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## Evidence, Pragmatics, and Justification

Jeremy Fantl and Matthew McGrath

*Train Case 1.* You're at Back Bay Station in Boston preparing to take the commuter rail to Providence. You're going to see friends. It will be a relaxing vacation. You've been in a rather boring conversation with a guy standing beside you. He, too, is going to visit friends in Providence. As the train rolls into the station, you continue the conversation by asking, "Does this train make all those little stops, in Foxboro, Attleboro, etc?" It doesn't matter much to you whether the train is the "Express" or not, though you'd mildly prefer it was. He answers, "Yeah, this one makes all those little stops. They told me when I bought the ticket." Nothing about him seems particularly untrustworthy. You believe what he says.

Intuitively, in Train Case 1, you have good enough evidence to know that the train stops in Foxboro. You are epistemically justified in believing that proposition.<sup>1</sup>

*Train Case 2.* You absolutely need to be in Foxboro, the sooner the better. Your career depends on it. You've got tickets for a south-bound train that leaves in two hours and gets into Foxboro in the nick of time. You overhear a conversation like that in Train Case 1 concerning the train that just rolled into the station and leaves in 15 minutes. You think, "That guy's information might be wrong.

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<sup>1</sup> We use 'S is justified in believing that p' throughout the paper, in a standard way, to mean that S has good enough evidence to know that p. On our usage, you might have good undefeated evidence for p (have a good bit of "justification" for believing that p) and yet not be justified *simpliciter*, owing to the fact that your evidence isn't good enough for knowledge. Thus, at least on one standard intuition, before the lottery winner is announced, you aren't justified (in our sense) in believing that your ticket is a loser, even though you may have substantial justification on the basis of probabilistic reasoning. (The lottery case was never construed as a Gettier case—that is, as a case in which one had justified true belief but failed to know.)

What is it for evidence to be good enough for knowledge? To say that S's evidence is good enough to know that p isn't to say that S's having that evidence entails S's knowing that p. It is to say that, if S fails to know, it is not for S's lack of evidence. We take this condition not to be vacuous, since we assume that one cannot know without evidence.

What's it to him whether the train stops in Foxboro? Maybe the ticket-seller misunderstood his question. Maybe he misunderstood the answer. Who knows when he bought the ticket? I don't want to be wrong about this. I'd better go check it out myself."

Intuitively, in Train Case 2, you do not have good enough evidence to know that the train stops in Foxboro. You are not justified in believing that proposition. When so much is at stake, a stranger's casual word isn't good enough. You should check further.<sup>2</sup>

Suppose these intuitions are correct: you are justified in Train Case 1 but not in Train Case 2. What follows is that epistemic justification is not simply a matter of the evidence one has. You have the same evidence in each case. But in one case you are justified; in the other you are not. So, if these intuitions are correct, a proposition's justification does not supervene on one's evidence for or against it; that is, evidentialism is false.<sup>3</sup>

*Evidentialism.* For any two subjects S and S', necessarily, if S and S' have the same evidence for/against p, then S is justified in believing that p iff S' is, too.

How surprising this conclusion is depends on how broad a notion of evidence is employed. Under an internalist conception of evidence, the falsity of evidentialism is of some interest, but might only reveal the weaknesses of internalism, and similarly for externalist versions of evidentialism. The term 'evidence', however, is not a technical term requiring a stipulated meaning. In considering the Train Cases, we use 'evidence' to mean what it ordinarily does. That is to say, we employ a broad intuitive concept of evidence, which internalists and externalists

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<sup>2</sup> This pair of cases is modeled after Stewart Cohen's airport case. In Cohen's case, it is not entirely clear that the two subjects share the same evidence. Our pair of cases ensures this. Cf. (Cohen 1999, 58). However, our cases inherit the ambiguity of planes or trains "stopping" at such and such places. Is the proposition *This train stops in Foxboro* equivalent to the proposition *This train (type) is scheduled to make a stop in Foxboro as part of its normal route?* Or is it, rather, equivalent to *This train (token) will stop in Foxboro?* This ambiguity does not seem to affect intuitions about justification. Intuitively, in cases like Train Case 1, one is justified in believing both such propositions, while in Train Case 2, one is justified in believing neither.

<sup>3</sup> For a defense of evidentialism, see Feldman and Conee 1985. They write:

What we call evidentialism is the view that the epistemic justification of a belief is determined by the quality of the believer's evidence for that belief. (15)

David Owens defines a broader notion of evidentialism: "Evidentialism is the doctrine that epistemic norms invoke only evidential considerations" (2000, 24).

might analyze in different ways. It is difficult to say much that is helpful about the ordinary concept of evidence without taking up a particular theory. But it ought to be common ground between theories of evidence that having a lot at stake in whether *p* is true does not, by itself, provide evidence for or against *p*. Evidence for *p* ought to raise the probability of *p*'s truth (in some appropriate sense of 'probability'). But having a lot at stake in whether *p* is true doesn't affect its probability, except in rare cases in which one possesses special background information. For this reason, it seems that all candidate theories of evidence ought to allow that you have the same evidence in the Train Cases. So if the intuitions about the Train Cases are correct, then even when 'evidence' is understood as expressing the broad intuitive notion, evidentialism is false. The conclusion that evidentialism, so understood, is false, is therefore surprising. If it is false, we suspect many forms of reliabilism, virtue theory, and deontologism are false as well.

We reject evidentialism, but we feel that the above argument is not enough to do the job. The intuitions in the Train Cases, though ultimately correct, are not strong enough to count as data in a decisive argument against evidentialism. Evidentialism is not so easily refuted.

Denying evidentialism seems tantamount to denying the undeniable distinction between epistemic and pragmatic justification. We usually distinguish the two by noting that the former has a special relationship to truth-acquisition and falsehood-avoidance that the latter lacks. Put one way, pragmatic justification has to do with all of our goals, while epistemic justification has to do only with our special truth-related goals. Consequently, if evidence for *p*, construed broadly, just is a matter of what serves our truth-related goals in respect of *p*, then epistemic justification will be a matter of evidence and nothing more.

Because of its apparent connection with this distinction, evidentialism is not defeated simply by noting that we often take (and ought to take) non-evidential considerations into account before forming or acting on a belief. Richard Rudner, for example, claims that "[h]ow sure we need to be before we accept a hypothesis will depend on how serious a mistake would be" (1953, 2). This might seem to require that justification be at least partly a pragmatic matter. But one could accept Rudner's claim without giving up evidentialism, if one distinguishes, as Richard Foley (2000) does, between a notion of responsible belief and a notion of epistemically rational belief. The latter, for Foley, is the epistemologically central notion, the notion that foundationalists, coherentists, and reliabilists dispute. It is an idealized notion, concerned

with a “very specific goal, that of now having accurate and comprehensive beliefs” (181). But as examples such as the Train Cases make clear, “in reality all of us have many goals” (181). The notion of responsible belief takes account of these other goals. One *responsibly believes that p*, according to Foley, if one has an epistemically rational belief that one’s procedures with respect to p have been acceptable given the limitations on one’s time and capacities and given all one’s goals (183). The evidential standards for responsible belief “slide up or down with the significance of the issue” (185); not so, for epistemically rational belief. For Foley, the subjects in the Train Cases are alike with respect to epistemic rationality (either both or neither would be epistemically rational to believe that p), and so presumably with respect to epistemic justification as well, but they differ with respect to responsibility.

