

FUMERTON'S PRINCIPLE OF INFERENTIAL JUSTIFICATION, SKEPTICISM, AND THE NATURE OF INFERENCE

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ABSTRACT: I argue that Richard Fumerton's controversial "Principle of Inferential Justification" (PIJ) can be satisfactorily defended against several charges that have been leveled against it, namely, that it leads to skepticism, that it confuses different levels of justification, and that it involves a fallacy of "misconditionalization." The basis of my defense of PIJ is a distinction between two theories of the nature of inference—an internalist conception (IC), according to which inferring requires that the reasoner have a conscious perspective on the evidential relation between premises and conclusion, and an externalist conception (EC), which does not require any such perspective. Given IC, the above charges against PIJ fail, and PIJ emerges as a plausible thesis. Given EC, however, the above charges stick, and PIJ is untenable. An internalist position on inferential justification is tenable, therefore, if and only if it is held in conjunction with an internalist conception of inference.

I. INTRODUCTION

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he central thesis of this paper is that epistemological reflection on the nature of *inferential justification* (i.e., the epistemic justification of beliefs arrived at inferentially) needs to take into careful consideration the nature of *inference*. I shall argue that one's views on these two issues need to be kept in sync, on pain of inviting skepticism and other inconveniences. This result will be borne out by an examination of Richard Fumerton's work on inferential justification. Perhaps more than any other philosopher in recent times, Fumerton has reflected seriously on the requirements for inferential justification, steadfastly defending a

controversial “Principle of Inferential Justification” (PIJ) in the face of numerous critics. The debate so far has focused primarily on the alleged skeptical ramifications of PIJ. On the one hand, Fumerton argues that PIJ is too plausible and too central to the traditional epistemological enterprise to give up, while conceding that it invites radical skepticism, unless the rather dubious Keynesian theory of probability is correct.¹ On the other hand, critics like Greco and Huemer argue that the skeptical ramifications of PIJ are unavoidable and take that to be a decisive reason for rejecting it. In addition, Huemer argues that Fumerton’s case for the plausibility of PIJ is an illusion built on the dual errors of “level confusion” and “misconditionalization.”²

As I see it, much of this controversy has been misguided, because neither Fumerton nor his critics have taken sufficient time to consider *what inference is*. Had they done so, they might have realized that there are two conceptions of inference that need to be distinguished—a broader “externalist” conception and a narrower “internalist” one. Given the externalist conception, I will argue, PIJ does indeed have dire skeptical consequences and incurs the additional problems noted by Huemer. Given the internalist conception, however, not only can Huemer’s criticisms be deflected, but it also turns out that PIJ doesn’t have any serious skeptical consequences at all. When inference is understood in the internalist way, PIJ is very plausible.

After explaining PIJ and the skeptical worries engendered by it (section two), I develop (section three) the distinction between externalist and internalist conceptions of inference and show how the skeptical worries surrounding PIJ are averted by combining it with the internalist conception (IC). Next (section four), I show how the same combination (PIJ + IC) can sustain the plausibility of PIJ in the face of Huemer’s criticisms. Finally (section five), I reply to an objection against my proposal. The net result is a vindication of PIJ and an illustration of why epistemologists need to examine their assumptions about the nature of inference.

II. FUMERTON’S DILEMMA

Fumerton’s “Principle of Inferential Justification” (PIJ) is the thesis that:

To be justified in believing one proposition P on the basis of another proposition E one must be (1) justified in believing E and (2) justified in believing that E makes probable P.³

Clause (1) of PIJ is not particularly controversial;⁴ as Fumerton explains: “When we attempt to expand our justified beliefs or knowledge through inference, we will succeed only if the premises from which we infer our conclusions are themselves justified or known. Garbage in—garbage out.”⁵ For example, if someone says that the Earth will soon be destroyed and offers as evidence the claim that a giant asteroid is going to smash into the planet within the next few hours, you might be alarmed. But if you then discovered that the doomsayer had no reason whatsoever for thinking there was a giant asteroid on a collision course with the Earth, you

would immediately conclude that the prediction about the Earth's being destroyed was "wildly irrational."⁶

As for clause (2), Fumerton thinks it, too, is highly plausible, and gives the following illustration:

Suppose I claim to be justified in believing that Fred will die shortly and I offer as my justification that a certain line across his palm (the infamous "lifeline") is short. Rightly skeptical, you wonder what reason I have for believing that palm lines have anything whatsoever to do with length of life. As soon as you become satisfied that I have no justification for supposing that there is any kind of probabilistic connection between the character of this line and Fred's life, you will again reject my claim to have a reasonable belief about Fred's impending demise.⁷

Unlike the asteroid collision example, the problem here does not lie in doubts about the justification of the premises upon which the inference is based. That Fred has a short lifeline is not in question. Rather, our doubts concern the *relevance* of lifeline length to conclusions about length of life. Indeed, that Fred's having a short lifeline is sufficient to make probable that Fred will die shortly is something that, given common background assumptions about the unreliability of palm reading, we are quite justified in *disbelieving*. Thus, argues Fumerton, inferential justification fails because clause (2) of PIJ is not satisfied.⁸

As matters stand, however, many reject PIJ; clause (2) in particular. Fumerton calls these philosophers "inferential externalists" in distinction from his own "inferential internalist" position.⁹ Externalists about inferential justification typically hold that for S to be inferentially justified in believing P on the basis of E, it is sufficient that S *be* justified in believing E and that E *make* probable P. S need not *believe* that E makes probable P, much less be *justified* in believing that it does.¹⁰ But as we have just seen, Fumerton has a positive argument for clause (2), an argument that, at first glance, does seem to adequately motivate it.¹¹ In the lifeline case, what seems to make the inference unreasonable is not the absence of a strong *de facto* connection between lifeline length and length of life but the fact that we have no good reason to *believe* that there is a strong connection. So it will not do for inferential externalists simply to deny clause (2) of PIJ. They need a counterargument and, preferably, a diagnosis of what's wrong with Fumerton's positive case.

