CREDENCE 1 CRUXES: CLOSURE OF INQUIRY, SURETY, AND STEADFASTNESS

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ABSTRACT: Even if credence 1 is justified for many contingent propositions, it is not justified in cases where a disposition to revise in light of counterevidence is rationally required. First, credence 1 may be compatible with admission of fallibility, but this does not imply that it is compatible with a disposition to revise. Moreover, credence 1 entails being sure, which requires that one remain steadfast. Since steadfastness with respect to belief entails a disposition not to revise in light of counterevidence, credence 1 entails a disposition not to revise. Finally, since there are closure of inquiry defeaters for a wide range of contingent propositions, and since having credence 1 in p entails closure of inquiry about p, it is not justified to have credence 1 in such cases.

KEYWORDS: credence 1, surety, closure of inquiry, steadfastness, self-trust

1. Introduction

Among the many views of the relationship between credence and belief defended in the recent literature, some take credence to be more fundamental than belief.[1] Such views hold that belief is reducible to credence: believing that *p* just is having a certain level of credence in *p*. The most popular position of this kind is the 'threshold view,' which takes belief to be a level of credence at or above some threshold typically between .5 and 1.[2] According to the threshold view, having a credence that meets or exceeds the relevant threshold is sufficient for believing 'outright' or 'flat-out.'

[1] See, e.g., Eriksson and Hajek 2007. Some, by contrast, take belief to be more fundamental than credence. See, e.g., Kauss 2020; Moon and Jackson 2020; for further discussion, see Harman 1986. Some deny that either of belief or credence is more fundamental. *Eliminativist* views, for instance, deny either the existence of belief or the existence of credence. Jeffrey 1970 defends eliminativism about belief, and maintains that there is only the graded state of credence; Holton 2008 and Horgan 2017 defend eliminativism about credence. And *Dualists* hold there are no important conceptual links between belief and credence and that neither attitude is more fundamental than the other. See, e.g., Buchak 2015; Ross & Schroeder 2014; Jackson 2019*a*, Jackson 2019*b*.

[2] For defense of the threshold view, see Leitgeb 2013; Foley 1992; Sturgeon 2008.

Some 'credence-first' proponents hold that while belief is reducible to credence, there is in fact no such threshold. Such views simply identify credence 1 with 'outright' or 'flat-out' belief.[3] Although it is not entirely clear what flat-out belief is, it's typically understood to be required for knowledge. For instance, Daniel Greco (2015, 180) suggests that believing a proposition in this sense "feels just like knowing." And many authors contrast flat-out belief with *degrees of confidence*. Thus Jonathan Ichikawa and Matthias Steup (2018) write, "To believe outright that *p*, it isn't enough to have a pretty high confidence in *p*; it is something closer to a commitment or a being sure." Others suggest that flat-out belief may be contrasted with probabilistic belief, e.g., the belief that it's 99% likely that the defendant is guilty.[4] Although there is some disagreement about what is required for flat-out believing a proposition *p*, understood as believing *p* in some strong sense, it is fair to say that all accounts agree that flat-out belief is often justified and that it can be justified for a wide range of propositions, both necessary and contingent.

On accounts that identify credence 1 with flat-out belief, it turns out that it is often rational to assign credence 1 not only to logical and necessary truths but also to many contingent propositions. Understandably, some authors have worried that even if credence 1 may be warranted in some cases, the view that it is warranted in so many everyday cases is implausible given the rational connections that apparently hold between credence 1 and certain other states. For instance, some would argue that assigning *p* a credence of 1 requires a readiness to accept bets on *p* at extreme odds.[5] Such worries typically arise on the assumption that credence 1 involves doxastic certainty. In particular, if assigning credence 1 to *p* requires certainty that *p*, then it's not clear that credence 1 is compatible with rational doubt, hence with admission of fallibility with respect to *p*. Thus, where admission of fallibility is a requirement of rationality, it seems it is also required to forego credence 1. However, recently some authors (notably, Rosenkranz (2015) and Kauss (2018)) have argued that credence 1 does not preclude admission of fallibility and that, consequently, it is compatible with a disposition to revise in light of counterevidence.[6]

I agree with some of the claims regarding credence 1 by its proponents. For instance, I agree with Rosenkranz that credence 1 need not be understood as the highest possible degree of belief; instead, it may be understood as "the highest degree

[3] Dodd 2017; Clarke 2013; Levi 1991; Levi 2004; Arló-Costa 2010; Greco 2015. It should be noted that the belief-first view is also compatible with the view that belief is identified with credence 1. For a recent defense of such a position see Kauss 2020.

[4] See, e.g., Papineau 2019.

[5] For discussion, see Williamson 2000; Christensen 2007.

[6] See also Clarke 2013.

of belief implied by knowledge."[7] As Rosenkranz (2015, 635) notes, it is consistent with this view to take credence 1 "to correspond to no more than wholehearted, i.e. unqualified and undiminished assent… in light of one's total evidence…" Thus credence 1 need not be understood as entailing *absolute certainty*, where such a state involves higher-order belief of one's immunity to error.[8] I am also inclined to agree with proponents of credence 1 that having a credence of 1 is justified in many cases of contingent propositions, e.g., *my coffee cup is empty* and *I am here now*. Provided you need not be certain that *p* in order to rationally assign *p* credence 1, there is no obvious reason to restrict credence 1 to necessary propositions.

Nevertheless, the purpose of this paper is to show that matters are more difficult for the proponent of credence 1 than the accounts mentioned suggest, and that such difficulties have not been sufficiently recognized. First, in order for the proponent of credence 1 to establish that credence 1 in a proposition *p* is (rationally) compatible with a readiness to revise one's belief that *p* in light of counterevidence, it is not enough to show that credence 1 in *p* is compatible with admission of fallibility with respect to *p*. Admitting fallibility is compatible with remaining steadfast—that is, it's compatible with a strong disposition to hold onto one's belief in the face of counterevidence. Thus provided there is a closure of inquiry defeater for one's belief that *p*—a defeater that makes it unreasonable to remain steadfast—having credence 1 in *p* is unjustified. Here I will connect the issue to recent work on epistemic self-trust, and argue that consideration of the preemptive nature of reasons for self-trust and its relation to credence 1 supports the view that credence 1 strongly disposes one to remain steadfast. The issue of the epistemic significance of peer disagreement is also relevant, I suggest, since peer disagreement should

[7] Rosenkranz 2015, 635. Cf. also Rosenkranz & Schulz (2015, 558): "[W]e may understand subjective probability 1 as an idealized model of the highest degree of belief implied by knowledge." They note that this view is similar to the one defended in Levi 1980.

[8] Horgan (2017, 7) notes that despite what many authors assume it is coherent to equate credence 1 with both flat-out belief *and* certainty, because there are contexts in which any belief that qualifies as knowledge qualifies as certain. He may be right, but two points: First, given there are contexts in which belief and certainty clearly do not coincide, I think this doesn't gainsay the plausibility of identifying credence 1 with either belief or certainty (but not both). Second, a belief may qualifiy as knowledge even in the absence of higher-order belief about immunity to error; if absolute certainty requires such higher-order belief then (knowledge qualifying) belief cannot be identified with certainty in this sense. Note also that Greco's (2015) talk of 'maximal confidence' entailed by credence 1 is problematic, since it suggests a higher-order attitude of some sort, such as the belief in one's immunity to error. As Rosenkranz and Schulz (2015) note, this construal of credence 1 threatens the connection between Bayesian coherence constraints and actual epistemic practice: assigning credence 1 to a theorem of logic even after having constructed a proof would seem not to be rational, on this picture.

rationally lead one to question whether the extent of one's self-trust is warranted. I conclude that where we have reason to regard rational belief in contingent propositions as involving a readiness to revise we ought to refrain from assigning credence 1 to such propositions.

