

BELIEF AND CREDENCE: A DEFENSE OF DUALISM

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Abstract

by

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Belief is a familiar attitude: taking something to be the case or regarding it as true. But we are more confident in some of our beliefs than in others. For this reason, many epistemologists appeal to a second attitude, called credence, similar to a degree of confidence. This raises the question: how do belief and credence relate to each other? On a belief-first view, beliefs are more fundamental and credences are a species of beliefs, e.g. beliefs about probabilities. On a credence-first view, credences are more fundamental and beliefs are a species of credence, e.g. credence above some threshold. In this thesis, I develop and defend a third view that I call *belief-credence dualism*. On this view, belief and credence are independent, equally fundamental attitudes, and neither reduces to the other.

I begin by motivating the project: why should we care about the relationship between belief and credence? I argue it has broad implications for many debates in epistemology and beyond. Then, I defend dualism, arguing that it can explain features of our mental lives that a credence-first view and a belief-first view cannot. I also argue that dualism has attractive, interesting implications when applied to the pragmatic

encroachment debate. Finally, I explore implications of dualism, both for the nature of evidence and how faith might go beyond the evidence but nonetheless be epistemically rational. I conclude that the human mind is, in some ways, complex, but we should be happy with this conclusion also long as each mental state we posit has a clear role to play.

To my grandparents: Jerry, Libby, Charlotte, and Paul.

I love you all so much.

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PREFACE

I have two primary goals for this dissertation. The first is to defend belief-credence dualism, the view that we have both beliefs and credences, and belief doesn't reduce to credence and credence doesn't reduce to belief. The second is to explore implications of belief-credence dualism. The main implications I explore involve pragmatic encroachment, the nature of evidence, and the nature of faith.

In **chapter one**, I introduce the project and cover background material. I explain the way I'm understanding the attitudes belief and credence, and give a basic overview of the debate thus far.

In **chapter two**, I motivate my project by explaining why the relationship between belief and credence is a central question in epistemology. I argue that the belief-credence relationship has significant implications for a number of current epistemological issues. I focus on five controversies: permissivism, disagreement, pragmatic encroachment, doxastic voluntarism, and the relationship between doxastic attitudes and prudential rationality. I argue that each debate is constrained in particular ways, depending on whether the relevant attitude is belief or credence. This means that (i) epistemologists should pay attention to whether they are framing questions in terms of belief or in terms of credence and (ii) the success or failure of a reductionist project in the belief-credence realm has significant implications for epistemology generally.

I give my main defense of dualism in **chapter three**. I motivate dualism by arguing that it explains features of our mental lives better than belief-first and credence-first. I argue against credence-first views by arguing that there are three roles beliefs play: the role of allowing one to take a stand/have a view of the world, the role of being used in reactive attitudes such as praise and blame, and the role of simplifying reasoning. I argue that belief qua mere high credence cannot play these roles. I argue against belief-first by arguing that credences explain the actions of children and animals, and cannot be formed by simply altering the content of what is believed. I also show how belief-first runs into trouble in the case of barely graspable propositions, and point out that it is unclear that a belief-first view is all-things-considered more parsimonious than a dualist view. For all these reasons, I conclude in that we should favor dualism over a belief-first view and a credence-first view.

In **chapter four**, I further motivate dualism by applying it to a contemporary debate in epistemology: the pragmatic encroachment debate. Pragmatic encroachment is the view that stakes alone can affect the epistemic rationality of states like knowledge or justified belief. In this chapter, I argue that dualism can uniquely explain what is going on in pragmatic encroachment cases. My basic proposal is that in high stakes cases, it is not that one cannot rationally believe that *p*; instead, one ought to not *rely* on one's belief that *p*. One should rather rely on one's credence in *p*. I argue that there is good philosophical and psychological evidence for this view.

The final two chapters explore implications of dualism. In **chapter five**, I explore how rational belief and rational credence relate to evidence. I begin by looking at three cases where rational belief and credence seem to respond differently to evidence:

lotteries, cases of naked statistical evidence, and hedged assertions. I consider an explanation for these cases, namely, that one ought not to form beliefs on the basis of statistical evidence alone, and raise worries for this view. Then, I suggest another view that explains how belief and credence relate to evidence. My view focuses on the possibilities that the evidence makes salient. I argue that this makes better sense of the difference between rational credence and rational belief than other accounts.

Finally, **chapter six** applies some of my earlier conclusions to the nature of faith. I do so by utilizing cases where rational belief and rational high credence respond differently to evidence. If rational belief comes apart from rational credence in this way, it seems as though faith could function similarly but nonetheless be epistemically rational. Thus, we get cases where rational faith that p is consistent with a wide range of credences in p , including quite low ones. I argue that this is an important way that faith goes beyond the evidence yet is still epistemically rational.

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CHAPTER 1: INTRODUCTION

1.1 Motivating the project

Traditionally, epistemology has concerned questions such as the following: What is knowledge? Can we know anything (or much of anything) at all? When is true belief knowledge? Is justification internal or external? What is the aim of belief? Does whether one knows depend on practical factors? What role do beliefs play in rational decision making?

To answer these questions, traditional epistemologists have generally adopted a coarse-grained taxonomy of doxastic states: for any proposition p , one can believe p , withhold belief with respect to p , or disbelieve p (i.e. believe not- p). In this, traditional epistemology has largely concerned itself with three fundamental doxastic attitudes.¹

Recently, a second doxastic taxonomy has emerged. So-called formal epistemology provides answers to some of the same questions of traditional epistemology, but in a different framework: a credence framework.² Credences are

¹ Of course, there may be others, such as never-have-considered p (see Bergmann 2005) and maybe even others, such as a proposition you once believed but is now too complex for you to grasp (see Friedman 2013a). But primarily, traditional epistemology has focused on three doxastic attitudes. (There is also the question of whether withholding is a *doxastic* attitude or another kind of attitude, but I do not have time to explore that here; Friedman (2013a) argues that we suspend on questions, rather than propositions.).

² Formal epistemology is also often referred to as Bayesianism epistemology; I take Bayesianism to be a particular (although popular) strand of formal epistemology that entails certain norms on rational

something like subjective probabilities, and are often assumed to be representable as some value on the interval $[0,1]$. In this, they are more fine-grained than beliefs, and there are (at least in principle) infinitely many possible credences for a proposition.

Using this framework, formal epistemologists explore questions such as: what is rational credence? What do credences aim at? How does one update one's credences in light of new evidence? Are rational constraints on credences primarily a matter of something internal to the agent (subjective Bayesianism) or something external to the agent (objective Bayesianism)? Can credences be knowledge-like? What is the role of credence in rational decision making?

The predominant questions of formal epistemology overlap, but do not perfectly parallel, the questions that are central to traditional epistemology. For example, traditional epistemologists seem concerned with knowledge and justification, and formal epistemologists seem more focused on evidence and rationality. Nonetheless, there is quite a bit of overlap between the two epistemologies, and some of the differences may be more terminological than substantial (e.g. 'justification' vs. 'rationality').

Given these two frameworks, many interesting issues arise. Are these competing frameworks, such that we ought to pick between them? Or are both frameworks useful for different purposes? Which framework should we trust if we are given competing verdicts? Or do these frameworks ever conflict, given they seem to invoke different

credence (specifically, probabilism and conditionalization). There are some formal frameworks that deny at least one of the Bayesian constraints on rationality (e.g. those endorsed by Williamson and Hacking). Formal epistemologies that depart even further from Bayesianism include the frameworks of e.g. Clark, Glymour and Spirtes, AGM belief revision, epistemic logic, etc. Thanks to Daniel Nolan.

fundamental doxastic building blocks? Is one framework more psychologically realistic?
Does one framework more accurately describe ideal agents?

In my dissertation, I shed light on some of the questions about the relationship between these two epistemologies by focusing on one very specific relationship. One of the primary differences between these two epistemologies is their doxastic taxonomies: traditionalists use beliefs, and formalists use credences. Making progress on the relationship between these two attitudes is a central component of making progress on the relationship between the two epistemologies.

1.2 The attitudes of belief and credence: background and assumptions

1.2.1 What is belief?

Belief is, roughly, the attitude of regarding something to be true or taking it to be the case.³ What it is to believe, more rigorously and specifically, is a highly controversial matter in philosophy of mind. There are at least six main views of belief: representationalism, dispositionalism, interpretativism, functionalism, primitivism, and eliminativism.⁴ Insofar as my dissertation will largely take it for granted that beliefs exist, I will primarily set aside eliminativist views of belief (although I briefly discuss them in chapter three). A second view of belief that may be inconsistent with my conception of belief is interpretativism (along with a closely related view that Carr (forthcoming) calls “the measure theory of mind”). On at least some versions of these views, there is no

³ See Schwitzgebel (2016).

⁴ Schwitzgebel (2016) discusses all of these except primitivism.

psychological difference between attitude and content, and thus no psychological difference between, e.g., probabilistic beliefs and credences. The content/attitude distinction is crucial for the way I set up the debate (as summarized below in Section 1.3) and other aspects of my project, and thus my project probably rules out some versions of interpretativism. Otherwise, my view of belief should be consistent with a large majority of representationalist, dispositionalist, functionalist, and primitivist views of belief; I strive to remain neutral between these concepts of belief.

I make a few further assumptions about the nature of belief. First, I will generally treat belief as a doxastic attitude with *propositional* content.⁵ I do not take this to be essential to my project, but I take it on board as a simplifying assumption. Second, I assume that beliefs do not come in degrees.⁶ The phrase “degrees of belief” is a common and popular one among epistemologists, but I will use the term “credence” here instead (see the next section, 1.2.2). When I use the word “belief,” I will be referring to a categorical mental state that is coarse-grained in the way described above: i.e., for every proposition, one can believe it, withhold on it, or believe its negation. Nonetheless, I do not take this to be particularly controversial; I suspect my disagreement with those who prefer the phrase “degrees of belief” is terminological, rather than substantive.

Third, especially in chapters three and four, I will largely set aside views on which belief is certainty or credence one. While I take belief and credence one to have many things in common, e.g. for both mental states, we will be disposed to treat their

⁵ As Schwitzgebel (2016) notes, this is standard. But see e.g. Moss (2018) for a view on which beliefs (and credences) are not propositional attitudes.

⁶ See Moon (2017).

content as true in our reasoning (at least when the content is relevant), I reject the view that belief is identical to or reducible to credence one. This is due to, among other things, the fact that belief and credence one have different modal profiles. If one has credence one in p , one ought to (and often will) reason holding p fixed, no matter the stakes. If one believes p but has a credence of less than one in p , one need not reason holding p fixed no matter the stakes.⁷ The belief-is-maximal-credence view also cannot capture the plausible suggestion that we are more confident in some of our beliefs than in others.

A final commitment I have is taking the distinction between belief and acceptance seriously. Accepting p is acting as if p ; I do not take (rationally) acting-as-if- p to be sufficient or necessary for (rationally) believing p . Acceptance is a practical matter; whether we ought to accept some proposition is a practical, rather than primarily an epistemic, question. Belief, on the other hand, is an epistemic state. This isn't to assume that pragmatic encroachment is false. Belief's being an essentially epistemic state need not rule out the view that sometimes, stakes can affect rational belief. However, I take the distinction between what justifies belief and what justifies action seriously; this is relatively standard on most views of what makes action rational, e.g. decision theory or a belief-desire model. The distinction between belief and acceptance will be especially important for chapter four, but I generally take this distinction seriously throughout the dissertation.

⁷ Buchak (2014: 286). For discussions and defenses of the view that belief is credence one, see Roorda (1995), Wedgwood (2012), Clarke (2013), Greco (2015), Dodd (2016). See also Levi (1991), although Levi does not think that credence one is sufficient for belief.

Beyond these assumptions, I will otherwise strive to remain largely neutral about the nature of belief.

1.2.2 What is credence?

Epistemologists' understanding of credences has evolved over time. When the term 'credence' was originally introduced (by e.g. Ramsey and Lewis), credences were widely taken to be a probability function that is necessarily coherent, i.e. obeys Kolmogorov's axioms of probability.⁸ Credences were also assumed to be precisely point valued. In many of the original discussions of credence, it was unclear to what extent credences were supposed to be features of actual human agents, but were instead used in probabilistic representation, modeling ideally rational agents, etc.⁹

Credences have also long been closely associated with betting behavior. Some (e.g. de Finetti) maintained that one's credences are simply reducible to one's betting behavior;¹⁰ others (e.g. Ramsey, Jeffrey) maintained that betting behavior provides a (nearly) perfect measure of one's credences.¹¹ Carnap (1962) is one of the first to introduce the term 'credence' in this context:

“The concept of probability in the sense of the actual degree of belief is a psychological concept... to be established by the

⁸ Ramsey (1926), Lewis (1974, 1980), de Finetti (1972, 1990), Kaplan (1996).

⁹ Even if 'credence' in this early sense does not apply to actual human agents, that doesn't mean we should give up on the project of modeling belief probabilistically, even if idealized. It has uses in e.g. computer programming, artificial intelligence, etc.

¹⁰ de Finetti (1990).

¹¹ Ramsey (1926: 166ff), Jeffrey (1965). Note that Ramsey uses the term 'degree of belief' instead of 'credence,' but based on his usage, we can treat the terms as synonymous.

investigation of the behavior of persons in situations of uncertainty, e.g., behavior with respect to bets or games of chance. I shall use for this psychological concept the technical term ‘degree of credence’ or shortly ‘credence’.”¹²

While it enjoyed popularity for a while, the close association of credence with betting behavior has since faced serious challenges from Eriksson and Hájek, among others.¹³ Along similar lines, some epistemologists have tried to define credence using representation theorems, on which an agent’s credences are derived from an agent’s preferences (assuming those preferences satisfy certain constraints).¹⁴ This representation-theorem definition of credence also faces serious worries.¹⁵ In my estimation, epistemologists are no longer as eager to closely associate credences with betting behavior or maintain they are definable by representation theorems.

The notion of credence has evolved in other ways.¹⁶ First, epistemologists seem to have dropped the assumption that credences are necessarily coherent. Many think that probabilistic coherence (or something similar) is required for *rational* credence,¹⁷ but today, the possibility of irrational credences is a common admission.¹⁸ Further,

¹² Carnap (1962: 305).

¹³ See Foley (1993: ch. 4), Plantinga (1993: ch. 6), Christensen (2004: 5.2), Eriksson and Hájek (2007), and Steffánson (forthcoming).

¹⁴ See Ramsey (1926).

¹⁵ See Zynda (2000), Eriksson and Hájek (2007), Meacham and Weisberg (2011).

¹⁶ For a nice summary of some of the ways the notion of credence and Bayesianism more generally has developed, see Weisberg (2015).

¹⁷ Skyrms (1996), Joyce (1998), Hayek (2008), Kaplan (2010). But see also Dogramaci (2018) for a recent suggestion for a norm to replace probabilism.

¹⁸ Russell (1948) used ‘credence’ early-on to mean something much closer to its modern usage. He says, “I think, therefore, that everything we feel inclined to believe has a ‘degree of doubtfulness,’ or, inversely, a ‘degree of credibility.’ Sometimes this is connected with mathematical probability, sometimes

epistemologists no longer assume that credence (or even rational credence) is precisely point valued; the possibility and rationality of vague, fuzzy, and interval credences is a topic that has received much attention as of late.¹⁹

Additionally, there is good reason to question the orthodoxy of dispositionalism about credences. One, as noted above, serious objections have been raised to the traditional dispositionalist view of credence that associates credences with betting behavior. Two, as noted above, when it comes to views of belief, a number of major theories have been raised, developed, and defended, including representationalism, dispositionalism, interpretativism, functionalism, primitivism, and eliminativism. Besides dispositionalism (and maybe interpretativism),²⁰ these theories of belief have largely not been applied to credence. A potentially promising area of further research involves developing, e.g., representationalist, functionalist, or primitivist views of the nature of credence.²¹

There are two salient commitments about the nature of credence that I will take on board in this dissertation. One, I treat credences to be similar to the more familiar attitude of confidence. I do this for several reasons. First, it seems as though many

not; it is a wider and vaguer conception. It is not, however, purely subjective. There is a cognate subjective conception, namely, the degree of conviction that a man feels about any of his beliefs, but ‘credibility,’ as I mean it, is objective in the sense that it is the degree of *credence* that a rational man will give” (248, emphasis mine).

¹⁹ See White (2009), Schoenfield (2012, 2017), Bradley and Steele (2014), Smith (2014), Carr (2015), Lyon (2017), Konek (forthcoming). For a nice summary of the developments in the imprecise credence literature, see Weisberg (2015: section 2).

²⁰ See Lewis (1974).

²¹ Eriksson and Hajek (2007) endorse and sketch a brief outline of a primitivist view of credence. (However, Hajek no longer endorses primitivism about credence).

epistemologists are moving toward thinking about credence in this way.²² With the departure of thinking of credence as necessarily rational and necessarily point valued, it seems that credences are being treated less as a formal modeling tool and more as a feature of human agents. As Jonah Schupbach notes, "...credences are... naturally thought of as degrees of confidence. So construed, Bayesianism most straightforwardly provides a logic of confidences. As a normative theory, it examines how an agent's confidences ought to look."²³ Schupbach carefully places the role for e.g. perfectly probabilistic credences in the realm of the normative, rather than the descriptive. Actual humans have levels of confidence that may or may not be probabilistic, and, in turn, may or may not be rational.²⁴ This, in my view, is the way many so-called Bayesians now think about credence.

Further, belief and credence, as I understand them, describe and apply to normal humans, and part of what I aim to argue is that *humans like us* have both beliefs and credences. But this conclusion seems *prima facie* implausible if credences are necessarily rational, necessarily point valued, etc.²⁵ This isn't to say that credences are never precisely point valued, especially, for example, when considering one's credence that a coin will land heads or when proportioning one's credence to a particular statistic. Nonetheless, I will not assume that credences are always precisely point valued. While I

²² See e.g. McGrath and Goldman (2015: 251), Schupbach (2018).

²³ Schupbach (2018: 3).

²⁴ In the case of imprecise credences, they may be rational only if representable by a probability function. See van Frassen (1983: 311), Foley (1993: ch. 4).

²⁵ As Holton (2008), (2014), and Horgan (2017) argue.

discuss precise credences frequently in chapter two, subsequent chapters allow for an understanding of credences as vague or fuzzy.

Second, credence leaves possibilities open in a way belief does not. When one reasons with one's credence in p , both p and not- p are live for them. By contrast, the attitude of belief that p closes off possibilities; when one engages in belief-reasoning, one rules out (or never considers) the possibility of not- p . This commitment about the difference between credence and belief doesn't require that credences be precisely point valued, but does indicate a difference between credence and belief that will be central throughout the dissertation: (non-extreme) credences leave open possibilities; beliefs close off possibilities.

1.3 The relation of belief and credence: an overview of the debate

Several different views on the relationship between belief and credence have emerged in the literature. One common move attempts to reduce one attitude to the another. The relatively popular **credence-first** view maintains that belief reduces to a formal feature of credence. There are at least two important versions of this view. The first is that belief is credence one. One reason in favor of this view is that belief and credence one function in many of the same ways—they both have content that we tend to treat as true in our reasoning. There also is something clean and simple about the view that belief is credence one.

However, it seems like many of our everyday beliefs are held with less than maximal certainty; it does not seem like we should bet anything on the things that we believe, although, according to decision theory, we should bet anything on the

propositions for which we have credence one. Further, certain readings of those who defend belief-as-credence-one (e.g. Clarke 2013) may not be, strictly speaking, credence-first views. Instead of seeing Clarke's view as one that *reduces* belief to credence one, it is plausible to instead interpret it as the view that beliefs are things we treat similarly to credence one in particular contexts. This suggestion fits well with a dualist picture of belief and credence I defend in chapters three and four (explained below), on which beliefs play an important role in simplifying reasoning, enabling the believer to rule out small error possibilities when contextually appropriate.²⁶ As I mentioned in the previous section, I will largely set this view aside in this dissertation (especially in chapters three and four), for these reasons and those named above.