The main counterargument against PIJ is one to which Fumerton himself has called prominent attention, namely, the ease with which it leads to skepticism. Fumerton explains at length how PIJ functions centrally in many skeptical arguments and argues that accepting both clauses of PIJ makes it very hard to avoid extreme skepticism about the future, memory, other minds, the external world, and so forth.¹² But while Fumerton holds out hope that skepticism *may* be avoidable, if the Keynesian view that some propositions of the form "E makes probable P" are necessary truths knowable *a priori* is correct,¹³ inferential externalists like Greco and Huemer believe that these skeptical consequences *cannot* be avoided and so reject PIJ, and with it, inferential internalism.

How is PIJ supposed to lead to skepticism? Well, if the belief referred to in clause (2) of PIJ (i.e., the belief that *E makes probable P*) must itself be *inferentially* justified, then it must be the conclusion of an inference from some body of evidence *E'*. By PIJ, therefore, we must be inferentially justified in believing that *E' makes probable (E makes probable P)*. But that, then, must be the conclusion of an inference from *E''*, and so on. The regress is vicious, because to be inferentially justified in believing *anything at all* we would already have to be justified in believing an infinite series of ever more complex propositions. Thus, if the belief that *E makes probable P* must be inferentially justified, then inferential justification is impossible, and radical skepticism results. There are only two ways to avoid this skeptical conclusion: (a) reject clause (2) of PIJ and adopt an externalist position on inferential justification, or (b) maintain that beliefs like “*E makes probable P*” can be *noninferentially* justified. The problem with (b) is that it seems difficult to defend for inductive inferences, as I will now explain.

In deductive contexts, the relation between *E* and *P* is presumed to be not merely probable, but *necessary*. The question for the inferential internalist here is whether we can be noninferentially justified in believing that *E entails P*. Provided that *E* and *P* are not overly complex propositions, there is good reason to think we can. As anyone who has grasped the validity of *modus ponens* can testify, we have the ability to “see” entailment relations via rational intuition. Both the necessity of the relation and the non-complexity of the relata are important, however. Without the former, the relation between *E* and *P* wouldn’t be *rationally* accessible (indeed, there wouldn’t be any entailment relation for us to “see”). Without the latter, any entailment relation that existed between *E* and *P* would be *psychologically* inaccessible for beings with finite minds, such as ourselves.

In inductive contexts, the relation between *E* and *P* is not presumed to be one of entailment, but rather of “making probable.” So the question for the inferential internalist in this case is whether we can be noninferentially justified in believing that *E makes probable P*. Presumably, the answer is “yes” if there is an objective probability relation between *E* and *P* that is both rationally and psychologically accessible to us. The trick is finding an analysis of probability that meets these conditions. A relative frequency or propensity analysis would give us an objective connection between *E* and *P*, but, notes Fumerton, it would also render “*E makes probable P*” a complex contingent truth, and it is very implausible to think that we could just “see” that such relations obtain.¹⁴ In contrast, a subjective analysis of probability would give us easy accessibility to the truth of “*E makes probable P*”—all we’d have to do is reflect on how acceptance of *E* would affect our degree of belief that *P*—but it would do so at the expense of objectivity. And if our goal is to ward off skepticism, that’s definitely something we want.¹⁵

Is there any analysis of probability that can give the inferential internalist what he needs?¹⁶ Well, the Keynesian, or logical, theory of probability seems like it might fit the bill. On this view, logical probabilities are “partial entailments” and, like entailments, are objective. Just as one proposition either does or does not

entail another, so one proposition either does or does not make probable another. Moreover, on this view, E's making probable P is a necessary and strictly internal relation between E and P. As necessary, the relation is plausibly accessible to rational intuition. As internal, we don't need anything in addition to E and P, such as a complex body of background beliefs, in order to determine whether the relation holds. Consequently, psychological accessibility is no more problematic here than it was in the deductive case. For these reasons, and given the apparent lack of feasible alternatives, Fumerton concludes that the only way to block the skeptical regress that threatens PIJ is to

understand the concept of nondeductive epistemic probability as being . . . like the concept of entailment, and . . . subsequently convince ourselves that epistemic principles are necessary truths knowable *a priori*.¹⁷

Unfortunately, it is doubtful whether these logical probability relations actually exist.¹⁸ Since inductive inferences extrapolate to a conclusion that goes beyond the premises, the relation between E and P is both synthetic and, if Keynes is right, *a priori*. But if we are to establish that "E makes probable P" is a synthetic *a priori* truth, without appealing to contingently reliable evidence of the very sort that skepticism calls into question, then, says Fumerton, it must be by direct acquaintance.¹⁹ We have to be able to "see" that these relations obtain. The requisite acquaintances, however, seem to be lacking, leading Fumerton to conclude on a skeptical tone:

I cannot quite bring myself to believe that I am phenomenologically acquainted with this internal relation of making probable bridging the problematic gaps. . . . [I]n the end, I strongly suspect that the probability relation that philosophers *do seek* in order to avoid skepticism concerning inferentially justified beliefs is an illusion.²⁰

In summary, Fumerton's dilemma is that he can neither see his way to giving up PIJ, nor can he see any way to avoid the skeptical regress threatened by clause (2) of PIJ without relying on an admittedly dubious Keynesian analysis of probability. I'm now going to argue that this dilemma is a false one, resulting from some unexamined assumptions about the nature of inference and of inferential evidence. Once those assumptions are made explicit, we will see that there is a way for Fumerton to affirm PIJ without incurring any special skeptical burdens.

III. HOW TO AFFIRM PIJ WITHOUT INVITING SKEPTICISM

In Fumerton's statement of PIJ, an *inference* is characterized as believing one proposition "on the basis of" another proposition. That seems right, but we need to look more closely at this basing relation. For it turns out that there are two significantly different ways of thinking about it, and hence about the nature of inference. It will emerge that which approach we adopt makes a big difference to the plausibility of PIJ.

