What It Takes to Be Sure

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Abstract

What does psychological certainty—the state of being sure—consist in? In contemporary epistemology it is standard to accept the credence account of certainty, which identifies it with maximal credence. I argue that the credence account is mistaken, for three reasons. First, we can be sure about both practical decisions and theoretical judgments, whereas credence only applies to the latter. Second, norms of certainty concern one's knowledge and the *kind* of evidence one has, which is hard to explain if certainty is simply maximal credence. Third, there are mismatches between our intuitive judgments about certainty and ones about credence. Instead, I propose an inquiry account of certainty: to be sure is to *take an inquiry to be closed*. This account offers a unifying story of the connections between certainty, on the one hand, and belief, knowledge, and assertion, on the other: it explains why we need not posit a mysterious kind of "strong belief" distinct from ordinary belief, why knowledge does not entail certainty but is normatively in tension with uncertainty, and why it is odd to both assert something and assert that one is not sure of it.

1 Introduction

Jimmy is at work when he starts wondering, *Did I lock my front door when I left home this morning?* He searches his memory. He remembers turning the key, pushing the handle down to check that it is locked, putting the key back in his pocket, and so on. He seems to remember locking it. Then again, his memories are not always reliable. One time, he mistakenly thought he had bought the flight tickets for the conference, only to find out otherwise at the airport. What if these memories of locking the door are really from yesterday, or even the day before? What if the door is actually unlocked, and someone robs him? What if the cat escapes? Jimmy cannot stop thinking about all these possibilities. Finally, he decides to go home. He gives the handle a nudge and it is indeed locked. He thinks: *Now I am sure that the door is locked*.

It is clear *how* Jimmy comes to be sure that the door is locked: by checking. However, it is less clear just *what* his being sure amounts to. Certainty—the state of being sure—has a peculiar status in our mental economy. On the one hand, it seems like something above and beyond what is required for conducting our daily lives. We believe many things, and act on these beliefs, without being sure of them. I believe that the bus will come at 10:10, but I am not sure of that; still, I pack my bags and leave the house at 10:05 to catch the bus. On the other hand, we do seem to aspire to be sure, and expect one another to be sure, from time to time. Jimmy chooses to abandon his work to go home because he wants to be sure that the door is locked. When someone makes an assertion or expresses a decision, we are often inclined to ask: *Are you sure?*; and when we are under pressure to speak or act, we can excuse our silence or hesitation by saying, *But I am not sure yet*. Intuitively, it is not easy to be sure—hence the hesitation that we

often feel before reporting certainty. However, we do seem to be sure of many things: I am sure that I have seen *The Shining*, that my mother's birthday is April 6th, and so on.

What does the mental state of being sure consist in, given that it appears to be both exceptional and ordinary? What are the norms governing certainty? And how is it related to other epistemically significant concepts, such as belief, knowledge, or assertion?

A tempting thought is to reduce certainty to credence, or degrees of belief. This is indeed the dominant view in epistemology. Most philosophers identify psychological certainty, either explicitly or implicitly, with maximal credence. However, I will argue that this view is mistaken. In §2, I will offer three reasons to reject the credence account: (i) we can be sure or unsure about plans and decisions, as well as judgments, whereas we can only have credences in judgments; (ii) certainty is governed by norms that go beyond norms of credence; and (iii) our intuitive judgments about credence and certainty come apart.

If certainty is not maximal credence, what is it? In §3, I propose my alternative, the inquiry account of certainty: to be sure about a question is to take that question to be settled (or equivalently, to take inquiry into that question to be closed). Taking a question to be settled is the state that is incompatible with inquiry into that question. It is appropriately expressed by reports like *My mind is made up* or *Her decision is final*, and it explains why some agents act without any hesitation or further deliberation while others feel the need to wait. This state is constrained by, but ultimately orthogonal to, one's credences.

My view offers a unifying story of certainty's norms and connections with other important notions in epistemology. Since certainty is taking inquiry to be closed, norms of certainty are fundamentally norms of inquiry: we shouldn't be sure when we lack knowledge or the right kind of evidence, because we shouldn't close inquiry when we lack knowledge or the right kind of evidence. Similarly, my view clarifies the relation of certainty, on the one hand, and belief, knowledge, and assertion, on the other. It explains, for example, why we need not posit a mysterious kind of "strong belief" distinct from ordinary belief, why knowledge does not entail certainty but is normatively in tension with uncertainty, and why it is odd to both assert something and assert that one is not sure of it. I will explain these upshots in more detail in §4.

2 Certainty is not maximal credence

The standard approach in contemporary epistemology takes certainty to be the limiting case of graded belief or confidence, namely, maximal credence (Halpern, 1991; Clarke, 2013; Moss, 2019). Even sophisticated recent attempts to rehabilitate certainty continue to analyze it in terms of maximal credence (Beddor, 2020). A typical introduction to formal epistemology will take for granted that certainty is maximal credence. For example, the *Routledge Encyclopedia of Philosophy* explains maximal credence as "corresponding to the strongest possible belief or certainty" (Pettigrew, 2023). Some

traditional epistemologists who reject nearby theses also presuppose that certainty is maximal credence. For example, Jackson (2020) rejects identifying belief with credence one because it is "in tension with the plausible idea that we hold many of our beliefs with less than maximal certainty." In sum, it is standard to accept, either explicitly or implicitly, the following:[1]

> (Credence account of certainty) To be sure of a proposition is to have maximal credence in that proposition.

Perhaps the credence account is too demanding. After all, if we are good probabilistic reasoners, we should almost never assign maximal credence to anything. If so, one might prefer a more moderate version:

> (Weak credence account of certainty) To be sure of a proposition is to have credence sufficiently close to maximal credence in that proposition.

However, both versions ultimately identify certainty with some level of credence. In what follows, I offer three objections to *any* account that identifies certainty with credence.

2.1 Certainty about plans

We can be sure or unsure about judgments. For instance, I am not sure that all the students will pass the exam. We can also be sure or unsure about decisions, and such (un)certainty is not reducible to (un)certainty about judgments. Consider the following:

> **Ride**
> Alice and Bill are at a party together. Alice warns Bill that if he becomes drunk, he won't be able to drive home. Bill gets drunk anyway. Alice is trying to decide whether to give Bill a ride. On the one hand, Alice is convinced that giving him a ride is the right thing to do, and will lead to the best overall result. On the other hand, it is very late and she really doesn't want to drive him home. Plus, she is upset at Bill for being so imprudent. For a while, she is unable to decide.

Intuitively, Alice is uncertain. It is natural to imagine her reporting her predicament to a friend: "I am really not sure what to do. I know I should give him a ride home, but it's so late and he did this to himself!" If Alice is uncertain, what is her uncertainty about?

