**A Puzzle about Probabilism**

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**1. Introduction**

Consider the following principle of rationality:

*Probabilism*: An agent’s credences should be probabilistically coherent.

An agent’s credences are probabilistically coherent just in case they satisfy the following axioms:

*Finite Additivity*: If p and q are mutually exclusive propositions, then Cr (p or q) = Cr (p) + Cr (q).

*Non-Negativity*: For any proposition, p, Cr (p) ≥ 0.

*Normality*: For any tautology, t, Cr (t) = 1.[[1]](#footnote-1)

Probabilism is motivated by many different considerations. For instance, proponents of the Dutch Book arguments have shown that if one has credences that are probabilistically incoherent, then one will sanction as fair a pair of bets that guarantee a loss in utility. Thus, insofar as it is irrational to sanction such bets as being fair, the Dutch Book arguments support the claim that one’s credences should be probabilistically coherent.[[2]](#footnote-2)

 Moreover, the accuracy-dominance arguments suggest that if one’s credal state, C, is probabilistically incoherent, then one can always have some other credal state, C\*, that will be at least as accurate as C regardless of what the world is like. Thus, given that the primary epistemic goal is to represent the world as accurately as possible, the accuracy-dominance arguments also support Probabilism.[[3]](#footnote-3)

 In addition to these theoretical considerations, Probabilism is intuitively plausible as well. For instance, it seems irrational for someone to have a credence of .30 that the Warriors will win the game while only having credence of .30 that they won’t. Probabilism is the principle that allows us to derive this intuitive verdict.

 But despite its intuitive and theoretical plausibility, Probabilism has a puzzling consequence. For given some widely endorsed principles about how our credences should be updated after receiving testimony from others, a paradox arises when one receives testimony that bears on how confident one should be in certain tautologies. The paradox is that if Probabilism is true, then one’s credence in some tautology, T, should be 1. However, when one receives misleading higher-order evidence that one has misevaluated whether one’s evidence actually supports T, there are other plausible principles according to which one’s credence in T should be less than 1. But assuming that one should not be both certain and less than certain that T is true, something has to give.

The primary aim of this paper is to develop and defend a new solution to this paradox. I begin by spelling out the details of the puzzle and showing how it can be generalized in a couple of different ways (Section 2). Next, I consider what I take to be the two most promising solutions currently on offer and argue that there are strong reasons for resisting them (Section 3). Afterwards, I propose a novel theory of rationality according to which it can be indeterminate which rational requirements one is subject to and thus indeterminate which credences one is permitted or required to have. I argue that this view allows us to resolve the paradox while also avoiding a number of pitfalls (Section 4). I conclude by sketching a decision procedure for agents who have doxastic states that are indeterminately rational and by highlighting the ways in which this approach dovetails with the ways in which agents should make decisions in the face of indeterminacy more generally (Section 5).

**2. A Puzzle about Probabilism**

Consider

LOGIC PROBLEM: Anna is a logic student who is evaluating the following proposition:

(L) If Lenny is happy if and only if Jenny and Benny are not happy, then if Jenny is happy if Benny is not, Lenny is not happy.

 Anna is certain that (L) is true. However, her logic professor, Chad, then tells her that before she began the exam, she was slipped a reason distorting drug that badly impairs people’s ability to solve logic problems; those who are affected by the drug only reach the right conclusions 20% of the time. Anna has seen her fellow classmates experiment with this drug and she knows that if it is in your system, then there really is only a 20% chance that you will arrive at the correct answer.

 As it turns out, unbeknownst to both Anna and Chad, the drug was just a placebo and Anna’s logic reasoning abilities were not affected in the least.[[4]](#footnote-4)

There are two things to notice here. First, not only is (L) a tautology, it is a logical truth that students like Anna have the cognitive capacity to understand. Second, even though Anna’s first-order evidence entails (L), Chad’s testimony provides her with higher-order evidence that strongly suggests that she has misevaluated what this first-order evidence actually supports; insofar as Anna should accept Chad’s testimony, she has higher-order evidence that suggests that there is an 80% chance that she botched her assessment of the logic problem.[[5]](#footnote-5)

 Question: after receiving Chad’s testimony about the drugs, how confident should Anna be in (L)?

 Answer: it is hard to say, since given her total body of evidence, Anna is in the grip of an epistemic paradox.

 To see why, notice that if Probabilism is true, then Anna should have a credence of 1 in (L). However, given Chad’s testimony, it also seems plausible that Anna should integrate her first and higher-order evidence and reduce her confidence in (L) as follows:

*Calibrationism*: For any proposition, p, if, independently of the first-order reasoning in question, your expected degree of reliability concerning whether p is r, then your credence in p should be r.[[6]](#footnote-6)

As it is stated, Calibrationism is a general thesis that captures the spirit of a family of views. Thus, while calibrationists disagree about how the details of this general principle should be filled in, they all agree that there is a tight connection between how reliable Anna should take herself to be at determining whether (L) is true, on the one hand, and the credence that Anna should have in (L), on the other.

 Now, to see how Calibrationism should be unpacked, notice that by her own lights Anna should think that there is a 20% chance that she evaluated her first-order evidence correctly. For even though the drugs did not affect Anna’s *actual reliability* at evaluating the logic problem (i.e., because she received a placebo, it is highly likely that Anna evaluated her first-order evidence correctly) her *expected reliability* is still very low (i.e., given Chad’s testimony, from her own perspective Anna should expect to form credences that are supported by her first-order evidence 20% of the time). Thus, because Anna’s expected degree of reliability is 20%, all calibrationists agree that Anna ought to have a credence of .20 in (L).

 In addition to being intuitively plausible, there are many arguments that support Calibrationism. One general line of thought is this. Suppose that Calibrationism is false. Then one should either endorse a steadfast view according to which Anna should ignore her higher-order evidence entirely, e.g., Anna should remain highly confident that (L) is true on the basis of her first-order evidence and refuse to accept Chad’s testimony, or else one should adopt a level-spitting view according to which Anna should accommodate her first and higher-order evidence by being highly confident that (L) is true and that she has misevaluated whether her evidence actually supports this, e.g., Anna should be highly confident that “(L), but my evidence does not support (L).”[[7]](#footnote-7) But because these steadfast and level-splitting views license problematic forms of reasoning, e.g., in the long run, both views seem to license Anna to bootstrap her way to the conclusion that she is immune from the effects of Chad’s drugs, Calibrationism is the most plausible way of explaining how an agent should respect all of her evidence.[[8]](#footnote-8)

 As it stands, then, Calibrationism and Probabilism are plausible principles of rationality that issue incompatible verdicts about the credence that Anna should have in (L). This tension can be turned into a full-blown paradox given the following constraint that any theory of epistemic rationality ought to satisfy:

*No Dilemmas*: The principles of rationality cannot be such that, for some bodies of evidence, an agent with that evidence is required to have an impermissible credence no matter what.

What exactly does it mean to say that it is rationally impermissible for an agent to have a particular credence? Plausibly,

*Permissibility*: It is rationally permissible for an agent to have a credence, c, in a proposition, p, just in case having c does not violate any principles of rationality.

*Impermissibility*: It is rationally impermissible for an agent to have a credence, c, in a proposition, p, just in case having c violates a principle of rationality.

Given these notions of rational permissibility and impermissibility, we can also give an account of rational requirements as follows

*Requirement*: An agent is rationally required to have a credence, c, in a proposition, p, just in case it is impermissible for one to not have c.

Thus, No Dilemmas says that if a theory entails that Anna’s credence in (L) will be rationally impermissible no matter how she responds to her evidence, then that theory needs to be revised. No Dilemmas is intuitively plausible,[[9]](#footnote-9) and in (Section 4.2) I will offer two arguments for why it should be accepted, i.e., I will argue that if we reject No Dilemmas, then we will have to endorse two highly counterintuitive consequences.