On what I call the "internalist conception of inference" (IC), a cognitive process qualifies as inferential only if the subject has a *conscious perspective* on the

evidential relation between premises and conclusion, in which perspective, it *seems* to the subject that the truth of the premises renders at least probable the truth of the conclusion. More formally,

- (IC) An inference is a cognitive process in which one passes from consideration of a set of propositions (the premises) to belief in a proposition (the conclusion) *because it appears to one* that the latter must be, or is, probably true if the former is.²¹

One prominent philosopher who held this view of inference was Charles Peirce. According to him, there exist cognitive processes that are akin to inferences in that they are belief-forming and take propositional input, but that are nevertheless non-inferential because the evidential relation between premises and conclusion is hidden from consciousness. As a result, the beliefs are not formed *because of* an appreciation of the evidence. Peirce called such processes “associational suggestions of belief” and contrasted them with “reasonings,” in which we are “conscious, not only of the conclusion, and of our deliberate approval of it, but also of its being the result of the premiss [*sic*] from which it does result, and furthermore that the inference is one of a possible class of inferences which conform to one guiding principle,” and with “acritical inferences,” in which “we are conscious that a belief has been determined by another given belief, but are not conscious that it proceeds on any general principle.”²²

In contrast to IC is what I call the “externalist conception of inference” (EC). According to EC, for a cognitive process to qualify as inferential, it is sufficient that it result in the formation of a belief on the basis of propositional input. Here the basing relation is to be understood in a broadly causal sense that does *not* imply (though is compatible with) having a conscious perspective on the evidential relation between premises and conclusion. More formally:

- (EC) An inference is a cognitive process in which a set of propositionally loaded cognitive states (the premises) given as input into a cognitive system *results in* the formation of a belief (the conclusion) as output.

Clearly, any cognitive process that qualifies as inferential according to IC also qualifies as inferential according to EC, but not vice-versa.²³ In this respect, then, EC is broader in scope. In another respect, however, EC is narrower. On an externalist conception of inference, *all* propositional input into the inference has to get handled in the same way, namely, as a *premise*. That’s the only “input” slot available according to EC. According to the internalist conception, however, only information that enters into the reasoner’s conscious perspective can qualify as a premise. This leaves room for the possibility that information of which the reasoner is *not* consciously aware, such as background beliefs, might play a *different* sort of role in the inference. Both of these contrasts will emerge as crucially important.

With the IC/EC distinction in mind, let’s return to Fumerton’s views about evidence. As we’ve seen, he believes that the evidential relation between E and P must be objective and both rationally and psychologically accessible in order to

satisfy clause (2) of PIJ. In other words, we have to be able to “see” that E makes probable P and do it in a way that puts us in direct acquaintance with the facts that ground that belief.²⁴ Fumerton also believes that evidential relations could only be accessible to us (in either sense) if they were *necessary*. If “E makes probable P” were a contingent truth, then, he contends, it would also have to be highly complex, and it is very implausible that we could just “see” that something so complex was true.²⁵ So far, Fumerton’s position may seem clear, but the moment we ask which conception of inference he is working with, whether IC or EC, a tension appears. On the one hand, his insistence on our need to “see” that E makes probable P, to get it into our conscious perspective, suggests that he is working with an internalist conception of inference. On the other hand, his contention that contingent evidential relations (if there are any) would have to be highly complex, and therefore inaccessible to us, suggests that he is working with an externalist conception of inference. Inaccessibility only follows if, in accordance with EC, all of that complex informational input has to go into *the premises*.

This tension in Fumerton’s position encourages, I believe, a phenomenological misdescription of inductive inference. *Pace* Fumerton, the evidential relations that we “see” when we reason inductively are typically *contingent*, not necessary. Moreover, and perhaps surprisingly, this does not seem to result in either psychological or rational inaccessibility. An experienced auto mechanic, for example, can reliably tell by the sound of an engine that a piston rod needs replacing. The relation between the evidence that the mechanic is directly acquainted with (the engine sound) and the conclusion (there’s a bad piston rod) is clearly contingent, for it is certainly possible that the sound be caused by something else. Involved in grasping that relation, however, is a large and complex body of background beliefs: beliefs about the internal structure of car engines, beliefs about what healthy engines sound like versus what different types of unhealthy engines sound like, etc. These background beliefs, presumably, define a possibility space in which the conditional probability of the piston rod hypothesis, given the evidence, is significantly higher than that of any other available hypothesis at the same level of generality. The crucial point, however, is this: it is because this complex body of beliefs is *in the background*, and not in his focal awareness, that the mechanic is quickly able to grasp the contingent connection between the engine’s sound and the piston rods. His background beliefs enable him to “see” contingent evidential relations without themselves being “seen.” This does not preclude there being a necessary relation between the conclusion (piston rod is broken) and the mechanic’s evidence (the sound) *plus* his background beliefs. But *that* relation, I submit, is not the one that the mechanic “sees.”

Fumerton may respond by pointing out that distinguishing inferential evidence from background beliefs may account for the *psychological* accessibility of contingent evidential relations but not their *rational* accessibility. Rational intuition, after all, is a faculty for grasping necessary truths, not contingent ones. Two points may be offered in response. First, it is clear from the mechanic example that we

can “see” contingent relations. Moreover, the mechanic’s inference seems to be an epistemically justified one. I submit this as data to be accommodated by our theories of inference and of inferential justification, respectively. That rational intuition *does* allow us to grasp contingent evidential relations looks secure even if the question of *how* it does so is hard to answer. Second, having the right kinds of background beliefs (B) is obviously essential. One who did not have the training or experience of the mechanic presumably would not be in a good epistemic position to “see” that E (the engine sound) makes probable P (piston rod is broken). As noted above, a contingent relation between E and P is compatible with a necessary relation between E *plus* B and P. So perhaps what happens when we reason inductively is that rational intuition yields us a *partial grasp* of a necessary relation between E + B and P. Instead of Keynesian partial entailment, we have a partial grasp of an entailment, but because the grasp is only partial, the relation as we “see” it is a contingent one.²⁶