A second credence-first view maintains that belief is credence above some threshold less than one. This threshold might be some set value, e.g. 0.75, or the threshold might vary depending on stakes/circumstances. (This view, which makes a descriptive claim about the relationship between belief and credence, is often called **the Threshold View**. There is a related view, often called **the Lockean Thesis**, that makes a normative claim: one rationally believes that p iff one has a rational credence in p above some threshold). The Threshold View has the virtue of simplicity—beliefs are not an extra fundamental existent in our ontology. Further, it can explain why belief and high credence often go together, i.e. why we tend to have a high credence in the things we believe.

²⁶ Thanks to Julia Staffel. Something similar may also be said of Greco (2015)'s view, although it is less obvious to me that this is the best interpretation of his view.

At the same time, puzzles have been raised for this view. One classic puzzle is the lottery paradox—your credence that your ticket will lose approaches one as the lottery gets bigger and bigger, but many still do not believe their ticket will lose (and many think you shouldn't believe your ticket will lose, either; so this counts against Lockeans as well).²⁷ Another worry for the Threshold View involves the “problem of naked statistical evidence”—in many cases, when one has mere statistical evidence for some proposition *p*, they will have a high credence that *p*, but not believe that *p*.²⁸ (Some have even suggested that we never or almost never ought to form beliefs on the basis of statistical evidence; so the problem of naked statistical evidence may count against the Lockean Thesis as well.)²⁹ Another interesting argument against the Threshold View involves the attitude of withholding. Jane Friedman argues that withholding is consistent with having any credence, including zero and one.³⁰ It has also been suggested that the Threshold View and the Lockean Thesis cannot explain other features of belief such as correctness, stability, sufficient evidence, and consistency,³¹ and that they are psychologically inadequate.³² I expand on and defend some of these arguments in chapter three.

A second reductionist view is a **belief-first** view. Belief-firsters posit a reduction in the other direction; they maintain that credences are beliefs with a particular kind of

²⁷ See Foley (1993), Christensen (2004), Sturgeon (2008), Lin and Kelly (2013).

²⁸ Buchak (2014), Enoch, Spectre, and Fisher (2012).

²⁹ Staffel (2015).

³⁰ Friedman (2013b).

³¹ Ross and Schroeder (2014).

³² Weisberg (forthcoming).

content (e.g. beliefs with content that is probabilistic or involves epistemic modals). Belief-first is simple insofar as it posits a single fundamental attitude. Further, it seems like we in fact form modal/probabilistic beliefs, and that they are even relatively common (e.g. beliefs like ‘probably p,’ ‘p is likely,’ ‘p has probability n’).

However, Christensen points out that defenders of this view need to give some story about the type of probability invoked in these probabilistic beliefs.³³ Frankish further worries that certain agents, like children and animals, can have something like credences, but it does not seem like they have the concept of probability.³⁴ I discuss this and other objections to belief-first in chapter three.

A third view takes a more pluralistic stance. Maybe neither attitude is more primitive than, or reducible to, the other. This view is called belief-credence **dualism**. Dualism has the cost of being more ontologically complex: it posits beliefs, credences, and modal/probabilistic beliefs— but it might be worth embracing a more complicated picture if it provides significant explanatory power. There have been both psychological and philosophical arguments advanced for dualism (many of which involve pointing out inadequacies of the reductionist views). I explain and defend some of these arguments in chapter three.

How do these different views bear on the relationship between formal and traditional epistemology? Suppose one of the reductionist pictures were successful, and we found out only one type of attitude was ontologically fundamental. Then, we would

³³ Christensen (2004).

³⁴ Frankish (2009), Lee (2017).

also have a (defeasible) reason to think that that subfield is more fundamental, and even potentially should be given preference if we encountered competing verdicts. However, if belief-credence dualism is true (as I will argue), this gives us reason to think that neither epistemology is more primitive. Perhaps both epistemologies are equally fundamental and equally viable research programs, and different verdicts either do not arise or are resolvable. We need not throw out either framework; we just need to further explore how they interact and govern our doxastic lives.

1.4 What lies ahead

I have two primary goals for this dissertation. The first is to defend belief-credence dualism, the view that we have both beliefs and credences, and belief doesn't reduce to credence and credence doesn't reduce to belief. The second is to explore implications of belief-credence dualism. The main implications I explore involve pragmatic encroachment, the nature of evidence, and the nature of faith.

In **chapter two**, I motivate my project by explaining why the relationship between belief and credence is a central question in epistemology. I argue that the belief-credence relationship has significant implications for a number of current epistemological issues. I focus on five controversies: permissivism, disagreement, pragmatic encroachment, doxastic voluntarism, and the relationship between doxastic attitudes and prudential rationality. I argue that each debate is constrained in particular ways, depending on whether the relevant attitude is belief or credence. This means that (i) epistemologists should pay attention to whether they are framing questions in terms of

belief or in terms of credence and (ii) the success or failure of a reductionist project in the belief-credence realm has significant implications for epistemology generally.

I give my main defense of dualism in **chapter three**. I motivate dualism by arguing that it explains features of our mental lives better than belief-first and credence-first. I argue against credence-first views by arguing that there are three roles beliefs play: the role of allowing one to take a stand/have a view of the world, the role of being used in reactive attitudes such as praise and blame, and the role of simplifying reasoning. I argue that belief qua high credence cannot play these roles. I argue against belief-first by arguing that credences explain the actions of children and animals, and cannot be formed by simply altering the content of what is believed. I also show how belief-first runs into trouble in the case of barely graspable propositions, and point out that it is unclear that a belief-first view is all-things-considered more parsimonious than a dualist view. For all these reasons, I conclude in that we should favor dualism over a belief-first view and a credence-first view.

In **chapter four**, I further motivate dualism by applying it to a contemporary debate in epistemology: the pragmatic encroachment debate. Pragmatic encroachment is the view that stakes alone can affect the epistemic rationality of states like knowledge or justified belief. In this chapter, I argue that dualism can uniquely explain what is going on in pragmatic encroachment cases. My basic proposal is that in high stakes cases, it is not that one cannot rationally believe that *p*; instead, one ought to not *rely* on one's belief that *p*. One should rather rely on one's credence in *p*. I argue that there is good philosophical and psychological evidence for this view.

The final two chapters explore implications of dualism. In **chapter five**, I explore how rational belief and rational credence relate to evidence. I begin by looking at three cases where rational belief and credence seem to respond differently to evidence: lotteries, cases of naked statistical evidence, and hedged assertions. I consider an explanation for these cases, namely, that one ought not to form beliefs on the basis of statistical evidence alone, and raise worries for this view. Then, I suggest another view that explains how belief and credence relate to evidence. My view focuses on the possibilities that the evidence makes salient. I argue that this makes better sense of the difference between rational credence and rational belief than other accounts.

Finally, **chapter six** applies some of my earlier conclusions to the nature of faith. I do so by utilizing cases where rational belief and rational high credence respond differently to evidence. If rational belief comes apart from rational credence in this way, it seems as though faith could function similarly but nonetheless be epistemically rational. Thus, we get cases where rational faith that *p* is consistent with a wide range of credences in *p*, including quite low ones. I argue that this is an important way that faith goes beyond the evidence yet is still epistemically rational.

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CHAPTER 2:

BELIEF AND CREDENCE: WHY THE ATTITUDE-TYPE MATTERS

Abstract: In this chapter, I argue that the relationship between belief and credence is a central question in epistemology. This is because the belief-credence relationship has significant implications for a number of current epistemological issues. I focus on five controversies: permissivism, disagreement, pragmatic encroachment, doxastic voluntarism, and the relationship between doxastic attitudes and prudential rationality. I argue that each debate is constrained in particular ways, depending on whether the relevant attitude is belief or credence. This means that (i) epistemologists should pay attention to whether they are framing questions in terms of belief or in terms of credence and (ii) the success or failure of a reductionist project in the belief-credence realm has significant implications for epistemology generally.

Keywords: Belief; Credence; Permissivism; Uniqueness; Disagreement; Pragmatic Encroachment; Doxastic Voluntarism; Prudential Rationality

2.1 Introduction

Sometimes, we simply believe things. I believe my car is in the parking lot outside, that $1+1=2$, and that my coffee is getting cold. Belief is the attitude of taking some proposition to be the case or representing it as true. Belief is a categorical attitude in the sense that it is not degreed; either one believes a proposition or one does not.³⁵

³⁵ For the purposes of this chapter, I will be assuming or stipulating that belief is a categorical attitude. Of course, many epistemologists use the phrase “degrees of belief,” which indicates that beliefs

There are three belief-like attitudes one can take toward a proposition p ; one can believe p , one can withhold belief with respect to p , and one can disbelieve p (which is usually assumed to be the same as believing not- p). For example, I withhold belief that there are an even number of hairs on my head, and I disbelieve that the Cavs won the 2018 NBA finals.

However, sometimes our attitudes are more complex than simple beliefs. While I am roughly 100% confident that $1+1=2$, I am closer to 99% confident my car is in the parking lot outside, and more like 50% confident that a Republican candidate will win the next US election. I will follow many epistemologists in calling this second attitude *credence*. Credences are, in many ways, similar to the more everyday attitude of confidence, and roughly correlate with the subjective probability that some proposition is true. I will assume that, like beliefs, credences are propositional attitudes,³⁶ but unlike beliefs, they come in degrees. Because they come in degrees, credences enable us to represent the world in a more fine-grained way; I believe that $1+1=2$ and that my coffee is cold, but I have a higher credence in the former than in the latter. Also unlike beliefs, credences (besides 0 and 1) don't treat the proposition in question as given, but leave the possibilities more open. A credence of 0.99 that *it is raining* leaves open the possibility that it is not raining in a way that a belief *it is raining* does not.³⁷

(or something like beliefs) come in degrees, but I will use the term “credence” here instead. For more on whether beliefs come in degrees, see Moon (2017).

³⁶ While I am assuming that both beliefs and credences are propositional attitudes, this is controversial. For example, Moss (2018) holds that, rather than having propositional content, both beliefs and credences have probability spaces as content. I adopt the propositional content view as a simplifying assumption, but I do not think this is essential to my arguments.

³⁷ Generally, I will assume a standard, mainstream philosophy of mind conception of both beliefs and credences. On certain non-standard views of doxastic attitudes (e.g. the measure theory of mind (see

Recently, three views about the relationship between belief and credence have emerged. The first is what one might call a **credence-first** view. On this view, credence is the fundamental attitude, and belief is a species of credence. On one version of this view, belief is the attitude of maximal credence, so belief is certainty that some proposition is true.³⁸ On another credence-first view, belief is not maximal credence, but instead credence above some threshold, usually between 0.5 and 1.³⁹ Either way, on this view, believing is ultimately a matter of having a particular kind of credence.

A second view of the relationship between belief and credence is the **belief-first** view.⁴⁰ On this view, belief is the fundamental attitude and credence is a species of belief. The fine-grained/numerical features of credence are built into the content of what is believed. On one version of this view, credences are beliefs with probabilistic content. A 0.99 credence *it is raining* is actually just the belief *the probability it is raining is 0.99*; a 0.5 credence *the coin will land heads* is a belief with the content *the probability the coin will land heads is 0.5*. However, it is worth noting that the content need not be about

Carr (forthcoming)), and interpretativism (see Dennett (1978, 1987, 1991) and Davidson (1984)) some of the points I make may not apply, or at least not apply in the ways I take them to apply. For example, given the measure theory of mind, the attitude-content distinction is measure-system relative. On this view, there's no psychological difference between e.g. having probabilistic beliefs and having credences. However, the distinction between probabilistic beliefs and credences is important for the points I make in this chapter, so some of my arguments may rule out non-standard views of doxastic attitudes.

³⁸ For defenses and discussions of a credence-first view on which belief is maximal credence, see Levi (1991), Roorda (1995), Wedgwood (2012), Clarke (2013), Greco (2015), Dodd (2016). Note that it is controversial on this view whether the attitude of certainty ought to be identified as credence 1.

³⁹ For defenses and discussions of a credence-first view on which belief is less-than-maximal credence, see Foley (1992, 1993, 2009), Hunter (1996), Bouvens and Hawthorne (1999), Christensen (2004), Weatherson (2005), Douven and Williamson (2006), Ganson (2008), Sturgeon (2008), Frankish (2009), Chandler (2010), Smith (2010), Locke (2014), Dallmann (2014), Pettigrew (2015_a, 2015_b), Leitgeb (2013, 2014), Dorst (2019), Lee (2017_a, 2017_b).

⁴⁰ For defenses and discussions of belief-first, see Harman (1986, 2008), Lance (1995), Holton (2008, 2014) Plantinga (1993: chapter 1), Easwaran (2015), Moon (2018, 2019), Jackson and Moon (MS).

probabilities per se; it could instead involve epistemic modals or some other kind of numerical structure. What is central to the belief-first view, however, is that the numerical structure is part of the content rather than part of the attitude, and the relevant attitude is simply belief.⁴¹

A third view is what some have called pluralism or **dualism**; on this view, both belief and credence are equally fundamental. We have both attitudes and neither is reducible to the other. This view is more complex, but proponents of dualism maintain it can nonetheless better explain our epistemological concepts and mental lives. On some versions of dualism, belief and credence are two different epistemic tools that we use for different purposes. The dualist view has recently been growing in popularity, and there have been both philosophical and psychological arguments proposed for dualism.⁴²

The thesis of this chapter is that the relationship between belief and credence is a central issue for epistemology. Specifically, I will consider each of the above views: belief-first, credence-first, and dualism, and argue that each view has significant implications for other debates in epistemology.⁴³ If I am right, then whether a reduction in the belief-credence realm is successful is a significant and pivotal question in

⁴¹ Although this may not be sufficient for a belief-first view. For example, Moss (2018) argues for a simple-attitude, complex-content account of both beliefs and credences, but her view is not a belief-first view. See footnote 2.

⁴² For defenses and discussions of dualism, see Pollock (1983, 1994), Adler (2002: 9.1), Frankish (2004), Hawthorne (2009), Sosa (2011: chapter 4), Weisberg (2013, forthcoming), Friedman (2013a), Ross and Schroeder (2014), Buchak (2014), Littlejohn (2015), Pettigrew (2015_b), Carter, Jaris, and Rubin (2016), Staffel (2017, 2018, forthcoming), Jackson (2018, forthcoming).

⁴³ See Hájek and Lin (2017) for an important complementary paper. They examine points of connection and disconnection between formal and traditional epistemology and consider some of the same debates I consider, such as pragmatic encroachment and the role of belief and credence in rational action.

epistemology. Further, epistemologists ought not slide between attitudes, and should be careful making an argument considering one attitude and then taking their argument to generalize. For example, an argument for permissivism about credence may not entail permissivism about belief; one ought not assume one has established permissivism is true if one has only argued for permissivism about credence.

I will focus on five debates: whether evidence can be permissive (**Section 2.2**), how we ought to respond to disagreement (**Section 2.3**), whether our practical interests can affect the epistemic rationality of doxastic attitudes (**Section 2.4**), whether we have control over our doxastic attitudes (**Section 2.5**), and the relationship between prudential rationality and doxastic attitudes (**Section 2.6**). For each controversy, I will show that belief-first, credence-first, and dualism constrain the debate – sometimes, in radical ways. I conclude with some upshots and suggestions for further research (**Section 2.7**).

Two caveats before I begin. First, I am not arguing for a particular view of the relationship between belief and credence. Instead, I am exploring what each view would say about other debates in epistemology. This chapter involves many conditional claims; I will leave it to the reader to draw her own conclusions. Second, these controversies are complex and multi-faceted, and most of them have a large and growing literature. There are many implications that I will not have space to cover in this chapter. Nonetheless, I hope my discussion will at least suffice to show the centrality of the belief-credence question for each debate in epistemology. This chapter will point to many places in which further research is needed.

2.2 Permissivism

2.2.1 Permissivism and uniqueness

The permissivism debate is about whether there is ever any slack between a body of evidence and what it is epistemically rational to conclude, given that evidence.

Permissivism is the view that, sometimes, for a proposition and a body of evidence, there is more than one rational doxastic attitude.⁴⁴ For example, a permissivist might hold that two people could have all the same evidence about whether God exists – e.g. they both know about the cosmological and ontological arguments and are both aware of the problem of evil and the problem of divine hiddenness. Nonetheless, it is at least possibly true that, e.g., one rationally believes God exists and the other is rationally agnostic. Or one might have a higher credence than the other without compromising rationality.⁴⁵ Thus, a permissivist maintains that one's body of evidence does not always rationally oblige one to hold a certain doxastic attitude toward a proposition.

Defenders of uniqueness deny this: uniqueness is the view that, for every body of evidence and proposition, there is always a single rational doxastic attitude.⁴⁶ In response to the above example regarding belief in God, a proponent of uniqueness might insist that

⁴⁴ Main defenders of permissivism include Ballantyne and Coffman (2011), Kelly (2013), Meacham (2014), Schoenfield (2014, 2018).

⁴⁵ In the context of the belief/credence relationship, a more precise way to state the permissivist thesis would be that, given a body of evidence, there is more than one rational doxastic attitude *of a particular type*. This modification is needed because the view that a body of evidence permits a particular credence and a particular belief-attitude at the same time is not sufficient to count as permissivism. For example, my evidence might uniquely determine that I ought to have both a 0.9 credence in *p* and believe *p*; this does not entail permissivism. Thanks to Geoffrey Hall.

⁴⁶ Main defenders of uniqueness include White (2005, 2013), Feldman (2007), Hedden (2015), Greco and Hedden (2016), Dogramaci and Horowitz (2016).

the agents in question do not actually share evidence; there must be a difference in evidence to justify a difference in attitudes. If the permissivist insists that they do share evidence, then the advocate of uniqueness will conclude that one of them is irrational.

2.2.2 Implications of the belief/credence relationship

Implicit in the above discussion is a distinction between two types of permissivism:

Credal permissivism: some bodies of evidence permit more than one rational credal-attitude.

Belief permissivism: some bodies of evidence permit more than one rational belief-attitude.

To see how these come apart, note that one could consistently maintain credal permissivism but deny belief permissivism. It might be that sometimes, a body of evidence permits more than one credence, but always requires one of the three belief-attitudes (belief that p , withholding belief, or belief that not- p).⁴⁷ The evidence could allow one to believe p and have a credence of 0.8 or to believe p and have a credence of 0.9, but not allow for withholding belief or belief that not- p .

Before discussing how views on the relationship between belief and credence constrain the permissivism debate, it is worth noting that on the traditional fine-grained credence model, credal uniqueness seems implausible. If credal uniqueness is true, then there is a single, fine-grained rational credence for a body of evidence. But it seems

⁴⁷ One might also deny credal permissivism but maintain belief permissivism. For example, one might be a pragmatist about rational belief, so rational belief is a matter of both stakes and evidence, but be a purist and uniquer about credences, such that rational credence mirrors, and is solely determined by, one's evidence. Thanks to Michael Hatcher.

overly demanding to insist that I am irrational if I don't adopt a credence of, e.g., 0.675, given my evidence.⁴⁸ Thus, at least at first blush, credal permissivism seems more plausible than credal uniqueness.

Let's then suppose credal permissivism is true, and further suppose that a credence-first view of the relationship between belief and credence is true. On this view, one's evidence would sometimes permit a range of rational credences, and belief would be a matter of having a credence above a particular threshold. This seems to lend itself to belief permissivism, as there seems to be no principled reason to think that the range of permitted credences could not straddle the threshold for belief. Thus, it seems natural to think that the conjunction of credence-first and credal permissivism (which is independently plausible) entails belief permissivism.⁴⁹

Belief-first and dualism do not as obviously lend themselves to belief permissivism, so some who are attracted to uniqueness may want to adopt one of these views of the belief-credence relationship instead. Further, uniqueness about belief does not seem as *prima facie* implausible as uniqueness about credence, so whether belief permissivism is true seems like a more substantive question than whether credal permissivism is true.⁵⁰ Thus, the belief-first and dualist views might provide a more

⁴⁸ See Kelly (2013), Douven (2011), Schoenfield (2014), Decker (2012).

⁴⁹ Thanks to Michael Hatcher.

