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Abstract If a subject has a true belief, and she has good evidence for it, and there's no evidence against it, why should it matter if she doesn't believe *on the basis of* the good available evidence? After all, properly based beliefs are no likelier to be true than their corresponding improperly based beliefs, as long as the subject possesses the same good evidence in both cases. And yet it clearly does matter. The aim of this paper is to explain why, and in the process delineate a species of epistemic luck that has hitherto gone unnoticed—what we call *propositional epistemic luck*—but which we claim is crucial to accounting for the importance of proper basing. As we will see, in order to understand why this type of epistemic luck is malignant, we also need to reflect on the relationship between epistemic luck and epistemic risk.

1 Propositional epistemic luck

Helen's roommate Joe has told her that he has bought ice cream and put it in the freezer. Helen therefore has good evidence available to her for the truth of the proposition that there's ice cream in her freezer, and she believes that she has ice cream in the freezer. Joe wasn't lying; he really did put ice cream in the freezer. However, Helen doesn't

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hold her belief on the basis of the good evidence provided by Joe's assertion. Rather, she holds her belief because she has an irrational fear of living in a world where her freezer contains no ice cream. Every morning, Helen recites to herself, "there is ice cream in my freezer. I have ice cream. I need fear no empty ice cream container." After reciting her ice cream litany every morning, she always manages to induce in herself a feeling of confidence in the truth of the proposition that she really does have ice cream. Moreover, Helen never takes anyone's word for it that there is ice cream in the freezer, for fear that trusting anyone when they say that there is ice cream will also lead her to trust them when they say that there is no ice cream in the freezer. Helen recognizes that testimony from roommates about household items is generally a good source of evidence, but she refuses to regard such testimony as good enough reason for believing in cases where the testimony is about ice cream.

Helen is a partially irrational subject, but not an impossible one. She has good evidence available for the proposition that there is ice cream in the freezer, in the form of Joe's testimony, and she is aware that it is good evidence, but she does not regard the evidence as sufficient reason for believing that there is ice cream in the freezer. So, as most epistemologists would say, Helen has *propositional* justification for her belief: the proposition that there is ice cream in the freezer is one for which she possesses good reasons. But what she lacks is *doxastic* justification: her belief is not held in the right way, because it's not held on the basis of her good evidence. The evidence plays no causal role in producing or sustaining her belief; it is neither causally necessary nor sufficient for her belief; it does not overdetermine her belief; it does not even *pseudo*-overdetermine her belief. And the utter causal irrelevance of the good available evidence to Helen's holding of her belief seems to *matter*; it intuitively seems to be an important epistemic shortcoming on Helen's part.

But one might reasonably wonder why this *should* matter.[1] If Helen has a true belief, and she has good evidence for it, and there's no evidence against it, why should it matter if she doesn't believe on the basis of the good available evidence? After all, properly based beliefs are no likelier to be true than their corresponding improperly based beliefs, as long as the subject possesses the same good evidence in both cases. So although we do generally want to avoid having false beliefs, the desire to rule out false beliefs doesn't support the proper basing requirement on doxastic justification.

Of course the sociological fact is that almost all epistemologists think that in order to be fully justified, beliefs must be held on the basis of good available reasons (for justification-internalists), or properly/reliably caused by justifying considerations (for justification-externalists). But if we can have good reasons for our beliefs whether or not we hold them on the basis of our good reasons, then what justificational difference should it make if our reasons fail to be causally or counterfactually active in support of our beliefs?[2]

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[1] Indeed, Silva (2015) argues that it *doesn't* matter. For Silva, if a belief is propositionally justified, then it's doxastically justified, too. See Oliveira (2015) for a reply to Silva.

[2] See Korcz (1997) for a survey of work on the basing relation—i.e., the relation which obtains between beliefs and the reasons for which they are held. For some more recent approaches which take a counterfactual and/or a causal approach to this relation, see Turri (2011), Evans (2013), McCain (2012), and Bondy (2015).