One might be tempted to look for a judgment, yet no judgment seems to be the right answer. Alice is not uncertain about a normative or moral judgment: she is sure

[1] Two notable exceptions are Horgan (2017) and Goodman and Holguín (2022), both of whom reject the credence account of certainty. Neither offers a full alternative account of certainty. Goodman and Holguín (2022) propose that certainty is the least demanding doxastic attitude subject to a knowledge norm, but they acknowledge that this is not an analysis of certainty, but rather "a way of highlighting the significance of being sure in terms of its unique position in relation to other attitudes" (Goodman & Holguín, 2022, p. 653). They also make the suggestion that being sure that p might amount to thinking that p plus p has a high enough plausibility.

that she should give Bill a ride home, that giving him a ride is the right thing to do, etc.; Alice is not uncertain about whether she wants to give Bill a ride, in the sense of desiring or preferring to drive him home, for she is sure that she does not. It seems that Alice is not uncertain about a judgment at all.[2] Instead, she is not sure *what to do*, despite being sure about all the relevant facts of the matter, i.e., about what is the case.[3] In other words, Alice is uncertain about her plan.

Conversely, one can be sure about a plan without being sure about many of the relevant facts. Consider an alternative version of **Ride**:

> **Ride (It Takes Two)**
> Again, Alice and Bill are at a party together. Alice has warned Bill that if he becomes drunk, he won't be able to drive home. Bill gets drunk anyway. Except this time, Alice is herself a bit tipsy. As a result, she is not in the best position to reason. She thinks to herself: "Okay, do I actually have time for this… it's out of the way, and I've got stuff to do later… but it's not *that* far… I mean, he'd probably be stuck otherwise… or maybe he can walk home? Would he do it for me? maybe, maybe not… ugh, this is too hard to think through… it's like five extra minutes, or maybe ten… why am I overthinking this…—whatever, I don't care anymore. I have decided: I'll just give Bill a ride." Alice then drives Bill home.

In this case, Alice is uncertain about many judgments, including whether she wants to, whether she should, or whether it would be best to give Bill a ride. However, unlike in the original case, Alice ends up with no uncertainty about what to do: she has made a final decision.

In general, we can be sure or unsure about what to do as well as what is the case. This is reflected in the fact that we often combine "sure" with infinitival interrogatives, i.e., phrases of the form "wh- to + verb."[4] Typically, these express practical questions, questions about what to do, rather than theoretical questions, questions about what is the case. Consider:

(1) Carl is not sure what to do.
(2) Daisy is reasonably sure which move to make next.

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[2] Perhaps Alice is not sure whether she will in fact give Bill a ride, but unless Alice suspects herself of weakness of the will, what Alice will do rests entirely on what Alice decides to do. If Alice is *just* unsure what she will in fact do, she can easily come to be sure by making a decision.

[3] I am using "facts" in a minimal sense. In this sense, all judgments concern facts. I am putting aside the distinction between judgments that are in some sense fully factual and ones that are not.

[4] One complication is that, while "sure" naturally embeds interrogatives under negation, it doesn't embed interrogatives as naturally without negation. For example, (1a) sounds considerably less natural than (1):
(1a) #Carl is sure what to do.
Adding a preposition makes it sound better, but still not completely natural:
(1b) ?Carl is sure about what to do.
This is a puzzling feature of "sure", but it is important to note that it applies to both finite interrogatives (denoting theoretical questions) and infinitival interrogatives (denoting practical questions). See:
(5) Carl is not sure what happened.
(5a) #Carl is sure what happened.
(5b) ?Carl is sure about what happened.

(3) Emma is unsure whether to go to the party.
(4) Fabio is not sure whether to take the job offer or wait another year.

Whatever certainty is, it should be an attitude we can hold toward both judgments and plans.

A defender of the credence account might suggest that there really are two distinct attitudes picked out by our ordinary use of "sure" and "certain." One applies only to judgments, which is maximal credence, and one applies only to decisions, which is something else—perhaps maximal expected utility. This suggestion risks unnecessarily proliferating attitudes, but more importantly, it is hard to square with the fact that we frequently combine certainty about judgments and certainty about decisions in the same report. For example, consider (6):

(6) Gao is not sure whether it will rain tomorrow and whether to bring an umbrella.

Here the theoretical question of whether it will rain and the practical question of whether to bring an umbrella are under the scope of the same "sure." If there were no unified state of being sure that applies to both what is the case and what to do, it would be unclear what (6) could even mean. However, (6) sounds perfectly coherent and natural.

This is a problem for the credence account of certainty. We have credences towards judgments, not plans or decisions. After all, credences are degrees of belief, and belief is simply the wrong attitude for plans. Beliefs and credences are truth- or accuracy-apt, whereas decisions and plans are not.[5] The problem is that no amount of credence (even credence one) that one assigns to a possibility can amount to one's certainty about a plan to make that possibility obtain. For instance, no amount of credence that I assign to the possibility that the world will come to an end will amount to me being sure about *making* the world come to an end; conversely, from the fact that I do not have maximal credence that I *will* in fact manage to get to the train station on time, it does not follow that I am not sure whether *to* get to the train station on time. Credence is simply too narrow to capture certainty.

Now one might be tempted to think that, although the credence account fails to capture the practical dimensions of certainty, it adequately captures the theoretical one. However, I will now argue that credence fails to capture certainty even in the theoretical realm.

[5] An expressivist like Gibbard (2003) might agree with me that we can be sure about decisions, but argue that deciding to do X just is judging that X is the thing to do, or that X ought to be done, all things considered. If so, there may be no real distinction between decisions and judgments, and that opens up some room for the possibility of having credences towards decisions. Addressing the broader debate over the relationship between judgments and decisions is beyond the scope of this paper. For now I will assume that they are distinct attitudes, as this distinction seems intuitive. In particular, the equivalence between deciding to do X and judging that X is the thing to do seems difficult to maintain, since we can coherently judge that X is the thing to do without having made up our mind to do X, as in the following:
(7) I know quitting is the thing to do, but I just can't make up my mind to do it.

2.2 Norms of certainty

When are we justified in being sure? If certainty is credence one, then the Bayesians offer a simple answer: when conditionalizing on one's evidence yields probability one. That in turn depends on (a) the prior probability that one assigns to each possibility, (b) laws of probability, and (c) conditionalization. A particular kind of Bayesian might add the *Principal Principle*, according to which one's credence in a proposition should match the objective chance of that proposition, absent other, non-chancy evidence. On its own, this is a simple but powerful picture of norms of credence: having the right level of credence is just a matter of getting the probability right.

However, this picture appears too barren, if we are hoping to capture norms of certainty, for certainty is plausibly governed by at least two epistemic norms. First, certainty is governed by a *knowledge norm*:

(KNC) One should be sure about q only if one knows the answer to q.

