

What Epistemic Reasons Are For: Against the Belief–Sandwich Distinction

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Abstract

The standard view says that epistemic normativity is normativity of belief. If you're an evidentialist, for example, you'll think that all epistemic reasons are reasons to *believe* what your evidence supports. Here we present a line of argument that pushes back against this standard view. If the argument is right, there are epistemic reasons for things other than belief. The argument starts with evidentialist commitments and proceeds by a series of cases, each containing a reason. As the cases progress, the reasons change from counting in favor of things like having a belief to things like performing ordinary actions. We argue that each of those reasons is epistemic. If the argument succeeds, we should think there are epistemic reasons to consider hypotheses, conduct thought and physical experiments, extend one's evidence, and perform mundane tasks like eating a sandwich, just as there are epistemic reasons to believe what one's evidence supports.

1 *"Belief, though, can't aim literally; it's we who aim."*

At the beginning of "Rational Credence and the Value of Truth," Gibbard (2007, p. 143) says "Belief aims at truth – or so it is said, Belief, though, can't aim literally; it's we who aim." Gibbard then argues that to explain that feature of epistemic rationality, we must see practical guidance value as playing an important role in what makes beliefs epistemically rational. Here we extend Gibbard's idea that what's epistemically required of us can be understood in terms of what's involved in an agent aiming for truth.

According to the standard view, epistemic normativity only governs belief. Put in terms of reasons, the claim is that all epistemic reasons are reasons to believe:

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$E \leftrightarrow B$ Something is an epistemic reason if and only if it is a reason (of the right kind)¹ to believe.

$E \leftrightarrow B$ is incompatible there being epistemic reasons to consider hypotheses, draw helpful diagrams, request books related to one's research from the library, or look at birds in the sky to learn about birds.² But, inasmuch as we see epistemic normativity as the kind of normativity that governs the project of promoting truth in our beliefs, we should think there can be epistemic reasons to do those kinds of things, since each of them can be an important part of believing the truth. Here we'll show that there is an intuitively compelling line of argument for thinking exactly that. We'll present a series of cases, each of which contains a reason. As the series progresses, what the reasons count in favor of becomes progressively more like doing an action than having a belief. Despite that, we'll argue that we should see each reason as an epistemic reason. If our argument succeeds, it will follow that just as we can have epistemic reasons to believe what our evidence supports, we can have epistemic reasons to eat a sandwich.

There is already a large literature on $E \leftrightarrow B$, but the focus of that literature is primarily on whether there are practical reasons for belief, i.e. whether the right to left direction of $E \leftrightarrow B$ is true (see, for example, Leary 2017, Markovits 2014, Reisner 2009, Rinard 2015). We focus on the opposite direction, i.e. whether there are epistemic reasons for things other than belief. Our claims will be independent of whether there might be practical reasons to believe.

We take it that our argument would uninterestingly beg the question if it started by assuming a truth-loving consequentialist epistemology like the one endorsed by Goldman (1999) or Singer (2018). If there are epistemic reasons to do anything that results in maximizing the number of true beliefs we have, it would immediately follow that there are epistemic reasons to consider certain hypotheses, do certain calculations, set up scientific and educational institutions in certain ways, and drink coffees before certain soporific talks (assuming all of those things promote having more true beliefs).³

¹One version of this view takes practical reasons to be the "wrong kind of reason" to believe, and in turn, treats epistemic reasons as the only "right kind of reason" to believe (e.g. Hieronymi 2005, 2013, whereas another version takes putative practical reasons to believe to be actually practical reasons to bring belief about (e.g. Kelly 2002, p. 171, Shah 2006, p. 498, Parfit 2001).

²The standard view is a background assumption in a lot of work in epistemology from the last century. The view is argued for (or at least explicitly assumed) by Berker (2017) who argues that "epistemic and practical normativity are individuated by their objects of assessment: the normative assessment of belief (and other doxastic attitudes) is epistemic normativity, and the normative assessment of action is practical normativity" and by Turri (2009) and Raz (2009) who treat the standard view as an uncontroversial assumption. For more examples, see Sylvan (2016), who reviews theories of epistemic reasons where the assumption is that these are reasons for doxastic attitudes (e.g., one view of epistemic reasons is "the fact that p is a reason to have doxastic attitude D towards q").

³For the same reasons, we won't start with a similar picture offered by Kornblith (1983) where epistemically valuable actions and epistemically valid reasoning are seen as reflecting two different

Instead, we'll take as our starting point a traditional picture of epistemic normativity that might lead someone to accept $E \leftrightarrow B$. According to *evidentialism*, epistemic normativity is about having the beliefs that are supported by one's evidence. On this view, all and only pieces of evidence are epistemic reasons. And because what evidence does is stand in support relations to beliefs, proponents of this view might conclude that all epistemic reasons are reasons to believe. Often, evidentialists, like Conee and Feldman (2004, 2000, 1985), make this conclusion explicit. We'll assume that our reader will grant the evidentialist starting intuition, i.e. epistemic reasons spring from evidence and that we have epistemic reasons to believe what our evidence supports - though evidence may be understood in an internalist or externalist manner. What our argument will show is that someone who accepts those claims, along with a few other plausible claims about how reasons work, should think there are epistemic reasons for things other than belief.

Below we'll put the argument in terms of reasons, but we hope that it's clear that the force of the argument is neutral on the metanormative question of whether reasons, rationality, 'ought's, or something else is normatively fundamental. What we hope to show, put in more ecumenical terms, is epistemic normativity is not normativity of belief. Epistemic norms apply to mental and physical 'doings' just as they do to beliefs.

Finally, we won't consider objections to our arguments below that appeal to worries about whether we can have reasons for things we cannot control. The cases we consider below are designed to be at most as controversial in this respect as paradigmatic cases of belief formation. The literature on doxastic voluntarism is well-trodden with arguments on all sides of the issue. Our starting point assumes that there are some epistemic reasons (reasons to believe what one's evidence supports), and the reader may choose their preferred way to handle objections to that on the basis of whether we control our beliefs.

With those clarifications in mind, we turn to the first step in the argument.