This is a worthwhile question to ask, and one of the aims of this paper is to propose an answer. We claim that the reason why we should care about holding beliefs on the basis of good reasons or factors—or one fundamental reason at any rate—is connected with an interesting kind of epistemic luck.

Standard treatments of epistemic luck in the literature have to do with whether true beliefs are true as a mere matter of luck. In pre-Gettier approaches to understanding knowledge, it was recognized that true beliefs which are true as a mere matter of luck cannot count as knowledge, and so it was generally accepted that some sort of justification condition must be met in order for a belief to count as knowledge.[3] Then Gettier showed that justification does not always rule out having beliefs that are true as a mere matter of luck. In any ordinary Gettier case, although the subject has a justified true belief, the truth of the belief seems to be just lucky, and so we intuitively deny that the subjects in such cases have knowledge. One candidate explanation of the importance of luck in the denial of knowledge in Gettier cases is that knowledge is supposed to provide us with an appropriate guide for getting around in the world in a reliable way, and lucky guides aren't really reliable guides. So because justification doesn't rule out lucky true belief, justified true beliefs aren't always known.[4]

Still, having doxastic justification—having beliefs which are properly held on the basis of good reasons—does seem to rule out a kind of epistemic luck, which we can call *propositional epistemic luck*. The basic idea is this:

(PEL) S's belief B is propositionally epistemically lucky iff S has a good reason R (and therefore, propositional justification) for B, but it is only a matter of luck that she does.

PEL is the basic concept of propositional epistemic luck. It is *propositional* epistemic luck because it is only a matter of luck that the subject has propositional justification for a belief that she holds. All cases of propositional epistemic luck are cases where a subject has a belief which is propositionally but not doxastically justified (though, as we will shortly see, not all cases of beliefs which enjoy propositional but not doxastic justification will involve propositional epistemic luck).

There are two ways in which a belief that is propositionally justified can fail to be doxastically justified: it can be held on the basis of a bad reason, or it can be held on the basis of a good reason but in a bad way. Somewhat more precisely:

S's belief B is propositionally but not doxastically justified iff *S* holds B only on the basis of a set of reasons $R1 = \{R1_1, R1_2, \ldots R1_n\}$, and either:
(1) $R1$ is not a good set of reasons for holding B, and

(2) S has available to her another set of reasons $R2 = \{R2_1, \ldots R2_n\}$ which are good reasons for holding B;

or

(3) $R1$ is a good set of reasons, and

(4) S arrives at B on the basis of $R1$ in an improper way.

In many cases where either conditions (1) and (2) or conditions (3) and (4) obtain, S will be propositionally epistemically lucky. Let's begin by considering cases where conditions (1) and (2) obtain. We'll come back to cases where (3) and (4) obtain at the end of this section.

In a wide range of cases where S believes for bad reasons but has good reasons available, S is just lucky to have good reasons available, because it could easily have been the case that S would have held the same belief in the same way but lacked good reasons for it. By contrast, when S has doxastic justification for B, it is not the case that S could easily have held B in the same way as in the actual world and lacked any good reasons for it.

The claim that a subject is lucky to be such that she possesses good reasons for her belief B in many cases where B is held on the basis of bad reasons, but where good reasons are available, can be spelled out in modal terms. According to the modal account of luck, an event E is lucky (whether good or bad luck) if and only if E could easily enough have failed to happen. That is, E is lucky just in case, given the relevant initial conditions before E occurs, there is a significant set of close possible worlds where the event doesn't happen.[5] For example, if Shaun buys a ticket in the Heart and Stroke Lottery, in Ontario, Canada, and he does not win anything, his not winning is at least somewhat unlucky for Shaun, because there is a significant set of close worlds in which Shaun buys a ticket and he wins something. (The odds of winning a prize in the Heart and Stroke Lottery are about 1 in 20.) There is also a set of close worlds in which Shaun buys no ticket at all, but for the purpose of determining whether Shaun's failure to win counts as a lucky event, we need only to consider the close worlds in which the relevant initial conditions obtain, and the relevant initial conditions include Shaun's buying of the ticket.