But while Probabilism, Calibrationism, and No Dilemmas are independently plausible, they are jointly inconsistent. Here is one way to see this:

(1) No Dilemmas is true.

(2) Anna is subject to Probabilism and Calibrationism.

(3) Anna will either have a credence of 1 in (L) or else she will not.

(4) If not, then Anna’s credence will violate Probabilism, in which case her credence will be rationally impermissible.

(5) If so, then Anna’s credence will violate Calibrationism, in which case her credence will also be rationally impermissible.

(6) Thus, No Dilemmas is false.

But (1) and (6) are incompatible. Call this the *Puzzle about Probabilism*.

 Before moving on, is it worth noting that this puzzle can be generalized in a couple of ways. Consider, for instance, a different version of LOGIC PROBLEM in which Anna has no reason to think she has been given the logic drugs, but where she does disagree with many of her epistemic peers about whether (L) is true. In this case, many theories of peer disagreement will require Anna to conciliate towards her peers to at least some degree, e.g., while they do so for importantly different reasons, the equal weight view,[[10]](#footnote-10) the total evidence view,[[11]](#footnote-11) and the justificationist view[[12]](#footnote-12) all require Anna to respond to the peer disagreement by becoming less than certain of (L).

 Or, consider a third version of LOGIC PROBLEM in which Chad doesn’t tell Anna about the logic drugs, but where Anna does receive testimony from many known experts that (L) is false. In this case, any view about expert testimony that requires novices like Anna to respond to the testimony of known experts by reducing her credence in (L) will also require her to have credences that are probabilistically incoherent.[[13]](#footnote-13)

Thus, nothing about the paradox hangs on Calibrationism in particular. Rather, any principle that ever requires one to be less than certain of a tautology will also conflict with Probabilism.

**3. Two Potential Solutions**

While one could resolve the puzzle by rejecting Probabilism or Calibrationism, I don’t want to explore either of these options here. [[14]](#footnote-14) This is partly because I find the arguments that motivate these principles compelling, but also because even if one tries to go this route, one still won’t be completely out of the woods. For in addition to the Puzzle about Probabilism, there are many other paradoxes that involve conflicts between entirely different epistemic principles. For instance, conflicts can arise between the principles that govern our testimonially-based beliefs and the principles that require us to not have beliefs that are epistemically akratic.[[15]](#footnote-15) And other conflicts can arise between the principles that require us to have beliefs that are consistent and the principles that require us to have beliefs that are obviously entailed by out evidence.[[16]](#footnote-16) And the list goes on.[[17]](#footnote-17)

Thus, insofar as one adopts the general strategy of resolving epistemic paradoxes by giving up on some of the principles that get the puzzles going, one must not only abandon at least one of the principles discussed thus far, but a number of other principles that are equally important. Because the prospect of revising our epistemological theories in such a radical way looks grim, there is good reason to investigate other solutions.[[18]](#footnote-18)

 To my mind, the two best solutions currently on offer say that we should embrace the fact that rational requirements can come into conflict.

 According to the first line of thought, LOGIC PROBLEM should be diagnosed as follows: Even though it is impossible for Anna to rationally have a credences of 1 and less than 1 in (L), this is what she ought to do; after all, Probabilism and Calibrationism are genuine principles of rationality, and this is precisely what these principles recommend. Call this the *Genuine Rational Dilemmas Proposal* (RDPGenuine).[[19]](#footnote-19)

 According to the second line of thought, even though Probabilism and Calibrationism issue incompatible verdicts in LOGIC PROBLEM, there is only a *prima facie* dilemma here. More specifically, while these principles do require us to have certain credences in most cases, when they conflict one principle will override the other, so to speak, such that there is a single credence that is most rational for one to have. Thus, depending on how the details of this view are fleshed out, one potential diagnosis of LOGIC PROBLEM is as follows: Anna should satisfy Probabilism and Calibrationism in general; however, when these principles conflict, Calibrationism overrides Probabilism such that Anna is required to satisfy the former and should not, therefore, satisfy the latter; thus, all things considered, Anna should have a credence of .2 in (L). Call this the *Prima Facie Rational Dilemmas Proposal* (RDP*Prima facie*).[[20]](#footnote-20)

I am now going to argue that there are good reasons for resisting both of these solutions. While I don’t think that any one reason is conclusive on its own, when taken together these considerations make for a package of concerns that should motivate us to explore other ways of resolving the puzzle.

*4.1 Against the RDPPrima Facie*

 As it stands, proponents of the RDP*Prima Facie* have yet to discharge a large explanatory burden. For according to this view, when two principles of rationality conflict, one will override the other. But what explains why this is the case? In virtue of what, for instance, would Calibrationism trump Probabilism?

 Perhaps proponents of the RDP*Prima Facie* could try to develop an epistemic ranking system that attached a sort of epistemic weight to every principle of rationality. For instance, perhaps we could think of this system as being a 100-point scale that allowed us to assign numerical values to the overall epistemic importance of various principles. Given this ranking system, we could just look to see which of the two conflicting principles was lower on the scale and then appeal to this fact to explain why it was overridden. The reason that Calibrationism overrides Probabilism, say, is that the former has an epistemic value of 97 whereas the latter only scores a 92.

 But even so, the explanatory burden has clearly not been discharged. For what explains why principles get ranked the way they do? What explains why Calibrationism scores a 97 and Probabilism a 92?

Coming up with a non-*ad hoc* story to tell here strikes me as being a very difficult task indeed. This is partly because there is no obvious, uncontroversial way to compare the epistemic significance of the arguments and intuitions that support these conflicting principles; e.g., insofar as the arguments for Probabilism and Calibrationism suggest that one should always satisfy these principles, it is far from clear what considerations one would appeal to in order to show why the de-pragmatized Dutch Book arguments that support Probabilism are less weighty than the bootstrapping arguments that support Calibrationism. But it is also because the puzzle discussed above is just one of many importantly different epistemic paradoxes (e.g., ft. 15-17). Thus, insofar as one opts for a ranking system approach to solve epistemic paradoxes in general, one will not only need to explain how Probabilism and Calibrationism stack up against one another, but also how and why many other principles get assigned their own epistemic scores. And as it stands, it is far from clear how such a project could be carried out.[[21]](#footnote-21)

Instead of taking the ranking system approach, perhaps one could develop an intuitionist view according to which conflicts can be resolved on a case-by-case basis by simply making an epistemic judgment on the matter, e.g., in LOGIC PROBLEM, Probabilism trumps Calibrationism because when we consult our best epistemic intuitions, this is just what seems right.[[22]](#footnote-22)

But given the wide variety of epistemic paradoxes that involve conflicting rational requirements, and given the great deal of disagreement over how these paradoxes should be resolved, what reason is there to think that my epistemic judgments about these matters are more truth conducive than yours?

This is not to say that we can never use our best judgments to figure out when some principle trumps another, e.g., when it comes to certain kinds of conflicts between moral principles, perhaps there is nothing problematic about resolving the tension by appealing to the widespread and relatively uncontroversial intuition that my obligation to save my drowning child overrides my obligation to keep my promise to take you for ice cream. Rather, my point is that given the wide range of views about how these importantly different epistemic paradoxes should be resolved, there is good reason to think our highly contested intuitions about what trumps what should not constitute the entire basis for resolving them.

 The takeaway point here is not that it is impossible to give a good explanation of how the ranking system and intuitionist approaches could work, but just that proponents of the RDP*Prima Facie* currently bear an explanatory burden that is large enough to motivate us to search for an alternative proposal.[[23]](#footnote-23)

*4.2 Against the RDPGenuine*

 The RDPGenuine avoids this worry. For when two principles conflict, the RDPGenuine says that one does not override the other, but that the two just remain in tension. Nevertheless, the RDPGenuine has two highly counterintuitive consequences.