2 *Epistemic Reasons to Not Believe*

The first step in the argument should be uncontroversial. Evidentialism says that we have epistemic reasons to *believe* what our evidence supports. A ham-fisted reading of that entails that all epistemic reasons must be reasons for beliefs, not other doxastic attitudes. But it seems like we can also have reasons to suspend belief:

MARATHON WITH BROKEN WATCH You're running a marathon. Based on using your watch during training, you thought that it would take a little over 4 hours to finish. But, you just learned that the watch was broken the whole

normative perspectives. We'll be concerned with a single notion of epistemic normativity that governs both belief and action.

time. It incorrectly reported your training times, and you're not sure about the magnitude or direction of the errors.

In this case, once you learn the watch is broken, your evidence no longer supports believing anything about whether you'll finish in 4 hours, since the fact that the watch was broken defeats any reason you have otherwise had to believe anything else. So it looks like you ought to suspend belief about whether you'll finish in 4 hours. Assuming one ought to have a doxastic state only if one has a reason to have it, there must be epistemic reasons to suspend belief.⁴

Of course, it's easy for our opponent to accept this by modifying their view to say that we have epistemic reasons to have whatever doxastic states are supported by our evidence, where suspension of belief is seen as a kind of doxastic state. The next case puts pressure on this refined view.

3 *Epistemic Reasons to Consider*

Consider this case:

COMPETING SCIENTIFIC THEORIES You're a chemist, and you have a long-standing dispute over a theoretical postulate with your colleague Tirrell. You both agree that the results of a titration experiment will shine light on your dispute. After repeating the titration multiple times, you discover that, in fact, the volume of the titrant is 50 mL, which is a result neither of you expected. You and Tirrell are both puzzled by the outcome. You're discussing the result with Tirrell in the department lounge when your colleague Jorrie, who was not previously a party to the conversation, interjects with what appears to be an elegant and plausible explanation of the result.

In this case, we'll argue that you have an epistemic reason to consider Jorrie's proposed explanation⁵. Of course, the claim isn't that you're obliged to accept Jorrie's proposal, since the proposal might be implausible on other grounds. It might even be the case that *all (epistemic) things considered*, you shouldn't consider the proposal; perhaps Jorrie is widely regarded as a crank who ought not be listened to. Nonetheless, the fact that Jorrie proposed a simple, elegant, and plausible explanation of the otherwise puzzling result is *a reason* to consider it, we'll argue.

⁴What should the evidentialist think this reason is? It's natural to think that the fact that the watch is broken is itself that reason, but there are many other options. The reason might instead be a higher-order reason arising from the lack of first-order reasons to believe, or it might be a standing reason that one always has to suspend when one doesn't have sufficient reason to have a certain belief. What's important though is that there must be some epistemic reason to *not* believe or to suspend belief.

⁵This case and the cases below begin by stipulating that the agent does have a doxastic attitude about the proposition in question. We do this to avoid objections from evidentialists, like Feldman, who countenance reasons to believe what one's evidence supports only if the agent has or is going to have a doxastic state about the proposition.

The defender of the standard view will likely think that any reason to consider is practical and not epistemic. One reason to think it's practical is that, in science institutions, financial and professional incentives are often structured so as to promote epistemically good outcomes. So it's no surprise that you'd have a practical reason that's doing intuitively 'epistemic' work.

We don't think the reason to consider Jorrie's hypothesis can plausibly be construed as merely practical though. To see why, consider cases in which the scientists' practical and epistemic reasons come apart. Here is an extension of COMPETING SCIENTIFIC THEORIES:

IMPRACTICAL COMPETING SCIENTIFIC THEORIES Unlike Tirrell, you do not do research in the area of the anomalous result, and except for your conversations with Tirrell, the explanation of that result will never have any practical import for you. Moreover, you're giving an important talk tomorrow on your own research. If you consider Jorrie's explanation of the anomalous result, you'll begin to doubt your ability to do science well and you'll perform badly at the talk.

In this case, your practical reasons overwhelmingly recommend ignoring Jorrie's proposed explanation. But, suppose that just before you leave for your talk tomorrow, we ask you what might explain the anomalous result. If you don't have good reason to ignore it (like by having considered it and rejected it), we can criticize you for disregarding Jorrie's proposal. For example, if you said "I literally have no idea about what might explain it," we can reasonably expect that you must have rejected Jorrie's explanation for good cause. What is the basis of the negative evaluation we'd give if you simply ignored Jorrie? It can't be a failure to be practically rational (because you're being practically rational). It also can't be an interpersonal failure, like a failure to be nice to one's colleague, since we can additionally stipulate that no one will find out that you didn't consider Jorrie's hypothesis or that the stakes are high enough to warrant violating such a norm (like if the question were posed by authorities in a murder investigation). Excluding those, the most natural conception of the criticism is that it's epistemic. What the criticism exposes is that if you fail to consider Jorrie's proposal, you're making an epistemic mistake. That mistake is a failure to comply with your epistemic reason to consider Jorrie's proposal.

Another way to argue that the criticism is epistemic and not practical is by looking at the types of agent-impartial features it depends on. Notice that any agent who has the same beliefs and evidence as you is subject to the same criticism when they fail to consider Jorrie's explanation without having a good reason not to. The criticism depends only on the agent sharing those epistemic features with you. Importantly, it doesn't depend on the agent's other attitudes, such as their wants or needs⁶. Since the practical reasons of agents are grounded in that second class of

⁶Likewise, one version of practical normativity has it that practical reasons come from some form

things, the criticism here can't be practical. Instead, the natural conclusion here is that this is an epistemic reason to consider.

Finally we can see that conceiving of the criticism as epistemic follows naturally from our Gibbardian starting picture of epistemic normativity. Because it is we who aim for truth, not our beliefs, Gibbard (2007, p. 146) says that a "minimal test" for whether a method of forming beliefs is epistemically rational is whether "if one forms beliefs that way, it will be as if one were, by one's own lights, forming beliefs voluntarily with the aim of believing truths and not falsehoods." Supposedly, you believe that the puzzling titration result stands in need of explanation. If so, then whatever method of forming beliefs that resulted in your ignoring or rejecting Jorrie's explanation without good reason couldn't be one that by your lights was aiming at truth in your beliefs, since Jorrie's explanation was plausible, elegant, and the only available explanation of the result you had. So if epistemic rationality requires that you form beliefs in ways that would be as if you were forming beliefs with the aim of believing truths, then it looks like epistemic rationality requires you to have considered Jorrie's hypothesis (and so, in reasons-speak, you must have had an epistemic reason to consider it).