The normative connection between certainty and knowledge is hardly news. Ayer (1983) argues that knowledge gives one the right to be sure, for example. More recently, Goodman and Holguín (2022) argue that being sure is the least demanding doxastic attitude subject to a knowledge norm: i.e., one should only be sure that p if one knows that p.[6] They argue that we should accept KNC because it would explain both why (8) is infelicitous and, with the help of a certainty norm of assertion—one should only assert p if one is sure of p—why (9) is infelicitous.

(8) #I am sure that it's raining, but I don't know that.
(9) #It's raining, but I don't know that.

They are infelicitous because uttering (8) amounts to flouting KNC, and uttering (9) amounts to flouting either KNC or the certainty norm of assertion.

Secondly, whether one is justified in being sure also depends on whether one has the right *kind* of evidence, not just the strength of one's evidence. This means that certainty is governed by an *evidential norm*:

(ENC) One should not be sure about q unless one has the right kind of evidence for q.

Consider the following pair of cases (cf. Lawlor, 2014, p. 5):

Lottery$_1$
Bill bought a lottery ticket. Bill knows that there are N tickets in total and therefore that his ticket has an extremely low probability of winning. On this

[6] For this reason, Goodman and Holguín (2022) also reject the credence account of certainty, but their view differs from mine in a few respects. For example, they accept that certainty is a doxastic attitude, while I argue that certainty crosscuts the doxastic and non-doxastic distinction.

basis, Bill comes to be sure that he lost, without checking what the winning ticket is.

Lottery$_2$
Bill bought a lottery ticket. Bill has no idea how many tickets there are in total. But he looks up the number of the winning ticket in the newspaper and sees that it is not his. On this basis, he comes to be sure that he lost.

Let's suppose that Bill's ticket did in fact lose. Let's also stipulate there is a small, non-zero chance (equal to 1/N) that Bill's checking in **Lottery$_2$** went wrong, for example because Bill misread the number. This means that given Bill's evidence, the probability that Bill's ticket lost is the same in both cases. In other words, Bill ought to have the exact same credence that his ticket lost in **Lottery$_1$** and **Lottery$_2$**.

However, intuitively there is a difference in whether Bill is justified in being sure. It seems fine for Bill to be sure in **Lottery$_2$**: that just involves trusting his ability to read the newspaper. But it seems less rational for Bill to be sure in **Lottery$_1$**: he has done nothing to check whether he is the winner, and is simply basing his certainty that he will lose on the sheer number of tickets.[7] He seems to be epistemically irresponsible in becoming sure that he lost without checking the winning ticket, even though he ought to have the same credence in both cases. Imagine if Bill decides to throw away the lottery ticket in **Lottery$_1$**. It is very natural to object by saying: "But you haven't even checked the winning number yet. How can you be sure that you lost?" Contrast that with **Lottery$_2$**: if Bill decides to throw away the ticket after checking the winning number, it would sound a bit delusional to say "But there might have been a mistake. How can you be sure that you lost?" This shows that certainty is sensitive to the *kinds* of evidence one has, not just the amount of credence it warrants.

Can the credence account as it stands make sense of KNC and ENC? It seems not. No combination of conditionalization, laws of probability, and the Principal Principle would generate a corresponding knowledge norm or evidential norm of credence. In fact, it would be a little puzzling if credence one or some other level of credence were subject to such norms. When an agent generates a credence in p in accordance with conditionalization and laws of probability, how is the fact that one knows or does not know p supposed to bear on that credence? Suppose I come to have credence 1. If my credence is fixed by my total evidence and the probabilistic norms governing rational belief revision, it is unclear what additional role knowledge could or should play. The same applies to the *kind* of evidence we have. Once my total evidence determines a probability, it is unclear what additional role is left for the *kind* of evidence to play in determining my credence.

[7] Note that I am working with the weak credence account of certainty, since the more demanding one is ruled out by the idea that Bill can be sure without having credence one.

Of course, there is some room for knowledge to play a role in constraining credence. Bayesianism is silent on what constrains the prior probabilities, so a defender of the credence account could always supplement norms of credence with some additional constraint on the priors, such that an agent should assign maximal credence to and only to propositions that they know.[8] In effect, this amounts to a knowledge requirement on maximal credence. However, this has a side effect: it risks making knowledge too demanding. Intuitively, one can know many things that are not entailed by their evidence. Consider, for example, perceptual knowledge or knowledge from memory. I know that I went to Switzerland in 2019 from memory, even though my evidence does not rule out the possibility that I am wrong. If I am a good probabilistic reasoner, I should not assign maximal credence to the proposition that I went to Switzerland in 2019. This places the credence account in a dilemma: either it makes knowledge too demanding, or it makes maximal credence too easy.

It would be even harder to accommodate ENC by putting a constraint on one's evidence. What counts as the right kind of evidence could differ depending on the subject matter of the proposition: the number of tickets in a lottery is not the right kind of evidence for whether Bill has lost, but it is the right kind of evidence for whether the lottery is fair. Putting a blanket ban on certain kinds of evidence, such as statistical evidence, would not constrain certainty with the right level of fine-grainedness.

More importantly, the issue is not just whether KNC and ENC are compatible with, or can be somehow accommodated by, the credence account of certainty; rather, it is whether the credence account can *explain* them: whether identifying certainty with credence one can shed light on why certainty should be constrained by knowledge and the kind of evidence one has. So if there is an alternative account of certainty that does explain these constraints, as I will argue there is, that is a strong reason to reject the credence account.

2.3 Mismatches between certainty and credence

Certainty comes in degrees. One can be *more* sure, *less* sure, *absolutely* sure, *pretty* sure, *extremely* unsure, and so on. What credence would one need to have in a proposition p to count as *maximally unsure*, or *not sure at all*, that p, according to the credence account? Let's consider two natural candidates: credence 0 and credence 0.5.

Clearly, it cannot be credence 0: being not sure at all that p should not entail being absolutely sure that not-p. I might have no clue at all whether it is going to rain. In that case, I am not sure at all that it will rain, and I am not sure at all that it won't.

However, it cannot be credence 0.5 either. Consider two cases:[9]

[8] Though it is controversial, we can understand Williamson (2000) as endorsing something like this.

[9] These are reminiscent of Yalcin's (2010) cases, which Yalcin uses to show that ordinary speakers' intuitions about "probably" statements are affected by the salient alternatives. The data for this observation come from Windschitl and Wells (1998).

Horse Race
Four horses are racing: A, B, C, and D. Liz has credence 0.5 that horse A will win, credence 0.2 that B will win, 0.15 that C will win, and 0.15 that D will win.

Tiny Horse Race
Two horses are racing: A and B. Maddy has credence 0.5 that horse A will win, and credence 0.5 that horse B will win.

