**Epistemic repugnance four ways**

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Forthcoming in *Synthese*; this is the penultimate version

# Introduction

 Many philosophers take a value-based approach to epistemology, claiming that there are distinctively epistemic values which explain or ground norms on belief. For example, one popular form of epistemic consequentialism explains epistemic norms by showing how conformity with them leads to more accurate beliefs or credences, which are claimed to be epistemically valuable (see e.g. Joyce 1998, Pettigrew 2016). This paper is for philosophers attracted to value-based epistemology. I argue that, if individual beliefs or credences are bearers of epistemic value, then credences or beliefs about some topics either have no, or at most infinitesimal, positive value. If we explain or ground epistemic norms by appeal to epistemic value, then epistemic norms may have nothing to say about credences or beliefs on these topics.

 My argument starts with a problem discussed in a recent series of papers by Jennifer Carr (2015), Richard Pettigrew (2018), and myself (Talbot 2019). These papers discuss one particular type of consequentialist epistemology – accuracy-first epistemology *–* whose details I’ll explain later in the paper. These papers show that accuracy-first epistemology faces a problem much like one faced by ethical consequentialism: the *Repugnant Conclusion*. The Repugnant Conclusion in ethics is the conclusion that a world with a sufficiently vast number of people, each of whose life just barely has positive value, would be better than a world with a smaller, but still large, number of people with amazing lives (Parfit 1984). In epistemology, the Repugnant Conclusion is that an overall credal state with a sufficiently vast number of credences, each of which just barely has positive epistemic value, would be better than one with a smaller, but still large, number of extremely accurate credences. Richard Pettigrew argues that accuracy-first epistemology should accept that the Epistemic Repugnant Conclusion is true. In my previous paper, I argued that we should partly deny the Epistemic Repugnant Conclusion by accepting a version of the thesis I defend in this paper: accurate credences on some topics have no, or at most infinitesimal, positive epistemic value.

 This initial discussion has unfortunate restrictions. It is limited in scope, and inconclusive within that scope. This is because it is focused on arguments that parallel ethical discussions of the Repugnant Conclusion. That is not surprising, since accuracy shares with well-being a number of features which together generate the Repugnant Conclusion. But, as we will see, this focus leaves the disagreement about whether to accept the Epistemic Repugnant Conclusion at an impasse, with neither side being able to conclusively argue for their view. Further, because of this focus, this discussion is only relevant to accounts of epistemic value that, like accuracy, have the same Repugnant Conclusion generating features as well-being. A range of plausible accounts of epistemic value lack these features.

 The results in *this* paper are more general and more conclusive. I develop four new types of problem cases. These are inspired by the initial discussion of the Epistemic Repugnant Conclusion. But these cases are distinctive to epistemology, and have no parallel in the ethics literature. These cases accomplish the following:

* They raise problems for all extant accounts of the value of *individual* beliefs or credences.
* They raise problems for all extant accounts of the value of *total* doxastic states, even for accounts whose ethical parallel avoids the Repugnant Conclusion.
* Arguments for accepting the truth of the Epistemic Repugnant Conclusion do not apply to these problem cases.

To clarify the second point: in ethics, there are accounts of the value of total states that avoid the Repugnant Conclusion. Carr, Pettigrew, and I all have argued that accuracy-first epistemology cannot adopt epistemic versions of any of these accounts. But our arguments relied on features of accuracy that aren’t shared by other possible forms of epistemic value. So, someone who endorsed one of these other views of the value of individual beliefs or credences could endorse an account of total epistemic value that avoided the Repugnant Conclusion. I’ll show that this would not avoid my new problems.

 In light of these four problem cases, we should say the following: individual beliefs or credences on certain topics have no, or at most infinitesimal, positive epistemic value. This is so regardless of what epistemic value is. I’ll argue that this makes it hard to explain why there are epistemic requirements on these beliefs or credences.

 Let’s set out some key concepts. I will be talking about *individual value* or *individual utility* (I use “value” and “utility” interchangeably in this paper). That’s the value had by individual utility bearers, which I will assume are individual beliefs or credences. I will also be talking about *total value* or *total utility*, which is the value or utility had by a total doxastic state (including all relevant beliefs or credences). My target views are forms of epistemic consequentialism that explain what we ought to believe in terms of total epistemic value. That is parallel to how standard consequentialism works in ethics – it explains what we ought to do in terms of the goodness of overall state of affairs – and is a paradigmatic form of consequentialist epistemology (e.g. Joyce 1998, Pettigrew 2016).My arguments should have implications for other value-based approaches to epistemic norms (I discuss one such approach in section 2). But explicitly engaging with these non-consequentialist forms of epistemology would take the paper too far afield.

# The Epistemic Repugnant Conclusion

 Let’s start with the initial discussion of the Epistemic Repugnant Conclusion. This discussion occurred within *accuracy-first epistemology,* a form of epistemic consequentialism that sees the accuracy of credences as the measure of individual epistemic utility, and sees total utility as the sum of individual utilities*. Credences* are degrees of belief or degrees of confidence that some content is true. We’ll assume that they range from 1 – maximum confidence that the content is true – to 0 – maximum confidence that the content is false. A *credal state* is the total set of credences an agent has. A credence in a truth is more *accurate* the closer it is to 1, and a credence in a falsehood is more accurate the closer it is to 0. *Accuracy-first epistemology* sees individual credences as more valuable the more accurate they are, and sees the utility of a total credal state as the sum of the utilities of its individual credences. Finally, let’s say that a credal state is *barely accurate* when it is slightly more accurate than inaccurate; we’ll assume that this gives the credal state very slightly positive epistemic utility. For example, a credence of .50001 in a true claim about a coin flip might be barely accurate. I won’t give a more precise definition or a defense of the notion of barely accurate credence, since it does not play an important role in my own arguments later in the paper (see Carr and Pettigrew for more on this topic).[[1]](#footnote-1)

 Richard Pettigrew illustrates the Epistemic Repugnant Conclusion as follows:

Suppose Phoebe has 1 million credences, all of which are extremely accurate. [The Epistemic Repugnant Conclusion is that] there is a credence function that Daphne might have that assigns 1 trillion credences that are extremely inaccurate and whose remaining credences are only [barely accurate], such that Daphne’s credence function is better than Phoebe’s. (Pettigrew 2018, 347)

In my previous paper, I used a more detailed example to illustrate the repugnance of the Conclusion:

Consider a … credal state which contains only extremely high credences in all the wisdom that humanity will ever acquire. Assume “wisdom” is factive, so these are all high confidences in true propositions, and thus extremely accurate, and assume humanity acquires a finite but very large amount of wisdom during our time in history. Contrast this with a state that contains nothing but a vast number of [barely accurate credences], each of which is about whether there is a particle in some arbitrary location in space and time (each credence is about a different location, so these are credences in distinct propositions)…. [The Epistemic Repugnant Conclusion is that] some repugnant state of this sort is superior to certainty about all human wisdom. (Talbot 2019, 542)

These Repugnant Conclusions follow if the individual value of the barely accurate credences can add up to a greater total utility than that had by the extremely accurate credences. They also illustrate something distinct about the Repugnant Conclusion in epistemology. Repugnant Conclusions involve large numbers of individually not-very-good things that have more total value than collections of individually very good things. In discussions of the ethical Repugnant Conclusion, we vary individual goodness by varying individual wellbeing. But, in epistemology, individual goodness can vary in two ways: a credence can be more or less accurate, or can be about a more or less worthwhile topic.