 First, it is exceedingly plausible that one should not have credences that are epistemically akratic in the following sense:

*No Akrasia*: Epistemically speaking, if one is highly confident that a proposition, p, is true, then one should not also think that one has misevaluated one’s evidence about whether p, e.g., one should not think, “P is true” while also thinking “I probably misevaluated whether my evidence actually supports p”.[[24]](#footnote-24)

Now, if RDPGenuine is true, then Anna should have a credence of 1 in (L), and she should have a credence of .2 in (L) too. But given that Anna should be certain that (L) is true, what explains why she should also have a credence of .2 in this proposition? Given the setup of the case, the only plausible answer seems to be is this: Anna should have a credence of .2 in (L) because she should think that she misevaluated whether her evidence actually supports (L); she should think while she initially judged (L) to be true, Chad’s logic drug caused her she botch her assessment of the relevant evidence.

 But – and herein lies the problem – if the RDPGenuine is true, then Anna should be certain that (L) is true and she should be confident that she botched her assessment of the relevant evidence; that is, she should think, “(L) is true”, while also thinking that “I probably misevaluated whether my evidence actually supports (L).” Thus, proponents of the RDPGeuine must embrace the counter-intuitive verdict that, in some cases, an agent should have akratic doxastic states.

 Second, it is plausible that your credences should be immodest in the following sense:

*Immodesty*: If you should be highly confident that some proposition, p, is true, then you should also think that p is more likely to be true than not-p.

For instance, if you should be highly confident that it is going to rain tomorrow, then you should also think that it is more likely to rain tomorrow than not. For it seems irrational for someone to say, “I am highly confident that it is going to rain tomorrow, but it is more likely that it will be sunny all day,” or “My confidence that it will rain tomorrow is very high, but I think the chance of rain is equal to the chance of not rain.”[[25]](#footnote-25)

 However, if the RDPGenuine is true, then since Anna should be highly confident of (L), she should also think that (L) is more likely to be true than not-(L). And since she should be highly confident that not-(L), she should also think that not-(L) is more likely to be true than (L). But – and herein lies the problem –it is implausible that Anna should think that (L) is more likely to be true than not-(L), while also thinking that not-(L) is more likely to be true than (L). Thus, proponents of the RDPGenuine must endorse the counter-intuitive consequence that in some cases one’s credences should be far too modest.

 The purpose of these last two arguments has been to defend No Dilemmas by drawing out a couple of unnoticed and problematic consequences of the RDPGenuine. The upshot is that, all else being equal, it is better to opt for an alternative solution that preserves No Dilemmas and thus avoids these worries.

 Thus far I have suggested that the RDPGenuine and the RDP*Prima Facie* give rise to some important questions that, as it stands, have yet to be answered. I have also suggested that answering these questions will not come easily and that, at the very least, adequately addressing them will require one to take a stand on a number of controversial issues. In the remainder of this paper I will develop and defend a novel theory of rational indeterminacy and argue that this view provides a unified solution to the Puzzle about Probabilism and some other epistemic paradoxes with the same underlying structure.

**4. Towards a Theory of Rational Indeterminacy**

 The view I am going to propose is in the same vein as supervaluational treatments of vagueness and indeterminacy more generally. Roughly speaking, supervaluationists maintain that if it is indeterminate whether some proposition, p, is true, then there are multiple ways in which things can be sharpened or precisified such that p will be true on some sharpenings and false on others. One upshot of this general framework is that it gives us the resources to get a grip on what it would mean to say that it is indeterminate whether p is true. For instance, according to classical supervaluational theories, p is true just in case it true on the correct sharpening, false just in case it is false on the correct sharpening, and indeterminate if it is true on some sharpenings but not others and it is unsettled which sharpening is correct. I think this general framework has a lot to recommend it, and I want to push for something analogous in the domain of epistemic rationality.[[26]](#footnote-26)

Question: how can there be any room in a theory of rationality for indeterminacy to arise? After all, if Anna is subject to all of the principles of rationality, then her credence will either satisfy all of these principles or it won’t. If it does, then it will be permissible, and if it doesn’t, then it will be impermissible. And these two options seem exhaustive.

To get a grip on how it can be indeterminate which credences one is permitted to have, I want to introduce the following notion of epistemic immunity:

*Epistemic Immunity*: One has epistemic immunity from a principle of rationality, R, with respect to a particular proposition, p, just in case one is in an epistemic situation in which R no longer states a necessary condition on which doxastic attitudes one is permitted or required to have about p.

To see how Epistemic Immunity should be unpacked, consider LOGIC PROBLEM and notice that insofar as Anna is subject to Probabilism and Calibrationism, she is required to have a credence of 1 and .20 in (L) respectively. Now, suppose just for the sake of argument that Anna has epistemic immunity from Probabilism and that Calibrationism still applies to her with respect to her credence in (L). Epistemic Immunity says two things. First, it says that Probabilism no longer states a necessary condition on which credence is permissible for Anna to have in (L). Thus, because Probabilism no longer applies to Anna, her credence of .20 in (L) does not violate this principle and is not, therefore, impermissible.

Second, Epistemic Immunity says that Probabilism only fails to apply to Anna with respect to her credences in (L). It does not say that Probabilism fails to apply to Anna with respect to any propositions whatsoever. Thus, while Anna’s credence in (L) can be rationally permissible even if it is less than 1, Epistemic Immunity does not imply that it is also rationally permissible for Anna to have credences of less than 1 in other tautologies, e.g., Epistemic Immunity does not say that it can be permissible for Anna to have a credence of .07 in the proposition that two plus two equals four.

Of course, Epistemic Immunity neither says anything about whether anyone actually has immunity from a principle of rationality, nor does it say anything about the connection between having epistemic immunity, on the one hand, and having credences that are indeterminately rational, on the other. It does, however, give us the tool that we need to develop a theory of rational indeterminacy.

*5.1 An Argument for Rational Indeterminacy*

The aim of this subsection is to give an argument that appeals to the notion of epistemic immunity to explain when and why rational indeterminacy occurs.

To begin, consider

 (7) If there are two principles of rationality such that one’s credence in p cannot jointly satisfy the principles in question, then one has epistemic immunity from *one* of the principles with respect to one’s credences in p.

To see the motivation for (7), notice that if Anna did not have epistemic immunity from Probabilism or Calibrationism with respect to her credence in (L), then we should either accept the RDPGenuine or else the RDP*Prima Facie*. But since we seen that there are serious worries with both views, there is good reason to accept (7).

 It is important to note that according to (7), Anna has epistemic immunity from either Probabilism or Calibrationism, but not both. One might wonder, then, why (7) should not be replaced with

(7\*) If there are two principles of rationality such that one’s credence in p cannot jointly satisfy the principles in question, then one has epistemic immunity from *both* of the principles with respect to one’s credences in p.

We have come to a choice point: insofar as both versions of the RDP should be rejected, we should either endorse (7) or (7\*). But which one? Here is an argument for the former.

If (7\*) is true, then in LOGIC PROBLEM Anna has immunity from Calibrationism and Probabilism. But if neither principle governs Anna’s thinking, then her credences cannot violate either of them, i.e., you can’t violate a principle that you are not subject to. Thus, if (7\*) is true, it would be permissible for Anna to have a credence of .20 in (L), since this credence would neither violate Probabilism nor any other principle that Anna is subject to. Similarly, it would be permissible for Anna to have a credence of 1 in (L) too, since this credence would neither violate Calibrationism nor any other relevant principle. In fact, if Anna has immunity from both Calibrationism and Probabilism, then it would be permissible for her to have any credence in (L) whatsoever, e.g., if Probabilism and Calibrationism do not apply to Anna, then it is hard to see how her credence of .07 in (L) would violate any principles that bear on how confident she should be about this tautology.