The view that I am targeting is the conjunction of two claims: (i) flat-out belief either just is credence 1, or it essentially involves credence 1, and (ii) credence 1 can be rational in cases where a disposition to revise is rationally required. I'll refer to this as *the liberal view*. I should emphasize that in criticizing it I do not claim it is never rational to have credence 1 in contingent propositions. (I do not assume Bayesian regularity, the thesis that for all contingent propositions it is rational to have a credence strictly between 0 and 1.) As I indicated, I'm inclined to think it is indeed rational in some cases, but I'll treat this as an open question. If credence 1 in contingent propositions turns out never to be rational, this is not because it's incompatible with admission of fallibility. (I agree with Rosenkranz (2015) on this point.) Nevertheless, credence 1 may still (very often, anyway) be irrational despite its compatibility with admission of fallibility. I claim that where there are grounds for acknowledging closure of inquiry defeaters, there is reason to regard credence 1 as irrational. Closure of inquiry defeaters provide grounds for the readiness to revise; they make rational not only openness to the possibility of error but a disposition to revise in light of counterevidence.[9]

2. Fallibility and the Disposition to Revise

This section argues that one's admission of fallibility with respect to the belief that *p* does not (logically or psychologically) require a disposition to revise one's belief in light of counterevidence. Consequently, the compatibility of credence 1 with admission of fallibility would not entail its compatibility with a disposition to revise. The first step is to point out that whereas admission of fallibility merely involves a recognition of the *possibility* of error, the disposition to revise one's belief is graded. Recognition of the possibility of error therefore does not require the belief that error

[9] I acknowledge that there are a number of formal accounts of credence that purport to avoid the problem I raise in this paper. For instance, Isaac Levi (1991, 2004) has argued that credence 1 (which he takes to be required for flat-out belief) plays a critical role in demarcating possibilities for partial belief. (See Arló-Costa 2010 for further discussion.) I do not question the view that assignments of credence presuppose a commitment to a partition, and that "probability presupposes certainty," as Levi says, in this sense. Moreover, I do not address the sophisticated accounts of belief revision Levi and others have developed. Nevertheless, it remains unclear to me how these formal accounts would address the particular argument and the general concerns that I offer here. My argument, then, is offered in part as a challenge to such formal accounts of credence 1.

is at all likely. If one believes error is extremely unlikely, then one will be disposed to regard counterevidence as misleading. Consequently, it seems one will not be disposed to revise one's belief in the face of such evidence.

It might be argued that one can be *sensitive* to future counterevidence even if the likelihood of such evidence isn't something that is presently granted—indeed even if one is presently confident that such evidence *won't* arise. To take Rosenkranz's example, if I were to learn that I had been drugged, I would be more disposed to revise my belief that I'm at my desk working at my computer; but recognition of this fact doesn't—nor apparently should it—make me any less confident that relevant counterevidence will not arise. Nor should it lessen my confidence that I'm at my desk, given my current evidence. So it may seem that your disposition to revise your belief that p in light of counterevidence need not be affected by your *present* degree of confidence in your belief. In general, what you *would* do, were conditions different from what they currently are, is not necessarily settled by your current condition and circumstances.[10]

Perhaps this is right, but it doesn't follow that the disposition to revise is entailed by the mere recognition of the possibility of error. The above example apparently shows that it's possible for one to admit fallibility without being disposed to revise one's belief. Moreover, if credence 1 disposes one to remain steadfast, as I'll argue it does, then having credence 1 entails a lack of such readiness. Hence, if a readiness to revise is rationally required, then so is foregoing credence 1.

I'll now argue that admission of fallibility is not only compatible with a disposition not to revise but also with a firm refusal to alter one's belief in the face of counterevidence. First, I offer an analogy. Consider an athlete who is so highly determined to win that she refuses to accept defeat even when the evidence in her possession clearly shows that winning is no longer possible. In general, the athlete is strongly disposed to hold to her pursuit of victory, and to her belief that victory is within reach, despite compelling evidence to the contrary. On race day, things do not go as well as hoped. The justification for the athlete's belief that she'll win gradually diminishes, yet she holds firmly to her belief. In this case, the athlete's recognition of the increasing likelihood of defeat is combined with the steadfast pursuit of victory, and with the refusal to accept defeat. Whatever we may think about the character of such an individual, we do not necessarily regard her dogged

[10] You might worry that if dispositions have 'categorical bases' then this cannot be right. I grant this is a legitimate worry; my point is that there is also some reason to think that the truth or falsity of the counterfactual is not settled by my present (overall) doxastic state, including my admission of fallibility.

pursuit of victory, and her attitude towards it, as vicious or irrational.[11] But the main point is that it is apparently *psychologically possible*—whether or not it is rational—for the athlete to combine a recognition of fallibility with a steadfast belief that she can win.

The analogy suggests that it's similarly possible for you to remain steadfast in your belief while simultaneously recognizing the possibility that you are mistaken. It might be objected that the analogy is no good, though, since sport is not a truth-seeking enterprise. The permissibility of steadfastness in one's pursuit of victory in the face of convincing counterevidence does not suggest that it's rationally permissible for a truth-seeking *believer* to remain steadfast in her belief. But recall that I'm not arguing that remaining steadfast while acknowledging fallibility is rational, but only that it's psychologically possible. Provided it's possible to admit fallibility while remaining steadfast the proponent of credence 1 needs to do more than show that credence 1 in p is compatible with admission of fallibility about p. If, in addition to admission of fallibility, a disposition to revise is required in relevant cases where credence 1 is thought to be justified, then it had better be at least psychologically possible to combine it with credence 1.

I return to the question whether this is psychologically possible in the next section. But first, worries about the claim that it's psychologically possible to combine steadfastness with admission of fallibility may remain. For instance, it might be thought that the analogical argument trades on a conflation of acceptance and belief. While you can refuse to let what you do and don't accept be influenced by counterevidence, this may seem to have no bearing on what you are disposed to *believe* in light of counterevidence. So, even if it may be psychologically possible for you to acknowledge fallibility while refusing to *accept* counterevidence as such, this doesn't imply that it is possible for you to acknowledge fallibility while remaining steadfast in your *belief*.

This objection appears to rely on an implausible form of doxastic involuntarism, according to which your decision, or refusal, to *accept* p has no influence on your disposition to believe p. While there's a clear distinction between acceptance and belief, there is an important relationship between these states. In particular, as is widely acknowledged in the ethics of belief literature, it is plausible that your disposition to believe p is influenced by your choosing not to seriously consider evidence against p, alternative hypotheses, etc., and by your choosing to

[11] This depends, of course, on the degree of justification for her *belief* in defeat. Arguably, as things play out, and it becomes clear to her that victory is out of the question, it will eventually become irrational to hold onto the belief that it's still possible. Accordingly, given the relationship between belief and action, some will maintain that the pursuit of victory is thereby irrational.

explain such counterevidence away.[12] Moreover, if your disposition to believe *p* is subject to such influence, then so is your disposition to revise this belief in the face of counterevidence: You can, by refusing to accept counterevidence, become more strongly disposed to retain your belief in the face of such evidence.[13]

Relatedly, it's possible for you to exercise control over your *habits of acceptance*, habits which, at least on some accounts of belief, can lead to, or even constitute, flat-out belief. For instance, on Mark Schroeder's (2021) *default reliance* account of belief, acceptance and belief are intimately related: To believe *p* is to have a *perfectly general* habit of accepting that *p*.[14] Belief, according to this account, is just "the limiting case of [the] progression from limited to more general habits of acceptance." (Schroeder 2021, 169) For example, Schroeder suggests that supposing you're frequently required to make calculations about the expected behavior of medium-sized objects, you might reasonably develop a habit of accepting Newtonian mechanics, a habit that disposes you to accept Newtonian mechanics when, for instance, you're designing a bridge and trying to determine its load-bearing capacity. This habit, like others, might be masked; and it is consistent with a more general habit of accepting that Newtonian mechanics is false, a habit that you have *by default*. So the default reliance account of belief does not imply that you believe Newtonian mechanics just because you happen to rely on it in such a case.[15]

How does the default reliance account of belief handle cases of steadfastness? A natural thought is that steadfastness is a matter of the strength of your habit of accepting *p* by default. If your habit is strong enough, then you'll be disposed to accept p even when faced with considerable counterevidence. That doesn't mean that you take your belief to be infallible. You can acknowledge the possibility of error while at the same time having such a strong habit of acceptance.

Even if the relationship between belief and acceptance isn't as tight as the default reliance account implies, it is plausible that the relationship is close enough

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[12] See Feldman 2000; Audi 2001; Audi 2008; Yee 2002.

[13] The involuntarist may object that I am conflating an important distinction between belief-*forming* and belief-*holding*. She might maintain that the reasons I've indicated for taking belief to be voluntary apply only to belief-forming, and that it is only belief-holding that is involuntary. (Cf. Heil 1983; Yee 2002, 450.) But I do not see why belief-holding should be any less susceptible to the kinds of influence noted, or why, if whether one *forms* (or *withholds*) the belief that p can be (indirectly) under one's control, whether one gives up, or revises, this belief cannot also be under one's control.