Liz and Maddy have equal credence, credence 0.5. However, intuitively Liz might be fairly sure that horse A will win; by contrast, Maddy seems not sure at all that A will win, despite having the exact same credence that horse A will win.

A defender of the credence account might propose a more complicated version of the view: instead of a particular level of credence, perhaps certainty amounts to a certain distribution of credences. That is, one is *maximally* uncertain iff one has equal credence in each of a question's answers, and one becomes more certain when one assigns higher credence to one of the answers. Here is a toy version of this approach:

> (Credence distribution account of certainty) Given a set of answers to a question, one's degree of certainty is determined by the gap between the answer that one has the highest credence in and the answer that one has the second-highest credence in. The larger the gap, the more certain one is.

The credence distribution account entails the credence account: the gap is maximally large when one has credence one in one of its answers and credence 0 in the rest. On top of that, it predicts that Maddy is more unsure than Liz, which seems plausible. However, now we simply encounter some new problem cases. For example, consider:

Rabbit Race
Six rabbits are racing. Sophie has credence 0.7 that Rabbit A will win, credence 0.3 that Rabbit B will win, and credence 0 that any of the other 4 rabbits will win. Meanwhile, Jenny has credence 0.5 that Rabbit A will win, and credence 0.1 that each of the other 5 rabbits will win.

According to our toy credence distribution account, Sophie and Jenny should be equally certain about which rabbit will win, given that the difference between their most confident answer and second-most confident answer is the same, namely, 0.4. However, intuitively Sophie might be more sure than Jenny, given that she has ruled out 4 out of the 6 candidates.

In addition, it is not clear that an even distribution of credences guarantees maximal uncertainty either. Consider:

Bridge
Jim is investigating whether a bridge is safe. He has done extensive research, and has determined that whether it is safe just depends on whether it was built before 2003. Jim does not know whether it was—for all he knows, it is equally likely to have been built before 2003 as after, but he knows where to find the record for the bridge. In fact, Jim is now on the way to the city archives to look at the records.

Jim has credence 0.5 that the bridge was built before 2003 and credence 0.5 that it was built after. As a result, he has credence 0.5 that the bridge is safe and credence 0.5 that it isn't. (We can imagine that all his other evidence cancels out in terms of credence.) We certainly don't want to say that Jim is sure about whether the bridge is safe, but would we say that Jim is *not sure at all* whether the bridge is safe? After all, Jim has made a lot of progress in figuring out whether it is safe, and he is steps away from being completely sure. If we feel any hesitation ascribing Jim maximal uncertainty, it should make us question the credence distribution account. After all, if we are just looking at Jim's credences, he is as undecided as it goes.

Admittedly, what we are working with is just a toy version of the credence distribution account. There are many other potential maneuvers we can try, and perhaps one of them might just give us all the results we want. One reason to be pessimistic, though, is that similar problems arise for predicting judgments about "probably." As Yalcin (2010) points out, it is notoriously difficult to give a semantics of "probably p" in terms of the probability distribution over p and its salient alternatives which gets all the intuitive judgments right.

So neither the credence account nor the credence distribution account can offer a satisfactory account of what it takes to be maximally uncertain. In addition, there are reasons to think that there are mismatches on the other end of the spectrum as well: credence one is not enough to guarantee absolute certainty. Consider (Williamson, 2020, p. 2):

Cautious Indira
Indira knows that there has been an infinite series of independent tosses of a fair coin. Knowing the basics of probability theory, she forms credence in accordance with the probability of tails coming up at least once, which is 1. Nevertheless, she is not absolutely sure that the coin has in fact come up tails.

Indira has credence one that the coin has come up tails at least once. Thus she has the absolute maximal credence one could have. Nevertheless, she does not have the absolute maximal amount of certainty one could have. If someone asks Indira whether the coin has come up tails, for example, Indira might say: I believe so, but I am not absolutely sure. I'd have to check. And if Indira checks the results of the coin tosses, she could be

more sure that the coin came up tails. So Indira was not maximally sure prior to checking, for she could not become more sure by checking, if she were already maximally sure. One might disapprove of Indira's uncertainty, but so long as her state of mind is *possible*, it shows that credence one is not sufficient for absolute certainty.

2.4 Summary

It seems, then, that credence is in various respects ill-suited to play the role of psychological certainty: (i) certainty applies to both judgments and decisions, while credence only applies to judgments; (ii) certainty is normatively constrained by knowledge and the kind of evidence one has, while it is unclear why credence would be constrained in these ways; and (iii) there are mismatches between our intuitive judgments about certainty and those about credences. For these reasons, we should reject the credence account of certainty and look for an alternative.[10]

3 The inquiry account of certainty

If certainty is not credence one, then what is it? In arguing against the credence account, I have identified three desiderata for an account of certainty:

A. Certainty is a unified attitude that applies to both judgments and plans.
B. Certainty is subject to a knowledge norm and an evidential norm.
C. Certainty is underdetermined by one's credence distribution.

The aim is to identify a mental state that fits our pre-theoretical notion of certainty and satisfies these conditions. In this section, I propose my alternative account, the *inquiry account of certainty*:

> (Inquiry account of certainty) To be sure about a question q is to take inquiry into q to be closed (or equivalently, to take q to be settled), and to be unsure about a question q is to take inquiry into q to be open (or to take q to be unsettled).

In this section, I will first explain what it is to take inquiry to be closed, and how the inquiry account satisfies the above desiderata. Then I will provide a simple formal model of certainty based on the inquiry account.

3.1 Taking inquiry to be closed

When we inquire into a question, we aim to resolve that question by finding out the answer.[11] There are different ways for a line of inquiry to come to a stop. Sometimes we have to *suspend* inquiry, perhaps in order to focus on other tasks: e.g., I might suspend inquiry into the question, *Why did the dinosaurs die?*, because I have to start inquiring

[10] Though our specific arguments differ, my criticism of reducing certainty to credence is part of a broader tradition of questioning whether epistemic attitudes can be adequately reduced to credence. See, e.g., Buchak (2014), Ross and Schroeder (2014) on reducing belief to credence, Jane Friedman (2013b) on reducing suspension to credence.

[11] For two detailed accounts of inquiry, see Jane Friedman (2013a) and Daniel Friedman (2025). While their accounts differ, it is essential to both that the inquirer has some attitude that aims at finding out the answer to the question (an interrogative attitude for Jane Friedman, and an intention for Daniel Friedman).

into the more urgent question, *What should I make for dinner?*. Sometimes we choose to *abandon* a line of inquiry because we find ourselves unable to make progress: e.g., I might abandon the question, *What did I receive for Christmas eleven years ago?*, because there is no way to make progress. I am interested in the third way inquiry might come to a stop: when we *close* a line of inquiry, because we take the question to have been settled. Unlike suspending and abandoning inquiry, closing inquiry presumes success: in closing inquiry, one takes oneself to have successfully completed inquiry.