⁵⁰ As Kelly (2013) points out, an alternative route for defenders of uniqueness is to appeal to fuzzy or interval credences. I discuss other kinds of mental states besides belief and precise credences briefly in the conclusion (Section 2.7).

interesting model on which to debate permissivism; e.g. could rationality and a body of evidence ever permit both believing p and withholding with respect to p ?

Further, on a dualist picture, credal permissivism and belief permissivism can potentially come apart quite a bit. Of course, this will partially depend on whether there are *normative* connections between belief and credence (for example, whether the Lockean thesis is true, and rational belief that p requires a rational credence in p above some threshold). However, dualism is merely a descriptive, rather than a normative thesis, and this allows for multiple combinations of views about permissivism (permissivism about one attitude, uniqueness about the other, permissivism about both, uniqueness about both, etc.).

2.3 Disagreement

2.3.1 Steadfastness and conciliationism

How should we respond to disagreement? Should we alter our opinion in some way? Or is it fine to maintain our previously held opinion? The disagreement debate concerns these questions. Central to this debate is the concept of an *epistemic peer* – roughly, someone who is your epistemic equal. (For example, according to Kelly, epistemic peers have approximately the same evidence and the same epistemic virtues).⁵¹

⁵¹ Kelly (2005). There are different, incompatible notions of peerhood in the disagreement literature; another notion of peerhood that centers around reliability is found in Elga (2007: 487). I mention Kelly's definition to give the reader a general understanding of what being an epistemic peer amounts to, but nothing in my argument turns on adopting a particular view of peerhood.

There are two primary positions in the disagreement debate. Conciliationists maintain that the mere fact that an epistemic peer disagrees with you is a reason to alter your doxastic attitudes in some way. For example, suppose you and your friend, who is equally good at math as you (i.e. your epistemic peer) are at a restaurant, trying to figure out how to split the bill. You both calculate separately, and you determine that the cost is \$22 a person, while they calculate that it is \$26 a person. Intuitively, you should not dogmatically believe you are right and they are wrong; you should withhold belief and/or lower your credence in your previously held opinion, as you have no reason to think that you are more reliable than your friend.⁵²

The other position in this debate is steadfastness, or the view that the mere fact a peer disagrees with you is *not* always a reason to alter your doxastic attitudes in some way. Steadfasters may think that, in some cases, peer disagreement should cause us to alter our attitudes, e.g. because disagreement functions as higher-order evidence against a previously held opinion.⁵³ However, steadfasters think it is at least sometimes, if not often, appropriate instead to remain true to your previous opinion, even in the face of peer disagreement. For example, we encounter peers daily who disagree with us on political and religious matters, but it doesn't seem irrational to nonetheless maintain our political and religious convictions, even with high confidence.

⁵² See Christensen (2007, 2009, 2016).

⁵³ Kelly (2005).

2.3.2 Implications of the belief/credence relationship

Suppose that a belief-first view is true, and beliefs are the fundamental attitude. Suppose also that conciliationism is true, and that we should change our doxastic attitudes in the face of peer disagreement. The combination of these two views actually leads to some puzzles. The coarse-grained nature of a belief-first view makes it difficult to see what conciliating would look like. Recall that there are only three belief-like attitudes one can take toward a proposition. If I believe p and you, my peer, believe not- p , then it seems like we should both withhold belief. But what if I believe p and you withhold? Or if I withhold and you believe not- p ? If conciliationism is a matter of altering one's attitudes, it is unclear what this change ought to look like – there is no intermediary attitude.

One potential way to solve this puzzle is to suggest that conciliating in cases like these should involve changing the content that is believed, rather than changing one's attitude toward a particular proposition. For example, if I believe p and you withhold, maybe I should neither believe p nor withhold, but instead form a new belief with the content "probably p ." This suggestion is both interesting and puzzling. It is interesting because conciliationism ends up amounting to "trading" one belief for another, rather than altering one's attitude toward a particular content. At the same time, it raises a number of questions, most notably, what attitude should one take toward the original proposition p ? It seems inappropriate for me to believe p or withhold, and I definitely shouldn't believe not- p . Is there an additional perspective, having-no-attitude-at-all toward p , where p is a proposition you have considered? Maybe, but talk of such an

attitude is rare, if not virtually absent, from the literature;⁵⁴ further, it is unclear that this is the appropriate attitude for me to take toward *p* in this situation. There is room for further work on how one would combine a belief-first view with conciliationism.

Suppose instead that credence-first is true. *Prima facie*, it might seem as though a credence-first view lends itself nicely to conciliationism, because whenever you encounter a peer who disagrees with you, you can simply average your credence with theirs and “split the difference” with them. However, on closer examination, a credence-first conciliationist view may not be so straightforward. Consider a case for Christensen.

“I am a doctor determining what dosage of a drug to give my patient. I’m initially inclined to be very confident in my conclusion, but knowing my own fallibility in calculation, I pull back a bit, say, to 0.97. I also decide to ask my equally qualified colleague for an independent opinion. I do so in the Conciliatory spirit of using her reasoning as a check on my own. Now suppose I find out that she has arrived – presumably in a way that also takes into account her fallibility – at 0.96 credence in the same dosage.”⁵⁵

In this case, you are technically encountering peer disagreement, as your colleague is less confident in the proposition than you. According to the split the difference view, you should be slightly less confident that you should give that dosage to your patient (i.e. alter your credence to 0.965). However, Christensen concludes that “it seems that the rational thing to do is for me to increase my confidence that this is the correct dosage, not decrease it as difference-splitting would require.”⁵⁶ Even though she

⁵⁴ One exception is Friedman (2013b: 170)

⁵⁵ Christensen (2009: 759).

⁵⁶ *Ibid.*

is less confident than you are, she is confident enough that it confirms, rather than calls into question, your conclusion about the dosage.

Of course, not all will share Christensen's intuitions about this case, but I do think there are more general lessons to be learned. First, as Christensen notes, "mechanical difference splitting with peers" in a credence framework might not straightforwardly apply in every case.⁵⁷ Second, the fine-grained nature of credences may, in some cases, make it seem like there is disagreement when the situation is better described as one of agreement. Consider another example: suppose I hold an unpopular view in philosophy with a credence of 0.95, and I am discouraged because everyone I encounter seems to reject my view. Then, I meet someone else with a 0.90 credence in that view. I will likely experience comfort and happiness to find someone who shares my inclinations, and I would probably even describe them as someone who agrees with me. It seems unlikely that I would spend a lot of time focusing on the fact that I am slightly more confident than they are. Thus, when the attitudes in question are extremely fine-grained, agreement and disagreement start to blur together, and the proper way to conciliate with epistemic peers may not be straightforward.

Finally, suppose that dualism is true. Then, it seems as though conciliationism and steadfastness can be combined in interesting ways. For example, one might be a steadfast about belief but a conciliationist about credence.⁵⁸ Further, if one thinks there is a normative relationship between the attitudes, it might be that conciliationism is

⁵⁷ Ibid.

⁵⁸ Thanks to Lara Buchak.

fundamentally true of one attitude, but derivatively true of another; e.g. the only reason one ought to alter one's beliefs in response to disagreement is in virtue of the fact that one ought to alter one's credences, as it is irrational to alter one's credences drastically without a change in one's beliefs.⁵⁹

2.4 Pragmatic encroachment

2.4.1 Pragmatism and purism

The pragmatic encroachment debate is about whether practical interests can affect the epistemic rationality of particular kinds of mental states.⁶⁰ Early in the debate, most people were focusing on whether practical factors can affect *knowledge*,⁶¹ but lately, many have been focusing on whether the practical can affect *epistemic justification*.⁶² (Of course, the practical might affect knowledge by affecting epistemic justification, so these foci are not mutually exclusive and are even potentially complementary). Since this chapter concerns beliefs and credences, I will focus on the ways that the practical might affect epistemic justification or epistemic rationality, as justification/rationality apply more straightforwardly to beliefs and credences than to knowledge.⁶³

⁵⁹ Thanks to Zoe Johnson King.

⁶⁰ For a nice survey of the pragmatic encroachment debate, see Kim (2017).

⁶¹ See Hawthorne (2003), Stanley (2005).

⁶² See Fantl and McGrath (2002, 2010), Schroeder (2012), Ross and Schroeder (2014).

⁶³ One reason for this is because it is controversial whether credences can be knowledge or knowledge-like. For an argument that credences can amount to knowledge, see Moss (2013, 2018).

Pragmatists argue that epistemic justification depends, at least in part, on the practical. Purists deny this and maintain that epistemic justification is not affected by our practical interests. One traditional example to motivate pragmatism is as follows. Suppose that Hannah is driving home on a Friday afternoon, and plans to stop by the bank to deposit a check. There is no urgency to deposit this check, and Hannah drives by the bank and notices the lines are extremely long. She remembers that she was at the bank a few weeks ago on a Saturday, and thus justifiedly believes/has a high credence that the bank is open tomorrow.

In the second version of the case, Hannah is also driving home on a Friday afternoon and plans to stop by to deposit a check at the bank. She also sees very long lines when she drives by the bank. However, she has very little money in her account and her mortgage payment is due Monday. If she doesn't get the check deposited by that weekend, she will default on her mortgage and go bankrupt. She has the memory of being at the bank a few weeks ago on a Saturday, but she also knows her memory is fallible and banks do change their hours. It seems like Hannah does not have justification to believe/have a high credence that the bank is open, even though the epistemic aspects of the case remain the same. Thus, at least in some cases, it seems like stakes alone can affect the rationality of our doxastic attitudes.⁶⁴

Purists resist this verdict and offer an alternative explanation for our differing intuitions. For example, our intuitions might not clearly distinguish epistemic justification to *believe/have a high credence* that the bank is open tomorrow, and

⁶⁴ These cases are adopted from Stanley (2005: 3-4).

practical justification to *act as if* the bank is open tomorrow. There is also a correlation between stakes and how much evidence it seems one ought to gather before taking action, so our intuitions might be the result of a confusion between epistemic justification and duties to gather evidence before acting.⁶⁵

2.4.2 Implications of the belief/credence relationship

There are two ways one might be a pragmatist:

Credal pragmatism: The justification/rationality of a credence depends, at least in part, on practical interests.⁶⁶

Belief pragmatism: The justification/rationality of a belief depends, at least in part, on practical interests.

There are also two ways to be a purist: credal purism (the denial of credal pragmatism) and belief purism (the denial of belief pragmatism). Our judgments about these theses will depend on the relationship between belief and credence.

Suppose the credence-first view is true, and beliefs are a type of credence. It might seem that purism about credence would entail purism about belief – if rational credence isn't affected by the practical, and belief is just a matter of having a certain credence, then it would seem that rational beliefs aren't affected by the practical, either. However, recall that on a credence-first view, belief is a function of both one's credence and also a threshold required to count as believing. Thus, certain credence-first views can actually maintain both credal purism and belief pragmatism, if practical factors can

⁶⁵ See Nagel (2008, 2010a).

⁶⁶ Some authors who mention or discuss this view include Stanley (2005: 88-89), Armendt (2008), Kim (2017: 7), Hájek and Lin (2017: 226), Moss (forthcoming), and Sturgeon (forthcoming).

affect the threshold for belief.⁶⁷ For example, in a low stakes scenario, one might only need a 0.7 credence for rational belief, but if the stakes go up, one might need a 0.9 credence for rational belief. If, on the other hand, the threshold for belief does not vary with stakes, this would make space for a credence-first view that is purist about both belief and credence.

A belief-first view does not seem to be as flexible. Given belief-first, pragmatism about belief seems to lend itself to pragmatism about credence (and vice versa), and purism about belief seems to lend itself to purism about credence (and vice versa). Recall that according to belief-first, credences are just a matter of having beliefs with a particular content. It would be very odd if pragmatism were true about beliefs with certain contents but not other contents; it seems like pragmatism and purism ought to apply equally to both beliefs and credences, given belief-first.

Finally, suppose dualism is true. Dualism seems to allow for multiple combinations of belief pragmatism, credal pragmatism, belief purism, and credal purism. What combinations of views one can maintain will, again, depend on whether there are normative connections between belief and credence.

It is also worth noting that dualism can potentially offer a unique purist explanation for pragmatist intuitions. Recall that on the dualist view, we have both beliefs and credences, and many dualists maintain that beliefs and credences are two epistemic tools used for different purposes.⁶⁸ There is additional psychological evidence

⁶⁷ Defenders of this view include Weatherson (2005), Ganson (2008), Fantl and McGrath (2010), Pace (2011). For objections to this view, see Ross and Schroeder (2014).

⁶⁸ See Staffel (2017), Weisberg (forthcoming).

that beliefs are useful in low-stakes scenarios, when we can assume certain propositions in our reasoning but still reason accurately enough for our aims. For instance: it may be completely appropriate for me to believe my office mate, Rachel, is in the philosophy building because I saw her coat and backpack in the office, and rely on this belief if a friend casually asks me if Rachel is in today. On the other hand, credences are useful in high stakes cases, where precision and accuracy in reasoning are especially important. Returning to our example, if police are investigating a murder in the philosophy department and require a detailed list of everyone in the building that day, I ought to consider the possibility that Rachel was not actually in that day, since I never actually saw her, only her coat and backpack.⁶⁹ Instead of believing and taking for granted that Rachel was in today, I should reason using my credence that she was in the building; this keeps the possibilities open and allows for a more accurate representation of my evidential situation.⁷⁰

Thus, it is open to the dualist to say that when the stakes rise, you shouldn't give up the relevant belief; you just shouldn't rely on it in reasoning. Instead, you should rely on your credence. Higher stakes call for more detailed, thoughtful reasoning, i.e. credence reasoning. But that you shouldn't use belief-reasoning doesn't entail you ought to give up the belief; rational *belief* doesn't depend on practical interests, but whether you should rely on a belief does.⁷¹

⁶⁹ This case is adapted from DeRose (2009).

⁷⁰ See Webster & Kruglanski (1994, 1996), Nagel (2008, 2010a, 2010b), Kahneman (2013), and Staffel (2017).

⁷¹ This argument is further developed in Jackson (forthcoming).

2.5 Doxastic voluntarism

2.5.1 Voluntarism and involuntarism

The doxastic voluntarism debate primarily concerns the question of whether we can ever have direct control over our doxastic attitudes. Direct control is the same kind of control we have over raising our hand; what precisely this kind of control amounts to is controversial.⁷² However, we can, via an agential act, raise our hand straightforwardly and directly; we can also choose not to raise our hand. Voluntarists maintain that, at least sometimes, we can control our doxastic attitudes in this way. Involuntarists deny that our doxastic attitudes can ever be controlled directly.⁷³

2.5.2 Implications of the belief/credence relationship

We can distinguish two ways voluntarism might be true:

Belief voluntarism: we have direct/voluntary control over some of our beliefs.

Credal voluntarism: we have direct/voluntary control over some of our credences.

How do various views on the belief-credence relationship affect what one might conclude about these types of voluntarism?

Suppose that credence-first is true. Then, the fundamental question in the doxastic voluntarism debate seems to be over whether credal voluntarism is true. However, the

⁷² As Hieronymi (2006: 48) points out, direct control and basic actions come apart.

⁷³ Arguments for involuntarism include Williams (1970), Winters (1979), Alston (1988), Bennett (1990), Scott-Kakures (1994), Hieronymi (2006, 2009), Setiya (2008). Arguments for voluntarism include Radcliffe (1997), Ginet (2001), Shah (2002). See also Audi (2001), Feldman (2001), Ryan (2003), and Steup (2008).

doxastic voluntarism literature has primarily concerned the attitude of belief, rather than the attitude of credence.⁷⁴ While many philosophers seem unsympathetic to the idea that we could directly control our credences, few have discussed this in print or provided arguments for this conclusion. One exception is that some have suggested that we can't control our credences because credence simply tracks the amount of evidential support we have for a particular proposition.⁷⁵ However, it is still a relatively unexplored question whether credal voluntarism is plausible.

But supposing credal voluntarism *is* implausible, what would a credence-first view say about belief voluntarism? While this may seem to imply that belief voluntarism is also implausible, there is at least one potential way to preserve belief voluntarism. If, somehow, we could control the threshold for belief, strict involuntarism could be true of credences, but we could control whether we believe by moving the threshold around. In some ways, this suggestion is similar to the one in Section 2.4.2 on which pragmatic factors can set the threshold for belief. The big question for this view seems to be whether it is plausible that we could directly control this threshold.

On a belief-first view, credal voluntarism and belief voluntarism seem to stand or fall together. If we can directly control some of our beliefs, it seems ad hoc to suggest we cannot directly control our beliefs with probabilistic content (at least it is unclear what would motivate this). Further, if we do not have direct control over our beliefs, then it seems like we would not have direct control over our probabilistic beliefs, either.

⁷⁴ One exception to this is Pittard (MS).

⁷⁵ Thanks to Lara Buchak.

Dualism, by contrast, allows for more combinations of views. On a dualist picture, it seems like one could maintain belief voluntarism but deny credal voluntarism, or maintain credal voluntarism but deny belief voluntarism. And unlike the credence-first view, this wouldn't require the ability to directly control the threshold for belief. Thus, on a dualist picture, one could maintain strict credal involuntarism but nonetheless hold that sometimes, we can directly control whether or not we believe the proposition in question.

2.6 Doxastic attitudes and rational action

2.6.1 Two models of rational action

What makes an action rational? At least two different models have been developed in order to answer this question. The first is decision theory. On an orthodox decision theory model, an action is rational iff it maximizes expected value.⁷⁶ The second is a belief-desire model; i.e. an action is rational iff it is appropriate given one's beliefs and desires.⁷⁷ The main use for these models (at least in a philosophical context) is to give a *normative* theory of action – a theory that explains how one ought to act.⁷⁸ For example, suppose it is rational for me to go to the library. On a decision theory picture, this is because my utility function is such that I value getting work done, and, given the ways the world might be, going to the library results in the best outcome, given my utility

⁷⁶ See Briggs (2014).

⁷⁷ See Davidson (1963), Bratman (1987).

⁷⁸ Some (especially economists) additionally use them as descriptive theories, to *explain* action (rational or irrational), but using the models for this purpose is less common among philosophers.

function. On a belief-desire picture, this action will be rational because I desire to get work done, I believe being at the library provides a quiet work environment, I believe in the past I've been productive when I've gone to the library, etc.

Note that both of these models involve an epistemic component and an axiological component. Decision theory takes probabilities (or credences) and utilities as inputs. The belief-desire model takes beliefs and desires as inputs. Both of these (and most other models of rational action as well) require some kind of input that represents the world or says something about what the world is like.

2.6.2 Implications of the belief/credence relationship

Given that rational action requires us to represent the world in a particular way, questions arise about the way beliefs and/or credences play a role in how we ought to act. How will one's commitments on the relationship between belief and credence affect one's views on the rationality of action? Do some views on belief and credence push us toward one model or another?

Suppose a credence-first view is true. Credence-first seems, at least *prima facie*, conducive to a decision theory model of rational action, as decision theory takes credences as inputs. One worry for this combination of views, however, is that there is psychological evidence we often fail (in serious and predictable ways) to maximize expected value.⁷⁹ We fail at least partially because efficiency is often important in our decision-making processes, and when the stakes are quite low and/or we have to make a

⁷⁹ See Kahneman, Slovic, and Tversky (1982).

decision quickly, it doesn't make sense to do an expected value calculation; this would require too much mental work.⁸⁰ A decision-theorist might respond that the fact that we fail to maximize expected value doesn't count against decision theory as a *normative* theory. Decision theory is a theory about ideal prudential rationality, not one that is meant to describe how we actually reason. This response makes sense, but there is still a worry in the neighborhood: is it plausible for agents like us to be guided by decision theory in *all* of our decision making? One might worry this an unrealistic prescription, given our cognitive limitations. In other words, one might worry that if decision theory is supposed to be an *action-guiding* norm for prudential rationality, using it for all decision making is too complex or requires too much mental effort.⁸¹

If one takes this sort of worry seriously, it might motivate the idea that a belief-desire model of decision making is better suited to guide action for cognitively limited agents like us. A belief-desire model seems to fit nicely with the belief-first view, as it takes beliefs, rather than credences, as inputs. While this might guide action more realistically, given our cognitive limitations, the belief-desire model faces other worries. For example, there are cases where it is rational to act as if some proposition is true when one doesn't believe it or believes it is false. Suppose you are trying to decide whether allow your children to skate on a frozen lake. You believe the ice is solid, but you also realize there's a chance it is not. It might be rational to act as if the ice will crack and tell your children they cannot skate, even despite your belief the ice is solid. In a second

⁸⁰ See Weisberg (forthcoming).