 But in order to maintain that it is permissible for Anna to have any credence in (L) whatsoever, one must endorse a radical form of Intrapersonal Permissivism:

*Intrapersonal Permissivism*: One agent, with one body of evidence and one evidential standard, can be permitted to take one of many different doxastic attitudes towards the same proposition.[[27]](#footnote-27)

However – and herein lies the problem – there are good reasons for thinking that this variety of Permissivism is untenable.[[28]](#footnote-28) For instance, it is hard to see how one’s evidence and evidential standard could be such that being highly confident in (L) is just as permissible as being highly confident in not-(L), given that one’s evidential standard should be such that one’s evidence for (L) is also evidence against not-(L). Thus, (7\*) should be given up on the grounds that it licenses an overly permissive theory of rationality.

 This is not to say that proponents of (7) are home free. For if it can be shown that (7) also licenses an overly permissive theory of rationality, then perhaps we should re-think this premise all together. I think that proponents of (7) can avoid this worry, but seeing why will take some work.

 To begin, notice that

(8) In LOGIC PROBLEM, Anna’s credence in (L) cannot jointly satisfy Probabilism and Calibrationism.

Thus, given (7) and (8),

(9) In LOGIC PROBLEM, Anna has epistemic immunity from either Probabilism or Calibrationism with respect to her credence in (L).

But which of these two principles does Anna have immunity from? Here we come to another choice point:

(10) There is either a plausible, non *ad hoc* way of specifying which requirement fails to apply to Anna, or else there are two equally good resolutions (more on resolutions below).

According to the first way of going, we would need to develop an argument that specifies why Probabilism still applies to Anna but Calibrationism does not, or vice versa. But such a view collapses into a version of the RDP*Prima Facie* discussedabove; this view amounts to the claim that when two principles conflict, one will override the other. Thus, insofar as proponents of the *RDPPrima Facie*are saddled with the difficult task of explaining why certain principles override others, those who take this route will face a similar problem.

 As things currently stand, then, there is good reason for thinking that

(11) There are no plausible, non-*ad hoc* ways of specifying which requirement fails to apply to Anna.

Thus, there is good reason for thinking that

(12) There are two equally good resolutions.

There are two questions worth asking here. First, what exactly is a resolution? Second, what does it mean to say that two resolutions are equally good? Let us take these in turn.

A resolution is meant to capture one way in which an agent can form credences without violating any of the principles of rationality that apply to her. More specifically,

*Resolution*: A maximally consistent set of epistemic principles that apply to an agent with respect to her credence in a specific proposition.

For instance, consider LOGIC PROBLEM and notice that given (7)-(12), there will be two resolutions. The first resolution will be the set that includes every principle of rationality except for Probabilism. Thus, according to this resolution, Anna can satisfy all of the principles that apply to her by having a credence of .20 in (L). The second resolution will include every principle of rationality except for Calibrationism. Thus, according to this resolution, Anna can satisfy all of the principles that apply to her by having a credence of 1 in (L). Thus, both resolutions say that there is a permissible credence for Anna to have in (L).

 I will say more about resolutions below, but for now I want to move on to consider what it means for two resolutions to be equally good. The idea here is that instead of including some principled way of determining which resolution trumps the other, our best epistemological theories leave it genuinely unsettled which is best. That is, our theories are silent about whether Anna should satisfy the recommendations of the first resolution or the second.

It is here that we can begin to see how rational indeterminacy can arise. For when the principles of rationality are not in tension, there will only be one resolution, i.e., the resolution on which all of the principles apply. But when a conflict does arise, there will a number of equally good resolutions, where the number of resolutions will be determined by the number of maximally consistent sets of principles to which one can be subject.

Any plausible theory of rationality ought to be able to account for the difference between the cases in which there is only one resolution and the cases in which there are many. One of the most plausible ways of doing this, I think, is to draw on the classical supervaluational framework as follows:

*Determinate-Applicability*: A principle of rationality, R, applies to an agent, S, with respect to her credence in a particular proposition, p iff. R applies to S on the correct resolution.

*Determinate-Inapplicability*: A principle of rationality, R, does not apply to an agent, S, with respect to her credence in a particular proposition, p iff. R does not apply to S on the correct resolution.

*Indeterminate-Applicability*: It is indeterminate whether a principle of rationality, R, applies to agent, S, with respect to her credence a particular proposition, p iff. R applies to S on some resolutions but not others and it is unsettled which resolution is the correct one.

Moreover, depending on the number of possible resolutions, one’s credence might be permissible on the correct resolution, impermissible on the correct resolution, or it could be unsettled which resolution is correct. One of the most plausible ways of accounting for the differences between these three possibilities, I think, is to maintain that:

*Determinate-Permissibility*: It is permissible to have a credence, c, just in case it is permissible to have c on the correct resolution.

*Determinate-Impermissibility*: It is impermissible to have a credence, c, just in case it is impermissible to have c on the correct resolution.

*Determinate-Requirement*: One is required to have a credence, c, just in case is impermissible to not have c on the correct resolution.

*Indeterminately Rational*: It is indeterminate whether one is permitted or required to have a credence, c, just in case one is permitted to have c on some resolutions but not on others and it is unsettled which resolution is the correct one.

 Given this way of understanding permissibility and impermissibility,

(13) If there are two equally good resolutions, then some credences will be indeterminately rational.

For as we have seen above, anytime there is a plurality of equally good resolutions, different credences will be permitted on each. For instance, in LOGIC PROBLEM there are two resolutions, one of which says that it is permissible for Anna to have a credence of 1 in (L), and one of which says that it is permissible for Anna to have a credence of .20 in (L). But since it is unsettled which resolution is best,

(14) In LOGIC PROBLEM, it is indeterminate which credence Anna is permitted or required to have in (L).[[29]](#footnote-29)

More specifically, it is indeterminate whether Anna is permitted or required to have a credence of 1 or .20 in (L), since each credence is permitted on exactly one of the two resolutions. Moreover, it is impermissible for Anna to have any other credence in (L), since any credence other than 1 or .20 is impermissible on both resolutions.

Let us call the view that it can be indeterminate which credences an agent is permitted or required to have the *Rational Indeterminacy Proposal* (RIP).

In the next subsection I want to argue that the RIP allows us to resolve the Puzzle about Probabilism as well as other epistemic paradoxes with the same underlying structure.[[30]](#footnote-30)

*5.2 The Puzzle, Revisited*

 Recall

(2) Anna is subject to Probabilism and Calibrationism.

But according to the RIP, Anna is not subject to both Probabilism and Calibrationism, for neither principle applies to her on every resolution. Rather, it is indeterminate which of the two principles Anna is subject to in her current epistemic situation. Thus, (2) should be rejected.

 Moreover, consider

(4) If so [i.e., if her credence in (L) is less than 1], then Anna’s credence violates Probabilism, in which case it is rationally impermissible.

(5) If not [i.e., if her credence in (L) is 1], then Anna’s credence violates Calibrationism, in which case it is rationally impermissible.

But according to the RIP, it is indeterminate whether Anna is subject to Probabilism or Calibrationism. Thus, if Anna has a credence of .20 in (L), then even though her credence is less than 1, it does not necessarily violate Probabilism and is not, therefore, impermissible. Rather, it is indeterminately rational. Similarly, if Anna has a credence of 1 in (L), then it does not necessarily violate Calibrationism and is not, therefore, impermissible. Rather, it is indeterminately rational too. Thus, according to the RIP, (4) and (5) should be rejected as well.

This, then, is how the RIP furnishes the resources to resolve the paradox.