Could the evidentialist grant that reasons to consider are epistemic, but also think that they can be reduced to reasons for (or against) having certain doxastic states? Might she think, for example, that the reason to consider Jorrie's hypothesis can be understood in terms of reasons to believe Jorrie's hypothesis or have at least a minimal credence in it? We don't think that simple reduction works because reasons to consider come prior to reasons to believe. For example, suppose that, despite Jorrie's hypothesis *seeming* elegant and plausible, if you considered it, you'd immediately see that the proposal is actually insane. If so, then it seems like you have a reason to consider her proposal (due to its apparent fecundity) but you have no reason to believe it (due to its insanity that would immediately become apparent to you in considering it). This shows against a straightforward reduction of reasons to consider to reasons to believe.

Might reasons to consider reduce to more sophisticated reasons to believe, like reasons to believe that the hypothesis is plausible or reasons to believe that you should take it to be a possibility? We do not think so. A reason to consider P is a reason to treat P as a serious option for belief, but treat P as a serious option for belief doesn't amount to having any particular beliefs, even including the belief that P is a serious option for belief. Treating P as a serious option for belief is a doxastic *process*. You go through the process in order to facilitate either believing or rejecting the thing under consideration. The process of considering can include activities like testing whether the hypothesis really makes sense of the data or

of decision theory. In that case, what you have a reason to do normally depends on your utility function. Decision theory arguably gives rise to some epistemic norms - such as the maxim to never turn down free evidence - but once we add in a practical cost to an act of evidence-gathering, its rationality will depend on assessing that cost against the agent's utilities.

questioning whether it's supported or refuted by other things you know. Believing is not naturally construed as a process like this. So epistemic reasons to consider don't amount to reasons to believe. Reasons to consider are for a kind of mental *doing* that is distinct from having or not having certain beliefs. Because of that, we should think that there are epistemic reasons to consider, in addition to epistemic reasons to believe.

4 *Epistemic Reasons to Infer and Calculate*

We also have epistemic reasons to infer and do complex calculations, we'll argue. Let's start with a simple inference:

LUNGFISH Sasha is considering whether any fish have lungs, and he's pretty sure none do. He recalls from his childhood biology class that lungfish have lungs, and Sasha knows that lungfish are fish. Sasha has not yet put these two facts together, but he knows that if he were to think about it, he would perform an inference that left him believing more of what his evidence supports.

In this case, the evidentialist should think that Sasha has an epistemic reason to do the inference. Why's that? It's because performing the inference just is how Sasha should come to believe what his evidence supports. To see this, first notice that if Sasha came to believe that some fish have lungs but only because he believed that whales were fish, there's a sense in which he still wouldn't have the doxastic states supported by his evidence. Sasha has evidence for more than just that some fish have lungs. Sasha's evidence also supports basing his belief that some fish have lungs on his two other beliefs, that lungfish are fish and lungfish have lungs. Inferring from those two beliefs to the one belief just is the activity of forming the one belief based on his evidence. So, since the evidentialist grants that Sasha has epistemic reasons to believe what his evidence supports, the evidentialist should grant that Sasha has an epistemic reason to do the inference.

More generally, the evidentialist should accept the following principle:

REASONS FROM EVIDENCE (WEAK) If S knows that ϕ ing constitutes S coming to believe strictly more of what her evidence supports, then S has an epistemic reason to ϕ .

Since the evidentialist grants that we have epistemic reasons to believe what our evidence supports, the evidentialist should similarly grant that we have epistemic reasons to do the things that constitute coming to believe what our evidence supports. So, in cases like Sasha's, the evidentialist should think that Sasha has an epistemic reason to perform the activity of according his beliefs with his evidence, since that just is what it means for Sasha to do what the evidentialist says he has reason to do. In more complex cases though, the agent might need to take a series of steps to achieve that outcome. Consider this case:

FROG CALCULATION Fred doesn't know much about frogs, but he's trying to figure out which garden plots frogs find most hospitable. He's performing an experiment to test how frogs thrive in lily pads compared to mud. Before the experiment, he believed that frogs would do equally well in both conditions, but the initial data appears to show against that initial belief. Fred knows that calculating the effect size would give him a better sense of how much these differences matter. Fred is unable to calculate the effect size in his head though. Fortunately, he's near a computer and can calculate the effect size using it.

Here, when Fred gets the surprising initial data, he is epistemically required to suspend judgment, since that data appears to show against his initial belief. After Fred suspends, he knows that if he performs the effect size calculation, he will come to believe more of what his evidence supports, and as such, he'll be in a better epistemic position by the evidentialist's lights. Because Fred knows that calculating the effect size will bring him to an epistemically better outcome, Fred has an epistemic reason to do the calculation, we'll argue. If asked why he is doing the calculation, Fred could, after all, appeal to the fact that it is a way to figure out what his evidence supports.

Notice that our claim about Fred's reasons doesn't follow from the weak version of REASONS FROM EVIDENCE given above, since using a nearby computer doesn't *constitute* Fred coming to believe more of what his evidence supports. Using the computer is simply a step in how Fred will form his belief. So to defend our claim about Fred, we'll need a stronger principle:

REASONS FROM EVIDENCE (FIRST PASS) If *S* knows that ϕ ing would help bring about *S* believing strictly more of what her evidence supports, then *S* has an epistemic reason to ϕ .

Why might an evidentialist accept this principle? Evidentialists think that we epistemically ought to believe what our evidence supports. In cases where the REASONS FROM EVIDENCE principle applies, the agent knows that they don't believe everything that's supported by their evidence and know that ϕ ing would have them believing strictly more of what their evidence supports.⁷ The agent epistemically ought to achieve this end and the agent knows they can get strictly closer to it by some means; that must at least give the agent some reason to take those means.