⁸¹ Although a potential rejoinder here is that one's action is rational iff one can be represented as maximizing expected value. See Lewis (1974: 337).

case, suppose your brother has been missing for multiple months. There is a lot of evidence he is dead; so much evidence, in fact, you believe he is dead. However, you also know there's some chance you're wrong – there's a chance he's still alive, and for this reason, you don't give up hope, and you continue to search for him and try to get in contact with him. In both of these cases, you believe *p*, but acting as if not-*p* is rational for you, because (i) there is a non-zero chance that not-*p* and (ii) the stakes are sufficiently high. There are many other cases with a similar structure; most cases of rational acceptance without belief will fit into this category.⁸² Probabilistic models of rational action, e.g. decision theory, seem more conducive to capturing the rationality of this kind of action.

A proponent of the belief-desire model/a belief-firster might respond by saying that cases like these are ones in which our probabilistic beliefs come into play. While you believe *p* in these cases, you also believe *there is a non-zero chance that not-p*, and you are acting on the basis of this second belief.⁸³ This helps with the problem, but there is also the question of *why* you ought to act on the basis of your probabilistic belief *there is a non-zero chance that not-p* instead of your belief that *p*. Decision theory gives a nice answer to this question; it is clearly captured in the formal model. However, at least *prima facie*, on the belief-desire model, it is not clear why one ought to act on the probabilistic belief rather than the non-probabilistic one.

⁸² See Cohen (2000).

⁸³ For some work on how beliefs might guide action without credences, see Hawthorne and Stanley (2008), Lin (2013), Easwaran (2015: 19).

Finally, suppose dualism is true and we have both beliefs and credences and neither is fundamental. Some have worried that dualism is subject to the “Bayesian Challenge.”⁸⁴ The Bayesian Challenge is the worry that we do not need both beliefs and credences to explain the rationality of action (among other things). Credences alone seem to do quite well. If beliefs make the same prescriptions as credences, they seem superfluous; if they make different ones, we should trust those made by our credences (because, for example, it can be rational to act as if not- p even though we believe p , as discussed above). Thus, beliefs are either unnecessary for decision making or guide us in the wrong direction.⁸⁵

Several attempts to meet the Bayesian Challenge have been offered. Ross and Schroeder, for example, suggest that beliefs are the things that determine which possibilities one is considering in one’s decision making. When S believes p , p is true in every state of the world in S ’s decision matrix. For agents like us, it is impossible to consider every possibility, so beliefs make reasoning manageable.⁸⁶ Weisberg and Staffel suggest that we never reason with our belief in p and our credence in p at the same time, so when beliefs (rationally) play a role in our reasoning, it is because (for various reasons) we ought to rely on our belief in p rather than our credence in p .⁸⁷ Along similar lines, Moon has suggested that it is possible for agents to have a belief that p without a

⁸⁴ See Kaplan (1996), Stalnaker (1984), Sturgeon (2008), Frankish (2009).

⁸⁵ See Weisberg (forthcoming).

⁸⁶ Ross and Schroeder (2014), Tang (2015), Staffel (2018).

⁸⁷ Staffel (2017), Weisberg (forthcoming).

credence that p .⁸⁸ If Moon is right, it seems as though agents who believe p without a credence must utilize their belief that p in order to reason about p and act on p . Whether these various attempts to meet the Bayesian Challenge are successful is a judgment I will leave to the reader, but at minimum, it is not obvious that the Bayesian Challenge is devastating for dualism.

2.7 Conclusion

I conclude with some areas of further research. First, I have only considered the relationship between two kinds of attitudes: categorical beliefs and precise credences. However, epistemologists have recently suggested there might be other kinds of attitudes as well: imprecise/fuzzy/interval credences,⁸⁹ attitudes of comparative confidence,⁹⁰ etc. Including these attitudes in the debates could open up even more possibilities. For example, if uniqueness and credence-first are in tension, one might include fuzzy or interval credences in the domain of possible attitudes, and maintain that the evidence determines a unique fuzzy credence (even if it doesn't determine a unique precise credence).⁹¹ I have avoided talking about this kind of move for the sake of space, but this is one potential way to expand my project. Also, if something about a particular debate in epistemology pushes us to adopt a more coarse-grained attitude, there is a question of

⁸⁸ Moon (2019).

⁸⁹ See Rothschild (2012), Schoenfield (2012, 2015), Konek (forthcoming).

⁹⁰ See Carter, Jaris, and Rubin (2016).

⁹¹ See Kelly (2013).

when we should move to categorical belief, and when it might be better to instead move to an interval/fuzzy credence. More research could be done on this question.

A second view I have not considered is eliminativism. On both belief-first and credence-first, one attitude is *reduced* to the other, but on both views, the reduced attitude still exists. However, one might maintain, for example, that our concept of belief is a leftover from folk psychology, and there is no reason to hold that beliefs are psychologically real. Belief is not high credence or certainty; beliefs just do not exist.⁹² One could maintain a similar view of credence (although I am not aware of anyone who has argued for eliminativism about credence).⁹³ Eliminativism about belief or credence might have different implications for these debates than reductionism; this is another area where further research is needed.

I conclude that the relationship between belief and credence is a significant one for epistemology, and one to which epistemologists should pay closer attention. It is also worth noting that answering questions about the relationship between belief and credence involves much philosophy of mind; in fact, it may be primarily a philosophy of mind question. Further, exploring the belief-credence relationship might also require diving into psychology and looking at what view of belief and credence is best supported by the empirical evidence.⁹⁴ Thus, insofar as the relationship between belief and credence is a

⁹² See Jeffrey (1970), Churchland (1981), Maher (1993: 152-155), Pettigrew (2016).

⁹³ Views that could be construed as credence-eliminativism include Holton (2008), (2014), and Horgan (2017). Whether these count as credence-eliminativism depend on how broad one's notion of credence is. For example, Holton denies that we have precise, point-valued credences, but maintains we have something called "partial beliefs" that stands in contrast to full beliefs.

⁹⁴ Weisberg (forthcoming) provides a notable example of how one might apply psychology to the belief-credence question.

philosophy of mind/empirical question, epistemologists ought to be branching out into other fields.⁹⁵

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CHAPTER 3:

A DEFENSE OF BELIEF-CREDENCE DUALISM

Abstract: Belief-credence dualism is the view that we have both beliefs and credences and both attitudes are equally fundamental. In this chapter, I defend belief-credence dualism. First, I explain five views about the metaphysics of beliefs and credences: belief-eliminativism, credence-first, dualism, belief-first, and credence-eliminativism. Settling the eliminativist views aside, I motivate dualism by arguing that the remaining views, belief-first (that belief is more fundamental) and credence-first (that credence is more fundamental) cannot account for various roles of each attitude.

Keywords: Belief, Credence, Belief-First, Credence-First, Belief-Credence Dualism

3.1 Introduction

Belief is a familiar attitude. We believe something, roughly, when we regard it to be true or take it to be the case.⁹⁶ I believe $1+1=2$ and that my mom is in Georgia right now. It is generally assumed that there are primarily three belief-like attitudes one can take toward a proposition p one has considered; one can believe p , one can believe not- p , and one can withhold belief, neither believing p nor not- p . However, we are more confident in some of our beliefs than others; I am more confident that $1+1=2$ than that my

⁹⁶ See Schwitzgebel (2016).

mom is in Georgia. To capture this, some epistemologists appeal to another mental state, similar to the everyday attitude of confidence. They call this attitude *credence*.

Credences are more fine-grained than beliefs and are often given a value on the $[0,1]$ interval. For example, I have a ~ 0.9999 credence $1+1=2$, but only a ~ 0.9 credence my mom is in Georgia right now. I have a 0.5 credence (and withhold belief) that a fair 2-sided coin will land heads. Unlike belief, there are (at least in principle) an infinite number of credences one can take toward a proposition.

Lately, there has been some controversy about these two attitudes. One involves their ontological status: that is, whether each attitude exists. Another involves their relationship: that is, if they both exist, whether one is more fundamental. But why care about these questions? There are several reasons. One, belief is the fundamental doxastic building block of traditional epistemology, while credence is the fundamental doxastic building block of formal epistemology. Answering ontological and relational questions about belief and credence gives us at least a partial answer to broader questions about formal and traditional epistemology. For example, if beliefs (credences) do not exist, then one might question the value of the traditional (formal) epistemology research program. On the other hand, if we have both attitudes, learning about their relationship can shed light on important questions such as: Is one subfield more fundamental? Or are they stand-alone, largely independent research programs? Second, many debates in epistemology, e.g. permissivism, disagreement, pragmatic encroachment, and doxastic voluntarism, will look very different if the fundamental attitude of debate is belief or

credence, and if a reductionist project is successful.⁹⁷ Thus, figuring out ontological and relational questions about belief and credence has implications for many broader debates.

There are five main views about the metaphysics of belief and credence. First, there are views that deny one of the attitudes exists. For example, belief-eliminativism the view that, despite appearances, we actually do not have beliefs. Several in the literature have expressed sympathy for a view like this.⁹⁸ Another (relatively unpopular) view is credence-eliminativism. While, at points, Holton expresses sympathy for this view,⁹⁹ his view is that we don't have precisely point-valued credences, but nonetheless we have another attitude that he calls "partial beliefs" that comes in degrees and stands in contrast to full beliefs. Depending on how broad one's notion of credence is, then, virtually no one defends credence-eliminativism.

There are three further views, that all maintain we have both beliefs and credences, but differ on which attitude is more fundamental. The first is what one might call a credence-first view. On this view, credence is the fundamental attitude, and belief is a species of credence. While the most general commitment that unites credence-firsters is that belief reduces to some formal feature of credence,¹⁰⁰ the most common credence

⁹⁷ See Jackson (Forthcoming_a).

⁹⁸ See Jeffrey (1970), Churchland (1981), Maher (1993: 152-155), Pettigrew (2016).

⁹⁹ Holton (2014: 3) says, "I argue that we cannot form credences at all. The Bayesian approach is not an idealization of something we actually do. Instead, it is quite foreign to us. Just as our core native deliberative state is that of the simple intention, so our core native epistemic state is that of simple, all-out belief." See also Holton (2008) and Horgan (2017).

¹⁰⁰ For example, the threshold for belief may be context or stakes dependent (see Weatherston (2005), Ganson (2008), Pace (2011)). Other credence-first views reduce belief to some other formal feature of credence, such as Leitgeb's stability theory (see Leitgeb 2013, 2014). Another possible credence-first view says that belief that *p* doesn't reduce to merely one's credence in *p*, but rather reduces to facts about one's credal state as a whole. Thanks to Lara Buchak. Finally, some argue that belief is

first view is that belief is credence above some threshold, usually between 0.5 and 1.¹⁰¹ Either way, on this view, believing *just is* having a particular kind of credence.

A second non-eliminativist is the belief-first view.¹⁰² On this view, belief is the fundamental attitude and credence is a species of belief. The fine-grained/numerical features of credence are built into the content of what is believed. On one version of this view, credences are beliefs with probabilistic content. A 0.9 credence *it is raining* is actually just the belief *the probability it is raining is 0.9*; a 0.5 credence *the coin will land heads* is a belief with the content *the probability the coin will land heads is 0.5*. It is worth noting that the content need not be about *probabilities* per se; it could instead involve epistemic modals or some other kind of numerical structure. What is central to the belief-first view, however, is that the numerical structure is part of the content rather than part of the attitude, and the relevant attitude is simply belief.¹⁰³

A final view is what some have called pluralism or dualism; on this view, belief and credence are equally fundamental. According to dualism, we have both kinds of attitudes and neither is reducible to the other. This view is more complex, but proponents

maximal credence, or certainty that some proposition is true. However, I will set this view aside for the purposes of this chapter. See footnote 10.

¹⁰¹ For defenses and discussions of credence-first, see Foley (1992, 1993, 2009), Hunter (1996), Bouvens and Hawthorne (1999), Christensen (2004), Weatherson (2005), Douven and Williamson (2006), Ganson (2008), Sturgeon (2008), Frankish (2009), Chandler (2010), Smith (2010), Locke (2013), Dallmann (2014), Pettigrew (2015_a, 2015_b), Leitgeb (2013, 2014), Lee (2017), Dorst (2019).

¹⁰² For defenses and discussions of belief-first, see Harman (1986, 2008), Lance (1995), Holton (2008, 2014) Plantinga (1993: chapter 1), Easwaran (2015), Moon (2018, 2019), Jackson and Moon (MS).

¹⁰³ Although this may not be sufficient for a belief-first view. For example, Moss (2018) argues for a simple-attitude, complex-content account of both beliefs and credences, but her view is not a belief-first view.

of dualism maintain it nonetheless better explains our epistemological concepts and mental lives.¹⁰⁴

The following chart outlines the above five views of the metaphysics of belief and credence.

TABLE 3.1:
THE METAPHYSICS OF BELIEF AND CREDENCE

	Belief- eliminativism	Credence- first	Dualism	Belief- first	Credence- eliminativism
Belief exists?	No	Yes	Yes	Yes	Yes
Belief reduces to credence?	---	Yes	No	No	---
Credence reduces to belief?	---	No	No	Yes	---
Credence exists?	Yes	Yes	Yes	Yes	No

In this chapter, I build a case for dualism by pointing out inadequacies in the other views. While I will primarily set eliminativist views aside and focus on arguing against belief-first and credence-first views, I note the following about eliminativism. Belief is a common, everyday notion, and thus belief-eliminativist views require an extensive error

¹⁰⁴ For defenses and discussions of dualism, see Pollock (1983, 1994), Adler (2002: chapter 9 section 1), Frankish (2004), Hawthorne (2009), Sosa (2011: chapter 4), Weisberg (2013, forthcoming), Friedman (2013), Ross and Schroeder (2014), Buchak (2015), Littlejohn (2015), Pettigrew (2015_b), Carter, Jaris, and Rubin (2016), Staffel (2017, forthcoming_a, forthcoming_b).

theory about commonsense psychology and much of everyday discourse.¹⁰⁵ While ‘credence’ is not a word commonly used by folk, ‘confidence’ is; it is natural and familiar to think that we have confidence levels in various propositions. One way to think about credence is simply as precisified confidence. Further, even if confidence levels aren’t always pointed valued, it seems as though they are at least sometimes are, e.g. when considering how confident I am that a coin will land heads or when proportioning my confidence levels to a particular statistic. Thus, it is plausible that credence corresponds to our everyday notion of confidence, and this gives us at least a *prima facie* reason to reject credence-eliminativism (assuming we accept a sufficiently broad understanding of what it is to have a credence). Commonsense psychology supports that we have two attitudes, one more fine-grained than the other: belief and confidence. Thus, while I don’t take myself to have given a knock-down argument against them, I set aside eliminativist views.

When comparing belief-first and credence-first to dualism, one might think that, at first blush, considerations of parsimony provide good reason to favor one of the reductionist views. If we have a reason to prioritize simplicity in theory choice or to think that simpler theories are more likely to be true, then, all else equal, we should favor reductionist views over non-reductionist ones.

I have two thoughts on this line of reasoning. First, it is unclear that principles of parsimony apply to debates about the content of the mind in the same way they apply to debates about e.g. the ontological status of abstract objects. Do we have a good reason to

¹⁰⁵ See Moon (2017).

assume the mind is simple, rather than complex? It is unclear that we do, or what would motivate such a presupposition.

Further, even if we do have reason to prefer parsimonious theories when it comes to the mind, at the same time, we should not prioritize reductionism in our theories to the point of inadequacy.¹⁰⁶ I will argue that belief-first and credence-first give us an inadequate picture of the mind. I do so by painting a picture on which belief and credence are two cognitive tools, used for different theoretical and practical purposes. Of course, it does not immediately follow from this that the belief-first and credence-first views are inadequate. I further argue that the roles of belief are ones that cannot be played by high credence, and the roles of credence are ones that cannot be played by probabilistic (or modal) beliefs.

The chapter is structured as follows. I argue against credence-first views in **Section 3.2**. I do so by arguing that there are three roles beliefs play: the role of allowing one to take a stand/have a view of the world, the role of being used in reactive attitudes such as praise and blame, and the role of simplifying reasoning. I argue that belief qua mere high credence cannot capture these roles. In **Section 3.3**, I use a similar strategy to argue against belief-first. I argue that credences explain the actions of children and animals, and cannot be formed by simply altering the content of what is believed. I give a third argument from graspability – it seems like there are very complex propositions we can form credences in, but cannot form modal beliefs in. Finally, I point out that it is unclear that a belief-first view is all-things-considered more parsimonious than a dualist

¹⁰⁶ Ross and Schroeder (2014: 285).

view. For all these reasons, I conclude in **Section 3.4** that we should favor dualism over a belief-first view and a credence-first view.

3.2 Belief is not high credence

In this section, I argue that belief is not reducible to a formal feature of credence. I will focus on the popular credence-first view that belief is a high credence above some threshold, but my arguments extend to most other credence-first views as well.¹⁰⁷ I do so by focusing on three roles that beliefs play – allowing us to take a stand and have a view of the world, being used in praise and blame, and the role of simplifying reasoning. I argue that these roles cannot be played by credences.

This section also functions as a response to the Bayesian Challenge. The Bayesian Challenge, originally put forth by Kaplan (1996), is a challenge for those who think human agents have beliefs and they are not reducible to credences. The reasoning is as following: if beliefs are an attitude independent of credences, either they make the same prescriptions as credences for action/inference/assertion, or they do not. If they make the same prescriptions, they are superfluous. If they make different ones, we should trust those made by our credences, because credences more accurately represent

¹⁰⁷ One credence-first view that may be able to explain some of these roles is the view that belief is certainty/credence 1. (See Roorda (1995), Levi (1991), Wedgwood (2012), Clarke (2013), Greco (2015), Dodd (2016)). However, this view of belief has other problems. While it is true that we often treat our beliefs and the things we have credence 1 in similarly in reasoning, belief and credence 1 have different modal profiles. If one has credence 1 in p , one ought to (and often will) reason holding p fixed, no matter the stakes. If one believes p but has a credence of less than 1 in p , one need not reason holding p fixed no matter the stakes. Thus, those who maintain belief is credence 1 must argue that beliefs are radically stakes-sensitive, and our beliefs can and should change by simply being offered particular bets, or they must argue that beliefs are extremely rare and many of the things we think we believe we do not actually believe. Both of these consequences seem particularly bad, so I will set the belief-as-credence-1 view aside.

our evidential situation, and give the correct verdict in e.g. lottery and preface situations, whereas beliefs give puzzling or even absurd ones.¹⁰⁸ In this section, I will argue that beliefs play important roles in our mental lives that cannot be played by credences, and in this, they are (at least sometimes) neither superfluous nor misleading.

3.2.1 Beliefs let one take a stand and have a view of the world

The first role that is played by belief that cannot be played by high credence is twofold: a belief that *p* enables the believer to take a stand on whether *p*, and have a view of the world, namely, that the world is such that *p*.¹⁰⁹

It is natural to think that our beliefs shape our view of the world. Belief that *p*, understood as taking *p* to be the case, is essentially taking the world's to be such that *p*. A high credence in *p*, on the other hand, doesn't give one a view of the world, at least when it comes to *p*. It commits one to the idea that the world is such that *p is likely true*, but one with a mere high credence in *p* doesn't have a view of the world, at least with respect to the question of whether *p* is true. Beliefs provide a type of categorical commitment about the world that credences do not.

Here is the point put another way. At least in some minimal sense, a belief that *p* represents the world to be such that *p*. (This is an intuitive and weak claim, and need not

¹⁰⁸ For discussions of the Bayesian Challenge see Kaplan (1996), Stalnaker (1984), Sturgeon (2008), Frankish (2009), and Weisberg (forthcoming).