[14] Schroeder 2021, Ch. 8. See also Williamson (forthcoming).

[15] Compare Williamson (forthcoming): "[In general] you may rely on *p* on a particular occasion—for example, when very little is at stake—without being sufficiently *disposed* to rely on *p* to count as believing *p*, at least as judged by the standards of a given context."

that the disposition to believe (and hence, to revise belief) is well enough under our voluntary control that it is possible to combine clear acknowledgement of fallibility regarding belief that *p* with steadfastness in this belief. The disposition to revise or not is, then, not strictly psychologically dependent on a prior conviction in the (in)fallibility of one's belief.

This means that even supposing it is possible for you to have credence 1 in *p* while acknowledging your fallibility with respect to *p*, this admission of fallibility is compatible with your lacking a disposition to revise your belief that *p*. (Note that this does not mean that admission of fallibility does not *rationally require* a disposition to revise, but only that some instances of admission of fallibility are not psychologically compatible with such a disposition.) In general, where φ-ing is under one's voluntary control, lacking a disposition to φ is sufficient for having a disposition not to φ. For example, my having no disposition to engage in intense exercise immediately after getting out of bed in the morning is sufficient for my being disposed not to engage in intense exercise in such conditions. Thus, if your admission of fallibility is compatible with your having no disposition to revise your belief, then your admission of fallibility is compatible with your having a disposition *not* to revise your belief. Consequently, we cannot infer from the fact that credence 1 is compatible with admission of fallibility that it is also compatible with the disposition to revise: it is possible that credence 1 necessarily disposes one not to revise.

3. Credence 1 and Closure of Inquiry Defeat

My view is that credence 1 entails a kind of closure of inquiry that disposes one not to revise, i.e., to remain steadfast. So, if it is irrational to remain steadfast in one's belief that *p*—as I'll argue it is, as long as one recognizes there is a *closure of inquiry defeater* for this belief—it would follow that it is irrational to assign credence 1 to *p*. My argument involves two steps. First, I argue that the liberal view cannot accommodate closure of inquiry defeat, at least on one plausible understanding of what the latter involves. Moreover, if we revise that view so that the liberal view can then accommodate closure of inquiry defeat, such defeat remains essentially incompatible with steadfastness. Second, I argue that having credence 1 in *p* entails closure of inquiry about *p*, in the relevant sense, as it requires higher-order confidence in one's belief in *p*, confidence in one's continued confidence in p under future investigation. Since higher-order confidence entails a disposition to remain steadfast, it follows that having credence 1 in *p* entails having a disposition to remain steadfast in one's belief that *p*. In this section, I focus on the first step of the argument.

3.1. (How) Does CI defeat bear on credence?

First, we need to clarify the notion of a *closure of inquiry (CI) defeater*. I begin with a brief exposition that relies on the work of Rutledge (2017) and Kvanvig (2014). Eventually, I will suggest a revision to the account these authors offer, and conclude by noting a tension between this account of CI defeat and the liberal view of credence 1. Regarding the notion of CI defeat, there are a couple of important things to note. One is that a CI defeater is an undercutting defeater, and as such it is *meta-evidential* in character. That is, such a defeater doesn't affect the evidential support relation itself; instead, it defeats the reasonability of believing some proposition on the basis of one's evidence, however strong this evidence may be. The presence of a CI defeater thus prohibits one from moving from evidence that p is true to a reasonable belief in p (Rutledge 2017, 24). Second, as Rutledge explains, there are at least two features that tend to give rise to such defeat:

> (i) the [reasonable] expectation that further evidence gathering will lead to evidentially significant discoveries concerning what one should believe and (ii) a live or momentous realization that one may not be reliable or trustworthy when it comes to assessing the significance of evidence within a particular domain of inquiry. (Rutledge 2017, 25)

We should note that whether (i) is correctly regarded as tending to give rise to defeat may depend on what counts as 'evidentially significant': If further *confirmation* for one's belief is to be understood as evidentially significant, then (i) is too strong: expectation of confirmation for your belief does not undercut that belief. Therefore, it seems reasonable to interpret 'evidentially significant' discovery as discovery that suggests one's belief isn't justified.[16] You have a CI defeater for your belief that p, on this account, if you have some reason to think either that further evidence will bear on the justification for this belief, or that you aren't reliable in judging the support for p provided by the available evidence.[17] Suppose for example that, your reliable weather app forecasts an 85% of rain tomorrow. Based on your knowledge that the app is fairly reliable, you are inclined to believe that it will rain. However, you also have a reasonable expectation that the forecast will change, such that it will no longer be reasonable to believe it will rain (weather conditions have been volatile). Suppose that you assign a credence of .6 that you'll be confronted

[16] Thanks to David DiDomenico for this point.

[17] What if you have reason to think that further evidence *might*, or that it *probably will*, undercut one's justification? Would that be enough for CI defeat? It might be argued that it is. (Thanks to David DiDomenico for raising this question.) But I will not take a stand on this. For my purposes, it is enough that there is CI defeat at least in those cases where you have reason to think future evidence *will* in fact undercut your justification.

with new evidence that supports this change in belief. In this situation, you have a closure of inquiry defeater that, on the account just mentioned, makes it unreasonable at present to flat-out believe (i.e., regard as settled) that it will rain tomorrow.

On this understanding of the way CI defeaters work it may seem they are essentially incapable of undermining *credences*, at least on views that hold that rational credence is determined by strength of evidence. This would be a problem for the liberal view, because CI defeat would have to undercut belief without affecting credence (on the liberal view, that is not possible). Provided CI defeaters don't affect the *strength* of your evidence, but only its *quality*, why should they affect credences that are based on that evidence? For instance, if you know it's 99.9% likely that your lottery ticket will lose, then your credence in the proposition that it will lose should, it seems, be .999 as long as the strength of your evidence remains the same—regardless of whether there is a CI defeater that requires you to leave open the question whether you will lose.[18] Thus it seems that rational credence *reflects the strength of your evidence*, regardless of whether such evidence is sufficient for flat-out belief. Note that it is very hard to make sense of this idea on the threshold view, according to which there is some credence value n, where $0<n<1$, such that believing a proposition p just consists in assigning it a credence of n or higher. Since a CI defeater might be present even where one has a rational credence of n in p, accepting both the threshold view and the view that closure of inquiry works in the way described would imply that it is both rational and irrational to believe p in the presence of such a defeater.[19]

These considerations may motivate a rejection of the threshold view, perhaps in favor of the view that belief just is credence 1. But the view that belief is credence 1 is, like the threshold view, hard-pressed to make sense of the claim that CI defeaters can undermine rational belief (i.e., require withholding) *without affecting the strength of one's evidence*, provided it takes rational credence to be determined by strength of evidence alone. For if rational credence is determined by strength of

[18] See Worsnip 2016, 556. Worsnip argues that it is rational to change one's credence in p only if it's rational to think that either the probability of p has changed or that one has made a mistake in one's previous estimate of that probability.

[19] A similar problem for the threshold view arises in lottery cases. No matter how large the lottery, it is arguably not irrational for a ticket holder to withhold belief that one's ticket will lose. (See, e.g., Williamson (forthcoming).) But withholding is evidently not even an option on the threshold view, given one's rational credence in the proposition that one's ticket will lose may be very close to 1. That is, on the threshold view, it is not even psychologically possible for an agent to have credences which reflect the facts that a lottery is sufficiently large and fair, while withholding belief of any given ticket that it will lose (Clarke 2013, 3-4).

evidence, then whether credence 1 is rational cannot depend on whether there is a defeater with respect to the quality of the evidence. Hence, if the strength of your evidence warrants assigning a credence of 1 to *p*, then it warrants belief in *p*.[20] And if there is a closure of inquiry defeater for this belief, this will undermine the belief only if it renders irrational the assignment of credence 1 to *p*—and, given the relationship between rational credence and available evidence, it will do that only if it affects the strength of one's evidence for *p*.