At any rate, we need to take the phenomenology of inference seriously when thinking about inferential justification. More generally, we need to keep our theory of inference and our theory of inferential justification in sync, on pain of inviting skepticism. The first option is to go with EC and insist that all informational input into an inference be construed as part of the premises, that is, as part of the inferential evidence, E. If we take this option, then we should *not* affirm clause (2) of PIJ. As the foregoing example illustrates, inductive reasoning typically depends on a complex mass of background beliefs. Packing all of that information into E makes it very implausible to suppose that we can “see” that E makes probable P. So, if inferential justification requires us to “see” that E makes probable P, then inductive justification is by-and-large beyond us. In short, if we go with EC, then massive inductive skepticism threatens, unless we reject clause (2) of PIJ in favor of inferential externalism. This solves the problem because inferential externalism doesn’t require us to “see” that E makes probable P in order to be inferentially justified in believing P on the basis of E. If, however, we are persuaded that clause (2) of PIJ is correct, then we can take the second option, which is to go with IC. This option allows us to affirm that for inferential justification one needs to “see” that E makes probable P, without engendering inductive skepticism, because it allows us to distinguish the complex, less accessible relation between E + B and P from the simpler, more accessible relation between E and P. On this view, the latter relation ($E \rightarrow P$) is the properly *evidential* one, whereas the former ($E + B \rightarrow P$) is more properly thought of as playing a non-evidential grounding or supporting role.²⁷ In sum, then, if you want to be an inferential internalist, that is, an internalist with respect to inferential justification, then you’d better be an internalist with respect to the nature of inference. That’s the way to affirm PIJ while avoiding skepticism.

I’d like to close this section by contrasting Fumerton’s position with the anti-skeptical externalist (EC + \sim PIJ-2) and internalist (IC + PIJ) positions, respectively. For succinctness, I’ll do this by means of a chart. Let ‘P’ be the conclusion. Let ‘E’ be information that the reasoner “sees” as supporting P. Let ‘B’ be information that

plays a role in the inference but which is far enough outside of consciousness that the reasoner does not “see” it as giving support to P (even if it does). I indicate the evidential relation with an arrow (\rightarrow) with the word ‘see’ over it if the evidential relation is one that the reasoner is supposed to be internally acquainted with.

Fumerton's Position	Anti-Skeptical Externalist Position EC + \sim PIJ-2	Anti-Skeptical Internalist Position (IC + PIJ)
$E \xrightarrow{\text{see}} P$	$(E + B) \longrightarrow P$	$\underbrace{E \xrightarrow{\text{see}} P}_B$

For Fumerton, background beliefs are evidentially irrelevant—all of the evidential work is done by a necessary, internal relation of “making probable” between E and P. Skepticism threatens because we don’t seem to be acquainted with relations of the requisite sort in inductive contexts. And, *pace* Fumerton, background beliefs matter.²⁸ For the anti-skeptical externalist, all informational input goes into the premises. This would create an inductive skepticism-inducing accessibility problem but for the fact that, on this view, we do not need to be acquainted with the evidential relation in order to be inferential justified. Finally, for the anti-skeptical internalist, background beliefs play a non-evidential supporting role. In inductive contexts, they are the backdrop against which the contingent evidential relation between E and P can be “seen.” Inductive skepticism is averted on this view, because inferential justification doesn’t require us to do something that we apparently can’t—that such relations are accessible to us is phenomenologically evident.

IV. OTHER OBJECTIONS AGAINST PIJ CONSIDERED

We have now seen that the primary objection to PIJ—that it leads to inductive skepticism—fails. To be sure, one way to avoid the skeptical threat is to give up PIJ in favor of inferential externalism. But another way is to combine PIJ (inferential internalism) with an internalist position on the nature of inference. Is there any reason for preferring one of these approaches to inferential justification over the other? Yes, there is. As noted above, Fumerton has offered us a positive case for PIJ. His example of inferring from Fred’s short lifeline to his having a short life suggests that, in at least *some* cases, clause (2) of PIJ must be satisfied in order for belief in the conclusion to be inferentially justified. If that’s right, then the defusing of the skeptical threat leaves inferential internalists in the stronger dialectical position. Not everyone is impressed with Fumerton’s positive case, however. Michael Huemer, in particular, has argued that the case for PIJ depends, for its apparent strength, on two errors, the confusion of levels of justification and a fallacy that he calls “misconditionalization.”²⁹ Huemer contends that once these errors are cleared up, clause (2) of PIJ loses whatever plausibility it may have seemed to possess. Let’s look more closely at these charges.

As Huemer characterizes it, a level confusion “is a confusion between the conditions required for justifiably believing P and the conditions required for justifiably believing that one justifiably believes P.”³⁰ To show that clause (2) of PIJ involves a level confusion, Huemer asks us to consider what it means to say that a person, S, is justified in believing P on the basis of E, where E is a premise in a proof for P. He answers that it means that E, by itself, is *sufficient* for S’s being justified in believing P. After all, if E was not sufficient for S’s being justified in believing P—if additional evidence, F, was also necessary—then what we should say is that S is justified in believing P on the basis of *both E and F*.³¹ Huemer presses this point against PIJ:

[A]ccording to the principle of inferential justification, E is decidedly not an adequate justificatory ground for P; it is only the conjunction of E with *E makes probable P* that can give me adequate justification for P. Yet by assumption, E was my basis for believing P. So if we accept PIJ, we can construct a *reductio ad absurdum* of the existence of inferential justification: for any P and E, if I am justified in believing P on the basis of E, then I am not justified in believing P on the basis of E after all. So the principle of inferential justification entails that I am not justified in believing anything on the basis of anything.³²

Huemer rightly notes that Fumerton can avoid this problem if he can make out a clear distinction between *inferential evidence*, the premises on which an inference is based, and *non-evidential supporting beliefs* that one must be justified in believing in order to legitimately infer P. If E belonged to the former category and “E makes probable P” to the latter, then there would be no level confusion. The beliefs referred to in clauses (1) and (2) of PIJ, respectively, would be playing two entirely different roles in the inference. But Huemer doesn’t see how to make out this distinction,³³ and neither, it seems, does Fumerton. In a recent reply to Huemer, Fumerton discusses the need for a complex array of background beliefs in making inductive inferences, admits that it’s difficult to determine just what the premises of an inference are because many inferences are plausibly construed as enthymematic, offers a modified example to support clause (2) of PIJ (which I discuss below), and finally reiterates the inferential internalist’s need for something like a Keynesian theory of probability, but nowhere, so far as I can see, does he supply the needed distinction.³⁴

Nor can he if he is working with an externalist conception of inference. As noted above, given EC, *all* informational input into the inference becomes part of the premises. Hence, if there are background beliefs that serve to underwrite the relevance of the consciously recognized evidence to the conclusion, EC requires us to treat these as suppressed premises in an enthymematic inference. Once all of the premises (explicit and suppressed) are laid out, the evidential basis (E) for the conclusion (P) is complete, and so, as Huemer points out, it’s not clear what work is left for the belief that E makes probable P to do. Hence, to demand, in accordance with clause (2) of PIJ, that *that* belief be justified as well, in order for

one to be inferentially justified in believing P on the basis of E, looks like a level confusion. Specifically, it looks like a confusion between E, one's basis for being justified in believing P, and E *plus* E makes probable P, one's basis for being justified in believing that one is justified in believing P.