Taking inquiry to be closed is the state that one enters when one closes a line of inquiry in this sense. However, to count as taking inquiry into a question to be closed, one need not have actually inquired into a question. When a scientist tells me that copper is conductive, for instance, I might simply take the question of whether copper is conductive as settled, without ever inquiring into this question myself; or perhaps I take the question, *Is pain unpleasant?*, to be settled, even though I have never actually thought about it. In other words, one can take a line of inquiry to be closed without *first* opening that inquiry and *then* closing it. Taking inquiry to be closed is also not an *irreversible* state: just as one can close an inquiry, one can also reopen inquiry into a question that one previously took to be settled. When I eat a piece of shrimp and it feels a bit weird, I might reopen inquiry into whether I am allergic to shellfish, even if I have been convinced all my life that I have no food allergies.

So long as one takes inquiry to be closed, one has no disposition to inquire. This is another respect in which someone who takes inquiry to be closed might differ from someone who merely suspends or abandons inquiry: the latter might still have a disposition to inquire, which is overpowered by other dispositions, while the former has none to begin with. Taking inquiry into a question to be closed entails that one is at peace, as it were, with one's answer to the question and feels no pull at all towards further inquiry. This means that taking inquiry into q to be closed entails (i) endorsing an answer to q (in virtue of forming a belief or an intention), (ii) being disposed to rely on this answer as a premise in further deliberation, and (iii) thinking that one knows it.[12]

In particular, (iii) is important for distinguishing taking inquiry to be closed from a more temporary and conditional attitude like *acting as if* inquiry is closed, or treating inquiry as closed *for the purpose of the conversation*. A member of the jury might choose to yield a verdict of not guilty, for example, simply because they do not have enough permissible evidence in court to prove that the suspect is guilty. Once outside of the legal context, however, the member of the jury will not take inquiry to be closed. Even when delivering the verdict, they might be wondering privately whether the suspect really did it, precisely because they do not take themselves to know the answer.

[12] One might worry about what it is to know the answer to a practical question. I think spelling out what it is to know the answer to a practical question is an interesting task, but beyond the scope of this paper. I take for granted that we do know such answers, since we frequently describe each other as knowing (or not knowing) what to do: e.g., "Jonathan didn't know what to do, but now he does." For an in-depth discussion of knowing what to do, see Jerzak and Kocurek (2025).

Because one has to take oneself to know the answer in order to take inquiry to be closed, one does not have complete voluntary control over whether one is sure.

Sometimes we report the state of taking inquiry to be closed with expressions like "My mind is made up" or "She is set on this." This state also explains why some agents act without hesitation while others feel the need to wait or deliberate more. Consider the following two cases:

> **Job Offer**
> Olivia and Jamie both applied for some jobs. When Olivia receives a job offer, she immediately accepts it; but when Jamie receives a job offer, she looks over the details once more, thinks about it some more, and asks for advice from her friends and family, and then accepts it.
>
> **Love**
> Ross finds himself questioning whether his partner really loves him. He finds himself overreading every word his partner utters, and every little gesture they make. For Ethan, however, the question of whether his partner loves him never comes up. Instead, he simply goes about life, fully convinced that they do.

Jamie waits to do more research while Olivia does not, because Olivia, but not Jamie, takes the question of whether to accept the job to be settled; similarly, Ross keeps thinking about whether his partner loves him while Ethan does not, because Ross takes inquiry into whether his partner loves him to be open while Ethan takes it to be closed.

I hope I have said enough to pick out a familiar state, the state of taking inquiry to be closed. My proposal is that this state *just is* certainty.

This proposal satisfies the three desiderata. Firstly, we inquire into practical as well as theoretical questions: just as we deliberate about what is the case, we also deliberate about what to do. Insofar as inquiry into theoretical questions is continuous with inquiry into practical questions, taking inquiry to be closed is already a unified state between the theoretical and the practical domains. Therefore, the inquiry account of certainty explains why it seems so natural to apply certainty to both judgments and plans.

Secondly, according to the inquiry account, certainty is taking inquiry to be closed, so norms of certainty are really norms of closing inquiry. There are *independently motivated* norms for closing inquiry that explain the knowledge and evidential norms of certainty. Kelp (2021), for example, takes knowledge to be necessary and sufficient for appropriately closing inquiry. Even more (Jane Friedman, 2024; Kelp, 2021; Carter and Hawthorne, 2024) take knowledge to be the aim of inquiry. Intuitively, one should not take a goal-directed activity to be complete until one has reached the goal. So given that inquiry aims at knowledge, we have the following knowledge norm of inquiry:

(Knowledge norm of inquiry) One should take inquiry into q to be closed only if one knows the answer to q.

In addition, Daniel Friedman (forthcoming) argues that different inquiries come with their associated kinds of evidence. For example, scientific research is answerable to experiments, crime investigations are answerable to fingerprints and autopsies, philosophy is answerable to arguments. Without the right *kind* of evidence, it is irresponsible to close an inquiry, even if one's evidence is otherwise quite strong. This gives us the evidential norm of inquiry:

(Evidential norm of inquiry) One should take inquiry into q to be closed only if one has the right kind of evidence.

If certainty is taking inquiry to be closed, these two norms of inquiry straightforwardly generate, and thus explain, the corresponding norms of certainty.

Finally, taking inquiry to be closed is underdetermined by credence in exactly the ways that I have argued certainty is. No level or distribution of credence guarantees that one takes inquiry to be *maximally open*. Recall that in **Bridge** Jim has credence 0.5 that the bridge is safe and credence 0.5 that it is not safe. However, it is not true that Jim takes inquiry into whether the bridge is safe to be maximally open: after all, he has made a lot of progress in inquiry and is steps away from fully settling the question. In the other direction, credence 1 does not guarantee taking inquiry to be fully closed. Recall **Cautious Indira**: Indira has credence one that the coin has come up tails, but she might not take the question to be *fully* settled until she has checked that the coin has in fact landed tails.

3.2 Inquiry model of certainty

One might think that an advantage of the credence account is that it comes with a formal model of certainty, given the extensive and fruitful work on formally modelling credal states. In this section, I show what an alternative model could look like if we accept the inquiry account of certainty.