If Foley is right, evidentialism is consistent with Rudner’s claim that whether we ought to accept a hypothesis depends at least partly on how much is at stake, as long as the “ought” is one of responsibility, not epistemic rationality. So, it seems that evidentialists need not take intuitions about cases like the Train Cases as decisive against their view. They can respond by arguing that the intuitions at work, though real, are misdescribed. This is Foley’s strategy, and the strategy of Keith Lehrer as well, who suggests that, properly construed, the intuitions reveal conversational rather than semantic constraints:<sup>4</sup>

When the context is one in which a great deal hinges on whether or not p is true, one should be cautious about giving one’s word or authority for the truth of p. Consequently, it might be inappropriate to say, “I know that p,” in such contexts even though one does know that p. (2000, 33)

In light of these sorts of evidentialist responses, one cannot refute evidentialism by a simple appeal to the Train Cases. But this is not our plan. Rather, we aim to provide a theoretical basis for rejecting evidentialism by defending a “pragmatic” necessary condition on epistemic justification. If our proposed condition is necessary for justification, it becomes reasonable to see the intuitions at work in cases like the Train Cases as intuitions about justification, rather than conversational dynamics or responsible belief. This is because our necessary condition, if correct, explains how differences in pragmatic factors—in facts about preferences—can make a difference to justification. Thus, we do not merely refute evidentialism. We show *that*, *why*, and *how* a subject’s pragmatic situation may affect her justification.

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<sup>4</sup> See also Rysiew 2001.

We are not alone in rejecting views that fail to give pragmatic factors an epistemic role. In a recent book, David Owens offers the following argument against evidentialism.

[My case against evidentialism] can be made simply by asking: how are you going to tell us, in purely evidential terms, what level of evidence is needed to justify belief? Unless this question can be answered, evidentialism (internalist and externalist) must be abandoned. (2000, 26)

Something in addition to evidence must “complete” the justification. “How,” he asks, “could this something be anything other than the (perceived) needs and interests of the believer?” (26).

We join Owens in rejecting evidentialism, but we will not be making use of his argument. Though he does seem correct that the evidentialist does not provide us with a way to determine how much evidence is required for justification, we don’t seem much closer to solving this problem after Owens’s argument. We’re told that our needs and interests are relevant. But we’re not told how they bear on the evidence required for justification. What we’re missing, even after Owens’s argument, is a non-arbitrary rule telling us that in such and such a pragmatic situation (specified in terms of needs and interests), such and such an amount of evidence is required for justification. In the absence of such a rule, the question of what level of evidence, given such-and-such stakes, is required for justification seems no less urgent for the opponent of evidentialism than the question of what level of evidence is required for justification is for the evidentialist. Therefore, because of evidentialism’s initial plausibility, plus its resilience in the face of apparent counterexamples, until a better argument comes along, evidentialism has the upper hand.

This article is divided into three parts. In the first, we argue for a pragmatic necessary condition on epistemic justification that predicts and explains the intuitions we have about the Train Cases and their ilk. In the second, we apply our account to test cases, thereby showing how it avoids some of the pitfalls of other accounts that give pragmatics a role in epistemic justification. In the third, we consider an objection to our argument against evidentialism.

### **1. A Pragmatic Condition on Epistemic Justification**

How might pragmatic factors affect whether, given one’s evidence, one is justified in believing something? Let us begin with the more intuitive concept, knowledge.

If you know that *p*, then it shouldn't be a problem to act as if *p*. If it is a problem to act as if *p*, you can explain why by saying that you don't know that *p*. Suppose you are faced with some decision—do *A* or do *B*—where which of these is better depends on whether *p*. You know that if *p*, *A* is the thing to do, but that if not-*p*, *B* is. To say in one breath, “I know that *p*” and in the next breath, “But I'd better do *B* anyway, even though I know that *A* is the thing to do if *p*” seems incoherent. If you really know that *p*, and you know that if *p*, *A* is the thing to do, then it's hard to see how you could fail to know that *A* is the thing to do in fact. But then you ought to do *A*.

This seems to work both from the first-person and third-person perspectives. If *S* knows that *p*, then it shouldn't be a problem for *S* to act as if *p*. If it is a problem for *S* to act as if *p*, we can explain why by saying that *S* doesn't know that *p*. Suppose *S* is faced with the above choice situation. *S* knows that if *p*, *A* is the thing to do, but that if not-*p*, *B* is. To say in one breath, “*S* knows that *p*” and in the next breath, “But *S* had better do *B* anyway, even though *S* knows that *A* is the thing to do if *p*” seems incoherent. If *S* really knows that *p*, and *S* knows that if *p*, *A* is the thing to do, then it's hard to see how *S* could fail to know that *A* is the thing to do in fact. But then *S* ought to do *A*.

This reasoning can be generalized into a two-part argument. The first part is a general closure argument:

- (1) *S* knows that *p*.
  - (2) *S* knows that if *p*, then *A* is the thing to do.
- Therefore,
- (3) *S* knows that *A* is the thing to do.

Depending on how ‘the thing to do’ is interpreted, different conclusions follow from (3). But if ‘the thing to do’ is interpreted in terms of what would be the best thing one can do in light of all one's goals, then something quite interesting follows. We can add a second part to our argument relating knowledge to rationality of action:<sup>5</sup>

- (3) *S* knows that *A* is the best thing she can do (in light of all her goals).

Therefore,

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<sup>5</sup> To avoid making controversial commitments about certain peculiar cases, we hereafter restrict *S/p/A* combinations in our closure arguments and principles so that *S* has no reason to believe that whether she does *A* will causally affect whether *p* is true. See Appendix 1 for discussion of the peculiar cases.

(4) S is rational to do A.

Combining the two parts into a whole, and interpreting ‘the thing to do’ as ‘the best thing one can do (in light of all ones goals)’ we arrive at:

(1’) S knows that p.

(2’) S knows that if p, then A is the best thing she can do.

Therefore,

(3’) S is rational to do A.

We can express our commitment to this argument in the form of a principle:

S knows that p only if, for any act A, if S knows that if p, then A is the best thing she can do, then S is rational to do A.

We think this is a good start. But there is an even stronger sense in which pragmatic factors have epistemic relevance. We can strengthen the principle in no fewer than four ways.

First, there is no need to restrict the original closure argument either to acts or to judgments of what is best. If you know that p, and you know that if p then A is better for you than B, then you know that A is better for you than B. Consequently, it’s rational for you to prefer A to B.<sup>6</sup> Here, A and B may be any states of affairs, where acts can be treated as merely one kind of state of affairs.<sup>7</sup> Thus, we may strengthen the consequent of our principle to reach:

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<sup>6</sup> One might object as follows. Couldn’t you know that A is better for you than B and yet not be rational to prefer A to B, because someone is standing nearby (make this being a demon, if necessary) who will kill you iff you prefer A to B? It would seem, then, that you ought not to prefer A to B.