 My previous paper argued that we should avoid the Epistemic Repugnant Conclusion by saying that accurate credences in certain *boring* propositions have either no epistemic value or infinitesimal epistemic value. Propositions about arbitrary space-time locations are boring in this way. Further, accurate credences about *interesting* propositions, such as ones constituting wisdom, have more than infinitesimal value. So, the total value of sets of accurate boring credences cannot outweigh the value of accurate, interesting credences.[[2]](#footnote-2) Pettigrew, on the other hand, argued that we should accept that the Epistemic Repugnant Conclusion is true.

 I think my response to the Repugnant Conclusion is more intuitively plausible. To show why, I’ll just briefly recap arguments from my previous paper. Many epistemologists independently think that accurate beliefs about pointless truths have little to no value (for discussion, see e.g. Goldman 1999, Grimm 2009, Friedman 2018). Further, if we accept that the Epistemic Repugnant Conclusion is true, then epistemic value is something a vast set of barely accurate credences about pointless truths could have more of than a credal state containing knowledge of all wisdom. Whatever it is that the barely accurate credences have more of does not seem important in any way that really matters. If epistemic value does not really matter, then norms grounded in this value are not going to be authoritative. That is, they are not going to be binding on us in any interesting or important sense. To illustrate this worry, note that we could say that hours spent watching paint dry have a distinctive kind of value, and we could invent norms telling us how to maximize that value. These norms would not be binding in any important or interesting sense, because the value of hours spent watching paint dry does not really matter. If the Epistemic Repugnant Conclusion is true, then epistemic norms grounded in epistemic value look like these paint drying norms: they almost never matter. That’s a problem. Many of us do pre-theoretically take epistemic value to matter, and take the epistemic norms to be authoritative. So (if we are attracted to epistemic consequentialism) we have good reasons to say the Epistemic Repugnant Conclusion is false.

 But there are ways of making the Epistemic Repugnant Conclusion more palatable. One way would be to give an error theory for the relevant intuitions. In ethics, one might say that we are not very good at imagining people whose lives are barely positive (Tännsjö 1992, Ryberg 1996).[[3]](#footnote-3) What we are *really* imagining, the error theory goes, is that these lives are not good. If that’s right, it’s no wonder the Repugnant Conclusion seems false, but that does not show us that it actually is. In epistemology, we might say that we have a hard time imagining the value of credences that are barely positive. Perhaps we can’t help but imagine them as actually bad. If that were so, then these intuitions do not give us reasons to reject the Epistemic Repugnant Conclusion. Pettigrew gives a different error theory for these intuitions: that they conflate practical considerations with epistemic ones. Having highly accurate credences (especially ones about wisdom) is more likely to make a significant difference to one’s actions than having just barely accurate credences, even if very many of them; if that’s what’s driving intuitions about these cases, then maybe the Conclusion is not really relevant to epistemology.

 Pettigrew gives another way of making it easier to accept the Epistemic Repugnant Conclusion. He claims that the Conclusion has no implications for what we ought to believe.[[4]](#footnote-4) That is because (he claims), epistemic oughts only govern choices between credal states containing credences on all the same propositions. The sorts of comparisons involved in generating the Repugnant Conclusion are thus not relevant to what we ought to believe. This claim about oughts has some independent motivation. It is commonly thought that there’s nothing epistemically wrong with losing credences due to forgetting (Williamson 1998), and it is also standard to think that we are not obligated to form credences on new topics (Nelson 2010).[[5]](#footnote-5) So, epistemic oughts don’t seem to tell us to expand our credal state, or to forbid contracting it, even when these expansions are epistemically better or the contractions epistemically worse. And so it makes sense to say that epistemic oughts don’t govern choices between differently sized credal states. If that’s so, then it is easier to accept the Conclusion: it would mean saying surprising things about what is epistemically good, but not anything surprising about what we ought to believe.

 Pettigrew’s suggestion still means accepting an implausible account of epistemic value. We can soften this blow further by borrowing ideas from Sophie Horowitz (2018). Horowitz discusses parallels between formal epistemology and the “consequentialization” project in ethics. To consequentialize a deontological ethical theory is to give a theory that issues all the same prescriptions (verdicts about wrongness or permissibility or what we ought to do), but explains these prescriptions in terms of value maximization (see e.g. Oddie & Milne 1991). Horowitz argues that we might see accuracy-first epistemology as a consequentialization of deontological epistemic norms. One reason to consequentialize deontological theories is to give formal models which we can apply to intuitively opaque cases (e.g. Colyvan, Cox, Steele 2010). Given this motive for consequentializing, the notion of value consequentialized theories use does not have to map onto a real good: it can just be a formal fiction. If we go this route, epistemic value would not *really* ground epistemic norms; we would need some other account of where the norms come from. But fictitious, formal notions of value could still be very useful. Horowitz does not discuss applying this idea to the Epistemic Repugnant Conclusion, but the application seems natural. If the account of value accuracy-first epistemology uses can just be a formal fiction, the account can say very implausible things about goodness, as long as the notion of value used plays the right formal role. This requires that the formal model using this fictitious notion of value does a good job of capturing intuitive deontological epistemic norms. That is, the formal model must correctly identify what we ought to believe. If our formal theory said we ought to prefer barely accurate credences about arbitrary space-time locations to knowledge of wisdom, it would be a bad model. Here is where Pettigrew and Horowitz’s ideas synergize. If we say both that accuracy is not really epistemic value but rather just a formal tool, and that epistemic norms never require us to choose between credal states containing credences on different propositions, we can endorse a form of accuracy-first epistemology that accepts the Epistemic Repugnant Conclusion, but in a non-problematic way.

 Taken together, these arguments put us at an impasse. Intuitions favor the view that accurate credences on boring topics have no, or infinitesimal, positive value. We can give error theories for these intuitions, but error theories are always empirical claims, and these error theories remain speculative at the moment. We can say that the Conclusion is not about epistemic oughts, but this requires endorsing either a surprising view of epistemic value, or saying that epistemic oughts are not really based in epistemic value – that consequentialism is just a useful formal fiction. None of these considerations are conclusive either way.

 I aim to be more conclusive. In what follows, I will argue that accurate but boring credences have no, or infinitesimal, positive value using evidence that clearly has implications for epistemic oughts and that rules out the relevant error theories. But first, I will discuss why this debate is significant.