This principle is close to, but doesn't follow from, popular necessity-based transmission principles, which say things like, "if one has a reason to ϕ and ψ ing

⁷Note that an agent knowing that they don't believe everything supported by their evidence doesn't require the agent to believe *of some particular proposition* that their evidence supports it and they don't believe it. By requiring that the agent believe *strictly* more of what their evidence supports, the principle avoids trade-off worries where the agent might have to consider giving up epistemically good beliefs to get many other good beliefs.

is a *necessary means* to ϕ ing, then one has a reason to ψ " (e.g. Darwall 1983, p. 16; Kolodny 2007, p. 251; Schroeder 2009, p. 245). But, as Kolodny (forthcoming) shows, requiring that the means are necessary for reason transmission is too strong. Kolodny argues that the means need only 'probabilize' the ends: "If there is reason for one to E, and there is positive probability, conditional on one's M-ing, that one's M-ing, or some part of one's M-ing, helps to bring it about that one Es . . . , then that is a reason for one to M . . .," Kolodny concludes.⁸ REASONS FROM EVIDENCE does follow from Kolodny's transmission principle, by evidentialist lights. Since the evidentialist says S has epistemic reasons to believe what her evidence supports, and S knowing that ϕ ing would help bring about an end requires that ϕ ing at least 'probabilizes' that end, that general transmission principle entails that S has a reason to ϕ .

The evidentialist could also get to the REASONS FROM EVIDENCE principle in another way. Many evidentialists will accept a picture of epistemology according to which epistemic value consists in agents believing what their evidence supports. If they accept such a picture, then the evidentialist could see our principle as flowing from a more general view about the nature of reasons according to which the existence of reasons is grounded in value production, like the one defended by Maguire (2016). On that kind of view, reasons just are the kind of thing that point an agent to promoting things of value.⁹ On that picture, agents will have epistemic reasons to promote the epistemic value of believing what their evidence supports, so REASONS FROM EVIDENCE will follow.

Two worries remain. The evidentialist might grant that the agent has a reason but insist that it's a practical, rather epistemic, reason. This is a natural move for the defender of the standard view as well, since as FROG CALCULATION brings out, REASONS FROM EVIDENCE will generate reasons for actions, not just beliefs.

On the face of it, it doesn't look like the reason generated would be practical rather than epistemic, though. For one, if the reason were practical, the agent would have to have the particular desires needed to ground that practical reason. Since being subject to the evidentialist requirement to believe what is supported by one's evidence doesn't put any substantive constraints on an agent's desires, the evidentialist would need a story about why agents in particular evidential situations must have the desires needed to ground a practical reason generated by REASONS FROM EVIDENCE. (Feldman 2000, p. 676, for example, seems to deny that any such story could be had, since he takes the evidentialist requirement to apply to us solely in virtue of our role as believers, and as such, independently

⁸In the part of the quote excluded, Kolodny outlines (complicated) provisos to the transmission principle, including that the bringing about must not be superfluous and that the end in play be not itself a means to some other end. All of the applications of this principle we use avoid those issues though, so we simplified the presentation for ease of exposition.

⁹Note that Maguire's view is committed to a stronger principle than ours though since it links increased value to the existence of reasons. Our principle only generates reasons to ϕ when ϕ -ing would *knowingly* make a better outcome than not.

of our desires.) Moreover, if the reason were practical, that would suggest that we could incur practical obligations solely in virtue of having certain kinds of evidence. Of course, gaining new evidence can change our practical obligations *in conjunction with our beliefs, desires, and moral considerations*. Learning that there's a humanitarian crisis might oblige us to donate to certain charities, for example. But if the reasons generated by REASONS FROM EVIDENCE were practical, there would be practical reasons that are grounded in evidence itself, not one's desires or moral considerations. That would be a surprising result.

In fact, Feldman (2000, p. 676) thinks that epistemic oughts apply to us in virtue of us occupying a certain role as believers. If that's right, then we should think that the reasons one has in virtue of occupying that role, including the ones that follow from REASONS FROM EVIDENCE, are also epistemic. It would be a mistake to assume that all reasons generated by one's role as a believer are reasons for belief, just as it would be a mistake to assume that all reasons generated from one's role as a baker are reasons to bake. Being a baker additionally gives one reasons to buy certain ingredients, be well-informed about public flavor preferences, and cultivate one's dough-kneading skills. Analogously, what we take the argument to be showing is that being a believer can generate reasons to calculate using a computer, not just reasons to believe.

A second worry one might have about REASONS FROM EVIDENCE is that, as stated, the principle is unclear about what ' ϕ ing would help bring about S believing strictly more of what her evidence supports' means. In most cases, like FROG CALCULATION, taking steps to bring it about that one believes more of what one's evidence supports doesn't change the evidence one has very much. Using a computer to analyze data might give you new evidence about what the computer looks like, for example, but in normal circumstances, using a computer to analyze data doesn't change what the data itself supports. Nonetheless, we can imagine cases where taking the means to believing what one's evidence supports significantly changes what one's evidence supports. In those cases, it's unclear when the principle applies. Is the antecedent satisfied when one believes more of what one's evidence supports after they ϕ ? Or is it the pre- ϕ ing evidence that's relevant? And if that's the case, what about cases where after ϕ ing, the agent's evidence no longer supports what the agent comes to believe?

To resolve these ambiguities, we'll modify the principle in two ways: First, we'll stipulate that the agent has a reason to ϕ only when ϕ ing would bring it about that the agent believes more of what her evidence supported before ϕ ing. Second, we'll exclude cases where ϕ ing importantly changes what one's evidence supports by using a more restricted version of REASONS FROM EVIDENCE:

REASONS FROM EVIDENCE If at t_0 , S knows that ϕ ing would help bring about S believing strictly more of what her evidence supports about some propositions at t_0 without changing what S 's evidence supports about those propositions,

then at t_0 , S has an epistemic reason to ϕ .¹⁰

Returning to the case of Fred and whether he has an epistemic reason to use the computer, we can see now that that he does by a simple application of REASONS FROM EVIDENCE.