In response, we want to extend a distinction of Nozick’s (1993, 70) to apply in the domain of rational preference. He distinguishes between *p* being the rational thing to believe and believing *p* being the rational thing to do. We distinguish, correspondingly, between *A* being rationally preferable to B and preferring A to B being the rational thing to do. There is a clear sense in which, in the objector’s example above, A is rationally preferable to B for S (since, in light of S’s evidence and basic preferences, A can be expected to have better results), though preferring A over B might not be the rational thing for S to do. See also Heil 1983, 758. When we say ‘S is rational to prefer A to B’, we mean ‘A is rationally preferable to B, for S.’

<sup>7</sup> For acts as states of affairs (as “propositions”) see Jeffrey 1983, 83–84. Hereafter we assume that an act (A) is rational for S just in case A is available to S and there is no available competitor B such that it is rational for S to prefer doing B to doing A. On this definition, if two or more acts are tied for best, both are rational.



S knows that p only if, for any states of affairs A and B, if S knows that if p, then A is better for her than B, then S is rational to prefer A to B.<sup>8</sup>

Second, we may strengthen our principle to apply to cases in which, although one has good reason, one neither knows nor is justified in believing that one state of affairs will be better for her than another. We often have good evidence for thinking one state of affairs will be better for us than another, while lacking evidence good enough for knowledge. Suppose you're playing the card game *Hearts*. You've got both the ace and the two of diamonds. It is early in the game. You don't know—and aren't justified in believing—that if diamonds are led, it will be better to play the ace than the two. After all, you might well get stuck with the queen of spades if a fellow player has no diamonds. But it seems wiser, given that diamonds are led, to get rid of your ace than to waste your two (since it's pretty likely everyone has at least one diamond). In our terms: you are rational to prefer playing the ace to playing the two, given that diamonds are led. That is, you are rational to prefer the state of affairs in which diamonds are led and you play the ace to the state of affairs in which diamonds are led and you play the two. Now suppose you come to know that diamonds are being led; the person to your right leads the five of diamonds. What should you prefer: playing your ace or playing your two? Surely, you should prefer playing your ace. If you know that diamonds are led, and you are rational to prefer playing your ace to playing your two, given that diamonds are led, then you must be rational to prefer playing your ace to playing your two in fact. More generally, if you know that p, and if you are rational to prefer one state of affairs to another, given p, then you will be rational to prefer that state of affairs to the other in fact. Thus, we may improve upon our argument (1')–(3') as follows:

(1'') S knows that p.

(2'') S is rational to prefer A to B, given p.

Therefore,

(3'') S is rational to prefer A to B in fact.

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<sup>8</sup> Two restrictions are needed here. First, we strengthen our earlier restriction on S/p/A combinations. Our proposal bears only on S/p/A/B combinations that are such that S has no reason to believe that whether A as opposed to B obtains will causally affect whether p is true.

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Second, the inference

- (1\*) S knows that p  
 (2\*) S knows that if p, then A is better for her than B.  
 Therefore,  
 (3\*) S knows that A is better for her than B.  
 Therefore,  
 (4\*) S is rational to prefer A to B.

is valid only when restricted to instances in which premises (1\*) and (2\*), if true, would still be true were S to face the choice of whether to make A true or make B true. To have a handier expression, we may formulate the restriction thus: the premises (1\*) and (2\*) must be robust (to borrow a term from Roy Sorensen (1988)) with respect to the choice situation *Make A true or Make B true*. The need for this restriction can be seen as follows. Suppose (1\*) and (2\*) (and so (3\*)) are true in a particular case. Why think that (4\*) must be true as well? (4\*) is true, we may assume, only if S would be rational to prefer making A true to making B true when faced with the choice. Now if (1\*) and (2\*) are robust with respect to the choice situation in question, then we can see that S would be rational to prefer making A true when faced with the choice: if you're in a choice situation with respect to A and B, and you know that A is the better of the two, then clearly you should choose A over B. However, suppose the robustness restriction is unsatisfied. Suppose, that is, that although (1\*) and (2\*) are true, they wouldn't both be true were S faced with the choice situation. Then there would be no guarantee that (3\*) is true—that is, no guarantee that S would still know, in the choice situation, that A is better for her than B—and so no guarantee that S would be rational to choose A over B. Thus, the mere truth of (1\*) and (2\*) does not guarantee the truth of (4\*). To derive (4\*), we need the assurance that both premises are robust with respect to the A/B choice situation.

Some philosophers and decision theorists might have reservations about the assumption that if a person is rational to prefer a state of affairs A to a state of affairs B, then the person would be rational to prefer making A true to making B true when faced with the choice. A standard alternative to this approach is Jeffrey's "good news" approach, under which you are rational to prefer A to B iff you would welcome the news that A is true more than you would welcome the news that B is true (1983, 82–83). All the same, we need a similar restriction on (1\*)–(4\*) in this decision-theoretic setting. Suppose that, were you to get the news that A is true, not both of (1\*) and (2\*) would be true. Then there would be no guarantee that you would still know that A is better for you than B, and so no guarantee that you wouldn't wish the news had been B instead. But if we impose the restriction that (1\*) and (2\*) be robust with respect to your learning the news that A is true (or that B is true), then the conclusion is obtained: were you to learn that A is true, you wouldn't wish the news had been B instead.

For each of the remaining strengthenings of our original argument (1)–(4), we hereby impose a corresponding robustness restriction. We require that the premises of each such argument be robust with respect to the choice situation *Make A true or Make B true* (or alternatively with respect to your learning the news that A (or that B)). (When such arguments are converted into principles, our restriction requires the robustness of the antecedent of the embedded conditional with respect to the A/B choice situation.)

The second restriction is not covered by the first. Even if one lacks a reason for thinking that whether A or B obtains will causally affect whether p is true, it doesn't follow that if one knows both that p and that if p, then A is better than B, then one's knowledge would survive being faced with the A/B choice situation. If, as we shall argue, knowledge depends on stakes, then we should expect to find cases in which one knows that p even though, were one in a high-stakes choice situation, one would not know that p.

Correspondingly, our necessary condition on knowledge becomes:

S knows that p only if, for any states of affairs A and B, if S is rational to prefer A to B, given p, then S is rational to prefer A to B, in fact,

where *S is rational to prefer A to B, given p* is equivalent to *S is rational to prefer A&p to B&p*.<sup>9</sup>

Third, we can strengthen our principle by making it a requirement on justification, not simply on knowledge. So modified, (1'')–(3'') becomes

(1''') S is justified in believing that p.

(2''') S is rational to prefer A to B, given p.

Therefore,

(3''') S is rational to prefer A to B in fact.