¹⁰⁹ A third, related role for belief some (e.g. Fantl and McGrath (2009: 141), Ross and Schroeder (2014: 275)) have suggested is that belief that *p* enables one to be correct or incorrect with respect to whether *p*, but a high credence in *p* does not. However, Lee (2017) argues that, contrary to appearance, this role can actually be played by high credence. A fourth role for belief is that one might think that beliefs are a constituent of knowledge, and credences cannot be (see Staffel (forthcoming_b: 13). However, this depends on a controversial assumption that credences cannot constitute knowledge, which Moss (2013, 2018) extensively argues against.

commit one to something as strong as representationalism about belief). However, a high credence in *p* does not represent the world in the same way. Again, one with a high credence in *p* is not representing the world to be such that *p*, but is rather representing something else – e.g. that *p* is likely or probable.¹¹⁰ A high credence in *p* might represent *p* as likely, but it doesn't represent *p* to be true flat-out.

A related role for belief that *p* is that it enables one to take a stand on whether *p*. Foley describes belief as an “epistemic commitment” and notes that whether or not you believe something depends on “whether you would commit yourself to saying yes to it were you forced to take a stand on it.”¹¹¹ He also notes, “Most of us prefer being the kind of intellectual being who takes stands rather than the kind who sits idly by on the sidelines.”¹¹² As Foley suggests, belief enables one to take a stand on whether *p* – by believing, one puts oneself on team *p*.

A high credence in *p*, in contrast, does not put oneself on “team *p*.” One might lean in that direction or take steps toward that camp, but one has not firmly put oneself in the *p* camp or the not-*p* camp. However, for many propositions, there is value, both epistemic and otherwise, to taking a stand on their truth. Part of the role of belief is that they enable us to do that, and this role cannot be played by a mere high credence.

¹¹⁰ The details about what exactly is represented by a high credence are actually quite difficult to flesh out. This is related to the descriptivism/expressivist debate about epistemic modals – see footnote 32.

¹¹¹ Foley (1993: 199).

¹¹² Foley (1993: 201).

3.2.2 Belief and reactive attitudes

Lara Buchak (2014) argues that beliefs play an important role in justifying certain kinds of reactive attitudes, and this role cannot be played by credences. She considers two kinds of norms for reactive attitudes: the first says blame someone only if you believe (or know) they transgressed, in proportion to the severity of the transgression (call norms of this form belief-blame norms). The second says how much you should blame someone is a function of your credence they transgressed and the severity of the transgression (call norms of this form credence-blame norms).¹¹³

Buchak argues that we should not (and do not) use credence-blame norms in blaming people, and more generally, that A's credence that B transgressed should not play a role in whether and to what extent A blames B.¹¹⁴ Instead, when blaming someone, we ought to blame them only if we believe they transgressed. Thus, belief plays an essential role in our blame practices that cannot be played by credences.

Buchak motivates this by considering a series of cases that show that the degree of blame I assign to a particular agent is based on the severity of the act, and not on my credence that the agent transgressed. She notes,

“If I have a 0.99 credence (and full belief) that you shoplifted a candy bar, I feel a small amount of indignation toward you, but if I have a 0.2 credence (and lack a full belief) that you stole from a hungry orphan, I withhold indignation altogether, even if the mathematical expectation of how much blame you deserve is higher in the latter case.”¹¹⁵

¹¹³ Buchak (2014: 299-300).

¹¹⁴ Buchak considers other blame norms that involve credences and argues against them.

¹¹⁵ Buchak (2014: 299).

If a credence-blame norm is correct and the extent to which we ought to blame people is a function of our credence in their guilt and the severity of their transgression, then we ought to blame you to roughly the same extent in both of the above cases. However, not only do we normally not blame people like this – it seems like blaming in this way would be inappropriate.

A second case that motivates that we should opt for a belief-blame norm rather than a credence-blame norm involves statistical evidence. Plausibly, statistical evidence someone is guilty of a crime ought to raise our credence that they did it, but we should not believe that someone did it or blame them on the basis of mere statistical evidence. If the belief-blame norm is correct, this can explain why we don't blame or convict people on the basis of statistical evidence: this statistical evidence is credence-generating, but not belief-generating, and my credence someone transgressed ought not play a role in whether I blame them. Here is an example from Buchak:

“Merely statistical evidence seems to play a similar role as in the legal cases: even if I know that 80% of teens shoplift, I ought not on this basis to believe of a particular teen that she has shoplifted and I ought not to condemn her for shoplifting. Again, I am called on to make a pronouncement about whether you did some act, and treat you accordingly.”¹¹⁶

Thus, it seems like our moral and legal practices support a belief-blame norm rather than a credence-blame norm. Further, note that Buchak's arguments seem to support both normative and descriptive claims about our blaming practices. We not only should, but often in fact do, blame people based on our beliefs they transgressed, rather

¹¹⁶ Ibid.

than our credences. Not only is this claim intuitive, but it would also be odd if Buchak's normative claims were true but we never followed these norms. Since it does not seem like all of our blaming practices are irrational, Buchak's arguments also support the descriptive claim that beliefs in fact play an important role in holding each other responsible.¹¹⁷ Thus, beliefs (that are not merely high credences) are essential to blame, both in our actual practices and in how we ought to hold each other responsible.

Recently, Julia Staffel (forthcoming) has objected to Buchak's picture. Staffel is sympathetic to Buchak's claim that mere statistical evidence is not a basis for rational belief, and that we ought not blame someone on the basis of mere statistical evidence, even if we ought to raise our credence that they are guilty. However, Staffel considers a case where we have high confidence based on non-statistical evidence that someone transgressed. In this case, Staffel says it is unclear that the credence cannot play a role in holding someone responsible. If credence can play the right role here, why do we need belief to be a middleman? Staffel further notes that legally, in civil cases, the preponderance of evidence standard applies, on which someone can be convinced if the evidence makes it more than 50% likely that they are guilty, and the evidence is not purely statistical. This further supports Staffel's contention that high credence *based on the right kind of evidence* can play a role in blame, even if a high credence based on mere statistical evidence cannot.¹¹⁸

¹¹⁷ Buchak notes this argument can extend beyond blame and seems to apply to a large class of reactive attitudes, including "resentment, indignation, guilt, [and] gratitude" (299).

¹¹⁸ Staffel (forthcomings: 12).

There are several responses available to Buchak here. First, Buchak's blame-requires-belief view seems to offer a simpler and better explanation of the data, as opposed to the view Staffel suggests, on which blame requires both high credence and that credence's being based on the right kind of evidence. On Buchak's view, every time we rightfully blame someone, we believe they are guilty. The alternative view suggested by Staffel on which some, but not all, high credences play a role in blaming, begins to look ad hoc. Thus, one reason to prefer Buchak's view is that it provides a nice unified explanation of the data: beliefs are the things that enable us to rightfully blame.

Second, Staffel's suggestion that high credence based on non-statistical evidence can be a basis for blame seems to overlook Buchak's arguments to the contrary. Buchak doesn't merely argue that statistically-supported credences are insufficient for blame, but that *all* credences are insufficient for blame. We tend to take a stand on whether someone is guilty, then blame them in proportion to the severity of their wrongdoing. In our blaming behaviors, we do not (and should not) appeal to our credences that the offender is guilty, whether our credence based on statistical evidence or not. Buchak's view seems to make better sense of our blaming practices than Staffel's.

Finally, with respect to Staffel's point on the preponderance of evidence standard, it may be that sometimes moral and the legal norms come apart. We might have a practical reason (e.g. on the basis of deterrence) to use the preponderance of evidence standard in court, but that doesn't mean we ought to blame someone just because our credence in their guilt is slightly above 0.5 (and not based on statistical evidence).

3.2.3 Beliefs simplify reasoning

A final role played by belief that cannot be played by high credence is the role of simplifying reasoning. To understand this role, first, note that the attitude of belief that p rules out the possibility of not- p . When one relies on their belief that p in reasoning, one treats p as true in their reasoning: either because they never consider not- p , or because they rule out not- p . However, when one relies on their (non-extreme) credence that p in reasoning, both p and not- p are live possibilities for them. Thus, credence-reasoning lets in extra possibilities that mere belief-reasoning does not.

This difference between belief and credence is important for the following reason. In our reasoning, we have at least two aims: efficiency and accuracy. We want our reasoning to accurately reflect our evidential situation. However, because of our cognitive limitations, we cannot always consider every possibility that isn't ruled out by our evidence. When we need to make a decision quickly, and/or the stakes are low, it isn't necessary to overcomplicate reasoning by considering small error possibilities. Thus, sometimes it makes sense to rely on our beliefs, never considering certain possibilities, rather than our credences, that complicate reasoning by adding columns to our decision matrix.

Consider the following example from Jacob Ross and Mark Schroeder (2014). Renzo wants to go to Canal St. to return a DVD, and he is considering whether to take the Broadway train or the Canal St. Express. He is unsure whether the Broadway train stops at Canal St., but the Canal St. Express is more expensive. Thus, at least two possibilities are salient in his reasoning about what to do: the Broadway train stops at Canal St., and it does not. However, there are additional possibilities he could use to further complicate

his decision matrix; e.g. the possibility he gets mugged and loses all his money, the possibility the train crashes, etc. Yet Renzo's considering all these farfetched possibilities in his reasoning would require quite a bit of cognitive effort, and ultimately make his decision problem intractable. Ross and Schroeder conclude that "in virtue of our limited cognitive resources, we cannot avoid the heuristic of treating as true propositions about which we are uncertain."¹¹⁹ Thus, relying on our beliefs allows us to ignore small error possibilities, simplifying reasoning.¹²⁰

This role for belief is further supported by psychological evidence. For example, one popular psychological theory called the "adaptive toolbox" model. According to this model, there are multiple methods we use to form judgments and make decisions. Which method we use depends on the situation, and one of our primary goals is to pick a tool that is maximally efficient but accurate enough for our circumstances.¹²¹

One analogy that is helpful for understanding this role of belief is to think of human reasoning as painting a wall. When painting a wall, we use at least two kinds of brushes: a roller brush to paint the main flat surface of the wall, where mistakes are less costly, and a detail brush to paint places such as the corners of the wall and around the door—places where mistakes are more costly. While of course, all else equal, it is easier to use one tool to accomplish a task rather than two tools, it is easy to see that using the

¹¹⁹ Ross and Schroeder (2014: 264-267).

¹²⁰ Ross & Schroder (2014: 286); Staffel (2017: 42). See also Lin (2013), Lin and Kelly (2012), Wedgwood (2008: 4, 2012), Smithies (2012: 278), Tang (2015), Weatherson (2016), Weisberg (forthcoming), Staffel (2017, forthcoming_b).

¹²¹ See Payne et al (1993), Gigerenzer and Goldstein (1996), Gigerenzer et al. (1999), Payne & Bettman (2004).

two brushes actually makes painting the wall much easier than if we merely used one. In the same way, in our reasoning, utilizing both our beliefs and our credences drastically improves our reasoning, especially in light of our dual goals of efficiency and accuracy.¹²²

This role of simplifying reasoning is not one that can be played by a mere high credence. A high credence in *p*, in virtue of being a *credence*, does not rule out possibilities in the same way that a belief that *p* does. It is unclear how a view that fundamentally posits only credences can explain how belief and credence are two cognitive tools used to balance efficiency and accuracy. There is only one kind of tool: credences, and a subset of those are beliefs. As Weisberg notes, “Before an assumption can be made, its [credence] has to be compared to some threshold, and the possibility that it’s false must then be discarded... [but] these are exactly the kinds of extra computational operations an adaptive decision maker is supposed to minimize.”¹²³ Further, discarding a possibility is one of the most expensive tasks in terms of cognitive effort.¹²⁴ A credence first view cannot explain the simplifying role of belief in the same way; high credences do not rule out possibilities in the way that beliefs do.¹²⁵

3.2.4 An overall picture of belief’s role

Given the three above roles of belief, a further question arises: how do these roles of belief fit together? The first two roles of belief, namely, the roles of enabling the

¹²² Thanks to Blake Roeber and Jennifer Nagel.

¹²³ Weisberg (forthcoming: 10-12).

¹²⁴ Bettman et al. (1990).

¹²⁵ For more on this point, see Ross and Schroeder (2014: 270) and Weisberg (forthcoming: 11-16, 20-23).

believer to take a stand/have a view of the world and engage in certain blaming practices, seem to suggest that we would have beliefs even if we did not have cognitive limitations. However, the role beliefs play in simplifying reasoning seems to suggest that, at least qua reasoning simplifiers, beliefs are a mental state we only have due to our cognitive limitations. On this latter view, ideal reasoners might not have beliefs (at least it is unclear what role beliefs would play in their mental lives; they would seem to be superfluous). Thus, there is a tension between these three roles of belief: on the simplifying view, it is very natural to think that beliefs are a product of our cognitive limitations, but on the former views, the reason we have beliefs is not due to our limitations, and even ideal reasoners would have beliefs.

One possible response to this tension is to embrace one role for belief but not another. For example, Staffel (forthcoming_b) seems sympathetic to the view that the only (or at least primary) role of belief is the role of simplifying reasoning. A second option is to say that beliefs play one (or both) of the first two suggested roles—taking a stand/having a view of the world, and enabling reactive attitudes like blame—but to deny that beliefs play a simplifying role in our reasoning. Someone who is sympathetic to this could maintain that the attitude playing a role in simplifying reasoning is not belief, but instead is another attitude (e.g. acceptance).¹²⁶ A third option is to try to embrace all three roles for belief at the same time. One way to do this would be to say that some of our beliefs play the role of simplifying reasoning, and other beliefs play other roles like enabling reactive attitudes or enabling us to take a stand, and maybe some beliefs play

¹²⁶ Thanks to Lara Buchak for helpful discussion.

both roles. Ideal agents thus may have fewer beliefs that we do, but they would nonetheless still have beliefs.

The details of this account I leave open as an area for further research; the main point I want to push is that there are plausible roles for belief that cannot be played by high credence, and this gives us a reason to favor dualism over a credence-first view. Now, I will argue that we have reason to favor dualism over a belief-first view.

3.3 Credence is not modal belief

Before arguing that the belief-first view cannot adequately explain various roles of beliefs and credences, I will briefly sketch the most plausible belief-first view. On this view, credences are beliefs with epistemic modals in their content (e.g. probably, possibly, might, definitely, etc.). This includes both probabilistic beliefs, e.g. “the probability it will rain is 0.5” but also beliefs like “it will definitely rain” or “it might rain” or “rain is very unlikely.”¹²⁷ Further, the relevant type of probability or modal is epistemic, expressing a relation between a particular proposition and the believer’s evidence.¹²⁸

¹²⁷ For more on epistemic modals, see Yalcin (2007, 2011, 2014), Schnieder (2010), Rothschild (2012), Dorr and Hawthorne (2013), Cragbill (2013), Silk (2017). One big debate in the literature on epistemic modals is between descriptivists, who think epistemic modals express propositions, and expressivists, who think epistemic modals do not express propositions but rather some attitude the speaker has toward the embedded proposition. While the correct view here doesn’t ultimately matter for my argument, it is worth noting that the belief-first views that appeal to epistemic modals require descriptivism about modals to be true. See Jackson and Moon (MS).

¹²⁸ This responds to a worry for belief-first from Christensen (2004: 19), who argues that the relevant type of probability cannot be propensity, frequentist, or subjective.

Further, recall the picture I sketched in section 3.2.3 on which beliefs and credences are two cognitive tools that enable agents to balance efficiency and accuracy in reasoning. At least *prima facie*, a belief-first view can capture this insight. Specifically, when the stakes are low or we have to make a decision quickly, we tend to reason with a bare proposition, e.g. *p*. However, if the stakes raise and/or we have more time to engage in reasoning, we tend to reason using beliefs with more complex content (e.g. probably *p*, there is a good chance that *p*, the probability of *p* is *n*). There is still some sense in which beliefs and credences enable us to balance accuracy and efficiency in reasoning, even if they aren't fundamentally different attitudes. Thus, a belief-first view can maintain that credences make reasoning more complex and provide a more accurate representation of one's evidential situation.

In the literature, the belief-first view is often dismissed quickly and taken to be subject to decisive objections. However, for the above reasons, among others, I think the belief-first view is more plausible than many have previously supposed.¹²⁹ Nonetheless, I still think we have at least four reasons to prefer dualism to belief-first.

3.3.1 Credences explain the actions of children and animals

Credences play an important role in explaining the actions of conceptually unsophisticated creatures, such as young children and animals. Further, it is plausible

¹²⁹ For a longer explanation of why I think belief-first is more plausible than many have assumed, see Jackson and Moon (MS).

that at least some of these creatures do not possess the relevant concepts to have modal beliefs.¹³⁰

For example, suppose that you and your friend are sitting at a table eating dinner, and your dog is looking for table scraps. In the past, you have only fed you dog three out of four times he's begged for food, but your friend has fed your dog nine out of ten times. For this reason, your dog approaches your friend to beg for food, rather than you. In this case, it is natural to think that your dog approaches your friend first because he is more confident that your friend will feed him than that you will feed him. Nonetheless, it is unclear that your dog is sophisticated enough to possess a belief with an epistemic modal in its content.¹³¹ This case can be extended to cases of young children, who seem to have credences without being able to grasp and/or conceptualize epistemic modals. Further, you might even think that normally functioning adult humans can employ and act on their credences without forming or employing beliefs with modal content.¹³²

A belief-firster might point out that having the concept of certain epistemic modals like 'probably' or 'might' is easier than possessing the concept of 'probability'. Thus, the more plausible version of belief-first has an easier time dealing with this objection: either the agent in question actually does have the modal concept, or they don't have a credence at all, but merely a simple belief.¹³³

¹³⁰ See Frankish (2009: 77), Lee (2017).

¹³¹ This example is inspired by one from Yalcin (2007, 2011).

¹³² See Lee (2017).

¹³³ See Jackson and Moon (MS).

In response, I agree that the belief-first view that employs epistemic modals has an easier time dealing with this objection than the narrower view on which credences are merely probabilistic beliefs. However, it seems implausible that for all possible creatures, there is no creature that has a credence without a modal belief. Further, note that the belief ‘probably p’ gives one a high credence in p, but to no precise level. On a belief-first view, one would need a belief like ‘the probability of p is n’ in order to have a precise credence in p. And it seems as though some conceptually unsophisticated creatures could have precise credences without possessing the required concepts, e.g. the concept of probability.¹³⁴ Thus, plausibly, credences explain the actions of children, animals, and others in a way that modal beliefs cannot.

3.3.2 Credences aren’t formed by believing different contents

Recall that, on a belief-first view, credences are beliefs with a specific kind of content. The relevant attitude is always the same: belief. What distinguishes belief and credence is the content of what is believed. For example, one may believe p then form a credence by forming a belief with a different content, such as ‘it might be that p’ or ‘the probability of p is n.’

This view clashes with the very plausible suggestion that one can have a belief that p and a credence that p with the same content. Both the dualist view and the credence-first view can capture this plausible suggestion. On a dualist view, a belief that p and a credence that p are fundamentally different attitudes; most dualists are explicit

¹³⁴ See Sinhababu (MS).

that agents can have both a belief and a credence with the same content.¹³⁵ On a credence-first view, one's credence that p amounts to a belief that p when it hits a certain threshold. Every credence above that threshold is also a belief, so one can have both a belief and a credence in the same proposition. However, on a belief-first view, there is only one relevant attitude that doesn't come in degrees, so the propositional content is the only variable that distinguishes one's credences from one's beliefs. But on this picture, forming a credence requires varying the content of what is believed, and so one cannot believe p and have a credence in p at the same time. Of course, the originally believed proposition p will be part of the credence's content, but the content is more complex than that. Oddly, given belief-first, one cannot form a credence in a believed proposition.

This worry is especially pressing if one thinks of credences as something akin to confidence levels. Suppose my friend reports that they believe p, and I ask how confident they are in p. "Very confident," they respond. Presumably, they are not forming/introspecting/considering a new belief with a different content—they are thinking about their confidence level in the proposition I asked them about, namely, p. It is natural to think that belief and confidence both apply directly to propositions, and that both attitudes could apply to the same proposition at the same time. It doesn't seem like having a confidence level is akin to forming a new belief.