In discussions of this case, our interlocutors often accept that Fred has some reason, but they strongly resist the conclusion that the reason is epistemic. Our interlocutors cite only the fact that it counts in favor of performing a physical action (manipulating the computer) rather than performing a mental 'action' in their defense. As we argued above though, we think there are good reasons to take the reasons produced by REASONS FROM EVIDENCE to be epistemic. But, to assess further whether the physicality of the object of the reason is relevant to the type of reason it is, let's compare FROG CALCULATION to an internalized version of the same case:

MENTAL FROG CALCULATION As in the previous case, Mahdi, who shares Fred's initial belief, is also performing an experiment to test how frogs thrive in lily pads compared to mud. Mahdi gets the same experimental data that Fred did. However, Mahdi is great at mental calculation, so instead of calculating the effect size on a computer, he can easily calculate it mentally.

In this case, the objector should admit that Mahdi has an epistemic reason to do the calculation, since Mahdi can comply with his reason with only his mentally-available resources. If the objector concedes that though, we take the main battle of this section to be won.

In conceding that Mahdi has such an epistemic reason, the objector admits that there can be epistemic reasons to calculate, which is most of what the argument aims to show here. That's because reasons to calculate, like reasons to consider, cannot be understood in terms of reasons to believe. One can see this by considering an agent who has a reason to calculate but no reason to believe the output of the calculation. This might happen, for example, if the output of the calculation is undefined (though the agent doesn't suspect this in advance), perhaps due to some statistical anomaly.

Another way to see that reasons to calculate don't reduce to reasons to believe is to compare two agents who have the same beliefs and evidence over time, but one has the post-calculation beliefs on the basis of doing the calculation and the other has them on the basis of wishful thinking. We take it that the first person is epistemically better off because they respected their evidence in forming their belief in a way that the second did not, despite the two landing on the same beliefs. The most natural explanation is that the first acted in accord with his reasons to

¹⁰Note that this principle will not give rise to wrong kinds of reasons cases since all the cases we discuss with it are cases of action, and wrong kinds of reasons problems don't occur for those kinds of cases (Hieronymi 2005).

calculate and the second did not. Reasons to calculate, like reasons to consider, are reasons to go through a certain kind of process. That process doesn't amount to merely having certain beliefs. To calculate, one must at least also have those beliefs in a certain order and have the subsequent ones on the basis of prior ones. For real agents, calculating also involves going through other mental processes, which typically involve non-belief-like actions, like carrying the '1' when numbers in the same 'column' of an addition sum to more than 9. Doing a calculation then doesn't amount to just having certain beliefs.

What does that show about the possibility of epistemic reasons to calculate using a computer, rather than doing it mentally? At this point, we hope that insisting that epistemic reasons can only count for mental activity strikes the reader as ad hoc. Both Fred's and Mahdi's reasons are reasons to perform a particular statistical calculation. The difference between Mahdi and Fred is the method they use to perform the action. Without begging the question by assuming that epistemic reasons can only be for beliefs, what explanation might one give for why reasons to calculate can only be epistemic if the calculation is done mentally? We doubt there is any principled explanation to be had.

Crucially, to argue that there can be epistemic reasons for activities like calculating with a computer, one need not be committed to anything like Clark and Chalmers' (1998) extended mind hypothesis, which holds that the environment outside of one's body can be part of one's mind. Though accepting their view would make this argument easy, you can reject their view while accepting this argument. All this argument requires is that calculation can be done outside the body (an uncontroversial claim), and that a reason's status as epistemic does not depend on how it is complied with, at least in some cases involving external means.

So it looks like Fred and Mahdi share a reason to calculate. For Mahdi, it's easy to comply with it by calculating mentally. For Fred though, calculating mentally is not a real option, but he does have a computer. So Fred has an epistemic reason to calculate using the computer.

5 *Epistemic Reasons for (Thought) Experiments*

What the previous section purports to show is that the evidentialist should accept that there are epistemic reasons to take simple means to believe what one's evidence (already) supports, regardless of whether those means are internal to the agent's mental life. Here we'll extend the argument to show there can also be epistemic reasons to perform more complex actions and actions that extend one's evidence.

Consider this case:

SPHERE EVERSION Serena has a budding interest in topology, but she hasn't learned much about spheres. She thought that spheres could not be everted (turned inside out) without cutting, tearing, or creasing, but in conversation, her mathematician friends seem to presuppose that they can. Serena can't imagine

how that would work, but she has a spherical toy on her desk and knows that manipulating the toy will help her get closer to figuring it out.

The argument below will conclude that Serena has an epistemic reason to manipulate the desk toy.

First notice that it's not obvious that a simple argument like the one used in the previous section will work in this case: After suspending her belief about the evertability of spheres, does Serena *know* that she would believe more of what her evidence supports if she manipulates the desk toy?¹¹ For instance, on a phenomenal view of evidence, where one's evidence consists in a set of seemings, Serena's initial evidence need not support that a sphere can be everted even though it is a necessary truth. If she doesn't know that she will come to believe more of what her evidence supports by playing with the desk toy, it doesn't follow from REASONS FROM EVIDENCE that she has an epistemic reason to do so.

We'll start with an internal analogue of the case under consideration:

MENTAL SPHERE EVERSION Alice has a budding interest in topology, but she hasn't learned much about spheres. She thought that spheres could not be everted without cutting, tearing, or creasing, but in conversation, her mathematician friends seem to presuppose that they can. Alice knows that she's very good at mental shape transformations, and she knows that manipulating a mental model of a sphere will help her get closer to figuring it out.

Like in the previous section, we'll give an argument that Alice has an epistemic reason to perform the thought experiment involving a mental manipulation of a sphere and then infer that Serena as an analogous epistemic reason to do that same process using her desk toy, since there is no epistemically relevant difference between the two cases.