But if we adopt an internalist conception of inference, a distinction between *premises* and *non-evidential supporting beliefs* is easy to make out. Given IC, the premises are those beliefs, and only those beliefs, that enter into one's conscious perspective as giving support to the conclusion. The supporting beliefs, in contrast, do not enter into the reasoner's conscious perspective, but remain in the background, where they do their work of enabling us to "see" the relevance of E to P without themselves being "seen."

So much for Huemer's first criticism. Let's turn to the second one. The charge is that PIJ depends on a fallacy of "misconditionalization." In general, this is the fallacy of confusing $\Box[(p \wedge q) \rightarrow r]$ with $p \rightarrow \Box(q \rightarrow r)$.³⁵ In the present context, the fallacy amounts to confusing the necessarily true claim, "If E and E makes probable P, then probably P," with the sometimes false (depending on the values of E and P) claim, "If E makes probable P then if E then probably P."³⁶ To illustrate, Huemer asks us to consider two propositions:

(3) If all men are mortal, then *Socrates is a man* entails *Socrates is mortal*.

(4) *All men are mortal* and *Socrates is a man* entails *Socrates is mortal*.

(4) is true but (3) is false, because it has a true antecedent and a necessarily false consequent—that Socrates is a man does not, by itself, *entail* that Socrates is mortal.³⁷

The application to PIJ is straightforward. Commenting on one of Fumerton's examples, Huemer says that an astrologer's inference from

(5) Jupiter will align with Mars next year,

to

(6) There will be prosperity next year,

must "surely" be enthymematic, and thus include, as a suppressed premise,

(7) The alignment of Jupiter with Mars in a given year always coincides with people being prosperous that same year.³⁸

The inference from (5)+(7) to (6) is valid, so someone justified in believing (5) and (7) is justified in believing (6), without also needing to be justified in believing that (5) and (7) make probable (6), *pace* clause (2) of PIJ. If, however, we don't add (7) as a suppressed premise we still need to justifiably believe it, according to clause (2) of PIJ, because (7) grounds the relevance of (5) to (6). But this seems to give us

(8) If (7) then (5) entails (6),

which is false because the inference from (5) to (6) is fallacious. So satisfying clause (2) of PIJ is either unnecessary, or it results in misconditionalization.

This looks bad for PIJ, but upon closer examination, the problems are illusory. The first question that we must ask is whether the inference from (5) to (6) is supposed to be deductive or inductive. To construe the inference as enthymematic, as Huemer does, is to construe it as deductive, because it involves identifying a suppressed *premise* that closes the logical gap between (5) and (6). But we might wonder if this is the right way to construe it. If we opt for an internalist conception of inference, then whether an inference is deductive or inductive depends on what sort of connection the reasoner “sees” between premises and conclusion.³⁹ Does the astrologer “see” a necessary connection, one of entailment? If so, then the inference is best taken to be an enthymematic deduction. Does the astrologer only “see” a contingent connection between (5) and (6)? If so, then the inference is best construed as inductive. Either way, PIJ faces no problems here, *provided that we combine it with IC*. The reason is simply that, on an internalist conception of inference, there is no need to construe the belief that satisfies clause (2) of PIJ as a *premise* in the inference. Without that, misconditionalization cannot result.

Suppose, on the one hand, that the astrologer’s inference is an enthymematic deduction, with (7) as the suppressed premise. In that case, what clause (2) of PIJ gives us is not another premise (which we don’t need) but a deductive *inference rule*,⁴⁰ one that we can be noninferentially justified in believing because we can “see” that it holds. We justifiably infer from (5)+(7) to (6), because we “see” that (5)+(7) entails (6) and are thereby noninferentially justified in believing that (5)+(7) entails (6).⁴¹ Suppose, on the other hand, that the astrologer’s inference is inductive. In that case, the inference is from (5) to (6), not from (5)+(7) to (6). If (7) plays any role at all, it is not as a suppressed premise but as a non-evidential supporting belief. The astrologer is able to “see” that (5) makes probable (6), which is a contingent relation, because her background beliefs, which may include (7), provide a backdrop against which contingent evidential relations can be “seen.” Given that the astrologer is able to “see” that (5) makes probable (6) in this way, she is noninferentially justified in believing that (5) makes probable (6), and so clause (2) of PIJ is satisfied.

In summary, both of Huemer’s criticisms can be deflected *if* PIJ is combined with an internalist conception of inference. It allows us to sidestep the level confusion charge by drawing a distinction between beliefs that function as premises in an inference and ones that function as non-evidential supporting beliefs. Similarly, it allows us to sidestep the misconditionalization charge by allowing the belief that satisfies clause (2) to be something other than a premise. The combination of PIJ with an externalist conception of inference would effectively block both of these saving moves. Grappling with Huemer’s arguments has thus given us two more reasons for thinking that internalism with respect to inferential justification is tenable if, and only if, combined with internalism with respect to the nature of inference.