## What is at stake?

 This debate matters because what we say about the value of boring credences has implications for the epistemic requirements that apply to these credences. These implications extend beyond accuracy-first epistemology.

 If boring credences have no epistemic utility, then there are no epistemic requirements on these credences. That should be obvious: consequentialism explains requirements in terms of value, and so beliefs with no value generate no requirements.[[6]](#footnote-6) The remainder of this section will discuss the implications of boring credences having infinitesimal utility.

 In my previous paper, I showed that, if boring credences have infinitesimal utility, then accuracy-first epistemology cannot vindicate coherence as a universal epistemic norm. This result is somewhat limited, however. To see why, we have to briefly discuss my argument. Accuracy-first epistemology endorses coherence norms because, it has been claimed, every incoherent credal state is *dominated* by some coherent version of it – that coherent version is epistemically superior in all possible worlds (Joyce 1998). My argument showed that this claim about dominance is not compatible with infinitesimal utilities. To illustrate, consider some credal state containing a credence about contingent interesting truth *I* and a credence about contingent boring truth *B*, where these two credences are incoherent with each other. Contrast this with some alternative, coherent credal state about *I* and *B*. Let’s say that the two states assign the same credence to *I*. If they do, then they assign different credences to *B*. And, since *B* is contingent, the incoherent state will have a more accurate credence about *B* in some worlds. So, the coherent state does not dominate the incoherent one. A similar argument applies if they assign the same credences to *B*: they then must differ about *I*, and the incoherent state will have a more accurate credence about *I* in some worlds. Let’s say instead that the two credal states disagree in the credences they assign to both *I* and *B*. Since *I* is contingent, there must be some world in which the incoherent credal state has a more accurate credence about *I*. So, if the coherent state is to dominate the incoherent one, then in this world – the world where the incoherent state is more accurate with respect to *I* – the coherent state must make up the difference by having a better credence about *B*. But, if boring credences are only infinitesimally valuable, no amount of accuracy in *B* can make up for the incoherent state’s superior credence about *I*. Thus, this incoherent state about *I* and *B* cannot be dominated by any coherent state.

 That argument is limited. It only shows that credal states in which interesting credences are incoherent with boring credences cannot be dominated. The result does not apply to credal states about only boring propositions or about only interesting propositions.[[7]](#footnote-7) There is a more general upshot of assigning boring credences infinitesimal utilities, though, which I hadn’t considered: it may mean that boring credences are subject to no epistemic requirements at all, just as if they had no utility.

 Epistemic consequentialists often assume *maximizing consequentialism*, the view that one is required to take the best relevant option. But we can weaken maximizing consequentialism by saying that there’s nothing wrong with taking an option that is only infinitesimally worse than the best option. Let’s call this *finite satisficing consequentialism.* If boring credences have infinitesimal value, then finite satisficing consequentialism says that there’s nothing wrong with adopting any finite number of bad boring credences, so these boring credences are not subject to epistemic requirements.

 This is significant because finite satisficing consequentialism is more plausible than maximizing consequentialism. Requirements that we maximize the good are intuitively over-demanding in most normative domains: commonsense norms make room for *supererogation* and *suberogation*. An option is supererogatory if it is better than one’s other options but not required (Urmson 1958). An option is suberogatory if it is worse than one’s other options but not forbidden (Driver 1992). It is well known that intuitive ethics sees some acts as supererogatory and some as suberogatory. Super- and suberogation are also familiar in prudence (Slote 1984). We see super- and suberogation in etiquette (McElwee 2017). And we see supererogation in duties of inquiry (Hedberg 2014). Maximizing consequentialism is not compatible with super- or suberogation, but satisficing forms of consequentialism are. More generally, it is intuitive that tiny differences in value are not normatively important, and cannot generate real requirements (e.g. Norcross 2006, 2020, Vallentyne 2006). This gives us strong *prima facie* evidence in favor of some form of epistemic satisficing consequentialism. And, since finite satisficing consequentialism is a minimal weakening of maximizing consequentialism, it can accommodate almost any evidence that seemingly supports maximizing.

 Further, epistemic versions of finite satisficing consequentialism avoid most, perhaps all, objections against satisficing consequentialism. Finite satisficing consequentialism is a form of what Ben Bradley (2006) calls *comparative satisficing*. Comparative satisficing views say that it is permissible to take an option that is less than *ε* worse than the best option. As Bradley shows, comparative satisficing avoids objections faced by other forms of satisficing consequentialism, with one exception. That one objection is this: comparative satisficing views say that one can permissibly make a series of choices that together are disastrously bad. Each of the individual choices would be close enough to the optimal choice to be permissible, but over the long run the total good lost by making these choices can be something that clearly should not be allowed (see also Thoma 2018). That’s a serious problem for most forms of comparative satisficing consequentialism, but it may not be a problem for finite satisficing consequentialism in epistemology. Finite satisficing says that it is permissible to make a choice that is infinitesimally worse than the best option. Any finite series of such sub-optimal choices, taken together, would still be only infinitesimally bad. Given that tiny differences in value intuitively do not matter, this long-run total badness also does not matter. But what if we consider an *infinite* series of such sub-optimal choices? Classical calculus, and current non-standard analysis, says that an infinite series of infinitesimals can add up to a finite value (Robinson 1966, Katz & Sherry 2013). Assume that’s so; what total value could an infinite series of bad choices involving boring credences have? I will argue below that this should be a low value (section 3). If I’m right about that, then when an agent makes an infinite series of bad choices involving boring credences, the total long-run loss will be finite but small, and not a loss that is intuitively wrong to incur.[[8]](#footnote-8) That would rebut the objection to epistemic finite satisficing consequentialism. But perhaps I’m mistaken: perhaps an infinite series of bad choices involving boring credences can add up to a non-insignificant loss (it definitely can’t be a *huge* loss, as we will see). This need not be a devastating objection to finite satisficing consequentialism. Many forms of consequentialism or decision theory have problematic implications when extended to infinite series of choices (see e.g. Arntzenius et al 2004).[[9]](#footnote-9) Given the other attractions of satisficing consequentialism, we might accept this one cost.

 To summarize: there is good evidence that norms should not be grounded in small differences in value. This is evidence for finite satisficing. Finite satisficing can be made compatible with almost any evidence in favor of maximizing consequentialism. And there are reasons to think it may be immune to all objections. At worst, it generates counterintuitive implications for agents who make infinitely many sub-optimal decisions. Either way, finite satisficing looks more intuitively plausible than maximizing consequentialism. But finite satisficing consequentialism entails a lack of requirements on boring credences. We might think that this is evidence against finite satisficing consequentialism. But that’s not a move epistemic consequentialists should make. One of the attractions of epistemic consequentialism is that it vindicates epistemic norms – shows why conformity with them is worthwhile – by grounding the norms in things that seem pre-theoretically to matter (Joyce 1998, Pettigrew 2016). If we adopt a form of consequentialism that is not independently compelling just because it “vindicates” the norms we want, we lose this attractive feature (Pettigrew 2016).