 Before moving on, it is worth nothing that the RIP is not tailor-made for the Puzzle about Probabilism. Rather, it provides a unified solution to any epistemic paradox that involves an agent who appears to be subject to conflicting rational requirements; the RIP says that any time there are genuine epistemic principles that offer conflicting recommendations, it is indeterminate which of these conflicting principles one is subject to and thus indeterminate which doxastic states one is permitted or required to have. Thus, insofar as there are many importantly different epistemic paradoxes that share this underlying structure (e.g., ft. 15-17), the RIP can resolve a variety of seemingly intractable puzzles.[[31]](#footnote-31)

*5.3 Two Potential Worries*

 I want to pause in this subsection to address two potential worries about the problem of Intrapersonal Permissivism that plagued (7\*):

(7\*) If there are two principles of rationality that cannot be jointly satisfied, then one has epistemic immunity from *both* principles in question.

The problem was that if Anna has immunity from both Calibrationism and Probabilism, then any credence that she has in (L) will be rationally permissible. But no theory of rationality should be this permissive. Insofar as the RIP rests on (7), will this problem re-emerge?

No. As we have seen, (7) is compatible with it being indeterminate which credences are rationally permissible for Anna to have. Thus, unlike (7\*), (7) does not imply that it is rationally permissible for Anna to have any credence in (L) whatsoever.

Second, even if the RIP does not rely on Intrapersonal Permissivism in particular, does it rely on Permissivism in general? That is, does the RIP entail that Uniqueness is false?

No. On what I take to be the best formulation of the view, Uniqueness says roughly the following:

*Uniqueness:* For any agent, S, body of evidence, E, and proposition, p, there is *at most* one rationally permissible attitude for S to take towards p given E.[[32]](#footnote-32)

Thus, the RIP is compatible with Uniqueness so understood. For instance, while the RIP entails that in LOGIC PROBLEM it is indeterminate which credences Anna is permitted or required to have in (L), it says nothing about whether there can be cases in which there is more than one permissible credence for agents with the same body of evidence to have in a given proposition. Thus, the RIP is compatible with the most plausible versions of Uniqueness and Permissivism.

In the next section I want to conclude by developing and then responding to a worry about the way in which the RIP bears on our lives as rational agents more generally.

**6. Decision Making Under Rational Indeterminacy**

**I AM NOT PLANNING ON INCLUDING THIS SECTION IN THE TALK.**

In LOGIC PROBLEM, Anna is in what I will call a Rational Indeterminacy Scenario:

*Rational Indeterminacy Scenario*: A case in which in it indeterminate which credences one is permitted or required to have about a particular proposition.

Now, suppose that Anna is forced to make a choice about whether (L) is true and that a lot hangs on this, e.g., if she answers correctly, she will pass Chad’s logic class, but if she answers incorrectly, then she will be forced to enroll in summer school. Of course, there is an ‘objective’ way of looking at her decision in which it is obvious what she should do; she ought to say that (L) is true because it is. But there is different and equally important way of looking at things in which isn’t at all clear how Anna should respond. After all, while it seems to her that (L) is true, it also seems to her that she has good reason to think that she probably misevaluated the relevant evidence. ‘Subjectively’ speaking, then, how should Anna decide to answer the question?

 While there is legitimate question to be asked about how and why agents in Rational Indeterminacy Scenarios should make decisions, the RIP appears to be ill-equipped to provide an answer. For presumably if Anna is forced to decide between (L) and not-(L), then she should choose (L) just in case it is rationally permissible for her to have a credence in (L) of .5 or more, e.g., intuitively, Anna should not choose (L) if she is rationally required to have a credence of .2 in this proposition.[[33]](#footnote-33) But since the RIP says that it is indeterminate whether Anna is permitted to have a credence in (L) or .5 or more, proponents of the RIP seem to be committed to saying that it is indeterminate how Anna should answer Chad’s question.

The worry here is that, all else being equal, it would be preferable to have a theory of rationality that provides agents with advice about how to make decisions. But, as we have just seen, the RIP fails to provide agents in rational indeterminacy scenarios with a decision-making procedure. As it stands, then, proponents of the RIP are faced with the following challenge:

*Rational Indeterminacy Challenge*: The challenge to construct a decision- making procedure for agents who are forced to makes a decision about a proposition while in the grip of a rational indeterminacy scenario.

Perhaps this challenge would not be so pressing if every theory of rationality had problems providing agents like Anna with applicable advice. But this is not the case. For insofar as the RDP*Prima-facie* says that when two principles conflict one will override the other, it can provide agents like Anna with the relevant decision-making procedure, e.g., if proponents of RDP*Prima-facie* want to say that Probabilism trumps Calibrationism and that Anna should thus have a credence 1 in (L), they can advise her to say that (L) is correct. Thus, if proponents of the RIP cannot meet the Rational Indeterminacy Challenge, then not only would the RIP incur a cost, it would incur a cost that is not incurred by the RDP*Prima-facie*. And this would be at least one good reason to prefer the latter to the former.

 My aim in this last section, then, is to propose an answer the Rational Indeterminacy Challenge. My general strategy will be to meet the challenge by expanding on Robert Williams’ (2014, forthcoming, ms.) Mind-Making account of decision-making.

*6.1 Indeterminate Ought Scenarios and the Indeterminate Ought Challenge*

While I have been arguing that it can be indeterminate which doxastic states an agent is rationally permitted or required to have, recent work on ethical vagueness and moral indeterminacy suggests that it can likewise be indeterminate which actions one is morally permitted or required to perform. For instance, consider:

PROMISE: Chad is obligated to help Anna with her logic homework unless he promised to help Zach with his logic homework instead. Chad talked to Zach about helping him, but his utterance was a borderline instance of promising, e.g., the language he used was vague, he and Zach were borderline drunk such that it is unsettled whether they were sober enough to establish a valid contract, etc. Chad knows that his utterance was a borderline promise, and he is trying to figure out which student to help.

Question: insofar as Chad knows that he should help Anna just in case he did not make a promise to help Zach, and insofar as Chad knows that he should help Zach just in case he made a promise to do so, morally speaking, what should Chad do?

Answer: it is hard to say, since it appears as though it is indeterminate who Chad ought to help.

PROMISE is an example of an Indeterminate Ought Scenario:

*Indeterminate Ought Scenario*: A case in which an agent knows that it is indeterminate whether she ought to perform some action.

Indeterminate Ought Scenarios are ubiquitous. Because it can be indeterminate whether a speech act constitutes a promise, or whether an organism is a person, or whether two people are numerically identical, etc., Indeterminate Ought Scenarios can crop up for importantly different reasons.[[34]](#footnote-34)

 But even if it is indeterminate what one ought to do, all else being equal it would be good if our moral theories could provide agents in Indeterminate Ought Scenarios with at least some advice about how to make decisions. This is the Indeterminate Ought Challenge:

*Indeterminate Ought Challenge*: The challenge to construct a decision-making procedure for agents who are forced to make a decision while in the grip of an Indeterminate Ought Scenario.

The Indeterminate Ought Challenge is a challenge for everyone. How should it be met?

The Mind-Making account of decision-making (e.g., Williams (2014, forthcoming, m.s.)) is what I take to be the best-developed and most plausible solution. Put very roughly, the solution goes as follows.

First, the Mind-Making account relies on the same classical supervaluationist framework that we have been working with. So, the proposition “I ought to help Anna with her homework” is true just in case it is true on the correct sharpening, false just in case it is false on the correct sharpening, and indeterminate when it is true on some but not all sharpenings and it is unsettled which sharpening is correct.