In fact, spheres are evertable, but it's hard for most people to imagine how that might work. (See fig. 1 for one way to do it.) So, let's grant that the evertability of the sphere is not supported by Alice's evidence before she begins the thought experiment.¹² Because of the complexity of eversion, we can assume that if Alice were to do the thought experiment, she would have to go through many stages of imagining shapes, starting with a sphere and moving to the next shape by simple permissible transformations. Suppose that the stages of Alice's thought experiment are represented by fig. 1.

Now suppose Alice has already started the thought process, and she's currently visualizing a shape at some stage of the transformation. As stipulated, Alice is good

¹¹To be as ecumenical as possible, our argument won't assume that our evidence always supports logically necessary propositions. Relaxing this assumption will mean that the relation 'is evidence for' will not be transitive, a point we'll rely on in our argument. If, however, one's evidence does always support logically necessary propositions, this case will reduce to the cases in the previous section where the initial evidence does indeed support the conclusion at the outset.

¹²If our opponent denies this, then the argument from the previous section applies directly here.

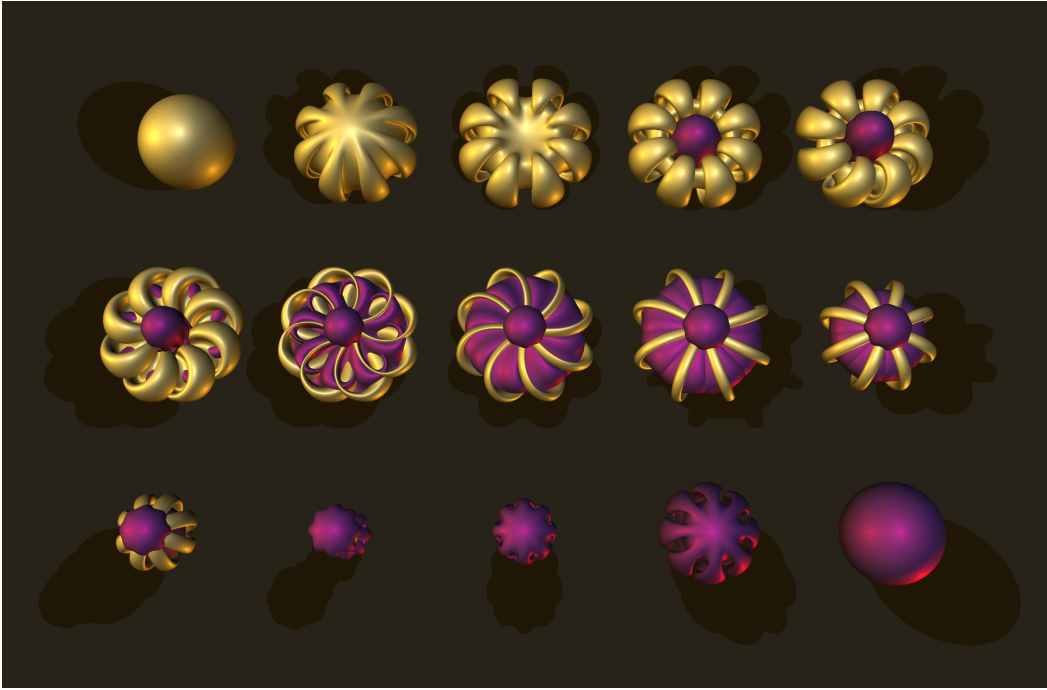


Figure 1: Steps to evert a sphere. Image reprinted with permission from Silvio Levy

at mentally manipulating shapes. If she visualizes a shape, it is obvious to her what other similar shapes can be reached from the visualized shape by small transformations. So, when Alice is visualizing a certain shape, at that moment, her evidence supports thinking that the next shape can be reached by small transformations, even if Alice doesn't yet have a belief about that particular shape.¹³

So suppose (1) Alice has progressed to some stage S_n of the progression and is visualizing that shape, (2) she does not yet believe that S_{n+1} is possible to reach from a sphere without cutting, tearing, or creasing, and (3) this pair of stages S_n, S_{n+1} is the last one in the sequence that meets conditions (1) and (2). (Such a pair must exist if she hasn't already figured out how to evert the sphere.) Because Alice is good at mentally manipulating shapes, we know that at S_n , Alice's evidence supports thinking that the shape at S_{n+1} can be reached. Moreover, Alice knows she's good at mental manipulations of shapes, and she knows that when she visualizes a transformation, she correctly believes whether it is possible. So, she knows at S_n that if she continues the visualization process, she will believe more of what her evidence supports at S_n . She can do this by moving from stage S_n to stage S_{n+1} of the visualization process. Thus, by REASONS FROM EVIDENCE, she has an epistemic

¹³We encourage the reader to try this. Imagine an ellipse, for example. Isn't it obvious that the ellipse can become "dented" on one side without cutting, tearing, or creasing it? It's obvious because when you're visualizing it, your evidence supports thinking that it's possible.

reason to do the mental transformation from S_n to S_{n+1} .¹⁴

What about the worry that visualizations in thought experiments don't come in discrete stages? Presumably, Alice visualizing one shape transforming into another will only induce the belief that the transformation is possible if Alice can visualize the transformation happening in a smooth way that doesn't admit of discontinuities or jumps between shapes. Since Alice has a strong skill in visualizing, we can assume she knows this as well. So REASONS FROM EVIDENCE tells us that, as she goes through the process, Alice gets a series of epistemic reasons to continue going through the process of smoothly visualizing the shape changing, not just to visualize discrete stages of that transformation.