3.2. Context-sensitivity and CI defeat

The conception of CI defeaters as affecting reasonability of belief but not strength of evidence appears quite problematic, then, not only on the view that belief is credence 1 but on other views that take belief to be reducible to credence. To the extent that CI defeat appears to work in the way described, this is trouble for the liberal view. However, proponents of this view might simply reject the thesis that rational credence is determined by strength of evidence alone, holding instead that credence is in one way or another context-sensitive.[21] On such an account, your credence in *p* can change from one context to another, depending on which non-*p* possibilities are taken seriously in the context, regardless of whether there is any change in the strength of your evidence. In addition, the proponent of such an account may deny that updating must proceed via conditionalization, holding instead that it proceeds via some context-shifting operation.[22] So, the liberal view apparently can make sense of CI defeat so understood: a belief can be undermined by a CI defeater that calls into doubt the *quality*, but not the strength, of one's evidence. Such a defeater might entail a context shift, in virtue of which it's no longer rational to assign credence 1 to *p*.

How is CI defeat related to shifts in context? How might CI defeat proceed via context-shifting; or, how might a shift in context proceed via CI defeat? This is where things get tricky for the proponent of the liberal view. First, she might try to

[20] Williamson (forthcoming) presents a counterexample: it's rational both to have credence 1 in the proposition that a fair coin will land tails at least once given an infinite number of flips, and to (very cautiously) withhold belief that it *will* land tails. I acknowledge the possibility of such cases (although I confess that I do not find it plausible that withholding belief that the coin will land tails is rational). In any case, I suggest that in ordinary cases thought to warrant credence 1, having such credence suffices for flat-out belief. And I claim this fact is enough to raise the problem indicated.

[21] See, e.g., Clarke 2013; Leitgeb 2014. Thanks to an anonymous referee for *Episteme* for pressing this point.

[22] Note however that Clarke argues that his own 'credence-sensitivist' account is compatible with updating via conditionalization (see Clarke 2013, 13).

make sense of the idea that CI defeat may effect a context shift in virtue of which credence 1 is no longer justified, by raising the (practical) stakes. For, arguably, raising the stakes can increase the threshold for belief.[23] Suppose, then, that the presence of certain high stakes raises the threshold for belief from n to $n+\frac{1-n}{2}$. Then, while a rational credence of n in p prior to the stakes being raised would have sufficed for reasonable belief in p, once they are raised this is no longer the case. In this way, it seems that the stakes can affect the quality of your evidence—and so determine whether it's sufficient for reasonable belief—without affecting its strength.

The suggestion that CI defeaters can raise the stakes is somewhat counterintuitive, however. What CI defeat seems to do is show that the believer's epistemic situation is not in fact as good as it may have seemed. This is not because the stakes are suddenly higher than they had been, but because there is some previously unnoticed or unappreciated fact about the believer's circumstances. Consider for instance the defeat provided by acknowledged peer disagreement. The reason such disagreement seems to make it unreasonable to continue to believe based on your calculation that your share of the bill is $14.48 is that it calls into doubt your handling of the available evidence; it is not that the emergence of disagreement about what each individual owes somehow makes it even more critical than it was before the disagreement that each individual pay (only) her fair share.

Perhaps the idea that CI defeat can raise the stakes simply gets things backwards. That is, while a CI defeater does not itself affect what is at stake, raising the stakes (introducing a new prospect of incurring a high cost if one is mistaken) can give rise to CI defeat—it can make it the case that what previously sufficed for closure of inquiry no longer does. In this way, it might be argued, a shift in context can bring about CI defeat, independently of any change in the strength of one's evidence. Thus, initially you may have been reasonable in assigning credence 1 to the proposition that you owe $14.48. But now that someone has threatened to take all of your money if you turn out to be off by so much as $.01, it is reasonable to reduce that credence, or withhold entirely—even though your evidence has not changed at all. However, the problem now is that it is difficult to see what the relationship between credence and evidence is supposed to be. If rational credence need not reflect the strength of one's evidence—if it need not be based on an estimate of objective probability or chance—then it is not clear how evidence should be brought to bear on credence, as it surely ought to.[24] In particular, supposing that

[23] Schroeder (2021, Ch. 7) calls this view "pragmatic credal reductivism."
[24] Cf. Worsnip 2016.

an increase in what is at stake can 'undo' credence 1 in the way indicated, then it would seem possible in principle that credence 1 in a proposition for which one has extremely strong (though not irrefutable) evidence could be undermined provided the stakes are high enough.

3.3. Relevant alternatives and CI defeat

While I think it would be premature to conclude that the above version of the contextualist view cannot account for the relationship between credence and evidence, I want to briefly consider a different way to make sense of the relevant sort of context shifting operation, in terms of relevant alternatives and/or contrastivism about reasons.[25] The basic idea is that which alternatives to p are relevant, and need to be ruled out in order for flat-out belief that p to be reasonable—and hence, according to proponents of credence 1, in order for credence 1 to be rational—can change with shifts in context, which may occur due to changes in the agents' practical interests. Such shifts in context need not affect the strength of one's evidence, since one's evidence need not *change* at all due to the shift. Accordingly, it might be reasonable for S to believe that p in context c_1, where relevant alternatives to p include q and r, but not s, and S has evidence that rules out q and r (but not s), while it's unreasonable for S to believe that p in c_2, where S has the same evidence, and relevant alternatives to p include q, r, and s.

Provided credence 1 does not entail steadfastness, this might work. For then, on the view that flat-out belief is credence 1, it would be possible to update from credence 1 on the basis of such a context shift, even if there is no reduction in the strength of one's evidence: my evidence might be strong enough to rule out the relevant alternative that o is an oak tree, and so sufficient for the flat-out belief that it's an elm in c_1, but not strong enough to rule out the relevant alternative that o is a beech tree, and so not sufficient for flat-out belief that it's an elm in c_2. (A closure of inquiry defeater thus might arise in c_2, which makes the possibility that o is a beech tree salient.) But I argue in the next section that credence 1 does, after all, entail steadfastness. So, it is strongly resistant to being updated in light of such shifts in context.

The proponent of credence 1 might object that the relevant alternatives account of reasonable belief offers an *explanation* of why credence 1 does not in fact require steadfastness. But we don't yet have sufficient reason to believe this, since the identification of flat-out belief with credence 1 is part of what's at issue. While the contextualist-cum-relevant alternatives account does, I think, provide an

[25] See Dretske 1970, 1981; Stine 1976; Schaffer 2004.

explanation of why *flat-out belief* need not involve steadfastness, the claim that a shift in context it can make it reasonable to reduce one's credence from 1 to less than 1, without changing the strength of one's evidence, presupposes that credence 1 can be combined with a rational responsiveness to reasons and evidence. Which is just what's at issue.

It would be hasty to conclude that credence 1 is irrational because it is impervious to CI defeat. Yet it remains unclear whether a contextualist approach to credence 1 can properly accommodate CI defeat. In response to the difficulties we've considered, one might argue we should revise our understanding of CI defeat, such that while a CI defeater for the belief that *p* may preclude *knowledge* that *p*, it does not necessarily make *belief* that *p* unreasonable (it does not require withholding). Accordingly, we might hold that a CI defeater prevents closure of inquiry without challenging the quality of one's evidence in a way that would make continued belief irrational. A CI defeater, so understood, undermines purported knowledge that *p*, but it does not necessarily affect the rationality of belief in *p*, nor need it affect rational credence in *p*. A CI defeater on this account undermines neither the reasonability of belief nor the strength of your evidence, but its presence or absence may determine whether the belief counts as knowledge. Such a defeater provides you with a reason to doubt whether your evidence is sufficient for knowledge, regardless of whether it is sufficient for reasonable belief—and it does so by calling into question the quality of your evidence, rather than its strength.