Similarly, we can see that in the case of Helen that we encountered at the beginning of this paper, the modal account of luck entails that Helen's possessing good reasons for her belief that there is ice cream in her freezer is lucky. The relevant initial conditions for the event are the way that Helen formed her belief—that is, the basis upon which the belief is held, and the way in which Helen forms her belief on that basis. Now, Helen explicitly ignores testimonial evidence about whether there is ice cream in the freezer; she forms her belief instead by a process of self-indoctrination. So, to

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[5] The modal account of luck is due to Pritchard—see especially Pritchard (2005a, Chap. 5; 2014) and Pritchard and Smith (2004). Note that most commentators add a further *significance condition* in their accounts of luck, so that E is not lucky unless it is somehow significant for a subject (e.g., Pritchard 2005a; Coffman 2007; Levy 2009), though Steglich-Petersen (2010) leaves this condition out, and Pritchard (2014) explicitly rejects it as a necessary condition on luck. For our purpose here it makes no difference whether or not we include the significance condition in the account of luck, because it's always at least to some degree significant for a subject whether she possesses good reasons for her beliefs, so no case of propositional luck would fail to pass an appropriate significance condition. Whether the cases of what we are calling propositional luck really are cases of luck thus hinges only the modal condition.

determine whether Helen is just lucky to possess good reasons for her belief, we need to look at whether there are close worlds in which Helen inculcates in herself the belief that there is ice cream in the freezer, but where she possesses no good reasons for thinking so. And of course, there are many such worlds: there are worlds where her roommate doesn't put any ice cream in the freezer, and he therefore doesn't tell her that he put ice cream in the freezer; there are worlds where he does put ice cream in the freezer, but he forgets to tell Helen about it; and so on. So Helen is just lucky to be in possession of good reasons for her belief that there's ice cream in the freezer.

So that is the basic kind of case of propositional epistemic luck, and the way to account for it in modal terms. There are a couple of ways in which the account needs to be clarified before moving on, though.

First of all, it's possible to construct cases where a subject possesses good reasons for her belief, and where she believes instead on the basis of bad reasons, but where some feature of the case guarantees that good reasons for the belief are present in all close worlds where the relevant initial conditions obtain. For example, think again of Helen and her ice-cream-belief, but now imagine also that Helen's roommate Joe has a pathological desire to buy ice cream every day, and he is always so proud of his purchases that every morning he tells Helen that he's put ice cream in the freezer. Given this twist to the case, there aren't any very close worlds in which Helen forms the belief that there is ice cream in the freezer, via her process of self-indoctrination, where there are no good reasons available for her belief.

Cases like this illustrate that subjects who have propositionally but not doxastically justified beliefs aren't always lucky to have good reasons available, since one's possession of good reasons must be at least somewhat modally fragile in order for it to be lucky that one possesses good reasons. So the claim that, unless our beliefs are doxastically justified, we will be (at best) lucky to have good reasons available for our beliefs, is false. This might seem to undermine the argument for the importance of doxastic justification on offer here.

But cases like these don't, in fact, undermine the argument on offer. For the claim is only that a wide range of cases of propositionally but not doxastically justified beliefs involve propositional epistemic luck, and that it is therefore good to be able to rule out that one is in such a case. In the initial presentation of the case of Helen, at the beginning of the paper, Helen is propositionally epistemically lucky in her possession of good reasons for her belief about her ice cream. Many other cases of the kind that epistemologists discuss in distinguishing propositional from doxastic justification are like that. For example, here is one from John Turri:

> Imagine two jurors, Miss Knowit and Miss Not, deliberating about the case of Mr. Mansour. Both jurors have paid close attention throughout the trial. As a result, both have good reason to believe that Mansour is guilty. Each juror goes on to form the belief that Mansour is guilty, which he in fact is. Miss Knowit believes he's guilty because of the evidence presented during the trial. Miss Not believes he's guilty because he looks suspicious. (2010, p. 312)