What this shows is that, once Alice starts the process, she has epistemic reasons to continue the process. Similar reasoning entails that Alice has an epistemic reason to begin the process: Consider Alice's state of mind before she starts visualizing. As stipulated, she knows a little about topology, and she originally thought sphere eversion was impossible. When her mathematician friends presupposes otherwise, Alice at least has an epistemic reason to suspend her prior belief. But since Alice knows some things about topology, she must know basic generalizations about how transformations can apply to shapes. For example, she knows the generalization that if a shape "o" can be reached from a sphere, then the shape "O" — shape "o" stretched vertically — can also be reached. She also knows that if "u" is a shape with a rounded edge that can be reached, then "w" can also be reached, since "w" is "u" with a new rounded indentation added to the bottom edge. Because she knows generalizations like these, Alice must know that there is some shape such that she doesn't believe it to be reachable from a sphere but her evidence supports thinking it is reachable. Why's that? It's because Alice knows that she doesn't already have a complete map of how spheres can be transformed. If she did, she would know already whether spheres are evertable. So if shape B is one she knows is reachable from a sphere, there must be some shape B' that can be reached by a simple transformation from B , even though Alice doesn't yet believe B' is reachable. Since she knows basic generalizations about simple transformations though, we can assume that the B -to- B' transformation is characterized by one of the generalizations she knows. So her evidence must support thinking that B' is reachable from a sphere, since it follows from the things she knows by simple logical entailment (namely that B is reachable and the generalization that characterizes the B -to- B' transformation). So Alice must know that there are some shapes whose reachability is supported by her evidence but that she doesn't yet have beliefs about.

From that, it follows that she knows that if she visualizes a sphere and mentally applies the transformations in a thoughtful way, she will move from visualizing

¹⁴Since the argument don't assume that her initial evidence supports the proposition that the sphere is evertable, this reasoning also shows is that the relation of evidential support is not transitive in the sense that (if one's evidence at t_1 supports believing P and if one believed P at t_2 then one's evidence would support believing Q), then one's evidence at t_1 supports believing Q .

shapes that she already knew were possible to visualizing shapes that she didn't yet know were possible but whose possibility was already supported by her evidence. As such, Alice will know that she will believe more of what's supported by her present evidence if she begins the visualization, so by REASONS FROM EVIDENCE, she has an epistemic reason to do so.

One might worry that this reasoning, if correct, would generate too many epistemic reasons. Our evidence almost always supports beliefs that we shouldn't waste our time forming. At any given time, we have evidence that bears on all kinds of things like whether the room we're in could safely hold more or less than 12 brown bears or whether Trump's hair could really just be three blades of oddly-shaped grass. So, doesn't the kind of reasoning here entail that we have reason to do things to get ourselves to have the beliefs our evidence supports about those propositions? Doesn't it entail that we have epistemic reasons to imagine brown bears stacked in the room we're in and epistemic reasons to do a thought experiment about Trump's hair?

No, the reasoning does not have that implication. Notice that in the kinds of cases the objector mentions, the agent isn't assumed to believe that imagining bears or thinking about Trump's hair would help her believe more of what her evidence supports. But REASONS FROM EVIDENCE requires that the agent *know* that her action will bring about her believing more of what her evidence supports, so it doesn't apply to cases where the agent doesn't even believe it.

One could also respond to this worry by modifying the argument: Notice that, as we put it above, the evidentialist view is subject to a similar overgeneration worry. The evidentialist says that one ought to have the doxastic states supported by their evidence, which seems to entail that one ought to have beliefs about all kinds of things that intuitively we can simply ignore, again like how many brown bears could safely fit in this room. Feldman (2000, p. 679) considers this objection and modifies his view to avoid it by relativizing it to a particular proposition and making the normativity conditional on the agent having any doxastic state towards that proposition. So instead of making the blanket claim that everyone ought to have exactly the doxastic states supported by their evidence, the revised evidentialist view only says that if an agent has a doxastic state about some proposition, then she ought to have the doxastic state that her evidence supports having. Our argument can employ the same move to avoid the overgeneration worry. By relativizing REASONS FROM EVIDENCE to a particular proposition and making it conditional on the agent having a doxastic state about the proposition, it no longer follows from the principle that the agent has the kinds of epistemic reasons the objector was worried about, since the agent wasn't going to have a doxastic state about those things anyway.

Relativizing REASONS FROM EVIDENCE to a particular proposition and making it conditional in that way doesn't threaten our conclusion. In each of the cases described, there is a particular proposition in play and the agent is stipulated to

have a doxastic state about that proposition (suspension, in particular). Since the goal of the argument is conservative, in the sense that it aims to argue for the existence of these reasons, not show that they're abundant, the few (somewhat contrived) cases we give are sufficient.¹⁵ So there is no overgeneration worry for the argument we present here, and it follows that there are epistemic reasons to begin thought experiments and continue doing them once one has started. Since there is no epistemically relevant difference between doing that and doing the experiment with a desk toy, the argument similarly concludes that Serena has an epistemic reason to manipulate the desk toy.

One interesting implication of this section compared to the previous section is that, in this section, the argument purports to show that there are reasons to do things that end up giving the agent new evidence. One might have thought that no new evidence is gained during the thought experiment in the way we describe it, since at each successive step, Alice only comes to believe what was supported by her evidence in the previous step. That's not right though. When Alice acts in accord with her epistemic reasons to visualize the next step, the new visualization itself gives her new evidence about what future steps are possible. So though she only believes what's supported by her prior evidence at each successive step, she gains new evidence by virtue of how she comes to form that belief, namely by visualizing its possibility. The case for this is even clearer when the reason is one to manipulate the desk toy. So, epistemic reasons can (perhaps surprisingly) be epistemic reasons to do things that will result in gaining new evidence.

6 *Epistemic Reasons to Act*

Something that is brought out by the cases above is that, if the argument is right, what epistemic reasons an agent has can depend on highly contingent and non-doxastic features of the agent. Alice has an epistemic reason to think through the thought experiment in virtue of her having a particular psychological makeup that allows her to easily manipulate mental models of spheres. And Fred has an epistemic reason to compute using the computer because of his close proximity to it. These reasons are quite particular to those agents, but what we've seen is that accepting the existence of those reasons is naturally supported by accepting the more general claim that everyone has epistemic reasons to believe what their evidence supports.

In the final part of the argument, we'll extend that idea to show that there can be epistemic reasons for even the most mundane actions. Let's consider Alice again:

DISTRACTED ALICE Alice has been imagining transformations of spheres for an hour in search of the elusive eversion technique. She finds herself getting

¹⁵That said, in fact, we'd be happy to be saddled with the conclusion that there are epistemic reasons to do all kinds of things. Of course, in cases like the objector mentions, the reasons would be quite weak, so they wouldn't entail much about what the agent epistemically ought to do.

hung up on repeating a particular sequence of transformations that she's already determined to be unhelpful. To stop herself from getting distracted by that particular sequence, she knows she could perform a mindfulness exercise that involves focusing on the failed step.