This is a reasonable suggestion. Indeed, I disagree with Rutledge and Kvanvig that a CI defeater for *p* necessarily defeats the rationality of belief that *p*. I think that it can defeat *closure of inquiry* (that is, make such closure unreasonable) without making belief itself unreasonable. This idea is plausible especially when it is considered in connection with the two features that are supposed to give rise to CI defeat. First, while the fact that I have a reasonable expectation that future evidence *will* reveal evidence against *p* seems to make it reasonable for me to be disposed to revise this belief—and to regard inquiry into whether *p* as open—it is not clear that it makes it unreasonable for me to continue to believe *p* at present. Similarly, the realization that I might not be as trustworthy as I'd thought, whether because of the presence of peer disagreement or because of certain cognitive biases should, again, make me stand ready to revise, but it's not clear that withholding belief is required.[26]

Note that while on this revised understanding of CI defeat it can be rational for you to hold onto the belief that *p* in the face of a CI defeater, this does not imply

[26] Note that this is consistent with a 'reflection' principle for rational belief, that it's not rational to believe *p* now if you expect not to believe *p* in the future when you're better informed. (Schroeder 2021, 179)

that it's rational for you to remain steadfast in this belief in the presence of such a defeater. In fact, CI defeat on this understanding requires that you *not* remain steadfast. Hence, if credence 1 entails remaining steadfast, as I argue in the next section it does, it follows that having credence 1 in the face of CI defeat is not rational.[27]

4. Credence 1 Requires Steadfastness

This section argues that having credence 1 in *p* entails remaining steadfast in one's belief that *p,* that is, that it disposes one not to revise this belief. First, I respond to a recent account of the nature of credence and its relationship to belief developed by Dominik Kauss (2018) which aims to separate two independent dimensions of one's doxastic state, and which might be taken to show that credence 1 does not require steadfastness. Next I appeal to an account of the state of *being sure* developed by Pruss (2016) and argue that this account supports the view that credence 1 entails a disposition to remain steadfast. Finally, I argue that the view that credence 1 requires steadfastness is supported by considerations of epistemic self-trust and its relation to credence 1.

4.1. Doxastic tendency and doxastic resilience

It might be argued that there is no important relationship between credence and steadfastness, as these concern distinct and independent dimensions of one's overall doxastic state. Consider, for example, what Kauss says about about the agent in Lara Buchak's widely discussed bus example,[28] who believes wholeheartedly and

[27] Why should it be irrational to remain steadfast in the face of CI defeat? The argument is simply that if inquiry regarding *p* should remain open, as it should if there's a CI defeater regarding *p*, then you should be disposed to revise your belief that *p* in the face of counterevidence. I do not take this argument to be contentious. If a CI defeater undercuts your purported knowledge that *p*, then it makes it unreasonable for you to regard the case for *p* as closed. What about the claim that regarding *p* as open should dispose you to revise your belief that *p*? I take it this claim simply unpacks what it means to say that it's rational to keep inquiry on *p* 'open.' To keep inquiry open is not merely to admit fallibility; it is to think that there is a significant possibility that future investigation will lead to important counterevidence, in which case one should then revise one's belief.

[28] See Buchak 2015. A very similar type of example is discussed in Thomson 1986. For readers who are not familiar with the case: Your parked car was hit by a bus in the middle of the night, which could belong either to the blue bus company or the red bus company. Now consider two scenarios. In Scenario A, you know that the blue company operates 90% of the buses in the area, and the red company operates only 10%. In Scenario B, the two companies have an equal number of buses in the area, and a 90% reliable eyewitness has testified that a blue bus hit your car. Is it rational for

unequivocally (and justifiably, at least according to Buchak), based on eyewitness testimony, that a Blue Bus has hit their car:

Unless 'believe' is taken in some weak sense…, [to say that x is justified...] is to concede that *x* is justified in entering a mental state such that, to *x*, their car having been hit by a Blue Bus *is just how things are*. Whatever the *statistical* probability of the eyewitness's being right, as far as *x* is concerned *the case is closed*, pending new evidence. (my emphasis) (4514)

The general idea is that representing the world as being such that *p* is a *binary, all-or-nothing, non-graded state*, so that if believing that *p* is a mental state that represents the world as being such that *p*, then *x* believes that *p* in case *to x* the world is such that *p* (Kauss 2020, 4499). We may also compare Dylan Dodd's (2017, 4604) conception of belief as *doxastic necessity*: if one believes that *p*, one's perspective or doxastic state doesn't leave open the possibility that not-*p* (one doesn't regard not-*p* as an 'open possibility').[29] Intuitively, if you are in the sort of binary, all-or-nothing, settled state that Kauss, Dodd, and others describe, you have 'closed off' the possibility that what it represents is not the case, in the sense that your state represents, or indicates, that this possibility does not obtain.

Kauss argues that this 'all-or-nothing' conception of belief supports the claim that *x*'s rational credence in the proposition that a Blue Bus has hit their car is 1. He explicitly denies however that this requires that *x* be disposed to retain this belief in the face of counterevidence. Since the evidential source is less than 100% reliable, he says "*x* should not, pathologically, develop a disposition to hold on to the belief even in the face of excellent new evidence to the contrary" (Kauss 2020, 4514). But *x* can coherently adopt credence 1 while maintaining a disposition to revise in the face of counterevidence, Kauss suggests, since the latter "concerns the dimension of doxastic *resilience*, not the dimension of doxastic *tendency* which…is what credence 1 consists in…." (The *resilience* of a belief consists in the strength of the agent's disposition to hold on to the belief in the face of evidence to the contrary, whereas *tendency* for p is the degree to which the agent tends toward believing p.)

The claim is that assigning credence 1 to p is compatible with being disposed to revise belief in p, because credence pertains to tendency, whereas the disposition

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you to flat-out believe that a blue bus is to blame, in either A or B? Buchak argues that it is rational to flat-out believe this only in A. Note that Buchak takes the example to support Dualism, the view that credence and belief are mutually irreducible phenomena, sensitive to different features of our evidence, whereas Kauss argues that the example does not provide a reason to reject his own view that credence is reducible to doxastic tendency.

[29] Compare also Fantl and McGrath's (2009, 141) 'resolution' criterion for outright belief, viz., that if you believe that *p*, then your mind is made up that *p*.

to retain, or revise, belief pertains to resilience. This view assumes that tendency and resilience are, more or less, independent of one another. Against Kauss's account, it might be argued that *x*'s disposition to revise the belief that p in light of counterevidence is rational only if *x* recognizes that there is *some chance of error*—after all, the disposition to revise minimally requires admission of fallibility regarding *x*'s belief in *p*.[30] In that case, *x*'s credence in *p* should, it seems, be less than 1: if *x* recognizes there is a chance of error, then *x* should give some positive credence to the proposition that *p* is false, and so (given Complementarity) *x*'s credence in *p* should be less than 1.[31]

This argument fails, however. First, as Rosenkranz (2015, 621) notes, insofar as *p* does not concern the open future, to say there's a non-zero objective chance of *p*'s being false is to say that *p is* false. It can't, then, be rational for *x* to concede the actual *falsity* of *p* just because *x* admits to being fallible. On the other hand, if the relevant chance of error is taken to be subjective chance, and the idea is that *x* should assign some non-zero credence to the proposition that she has made an error in arriving at the belief that *p*, then again *x* would be required to assign non-zero credence in $\neg p$ (because arriving at a false belief due to some cognitive mistake entails that the belief is false), which again would require *x* to concede that she *actually* failed because she made a mistake in assessing her evidence.[32] Arguing based on subjective chance that credence 1 cannot be rationally combined with admission of fallibility thus "sins against the constraint that, in general, admission of one's own fallibility in a given case should not be construed as admission of one's actual failure in that case…" (Rosenkranz 2015, 622).

Rosenkranz is right that it is not this easy to establish that credence 1 does not cohere rationally with admission of fallibility and a readiness to revise. However, there is still some reason to worry that Kauss's account does not actually explain why credence 1 is compatible with a disposition to revise one's belief. For although the distinction between doxastic resilience and doxastic tendency is important, and it's

[30] Is this a subjective or objective chance? It might seem that it does not matter: If it is objective chance, then Lewis's Principal Principle applies (credence should conform to known objective chance), and this requires assigning a credence of less than 1. If, on the other hand, it is subjective chance, this means one should have some non-zero credence in not-*p*, which again requires assigning a credence of less than 1 in *p*. However, see below.

[31] Cf. Worsnip (2016, 554): "[C]redence 1 looks unpalatable, for simple reasons. We report ourselves as believing , and we assert outright, a lot of things of which we would not say that there is literally *no* chance that they are false. Moreover, it's easy to think of situations that reveal our lack of maximal certainty in the things we believe—for example, bets at very bad odds."