Suppose that a subject, S, is justified in believing that p, but does not know that p. Suppose further that S is rational to prefer A to B, given p. Compare S to a second subject, S', who has the same evidence and fundamental preferences as S but who knows that p. S' is rational to prefer A to B. What one is rational to prefer is determined by one's evidence and fundamental preferences. Since S and S' have the same evidence and fundamental preferences, they will be rational to prefer the same states of affairs. Thus, S, too, is rational to prefer A to B. Whatever it is rational for a knower to prefer is also rational for an otherwise identical subject who is merely justified in believing to prefer. Therefore, if (1'')–(3'') is valid, so is (1''')–(3''').

We can therefore strengthen our principle thus:

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<sup>9</sup> Here, as in note 6, one might object in the following way. Suppose A would bring great joy to you, B misery, and you know as much. Suppose also you know that p. These suppositions, moreover, are jointly consistent with your knowing that there is a demon nearby who is prepared to kill you iff you prefer A to B. In this case, you know that p, you're rational to prefer A to B, given p, but you're not rational to prefer A to B, in fact.

Our response here is similar to our earlier response in note 6. We distinguish the question of whether A is rationally preferable to B from that of whether having a preference for A over B is the rational thing to do. This distinction becomes especially plain if we think of rational preferability in terms of expected utility. A could have a higher expected utility than B, even though preferring A to B might have a lower expected utility than being indifferent or having the opposite preference (and vice versa). Assuming, in addition, that the rationality of acts is judged by expected utility, we would have the following situation: A is rationally preferable to B for S, but preferring A to B is not the rational thing to do.

As before, we use 'S is rational to prefer A to B' to mean that A is rationally preferable to B for S.

S is justified in believing that p only if, for any states of affairs A and B, if S is rational to prefer A to B, given p, then S is rational to prefer A to B in fact.

Now for the final strengthening. As it stands, the consequent of our principle is simply a conditional, rather than a biconditional. That is, our principle leaves open whether being justified in believing that p ensures that for states of affairs A and B, if S is rational to prefer A to B in fact, then S is rational to prefer A to B, given p. We now argue this issue should be closed. Assume you're justified in believing that the train goes to Foxboro (p). And assume that you are, in fact, rational to prefer boarding (B) the train to waiting (W) for the next train. Could it turn out that you are not rational to prefer B to W, given p? No. There are two ways you might fail to be rational to prefer B to W, given p. First, you could be rational to be indifferent between B and W, given p. In this case, since you would be justified in believing that p, then it seems that you would be rational to be indifferent between B and W in fact, which, by hypothesis, you are not. Second, you could be rational to prefer W to B, given p. Again, since you would be justified in believing that p, it seems that you would be rational to prefer W to B in fact, which, by hypothesis, you are not. Thus, we can strengthen our principle by making its consequent a biconditional: for any states of affairs A and B, S is rational to prefer A to B, given p, iff S is rational to prefer A to B, in fact.<sup>10</sup> When you satisfy this condition with respect to p, we will say that you are rational to *prefer as if p*. We express our principle compactly as a pragmatic necessary condition on epistemic justification:

(PC) S is justified in believing that p only if S is rational to prefer as if p.

Our view relates epistemic justification to rational preferences generally, and not merely to rational preferences about how to act. However, PC does entail a condition relating epistemic justification to acts and, in particular, to the act(s) that it is rational for S to do, given p.<sup>11</sup>

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<sup>10</sup> Given that the preference-or-indifference relation is both transitive and connected, our revised principle implies that, in order for you to be justified in believing that p, the preference ordering it is rational for you to have, given p, must be the same as the preference ordering it is rational for you to have in fact.

<sup>11</sup> A is rational for S to do, given p iff A is available to S and there is no state of affairs of the form B&p, where B is an available competitor to A, that S is rational to prefer to A&p.

S is justified in believing that p only if, for all acts A, S is rational to do A, given p, iff S is rational to do A, in fact.

We may think of the consequent of this principle as making precise the intuitive notion of *acting as if p*. Thus, the principle may be formulated more simply as:

(PCA) S is justified in believing that p only if S is rational to act as if p.<sup>12</sup>

Two clarifications are in order. First, we have arrived at (PC) by converting an *argument pattern* ((1'')–(3'')) into a principle.<sup>13</sup> Our argument for (PC), then, is one and the same as our argument for the validity of the corresponding argument pattern. Our argument for the latter is based on a series of strengthenings of our original argument, (1')–(3'), which is the combination of two arguments, a closure argument (1)–(3) and an argument linking knowledge to rational action (3)–(4). Thus, our argument for (PC) does not appeal to intuitions about particular cases, such as the Train Cases. We are not proposing a condition for justification and then seeing if it fares well by the method of example and counterexample, but rather providing a theoretical argument for a condition on justification.

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<sup>12</sup>In a brief discussion, Christopher Hookway seems to endorse something in the neighborhood of PCA. He writes:

[The fact that beliefs are among the antecedents of action] may help to explain our standards of cognitive evaluation. For example, our understanding of the amount of evidence we require in support of an hypothesis before we can describe it as justified may reflect the degree of support that is required before we can feel that we are acting responsibly when we act upon it. This promises to explain some of the relativities involved in our concept of justified belief; the greater the disaster if our actions fail to achieve their purpose, the more evidence we require before we regard the belief as properly justified; the greater the risks attaching to inaction, the readier we are to act on limited evidence. (1990, 139)

We think that Hookway's speculation is correct. Our argument for (PCA) can be thought of as a way of showing how essential features of justification bear out Hookway's speculation.

There is also a Bayesian account of belief analogous in some respects to PCA. Mark Kaplan calls it "The Contextualized Act View." Under this view, "you count as believing that P in a given context just if you are disposed in that context to act as if P is true" (1996, 105 n. 101). See Nozick 1993, 93–100 for such a view. Our proposal differs from this one in two important ways. First, ours presents a condition, not on belief, but on justification in believing. Second, ours requires that you be rational to prefer as if p is true (and consequently to act as if p is true), rather than that you be disposed to act as if p is true.

<sup>13</sup>To be exact, we have converted at once two argument patterns into a principle. These are (1'')–(3'') and the argument pattern which uses (1'') and (3'') as premises, and (2'') as the conclusion.

Second, it might seem that we are imposing an unduly severe restriction on justification and therefore knowledge. There will be some cases in which in order to have knowledge, one will need to have absolute certainty, or something close to it.<sup>14</sup> These will be cases in which something of great importance hinges on whether a belief is true.<sup>15</sup> Doesn't this make the requirements for knowledge too demanding? Can't we have knowledge without absolute certainty?

We can. Nor does our view entail otherwise. After all, in Train Case 1, our view is consistent with the claim that you know that the train is going to Foxboro, even though you have only the evidence of casual testimony. There are many cases—in fact, most cases are like this—in which we have knowledge without having a strong form of certainty. Requiring certainty in these cases would be otiose. Our account requires certainty for knowledge only in cases in which certainty is important—its importance consisting in the fact that it is required for being rational to prefer and act as if the relevant proposition is true. This should give the skeptic no consolation.