This observation brings out a notable difference between the credence-first reduction and the belief-first reduction. The credence-first view employs a maximally fine-grained attitude, which gives credence-firsters ample resources to distinguish

¹³⁵ See e.g. Staffel (2017), Weisberg (forthcoming).

between different levels of confidence. However, because the belief-first view has only one coarse-grained attitude, belief-firsters cannot maintain that an agent has a belief that p and a credence in p at the same time; there is merely one's belief that p , and any variation on that attitude requires varying the content believed.¹³⁶

3.3.3 An argument from graspability

Another argument against belief-first involves propositions too difficult for agents to grasp. Suppose that p is a proposition that is just on the edge of S 's ability of comprehension, such that S couldn't grasp a proposition more complex than p . Plausibly, S can have a credence in p , since S can grasp p . However, S cannot grasp Mp , where M is an epistemic model (e.g. p is probably true, p is unlikely to be true, p has probability n , etc.). Thus, it does not seem like S can form a probabilistic or modal belief about p , on the plausible assumption that you cannot believe a proposition if you cannot comprehend the proposition's content. Nonetheless, S can have a credence in p ; this is in virtue of S 's grasping the simpler, bare proposition p . Therefore, in the case of barely graspable propositions, it seems possible that agents can have credences in them but cannot form the modal beliefs required for a belief-first view.

3.3.4 Reduction without parsimony

A final consideration against belief-first is that it is unclear that the belief-first view is more parsimonious than a dualist one. Even if parsimony gives us a reason to

¹³⁶ Thanks to Peter Tan for helpful discussion.

prefer reductionist views in philosophy of mind (an assumption I've challenged), it gives us no reason to prefer a belief-first view to a dualist view.

It is true that the belief-first view is simpler in attitude: a dualist view posits two fundamental attitudes and a belief-first view posits only one. However, this is sacrificed for complexity in content: on a belief-first view, every instance of a credence is replaced by a belief with a particular kind of complexified content. In this, the complexity is just moved from one place (the attitude) and put in another (the content). It is unclear what reason there would be to prefer attitude-parsimony to content-parsimony. Without such a reason, it seems plausible that we should opt for a dualist view instead of a belief-first one, especially in light of the above arguments that dualism has greater explanatory power.¹³⁷

Interestingly, there may be reason to think that a credence-first view is the most parsimonious view of the three. The credence-first view posits only one fundamental attitude. While the fundamental attitude it posits is fine-grained, it is unclear that means it is more complex, and the relevant content is straightforward and simple. The credence-first view does require a threshold for belief, but it isn't obvious this makes a credence-first view more complex, especially if there is a way to establish a non-ad-hoc threshold.¹³⁸ Thus, considerations of parsimony may, all else equal, favor a credence-first

¹³⁷ Of course, a dualist view countenances modal beliefs too, but a belief-first view has to say these are much more common and widespread, and in some places, has to countenance them when it seems implausible they are there (e.g. cases from Section 3.3.1).

¹³⁸ Attempts to establish such a threshold include Lee (2017_b), Shear and Fitelson (2018).

view. However, parsimony isn't the final story on theory choice—and, as I've argued, all-things-considered, there is most reason to favor dualism over the rival views.

3.4 Conclusion

I've argued that, with respect to the relationship between belief and credence, we have a reason to prefer dualism to belief-first and credence-first. This is because dualism, as opposed to credence-first, can explain the essential role belief plays in our ability to take a stand and have a view of the world, our blaming practices, and in simplifying reasoning. Further, dualism, as opposed to belief-first, can explain the actions of unsophisticated agents and the intuitive idea that one can have a belief and a credence with the same content. Finally, I've argued that it is unclear that belief-first is a simpler theory than dualism. Thus, we have good reason to think that a dualist view of the mind is true; at the very least, it is a view that philosophers should take seriously.

One noteworthy implication of dualism is as follows. If dualism is true, we have prima facie reason to think not only that both traditional epistemology and formal epistemology are legitimate research programs, but that their relationship is unlike the relationship of biology to physics. That is, one research program is not more fundamental, and knowing all the truths in one research program would not necessarily give one knowledge of all the truths in the other. There are other implications of dualism I discuss elsewhere.¹³⁹

¹³⁹ Jackson (Forthcoming_a), Jackson (Forthcoming_b), Jackson (Forthcoming_c), Jackson (Forthcoming_d).

I conclude that human agents have two attitudes, beliefs and credences. Belief is not credence above a threshold, and credence is not belief with a certain content. The human mind is, in some ways, complex, and we should be happy with this conclusion as long as each mental state we posit has a clear role to play.¹⁴⁰

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CHAPTER 4:
HOW BELIEF-CREDENCE DUALISM EXPLAINS AWAY PRAGMATIC
ENCROACHMENT

Abstract: Belief-credence dualism is the view that we have both beliefs and credences and neither attitude is reducible to the other. Pragmatic encroachment is the view that stakes alone can affect the epistemic rationality of states like knowledge or justified belief. In this chapter, I argue that dualism offers a unique explanation of pragmatic encroachment cases. First, I explain pragmatic encroachment and what motivates it. Then, I explain dualism and outline a particular argument for dualism. Finally, I show how dualism can explain the intuitions that underlie pragmatic encroachment. My basic proposal is that in high stakes cases, it is not that one cannot rationally believe that *p*; instead, one ought not to *rely* on one's belief that *p*. One should rather rely on one's credence in *p*. I conclude that we need not commit ourselves to pragmatic encroachment in order to explain the intuitiveness of the cases that motivate it.

Keywords: Belief; Credence; Belief-Credence Dualism; Pragmatic Encroachment; Reliance; Epistemic Rationality

4.1 Introduction

What should we believe? When considering this question, we usually think of things that are epistemic in nature, like evidence. However, recently, some have argued that what we should believe is not determined merely by *epistemic* factors, like evidence, but also *practical* factors, like how bad it would be if we were wrong. This view, often called *pragmatic encroachment*, is motivated with cases in which a belief seems perfectly

fine when the stakes are low: I believe this sandwich is made with almond butter and give it to you when you ask for a snack. However, change only the stakes, and now it seems like I ought to give up the belief: I find out you are deathly allergic to peanuts, so I should no longer believe that it is made with almond butter, especially if there is a chance it is made with peanut butter instead.¹⁴¹

There is nonetheless something odd about pragmatic encroachment.¹⁴² Can stakes alone really affect the epistemic rationality of belief in this way, without a change in evidence or any other epistemic factor? In this chapter, I offer a way out for those who are skeptical of pragmatic encroachment.¹⁴³ I do so by presenting a picture of the mind on which there is not one, but two fundamental doxastic attitudes. On this view, that I call belief-credence *dualism*, we have not only beliefs but another doxastic attitude: credences.¹⁴⁴ Credences are fine-grained attitudes, similar to levels of confidence, that are correlated with subjective probabilities.¹⁴⁵ These two attitudes function as complementary

¹⁴¹ Notable defenses and discussions of pragmatic encroachment include Hawthorne (2003), Stanley (2005), Weatherson (2005), Ganson (2008), Fantl and McGrath (2002, 2009), Grimm (2011), Pace (2011), Schroeder (2012), Weatherson (2012), Ross and Schroeder (2014), Locke (2014, 2017), Roeber (2018_b), Kim (2017).

¹⁴² See Kim (2017: 1,7).

¹⁴³ Notable defenses and discussions of purism (the denial of pragmatic encroachment) include Williamson (2002, 2005), Neta (2007, 2012), Nagel (2008, 2010a, 2010b), Fumerton (2010), Reed (2010, 2012), Ichikawa, Jarvis, & Rubin (2012), Kim (2016), Zweber (2016), Roeber (2018_a), Anderson & Hawthorne (2018).

¹⁴⁴ Notable defenses and discussions of dualism include Pollock (1983, 1994), Adler (2002), Frankish (2004), Hawthorne (2009), Sosa (2011: chapter 4), Weisberg (2013, forthcoming), Friedman (2013_a), Ross & Schroeder (2014), Buchak (2014), Littlejohn (2015), Carter, Jarvis, & Rubin (2016), Jackson (2018, forthcoming_b, forthcoming_c).

¹⁴⁵ By “credence” I mean degree of confidence or degree of belief, rather than *rational* degree of confidence, like e.g. Lewis (1980). Also, one might prefer to use phrases like “partial belief” or “degrees of belief” instead of “credence,” but given that some have argued that beliefs do not come in degrees (Moon 2017), my terminology is more ecumenical.

epistemic tools, and our practical situation determines which we ought to rely on in practical reasoning.

Dualism creates space for the following natural thought. We need not give up our beliefs just because the stakes are raised; rather, high stakes call for us to consult our credences instead of our beliefs. Returning to the example above: when I find out about your peanut allergy, I should consult my credence that the sandwich is made of almond butter. When I find it to be less than maximal, it is clear why I ought not give you the sandwich, and instead should gather more evidence or give you another snack. However, there is no reason to think that I need to give up my almond-butter belief. This picture of the mind explains what is going on in the cases commonly used to support pragmatic encroachment, and vindicates the orthodoxy that justified belief is a function of merely the epistemic.

This chapter is structured as follows. In **Section 4.2**, I explain pragmatic encroachment and the cases that motivate it. In **Section 4.3**, I explain belief-credence dualism and some of the major philosophical and psychological motivations for it. In **Section 4.4**, I argue that dualism explains away pragmatic encroachment—in other words, that dualism offers a unique explanation for pragmatic encroachment intuitions. Central to my discussion is the distinction between having a belief and relying on it in reasoning. In **Section 4.5**, I consider and address potential objections to my view.

4.2 Pragmatic Encroachment

The pragmatic encroachment debate is about whether practical interests can affect the epistemic status of particular kinds of mental states—in slogan form, about whether

“the practical encroaches on the epistemic” (Kim 2017). Early in the debate, many people focused on whether practical factors can affect *knowledge* (Hawthorne 2003; Stanley 2005), but lately, many have been focusing on whether the practical can affect epistemically *justified belief* (Weatherson 2005; Thomason 2007; Ganson, 2008; Fantl & McGrath 2002, 2009; Nagel 2008, 2010a, 2010b; Schroeder 2012; Ross & Schroeder 2014; Thomason 2014; Kim 2017: 2). Of course, the practical might affect knowledge by affecting justified belief, so these foci are not mutually exclusive and are even potentially complementary. In this chapter, I will follow Jacob Ross and Mark Schroeder (2014: 260) and focus on the ways that the practical might affect the epistemic justification or rationality of belief.¹⁴⁶ The phenomenon I will seek to explain away is *pragmatic encroachment on epistemically justified belief*.

Proponents of pragmatic encroachment argue that epistemic justification depends on the practical. One traditional example to motivate pragmatic encroachment (from Stanley 2005: 3-4) is as follows. Suppose that Hannah is driving home on a Friday afternoon, and plans to stop by the bank to deposit a check. There is no urgency to deposit this check, and Hannah notices the lines at the bank are extremely long. She remembers that she was at the bank a few weeks ago on a Saturday, and thus justifiedly believes that the bank is open tomorrow.

In the second version of the case, Hannah is also driving home on a Friday afternoon and plans to deposit a check at the bank. She again sees very long lines.

¹⁴⁶ I will not distinguish between epistemic justification and epistemic rationality for the purposes of this chapter.

However, she has very little money in her account and her mortgage payment is due Monday. If she doesn't get the check deposited by that weekend, she will default on her mortgage and go bankrupt. She has the memory of being at the bank a few weeks ago on a Saturday, but she also knows her memory is fallible and banks do change their hours. It seems like Hannah does not have a justified belief that the bank will be open on Saturday, even though the epistemic aspects of the case remain the same. Thus, it appears that stakes alone can affect what one can justifiedly believe.

So-called *purists* resist this verdict. After all, it seems quite odd that a mere change in stakes—without a change in evidence, reliability, or any other epistemic factor—could change what one is epistemically justified in believing.¹⁴⁷ Yet the purist still needs an explanation for cases like the bank cases above. In what follows, I explain belief-credence dualism and then argue that it can offer a unique purist explanation for the above cases. My explanation relies on the distinction between justifiedly having a belief and justifiedly relying on it in reasoning.

4.3 Belief-credence dualism

4.3.1 Background

There are at least two kinds of attitudes we have that describe or represent the world: beliefs and credences.¹⁴⁸ Belief is a familiar attitude that is not degreed; roughly,

¹⁴⁷ As Kim (2017: 7) notes, rejecting purism seems mad! See also Roeber (2018_a: 1). Others, such as Grimm (2011) and Roeber (2018_b), make this point about credences but are more skeptical that we should be purists about belief.

¹⁴⁸ Some eliminativists deny this (see Jeffrey (1970), Churchland (1981), Maher (1993: 152-155)), but I set eliminativism aside for the purposes of this chapter.

belief is a propositional attitude one has when one takes something to be the case or regards it to be true (Schwitzgebel 2015). There are three belief-like attitudes one can take toward a proposition p ; one can believe p , one can withhold belief with respect to p , and one can disbelieve p .¹⁴⁹

Sometimes our attitudes are more complex than simple beliefs; for example, we might believe p and believe q but be more confident in p than in q .¹⁵⁰ This is one reason why epistemologists appeal to another attitude they call *credence*. Credence represents something like the subjective probability of p , often given a value on the $[0,1]$ interval. Credences are, in many ways, similar to the more familiar attitude of confidence.

The way beliefs and credences relate to one another is controversial.¹⁵¹ Some have argued for a credence-first view: that beliefs reduce to credences;¹⁵² others have argued for a belief-first view: that credences reduce to beliefs.¹⁵³ In this chapter, my primary target will be proponents of the credence-first view, who argue that belief is nothing over

¹⁴⁹ Although Friedman (2013_b) argues that we suspend on questions, rather than propositions.

¹⁵⁰ See Gardenfors (1988) for a discussion of different ways to measure the epistemic strength of belief.

¹⁵¹ See Jackson (forthcoming_a) for an extended discussion of why the relationship between belief and credence is an important epistemological question.

¹⁵² Defenses and discussions of credence-first include Foley (1992, 1993: chapter 4, 2009), Hunter (1996), Bouvens and Hawthorne (1999), Christensen (2004), Weatherson (2005), Douven and Williamson (2006), Ganson (2008), Sturgeon (2008), Frankish (2009), Chandler (2010), Smith (2010), Pace (2011), Locke (2013), Dallmann (2014), Pettigrew (2015_a, 2015_b), Leitgeb (2013, 2014), Lee (2017_a), (2017_b), Dorst (2019).

¹⁵³ Defenses and discussions of belief-first include Harman (1986, 2008), Holton (2008, 2014) Plantinga (1993: chapter 1), Easwaran (2015), Moon (2018), Kauss (forthcoming), Jackson and Moon (MS).

and above high credence; a common credence-first view is that belief is credence above some threshold.¹⁵⁴

Dualists maintain that beliefs are not reducible to credences, and credences are not reducible to beliefs.¹⁵⁵ Rather, we have both attitudes and they are equally fundamental. Most dualists hold this because both attitudes play unique, indispensable roles in our mental lives. For example, Jonathan Weisberg (forthcoming: 8) suggests that “our [beliefs and credences] are realized in largely separate mechanisms. In us, [belief and credence] are largely metaphysically distinct...[we should not treat] either as secondary, in either our psychological or our epistemological theorizing.” Note that dualism is a descriptive claim about belief and credence. In this chapter, I remain neutral about whether there are normative connections between the two attitudes.

Given dualism, it is plausible to think that one can have both a belief-attitude in *p* and a credal-attitude in *p* simultaneously. As Julia Staffel (2017: 45) notes, this raises a further question, namely, “in which contexts the agent should rely on her beliefs, and in which contexts she should consult her credences.” I will explore this in what follows.

4.3.2 Motivations for dualism

In this section, I explain one of the primary motivations for dualism, which purports to show that dualism explains features of our mental lives and reasoning that a

¹⁵⁴ Some credence-firsters (e.g. Weatherson 2005, Ganson 2008, Pace 2011) maintain the threshold for belief is context or stakes dependent. Other credence first views reduce belief to some other formal feature of credence, such as Leitgeb’s stability theory (see Leitgeb 2013, 2014). Another possible credence-first view says that belief that *p* doesn’t reduce to merely one’s credence in *p*, but rather reduces to facts about one’s credal state as a whole. Thanks to Lara Buchak.

¹⁵⁵ See footnote 4 for a list of authors who defend dualism.

credence-first view cannot. Then, in the following sections, I will show how the motivation for dualism discussed here explains what is going on in pragmatic encroachment cases without forcing us to commit to the pragmatic encroachment thesis.

Because my main opponent in this chapter is credence-firsters, who agree with me that credences are essential for reasoning, I will focus on the crucial role of *belief* in reasoning. Dualists have proposed several roles that belief may play, including the ability to take a stand/have a view of the world (Foley 1993; Kalpan 1996) being indispensable for our practices of praise and blame (Buchak 2014), and allowing our attitudes to be correct or incorrect (Ross and Schroeder 2014: 275-7; Carter et al 2016; Lee 2017_a).

I will focus on a particular role of belief that is pioneered by Ross and Schroeder (2014: 286), among others.¹⁵⁶ The view is summarized nicely by Staffel (2017: 42): “cognitively limited agents like us need outright beliefs, because they simplify our reasoning. In adopting outright beliefs, an agent takes the believed claims for granted in her reasoning, which frees her from having to pay attention to small error probabilities.” In other words, one role of belief is that it *simplifies* our reasoning.

In reasoning, we have at least two aims—accuracy and efficiency. That is, we want our cognitive attitudes to accurately reflect our evidential situation. However, representing our evidence with perfect accuracy is not always required for us to meet our practical and epistemic goals; often, a close approximation will do. Since we have limited cognitive resources, sometimes it makes more sense to rely on attitudes that are less than

¹⁵⁶ See also Lin (2013), Lin and Kelly (2012), Wedgwood (2008: 4, 2012), Smithies (2012: 278), Tang (2015), Weatherson (2016), Weisberg (forthcoming), Staffel (forthcoming).

perfectly accurate to lighten our cognitive load. This is supported by a popular psychological theory called the “adaptive toolbox” model, on which the method we use for decision making depends on the situation, and one of our primary goals is to pick a decision tool that is maximally efficient but accurate enough for our circumstances.¹⁵⁷ Following Weisberg (forthcoming: 9-10), I propose that belief and credence are two cognitive tools that enable us to balance those goals.¹⁵⁸

For many propositions, we have both a belief-attitude in *p* and a credal-attitude in *p*. In reasoning, we can rely on either our belief-attitude or our credal-attitude. The one we rely on depends on practical factors, and this allows us to appropriately balance efficiency and accuracy in reasoning (Staffel 2017: 46). Here is how: when one relies on one’s belief that *p*, one rules out the possibility of not-*p*. This makes reasoning about *p* much easier; one reasons holding *p* fixed. In contrast to reasoning holding *p* fixed, there is a more complex way to reason that takes more time and effort: reasoning considering additional possibilities, e.g., both *p* and not-*p*. If one is agnostic about whether *p*, and *p* is relevant to one’s reasoning, one will often reason treating both *p* and not-*p* as live.¹⁵⁹ In other cases, one may one believe *p* or believe not-*p*, but expand the possibility space for other reasons. There is psychological evidence that altering the possibility space under consideration in our reasoning is particularly cognitively costly (Bettman et al. 1990:

¹⁵⁷ See Payne et al (1993), Gigerenzer and Goldstein (1996), Gigerenzer et al. (1999), Payne & Bettman (2004).

¹⁵⁸ See Dallmann (2017) and Staffel (forthcoming) how beliefs simplify the way limited agents update on new evidence.

¹⁵⁹ Thanks to Lara Buchak. For cases where it is rational to rely on *p* in reasoning even if one does not believe *p*, see Cohen (2000) and Locke (2015).

table 7). Yet when the stakes are high, reasoning considering additional possibilities can be appropriate and even obligatory.¹⁶⁰

Consider an example, adapted from DeRose (2009), to illustrate how stakes can change what possibilities one ought to consider. It may be completely appropriate for me to believe my office mate, Rachel, is in the philosophy building because I saw her coat and backpack in the office, and rely on this belief if a friend casually asks me if Rachel is in today. However, if police are investigating a murder in the philosophy department and require a detailed list of everyone in the building that day, I ought to consider the possibility that Rachel was not actually in that day, since I never actually saw her, only her coat and backpack. It no longer seems appropriate to treat the proposition *Rachel was in the philosophy building today* as given in my reasoning.