[32] As Rosenkranz notes the error here isn't the same as the error in the first case where chance is understood as objective; but it's an error all the same, and the problem is that it's taken to be *actual*.

plausible that credence is identifiable with tendency rather than resilience, it is also plausible that resilience and tendency are related, such that certain combinations of these states are rationally impermissible whether or not they are psychologically possible. Indeed, Kauss acknowledges that although in a formal respect tendency and resilience are independent variables, "as far as *psychological* reality is concerned, tendency and resilience are not mutually independent. Typically, an increase or decrease in tendency is preceded by a decrease in resilience, i.e. an erosion of confidence, in one sense of 'confidence'" (Kauss 2020, 4503). I suggest further that an increase in resilience is often caused by an increase in tendency: as one's tendency to believe *p* gets closer to flat-out belief that *p*, one gets more and more confident that *p* is the case and, consequently, less and less disposed to reduce one's confidence, or withdraw one's belief in *p*.

There are plausibly rational as well as psychological constraints on the combination of resilience and tendency. In particular, it is plausible that a very strong tendency to believe that *p* cannot rationally be combined with a relatively weak resilience in this belief. Suppose that the slightest counterevidence or suggestion of a defeater would alter my tendency to believe that I'm now working at my desk. Simply entertaining the thought that I'm the victim of some elaborate scheme of massive deception would immediately lead me to withdraw my assent to the proposition. Under such conditions, it seems that my tendency to believe that I'm working at my desk should not be very high. Given the wide and ready availability of defeaters (by my lights) it would not seem reasonable for me to form the belief more than half of the time.[33]

In support of strong tendency-low resilience beliefs, we might resort to analogy. Consider soap bubbles, which exhibit a strong tendency to form and then, shortly thereafter, burst. In this case, it appears that fragility (lack of resilience) and high tendency are not at all at odds. Token beliefs might be viewed analogously: one's tendency to form token beliefs of a certain type might be strong, even if each token is fragile. However, here are a few concerns. First, it's not clear that this is even logically possible, since it's not clear it's coherent to regard the relevant fragile states as states of *believing that p,* rather than states of *considering whether p,* or *being inclined to believe that p.* Moreover, supposing the case is logically possible, it's not clear it's psychologically possible, given our evolutionary nature, since there would seem to be no clear advantage to forming beliefs in such cases. Finally, even supposing the case is both logically and psychologically possible, it's not clear that

[33] It's worth noting additionally that it's not clear that it's even possible for me to have such a high doxastic tendency in these conditions. What sense could it make to say that I am strongly disposed to believe that I'm sitting at my desk, if this tendency is so easily thwarted?

forming such beliefs can be *rational*, since the apparent defeat in virtue of which the belief token is fragile applies in the first instance to a type, rather than a token.[34]

If high-tendency, low-resilience belief is not rational, then it's possible that credence 1 in *p*, understood as the highest possible doxastic tendency, is not rationally combinable with a moderate-to-low doxastic resilience with respect to the belief that *p*. This is plausible, especially when we consider things from the agent's viewpoint. Recall Kauss's characterization of belief in *p* as representing the world as being such that *p*, hence as representing that, as far as *p* goes, *the case is closed*. It's conceivable that if I'm in such a state I remain open to the possibility that I'm mistaken, but it's difficult to see how such a settled state of confidence could be fragile.

Proponent of credence 1 cannot easily avoid the charge that having credence 1 in a proposition *p* requires an irrational commitment to retain the belief that *p* when it would be reasonable to revise it. Even if we identify credence with doxastic tendency and distinguish doxastic tendency from doxastic resilience, it is plausible that there are rational and psychological relations between tendency and resilience—relations that imply that high credence entails high resilience.

Proponents of the liberal view may offer counterexamples. For instance, consider the following case involving a countably infinite fair lottery (with a ticket for each natural number), in which there's a guaranteed single winner.[35] For each number *n*, it seems that our credence that ticket *n* will lose should be 1. One might want to assign a real-valued non-zero probability to each ticket being picked (and so, a probability less than one to each ticket's losing), but then the sum of these probabilities would be greater than 1. On the other hand, the assignment of infinitesimal probability to each ticket's being picked also faces difficulties. (See Pruss 2012 and Pruss 2014.) At the same time, if we assign probability 1 to the proposition that ticket *n* will lose, for each *n*, then the principle of countable additivity implies that the probability that no ticket will win is also 1. Hence, there is some reason to reject countable additivity[36] and assign 0 to each ticket's winning

[34] Is the bubble example disanalogous in this respect? It may seem so, since the 'defeat' in each case may seem to apply to the particular instance, rather than to the type *soap bubble*. But it is also plausible that the explanation of why the bubbles are fragile will appeal to certain properties which they all share (surface tension, elasticity, etc.); in this sense, the 'defeat' applies to a *type*. Of course, a nominalist or trope theorist will offer an account which eschews properties-qua-universals. Obviously, this is not the place to pursue the metaphysics of properties, and I will set aside the question whether there is an important disanalogy here.

[35] Thanks to an anonymous referee for *Synthese* for suggesting this example.

[36] *Finite additivity* states that the probability that one of two mutually exclusive events occurs is the sum of their individual probabilities. *Countable additivity* is a strengthened version of finite

and 1 to *some* ticket's winning. However, even if our credence that ticket *n* will lose is 1, we should remain ready to revise our credences once the winning ticket is drawn.

I offer two responses. First, not only is the case of countably infinite lotteries peculiar—and strikingly different from finite cases—but the issue of how rationally to assign probabilities in infinite lotteries is a contentious one. Whether it's a genuine counterexample thus depends on how this debate gets resolved. As long as it remains an open question whether assigning credence 1 to each ticket's losing is rational—and an open question whether one should be disposed to revise one's belief that ticket *n* will lose—the case is not a clear counterexample.[37] My second response is, in a sense, more concessive. Let's grant that credence 1 is rational in this case. There is still an issue of whether this credal state is (for the ideally rational agent) *stable*, such that the disposition to revise one's belief can obtain *along with it*. Although it may appear clearly rational (and psychological possible) for you both to assign 1 to ticket #31's losing *and* to be ready to revise your belief that ticket #31 will lose, it's not clear that these states are present at the same time, rather than that you vacillate between assigning 1, and being (definitely) disposed not to revise, and being disposed to revise, and consequently assigning a probability of less than 1. I suggest further that the view that credence 1 precludes the disposition to revise provides a plausible explanation of the tension we discern in this case, between assigning credence 1 to ticket *n*'s losing while also recognizing an (exceedingly small) possibility of *n*'s winning. If this were a clear case in which it is rational to combine credence 1 with readiness to revise, then no such tension would arise (recognition of the possibility that not-*p* being necessary for the disposition to revise belief that *p*).

I am not claiming that you can rationally adopt credence 1 in *p* only if you commit to holding onto this credence *come what may*. This is too strong (cf. Kauss 2020, 4514; Clarke 2013; Rosenkranz 2015). My point is that adopting credence 1 in *p disposes* you to hold onto the belief that *p*; hence, that it entails a disposition not to revise in light of counterevidence. The claim that credence 1 disposes you to remain steadfast is thus a fairly modest one. It does not imply certainty, or a commitment to retain your belief *regardless of what further evidence may crop up*. Nevertheless, the claim is significant, because there are plenty of instances of justified, contingent flat-out belief in which it is arguably rationally required to

additivity, which extends the principle to infinite cases.

[37] It might be argued that you should not be disposed to revise your belief that ticket #31 will lose upon being confronted with evidence that it won, since it is more likely that such evidence is misleading. (Thanks to David DiDomenico for this point.)

remain open to refutation and revision, and hence to retain a strong *readiness* to revise belief. The issue thus fundamentally concerns the rationality of certain dispositions that accompany our beliefs but may not be constitutively tied to them. The proponent of the liberal view may be correct in claiming that wholehearted, unqualified assent is justified for a wide range of contingent propositions; but to identify this doxastic state with credence 1 may go too far, if being in this credal state requires steadfastness.

4.2. Being sure and being disposed not to change one's mind

This section offers a positive argument for the claim that having credence 1 in p entails a certain kind of closure of inquiry regarding p, which involves a disposition to remain steadfast. The argument relies on work by Alex Pruss (2016) who offers an explication of the notion of the attitude of *being sure*, where being sure is understood as stronger than being confident but not as strong as being certain.[38] Pruss suggests, for instance, that you might be sure that the world is billions of years old, or that you have hands, while lacking certainty that this is true (i.e., while allowing that there is some chance that your belief is false). The account understands being sure that p in terms of having a level of confidence that would be required for a certain kind of rational closure of inquiry regarding p. I argue that provided Pruss is correct that being sure that p is both necessary and sufficient for such closure of inquiry, it follows that being sure that p necessarily disposes one not to revise one's belief in p in the face of counterevidence.