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<sup>14</sup> Here, we mean epistemic, rather than psychological, certainty. We have absolute epistemic certainty for *p* only if we have the highest possible degree of justification for *p*—perhaps something akin to infallibility.

<sup>15</sup> Here is an example: *The World is at Stake*. Suppose *somehow* the desirability matrix for your sole available options doing A and doing B were as follows:

	p	not-p
Do A	small gain	$-\infty$
Do B	smaller gain	0

And suppose *somehow* you were justified in believing that whether you do A as opposed to B would not causally affect whether *p* is true. You'd be only a little better off doing A than B if *p* is true, but you'd be infinitely worse off doing A than B if not-*p* is true. Our account entails that if the probability of *p* is less than 1 for you—if *p* does not have the highest certainty for you—then you will not be epistemically justified in believing that *p*. Suppose *p* is the proposition that you have hands. Each of us believes he has the strongest form of certainty for *p*. If we were somehow certain we were faced with the choice between doing A (say, trying to make a fist) or B (not trying to make a fist), and that the desirability matrix were as it is above, we think we would be rational to do A. But the probability of *I have hands* might be less than 1 for someone else (S). S would therefore not be rational to try to make a fist. Therefore, by an application of PC, S would not be justified in believing that she has hands. We find this result correct.

## 2. Illustrations and Test Cases

We can illustrate our view by applying it to the original Train Cases.<sup>16</sup> In Train Case 1, you don't much care about whether the train will stop in Foxboro. In Train Case 2, it is desperately important to you that it will.

Suppose that, in each Train Case, the same two options are available to you. You can inquire further to make sure that the train really will stop in Foxboro. Or you can board the train without inquiring further. PC entails that you are justified in believing that the train will stop in Foxboro only if you are rational to prefer as if the train will stop in Foxboro. In Train Case 1, what you are rational to prefer, given that the train will stop in Foxboro, is boarding the train. You are rational to prefer this to inquiring, since the latter will involve some cost to you, and you don't much care if the train will stop in Foxboro. You are also rational to prefer this in fact, for the very same reason. What it is rational for you to prefer, given that the train will stop in Foxboro, is also what you are rational to prefer in fact. That is, you are rational to prefer as if the train will stop in Foxboro. So PC is satisfied and you may have enough evidence for justification.

In Train Case 2, on the other hand, you are not rational to prefer as if *p*. For, in fact, you are not rational to prefer boarding the train to inquiring further. It is extremely important to you that the train will stop in Foxboro. If you board it, and it will not stop in Foxboro, things will go very badly for you. You need to inquire further to make sure that the train will stop in Foxboro. In fact, you are rational to prefer inquiring to boarding. Given that the train will stop in Foxboro, on the other hand, you are rational to prefer boarding to inquiring, since boarding will get you to Foxboro, and inquiring further involves a small cost to you. Therefore, what you are rational to prefer, given that the train will stop in Foxboro, is not what you are rational to prefer in fact. That is, you are not rational to prefer as if the train will stop in Foxboro. So, PC is not satisfied. You are not justified in believing (and, hence, do not know) that the train will stop in Foxboro.

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<sup>16</sup>Note that in each Train Case, our two restrictions delineated in note 8 are satisfied. In neither Case 1 nor Case 2 is it the case that whether A (boarding) or B (inquiring) obtains is causally related to whether *p* (the train will stop in Foxboro) is true. Nor is it the case, in either Train Case, that actually being faced with the choice situation (board or inquire) would change what you know (or are justified in believing). You *are* faced with the choice situation.

Let us see how our view handles some further cases. These cases will show how our account differs from, and improves upon, other accounts that find an epistemic role for pragmatic factors.

The first class of cases concerns the relation between justification and the costs/benefits of inquiry. Since our account provides only a necessary condition, the test cases for our account will be ones in which a subject has excellent evidence for a proposition but the cost of further inquiry is prohibitively high.

*Case of the Time-Consuming Call.* You're at home. You're taking the train to New York tomorrow. You have a distinct recollection from making your reservation by phone that your train leaves at 5 pm. You are not worried about being wrong. You have good evidence, and in any case, if you miss the 5 pm, you'd take the 7 pm. Calling up Amtrak again would mean waiting on the phone for 35 minutes or so.

Intuitively, it seems that the cost of inquiring further doesn't have a bearing on whether you are justified in this case. You don't need to inquire further in order to be justified. Our account confirms this. What you are rational to prefer, given that the train leaves at 5 pm is what you are rational to prefer in fact. You are rational to prefer not inquiring to inquiring, both in fact, and given that your train leaves at 5 pm. Similarly, for other states of affairs.

However, you might still think that the costs/benefits of inquiry are of special concern in determining whether one is justified. Our view does give the costs/benefits of inquiry a somewhat special role, since it will often be the case that inquiry will, with little cost, raise the probability that  $p$  to a level at which it will be rational to prefer as if  $p$ . But, our view, you might think, does not give one's rational preferences for further inquiry as critical a role as they deserve. You might even think that, any time it is rational to inquire further, one must lack justification. This seems to be the view of D. S. Clarke Jr., who posits the following principle: "(BC) S rationally believes in  $p$  relative to  $e$  only if S believes the cost to him of acquiring additional evidence  $e'$  is greater than what S believes to be the cost of  $p$ 's being mistaken" (1985, 460).

This sort of view gives the costs/benefits of inquiry too prominent a place in determining justification. Suppose I offer to reward you handsomely for inquiring further about whether today is Tuesday (or whatever day of the week it is). You have plenty of evidence that it is Tuesday, but you haven't been dwelling on the fact too much, and



nothing much hinges on which day of the week it is. Now there are no costs of inquiry whatsoever, only benefits, and great ones. Thus, the believed cost of inquiry to you is less than the believed cost of being mistaken. So, on Clarke's view, you are not rational (and therefore, presumably, not justified) in believing, no matter how much evidence you have. This seems wrong. On our view, what is rational to prefer, given *p*, is the same as what is rational to prefer in fact. You are rational to prefer inquiring in both cases. Therefore, our view, as articulated in PC, does not preclude you from being justified in believing that it's Tuesday.<sup>17</sup>

The second class of cases concerns the costs/benefits of believing a certain proposition. Since our account provides only a necessary condition for justification, the test cases are ones in which there is a high cost to believing something for which you have excellent evidence. We will discuss two such cases. The first is the:

*Case of the Threat not to Believe.* Suppose you are threatened not to believe that George W. Bush is president. If you continue believing it, you will suffer great pain.

Intuitively, although you ought to try to get yourself to give up the belief that Bush is president, you are justified in believing it. Our account accommodates this intuition. What you are rational to prefer, given that Bush is president, is what you are rational to prefer in fact: you are rational to prefer not believing that Bush is president to believing he is. One might even say: you ought not to believe that Bush is president. This 'ought', however, is the 'ought' of rational preferability, not epistemic justification.

Robert Nozick gives us a more realistic case in this class:

*Case of the Miserable Belief.* It would be extremely hard for you to go on if you believed your son was guilty of the crime of which he is accused. The belief would result in intense misery and pain, whether or not he is in fact guilty. You have good evidence that he is guilty.