 Thus, if boring credences have no, or infinitesimal, epistemic utility, we might have to say that epistemic requirements do not apply to them at all. In what follows, I will argue that, no matter what we think epistemic value is, beliefs or credences about boring propositions *do* have no, or infinitesimal, epistemic utility.

# Epistemic repugnance four ways

 In this section, I give four new problem cases, inspired by but going beyond the initial discussion of the Epistemic Repugnant Conclusion. These cases have no parallel in ethics. They resolve the impasse in the initial arguments about epistemic versions of the Repugnant Conclusion. I will also use them to argue that *all* accounts of the value of individual doxastic states must see doxastic states about some propositions as having no, or infinitesimal, positive epistemic value.

 The cases are summarized in Table 1. Here is what they have in common: Each is about two credal states, W and R. In each case, W and R contain credences about all the same propositions. Some of these propositions are boring; they can be about whether arbitrary locations in space and time contain a particle, or any other boring propositions you like. The other propositions are interesting ones, such as ones that constitute wisdom. In each of the cases, W has maximally accurate credences about all the interesting propositions. In each case, R has no accurate credences about any of these interesting propositions, but is doing better than W with regards to the boring propositions. In each case, it will be clearly false that R is superior to W, or that we ever ought to choose R over W, no matter how many interesting or boring propositions W and R have credences about.[[10]](#footnote-10)

 *Case 1*: credal state W has maximally accurate credences about all of the interesting propositions, but maximal uncertainty about all of the space-time points. R has maximal uncertainty about all of the interesting propositions, and barely accurate credences about all the space-time points. No matter how many space-time points these credal states have credences about, R is inferior to W. This case extends the example from my initial paper to equally sized credal states.

 *Case 2*: This is like case 1, except R has maximal accuracy about all of the space-time points (and maximal uncertainty about all the interesting stuff). It is still false that R can be better than W.

 *Case 3*: Give W maximally *inaccurate* credences about all the space-time points, rather than neutral credences, while still having perfect accuracy about the interesting propositions. R has neutral credences about the interesting topics, and maximally accurate credences about the boring ones. W remains superior to R.

 *Case 4*: Everything is maximal: W has maximally accurate interesting credences and maximally inaccurate boring ones. R has maximally inaccurate interesting credences and maximally accurate boring credences. W is superior to R no matter how many boring credences they both contain.

|  |  |  |
| --- | --- | --- |
|  | Credal state W | Credal state R |
| Credences about interesting propositions | Credences about arbitrary space-time coordinates | Credences about interesting propositions | Credences about arbitrary space-time coordinates |
| Case 1 | Maximal accuracy | Neutral (maximal uncertainty) | Neutral | Barely accurate |
| Case 2 | Maximal accuracy | Neutral | Neutral | Maximal accuracy |
| Case 3 | Maximal accuracy | Maximal inaccuracy | Neutral | Maximal accuracy |
| Case 4 | Maximal accuracy | Maximal inaccuracy | Maximal inaccuracy | Maximal accuracy |

Table 1 - W and R have credences on all the same propositions. The space-time credences vastly outnumber the interesting credences. In each case, it is repugnant to say that R is better than W or that we ought to adopt R over W.

 Just to make these intuitions clear, let’s unpack case 4 for the sake of illustration. In this case, one credal state – W – contains knowledge about all human wisdom, but false beliefs about a vast set of arbitrary and unimportant propositions. R, on the other hand, contains knowledge about all of these arbitrary and unimportant propositions, but false views about all human wisdom. R contains more true beliefs than W, and W contains more false beliefs than R. But it is clear that R is not better than W in any sense of “better” that really matters, no matter how many boring propositions W and R have credences about. If we adopt a view of epistemic good that *does* say R is better than W, this account of epistemic good is a good that does not really matter, akin to the “good” of watching paint dry (section 2). If such a value were the foundation of the epistemic norms, then the epistemic norms would not matter and would have no normative authority. These are wholly implausible results, and so we must deny that R is better than W.

 Let’s briefly consider one more type of case. My arguments in the remainder of this paper do not depend on it, so I do not include it in cases 1-4, but it is relevant to my earlier discussion of finite satisficing consequentialism (section 2.1). Imagine an R and W which each contain one credence about just one piece of wisdom and credences about any number of – even infinitely many – boring topics. W has a more accurate credence about this bit of wisdom, and R has more accurate credences about the boring topics. This time, though, give W just a *somewhat* accurate credence about the wisdom. How accurate? My intuitions are that W remains better than R even if it has just a very moderate edge with regard to the interesting credence; it seems to me that any amount of accuracy that genuinely matters in an interesting credence will give us a W that is better than R. If that’s correct, then an infinite number of boring credences can have, at most, less value than this – less value than any amount of interesting accuracy that matters. This is not a total value that seems particularly normatively significant. Why does this point matter? In section 2.1, we saw that the main objection to finite satisficing consequentialism would be that an infinite series of permissible choices, each involving an infinitesimal loss, could together sum to a total loss that is clearly impermissible to allow.Consideration of the present example suggests that an infinite set of boring credences can only add up to a normatively insignificant total value. If that’s correct, then this objection to finite satisficing does not work.

 Turning back to cases 2-4, it’s worth noting that ethical versions of these cases don’t generate Repugnant Conclusions. Ethical analogs of these cases would involve R worlds with vast numbers of very happy people, all of whom live neutral or bad lives in the W worlds. The R worlds would have a greater number of very happy people, and a better ratio of very happy to not-happy people, than the W worlds. It’s not repugnant to say that these R worlds are superior to W worlds. That’s because every person’s life is equally ethically important.[[11]](#footnote-11) But, saying that any R doxastic state is *epistemically* superior to any W *is* repugnant. Not every credence is equally epistemically important.

## Biting the bullet?

 Accuracy-first epistemology says that accuracy is the measure of individual epistemic value, the total value of a credal state is the sum of the values of its individual credences, and what we ought to believe is explained in terms of epistemic value. This view has disastrous implications, because it says that some R is superior to W in each of cases 1-4: as long as R and W contain credences about enough boring propositions, R’s superior accuracy with regards to these can eventually generate a total value that outweighs all other considerations. In section 2,I discussed ways of making it easier to accept the truth of the Epistemic Repugnant Conclusion. But, as we’ll see, these do not apply to cases 1-4; they do not allow us to accept that any R is superior to any W.

 Consider error theories about our intuitions. One error theory says that we are mistaking barely accurate credences about boring propositions for *in*accurate credences. That error theory cannot explain away intuitions about cases 2-4, since these cases ask us to consider maximally accurate credences about boring propositions. If one is still not convinced, we can focus on case 4, which only involves maximal credences. Any error theory that could undermine intuitions about case 4 would undermine *all* intuitions about epistemic value.