Pruss proposes that an agent is sure of p if and only if the credence r she assigns to p satisfies the 'Rational Confidence in Continued Confidence' condition (RCCC):

> RCCC. Necessarily any perfectly rational agent who knows she will remain perfectly rational and who assigns a credence r to some proposition q is confident that she will remain confident in q.

He notes that r=1 will satisfy RCCC in a standard Bayesian setting, whatever the threshold for confidence is (where the threshold is understood as number such that confidence requires a credence greater than or equal than the threshold). So, the following principle holds:

> Necessarily any perfectly rational agent who knows she'll remain perfectly rational and who assigns a credence of 1 to a proposition q is confident that she'll remain

[38] See Pruss 2016. Goodman and Holguín (2022) take "S is sure that p" and "S is certain that p" to mean the same; however, I take their account of being sure to be consistent with Pruss's as they clearly distinguish surety from Cartesian certainty, understood as a state "from which no possible course of experience could dislodge us."

confident in *q*.

RCCC is based on the intuitive idea that once a rational agent's confidence in *p* reaches a certain threshold, inquiry into *p* is no longer reasonable (the case is closed, so to speak). Pruss then infers that one who is sure of *p* is thereby in a position to rationally close inquiry into *p*. He explains:

On this proposal, being sure is related to a kind of security from rational refutation. One is sure provided that one has sufficient credence that any rational being who is certain of her future rationality is confident in her continued confidence, and hence is in a position to epistemically close inquiry. (48)

In a recent paper, Goodman and Holguín (2022, 4-5) endorse a related 'unsurety' norm on inquiry: *Inquire into whether p only if you are not sure that p*. Thus, according to Goodman and Holguín, if you're sure that *p*, this suffices for rational closure of inquiry; inquiring into *p* is not proper under such conditions. Suppose, for instance, that you're convinced that the butler did it—you are sure that the evidence establishes his guilt. Or suppose that you've repeatedly worked through a proof of a certain theorem, and you are sure that it's correct. In such circumstances, it would not be proper for you to deliberate or inquire further about the matter, or to gather further evidence. Nor, for that matter, would it be proper to remain curious about whether the relevant proposition is true, or to idly wonder whether it is true (Goodman and Holguín 2022, 14).

This surety norm comports with Pruss's analysis. Pruss however goes further. On his account, the reason being sure suffices for closure of inquiry is that it suffices for *higher-order confidence* (given one is rational): if you're sure that *p*, then you're not only highly confident that *p*, you are confident *that you will remain confident that p* in the face of future investigation (again, provided you remain rational). I take this to be a critical point about being sure. It means that being sure that *p* is not simply a kind of present conviction in *p*; it entails a future-directed attitude toward one's present attitude regarding *p*.

Pruss's account of being sure supports the claim that assigning credence 1 disposes one to remain steadfast in one's belief. The argument does not assume that assigning credence 1 to *p* entails being *certain* that *p*. It assumes only that assigning credence 1 to *p* entails being *sure* that *p* (as Pruss notes),[39] and that being sure

[39] I assume that assigning credence 1 to *p* requires that you bear the attitude of belief to *p*. I disagree, then, with Goodman and Holguín who reject subjective probability requirements on thinking in general and on being sure in particular. In their view, being sure that *p* isn't entailed by maximal subjective probability (i.e., credence 1), because being sure that *p* requires thinking that *p*, and (for all they claim to have shown) for any *n* it's possible to have credence *n* in *p* without thinking that *p*.

involves a future-directed attitude toward the endurance and stability of one's present state, given that one is, and knows one will remain, rational. If this is correct, then for any contingent proposition *p* such that it is rational to be disposed to revise rather than to remain steadfast, it is not rational to assign *p* a credence of 1.

In terms of Kauss's framework, *being sure that p* involves a very high degree of doxastic resilience regarding *p*. For example, if you are sure that you have two hands, or that the world is billions of years old, then you won't easily abandon your commitment to these propositions when faced with apparent counterevidence; you will be strongly disposed to explain it away. To take Pruss's example, you might have *some reason* to think that you're currently in the hospital recovering from an amputation of one of your hands, and that you're merely dreaming that you have two hands. (Imagine that similar stories of the delusions of others whom you regard as epistemic peers are salient.) Even if you have such a reason, you will likely not respond by withholding or questioning your belief, or tempering your credence in the proposition that you currently have hands. Moreover, it seems this is the rational thing for you to do given your high level of confidence in this belief, which, on Pruss's account, entails second-order confidence. Being sure that *p* involves not just a present conviction in *p* but a conviction in the *resilience* of one's belief that *p*. Thus if I'm confident that I'll remain confident that *p*, then I'm disposed *not* to revise this belief.

I have tried to establish a connection between credence 1 and the disposition not to revise, while rejecting the view that assigning credence 1 to *p* requires certainty that *p*. This is challenging, because if credence 1 in *p* does not require certainty, then it seems clearly compatible not just with admission of fallibility but with significant rational doubt about *p*.[40] If credence 1 allow room for such doubt, then it appears to allow room for a disposition to revise in the face of counterevidence. If so, then there's apparently nothing irrational about assigning credence 1 to contingent propositions belief in which it seems one should stand ready to revise. However, I claim it is a mistake to think that if credence 1 doesn't require certainty then it's compatible with rational doubt. While assigning credence 1 to *p* does not imply being certain that *p* it does imply being sure that *p*, in Pruss's sense. Consequently, since being sure that *p* involves not only current first-order confidence in one's belief that *p* but also higher-order confidence in one's belief—confidence that future inquiry will not make one lose confidence that *p*—it leaves

[40] In distinguishing mere admission of fallibility and significant rational doubt I mean to account for the difference between cases where it's conceivable in a very broad sense (there is no logical incoherence) that one is mistaken and cases where one seems to have some positive understanding of how one could be in error, and where such a possibility apparently cannot be ruled out.

no room for rational doubt. Since such second-order confidence disposes one to maintain one's (first-order) disposition to rely on *p* in one's reasoning (etc.), it follows that assigning credence 1 to *p* disposes one not to revise belief that *p* in the face of counterevidence.[41]

4.3. Epistemic Self-Trust and Steadfastness

Surety is closely related to steadfastness; consequently, so is self-trust. You should remain steadfast in your belief that *p* only if you're sure that *p*. And you should be sure that *p* only if you have a very high degree of epistemic self-trust, trust that you've handled evidence for *p* correctly. If an epistemic peer (someone who has the same evidence as you and who is equally capable of handling the evidence), disagrees with you, that is plausibly a reason to question whether your degree of self-trust is too high. Even the reasonable expectation of peer disagreement seems to provide some reason for self-doubt: if your evidence suggests that it's likely that there is an epistemic peer who disagrees with you about whether *p*, that makes it prudent for you to reconsider the matter and to wonder whether your judgment is properly grounded. In many cases of belief in contingent propositions, it's quite reasonable to expect peer disagreement. This suggests that your self-trust in these cases cannot rationally be very high: you should not be sure.[42] But because credence 1 entails

[41] Note that I am not claiming that having credence 1 commits you to *self-insulation* in the sense that you're disposed to automatically dismiss any counterevidence that arises as misleading. That would clearly be too strong. It's helpful here to contrast credence 1 with a certain sort of steadfast belief in conspiracy theories. Napolitano (2021) argues that conspiracy theories are beliefs invoking conspiracy explanations that are such that the agents take the relevant conspiracies to neutralize the counterevidence: no evidence could be presented that would cause them to change their minds, because any such evidence would be dismissed as a fabrication of the conspirators to steer the public away from the truth. Such dismissal of counterevidence might be required by absolute certainty, but as I indicated earlier, I reject views which identifying credence 1 with absolute certainty. My claim is merely that credence 1 *disposes* you not to revise, not that it makes you completely unable to (rationally) revise. Whereas self-insulated belief is counterevidence-proof, credence 1 is counterevidence-resistant.

Supposing you have credence 1 in *p*, it is nevertheless possible that you end up revising your belief or reducing your credence, as the result of a rational process. Your actually doing so is compatible with your having a strong disposition *not* to do so. Whereas, supposing your belief that p is self-insulated, the only way, I claim, for you to revise your belief is via some non-rational process (non-rational persuasion, psychological compulsion, etc.). Given that your attitude toward p licenses dismissal of all counterevidence, no such evidence will, by your lights, bear on the rationality of your belief.