Consider an analogy. When painting a wall, we use two kinds of brushes. We use a big roller brush to efficiently paint the main flat surface of the wall, where mistakes are not very costly. We use a small detail brush to paint the corners, around the door, and other places where mistakes would be much worse. If we painted the entire wall using the detail brush, we would be very accurate but painfully inefficient. If we painted the entire

¹⁶⁰ Although small changes in stakes may not prompt the move to credence reasoning, e.g. a changing the prize of a bet from \$10 to \$20. The stakes need to be sufficiently high in order to prompt a change in the space of possibilities. Thanks to Brian Kim. This raises another potential worry: suppose the stakes are intermediate, such that it is not obvious whether we ought to rely on our belief or our credence in reasoning. Deciding which to rely on may make our reasoning more, rather than less, complex. In reply, while reasoning about what to do often occurs occurrently in the cases I consider, reasoning about *how to reason* does not; we often move from belief to credence reasoning due to an automatic instinct, rather than an intentional process. Further, in the intermediate case, it may not matter whether agents rely on their belief that *p* or their credence, because, since the stakes are intermediate, the accuracy gain from using credence reasoning may wash out whatever expected utility is gained by hedging one's bets. Thus, the instinct to move to credence reasoning may not kick in until the stakes are sufficiently high to justify the switch (although this may depend on the agent, whether she is rational, etc.). Thanks to an anonymous referee for raising this objection.

wall using the roller brush, we would be very efficient but, on some parts of the wall, sloppy and inaccurate. We need both tools in order to paint both accurately and efficiently. All else equal, it might be easier to use only one tool and not be forced to switch back and forth. However, given the importance of both efficiency and accuracy, switching back and forth between the two tools is a much better policy than using a single tool to paint the entire wall.¹⁶¹ This analogy illustrates the way in which my view answers the *Bayesian Challenge* for dualism—namely, the challenge that we do not need both beliefs and credences to explain the rationality of action/inference/assertion (see Kaplan 1996; Stalnaker 1984; Sturgeon 2008; Frankish 2009; Weisberg forthcoming). According to the challenger, if beliefs make the same prescriptions as credences, they are superfluous; if they make different ones, we should trust those made by our credences. However, as the paintbrush analogy suggests, beliefs are not superfluous to action/inference/assertion; we need both beliefs and credences to strike an appropriate balance between accuracy and efficiency in reasoning (which will, in turn, affect action and assertion).

Note further that credence-firsters cannot explain the simplifying role of belief in the same way. According to the credence-first view, belief *just is* a credence above some threshold. Even if an agent has a high enough credence in *p* to justify acting as if *p*, in virtue of having a *credence* in *p*, they are considering the possibilities of both *p* and not-

¹⁶¹ Thanks to Blake Roeber and Jennifer Nagel.

p; both possibilities are live for them.¹⁶² In this, they do not have an automatic or defeasible disposition to treat p as true; rather, they must consider both p and not-p, and then judge whether the stakes are such that they can rationally act as if p. This requires a much more complex calculation than an agent who simply treats p as given in her reasoning automatically and never considers the possibility of not-p (Ross and Schroeder 2014: 270; Weisberg forthcoming: 11-16, 20-23). As Weisberg notes, “Before an assumption can be made, its [credence] has to be compared to some threshold, and the possibility that it’s false must then be discarded... [but] these are exactly the kinds of extra computational operations an adaptive decision maker is supposed to minimize” (Weisberg forthcoming: 10-12). Further, altering the possibility space in question is one of the most expensive tasks in terms of cognitive effort (Bettman et al. 1990). Thus, if beliefs are merely high credences, it is hard to see how they could be their own cognitive tool, or how they could enable us to reason more efficiently. Belief cannot play the same simplifying role on a credence-first view that it does on a dualist view.

One might wonder whether a belief-first view can maintain, like the dualist, that beliefs simplify reasoning. For example, an agent might rely on her belief that *p* when the stakes are low, but rely on her belief that *the probability of p is 0.9* when the stakes are high.¹⁶³ In this chapter, I take my main opponent to be the more dominant credence-first view, and I officially remain agnostic as to whether a belief-first view can employ the

¹⁶² Those that maintain that belief is credence 1 may be an exception. For example, Clarke (2013), Greco (2015), and Dodd (2016) argue that belief is maximal credence; they may be able to employ the simplifying role of belief.

¹⁶³ Thanks to an anonymous referee.

same purist explanation as the dualist. However, even if a belief-firster can use beliefs with different contents to mimic the dualist picture, it is nonetheless unclear how, on a belief-first view, belief and credence are two different cognitive *tools*; there is a single attitude whose content is varied, depending on the stakes. It is hard to see how a belief-firster could aptly employ the paintbrush analogy discussed above, since there are not two tools; there are just beliefs with different contents. At the very least, whether a belief-first view can explain away pragmatic encroachment requires further development, and this picture will look quite different than the dualist one. I pursue the dualist response because I think it is a more plausible picture of the mind, and because it can most clearly explain away pragmatic encroachment.

4.4 How dualism explains away pragmatic encroachment

4.4.1 My view

Recall that, in the cases discussed in Section 4.2, it seems epistemically rational for Hannah to believe that the bank is open on Saturday in the first version of the case, when there is very little at stake. In the second version of the case, there is much more at stake, and it no longer seems like it is epistemically rational for Hannah to believe the bank is open on Saturday. Call the proposition *the bank is open on Saturday* *p* and Hannah's epistemic situation *E*. Proponents of pragmatic encroachment endorse the following theses:

(1) When the stakes are low, given *E*, it is rational for Hannah to believe that *p*.

(2) When the stakes are high, given *E*, is it not rational for Hannah to believe that *p*.

I submit that (1) and (2) do not accurately describe what is going on in pragmatic encroachment cases. Instead, I propose the following:

(1*) When the stakes are low, given E, it is rational for Hannah to both believe p and rely on her belief that p, i.e. treat p as given in her reasoning.

(2*) When the stakes are high, given E, it is rational for Hannah to believe that p, but it is not rational for Hannah to rely on her belief that p; instead, Hannah ought to rely on her credence that p. Rather than treating p as given, Hannah should consider both p and not-p in her reasoning.

Note here that the phrase “rely on in reasoning” is meant to apply to practical reasoning (reasoning about what to do). There is a further question, namely, can stakes affect whether it is rational to rely on a belief in theoretical reasoning (reasoning about what to believe)? On this question, I remain agnostic.¹⁶⁴

4.4.2 Having a belief vs relying on it in reasoning

One question that immediately arises upon considering (1*) and (2*) is what it means to have a belief but not rely on it in practical reasoning.¹⁶⁵ On some views of belief, if one does not treat p as given in reasoning, one does not believe p. However, this is too quick. Of course, in many circumstances, there is a correlation between belief that p and treating p as a given in reasoning. But there are cases where one has a justified

¹⁶⁴ Thanks to Paul Blaschko. See Hawthorne and Stanley (2008: 577) for a view on which norms for treating p as true apply equally to both practical and theoretical reasoning. Locke (2015: 77) however, argues that how we ought to reason varies, depending on the kind of reasoning.

¹⁶⁵ See Locke (2015) for a related view on which whether we ought to premise that p in practical deliberation depends on practical factors.

belief but ought not to rely on it, due to sufficiently high stakes (Dallman 2014: 2307-8).

Consider the following cases from Jessica Brown and Baron Reed:

Birthplace: Liz is offered a bet on whether she was born in England. Liz was in fact born there, and she has excellent reasons for believing this: her parents told her, her family tells stories about visiting her in the hospital, she has never had trouble with the government, etc. However, the payouts of the bet are as follows: if Liz was born in England, she gains \$10; if she was not, she is tortured for the next 30 years. Liz decides not to take the bet. (Brown 2008a: 1144. See also Locke 2014: 39, 2015: 86-7).

Surgery: A student is shadowing a surgeon. In the morning, the surgeon makes a decision to remove the left diseased kidney of a patient. Later, right before the surgery, the student notices the surgeon consulting the patient's records. The student is puzzled, and asks a nurse why the surgeon is doing this; the surgeon justifiably believes—on excellent evidence—that the kidney to be removed is the left one. The nurse assures the student that the surgeon has not forgotten which kidney it is, but reminds the student how bad it would be if the surgeon removed the wrong kidney. For this reason, the surgeon checked the patient's records before operating (Brown 2008b: 176).

Marriage: John rationally believes, on excellent evidence, that his friend's wife has been cheating on her husband. The husband confronts John because John has had this evidence for weeks; he is upset John did not tell him sooner. John admits that he has believed this and had quite a bit of evidence she was cheating for a while. However, he did not want to say anything until he was absolutely sure she was cheating, because he knew the damage it would cause to their marriage (Brown 2008b: 176-7).

Jellybean: Alex is participating in a psychological study that measures the effect of stress on memory. The researcher asks Alex questions about Roman history, a subject that Alex knows quite a bit about. For every correct answer Alex gives, he gets a jellybean; for every incorrect answer, Alex gets an extremely painful electric shock. If Alex doesn't answer a question, he gets nothing. The researcher asks Alex the first question: when was Julius Caesar born? Alex believes that the answer is 100 BC and is pretty confident, but not absolutely certain. Because the reward of a jellybean is insignificant and the electric shock is so painful, Alex decides not to answer the question (Reed 2010: 228-9).

In these cases, Liz, the surgeon, John, and Alex all have a justified belief in the relevant proposition. Nonetheless, because of the stakes, they ought not to rely on their beliefs in reasoning. They instead ought to rely on their credences. Reliance on their credence, given the stakes, does not rationally allow them to act on p, but this does not change the fact that they rationally believe p. We can imagine the people in these cases saying something along the following lines: “I believe it, but because things would be pretty bad if I were wrong, I am not going to act on it.”

This distinction between having a belief and relying on it in reasoning helps us make sense of the cases that are central in the pragmatic encroachment debate, and see why they ultimately need not support pragmatism. We can maintain that facts about whether one ought to believe p do not change unless one’s epistemic situation changes; justifiedly having a belief is not sensitive to stakes. However, stakes are one of the major factors that determine whether one ought to rely on a belief in reasoning. Thus, pragmatism about rational *reliance* on a belief is true.¹⁶⁶

Part of what I am proposing is an error theory for our pragmatic encroachment intuitions (cf. Hawthorne 2003: 211-226; Williamson 2005; Nagel 2008). When we consider pragmatic encroachment cases, we have the intuition that stakes can affect the rationality of a belief, but in this judgment, we are not clearly distinguishing between justifiedly *having a belief* and justifiedly *employing a belief in reasoning*. Consider the bank cases again. In the second version of the case, suppose Hannah decides to wait in the long line even though she has the memory of the bank’s being open tomorrow. Her

¹⁶⁶ Alonso (2014: 163). Thanks to JJ Lang.

friend Sarah asks “Why are you waiting in line? The bank will be open tomorrow, so you can deposit the check then when the lines are much shorter.” As Roeber (2018a: 19) points out, it would be reasonable for Hannah to reply, “I know. But I figure I should play it safe and deposit the check now.” Hannah need not give up her belief that the bank is open tomorrow; continuing to believe this is not irrational. Rather, her situation is such that she ought not to rely on this belief when deciding what to do, given what is at stake.

One might worry that a satisfying error theory for pragmatic encroachment cannot merely appeal to justified belief, but must apply to knowledge, as the primary intuition about what is lost in high-stakes cases concerns the latter.¹⁶⁷ My response is twofold. First, we do have the intuition that justified belief is lost in high-stakes cases; these intuitions are more clearly brought out when things are worded less technically; instead of focusing on ‘epistemically justified belief,’ merely focus on what high-stakes agents should believe. Then, the intuition is much clearer; for instance: “Hannah shouldn’t believe the bank is open tomorrow. She could default on her loans!” Further, this error theory can be extended to pragmatic encroachment on knowledge. In the same way that, in high-stakes cases, Hannah should not rely on her belief that *p* in reasoning, Hannah also should not rely on her knowledge that *p* in reasoning. Like the belief case, our intuitions are not clearly distinguishing between knowing something and relying on that knowledge. Further, the above cases (Birthplace, Surgery, Marriage, and Jellybean) are all ones in which the agents can plausibly be construed as knowing, but nonetheless ought not rely on their knowledge that *p* in their reasoning. Thus, even if a belief amounts

¹⁶⁷ Thanks to an anonymous referee.

to knowledge, we may not be justified to rely on it in reasoning. (I discuss this more in Section 4.5.2 below).

To clarify my proposal, it may be helpful to contrast it with other related, recent literature. Ross and Schroeder (2014) also draw connections between dualism and pragmatic encroachment.¹⁶⁸ However, Ross and Schroeder conclude that pragmatic encroachment occurs. More specifically, their view is that there is pragmatic encroachment on *occurrent justified belief*, but not on non-occurrent justified belief.¹⁶⁹ In a low-stakes context, one can occurrently believe p; in a high-stakes context, one may only retain one's belief non-occurrently.¹⁷⁰ In other words, Ross and Schroeder maintain that if S has a justified occurrent belief that p, S ought to rely on p in her reasoning. However, I think it is clear that we can have a justified occurrent belief that p, but nonetheless need not rely on p in our reasoning.¹⁷¹ The cases above, Birthplace, Marriage, Surgery, and Jellybean, are examples of this: cases where one rationally occurrently believes p yet ought not rely on p in reasoning. In addition, I maintain a strict purism about all justified belief: both occurrent and non-occurrent. Thus, while we are responding to similar psychological facts, they draw the wrong lessons from them.¹⁷²

¹⁶⁸ For objections to Ross and Schroeder, see Locke (2013) and Tang (2015).

¹⁶⁹ Thanks to Blake Roeber.

¹⁷⁰ Ross and Schroeder (2014: 271). This follows from their principle, "Justification Condition on Occurrent Attitudes."

¹⁷¹ Locke (2013) raises a similar objection to Ross and Schroeder's view.

¹⁷² Thanks to Blake Roeber and Lara Buchak.

Another popular response to pragmatic encroachment cases involves the idea that, in a high-stakes context, subjects can justifiedly believe that *p* but are not in a strong enough epistemic position to act on *p* (see, e.g. Brown 2012; Reed 2010, 2012; Rysiew 2007). I agree with these authors that having a justified belief that *p* does not entail one ought to rely on that belief or act as if *p* is true; above, I borrow their cases to establish this very point. My view fills out theirs by painting a picture of the mind that can explain and add plausibility to their insight.

One might wonder whether this insight—that in high stakes cases, one can believe *p* but cannot act on *p*—is consistent with a credence-first view. After all, maintaining that beliefs *just are* high credences seems consistent with the idea that belief and action can come apart.¹⁷³ In response, while I agree these are strictly speaking consistent, it is hard to see *why* belief and action would come apart in this way on the credence-first view. As I argued above, credence-firsters cannot maintain the simplifying role of belief. If belief and credence are equally complex—because belief is nothing over and above a high credence—then it is hard to see why belief would be correlated with low-stakes and credence with high-stakes, because there would not be any efficiency payoff in relying on a belief when the stakes are low. So, a credence-firster can pull apart belief and action, but the dualist can explain *why* belief and action come apart: beliefs are relied on in low-stakes cases and credences relied on in high-stakes cases, and the mental state one relies on in reasoning affects how one ought to act.

¹⁷³ Thanks to an anonymous referee.

4.4.3 Psychological evidence

This explanation of pragmatic encroachment, (1*) and (2*), fits well with the psychological literature. As Jennifer Nagel (2008: 281) points out, multiple psychological studies have shown (unsurprisingly) that, when asked to solve the same problem, high-stakes subjects tend to try harder than their low-stakes counterparts. When the stakes are high, we think more systematically and less heuristically; we move away from automatic reactions and first impressions and tend more toward deliberate and controlled reasoning. Higher stakes subjects put forth more cognitive effort and their cognitive biases were mitigated (Kunda 1990, Lerner and Tetlock 1999). If part of the role of belief is to simplify our reasoning and mitigate cognitive effort, then it makes sense that we would tend to rely on our beliefs when the stakes are lower. Credence-reasoning, on the other hand, seems characteristic of the way psychologists describe high-stakes reasoning: it is deliberate, controlled, and requiring more cognitive work.

Other psychologists, such as Daniel Kahneman (2013), have proposed a model called the “two systems” or “dual process” view. This model also suggests that what kind of reasoning in which we engage depends on what is at stake. On Kahneman’s picture, for example, we have two systems, System 1 and System 2. System 1 is “fast thinking,” which is lazy but efficient, and is our automatic, default mode of reasoning. System 2 is “slow thinking” and requires much more mental work, attention, and effort, but is also more precise and reliable. Kahneman argues that the two systems theory can explain many psychological tendencies and heuristics, such as the availability heuristic, the base rate fallacy, how difficult it is for us to reason with small probabilities, and much

more.¹⁷⁴ Participants in many of Kahneman’s studies were more likely to rely on System 2 when the stakes were higher, e.g. they were given money or a desirable reward for getting a problem correct.¹⁷⁵ In some cases, belief-reasoning looks a lot like System 1 reasoning, as both are efficient and generally our default way of reasoning and thinking about the world (see Carter, Jarvis, & Rubin 2016: 2338). However, credence-reasoning—especially precise, careful credence reasoning—looks much more like System 2 reasoning, as it is more costly and less efficient, but can enable to us avoid errors. I do not commit to the idea that belief-reasoning is always System 1 reasoning, nor that credence reasoning is always System 2 reasoning (because, for example, sloppy or simplified credence reasoning may resemble certain types of System 1 reasoning). However, the two-systems/dual process models further support the idea stakes affect reasoning, and whether we rely on a belief or a credence depends on what is at stake.¹⁷⁶

Further, there is a psychological phenomenon called “need-for-closure,” and this describes how quickly subjects come to settle a question after opening inquiry on some matter. High need-for-closure is associated with quick decision making, low stakes, and/or the need to settle some question as soon as possible. Subjects with low need-for-closure, on the other hand, leave questions open for longer and take their time making up their mind. Psychological studies have shown that one major factor that diminishes our

¹⁷⁴ Kahneman (2013: ch. 1, 13, 14, & 16). See also Kahneman et al (1982). For a more recent defense of dual process theory, see Evans and Stanovich (2013_a, 2013_b). Thanks to Jennifer Nagel.

¹⁷⁵ Kunda (1990) and Lerner and Tetlock (1999). See also Nagel (2008, 2010_a, 2010_b).

¹⁷⁶ Further psychological evidence for dualism is nicely summarized by Weisberg (forthcoming) and includes Webster and Kruglanski. (1994, 1996). See also Nagel (2008, 2010_a, 2010_b).

need for closure is higher stakes; we will take longer to think through an answer if it is especially important we get it right, e.g. because there is a reward involved (Kruglanski & Freund 1983; Kruglanski & Webster 1991, 1996). Further, as Weisberg (forthcoming) suggests, it is plausible that closure often involves the decision to form or rely on a belief; this also fits well with Jane Friedman's account of belief (2013c). If this is right, then belief-reasoning is correlated with high need-for-closure (the desire to make up one's mind quickly) and low stakes, and credence-reasoning is correlated with low need-for-closure (the desire to take one's time and think through some matter) and high stakes.¹⁷⁷ Thus, we tend to settle on or rely on a belief when there are high benefits and low cost for closure. Credences, on the other hand, come up when it is costly to close inquiry because, for example, there is a significant risk involved.¹⁷⁸

The following table summarizes the basics of my view.

¹⁷⁷ See Nagel (2008) for a view that uses psychological evidence and specifically cognitive closure to explain what is going on in pragmatic encroachment cases.

¹⁷⁸ Thanks to Lara Buchak.