 The other error theory discussed in section 2 was that these intuitions conflate practical with epistemic value. My new cases give us two responses to this error theory. First, they give us additional evidence that the relevant intuitions *are* about epistemic value. Many philosophers have seen curiosity as a marker of distinctly epistemic value: roughly, greater curiosity about *x* reflects the greater epistemic significance of good beliefs about *x* (e.g. Foley 1987, Goldman 1999, Lynch 2004, Whitcomb 2010,Kvanvig 2013, Inan 2014). If intuitions about the value of R and W dovetail with judgments about what we are curious about and how curious we are about it, this indicates that we are not confusing the epistemic with the practical. This response may require appeal specifically to cases 2-4. That’s because some see curiosity as satisfied by knowledge (e.g. Whitcomb 2010), and might argue that it won’t be satisfied by small improvements in accuracy, even if those improvements are epistemically significant (although see Goldman 1999, Inan 2014 for a contrary view). If that were so, then judgments about curiosity would not be useful evidence for or against the epistemic significance of barely accurate credences. We can grant that for the sake of argument. Even so, in cases 2-4, R and W contain *certainty* about boring and interesting topics, respectively. Certainty about a topic should satisfy any curiosity we have about it. The certainty in W would clearly satisfy our curiosity more than the certainty in R.[[12]](#footnote-12) This indicates that W is superior to R in an epistemically significant way.

 Those who doubted the initial intuitions about the Epistemic Repugnant Conclusion may also question our understanding of our own curiosity, however. For them, there is a second response to this error theory. In cases 3 and 4, we can give W a fairly minimal number of accurate interesting credences, and as many maximally inaccurate boring credences as we like. If, epistemically speaking, the value of boring credences could outweigh the value of interesting credences, then in these cases we could make W truly terrible from an epistemic perspective. Yet W is still intuitively better than R. If this error theory were correct, then our intuitions would be fixating on practical value over this vast amount of purely epistemic disvalue. That would show that epistemic value does not matter to us, since massive epistemic disvalue would not be more salient than practical value; epistemic value would be shown to be even more clearly like the value of watching paint dry. That’s not a value we should build our theories around.

 Another way to motivate acceptance of the Epistemic Repugnant Conclusion is to say it is only an implausible claim about epistemic *value*, not an implausible claim about epistemic *oughts*. This involves the view that what we ought to believe is only based on comparisons between credal states containing credences on all the same propositions. My four cases involve credal states with credences in all and only the same propositions, however. If we explain what we ought to believe in terms of epistemic value, and we say that R is superior to W, then we have to say (for example) that one ought to choose a vast amount of pointless knowledge and false views about all wisdom over knowing all wisdom and having vast amounts of pointless false beliefs (case 4). That is unacceptable.

 For the same reason, these cases block the “consequentializing” response to the Repugnant Conclusion. That response says that modeling epistemic utility as accuracy is just a formal fiction which we employ to usefully represent deontological norms as consequentialist ones. That’s plausible only if the formalism this leads to does not generate false claims about what we ought to believe. A consequentialized formal model that says R is superior to W in any of cases 1-4 generates false verdicts about what we ought to believe, however.

 Even if we could comfortably accept the Epistemic Repugnant Conclusion, we cannot accept that R is superior to W in any of cases 1-4. To say (as we must) that each W is superior to the relevant R, accuracy-first epistemology must say that credences about boring propositions have no, or at most infinitesimal, positive epistemic value. These cases thus resolve the impasse in the debate discussed above. And they should be similarly conclusive for any account of epistemic value to which they can be applied. I will argue in the next section that this is a very wide range of accounts.

# Generalizing

 The cases I have just discussed have implications for all extant accounts of individual and total epistemic value: they show that all such accounts must say that beliefs or credences about certain topics have no, or infinitesimal, epistemic value. In order to argue for that, I will do the following:

 First, I’ll discuss some distinctive features of accuracy-first epistemology. Any notion of epistemic value that shares these features will also generate versions of cases 1-4.

 Second, I’ll discuss how accounts of *individual* epistemic value that don’t share these distinctive features of accuracy-first epistemology still generate versions of some of cases 1-4 (remember, individual epistemic value is the value of single beliefs or credences), unless they say beliefs or credences on boring topics have no, or infinitesimal, value.

 Third, I’ll argue that all plausible accounts of *total* epistemic value give rise to some of cases 1-4 (again, unless they say that beliefs or credences on boring topics have at most infinitesimal positive value). Accuracy-first epistemology sees the value of an overall credal state as the sum of the individual values of the constituent credences. This view of total value plays a huge role in generating the Epistemic Repugnant Conclusion. There are views of total value that, in ethics, have been shown to avoid the Repugnant Conclusion. However, no such account of total value can avoid all of cases 1-4.[[13]](#footnote-13)

 These three arguments will lead to the following conclusion: if there is such a thing as individual epistemic value and total epistemic value, then beliefs or credences on some topics can have no, or at most infinitesimal, positive epistemic value.

## Cases 1-4 and individual epistemic value

 Here are some distinctive features of accuracy-first epistemology:

1. accuracy, and thus epistemic value, comes in degrees
2. barely accurate credences have positive epistemic value, which can come in arbitrarily small but finite amounts
3. the total utility of a credal state is the sum of the utility of its constituent credences.
4. credences on all topics can have positive non-infinitesimal epistemic value

It should be clear by now how these features play a role in both the Epistemic Repugnant Conclusion and in some of cases 1-4.

 Any account of epistemic value that shares features (i) through (iv) will straightforwardly generate versions of cases 1-4. We just substitute the relevant value for accuracy in each case. To illustrate, consider the view that individual credences have epistemic value when they fit with one’s evidence (this is just an illustration; I am not asserting any claims about the value of fitting to one’s evidence). Assume that fit-to-evidence comes in degrees (feature i). Assume that a credence which just barely fits the evidence more than it does not has some slight positive value, and that this can be arbitrarily low (feature ii). Assume that the total utility of a credal state is the sum of the utilities of individual credences (feature iii). Assume that credences on all topics can have more than infinitesimal positive epistemic value (feature iv). We can now generate a version of each of cases 1-4 using fit to evidence. For example, case 4: credal state W contains credences about wisdom that perfectly fit one’s evidence, and credences about completely unimportant propositions that completely do not fit one’s evidence. R, on the other hand, has credences about wisdom that go against the evidence, and credences about unimportant propositions that completely fit the evidence. This account of value says that R is superior to W, as long as we give W and R credences about a large enough number of boring propositions.

 I won’t speculate here about which accounts of epistemic value have features (i) through (iv). The point is: for any that do, we can generate cases 1-4. These cases are a *reductio* of the relevant account. To avoid this, we have to give up some of (i) though (iv).