[42] By contrast, I've suggested that there are plenty of contingent propositions that you *can* be sure about—*you have hands*, *the world is billions of years old*, etc. In such cases, it might be reasonable

steadfastness, it requires that self-trust be very high. So, credence 1 is apparently not rational in these cases.

Rosenkranz and Schulz (hereafter R&S) argue that it's sometimes rational for you to have credence 1 in *p* even assuming that there is an epistemic peer who disagrees, as it's often reasonable to think that any such peer would make a mistake.[43] At the same time, they suggest, it may be rational in such a case for you to change your credence once the disagreement actually materializes (Rosenkranz and Schulz 2015, 575). They defend this view by arguing that belief revision in the face of peer disagreement should not proceed via conditionalization; rather, it's a matter of revision of one's prior conditional probabilities. The counterevidence provided by peer disagreement is not to be treated as a mere addition to one's evidence; instead, it calls into question one's prior take on the probative force of one's evidence and thus challenges one's prior probabilities.

However, as R&S note, the sorts of cases they consider in which (they maintain) it is rational to have credence 1 in a proposition despite anticipated peer disagreement bear a striking similarity to cases discussed in connection with Kripke's puzzle of dogmatism (Rosenkranz and Schulz 2015, fn. 34). In the present context, the problem is that having credence 1 in *p* would seem to license the belief that any potential counterevidence would be misleading, which in turn would entitle one to ignore such evidence, and even to systematically avoid getting oneself into a position in which one is faced with such evidence (provided it's not too costly to do so). This is problematic, R&S suggest, since even if it may be reasonable *before* being presented with counterevidence to think such evidence must be misleading, it may not be reasonable to think this *once such evidence has presented itself*; and so the effort to systematically avoid such evidence does not seem warranted.

Although they do not aim to provide a thorough response to Kripke's puzzle, R&S suggest that the proponent of credence 1 can consistently maintain that you can have credence 1 in such cases without thinking that there is sufficient reason to avoid getting yourself into a situation where you are faced with peer disagreement that would demand revision on your part. They write:

The evidence provided by peer disagreement is evidence that turns out to be counterevidence only when it is too late to ignore it, by which time it is undetectably misleading, if it is misleading. Upon meeting one's peer, one is reasonably confident

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to be uncertain (i.e., to allow there is some chance of error), but it's just not reasonable to expect peer disagreement.

[43] Whether it is rational may depend on what epistemic peerhood is understood to consist in. R&S suggest that regarding someone as an epistemic peer "involves taking them to have a track record that makes them as good as oneself in responding to the evidence shared." (559)

that she will either agree with one or that one can win her over after some argument. Thus one has no antecedent reason to systematically avoid encounters with one's peer, because one has no antecedent reason to expect that she will not come over to one's side, even if it takes a little argument to achieve this. When it turns out that she will not, it is too late to ignore her testimony, but at that time, one is no longer able to recognize that her testimony is misleading, even if it is, because by that time one's confidence in the original hypothesis should be shaken. (Rosenkranz and Schulz 2015, fn. 34)

While some cases of expected peer disagreement may be like this, there are also plenty of cases where it's no more reasonable, prior to meeting your peers, to expect that they will be won over than that they'll win you over instead. For instance, you might have a peer who has been able to win you over in roughly half of the situations in which they've disagreed with you in the past. In such cases, having credence 1 in the target proposition would (supposing it is reasonable to think the counterevidence provided by such disagreement is misleading) warrant an effort not to get into the situation where there is a good chance that you will be won over. Yet if there's a practical sense in which such an effort is warranted, there does not seem to be sufficient epistemic justification for the resolution to avoid such situations. So, to the extent that it seems epistemically irresponsible to resolve in advance to avoid situations in which relevant counterevidence might present itself, credence 1 does not seem rational.

Being sure involves a certain level of epistemic self-trust. If you're sure that *p*, then you trust that you have assessed your evidence for *p* correctly. Consequently, you trust that there is no undercutting defeater for your belief that *p*. (A lack of such trust would require that you regard inquiry about *p* as open. Since having credence 1 in *p* entails closure of inquiry regarding *p*, having credence 1 in *p* is not compatible with such a lack of trust.) Peer disagreement provides a reason to doubt one's epistemic self-trust. Moreover, as the foregoing discussion suggests, if peer disagreement provides a reason for self-doubt, then so does the reasonable expectation of peer disagreement.[44] Given, then, that for a range of contingent propositions it is reasonable to expect peer disagreement, it is reasonable to question one's degree of self-trust with respect to those propositions—reasonable, that is, to doubt whether one has assessed the evidence correctly. In particular, the reasonable expectation of peer disagreement regarding *p* makes it unreasonable for you to be sure that *p*.

[44] I do not claim that the reasonable expectation of peer disagreement provides *as strong* a reason for doubting self-trust as does actually observed peer disagreement. The claim is only that it provides some reason for doubt.

I suggest that this point is related to the *preemptive* nature of reasons for epistemic trust in oneself and others.[45] If reasons to trust are essentially preemptive reasons—higher-order reasons against acting for certain other reasons—as Keren (2014) argues, then there is a clear tension between trusting that one has handled the evidence correctly and standing ready to revise one's belief. As Keren (2014, 2605) notes with regard to trust in others' testimony, taking precautions against a speaker's failing to φ is incompatible with trusting her to φ, provided the latter is understood as involving preemptive reasons. So, if you trust a speaker S to speak the truth about X, then you refrain from investigating other sources of evidence regarding X. But if you don't take such precautions—if you resolve not to investigate, or attend to potential defeaters for your trust in S—then in what sense might you stand ready to revise testimonial beliefs thereby acquired? A readiness to revise such beliefs requires a sensitivity to any relevant counterevidence you might obtain. But then you can't commit to ignoring possible sources of evidence other than the testimony. In Keren's account, reasons for trust are reasons against taking precautions, and reasons against taking precautions are "reasons against acting in ways that might produce such evidence but also reasons against reflecting on or being attuned to such evidence" (Keren 2014, 2606). If you commit to not reflecting on or being attuned to evidence that trust has been violated, then you do not have the disposition to revise.

If this is the right account of trust in others, does it extend to epistemic self-trust? One might worry that it doesn't, since self-trust appears to be more fundamental than trust in others, in the sense that reasons for or against trusting others appears to depend on a certain degree of trust in one's own epistemic capabilities. But the fact that one needs to trust oneself to some degree in order to recognize grounds for (not) trusting another does not suggest that the fundamental nature of self-trust is different from that of trust in others. I suggest that the notion of trust as involving a refusal to take precautions is just as plausible here. Trusting one's evidence, methods, faculties, and judgment involves setting aside reasons to think these aren't reliable.

The disposition to revise involves a responsiveness to reasons for revising, not just an openness to the mere possibility that future evidence may mandate revision. While the degree of self-trust involved in being sure does not preclude openness to this possibility, it does preclude the kind of sensitivity to counterevidence that's required for having a disposition to revise.

[45] The term 'preemptive reason' is due to Joseph Raz, who uses it to refer to reasons that 'exclude' or 'displace' other reasons. A preemptive reason to φ is a second-order reason against φ-ing for certain other first-order reasons. See Raz 1990; Raz 1986.

Conclusion

If you have credence 1 in a proposition *p*, you need not be certain that *p*. But you must be sure that *p*. If you are sure that *p*, then (supposing you're rational) you're confident that you will remain confident that *p* under future investigation. In such conditions, it's not proper to inquire further into the question whether *p*. Moreover, if you are confident that you'll remain confident that *p*, then you are not disposed to revise your belief that *p* in response to counterevidence; that is, you are disposed *not* to revise your belief. But, for a wide range of contingent propositions, it is rationally required that you be disposed to revise in light of counterevidence. In particular, where there is a closure of inquiry defeater it is rational to be disposed to revise. Therefore, it is not justified to have credence 1 in any such cases[46].

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[46] I am grateful to reviewers for *Episteme*, *Synthese*, and *Analytic Philosophy* for comments on earlier versions of this paper. My credence in the proposition that they have helped me improve this paper substantially may not be 1, but it is very high. Special thanks are due to David DiDomenico, who read multiple drafts and provided extensive feedback throughout the process.

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