Notice that what happens when Alice gets distracted in this case is that she metaphorically takes a wrong turn in her thinking — her overall sequence of steps leads her astray from her goal. The defender of the standard view will surely see the deviation from her goal as a practical failing, so let's grant that. That said, she still has epistemic reason to do the mindfulness exercise, not because it will help her reach her goal, but because doing so will knowingly bring her to believe more of what her evidence supports.

One supported thing she'll come to believe is that the particular sequence of steps she's stuck on isn't useful. There's something else she'll believe too though. Recall that the previous section established that at each step of the thought experiment, she has reason to continue to the next step because in doing so, she knowingly comes to believe more of what her evidence supports. Then let S_l be the last stage in her thinking before the distracting sequence. Alice knows that, in theory, she could restart her thinking at S_l and visualize a different transformation of the shape and in doing so form new beliefs that are supported by her current evidence.¹⁶ But, as stipulated, Alice is getting distracted whenever she gets to S_l , and she knows this. She also knows that doing the mindfulness exercise would allow her to move past the distractions at S_l and believe what her evidence supports about how the shape at S_l can be transformed. So again by REASONS FROM EVIDENCE, she has an epistemic reason to do the mindfulness exercise.

The argument developed in the sections before this one purported to show that one can have epistemic reasons to do things like consider hypotheses, calculate effect sizes, and learn about spheres by manipulating a physical model. If you started reading this with a liberal conception of what epistemology is about, none of those results would have been very surprising. All of those activities are paradigmatic elements of what's involved in both scientific research and general deliberation, both of which are squarely in a broad conception of the domain of epistemology. What's interesting about this stage of the argument is that, unlike the previous cases, it purports to show that we can also have epistemic reasons to do activities that will strike almost no one as epistemic. In DISTRACTED ALICE, that activity is the mindfulness exercise. The point generalizes much further though:

HUNGRY ALICE Alice got past the distracting sequence, but now she has been imagining transformations of spheres for over 4 hours. She's close to everting

¹⁶Recall that above we showed that if Alice doesn't already know that the sphere is evertable, there must be some stage of the sequence where this is true. The argument is also supposing that Alice remembers, and her evidence still supports, that a sphere can be transformed into the shape at S_l , which is what would make the new beliefs also supported by her evidence.

the sphere, but as she tries to go on, she finds that her low blood sugar is making her foggy-headed and unable to concentrate. Alice knows that she could eat a sandwich to raise her blood sugar, which will help her move on to the next stage of the thought experiment.

Here, Alice has an epistemic reason to eat the sandwich. No additional argument for this is necessary, since the argument for why Alice has an epistemic reason to do the mindfulness exercise, *mutatis mutandis*, applies equally well. Alice has a reason to eat the sandwich because again, doing so will knowingly make her believe more of what's supported by her evidence.

This section just takes the reasoning of the previous two sections to their natural end. The argument shows that even evidentialists should think that there can be epistemic reasons to do all kinds of mundane activities that aren't typically thought of as in the domain of epistemic reasons. We discussed this here using the example of Alice needing mindfulness exercises and sandwiches to make it through a thought experiment. But, Mahdi could have faced the same distractions as Alice when he tried to mentally calculate the effect size in his frog experiment, and if he did, by this line of argument, he too would have had an epistemic reason to eat a sandwich. The same is obviously true in a broad range of other possible cases.

7 Conclusion

The argument laid out above purports to show that even those who start out only thinking that there are epistemic reasons to believe what is supported by one's evidence should allow that there are also epistemic reasons to suspend belief, consider hypotheses, do both thought and physical experiments, extend one's evidence, and perform mundane tasks like eating a sandwich. To create counterexamples to the standard view, our argument relied on intuitions and arguments about particular cases. But similar arguments can show that there are epistemic reasons to ask the right kinds of questions, buy certain statistical software packages, set up one's office in a certain way, hire a certain post-doc, get feedback from others on papers, apply for grants, and pay attention to certain things rather than others.

If this argument is right, it allows us to conceive of epistemic normativity as the kind of normativity that governs all aspects of knowledge creation and dissemination, not just what beliefs one ought to have in particular evidential situations. This is the picture of epistemic normativity that falls out of Gibbard's idea that it is we who aim for truth, not our beliefs.

That said, what we should learn from the argument is meager in the sense that it only shows that there are some epistemic reasons for these things, not that these reasons are strong, abundant, or sufficient for action. It is compatible with our argument that, all things considered, acting on these reasons is supererogatory, merely permissible, or even prohibited. In that way, if our argument is right, we should see the realm of epistemic reasons as similar to the realms of moral and

practical reasons. Just as there can be practical and moral reasons to do all kinds of things that one ought not do all things considered, the same would be true of epistemic reasons.¹⁷

As we mentioned at the beginning, we don't see this argument as being about reasons *per se*. What the argument really shows is that epistemic normativity, regardless of whether it's understood in terms of epistemic reasons or epistemic rationality, governs not just our beliefs but all sorts of other things, including what we eat. In that way, if the argument is right, it goes against the long-standing dogma of meta-epistemic theorizing that epistemic normativity is normativity of belief. But, as mentioned above, the goal of this discussion was only to lay out the argument and show why we find it plausible, not to assess the full case for or against its conclusion.

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¹⁷ One possible conclusion from the arguments we've presented is that just as epistemic normativity extends to objects other than belief, so does deliberation and even evidential support. In *SPHERE EVERSION* and *HUNGRY ALICE*, playing around with a desk toy and eating a sandwich contribute to figuring out an answer in much the same way as the internal mental activities of thought experiments and mental exercises. And further, these activities, whether mental or external, play a role in processing and understanding relations of evidential support. On this basis, one author suspects that deliberation, understood as the activity of figuring out what you should do and believe based on your evidence, might still be the sole locus of epistemic rationality even if the argument is right that epistemic reasons go far beyond belief.

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