 Second, since Chad knows that p is indeterminate, we can now ask about the cognitive role that indeterminacy plays here, i.e., given that Chad knows that p is indeterminate, which doxastic attitude should he have about this proposition? What you can get directly from the Mind-Making account is this: when you know that it is indeterminate what you ought to do, it is indeterminate which credences you should have about what you ought to do. Thus, it is indeterminate which credences Chad should have about “I ought to help Zach.” (Note: this point will become especially important in the next subsection.)[[35]](#footnote-35)

Third, when it is indeterminate what one ought to think about what one ought to do, one has no choice but to make up one’s mind. So, according to the Mind-Making account, one should just make an arbitrary judgment call; one should just pick one of the options that one knows is not determinately impermissible and stick with it. For instance, Chad should just pick between helping Anna and helping Zach and stick with his decision to do so.[[36]](#footnote-36)

Fourth, and finally, even though one is forced to simply make up one’s mind, this does not mean that it is a total free-for-all; there are still better and worse ways of picking. More specifically, notice that the classical supervaluationist framework gives us the resources to distinguish amongst choices that are determinately permissible, choices that are determinately impermissible, and choices that are decision neutral:

*Determinate Choice Permissibility*: A choice to x is determinately permissible just in case it is determinately permissible for one to have a credence of .5 or higher in the proposition that “I ought to x.”

*Choice Neutrality*: A choice to x is decision neutral just in case it is indeterminate whether it is rationally permissible for one to have a credence of .5 or higher in the proposition that “I ought to x.”[[37]](#footnote-37)

*Determinate Choice Impermissibility*: A choice to x is determinately impermissible just in case it is determinately impermissible for one to have a credence of .5 or higher in the proposition that “I ought to x.”

The key idea here is that neutral choices are immune from neutral sanction and praise. More specifically, to be neutral in an Indeterminate Ought Scenario is to not take a stand on which of the competing resolutions is the correct one, e.g., to not take a stand on whether the resolution on which Chad should help Anna is correct and the resolution on which Chad should help Zach is not. Thus, neutral choices are importantly different from choices that are determinately permissible (which can be praised from a neutral perspective because they are permissible on every resolution regardless of which one is correct) and choices that are determinately impermissible (which can be sanctioned from a neutral perspective because there are forbidden on every resolution regardless of which one is correct).

Now, on the plausible assumption that determinately permissible choices are better than those that are decision neutral, and that choices that are decision neutral are better than those that are determinately impermissible, the Mind-Making account can offer agents the following decision-making advice:

*Do Your Best*: Make the best choice that you can (and if two choices are tied, then pick one or the other).

Do Your Best prohibits agents from making choices that are worse than need be. In many cases, this principle advises agents to make choices that are strongly permissible. For instance, if Chad had made a determinate promise to help Zach, then the Mind-Making account delivers the intuitively correct verdict that this is what he ought to do; because this is the only determinately permissible choice for Chad to make, he should go on and make it. But in Indeterminate Ought Scenarios like PROMISE, there are no determinately permissible choices for one to make. So, Chad should pick between the neutral option of helping Zach and the neutral option of helping Anna. Importantly, because doing anything else would be ruled out on every resolution, the Mind-Making account secures the intuitively correct verdict that Chad must help one of his students and that it is therefore impermissible for him to stay at home and watch sports instead.

This, then, is how the Mind-Making account provides a solution to the Indeterminate Ought Challenge. But how does this help proponents of the RIP?

*6.2 Mind-Making and the Rational Indeterminacy Challenge*

Recall the following feature of the Mind-Making account: when one knows that p is indeterminate, it is indeterminate which credences one is permitted or required to have about p. This is key, since according to the Mind-Making account, Indeterminate Ought Scenarios turn out to be specific instances of Rational Indeterminacy Scenarios. The former are cases in which it is indeterminate which doxastic attitudes one is permitted to have about the proposition, “I ought to do such-and-such”, whereas the latter are cases in which it is indeterminate which doxastic attitudes one is permitted or required to have about some proposition, regardless of whether this proposition is about what one ought to do, and regardless of the truth of the proposition in question.

 But if Indeterminate Ought Scenarios are instances of Rational Indeterminacy Scenarios, then the Indeterminate Ought Challenge turns out to be a particular instance of the Rational Indeterminacy Challenge, i.e., the former is a challenge to construct a decision-making procedure for agents who have indeterminately rational doxastic attitudes regarding propositions about how one ought to act, while the latter can be construed as a challenge to construct a decision-making procedure for agents who have indeterminately rational doxastic states about any proposition whatsoever.

 Thus, insofar as we should treat all instances of the Rational Indeterminacy Challenge in a unified way, proponents of the RIP can appeal to the Mind-Making account to meet the Indeterminate Ought Challenge in particular, as well as the Rational Indeterminacy Challenge more generally. For instance, in addition to being able offer Chad some decision making advice in PROMISE, proponents of the RIP can offer Anna the following guidance in LOGIC DRUGS: you should do your best by either answering that (L) is true or else by answering that (L) is false; however, this does not mean that it is a total free for all, e.g., you should not answer “(L) and not-(L)”.

 Given how things seem from Anna’s own perspective, I think this is the intuitively correct verdict. Anna knows that she should fill in some answer, but it is unclear to her whether (L) or not-(L) is the right way to go. The takeaway point here, then, is that by endorsing the Mind-Making account of decision-making, proponents of the RIP can meet the Rational Indeterminacy Challenge.

*6.3 Concluding Remarks*

I have argued that the RIP provides a unified solution to the Puzzle about Probabilism and any other epistemic paradox with the same underlying structure. I have also argued that the RIP can deliver these results while avoiding the problems that plagued both versions of the RDP. Finally, I suggested that by expanding the Mind-Making account of decision-making from Indeterminate Ought Scenarios in particular to Rational Indeterminacy Scenarios more generally, we can give a more systematic account of how agents should make choices in the face of indeterminacy.

 Taken together, my hope is that these considerations establish that the RIP can do some useful epistemological work.[[38]](#footnote-38)

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1. But what is a tautology? For the purpose of this paper I will stick to a very weak interpretation according to which a tautology is a logical truth that ordinary agents can easily understand. Thus, while there are stronger interpretations available, all probabilists should agree that one should be certain of the tautologies discussed below. See Christensen (2004) and Titelbaum (2015) for more on how Probabilism can be interpreted. [↑](#footnote-ref-1)
2. For classic presentations of Dutch Book arguments, see Ramsey (1931), de Finetti (1980), and Skryms (1975). See also Christensen (1996) for a de-pragmatized version of the argument. [↑](#footnote-ref-2)
3. See, for instance, Joyce (1998, 2009). [↑](#footnote-ref-3)
4. Versions of this case can be found in Christensen (2007b, 2010). [↑](#footnote-ref-4)
5. For the purpose of this paper, by “higher-order evidence” I mean evidence that bears on the likelihood that one has evaluated one’s first-order evidence correctly. See Christensen (2010) for more on higher-order evidence in general. [↑](#footnote-ref-5)
6. For defenses of different versions of Calibrationism, see White (2009), Sliwa and Horowitz (2015), and Christensen (forthcoming). It is worth noting that given the setup of LOGIC PROBLEM, all calibrationists agree about the credence that Anna should have in (L) – they just do so for importantly different reasons. [↑](#footnote-ref-6)
7. It is worth noting that even if one rejects Calibrationism in favor of an alternative view (i.e., a view that is neither steadfast nor level-splitting), one will still be saddled with the same bootstrapping problem discussed in ft. 8. For this general problem will arise for any non-Calibrationist view whatsoever. Thanks to David Christensen for the help here. [↑](#footnote-ref-7)
8. Here is a very rough way of putting the bootstrapping argument. Suppose that Calibrationism is false and that Anna should be certain that (L) is the correct answer. Suppose also that Anna answers 99 other test questions like the one in LOGIC PROBLEM (i.e., problems whose answers are tautologies). Finally, suppose that while she is answering these problems, she justifiably believes that she is under the influence of Chad’s logic drug.