Miss Knowit and Miss Not both possess good reasons for their belief that Mansour is guilty, but only Miss Knowit's belief is doxastically justified, since Miss Not

believes for a bad reason. And it's clear that although Miss Not possesses good reasons for believing that Mansour is guilty, she is just lucky to possess those reasons. For there are close worlds where she believes that Mansour is guilty, on the basis of his suspicious look, but where the prosecution didn't present such a convincing case, or where Miss Not simply didn't pay very close attention during the trial, and so on.[6]

Again, not all cases of propositionally justified beliefs that lack doxastic justification will be propositionally lucky. Nevertheless, because there are many such cases, it is good to be able to rule out that we are in them. (We come back to this point below, where we explore the relevance of *epistemic risk* to this topic). And having doxastic justification for our beliefs does rule that out: given that S has a doxastically justified belief B in the actual world, she will possess good reasons for her belief in all close worlds in which S holds B in the same way as in the actual world.

The second important clarification has to do with the fact that beliefs can be held on good bases but in bad ways. This brings us back to conditions (3) and (4) in the explanation of the difference between propositional and doxastic justification, which we saw earlier in this section. It's possible for *S* to hold B on the basis of R, where R is a good reason in the actual world, but where the method by which *S* comes to have B on the basis of R isn't sensitive to the goodness of reasons, so that there are close worlds in which R is not a good reason for B, but where *S* continues to hold B on the basis of R.[7] In such cases, where *S*'s holding her belief on the basis of R is modally robust, but the goodness of R as a reason for B is modally fragile, *S* lacks doxastic justification, in spite of the fact that she holds her belief on the basis of a good reason.

Of course, if the goodness of R as a reason for B is modally fragile, but the method by which *S* comes to hold B on the basis of R in the actual world is sensitive to the goodness of reasons, then in those close worlds where R is not a good reason for B, *S* doesn't hold B on the basis of R. In cases like this, B can be doxastically justified on the basis of R.

The point of all this is that, in thinking about the kind of luck which is ruled out by the possession of doxastically justified beliefs, we need to think not just about the bases upon which beliefs are held, but also about the way in which beliefs are held on their bases. So the core idea at hand is that we get a case of propositional epistemic luck when *S* has good reasons available for B, but *S* could easily have held B and had no good reasons available for it. There are two ways such cases can arise: (1) they can arise when *S* holds B on the basis of a bad set of reasons $R1$, but where there is a good set of reasons $R2$ available, and $R2$ is not available in a set of close worlds in which *S* holds B. And (2) they can arise when *S* holds B on the basis of a good set of reasons *R* but in a bad way, so that there is a close set of worlds where *R* is not a good set of

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[6] Turri does not flesh out the case in this way, but we can easily imagine ways to fill in the case that guarantee that there are close worlds where Miss Not fails to possess the good reasons that she possesses in the actual world. For instance, we might imagine that the prosecuting attorney has been sleeping poorly throughout the duration of the trial, and he has only narrowly avoided botching the case.

[7] Thanks to J. Adam Carter for pressing us on this point.

reasons for B, but where *S* holds B on the basis of R anyway.[8] In such cases, it's just lucky that *S* has good reasons available for a belief which he would have held anyway.

2 Propositional epistemic luck and epistemic risk

We noted earlier that the propositional epistemic luck we have identified doesn't always have the modal profile that we would expect when it comes to a case of epistemic luck. In particular, it is consistent with the presence of propositional epistemic luck that in fact good reasons are available for the subject's belief not just in the actual world, but also across all relevant close possible worlds. Nonetheless, as we have noted, in at least a wide range of cases where beliefs are propositionally but not doxastically justified, the beliefs will be propositionally lucky, and so propositional luck is something that we want to be sure is eliminated from our beliefs—hence our desire to have beliefs that are doxastically, and not just propositionally, justified.