I begin by representing a set of questions. Following the standard approach (Hamblin, 1958; Belnap & Steel, 1976; Groenendijk & Stokhof, 1984), I model a question as a partition on logical space, resulting in a set of cells each of which corresponds to a possible complete answer to the question. Since certainty applies to both judgments and plans, I take the relevant space to consist of pairs (w, h), where w is a possible world and h is a plan for what to do. Formally, h is a hyperplan in Gibbard's (2003) sense—i.e., a plan that is fully decided on what to do in every conceivable situation. For each possible situation, which is represented as a centered possible world, there is a set of alternatives that are open to the agent; for each alternative, a hyperplan either rejects or permits

(i.e., rejects rejecting) it.[13] Let X be the space of world-hyperplan pairs. A question, q, is then a partition on X, and each resulting cell corresponds to a possible complete answer to q.[14]

To represent inquiry, each q is associated with a set of live cells, which is a subset of q's cells. Intuitively, a cell is live just in case the agent hasn't ruled out the corresponding answer to q in the course of inquiry. Q is closed for an agent (i.e., the agent is certain about q) just in case exactly one cell of q remains live; otherwise, inquiry into q remains open (i.e., the agent is uncertain about q).

Questions bear logical relations to each other (Lewis, 1988). Answering one question can constrain answers to another. For example, answering [*Where is Alice?*] with [*Alice is at home*] will also answer [*Is Alice at school?*]. For ideal agents, if an answer is ruled out in one inquiry, any answer that entails it will also be ruled out, even if they are answers for a different inquiry. For non-ideal agents, however, this need not be the case. This allows certainty to be *question sensitive* in much the same way belief (Yalcin, 2018), knowledge (Schaffer, 2007), and intention (Beddor & Goldstein, 2022) have been argued to be. Let's say that an agent is certain that p relative to q just in case p is true throughout the live cells of q.

Let me illustrate with an example from Stalnaker (1984). Suppose that an agent takes inquiry into [*Did the butler do it?*] to be closed in virtue of settling on [The butler did it.]. Relative to the question [*Did the butler do it?*], therefore, the agent is certain that the butler did it. However, the agent might fail to take inquiry into [*Did the butler or the chauffeur do it?*] to be closed, since they haven't even considered the possibility that the chauffeur did it. Relative to the question [*Did the butler or the chauffeur do it?*], therefore, the agent is not certain that the butler did it.

4 Implications of the inquiry account

How is certainty related to other familiar mental states and concepts, if we accept the inquiry account of certainty? In this section, I clarify the relation between certainty, on the one hand, and belief, knowledge, and assertion, on the other. As I hope to show, once we understand certainty as taking inquiry to be closed, we can see how it is both distinct from and importantly connected to many other familiar mental states and moves.

4.1 Certainty, credence, and "full belief"

I have argued that certainty is not reducible to or determined by credence. Of course, this is not a strike against the concept of credence itself.[15] It is undeniable that credence

[13] Equivalently, we can think of a hyperplan as a function from centered possible worlds to sets of permitted courses of actions, where each such set contains at least one element.

[14] This is not the only or necessarily the best way to incorporate hyperplans into logical space. For a detailed discussion of how one can model with hyperplans, see Yalcin (2022).

[15] In this respect, I differ from Horgan (2017), who also thinks that certainty cannot be credence one, though for different reasons. For Horgan, this is part of his argument that we should be skeptical of the notion of credence.

plays some important role in describing and explaining our mental states and actions. My claim is simply that certainty is not *determined* by credence. In fact, on my view, certainty is still *indirectly* constrained by credence when it applies to judgments, because certainty about judgments entails belief, and belief is constrained by credence. Following Buchak (2014), Holguín (2022), and many others, I accept a form of dualism about belief and credence. Belief and credence are two distinct kinds of mental states, potentially subject to distinct kinds of norms. However, it still seems plausible that believing something rules out at least *some* credence distributions. For example, we might think that one can only believe a proposition if one has higher credence in it than any of its salient alternatives. If so, certainty about judgments will be subject to the same constraint.

There is a debate between those who think that there is only weak belief and those who think that there is also a stronger belief state, "full belief." It is not entirely clear what exactly it means for belief to be strong: perhaps it means that it is subject to a knowledge norm (Goodman, 2023), perhaps it means that the evidential standards required for belief are high (Hawthorne, Rothschild, & Spectre, 2016; Holguín, 2022), or perhaps it means that believing is rationally incompatible with further inquiry (Buchak, 2014; Jane Friedman, 2017, 2019; among others).[16] But whatever it is, full belief would be mysterious, for the mental state picked out by our ordinary use of "belief" is rather weak, as a variety of authors (Hawthorne, Rothschild, & Spectre, 2016; Rothschild, 2020; Goodman & Holguín, 2022; Goodman, 2023; Beddor, 2025) have argued. If ordinary belief is weak, what is this stronger "full belief", and why should we think of it as a kind of belief at all?

An implication of the inquiry account of certainty is that some of the roles traditionally assigned to full belief might be better played by certainty. Belief is weak, but certainty is strong: it is subject to a knowledge norm, the evidential standards for certainty are high, and certainty is incompatible with further inquiry, since being sure just is treating inquiry as closed.

However, my view is not that the so-called "full belief" simply *is* certainty. While certainty has many canonical features of full belief, it does not have all of them. For example, whereas full belief is supposed to be a purely doxastic attitude, certainty crosscuts the doxastic/non-doxastic distinction, since it applies to both judgments and decisions; and whereas full belief is standardly taken to be a binary state—you either fully believe that p, or you don't, certainty comes in degrees. One can be completely sure, only somewhat sure, more sure, or less sure, and so on. This gradability is unsurprising given that ordinary descriptions of question-settling are themselves gradable. Consider:

(10) I take it to be completely settled/somewhat unsettled whether it is going to rain.

[16] Another possibility is Seth Yalcin's idea that belief is weak just in case believing p is incompatible with believing that it might not be that p.

(11) The new evidence has made the question of whether he did it much more settled, but still not as settled as we would like.
(12) How set are you on leaving tomorrow?

The felicity of these utterances suggests that, like certainty and unlike belief,[17] question-settling is a graded property.

Certainty, then, is not full belief with a different name. Instead, it is a distinct, fundamentally inquiry-related attitude that plays many of the roles assigned to full belief. This lets us escape the standoff between full belief believers and full belief deniers: we do not have to dismiss the motivations behind postulating a strong, question-settling attitude, but neither do we have to say that this attitude is a special kind of belief, distinct from ordinary belief.

4.2 Certainty and knowledge

Certainty neither entails nor is entailed by knowledge. After all, one can take inquiry to be closed without knowing the answer and one can know the answer without taking inquiry to be closed. For examples of the latter, we can consider cases of double checking.[18] When I check my restaurant reservation just one more time before arriving, for example, I fail to take the question to be settled, despite the fact that I know the answer.

But taking inquiry to be closed is normatively connected with knowledge in both directions. That is, in addition to the knowledge norm of inquiry, the following norm also seems plausible:

> (Ignorance norm of inquiry) As a default, one should take inquiry to be closed if one knows the answer to that question.