Intuitively, you are not justified in thinking your son is innocent, since all the evidence is against it. Are you justified in thinking he is guilty? Let us ask what our account implies. Is what you are rational to

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<sup>17</sup>For another account that treats justification as related to the costs/benefits of inquiry, see Owens 2000, 25–27.

prefer given that your son is guilty the same as what you are rational to prefer in fact? It seems so. Even given that your son is guilty, you are rational to prefer not believing he is guilty to believing he is guilty. And this is what you are rational to prefer in fact. This seems to hold for all states of affairs. Our account therefore leaves open the possibility that you are justified in believing that your son is guilty. Here we differ from Nozick, who claims that the rule below expresses a constraint on rational belief (and so presumably on justified belief):

Rule 2: Believe (an admissible)<sup>18</sup> *h* only if the expected utility of believing *h* is not less than the expected utility of having no belief about *h*. (1993, 86)

This seems to yield unacceptable results. Indeed it seems that no matter how much evidence you have that your son is guilty, you are not rational to believe he is, given Rule 2. He could be staring you in the face, confessing the crime to you, and explaining precisely how he did it. You might even have caught him in the act. So long as believing he is guilty is so crushing, you are not rational to believe, and so not justified.<sup>19</sup>

As the last two cases show, our view does not surrender the distinction between epistemic and pragmatic justification. If our view is correct, then epistemic justification for *p* requires the rationality of preferring as if *p*. But this does not mean that epistemic justification for *p* requires pragmatic justification for believing *p*. As we have seen, one can be rational to prefer not believing that Bush is president, even though one is rational to prefer as if Bush is president, and one can be rational to prefer not believing that one's son is guilty, even though one is rational to prefer as if he is. These are not isolated cases. Often there are costs to believing that *p* even when one is rational to prefer as if *p*. When those costs are high, you may not be pragmatically justified in believing that *p* (so believing won't best serve your general goals), and yet you may still be epistemically justified.

We noted earlier that acceptance of the epistemic/pragmatic justification distinction appears to commit one to evidentialism. How else to

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<sup>18</sup> An admissible *h* is a proposition that has a higher credibility value than any of its contraries (this is Rule 1) and has a "high enough" credibility value (this is Rule 3). See Nozick 1993, 85–93.

<sup>19</sup> Nozick means 'rational' in an epistemic sense, since his rules are meant to be rules about when a proposition that *p* is the rational thing to believe rather than when believing *p* is the rational thing to do. For more on this distinction, see Nozick 1993, 70.

distinguish epistemic justification than by its taking into account only one's truth-related goals? And if it takes into account only one's truth-related goals, it seems it must be solely a matter of evidence. We can now see that this reasoning is fallacious. Epistemic justification can take into account our non-truth-related goals and still be distinguished from pragmatic justification.

### 3. The Argument against Evidentialism

If our account is correct, that is, if PC states a pragmatic necessary condition on epistemic justification, then evidentialism must be false. If PC is true, then there could be two subjects, identical with respect to their evidence for/against *p*, one of whom should act (and generally prefer) as if *p* and one of whom should not. Train Cases 1 and 2 involve two such subjects.

This argument is too quick. Outright rejection of PC is implausible, as we hope to have made clear in previous sections. However, the evidentialist has another alternative. We will formulate a more careful approach in our response to this alternative.

Suppose an evidentialist reasons as follows: "I do accept your closure arguments and all the variations on them. This leads me to accept PC. However, I do not think that PC conflicts with my main evidentialist thesis that a proposition's justification supervenes on evidence for that proposition. All PC commits us to is the claim that if a subject is justified in believing that *p*, then she had better be rational to prefer as if *p*. But we can simply set the standard of evidence required for justification high enough to avoid pairs of subjects that have the same evidence but are such that one is rational to prefer as if *p* while the other is not. Two people with the same evidence for/against a proposition *p* will thus not differ in justification for *p*. In Train Case 1 you wouldn't count as justified, but that's not so hard to accept."

This response seems to commit the evidentialist to a kind of pragmatic condition on justification, namely:

(EPC) *S* is justified in believing that *p* only if anyone with *S*'s evidence for *p*, no matter what the stakes, would be rational to prefer as if *p*.

EPC isn't merely a way for the evidentialist to embrace PC; it's the only way. For suppose evidentialism and PC are true, but EPC is false. Then there is a case in which a subject *S* is justified in believing that *p*, but it's not true that anyone with *S*'s evidence would be rational to prefer as if

p. Thus, there must be some subject S' in a further case, who has the same evidence as S, but for whom the stakes are different, and who therefore isn't rational to prefer as if p. If evidentialism is true then, since S and S' have the same evidence for/against p, and S is justified, so is S'. But then, PC is violated: S' is justified, but it is not rational for S' to prefer as if p.

For the evidentialist, then, a lot turns on the acceptability of EPC. We want to make several claims about this principle. First, given that EPC itself proposes a pragmatic condition on epistemic justification, the truth of EPC would support our general claim that there is a pragmatic element in epistemic justification, even if it would not support our claim against evidentialism. Second, we agree that it might be useful to put a common label to a kind of epistemic status—a kind of “justification”—subject to EPC. If you know that you have justification satisfying EPC, then you know that you are safe in preferring—and, hence, acting—as if p, and will be safe so long as your evidence regarding p remains unchanged, no matter what happens to your fundamental preferences. Third, though, we think that PC is true of the justification required for knowledge, while EPC is not. EPC is too strong. It doesn't allow for many cases of justification based on induction, testimony, memory, rational intuition, and perhaps even direct perception. In many cases in which we are justified in believing a proposition p we would not be rational to prefer as if p, were the stakes radically higher. Train Cases 1 and 2 are meant to be instances of this general fact. But there are many other examples. (Bayesians have an arsenal; see Kaplan 1996, 102–3.) In an ordinary case, when the stakes are low—you're sitting in your front room relaxing—you are justified in believing, on the basis of memory and induction, that your car is parked in your driveway. But if you were to have this same evidence concerning the whereabouts of your car when your action would save or jeopardize lives depending on whether your car was there or not, and you had time to check before acting, you ought to go check. Similar examples can be constructed for your normally low-stakes justified beliefs such as: *the local post office is open until noon on Saturdays, your cousin lives in San Diego, you have a Tuesday-Thursday schedule next semester, the Yankees won the World Series two years ago*. Maybe even your evidence for I have hands isn't sufficient for justification however high the stakes may be.<sup>20</sup>

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<sup>20</sup> See note 15.

Note that evidentialists cannot avoid this conclusion by accepting contextualism. To combine contextualism with evidentialism is to hold that, if subjects *S* and *S'* have the same evidence, then within any fixed speaker context '*S* is justified' and '*S'* is justified' have the same truth value, although across speaker contexts, these sentences can have different truth values. So, a contextualist might claim that, despite the fact that the subjects in the Train Cases have the same evidence, when we discuss Train Case 1, we correctly attribute 'justified' to the subject, but when we discuss Train Case 2, we correctly attribute 'unjustified' to the subject. Our speaker context switches.