One might worry about this rationale, however. In normal cases of epistemic luck, after all, such as the kind of *veritic epistemic luck* that undermines knowledge in Gettier-style cases, it is *always* the case that a belief that is subject to such luck has the relevant modal profile (i.e., that there are close possible worlds where a belief, so formed, is false). Should we be worried about this disanalogy between propositional epistemic luck and standard kinds of epistemic luck? We think that there is a way to explain why this disanalogy ought not to concern us. The crucial point to recognise is that we care about the elimination of malignant varieties of epistemic luck? i.e., those which threaten knowledge? precisely because they represent high levels of *epistemic risk*.[9]

In order to see this point, note first the close connections between luck and risk. As noted above, lucky events have a particular modal profile—roughly, they are events which obtain, but which could very easily have not obtained. Risky events also have a similar modal profile—to say that a certain activity, such as rally driving, is risky, is to say that if one engages in such an activity then a certain unwanted outcome, such as a car accident, could easily occur. There are some important differences between the notions of luck and risk, however, and two are particularly salient for our purposes. First, when we talk of risk we have a specific 'risk event' in mind, which is the unwanted result of whatever activity is being undertaken.[10] So, for example, when it comes to rally driving, the risk event is a car accident (or, perhaps, a fatal car accident—as one varies the target risk event, so one alters one's judgement of risk). Second, lucky events

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[8] Note that the claim here is just that propositional luck *can* arise when *S* holds B on the basis of a good reason R but in a bad way, not that it always will. As in the case where *S* holds B on the basis of bad reasons but where there are good reasons available, we can construct exceptional cases of this second kind too. These would be cases where *S* holds B on the basis of a good reason R but in a bad way, but where there are no close worlds in which R fails to be a good reason for B. In such cases, B will be propositionally but not doxastically justified, but B will not be propositionally lucky. Still, the fact that such cases can be constructed does not rule out the importance of being able to rule that one is in a propositionally lucky case. And having doxastic justification for our beliefs does just that.

[9] Not all forms of epistemic luck are malignant in this sense; some are benign. For more on this point, see Pritchard (2005a, *passim)*.

[10] Risk doesn't only concern activities, of course. We focus on activities merely for ease of expression.

can be positive or negative—good luck, or bad luck.[11] Risk, however, only concerns *unwanted* outcomes—*viz.*, the modal closeness of the target risk event—and hence is always negative.[12]

The reason why we are concerned to eliminate certain kinds of epistemic luck is because they represent epistemic risks—i.e., it is the notion of risk which is fundamental here. Take veritic epistemic luck, for example. Knowledge is incompatible with such luck since a true belief that is veritically epistemically lucky could very easily have been false, and hence the target risk event—that of having a false belief—is modally close. This means that from an epistemic point of view this belief, even though true, is high-risk.[13]

The same reasoning applies to propositional epistemic luck, albeit in a more indirect fashion. The epistemic risk involved in veritic epistemic luck is straightforward in that it is in the nature of such luck that the target risk event (i.e., false belief) is modally close. This is not so with propositional epistemic luck, since although the target risk event—in this case, the absence of a supporting reason for the belief in question—is often modally close, it isn't guaranteed to always be modally close. Nonetheless, we can still capture the epistemic undesirability of propositional epistemic luck in terms of epistemic risk.

In order to do this, we need to take into account a distinction between what we might call 'objective' as opposed to 'subjective' risk. Imagine that one is a rally driver and one wishes to evaluate the riskiness of this activity relative to the risk event of a serious car accident. Given the information that one has to go on, one would likely judge that the possibility of the risk event is modally close, and hence that this is a high-risk activity. In all likelihood, this subjective judgement about risk may well match up with the facts, in that this activity is as high-risk as one judges it to be. Crucially, however, this needn't be the case. For example, it could be that unbeknownst to one there is a guardian angel out there who is devoted to keeping one safe, and who would ensure that even when rally driving no harm could come to one. Objectively, then, there is no risk involved in rally driving, even though one is quite right to subjectively judge, given that one is unaware of the guardian angel, that it is high-risk.