After all, inquiry is a goal-directed activity, where the goal is to know the answer to the question. In general, once the goal of an activity has been achieved, it would be irrational to continue that activity. So once the subject knows the answer to a question, it would be irrational for them to continue inquiring into that question.[19] In Whitcomb's words, inquiring after attaining knowledge is like "continuing to eat after being nourished" (Whitcomb, 2010, p. 674).

This means that, as a default, one should also be sure of p when one knows that p.

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[17] The view that belief is a binary attitude is endorsed by a number of philosophers, including Buchak (2014), Carter, Jarvis, and Rubin (2016), MacFarlane (2025), among others. The contrast between (10)–(12) and the following similar constructions involving belief also suggests that belief is not a naturally graded attitude.
(10a) #I believe completely that it's going to rain.
(11a) #The new evidence makes me believe that he did it much more, but not as much as I would like.
However, this is a controversial issue. For a detailed discussion of the gradability of belief and other attitudes, see Lassiter (2020).

[18] For detailed discussions of double-checking, see Woodard (2024) and Jane Friedman (2019).

[19] Jane Friedman (2017) argues for a stronger version of the ignorance norm along these lines.

This is an advantage of my view, because it allows us to explain some puzzling linguistic data. Consider the following sentences:[20]

(13) #I know when the movie starts, but I am not sure (when it starts).
(14) #I know that the movie starts at 7, but I am not sure (that it does).
(15) Hannah knows when the movie starts, but she is not sure (when it starts).
(16) Hannah knows that the movie starts at 7, but she is not sure (that it does).
(17) I knew when the movie starts, but I wasn't sure (when it starts).
(18) I knew that the movie starts at 7, but I wasn't sure (that it does).

(13) and (14) sound infelicitous, whereas (15)–(18) sound much better. To explain the contrast between them, we cannot simply take knowledge to entail certainty, since that would predict incorrectly that (15)–(18) are also infelicitous.[21]

To explain the contrast between sentences like (14) and ones like (16), Stanley (2008) defends a certainty norm of assertion:

(Certainty norm of assertion) One should assert p only if one is certain that p.[22]

This would explain the contrast between (14) and (16). Given the certainty norm of assertion and the factivity of knowledge, the first part of (14) is only appropriate if the speaker is certain that the movie starts at 7; however, the second part of (14) denies precisely that. So (14) is infelicitous because it flouts a norm. On the other hand, asserting (16) would not violate any norms: it is the speaker who has to be certain that the movie starts at 7, not the subject.

But Stanley's explanation only goes so far: while it explains the asymmetry between (14) and (16), it cannot explain the asymmetry between (13) and (15). In asserting (14), the speaker avows, if not asserts, the proposition that the movie starts at 7; but in asserting (13), the speaker does not avow any particular proposition about when the movie starts. So uttering (13) would not be flouting the certainty norm of assertion, even if it is true. But (13) seems to be infelicitous in exactly the same way as (14): the only difference lies in whether 'know' and 'sure' embed declarative complements or interrogative complements. It would be surprising if the infelicity of (13) and that of (14) require distinct explanations.

My view that certainty is taking inquiry to be closed offers a more unified explanation for (13)–(18), with the help of the ignorance norm of inquiry. In uttering the first part of (13) or (14), the speaker reports that they have knowledge—i.e., that the aim of their inquiry has been achieved; in uttering the second part of (13) or (14), the speaker reports that they are still uncertain—i.e., that they are still taking inquiry to be

[20] To my knowledge, Unger (1975) was the first to make the observation that sentences like (14) are infelicitous. He cites it as evidence for the claim that knowledge requires certainty.
[21] Stanley (2008) makes this point as an objection to Unger's (1975) argument that the infelicity of sentences like (14) shows that knowledge requires certainty.
[22] Goodman and Holguín (2022) also accept the certainty norm of assertion.

open. (13) and (14) are infelicitous, therefore, because they amount to flouting the ignorance norm of inquiry. To borrow Whitcomb's (2010) analogy, it is like saying "I am full, but I am still eating." On the other hand, (15)–(18) are fine because uttering them amounts to pointing out that *someone else* (including one's past self) violates the ignorance norm of inquiry.

4.3 Certainty and assertion

Many take it that assertion is governed by norms. For example, Williamson (1996) endorses the knowledge norm of assertion:

(Knowledge norm of assertion) One should assert that p only if one knows that p.

One motivation for the knowledge norm of assertion is that it explains Moore sentences like the following:

(19) #It's raining, but I don't know that it's raining.

These sentences strike us as puzzling: they sound paradoxical, even though they do not describe contradictions.[23] The knowledge norm of assertion offers us an explanation. Uttering (19) involves asserting a proposition and then denying that one knows that proposition. That amounts to flouting the knowledge norm of assertion and is, therefore, infelicitous. But as many (e.g., Stanley, 2008; Mandelkern & Dorst, 2022) have observed, some sentences involving "sure" and "certain" are structurally similar to the paradigm Moore sentences and seem odd in the same way. Consider:

(20) #It is raining, but I am not sure that it is raining.

The knowledge norm of assertion cannot explain the oddness of (20).[24] Naturally, some (e.g., Goodman & Holguín, 2022) have appealed to the certainty norm of assertion again. However, this proposed norm has met with resistance. Mandelkern and Dorst (2022) point out that typically we are not warranted to infer from an assertion that the speaker is sure. When a speaker asserts that p, it is infelicitous to report them as being sure that p on that basis alone.

(21) John: New York has over 8 million residents.
  (21a) John believes that New York has over 8 million residents.
  (21b) John knows that New York has over 8 million residents.[25]
  (21c) #John is sure that New York has over 8 million residents.

[23] Moore's (1954) original observation concerns sentences involving "believe". Since then, there have been many variants including (19).

[24] Of course, the knowledge norm would explain (20) if knowledge entails certainty. But for the purpose of this discussion, I will assume that that is not the case. For some detailed defenses of the view that knowledge does not entail certainty, see Stanley (2008) and Beddor (2020).

[25] Here we are supposing that it is true that New York has over 8 million residents.

Intuitively, by uttering (21c), we would be saying more than we are in a position to say. But if it is a commonly known norm that one should only assert that p if one is sure that p, and we are taking for granted that John is a cooperative asserter and, therefore, not violating any norms, (21c) should be a natural and acceptable way to report John's state.

Mandelkern and Dorst also observe that, whereas "How do you know?" or "Why do you think that?" are legitimate follow-ups to an assertion, "How are you sure?" is not:

(22) Ann: The movie starts at 7. We should get ready soon.
  (22a) How do you know?
  (22b) Why do you think that?
  (22c) Are you sure?
  (22d) #How are you sure?/What makes you sure?/How can you be sure?[26]

This suggests that we are not generally warranted to presuppose that a speaker is sure that p on the sole basis that they have asserted that p. We have reasons to think that, while assertion comes with a belief norm and a knowledge norm, it does not come with a certainty norm.