Before closing this section, I’d like to point out that while Huemer’s criticisms fail as refutations of PIJ, they have prompted a shift in Fumerton’s argumentative strategy. In the lifeline case discussed above, it was the apparent lack of a

probabilistic connection between short lifelines and short lifespans that rendered the inference problematic, and which Fumerton offered in support of clause (2) of PIJ. That may have seemed like a reasonable conclusion at the time, but now it looks rather hasty, for Huemer has called our attention to the possibility that the inference may be better construed as enthymematic. On that analysis, the inference is not from short lifeline to short life. Rather it is an inference to short life from short lifeline *plus* a suppressed premise to the effect that lifeline length is directly correlated with length of life. If that's the right way to look at it, then the problem with the inference is not the failure of clause (2) of PIJ, but rather the failure of clause (1), the lack of justification for the suppressed premise. In view of this alternate interpretation, it is no longer clear that the lifeline example ought to move us toward inferential internalism. For this reason, Fumerton has recently begun offering a different sort of example to support clause (2). He now asks us to consider a case in which S is nomologically *caused* to make an "inference" from E to P (say, by hypnosis), when E entails P, even though S does not "see" that E entails P, because the entailment is far too complicated to be psychologically accessible. Here, the relevance of E to P is guaranteed by entailment, but, urges Fumerton, S is not inferentially justified in believing P on the basis of E, because S doesn't "see" (i.e., have a conscious perspective on) the relevance of E to P.⁴² I share Fumerton's intuition about this kind of example. The stipulation that E entails P circumvents the enthymematic analysis and shows, I believe, that satisfying clause (2) of PIJ is at least sometimes necessary for inferential justification. Moreover, if it is S's failure to "see" a connection between E and P that results in the loss of inferential justification, then *only* IC-type inferences can yield inferential justification, for only they involve "seeing" the evidential connection between E and P. At any rate, openly acknowledging this would be a step in the right direction for Fumerton. As I have argued, the objections against PIJ can be defused only by hitching inferential internalism to an internalist conception of inference. To my knowledge, however, Fumerton has yet to embrace IC, though he has countenanced doing so.⁴³ I submit that were he to adopt IC, he could finally drop his reliance on the admittedly dubious Keynesian theory of logical probability, and PIJ would emerge as a much more attractive and defensible position. Before concluding on that note, there is an objection to my proposal that I need to address.

V. THE JUSTIFICATION OF BACKGROUND BELIEFS

Given the IC-based distinction between the premises of inference and those background beliefs that play a non-evidential supporting role, we might wonder whether those background beliefs themselves need to be justified in order for one to have inferential justification. If so, and if the justification of those beliefs must necessarily be inferential, then the same skeptical problems that afflicted PIJ will reemerge at the level of background beliefs. In the case of inductive inferences, our background beliefs concern substantive and contingent propositions that, it may seem, could only be justified inferentially (and inductively) if at all. For

example, the mechanic's inference from the engine sound, E, to the belief, P, that a piston rod is broken depends on background beliefs about what healthy engines sound like and about what engines with broken piston rods sound like, beliefs that themselves result from inductive generalizations on prior experiences. If those beliefs need to be justified by prior inferences relying on different background beliefs, which need to be justified by prior inferences, etc., then the infamous skeptical problem of induction rears its ugly head. The worry, then, is that even if the combination of IC and PIJ is less problematic than the combination of EC and PIJ, it still leads to inductive skepticism. Hence, dropping EC for IC isn't going far enough. Either we still need to invoke Keynesian logical probabilities, à la Fumerton, or PIJ has to go.

This objection poses a fair challenge. Space constraints unfortunately prohibit a detailed response, so I'll only be able to sketch an outline of what I take to be a defensible reply.

I begin by noting the assumption that background beliefs must themselves be justified in order to ground a justified belief that E makes probable P. This is not a trivial assumption. Why, for example, isn't it enough that one's background beliefs simply be (approximately) true? Obviously, if the assumption is false, then the objection doesn't get off the ground. The assumption is, however, at least *prima facie* plausible, and I'm willing to grant it for the sake of argument. What I'm going to argue is that there is no particular difficulty meeting that requirement, given IC and PIJ, *provided that* we don't commit ourselves either to a narrow foundationalism that only allows phenomenal beliefs to be basic, or to across-the-board internalism with respect to epistemic justification.⁴⁴ Both provisos are, I think, defensible.

For this strategy to work, there are two key points that need to be made. First, PIJ is only concerned with the conditions for *inferential* justification, that is, the conditions for being epistemically justified in believing proposition P given that one arrives at it via an inference from evidence E. It says nothing about what is required for *noninferential* justification, and so is compatible with various positions one might take on that issue. In particular, there's no *a priori* reason why one couldn't be an inferential internalist and a noninferential externalist with respect to epistemic justification. Such a combination is, in fact, quite natural if we recognize, with Fogelin⁴⁵ and Williams,⁴⁶ that epistemic justification encompasses two different standpoints of evaluation: a first-person, or internalist, standpoint and a third-person, or externalist, standpoint. The latter concerns whether the belief that P has in fact been formed in an appropriately reliable or truth-conducive manner. The former involves a reflective and normative assessment of one's epistemic performance in coming to believe that P. Obviously, internal justification will only be available where one has a conscious perspective on the relation between one's evidence and the belief that it presumably supports. This is the case for paradigm inferences and, given IC, for all inferences. Paradigm cases of noninferential belief formation don't involve any conscious perspective on the relation between evidence and belief, and so aren't even candidates for a first-person assessment.⁴⁷ In such cases, external

standards may well be the only applicable epistemic standards. Be that as it may, the key point is that inferential internalism does not imply an across-the-board internalist position on epistemic justification.