Understanding the Train Cases in this way, however, commits one to a broader contextualism—not merely a contextualism about justification but a contextualism about rational preference. Here is why. Since contextualist evidentialists, like all evidentialists, must accept EPC, they must maintain that if 'In Train Case 1, you are justified in believing that the train stops in Foxboro' is true in a given speaker context, then so is 'In Train Case 2, you are rational to prefer as if the train stops in Foxboro'. But, of course, as soon as we think about the latter, we judge it false. So, to save intuitions, while resisting skepticism, the contextualist must hold that 'rational to prefer as if' is context-sensitive. Recall that we defined '*S* is rational to prefer as if *p*' to mean '*For any states of affairs A and B, S is rational to prefer A to B, given p, iff S is rational to prefer A to B, in fact*'. Thus, the contextualist must hold that the relation 'is rational to prefer *x* to *y*', too, is context-sensitive. There seems little merit to this theory. Intuitively, we do not vacillate about whether the subject in Train Case 2 is rational to prefer checking further to immediately boarding. We stably judge the subject rational to prefer checking further. The best explanation for our stable judgments about cases like this is that 'rational to prefer *x* to *y*' expresses, across speaker contexts, a single relation that holds in virtue of the subject's evidence and fundamental preferences.

Furthermore, there is a fundamental difficulty for contextualism about rational preference. Contextualists about justification claim that what varies from context to context is not what degree of evidence a subject has, but whether that degree of evidence is enough for justification. What varies, that is, is the threshold for justification. The same holds good for contextualism about flatness, emptiness, tallness, etc. When it comes to rational preference, however, the question of a threshold does not arise. Rational preference is purely relational. Whether *S* is rational to prefer *A* to *B* is simply a matter of the relative

positions of A and B in S's rational preference ordering, not a matter of meeting a threshold of "rational preferability."

If contextualism about rational preference is unacceptable, then 'In Train Case 2, you are rational to prefer as if the train stops in Foxboro' will be false in all contexts. So if EPC is true in all contexts, it follows that the statement 'In Train Case 1, you are justified in believing that the train stops in Foxboro' will have to be false in all contexts, too. Thus, the evidentialist cannot avoid skepticism by accepting contextualism.

Given that EPC is too strong, and given the truth of PC, it follows that evidentialism is false.

#### 4. Conclusion

Our argument against evidentialism can be summarized succinctly. First, we argued for a pragmatic condition on epistemic justification.

(PC) S is justified in believing that p only if it is rational for S to prefer as if p.

(Recall that *it is rational for S to prefer as if p* abbreviates for any states of affairs A and B, S is rational to prefer A to B, given p, iff S is rational to prefer A to B, in fact.) We then showed that, if PC is true, then evidentialism could be true only if a strong pragmatic condition on justification holds, namely:

(EPC) S is justified in believing that p only if anyone with S's evidence, no matter what the stakes, would be rational to prefer as if p.

But, as we saw, EPC is too strong. It does not square with intuitions that one can be justified on the basis of a stranger's testimony about directions, train routes, etc., or on the basis of induction that one's cousin lives in San Diego, etc. Our conclusion: evidentialism is false.

Given that PC is correct and EPC is not, we have not only shown *that* differences in what's at stake for subjects can affect justification, we've shown *how*. Consider Owens's argument against evidentialism (discussed at the end of section 1, above). The key premise of his argument is that the evidentialist cannot simply set a threshold, since any threshold would be arbitrary. There is something wrong with the evidentialist's simply saying, "If you have this much evidence, your belief is justified." Owens suggests we need to appeal to pragmatic factors to secure a non-arbitrary threshold. Yet it seems no less arbitrary for

Owens simply to say, “When the stakes are this high, then when you have this much evidence, your belief is justified.” Why do these stakes require this amount of evidence, rather than some other amount? Owens does not answer this question. Not so in our case. It is clear how stakes play a role in the amount of evidence required for justification. We require at least as much evidence as is needed to make it rational to prefer as if the proposition in question is true. And this requirement is not arbitrary, as it would be if adopted by those who subscribe to Owens’s argument. It is a direct result of theoretical arguments based on essential features (for example, closure) of knowledge and justification.

Epistemic justification isn’t purely a matter of evidence. A subject is justified in believing something just in case she has evidence that is good enough for her to know. But what is “good enough” will not itself be a matter of evidence. Owens is correct in this at least. One subject (S) might have better evidence than another (S’) along a purely evidential dimension of evaluation even while S isn’t justified but S’ is. Suppose Nozick’s *credibility values* provide such a purely evidential dimension of evaluation of propositions. Here is Nozick:

Let us imagine a network that incorporates a weighting of many factors – including Bayesian probabilities, explanatory value (as represented by the Causalized Bayesian formula), Popperian methodological maxims, and an assessment of undercuttings—and feeds forward to result in a *credibility value* for a statement *h*. View this as an ideal assessment that duly weights all of the reasons for and against *h*. (1993, 84)

Our conclusion, reformulated in terms of credibility values, is that no specific credibility value is both necessary and sufficient for justification, independently of all pragmatic factors. There is a credibility value sufficient for justification, namely, whatever credibility value satisfies EPC. And presumably there is a credibility value necessary for justification, that is, a credibility value that all justified propositions must exceed in credibility: the credibility value zero. But there is no such thing as a pragmatics-independent credibility value *threshold* for justification. For S to be justified in believing a proposition *p*, *p*’s credibility value for S must exceed a threshold, but the threshold is determined in part by relevant features of S’s pragmatic situation.

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## Appendix I

In cases in which one has no reason to believe that how one acts will causally affect whether *p* is true, our closure arguments are unproblematic. There are, however, cases in which one does have such reason. In these cases, argument (1')–(3') seems subject to a peculiar logical difficulty. Consider the following train case: You need to get to Foxboro. But you know that the train conductor is your sworn enemy and will bypass Foxboro if you board the train (and that is the only way he will thwart your aims). You also know that, if you do not board the train, the conductor will definitely take the train to Foxboro. You decide, therefore, not to board the train. The following modus ponens argument would then be available to you:

(I) The train will go to Foxboro.

(II) If the train will go to Foxboro, then taking the train is the best thing for me to do.

Therefore,

(III) Taking the train is the best thing for me to do.

However, (III) seems not to be true in your case, even though (I) and (II) are (if you stick with your decision not to take the train). After all, if you take the train, it won't end up going to Foxboro. If it is questionable whether modus ponens fails in this cases, then *a fortiori* it is also questionable whether our closure argument (1')–(3') fails here. You know that (I) is true (given your decision and its efficacy), and you know that (II) is true, but it does not seem that you know that (III) is true. We need to restrict our closure arguments (1')–(3') to secure the unquestionable validity of the embedded instances of modus ponens. Moreover, it seems that, since we are closing knowledge under modus ponens, we must require that the relevant subject *S* have no reason to think that the validity of the embedded modus ponens argument is questionable. Restricting *S/p/A* combinations in our closure argument (1')–(3') so that *S* has no reason to believe that whether she does *A* will causally affect whether *p* is true serves our purpose adequately. We use a similar restriction for *S/p/A/B* combinations in our closure arguments and principles that involve comparisons between states of affairs.