Fortunately, the inquiry account offers us an intuitive way to connect certainty and assertion that avoids these worries. Instead of simply *building a certainty norm into assertion*, there are connections between certainty and assertion that are *rational* consequences of the nature of certainty and of assertion. Following Stalnaker (1974, 2002, 2014), we can understand many conversations as collaborative activities of information exchange aimed at *collective inquiry*. These conversations occur and evolve against a common ground, i.e., a background of mutually shared information. In particular, Stalnaker (1978) proposes that asserting a proposition p is a *proposal to make p part of the common ground*. As a natural way to take seriously the idea that conversations aim at collective inquiry, we can think of an assertion as a proposal to take collective inquiry to be closed. This means that we can understand both certainty and assertion in terms of inquiry: the former as a state defined in terms of *personal* inquiry and the latter as a move that purports to change the status of *collective* inquiry.

This connection allows us to explain the oddness of (20). One source of oddness is that it becomes unclear just what the speaker is proposing. If I propose a collective action for us, then I'd better do my part. So if I want a whole group, of which I am part, to collectively take a question to be settled, then I'd better take that question to be settled myself. Uttering (20) is like uttering:

(23) #Let's all go to the park, but I am not going.[27]

[26] Goodman and Holguín (2022, p. 635) actually think that "What makes you sure?" is a felicitous follow-up to an assertion.

[27] This resembles two other sets of puzzling sentences discussed by Ninan (2005). The first are sentences of the form "S must φ, but S won't." For example, "#I must go to confession, but I won't." The second are sentences that include a command to φ and an assertion that the hearer won't φ, e.g., "#Go to confession! You are not going to go to confession."

Another source of oddness comes from the fact that, typically, the reasons we have for leaving our personal inquiry into a question open will also be reasons for leaving collective inquiry into the same question open. For example, if I take a question to be unsettled because there is evidence still unaccounted for, then that is also a reason for us, as a group, to take that question to be unsettled. In other words, the standards for closing personal inquiry and for closing collective inquiry coincide in most cases.[28] In uttering (20), therefore, the speaker proposes a plan but indicates that it is perhaps not the best plan, which sounds perplexing in a way similar to uttering (24):

(24) #We should sell our SpaceX stocks, but I am not selling mine.

One might wonder: doesn't this mean that there is a certainty norm of assertion after all? And if so, doesn't it also face Mandelkern and Dorst's worries? In some sense, it does mean that there is a certainty norm of assertion. That is how we can explain why assertion is in tension with reporting uncertainty. However, on my view, this norm is not built into the practice of assertion, but rather a derivative norm that results from considerations of rationality.

Pagin (2016) distinguishes between different ways of understanding the *status* of a norm of assertion. In particular, one might understand a norm as *constitutive* of assertion: certain norms are simply built into the practice of assertion.[29] Just as a game of chess is (at least partly) constituted by its rules, according to this picture, the practice of assertion is (at least partly) constituted by its constitutive norms. This is the view that Williamson (1996) endorses when he argues for the knowledge norm of assertion, for example.

When a practice comes with a constitutive norm, certain conversational moves become appropriate. For one, it becomes appropriate to *presuppose* that the other is conforming to its constitutive norms on the sole basis that they are engaged in the practice. Take castling in chess as an example. As a rule of chess, a player can castle only if the King has not moved previously in the game. When a player attempts to castle, then, it is appropriate to say things that presuppose that the King has not been moved. For example,

(25) I didn't realize that the King had not been moved.

But besides its constitutive norms, a practice often comes with a variety of derivative norms as well, norms that arise out of considerations of rationality. These norms do not license the same type of presuppositions. For example, consider one of Grice's (1989) maxims of conversation: make your contribution relevant. Suppose you are discussing the weather, and your friend says, "I just heard that the rabbit population is growing rapidly." You might be puzzled by their utterance, just as we are puzzled by (20). Yet it

[28] In certain special contexts, the standards might come apart.
[29] I differ from Pagin (2016) in whether to apply the term "constitutive" to this understanding of norms.

would still be inappropriate for you to presuppose that this contribution is relevant or to report your friend as thinking so:

(26) #I didn't realize that the rabbits have something to do with the weather.
(27) #My friend thinks that the rabbits have something to do with the weather.

It would be much better to ask for clarification:

(28) Is this relevant to the weather?

This explains why (21a)–(21b) and (22a)–(22c) are warranted, while (21c) and (22d) are not. The mere fact that someone has proposed that we all sell our SpaceX stocks, for example, does not license presupposing or reporting that they are in fact going to sell their SpaceX stocks, though it might be a reasonable inference to make. Similarly, the mere fact that someone has proposed that we all take inquiry to be closed does not mean that they in fact take inquiry to be closed themselves.

5 Conclusion

In this paper, I have argued against identifying certainty with maximal credence and offered my alternative account, according to which certainty is taking inquiry to be closed. I have also shown that my view of certainty clarifies the relation between certainty, on the one hand, and belief, knowledge, and assertion, on the other. An upshot of my view is that certainty is not to be replaced with or reduced to credence. Instead, it is a distinctive way of relating to inquiry, and it thereby plays an essential role in our individual and shared deliberation.

Understanding certainty in this way transforms many familiar epistemological questions. Take, for example, epistemic certainty, typically expressed by utterances of the form "It is certain that …" Whereas psychological certainty is an attitude, epistemic certainty is an epistemic status of attitudes. Rather than assuming that epistemic certainty must be a matter of objective probability, as is standard in the literature, we can ask how it relates to the status of an inquiry. We can ask, for example: *What does it take for a question to have the epistemic status of being settled, as opposed to merely taken to be settled by a subject?*

New questions arise with respect to collective inquiry. In examining the relation between certainty and assertion, I have proposed that, whereas certainty is taking one's *own* inquiry to be closed, an assertion is a proposal to close *collective* inquiry. This opens up new questions about how a collective inquiry can open, progress, and close, and how different conversational moves rely on or affect the status of such collective inquiries. While recent literature on group attitudes has often focused on group belief or group knowledge, my account suggests that these issues are best addressed in relation to collective inquiry.

More generally, I see my account as contributing to a larger shift towards placing inquiry at the center of epistemology. As Jane Friedman (forthcoming) argues, epistemologists should investigate questions about how to inquire, in addition to questions about what to believe. Among other things, this paper demonstrates what that could look like: by understanding certainty in terms of inquiry, questions about certainty become questions about one's relation to inquiry.

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