mule. (False, from 1, 4).

It is false that: If S knows that she sees a zebra, and this implies that she sees a zebra, and a zebra is not a disguised mule, and S is aware of these implications; then S knows that she does not see a disguised mule.
Conclusion

Contrary to the critic's claim, the upshot of *taking for granted* that condition 4b is often times satisfied, doesn't lead to an uninformative account of knowledge. Instead it helps explain the material conditions under which S may possess knowledge in various situations. The PE definition explains how knowledge is possible and when it occurs. There are many other interesting case study examples that should be discussed elsewhere.

The no-defeaters condition 4b responds definitively to the problem of non-accessed misleading evidence that S is unaware of. Many philosophers believe that the Tom Grabit case with an inaccessible lie (from a frequent liar) is a problem. Here it is acknowledged that there *sometimes* actually exists misleading potential defeaters and propositional misinformation, that if presented to S might undermine S's belief. In such a case, where S remains unaware of the misleading evidence, and if hypothetically unable to discard this evidence if made aware, then S has a *true belief* based upon *strong and relevant reasons*, but not knowledge. Knowledge is less prevalent than often thought.

Finally, the PE definition explains how we *may* have knowledge, but the definition never guarantees that we (ever) have knowledge. The PE definition eliminates 'epistemic luck' (e.g. accidental true beliefs in Gettier and Harman situations, guesses, weak evidence, wishful thinking, and so on) when describing the material situations of what 'knowledge' is believed to be. But as the BIV situation indicates, every one of my beliefs *may* be the product of a systematic elaborate deception. In describing how knowledge is possible, it is accepted that I may have *no* knowledge at all. This is not a defect of the definition, but rather it reflects a limitation of human knowledge.
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