Now, if Calibrationism is false, then Anna should be certain that all 100 of these tautologies are true. But – and here is the key question – what should Anna think is going on here? From Anna’s own perspective, what explains why she got all of the answers correct even though she knows that if she is affected by the drug, she will get 80 of the 100 questions wrong? From her own perspective, it seems like the best explanation for her success is that unbeknownst to her, she was actually immune from the effects of the drugs. Thus, if one denies Calibrationism, then one should maintain that Anna can bootstrap her way to the conclusion that the drugs did not effect her. But this is an illegitimate way for Anna to form a belief about her own physiology. Thus, Calibrationism is true. See Horowitz (2014) and Sliwa and Horowitz (2015) for a more thorough presentation of this argument. [↑](#footnote-ref-8)
9. Caie (2012), Turri (2012), Lasonen-Aarnio (2014) and Schoenfield (2015) also defend versions of this principle. [↑](#footnote-ref-9)
10. E.g., Christensen (2007, 2011, 2014). [↑](#footnote-ref-10)
11. E.g., Kelly (2010). See in particular Kelly’s discussion of THE CONJECTURE case in which the total evidence view requires one to be less than certain of mathematical truths. [↑](#footnote-ref-11)
12. E.g., Lackey (2010). [↑](#footnote-ref-12)
13. For instance, Zagzebski’s (2012) pre-emptive view of expert testimony requires Anna to be less than certain of (L) in cases like this. [↑](#footnote-ref-13)
14. This is not to say that the principles discussed thus far are totally uncontroversial. For instance, Caie (2013) argues against Probabilism, Schoenfield (2014) and Titelbaum (2015) push back against Calibrationism in general, and Smithies (2015) argues against the verdict that Calibrationism delivers in LOGIC PROBLEM in particular. If one is sympathetic with these arguments, then one can interpret the dialectic thus far as attempting to establish the following conditional claim: if these widely accepted principles of rationality are true, then the argument from (1)-(6) is sound. [↑](#footnote-ref-14)
15. One example of this is the so called Paradox of Global Defeat, in which an agent receives testimonial evidence from a reliable source that all of her perceptual faculties are malfunctioning, including the auditory faculties that she used to consume the testimony in question. This case has been discussed in passing in Sliwa and Horowitz (2015, p. 2853). [↑](#footnote-ref-15)
16. For instance, in the Epistemic Liar Paradox, there are various ways of showing why there is no permissible attitude for an agent to take towards p, where p is “I do not believe that p is true.” See Caie (2012) for a recent discussion of this puzzle. [↑](#footnote-ref-16)
17. Consider, for instance, the Anti-Expertise Paradox in which an agent has excellent evidence (say from a memory of having taken what was thought to be a reason-distorting drug), that her attitudes about some proposition, p, are anti-reliable in the following sense: she believes that p just in case p is false. In this case, there are various ways of showing that one is doomed to violate a requirement of rationality no matter which attitude she takes towards p. For more on this paradox, see Conee (1982), Kroon (1983), Sorensen (1987) and Richter (1990). See also Caie (2013) and Egan and Elga (2005) who discuss this case in a credal framework. [↑](#footnote-ref-17)
18. One could also try to resolve the puzzle by weakening Probabilism such that Normality only applies to those tautologies for which one lacks higher-order evidence to the effect that one has botched one’s assessment of the tautology in question. After all, if Normality could be weakened in this way, then there would be nothing problematic about Anna just satisfying Calibrationism by having a credence of .2 in (L).

 To begin to see why this proposal will not succeed, notice that nothing about the puzzle hangs on (L) being the tautology under consideration. For instance, the tension between Probabilism and Calibrationism will still arise if Anna was considering a test question about whether “p or not-p” is true. But notice that if we weaken Normality such that Anna should have a credence of .2 in “p or not-p,” then at least two problems will emerge. First, since p and not-p are mutually exclusive, Finite Additivity says that if Anna’s credence in “p or not-p” is .2, then her credence in p and her credence in not-p should sum to .2, e.g., Anna should have a credence of .1 in p and a credence of .1 in not-p. But it is exceedingly odd to think that Anna’s credence in p and her credence in not-p should sum to something far less than 1. After all, where should the rest of her credence go?

 Second, and relatedly, the following is an extremely plausible and widely endorsed principle

 Negation: Cr (not-p) = 1 – Cr (p).

 But now suppose that we weaken Normality such that Anna’s credence in “p or not-p” should be .2. Presumably Anna’s credence in p should not be more than .2, since her credence in a disjunct should not be higher than her credence in the disjunction. So, let’s say that Anna’s credence in p is .2 (the number won’t matter here, since the general point will remain as long as Anna’s credence in p is not greater than .2). Then given Negation, Anna’s credence in not-p should be .8. But now we are stuck with the problem that we were trying to avoid; Anna’s credence in one of the disjuncts is going to be higher than her credence in the disjunction. And this is exceedingly odd indeed.

 The point here is that one cannot weaken Normality in this way without abandoning Negation and accepting that the sum of Anna’s credences in p and not-p should be far less than 1. But because these consequences should be avoided, there is good reason to keep Normality as is. Thanks to Fabrizio Cariani for a helpful discussion here. [↑](#footnote-ref-18)
19. Priest (2002), Ross (2010), and Brouwer (2014) endorse this view. [↑](#footnote-ref-19)
20. See Christensen (2007, 2010) for a defense of a view in this ballpark. Of course, there is a sense in which RDP*Prima Facie* is not a dilemma view at all. For it says that when Probabilism and Calibrationism are in tension, one principle will trump the other such that having a credence of .2 in (L), say, would be more rational than having any other credence in this tautology. But whether or not the RDP*Prima-Facie* should be classified as a dilemma view is beside the point for our purposes here. What is important is the view itself and the extent to which it provides a tenable solution to the puzzle. [↑](#footnote-ref-20)
21. Instead of opting for a view according to which one principle of rationality overrides another, perhaps proponents of RDP*Prima Facie* could opt for a sort of disjunctivist view along the following lines: when two principles of rationality conflict, one is only required to satisfy one or the other, e.g., in LOGIC PROBLEM, it is permissible for one to satisfy Calibrationism, and it is equally permissible for one to satisfy Probabilism, and the only thing one is required to do is to satisfy one or the other. After all, an analogous solution to moral dilemmas has struck many people as being plausible (e.g., Foot (1983), Conee (1982), Brink (1994), and Horty (2004)), and given that ethical and epistemological arguments often arise in parallel, it might not be surprising if a similar solution worked here.