 Giving up (i) and/or (ii) does not completely avoid all of cases 1-4. Case 4 can be generated even if epistemic value does not come in degrees, or if only maximal credences have value.[[14]](#footnote-14) That’s because case 4 is purely about maximal credences, and we can replace these with non-degreed doxastic states or goods. To illustrate: imagine that knowledge is the only epistemic good, and does not come in degrees of value. We can state case 4 in terms of knowledge: R contains knowledge about a vast set of boring propositions, whereas W only has knowledge of wisdom. R has way more knowledge than W. Since (given features (iii) and (iv)), all knowledge has more than infinitesimal epistemic value, and the total value of a doxastic state is the sum of the values of its individual constituents, R is better than W. That is still unacceptable.[[15]](#footnote-15)

Can we avoid cases 1-4 by being pluralists about epistemic value?At first glance, it’s not clear how plural values would help. After all, if any of the plural values has features (iii) and (iv), then for those values we have to say that R is superior to W (in at least case 4). And that’s implausible. But, the thought might be, it would be fine for R to be superior to W in *one* way, as long as W is better in another way. So, perhaps pluralists can allow for some epistemic values to have features (iii) and (iv) without saying anything implausible. But pluralism only makes biting this bullet palatable if the value that W has more of always overrides the value that R has more of. Otherwise, pluralism would still be positing a value of serious epistemic significance that does not avoid cases 1-4.[[16]](#footnote-16) So, if any type of epistemic value has features (iii) and (iv), then pluralism must also posit an all-things-considered epistemic value which factors in the different types of epistemic value, and W must always have more of this all-things-considered epistemic value than R. So, pluralism runs into trouble either if any type of epistemic value has features (iii) and (iv) and there is no all-things-considered epistemic value, or if all-things-considered epistemic value has features (iii) and (iv).

 We should reject any account of the value of *individual* credences that says credences or beliefs on all topic can potentially have more than infinitesimal positive epistemic value, and that the total value of an overall doxastic state is the sum of the values of its constituents. In the next section, I will consider alternative accounts of *total* epistemic value. I will argue that they, too, have problems dealing with cases 1-4 as long as we say that individual beliefs on all topics can have more than infinitesimal positive value.

## Total epistemic value

 I cannot discuss every account of total epistemic value (the value of total doxastic states). There are some that are not worth discussing, such as the view that total value is randomly determined, or always zero. In what follows, I will focus on accounts of total value that have been given serious attention in the ethical literature on the Repugnant Conclusion. Each of these avoids the ethical Repugnant Conclusion. I take these accounts to be the best candidates for avoiding cases 1-4. What I will show is that none of the epistemic analogs of these views avoids (all of) cases 1-4, unless they effectively say that credences on boring topics have no, or infinitesimal, value.

 One quick note. Each of the views I’ll discuss has been shown to have serious problems in ethics, even if it avoids the Repugnant Conclusion, and epistemic versions of most of these problems have been discussed by Carr, Pettigrew, and I. However, the problems for these views arise often because ethical value can come in arbitrarily small degrees. In other words, these problems arise from ethical versions of features (i) and (ii). Accounts of individual *epistemic* value that reject features (i) and (ii) can thus adopt (some of) the following accounts of total value. So I won’t be addressing problems with these accounts of total value that have been discussed in ethics.

 For each of the views I mention, I’ll just briefly discuss how it avoids the ethical Repugnant Conclusion, to motivate why we are talking about it. Recall that the ethical Repugnant Conclusion compares a *repugnant world* with a sufficiently vast number of people, each of whose life is just barely positive, and sees it as better than a *comparison world* with a lesser, but still large, number of people with amazing lives.

*Average utility:* This view says that total utility is the average of individual utilities. This avoids the Repugnant Conclusion because the repugnant world has a much lower average utility than the comparison world. But this doesn’t deal with cases 1-4. Average utility is sum of individual utilities divided by the number of individuals. In cases 1-4, both W and R have the same number of constituents. So, when we compare the average utilities of W and R, the denominators on both sides of the comparison are equal. We can ignore them, and compare W and R by comparing just the total utility of the constituents. Given finite utilities for boring credences, W will be inferior to R in some range of cases (if it weren’t, then we wouldn’t need to appeal to average utility in the first place).[[17]](#footnote-17)

 *Critical levels:* These views say that individual utilities below a certain, relatively high, level contribute negatively (or not at all) to total utility (Parfit 1984, 1986). Individual utility levels in the repugnant world are below this critical level, and the utilities in the comparison world above it. So the repugnant world cannot be better than the comparison world.

 Epistemic analogs to these views do not avoid cases 2-4 unless they say that beliefs on boring topics never have positive epistemic value. In cases 2-4, R contains boring credences that are as good as they individually can be. If these are above the critical level, then we can make R better than W. If these are still below the critical level, then credences on boring topics never have positive epistemic value.

 What about a modified version of critical level views? It says that credences below the critical level, *taken individually*, can have non-infinitesimal positive epistemic value, but that they can never contribute positive non-infinitesimal value to the *total* credal state. This is effectively saying that these credences never have positive epistemic value. After all, they do not have this value as far as total epistemic value is concerned. This paper is assuming that what we ought to believe is explained by total value. So, these credences have no value that is relevant to what we ought to believe. A similar point applies to another variant of critical level views, which says that goods below the critical level do contribute positively to total value, but the value they contribute cannot ever outweigh the value of things above the critical level (e.g. Parfit 1986). This just is to say that these goods contribute infinitesimally to total utility. So, as far as what we ought to do or believe, they have infinitesimal value.[[18]](#footnote-18)

 *Diminishing marginal utility:* In ethics, this view says that as the number of lives in a world increases, the contribution of each to the total utility decreases (Hurka 1983, Ng 1989, Sider 1991). Repugnant worlds have many more people than comparison worlds, and so the contribution of each person’s life to the total utility of the world in these repugnant worlds is significantly diminished.[[19]](#footnote-19) If we say that the contribution of each individual to total utility decreases properly, then the total utility of a repugnant world will approach some value asymptotically, and this can be less than the total utility of a comparison world.

 Diminishing marginal utility cannot deal with cases 2-4 unless we say that boring credences in certain situations can have no more than infinitesimal individual utility. In cases 2-4, R contains beliefs about boring topics that are each individually as good as they can be. To try to avoid cases 2-4, we want to say that their total utility approaches some value asymptotically, a value below the total value of the interesting credences in W. We can make the set of boring propositions that W and R have beliefs about arbitrarily large. That means that the value each boring credence contributes to the total can be arbitrarily small. If W and R contain infinite sets of boring credences, the value of each boring credence in R can only be infinitesimally large.[[20]](#footnote-20) That just is endorsing a version of my view in the infinite case. If we think about credences and beliefs as dispositional or implicit, beings like us quite plausibly have infinite numbers of boring credences: for every integer, we have a dispositional belief about its odd- or even-ness (Foley 1978, Klein 1999).[[21]](#footnote-21) It is even more plausible that cognitively ideal agents have infinite sets of boring credences, especially if we think that cognitively ideal agents will be logically omniscient. So, the diminishing marginal utility view says that boring credences have infinitesimal epistemic utility for ideal beings, and likely for ordinary human beings as well.[[22]](#footnote-22)

 *Person affecting restrictions:* These views say that one world cannot be better than another without being better for people that exist in both worlds (e.g. Heyd 1989, Bykvist 1998). So, when comparing worlds, the total utility of each is just based on the individual utility of people who exist in both. These avoid the Repugnant Conclusion, since any person in both the repugnant and comparison world is better off in the comparison world. But in the epistemic cases I’ve discussed, both W and R have credences on all the same propositions, and R is better with respect to more of them. So these views do not solve the problems I’ve raised.