Second, inferential justification is only needed when one makes an inference. Hence, whether we understand the nature of inference along EC or IC terms makes a big difference to the scope of applicability of PIJ. EC defines inference, roughly, as any belief-forming cognitive process that takes propositional input. IC defines inference more narrowly by adding the further requirement that the reasoner have a conscious perspective on the relation between premises and conclusion. Consequently, IC narrows the scope of applicability for PIJ and broadens the scope for theories of noninferential justification. In particular, IC allows *beliefs* to play an important role in *noninferential* justification. Now, if we restrict ourselves to a narrow foundationalism according to which only phenomenal beliefs can be basic, then (since a basic belief is a noninferentially derived belief) the only beliefs that could be noninferentially justified, on the basis of other beliefs, would themselves have to be phenomenal beliefs. This, of course, is no help at all against inductive skepticism, because the substantive assumptions upon which such inferences depend (e.g., “observed cases are reliable guides to unobserved cases”) are not phenomenal. But if we allow for a more generous foundationalism, then the possibility opens up that (some of) the substantive assumptions upon which (some) inductive inferences depend might themselves be basic, and properly so. Plausible arguments that our *psychological* foundations are broader than the phenomenally given abound—from Plato’s argument in the *Meno*,⁴⁸ to Reid’s argument that conventional languages presuppose a nonconventional natural language,⁴⁹ to Peirce’s argument that science couldn’t get off the ground without some *a priori* beliefs about what types of hypotheses are worth considering,⁵⁰ and so forth. Given an externalist position on noninferential justification, it is plausible that significant parts of this psychological foundation, whatever its exact character turns out to be, can also serve as parts of our *epistemic* foundation, and hence as justified background beliefs in an inductive inference.⁵¹

In summary, one way to respond to the challenge posed at the beginning of this section is to combine PIJ and IC with an externalist position on noninferential justification and a rejection of narrow foundationalism. Since the latter two positions are, arguably, quite plausible, it is not PIJ alone that creates skeptical problems, but rather its combination with other positions with which it has frequently been associated, such as EC, narrow foundationalism, and across-the-board internalism.

VI. CONCLUSION

I have argued that Fumerton’s PIJ can be defended against the charges of leading to skepticism, of confusing levels of justification, and of misconditionalization, by adhering consistently to an internalist conception of inference. Completely dispelling the skepticism charge may also require, as further commitments, an externalist position on noninferential justification and a rejection of narrow foundationalism,

but these commitments are independently plausible. The internalist conception of inference (IC), however, is key. Without it, the distinction between inferential evidence (premises) and background beliefs cannot be sustained, and without that distinction, Heumer's objections against PIJ are devastating. Furthermore, without that distinction, the skepticism charge against PIJ can only be parried by a reliance on Keynes's theory that probability relations are *a priori* knowable internal relations between propositions. But Keynes's theory is subject to numerous objections, and, in its application to inductive inference, it preserves the rational and psychological accessibility of evidential relations only by sacrificing descriptive accuracy, and that in two ways. First, the evidential relations we "see" in typical inductive contexts are contingent, not necessary, as Keynes would have it. And, second, Keynes's theory brackets background beliefs out of the picture, which is not true to the way inductive inferences work—whether a given person will "see" a connection between a piece of evidence (say, a particular type of engine sound) and a conclusion (say, that a piston rod is broken) depends crucially on whether the person has the relevant background beliefs that enable him to "see" that connection. Novice mechanics, like myself, can hear the same sounds and not know what to make of it.

In addition to sustaining a clear distinction between premises and background beliefs, IC also renders PIJ less conducive to skepticism by narrowing the range of beliefs that stand in need of inferential justification. Given IC, the belief that P is inferred only if it arises from a conscious consideration of evidence, E, as adequately supporting, or making probable, P. The mere fact that some belief is formed "based on" other beliefs (perhaps in a causal sense) does not qualify it as inferred. Consequently, IC calls for a broad notion of noninferential justification, one that allows propositional input to play a significant role. Assuming that a suitable account of noninferential justification can be given, perhaps even one along externalist lines, the net result is that PIJ, by itself, has no skeptical consequences whatsoever and, in fact, looks to be a truism.⁵²

ENDNOTES

Many thanks to Richard Fumerton, John Greco, and two anonymous referees for generous feedback on earlier versions of this paper.

1. Fumerton 1995 and 2006. On the centrality of PIJ to epistemology, see Fumerton 1995: 220.
2. See Greco 1999 and 2000b; Huemer 2002.
3. Fumerton 1995: 36; cf. Fumerton 2006: 39.
4. It should be questioned, though, whether *all* of the premises of an inference must be *believed*. An obvious counterexample is the case of *suppositional reasoning*, such as occurs in an indirect proof. In such cases, we start with some proposition, E, that is merely supposed (and often disbelieved)—note that E, if it were true, would entail (or make probable that) P—and come to believe the conditional, *if E then (probably) P*. If this is right, then (1) may

need to be revised. Because it is tangential to the present discussion, however, I will ignore this complication in what follows.

5. Fumerton 2006: 39.

6. *Ibid.*, 38.

7. *Ibid.*, 39. See also Fumerton 2004: 153.

8. A few pages later (Fumerton 2006: 104–105), Fumerton offers a different example to support PIJ by way of response to Huemer’s criticisms. I discuss this example below in §4.

9. Fumerton 1995: 37; cf. Fumerton 2006: 58.

10. Both Greco and Huemer endorse this view in their critiques of Fumerton. See Greco 1999: 284–285, and Huemer 2002: 335.

11. There are two types of arguments in Fumerton’s positive case. The first relies on examples, such as the lifeline case, to motivate PIJ (2). The second is a metaepistemological argument, to the effect that PIJ is too central to the epistemological enterprise to give up without effectively abandoning epistemology (Fumerton 1995: 220). I will only be considering arguments of the first type in this paper.

12. Fumerton 2005: chap. 2; 2006: 120–129.

13. Fumerton 2006: 106.

14. Fumerton 1995: 193.

15. Fumerton 1995: 196. The reason why we reject inferences from length of lifeline to length of life is because we don’t think that there’s any *real* (i.e., objective) connection between them.

16. Greco (1999: 283) argues that *no* analysis of probability can give Fumerton what he needs.

17. Fumerton 1995: 198.

18. For a good discussion of the Keynesian theory of probability and the difficulties it faces, see Gillies 2000: 25–53.

19. Fumerton 1995: 203.

20. *Ibid.*, 218. Cf. Fumerton 2006: 134, where he says that the Keynesian view may offer us a “fighting chance” to avoid skepticism. Despite the upbeat sound of this, I have been assured by Fumerton, in correspondence, that he still views this as a rather dim hope.