In Author (ms.) I argue that this sort of disjunctivist view leads to a problematic version of Intrapersonal Permissivism that proponents of Uniqueness and Permissivism both reject, i.e., it is implausible that given one’s evidence and evidential standard, it could be permissible for one to take one of two radically different attitudes toward the same proposition. Thus, regardless of whether this disjunctivist view provides a plausible solution to moral dilemmas, I argue that there is good reason for resisting it in the epistemic domain. [↑](#footnote-ref-21)
22. I have in mind here an epistemic analogue to Ross’ (1930) view about the use of moral judgments in resolving conflicts between moral duties. Thanks to Stephen White for bringing this to my attention. [↑](#footnote-ref-22)
23. In Author (ms. b) I argue against the RDP*Prima Facie* on the grounds that it cannot capture an important and hitherto unrecognized phenomenological aspect of being stuck in certain epistemic paradoxes; if one principle always trumps another, then proponents of the RDP*Prima-facie* can neither accommodate nor explain why it is appropriate for agents who are faced with conflicting rational requirements to feel *rationally perplexed* about what they should think. Thus, even if there is a non-*ad hoc* way of working out a ranking system or intuitionist theory, there is still good reason to search for an alternative solution because the RDP*Prima Facie*cannot capture an important part of our experience as epistemic agents. [↑](#footnote-ref-23)
24. See Christensen (2010), Horowitz (2014), Sliwa and Horowitz (2015), and Titelbaum (2015) for defenses of this principle. [↑](#footnote-ref-24)
25. This basic line of thought has been used to defend various immodesty principles, e.g., see Lewis (1971) for an argument to the effect that an inductive method should never maintain that a competing method is better, and see Horowitz (forthcoming) for a recent discussion of why our credence functions should recommend credences that uniquely maximize expected accuracy. [↑](#footnote-ref-25)
26. Important caveat: my aim is to only develop and defend a basic supervaluational framework for thinking about rational indeterminacy. I will put things in terms of classical supervaluationism (e.g., Barnes and Cameron (2009), Barnes and Williams (2009), Cariani and Santorio (forthcoming), Williams (forthcoming)), since I think there are independent reasons for accepting this view. However, with a little more work, I think things could be put in terms of the standard supervaluationist theories too (e.g., Fine (1975) and Keefe (2000)). While the classical and standard versions of supervaluationism have their differences, it is worth noting that both are able to preserve the law of excluded middle. [↑](#footnote-ref-26)
27. Intrapersonal Permissivism can be contrasted with *Interpersonal Permissivism*, which, roughly put, says that two agents with the same evidence but different evidential standards can be permitted to take different attitudes towards the same proposition. I have given only a rough characterization of Intrapersonal and Interpersonal Permissivism here. For a more detailed discussion of these two theses, see Titelbaum and Kopec (forthcoming). [↑](#footnote-ref-27)
28. See, for instance Kelly (2013), Meacham (2014), Schoenfield (2014), White (2013), and Sylvan (forthcoming) for more on Permissivism in general and why Intrapersonal Permissivism is a problematic version of the view. It is also worth noting that even if Intrapersonal Permissivism is true, proponents of this response are still not out of the woods. For one must not only establish Intrapersonal Permissivism in general, but a very radical version of the view according to which one can have *wildly* different credences in the same proposition (as opposed to a more conservative version of the view according to which there is a small range of different credences that are equally permissible for an agent to have about the same proposition). [↑](#footnote-ref-28)
29. It is worth noting that according to the RIP, anytime it is unsettled which rational requirements one has immunity from with respect to p, it will also be unsettled which of these requirements one has immunity from with respect to not-p. This is because it will be unsettled which requirements one has immunity from when one’s credence in p cannot jointly satisfy the requirements in question. And anytime one’s credence in p cannot jointly satisfy these requirements, the same will be true of one’s credence in not-p. For instance, in LOGIC PROBLEM it is unsettled whether Anna has epistemic immunity from Probabilism or Calibrationism with respect to (L), since her credence in (L) cannot be both 1 and .2. Similarly, because Probabilism and Calibrationism require Anna to have a credence of 0 and .8 in not-(L) respectively, the RIP says that it will be unsettled which of these two requirements Anna will have immunity from with respect to this proposition too. Thanks to David Christensen for the help with this. [↑](#footnote-ref-29)
30. Before moving on, it is worth noting that any complete theory of indeterminacy must have something to say about the source of the indeterminacy in question, e.g., is it linguistic, or ontic, or epistemic? The RIP sheds some light on this question, since it is only compatible with the source of rational indeterminacy being linguistic or ontic; if the RIP is true, then the source of rational indeterminacy cannot be epistemic. More specifically, it is hard to see how an epistemicist theory of rational indeterminacy could work in cases like LOGIC PROBLEM, since it is implausible to think that the indeterminacy could be adequately characterized in terms of it being in principle unknowable as to which credences one should have when subject to conflicting requirements. That is, since the Puzzle about Probabilism does not rest on any kind of sorites series, it is hard to see why one could not in principle come to know which principle overrides the other, e.g., why would necessarily be the case that one’s belief that Calibrationism overrides Probabilism is unsafe and thus cannot amount to knowledge.

And while this is only a small step in the right direction, it is the most that can be said without taking a stand on the much larger meta-epistemological project of determining where our epistemological principles come from; that is, just as meta-ethicists are interested in the source of our moral principles, fully answering this question would require one to determine whether we should be realists or anti-realists or whatever about the source of Probabilism, Calibrationism, etc. Thus, the most that should be said here is that if the RIP is true, then rational indeterminacy is a result of an unsettledness in the source of rationality itself, where this source is either linguistic or ontic. Thanks to Fabrizio Cariani for a helpful discussion here. [↑](#footnote-ref-30)
31. Discussing the important details of these other paradoxes would take us to far afield. However, in Author (ms. c) I discuss the Paradox of Global Defeat, and in Author (ms. d) I discuss the Epistemic Liar Paradox. In both cases I show how the RIP can provide a unified solution to these puzzles. [↑](#footnote-ref-31)
32. Uniqueness has been formulated in a number of ways and for reasons of space I am going to glide over many of these important distinctions here. See Kopec and Titelbaum (2015) for a useful discussion of the ways in which Uniqueness can be fleshed out in general, and see Titelbaum and Kopec (ms.) and Christensen (2014) for this formulation of Uniqueness in particular. It is worth mentioning, though, that sometimes Uniqueness is formulated as saying that for any agent, S, body of evidence, E, and proposition, p, there is always *exactly* one rationally permissible attitude for S to have about p (see, for instance, Ballantyne and Coffman (2011, 2012)). Since I don’t think that anything important in the Uniqueness debates turns on formulating the thesis in this way (as opposed to how it is formulated above), and since I don’t think that Uniqueness should rule out the existence of rational dilemmas from the get-go (which this version of Uniqueness would do), I think there is good reason for siding with the former interpretation. Thanks to Declan Smithies and David Christensen for a helpful discussion here. [↑](#footnote-ref-32)
33. See Horowitz (forthcoming) for a similar point about forced choices and educated guesses. [↑](#footnote-ref-33)
34. See Williams (2016, forthcoming) for a variety of indeterminate ought scenarios. It is worth noting that insofar as cases involving choices of incomparable value (e.g., Chang (2002, 2005)) should be diagnosed as being cases in which it is indeterminate which choice one ought to make (e.g., Broome (1998), Williams (2016)), then Indeterminate Ought Scenarios can arise for agents making both practical and moral decisions. [↑](#footnote-ref-34)
35. See especially Williams (forthcoming) for more on how and why the Mind-Making account delivers the verdict that in Indeterminate Ought Scenarios it is rationally indeterminate which doxastic states an agent should have about what they ought to do. [↑](#footnote-ref-35)
36. The “sticking with it” component of the Mind-Making account prevents one from rejecting a pair of bets that would guarantee one sure utility, i.e., if one is faced with a series of Indeterminate Ought Scenarios and continually flip flops on what one thinks about what one ought to do, then one can be turned into a value-pump. See Williams (2014) for a detailed discussion.

 It is worth noting, though, that proponents of the RIP need not be committed to this particular feature of the Mind-Making account. For, as will become clear below, what lies at the heart of the solution to the Rational Indeterminacy Challenge is the claim that (i) choices that are determinately permissible are better than those that are decision neutral, and those that are decision neutral are better than those that are determinately impermissible and that (ii) Do Your Best is true. Thus, instead of embracing the “sticking with it” feature of the Mind-Making approach, one could, for instance, opt for a view according to which there is nothing necessarily wrong with changing one’s mind and passing up a sure fire way of increasing value (e.g., Moss (2015)).

 Because a detailed discussion of these kinds of diachronic decisions problems would take us too far afield, and because I don’t think that proponents of the RIP need to be committed to any particular view about value pumps to meet the challenge at hand, I want to set this issue aside. Thanks to David Christensen for bringing this to my attention. [↑](#footnote-ref-36)
37. Compare the distinction between choices that are determinately permissible and those that are decision neutral with what Williams (2014) calls “strong” and “weak” permissibility respectively. [↑](#footnote-ref-37)
38. I am grateful to Baron Reed, Blake Roeber, Declan Smithies, Jennifer Lackey, Lisa Miracchi, Michael Glanzberg, Rebecca Mason, Sandy Goldberg, Stephen White, and Zach Barnett for useful feedback on earlier drafts of this paper. I am especially grateful to David Christensen and Fabrizio Cariani for loads of helpful comments and suggestions. [↑](#footnote-ref-38)