It should be noted that the logical difficulties that we have mentioned raise questions about the validity of argument forms other than simple modus ponens. Consider the notorious Henry V argument



(paraphrased from Shakespeare's account of Henry's speech to his badly outnumbered troops on the eve of battle):

- (i) Either we will win or we will lose.
- (ii) If we will win, it is better for us to be outnumbered (since there will be greater glory, etc.).
- (iii) If we will lose, it is better for us to be outnumbered (since at least we will avoid shame).

Therefore,

- (iv) It is better for us to be outnumbered.

(i)–(iii) seem true, but (iv) false. This seems to be a counterexample to the argument schema:

Either p or q.

If p, then A is better than B.

If q, then A is better than B.

Therefore,

A is better than B.

which is apparently valid insofar as it is subsumed under disjunction elimination.

Problems disappear here, as with (I)–(III) above, provided we impose a restriction about causal influence—provided, in particular, we require that whether A, as opposed to B, obtains will not causally affect whether p, as opposed to q, is true. (To say that the arguments seem wrong when and only when there exist such causal connections is not to answer the logical questions, Are arguments (i)–(iv) and (I)–(III) really invalid? Are modus ponens and disjunction elimination invalid?)<sup>21</sup>

## Appendix II

Our condition on justification is supported by intuitions about the closure of knowledge under modus ponens. It is incumbent upon us,

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<sup>21</sup> Plausibly, *If p, then A is better than B* is equivalent to *A&p is better than B&p*. If this is right, the Henry V argument is equivalent to a dominance argument. Its flaws, then, would receive ready diagnosis. However, such an equivalence would not imply that the argument's steps (ii) and (iii) weren't genuine conditionals. That is to say, the problem with disjunction elimination would not disappear. Similarly, the problem with modus ponens exemplified in (I)–(III) would not disappear if the constituent conditional were treated as equivalent to *One's doing A&p is better than any other state of affairs of the form One's doing B&p, where B is an available competitor to A*.

then, to show that our condition itself has this closure property.<sup>22</sup> For suppose our condition isn't closed under modus ponens. The worry would arise whether the truth of our account would undermine its support. Although the failure of closure for a necessary condition on justification doesn't entail the failure of closure for justification (and therefore knowledge), all the same, it would be cause for concern. We would need to appeal to further elements of the concept of justification in order to show how justification could have the closure property even though a necessary condition of it didn't.

We therefore seek to show that our condition is closed under modus ponens, or in other words, that the following argument is valid:<sup>23</sup>

- (1<sup>'''</sup>) S is rational to prefer as if p.  
 (2<sup>'''</sup>) S is rational to prefer as if (p→q).  
 Therefore,  
 (3<sup>'''</sup>) S is rational to prefer as if q.

Our proof uses the following definitions:

- D1: S is rational to prefer X to Y, given p =<sub>def</sub> S is rational to prefer X&p to Y&p.  
 D2: S is rational to prefer as if p =<sub>def</sub> for any states of affairs X and Y, S is rational to prefer X to Y, given p, iff S is rational to prefer X to Y, in fact.

- |                                                 |                                     |
|-------------------------------------------------|-------------------------------------|
| 1. S is rational to prefer as if p.             | Assumption                          |
| 2. S is rational to prefer as if (p→q).         | Assumption                          |
| 3. S is rational to prefer A to B.              | Assumption for<br>Conditional Proof |
| 4. S is rational to prefer A to B, given p.     | 1,3,D2                              |
| 5. S is rational to prefer A&p to B&p.          | 4,D1                                |
| 6. S is rational to prefer A&q&p to B&q&p.      | See subproof below                  |
| 7. S is rational to prefer A&q to B&q, given p. | 6,D1                                |
| 8. S is rational to prefer A&q to B&q           | 1,7,D2                              |
| 9. S is rational to prefer A to B, given q.     | 8,D1                                |

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<sup>22</sup> We extend special thanks to Robert Howell for making us recognize the need for this demonstration.

<sup>23</sup> Here as before we impose our restriction on S/p/A/B combinations.

10. If S is rational to prefer A to B then, S is rational to prefer A to B, given q.	3,9
11. S is rational to prefer A to B, given q.	Assumption for Conditional Proof
12. S is rational to prefer A&q to B&q.	11,D1
13. S is rational to prefer A&q to B&q, given p.	1,12,D2
14. S is rational to prefer A&q&p to B&q&p.	13,D1
15. S is rational to prefer A&p to B&p.	See subproof below
16. S is rational to prefer A to B, given p.	15,D1
17. S is rational to prefer A to B.	1,16,D2
18. If S is rational to prefer A to B, given q, then S is rational to prefer A to B.	11,17
19. S is rational to prefer A to B, given q, iff S is rational to prefer A to B.	10,18
20. S is rational to prefer as if q.	19,D2

We offer the following justifications for steps 6 and 15.

Justification for 6:

5.1 S is rational to prefer A&p to B&p, given $(p \rightarrow q)$ .	2,5,D2
5.2 S is rational to prefer A&p& $(p \rightarrow q)$ to B&p& $(p \rightarrow q)$ .	5.1,D1
5.3 $A \& q \& p \& (p \rightarrow q) = A \& p \& (p \rightarrow q)$ and $B \& q \& p \& (p \rightarrow q) = B \& p \& (p \rightarrow q)$ .	Statements of Pro- position Identity
5.4 S is rational to prefer A&q&p& $(p \rightarrow q)$ to B&q&p& $(p \rightarrow q)$ .	5.2,5.3
5.5 S is rational to prefer A&q&p to B&q&p, given $(p \rightarrow q)$ .	5.4,D1
6. S is rational to prefer A&q&p to B&q&p.	2,5.5,D2

Justification for 15:

14.1 S is rational to prefer A&q&p to B&q&p, given $(p \rightarrow q)$ .	2,14,D2
14.2 S is rational to prefer A&q&p& $(p \rightarrow q)$ to B&q&p& $(p \rightarrow q)$	14.1,D1

14.3	$A \& p \& (p \rightarrow q) = A \& p \& (p \rightarrow q)$ and $B \& p \& (p \rightarrow q) = B \& p \& (p \rightarrow q)$ .	Statements of Pro- position Identity
14.4	S is rational to prefer $A \& p \& (p \rightarrow q)$ to $B \& p \& (p \rightarrow q)$ .	14.2, 14.3
14.5	S is rational to prefer $A \& p$ to $B \& p$ , given $(p \rightarrow q)$ .	14.4, D1
15.	S is rational to prefer $A \& p$ to $B \& p$ .	14.5, D2

Steps 5.3 and 14.3 are inessential. If the relevant propositions aren't identical, then they are trivially equivalent, in which case it is rational to be indifferent between them. This is enough to secure 5.4 and 14.4.

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