 *Only negative utility:* These views say that no life has positive utility, or, from the perspective of what we ought to do when making population-level decisions, no life should be treated like it has positive utility (Benatar 2006). Lives in the comparison world are less bad, and there are fewer of them, than in the repugnant world, so this avoids the Repugnant Conclusion. But this does not deal with cases 1-4. Assume that no credences have positive utility. R and W contain the same number of credences, and in cases 2-4, R has more credences that are as non-bad as they can. So, R will be less bad than W.

 *Intransitivity*: Some try to avoid the Repugnant Conclusion by denying that “better than” is transitive (Temkin 2012).I mention this only because those familiar with the population ethics literature will know this as an often-discussed option. But it is not by itself a way of avoiding the Conclusion. Since it is a negative claim, to avoid the Conclusion it needs to be combined with a positive view of how we compute values of worlds, and this view needs to avoid the Conclusion. Temkin, the most famous denier of transitivity in this literature, suggests something like a diminishing utility view, or some form of pluralism. Those interested in denying transitivity can look to what I say about these positive views. Since none of the available positive views fix cases 1-4, mere denial of transitivity is not going to either.

 Let’s summarize this section. We have considered a set of possible features – (i) to (iv) – that an account of epistemic value might have. Accounts of value that have all of features (i) to (iv), such as standard accuracy-first epistemology, generate untenable conclusions for all of cases 1-4, and should be rejected. Accounts that give up features (i) and/or (ii) – that value comes in degrees, and that there can be individually barely good credences with arbitrarily small amounts of individual value – get false conclusions about some of cases 1-4, and should also be rejected. Accounts of total value that give up feature (iii) (that total value is the sum of individual values) only give plausible results in cases 1-4 by *effectively* denying (iv): they say that, in some versions of cases 1-4, beliefs or credences on boring topics make only infinitesimal positive contributions to total epistemic value, and total value is what matters for determining what we ought to believe. Thus, to give the correct results in cases 1-4, we must deny (iv) for either individual or total epistemic value.

# Conclusion

 Previous work on epistemic versions of the Repugnant Conclusion has suggested interesting things about epistemic value. But this work is limited both in scope and in the force of its arguments. These limitations arise from focusing on types of epistemic value and types of problem cases that have clear ethical parallels. Epistemic value is importantly different from ethical value, and we should not limit ourselves in these ways.

 I have discussed four new problem cases, most of which have no parallel in ethics. Arguments using these cases go beyond previous work in two ways. First, these arguments have implications for a wide range of views of epistemic value, and not just for ones that see epistemic value as structurally similar to ethical values like well-being. Second, these arguments avoid the impasse in discussions of the Epistemic Repugnant Conclusion because they block arguments for accepting that Conclusion. Each case involves a comparison between two total doxastic states, R and W. In each case, R is obviously inferior to W. An account of epistemic value that sees any R as superior, or that says R ought to be adopted over W (given the choice), is either false or an account of values and oughts that do not matter in the least. Unfortunately, every otherwise plausible account of individual and total epistemic value will see some R as superior to a relevant W, unless we adopt one fix. That fix says that credences or beliefs on certain topics, even when they are individually as good as they can be, can have no, or infinitesimal positive, epistemic value. We should adopt this fix. But it has important implications: if the epistemic norms are based in epistemic value, then it looks like the epistemic norms place no requirements on our beliefs about these topics.

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1. Carr and Pettigrew do not use the term “barely accurate.” They speak in terms of “neutral” credences (Pettigrew 2018, 341-342) or credences that are “no closer to truth than falsehood” or “no better than chance.” (Carr 2015, 232-233). Barely accurate credences are just slightly better than these. Both give more precise accounts than I do here, but what they say fits with my rough-and-ready treatment. Carr, Pettigrew, and I all argue previously that barely accurate credences have some positive epistemic value. I show in section 4 why my arguments in this paper do not need this. [↑](#footnote-ref-1)
2. This deals with the case I used to illustration the Conclusion, which compares credences about wisdom to those about boring propositions. It does not, however, deal with all of the versions of the Conclusion that Pettigrew discusses, since the topics of the beliefs are not specified. See my previous paper for discussion of this, but it is irrelevant to my arguments in this paper. [↑](#footnote-ref-2)
3. There’s another error theory discussed in ethics: Repugnant Conclusions involve too large of sets of things for us to reliably have intuitions about. I won’t discuss this in the main text for two reasons. First, it piggy backs on an error theory I do discuss. If we could clearly think about the value had by a few barely accurate boring credences, then we should be able to compare this to the expected value of accuracy improvements to credences about interesting topics, or see their trend in total value as the numbers of them add up. This would give us useful information about the value of boring credences, so our inability to think about large sets is only an error theory if we also are not good at imagining the value of smaller sets of barely accurate credences. Second, humans for all of our history have had doxastic states consisting of immense numbers of credences, whereas it is only very recently that humans have had to think about immense human populations. Even if we are bad at thinking about the total values of large human populations, I don’t see good reason to think that we can’t fathom the value of even very large doxastic states. [↑](#footnote-ref-3)
4. Note that Pettigrew makes this claim less to deal with the Repugnant Conclusion and more to deal with other, related problems for accuracy-first epistemology raised by Carr (2015).