If we apply this distinction to epistemic risk, we find that veritic epistemic luck is in its nature always objectively epistemically risky, since it entails that the target risk event of a false belief is modally close. Clearly one should always try to avoid objective epistemic risk of this kind. In contrast, propositional epistemic risk is often but not always objectively risky, since in those cases where reasons for belief are modally stable across close worlds there will be no objective epistemic risk. Even so, given that many such case involves objective epistemic risk, and that one has no reason for thinking that one is in a case where the availability of good reasons is modally stable, then from a subjective point of view one ought to judge that there is high epistemic risk involved even in cases where objectively it isn't, just as the rally driver with the

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[11] And perhaps even sometimes a bit of both, as when one is lucky to survive a car accident, but loses a limb in the crash.

[12] For a detailed account of the nature of risk, and the relationship between the notions of risk and luck, see Pritchard (2015).

[13] For more on the nature of epistemic risk, and in particular how it relates to veritic epistemic luck, see Pritchard (forthcoming).

guardian angel ought to judge that rally driving is high risk. We can thus account for the epistemic undesirability of propositional epistemic luck in terms of the elimination of epistemic risk even while granting that sometimes there is no objective epistemic risk at issue as regards this kind of epistemic luck.[14]

What about a case where the availability of good reasons for belief is modally stable, and where one is fully aware of the relevant facts? For example, imagine a subject who recognises that there are great reasons for believing a certain proposition, and that moreover there is a modal stability to such reasons, in that they would be present across all close worlds where she believes the target proposition. Even so, she self-consciously bases her (true) belief on poor reasons.[15] It is not clear to us that such cases are even conceptually possible, since it is difficult to see how the agent in this scenario is even able to regard such rational support as being robustly available for the target proposition while at the same time completely screening it out when it comes to the basis for her belief. But suppose we grant the case, for the sake of argument.

We concede that in such a case there is no epistemic luck in play and, relatedly, no epistemic risk either. In particular, there is obviously no close possible world where the risk event relevant for propositional epistemic luck obtains—i.e., of the subject lacking supporting reasons for the target belief. Nonetheless, we think most would agree that this is not an instance of knowledge. This isn't a problem for our proposal, however, since the presence of malignant epistemic luck is not the only way in which a belief could fail to be knowledge. Another way in which a belief could fail to be knowledge is because its success fails to manifest the cognitive agency of the subject. Knowledge, after all, must involve some degree of manifestation of cognitive agency—in the sense that one's cognitive success must be at least partially attributable to that agency—if it is to be *bona fide*.[16] Insofar as we can make sense of the case just described at all, however, then it is explicit to the scenario as depicted that the subject's cognitive success has nothing at all to do with her exercise of cognitive agency, and everything to do with a perverse—from a purely epistemic point of view at any rate—desire to hold the target belief on a poor epistemic basis. Hence it follows that one doesn't need to appeal to the notions of epistemic luck and epistemic risk to explain what is going awry in this case.

3 Concluding remarks

We have argued that in order to explain why proper basing is required for epistemic justification, we need to delineate a new species of epistemic luck that has hitherto gone unrecognised—*propositional epistemic luck*. Moreover, we have seen that we

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[14] This distinction between objective and subjective varieties of epistemic risk is closely related to the distinction between veritic epistemic luck and reflective epistemic luck that is drawn in Pritchard (2005a, b).

[15] This kind of case is similar to what are referred to in the literature on basing as "gypsy lawyer" cases. But there is an important difference: whereas in this case, the subject recognizes that the good reasons will be present in all close worlds, in the gypsy lawyer case, the lawyer recognizes that the good reasons will *not* be present across all close worlds. The gypsy lawyer case is originally due to Lehrer (1971). For two helpful discussions of this case, see Kvanvig (2003) and McCain (2014, Chap. 5).

[16] For more on the idea that knowledge demands at least a minimal degree of cognitive agency on the part of the subject—what is sometimes called the *ability intuition*—see Pritchard et al. (2010, Chap. 3) and Pritchard (2012).

can account for why this species of epistemic luck is malignant by appealing to the notion of epistemic risk. The result is a completely novel explanation of why we should care about proper basing, the importance of which has thus far been largely taken for granted in the epistemological literature.

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