21. Adapted from a definition given in Tragresser 1992.

22. Peirce 1998: 348.

23. A useful way of contrasting IC and EC is in terms of a “top-down” versus a “bottom-up” approach to understanding inference. The IC perspective is top-down, in that it takes as its reference point what we might call “paradigm” cases of inference, such as those that result from the conscious, self-critical deliberations of a professional philosopher or scientist. Other cases may be understood *analogically* in relation to the paradigm. What results is a continuum of belief-forming cognitive processes taking propositional inputs, in which perspectives on the relation between premises and conclusion range from nonexistent, to vague, to clear and distinct, from having no perspective at all, to seeing merely that this premise supports this conclusion, to seeing that it does so as an instance of a general logical principle like *modus ponens*. In short, some cognitive processes are *more inferential* than others, depending on

the quality of the reasoner's perspective on the relation between premises and conclusion. By contrast, the EC perspective is bottom-up, in that it looks for a common denominator among all cases of reasoning. Since small children and higher animals are capable of reasoning, at least on a rudimentary level, EC aims to be broad enough to include cases where reasoning is automatic and instinctual, rather than conscious and deliberate. The result is a *univocal* notion of inference, one in which rudimentary Fido-type cases and paradigmatic Einstein-type cases are equally inferential, even though Einstein often has a much better perspective on his reasoning. For more on the distinction between "top-down" and "bottom-up" approaches to epistemology, see Dretske 2000: 80–93.

24. Fumerton 1995: 74–75.

25. *Ibid.*, 193. Cf. Greco 1999: 283.

26. Reporting the views of a colleague, one reviewer suggested that we may also have "partial grasps" of necessary causal connections, when we experience pushing and pulling along with subsequent apparent motion. The connection that we "see" (experiential pull → apparent motion) is contingent, but it may, nevertheless, be grounded in a necessary connection between the phenomenal pull, together with various background conditions, and the subsequent apparent motion. Moreover, this colleague holds, we can still be directly aware of necessary causal connections, partially grasping them, as it were, without being directly aware of those background conditions.

27. To avoid terminological confusion, I am trying to preserve Fumerton's equation of one's "evidence" with one's premises. To preserve that equation, while adopting IC, we have to describe the role of background beliefs as "non-evidential." Some may be uncomfortable with the resulting restricting of "evidence" to beliefs that enter into a reasoner's conscious perspective in making an inference. After all, there are contexts in which we'd like to use the term 'evidence' more broadly, to refer to any data that one *does* bring to bear on an issue, or any data that *could* be brought to bear on an issue, whether part of one's conscious perspective or not, or even whether propositional or not. To accommodate this, a proponent of IC might accept a broader construal of "evidence," which includes background beliefs, and distinguish as a subset of that one's "*inferential* evidence," the data that actually enter into the conscious perspective of a reasoner and function as premises in an IC-type inference.

28. In personal communication, Fumerton told me that he thinks background beliefs play a *causal* role of some sort. But, given his Keynesian position, it follows that background beliefs cannot have any kind of *informing* role in inference—all the necessary information is given in the supposedly internal relation between E and P. I have argued that this results in a misdescription of how inductive inferences work. The evidential relations that we "see" in inductive contexts are contingent, and therefore not internal. Instead, they are external relations grounded in background beliefs by virtue of the *content* of those beliefs.

29. Huemer 2002.

30. *Ibid.*, 330.

31. *Ibid.*, 332.

32. *Ibid.*

33. *Ibid.*

34. Fumerton 2006: 103–108.

35. In other words, it is the fallacy of confusing “ p and q together entail r ” with “if p then (q entails r).” These are not logically equivalent, but may seem to be if we neglect the necessity operator and read the arrows as material conditionals. Doing so yields the exportation rule of standard first-order logic: $[(p \wedge q) \rightarrow r] \equiv [p \rightarrow (q \rightarrow r)]$.

36. Huemer 2002: 334.

37. Ibid.

38. Ibid., 333. I’ve modified Huemer’s wording of (7) to make the inference from (5)+(7) to (6) more clearly valid, as Huemer clearly intends it to be.

39. On an internalist conception, if the reasoner does not “see” any connection, then there is no inference.

40. In Lewis Carroll’s famous dialogue, “What the Tortoise Said to Achilles” (Carroll 1895), a tortoise asks Achilles to justify the inferential move from E and “If E then P” to P. Obliging, Achilles offers, as an *additional premise*, “If (E and “If E then P”) then P”, at which point the tortoise asks him what justifies the inferential move from E, “If E then P”, and “If (E and “If E then P”) then P” to P. Achilles keeps adding, as additional premises, ever more complex propositions until it become far too complex to “see” that the conclusion follows. The moral of the story is that we have to recognize a distinction between *premises* and *inference rules*. In the inference from E and “If E then P” to P, the principle that “If (E and “If E then P”) then P” is an inference rule, *not a premise*. Similarly, supporting background beliefs function like inference rules. Indeed, we might think of inference rules as supporting beliefs, albeit ones that we may never have consciously entertained.

41. Fumerton makes this point with reference to Carroll 1895 in Fumerton 2006: 101–102.

42. Fumerton 2004: 154; Fumerton 2006: 104–105.

43. See Fumerton 2004: 155: “I suspect that we may not want to concede that there has been a genuine inference unless there has been a veridical or nonveridical “perception” of a connection between that from which P is inferred and P.”

44. Since Fumerton is a thoroughgoing internalist and a narrow foundationalist (see, e.g., Fumerton 2005: 88), the sort of reply I’m going to give is not available to him.

45. Fogelin 1994: chap. 1.

46. Williams 2001: 21–22.

47. Greco 2000: chap. 4, for example, argues that this is true for perceptual knowledge.

48. Plato, *Meno* 80d.

49. Reid 1983: 32.

50. Peirce 1998: 217.

51. For example, given that we are born with an inherited body of innate conceptions that inform our activities in a manner analogous to the instincts that many animals possess, evolutionary selection considerations suggest that these conceptions would have to be fairly reliable in guiding our reasoning. As Quine (1969: 126) famously put it, “Creatures inveterately wrong in their inductions have a pathetic but praiseworthy tendency to die before reproducing their kind.”

52. Clause (1) of PIJ is generally accepted, and IC entails clause (2)—“seeing” that the premises make probable the conclusion is obviously a necessary condition for inferential justification if it is a necessary condition for a cognitive process to count as inferential in the first place. Hookway (2000: 395–399) makes a similar point.

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