Temkin (2012) endorses a view along these lines in ethics, but on different grounds than Pettigrew. [↑](#footnote-ref-4)
5. This may need qualification – depending on what forms of closure one endorses, and whether one thinks that credal states have to be partitions or Boolean algebras, it could be that losing certain credences would be problematic. But those qualifications don’t matter for my points here. [↑](#footnote-ref-5)
6. Can we base requirements on boring credences in instrumental value? Most boring credences have no actual instrumental value. To explain requirements on these credences, we’d have to appeal to their expected instrumental value. Expectation is defined in terms of probabilities of outcomes. To get plausible norms from expectations, we must appeal to the *rational* probabilities of outcomes. Where do the rational constraints on these probability assignments come from? Credences about the instrumental value of boring credences must themselves be boring. If they weren’t, then massive sets of such credences would be superior to wisdom. This is a problem: to use expected instrumental value to explain requirements on boring credences, we need some way of constraining credences about their instrumental values, but we do not have any such way, because these credences about instrumental value are themselves boring. See Talbot (2019) for more discussion. [↑](#footnote-ref-6)
7. This assumes that some infinitesimal values are greater than others. [↑](#footnote-ref-7)
8. One may prefer some alternate model for arithmetic involving infinitesimal values. The problematic models (for finite satisficing) would be ones that allow infinitesimal values to add up to very large totals at their limit. But, if that’s how infinitesimals work, then we won’t be able to use infinitesimal values to deal with either the Epistemic Repugnant Conclusion or the problems I go on to discuss. We’d have to instead say that boring credences have *no* epistemic value. [↑](#footnote-ref-8)
9. Arntzenius *et al* discuss infinite series of decisions such that: standard causal decision theory says that a certain choice is rational for each individual decision, but if the agent were able to make all of these decisions at once, they would be rationally required to *not* make these choices. That’s quite similar to what we may see for finite satisficing: each sub-optimal choice looks intuitively fine, but the collection of choices together looks intuitively wrong. Arntzenius *et al* conclude that causal decision theory is issuing the correct verdicts in each individual case – the decisions are individually rational, even though taken together they would be irrational – suggesting that the objection to finite satisficing may not be so serious. [↑](#footnote-ref-9)
10. As presented, neither W nor R is a Boolean algebra, since they don’t include the negations, conjunctions, and disjunctions of the propositions I’ve mentioned. That’s just to make things easy to follow. We can make them into algebras if one likes, and if we did, R would still have a greater number of accurate credences than W in each case. We could make this greater number as large as we like, and it would still be obvious that R cannot be more valuable than W. I won’t go through the process, as it would be tedious, but it should be clear how it goes: since each R starts with a greater number of accurate credences than the relevant W, extending each R and W into algebras will just continue this trend. [↑](#footnote-ref-10)
11. An anonymous reviewer suggested that we could get an ethical analog by considering non-human animals. To illustrate, let’s say that an ant can suffer in a way that is at least somewhat morally bad, but they cannot suffer to the same degree as a human. Intuitively, the suffering of any number of ants is less important than the great suffering of one human. [↑](#footnote-ref-11)
12. Some may say that our curiosity would be satisfied just by *thinking* we have knowledge. If that were so, then in cases 3 and 4, an agent in W would have their curiosity more satisfied than an agent in R, even if R were epistemically better than W. That’s because in these cases W contains as many or more maximal credences as R; thus, in these cases an agent in W would think they knew as much or more than the agent in R. However, in case 2, R contains more maximal credences than W. Yet in case 2 the credences in W still clearly satisfy our curiosity more than those in R. All that can explain this is that the maximal credences in W are together more epistemically significant than those in R. [↑](#footnote-ref-12)
13. Carr, Pettigrew, and I each argued that accuracy-first epistemology cannot adopt an account of total value that avoids the Repugnant Conclusion. These arguments relied on the distinctive features of accuracy that I discuss below. Accounts of epistemic value that don’t share these features *can* adopt these different accounts of total epistemic value. [↑](#footnote-ref-13)
14. We need case 4, and not just case 2, for views that say only full beliefs, and not suspensions of judgment, have value or disvalue. [↑](#footnote-ref-14)
15. To restate case 6 in terms of knowledge, when R contains knowledge that *p*, W would have to contain the belief that *not p*. So R and W must have beliefs with different content. But any tenable view of epistemic norms based on knowledge has to say that, for the purposes of determining what we ought to believe, knowledge that *p* is superior to a false belief that *not p*. Otherwise no doxastic state would be better than any other. [↑](#footnote-ref-15)
16. What if the different forms of epistemic value were incomparable, or on a par? When we say that two types of value are incomparable, or on a par, we are positing a sort of rough equality (Chang 2002). We might say, for example, that Mozart’s music is incomparable to Michelangelo’s. But we wouldn’t say that Michelangelo’s art is incomparable to *my* music, because I am a just-barely-competent musician. So, to say that there is value that R has more of than W, and this value is incomparable or on a par with values that W has more of than R, is just another way to bite the bullet on cases 1-4. [↑](#footnote-ref-16)
17. There are variants of the average utility view which say that the utility of a state is additive for small worlds, and average utility for large (see e.g. Temkin 2012). Since average utility views don’t avoid the Epistemic Repugnant Conclusion, these variants do not either. [↑](#footnote-ref-17)
18. There are a number of other variants on critical level views in the ethics literature. That’s because critical level views, in their simplest form, have untenable consequences. These variants add features to block these consequences, generally having to do with fairness or equality (e.g. Asheim & Zuber 2014). None of these impact the key features of critical level views that are relevant to the discussion here. Since critical level views in the simplest form don’t avoid cases 2-4, neither do these variants. [↑](#footnote-ref-18)
19. Temkin (2012) suggests some version of this view, although he suggests combining it with pluralism. One can combine what I say about pluralism and diminishing marginal utility to apply to Temkin-style views. [↑](#footnote-ref-19)
20. I’m assuming that the utility each boring credence contributes diminishes as a function of the number of boring credences in one’s credal state. But there is a different approach to diminishing utility: the utility of each boring credence diminishes as a function of the credence’s place in a sequence (e.g. a temporal sequence), with later credences contributing less than earlier ones. This view is implausible. It means that a handful of early credences can contribute more to total epistemic value than an infinite number of later credences. I can’t see why that would be so.

But let’s say we like the view. It does avoid some of my arguments. Infinite series of boring credences can diminish towards a limit without having to have infinitesimal values. But this view ultimately doesn’t avoid the main problem I discuss in section 2.1. Boring credences will still have to have very minimal epistemic utility. And their total utility must still approach a low limit. Given this, we can still adopt a form of satisficing consequentialism that allows us to ignore boring credences, and this form of satisficing will not be open to objections. [↑](#footnote-ref-20)
21. Dispositional beliefs are subject to epistemic evaluation. For example, David Rose and Jonathan Schaffer (2013) have recently argued that knowledge entails dispositional belief, not non-dispositional belief, and evaluating as knowledge is the paradigmatic form of epistemic evaluation. [↑](#footnote-ref-21)
22. You may wonder if I’m being hypocritical. In discussing finite satisficing consequentialism (section 2.1), I said it might be acceptable for it to say implausible things about infinite series of choices. Yet, here I am saying that a view must say plausible things about infinitely large doxastic states. What’s the difference? We probably don’t make infinite series of choices. But we may very well have infinitely large doxastic states, and some ideal agents almost definitely do. Epistemic consequentialists want a theory that applies to ideal agents, and (typically) also want a theory that applies to us as well. So, while it might not be so bad were consequentialism to generate implausible implications for infinite series of choices, it would be bad if consequentialism had implausible implications for infinitely large doxastic states. [↑](#footnote-ref-22)