TABLE 4.1:
BELIEF, CREDENCE, AND RELIANCE

	Having the attitude	Relying on the attitude in reasoning
Belief that p	<ul style="list-style-type: none"> ◆ Rationality purely a function of one's epistemic situation ◆ Has the property of <i>stability</i>: does not change in virtue of an evidentially irrelevant change in credences/preferences (Ross & Schroeder 2014: 277) 	<ul style="list-style-type: none"> ◆ Rationality a function of one's epistemic and practical situation ◆ Entails treating p as given/ accepting p ◆ Correlated with high need-for-closure and System 1 reasoning
Credence that p	<ul style="list-style-type: none"> ◆ Rationality purely a function of one's epistemic situation ◆ When occurrent, rational credence fluctuates to mirror one's epistemic situation (e.g. as our degree of justification or evidence changes) 	<ul style="list-style-type: none"> ◆ Rationality a function of one's epistemic and practical situation ◆ Entails considering both p and not-p ◆ Correlated with low need-for-closure and System 2 reasoning

4.5 Objections

4.5.1 What is belief?

One might wonder what it is for one to believe p, if it is possible to have a belief but not rely on it in reasoning. If the belief is not influencing one's reasoning, in what meaningful sense does one even have the belief anymore?

First, the idea that it is possible to have a belief but not rely on it in reasoning is consistent with most of the major theories of belief: dispositionalism,

representationalism, functionalism, and primitivism.¹⁷⁹ For example, as William Alston notes, having a belief might be associated with a set of defeasible dispositions, e.g. if S believes p, then...

- ◆ if someone asks S whether p, S will tend to respond in the affirmative.
- ◆ if S considers whether p, S will tend to feel it to be the case that p.
- ◆ S will tend to believe propositions that S takes to follow from p.
- ◆ if S learns not-p, S will tend to be surprised (Alston 1996: 4).

All of these characteristics of belief are consistent with my view. Not only does my view fit with many versions of dispositionalism about belief, but it is also consistent with representationalism about belief: one believes p iff one represents the world's being such that p. It is merely that, if the stakes become high enough, one ought to be willing to take into consideration the possibility of error. One represents the world's being such that p, but not with probability 1. My view fits with functionalism about belief as well. Finally, it might be that belief is a primitive concept; 'belief' is a familiar part of our everyday discourse and my view is consistent with treating it as a primitive.

Second, in what meaningful sense do we retain beliefs if we do not utilize them in reasoning? First, one may have a belief non-occurrently and thus not refer to it in reasoning. One has not given up the belief; it is stored in one's mind, but one is occurrently reasoning with one's credence. When we say things like "there's a good chance that p, but I'm not totally confident; it might be that not-p," we are engaging in

¹⁷⁹ For an overview of the different theories of belief, see Schwitgebel (2015).

credence reasoning. This kind of reasoning is consistent with one's believing that p; one is just not relying on one's belief in this instance of reasoning.

Further, it even seems possible to even have a belief *occurrently* but not utilize it in reasoning; this is what is happening in many of the above cases (i.e. Birthplace, Surgery, Marriage, Jellybean). For example, Alex could reason as follows: "I believe Julius Caesar was born in 100 BC; I have excellent evidence to support this and see no reason to give up this belief. Nonetheless, I don't think I should answer the question. There's a very small chance that I'm wrong, and the risk of the extremely painful shock simply is not worth the potential gain of a jellybean." Alex occurrently believes Julius Caesar was born in 100 BC, but also recognizes that he should not rely on his belief in this circumstance.

One might object that expressions of the form "I believe p but maybe not-p, so I should hedge my bets" should not necessarily be taken indicators of one's believing p, but are simply expressions of high credence. If one truly believed p, they would simply assert p; asserting "I believe p" is rather a way of hedging with respect to p.¹⁸⁰ In response, *ceteris paribus*, we should take people's claims about their own mental states at face value. Of course, we cannot rule out that these statements of belief express high credences, but I think an account that takes the statements literally should be preferred to one that does not. Further, on my account, an assertion that p is generally correlated not merely with believing p, but with something stronger: a reliance on one's belief in reasoning. Thus, statements like "p, but maybe not p" or "p, but there's a chance I'm

¹⁸⁰ Thanks to an anonymous referee.

wrong,” sound odd, because the first conjunct indicates a reliance on one’s belief that p, and the second indicates a reliance on one’s credence in p, and as Staffél (2017) argues, we do not rely on both attitudes at the same time. So, while most cases of assertion that p indicate belief that p, having a belief that p, even if occurrent, may not always license a flat-out assertion that p.

This raises the question: what does it mean to occurrently believe p, if it is possible to occurrently believe p without relying on p in one’s reasoning?¹⁸¹ On my view, when agents occurrently believe p at time t, they recognize the fact that they believe p at t; the proposition is at the forefront of their mind and they are immediately aware of the fact that they believe it. However, that does not entail that they will or ought to rely on p in their reasoning; one can be considering p, acknowledging that they believe p, but nonetheless rely on their credence in p in reasoning about what to do. Further, the various theories of belief, e.g. functionalism, do not commit us to any particular view of what occurrent beliefs are like, and thus my view of belief need not rule them out.¹⁸² On my view, then, we can distinguish the following four states/acts:

- ◆ Believing p (can be non-occurrent).
- ◆ Occurrently believing p, i.e. p is at the forefront of your mind, and you recognize that you believe it.
- ◆ Relying on p in reasoning, i.e. treating p as a premise in practical reasoning.

¹⁸¹ Thanks to an anonymous referee.

¹⁸² Thanks to Callie Phillips.

◆ Acting as if p (which may come apart from reliance in, e.g. weakness of will cases).¹⁸³

It is crucially important to keep these four distinct, and note that, contra many defenders of pragmatic encroachment, there are several steps between believing p and acting as if p is true.

4.5.2 What about principle-based arguments for pragmatic encroachment?

A second objection involves the extent to which my view supports purism. There are two main ways proponents of pragmatic encroachment have motivated their view: via cases and via principles (Roeber 2018a). While I have argued that the typical pragmatist argument from cases is based on a failure to recognize a crucial distinction, I have not discussed the principle-based arguments for pragmatic encroachment.

I first want to note that I am satisfied if I have merely diffused the case-based arguments for pragmatic encroachment. I acknowledge that there are many principle-based arguments to which I may not have responded. At the same time, my arguments challenge some of the principle-based arguments for pragmatic encroachment. Consider the following principle:

JB-action principle: If S has a justified belief that p, it is rational for S to act as if p.

If my argument above succeeds, then the JB-action principle is false; Birthplace, Surgery, Marriage, and Jellybean are all counterexamples to it. Thus, I have provided a reason to question any principle-based argument for pragmatic encroachment that relies

¹⁸³ Thanks to Kate Finley.

on the JB-action principle. However, recall at the beginning of the chapter that I shifted focus to justified belief, but knowledge has traditionally been the subject of the pragmatic encroachment debate. A more widely-discussed principle used to motivate pragmatic encroachment is the following:

Knowledge-action principle: If S knows that p, it is rational for S to act as if p.¹⁸⁴

I have not directly given arguments against the Knowledge-action principle. However, there are at least two ways that my arguments count against it. First, it is unclear why knowledge, but not justified belief, would allow one to act as if p. What component of knowledge would pave the way to rational action, apart from justification and/or belief? It is hard to see how the Knowledge-action principle could be true if the JB-action principle is false (Locke 2015: 83; Kim 2017: 2). Second, many of the cases I use to challenge the JB-action principle can also be used against the Knowledge-action principle. In cases very similar to Birthplace, Surgery, Marriage, Jellybean, the agents know p but are in a practical situation such that they ought not to act on p. Thus, my arguments above can be extended to challenge principles often used to motivate pragmatic encroachment.

There are many other principles besides the two above the proponents of pragmatic encroachment have used in arguments for pragmatism; Roeber (2018a) discusses at least five others. While I do not have space to consider each of these in

¹⁸⁴ The Knowledge-action principle was originally proposed by Fantl & McGrath (2002). Proponents of it include Hawthorne (2003), Hawthorne & Stanley (2008), Fantl & McGrath (2010), Ross & Schroeder (2014). For arguments against the Knowledge-action principle, see Brown (2008a, 2008b, 2012), DeRose (2009), Reed (2010), Lackey (2010), Neta (2012), Roeber (2018a).

detail, I note the following general observation. Almost all of the principles draw a close connection between belief/epistemic justification/knowledge and action: e.g. actions one can/is willing to/ought to perform. However, presupposing a tight connection between the epistemic and the practical from the beginning and using this connection to argue for pragmatic encroachment seems somewhat dialectically inappropriate. The tight connection between the practical and the epistemic is the very connection that many purists deny. In sum, while I do not take myself to have successfully diffused all the principle-based arguments for pragmatism, I think my arguments provide a reason to be skeptical of many of them.¹⁸⁵

4.6 Conclusion

I conclude that belief-credence dualism can offer a unique explanation for pragmatic encroachment. I explained a dualist picture of the mind on which belief and credence are two cognitive tools that enable us to balance efficiency and accuracy. Then, I argued that there is a crucial distinction between having a belief and relying on a belief in reasoning. Once this distinction is salient, one can see that high stakes do not require agents to give up their beliefs; instead, high stakes make it such that agents ought to rely on their credences instead of their beliefs. Thus, we need not commit ourselves to

¹⁸⁵ One might worry that my view has especially unhappy consequences when it comes to moral encroachment, the view that epistemically justified belief depends on *moral* factors. If you have a lot of (misleading) evidence for a sexist or racist belief, it might seem like my view would entail you ought to continue to have that belief, despite the high stakes, but you ought not rely on it in reasoning. In response, I agree that an immoral belief is problematic, but not necessarily *epistemically* problematic—rather, it is morally and all-things-considered problematic, and from those perspectives, you ought not hold it. Thanks to Jason Stanley, Amy Flowerree, and Chris Copan for helpful discussion. For more on moral encroachment, see Pace (2011), Fritz (2017), Gardiner (2018), Moss (2018), Basu and Schroeder (2019), Basu (forthcoming).

pragmatic encroachment in order to explain the intuitiveness of the cases that motivate it; belief-credence dualism can explain these cases, vindicating purism.¹⁸⁶

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CHAPTER 5:
BELIEF, CREDENCE, AND EVIDENCE

Abstract: I explore how rational belief and rational credence relate to evidence. I begin by looking at three cases where rational belief and credence seem to respond differently to evidence: cases of naked statistical evidence, lotteries, and hedged assertions. I consider an explanation for these cases, namely, that one ought not form beliefs on the basis of statistical evidence alone, and raise worries for this view. Then, I suggest another view that explains how belief and credence relate to evidence. My view focuses on the possibilities that the evidence makes salient. I argue that this makes better sense of the difference between rational credence and rational belief than other accounts.

Keywords: Belief; Credence; Evidence; Rationality; Lottery paradox; Statistical evidence; Salience

5.1 Introduction

A topic of recent interest in epistemology is the relationship between belief and credence.¹⁸⁷ Here, my interest is in questions about how belief and credence relate to different types of evidence. While most of our evidence is both belief-generating and credence-generating, it has been suggested that certain types of evidence ought to affect

¹⁸⁷ See Jackson (forthcoming_a) for why the relationship between belief and credence is an important epistemological question.

one's credences more than one's beliefs.¹⁸⁸ In this chapter, I explore this suggestion further and look more closely at the relationship between belief, credence, and evidence.

I focus on three cases: cases of naked statistical evidence,¹⁸⁹ lottery cases,¹⁹⁰ and hedged assertions, with an eye toward seeking a unified explanation of these cases. These cases are unique in that they seem to be credence-generating but not belief-generating; they seem to be cases where rational agents ought to raise their credence in some proposition but not believe it. Why would this be? Why does some evidence affect our credences rather than our beliefs? These are the questions I will explore. My primary aim is not to argue that these cases are ones that are credence-justifying but not belief-justifying. Rather, it is to convince the reader who is already sympathetic to my verdicts about the cases that I can explain them better than other accounts.

I proceed as follows. In **Section 5.2**, I cover relevant background material. In **Section 5.3**, I describe the three cases I seek to elucidate. In **Section 5.4**, I consider a potential explanation for these cases that has been suggested in the literature, that one ought not form beliefs on the basis of mere statistical evidence, and argue it is insufficient. In **Section 5.5**, I provide my own account of what is going on in these cases. My account centrally involves the possibilities a piece of evidence makes salient. I argue for my account in **Section 5.6**, showing how it explains the cases in Section 5.3, and does

¹⁸⁸ Buchak (2014), Staffel (2015), Smith (2010).

¹⁸⁹ Buchak (2014). See also Cohen (1977), Thomson (1986), Colyvan et al. (2001).

¹⁹⁰ Kyburg (1961), Nelkin (2000), Hawthorne (2003), Collins (2006), Staffel (2015), Kelp (2017), Horgan (2017).

better than the statistical evidence account discussed in Section 5.4. I conclude in **Section 5.7**.

5.2 Background

A few caveats before I begin. First, the focus of this chapter is normative, not descriptive. I am interested in rational belief and rational credence—so I am not primarily concerned with providing a psychological description of these mental states, but rather with how these states ought to function.

Second, it is crucial to clarify the notion of rationality I am concerned with in this chapter. Several philosophers have noted there are many strands of rationality; some have suggested there are as many as nine different kinds.¹⁹¹ In this chapter, by “rational,” I mean a specific strand of epistemic rationality that describes agents with the same cognitive powers as us who respond to evidence as they epistemically ought. I am concerned with this notion of rationality for three reasons. One, I think this is roughly what many epistemologists mean by “rational” when they use the term in an unspecified way. Two, it is more action-guiding and applicable to actual human agents than more idealized versions of rationality. Three, the agents I focus on have both beliefs and credences, but I will leave open whether very idealized agents (e.g. agents with greater mental processing power than regular humans) have both beliefs and credences, or have only credences. So, holding our mental processing power fixed, I am interested in questions about how we ought to respond to the evidence we encounter.

¹⁹¹ See Cohen (2010: 663) and Plantinga (1993_a: vii-viii), (1993_b: 132-161).

A final point involves how I am understanding the difference between belief and credence. Belief is a familiar attitude that is not degreed;¹⁹² roughly, it is a propositional attitude we have when we take something to be the case or regard it as true.¹⁹³ A popular thought is that there are three belief-like attitudes S can take toward a proposition p that S has considered: S can believe that p, S can believe that not-p, and S can withhold belief, believing neither p nor not-p. One view of belief is that S believes that p iff S rules out worlds in which not-p holds.¹⁹⁴ A similar view is that when S believes p, S treats p as true for some particular purpose, e.g. for making a decision.¹⁹⁵ For this chapter, I need not commit to one of these theories of belief, but they provide a general idea of what belief amounts to and how it contrasts with credence.

Credence, like belief, is a propositional attitude, but unlike belief, is a degreed attitude. S's credence that p represents something like the subjective probability of p for S, often given a value on the [0,1] interval. Unlike belief, there are an infinite number of possible credences one can take toward a proposition (at least in principle); credences are fine-grained, whereas beliefs are coarse-grained. One important difference between credence and belief is that when one believes something, one has, in a sense, settled the

¹⁹² A note on terminology: people often use the phrase “degrees of belief” to refer to a mental state that comes in degrees and in some sense, represents the world. I think such a mental state exists, but for our purposes, I call that “credence,” which I contrast with belief, a categorical state. One might prefer to use phrases like “partial belief” or “degrees of belief” instead of credence, and then call what I call belief “categorical belief.” I am not necessarily opposed to this, but given that some have argued that beliefs do not come in degrees (see Moon (2017)), my terminology is more ecumenical.

¹⁹³ Schwitzgebel (2015).

¹⁹⁴ Buchak (2014: 286). See also Holton (2014), Greco (2016).

¹⁹⁵ Weatherson (2005), Wedgwood (2012), Ross and Schroder (2014), and Locke (2014) all have views on which some kind of treating-as-true condition is necessary for belief.

matter; belief that p is a commitment to the truth of p . However, credence (with the exception of credence 0 and 1) keeps possibilities open; a high credence in p is not necessarily a commitment to the world's being such that p is true.¹⁹⁶

Credence has been traditionally associated with betting behavior.¹⁹⁷ For example, on some views of credence, S 's credence in p is the amount of money S is willing to pay in ordinary circumstances for a bet that yields \$1 if p and \$0 if not- p .¹⁹⁸ There are problems with both reducing credences to betting behavior and with the assumption that credences are perfectly measured by betting behavior.¹⁹⁹ However, it is plausible that betting behavior can generally be used as a heuristic to approximate one's credences. So, for the purposes of this chapter, I make the modest assumption that there is a *rough correlation* between one's betting behavior and one's credences.

When it comes to the relationship between belief and credence, a view that may seem natural is a view on which belief is credence 1 (Greco (2015: 179) calls this "the simple view"). Philosophers generally take credences to be measureable with real

¹⁹⁶ See Nagel (2010: 418), Ross and Schroder (2014: 275-277). One worry for this claim is that this is inconsistent with the threshold view of belief, on which belief that p is a high credence in p above some threshold (less than 1). However, those who hold to the threshold view could embrace this claim by maintaining that a credence's meeting the threshold gives the attitude additional properties, which makes it function like a belief and causes the agent to close off possibilities (see Weisberg (forthcoming: 22)). Nonetheless, those sympathetic to the threshold view of belief will almost certainly disagree with my verdicts about the cases in Section 5.3, as in those cases, one's credence in p can get arbitrarily close to one, yet one ought not believe p . In this, my assumptions about belief and credence may be inconsistent with a threshold view of belief.

¹⁹⁷ See Ramsey (1926), Jeffrey (1965), de Finetti (1990).

¹⁹⁸ Jeffrey (1965: 60).

¹⁹⁹ For objections to the view that credences are reducible to and/or measurable by betting behavior, see Foley (1993: ch. 4), Plantinga (1993_b: ch. 6), Christensen (2004: 5.2), Eriksson and Hajek (2007), and Steffánson (2017).

numbers between 1 and 0, where 1 represents maximal credence, and some have suggested that believing p is identified with having credence 1 in p .²⁰⁰ However, the idea that belief is credence 1 is in tension with the plausible idea that we hold many of our beliefs with less than maximal certainty, and that we are more confident in some of our beliefs than in others. Further, according to orthodox decision theory, we ought to be willing to bet anything on the propositions we have credence 1 in, but we need not bet everything on our beliefs. Thus, for the purposes of this chapter, I will set belief-as-credence-1 views aside.

5.3 The Cases

Usually, when we receive significant evidence for or against some proposition, the evidence ought to affect both our beliefs and our credences. I perceive a coffee cup on the table, so I both believe and have a high credence it is on the table. I hear from a reliable friend that the talk is at 3:00 today, so I believe and have a high credence the talk is at 3:00. However, not all cases are like these. Sometimes, one's evidence generates a rational high credence but not rational belief. I focus on three of these cases. These cases are especially illuminating because they are cases where belief-generating evidence and credence-generating evidence come apart. Focusing on them can provide insight as to when (and why) some evidence ought to affect just one's credences, and when it ought to affect one's beliefs as well. To be clear, my main objective in this section is not to *argue*

²⁰⁰ For more on the view that belief is credence 1, see Levi (1991), Roorda (1995), Wedgwood (2012), Clarke (2013), Greco (2015), Dodd (2016).

that these cases are credence-justifying but not belief-justifying; I instead merely intend to explain the cases and show the reader that this conclusion is defensible.

5.3.1 Naked statistical evidence

The first instance of rational high credence without rational belief is cases where one has merely statistical evidence (or “naked statistical evidence”) for some proposition.

Lara Buchak (2014: 292) gives several examples of this, including the following:

“You leave the seminar room to get a drink, and you come back to find that your iPhone has been stolen. There were only two people in the room, Jake and Barbara. You have no evidence about who stole the phone, and you don’t know either party very well, but you know (let’s say) that men are 10 times more likely to steal iPhones than women.”

She says that, in this case, you do not have enough evidence to rationally believe that Jake stole your phone – it doesn’t seem like you have evidence that he in particular stole the phone. However, based on your statistical evidence, you should have a high credence (~0.91) that Jake stole the phone; Buchak thinks that, if you were forced to bet on who took it, you should bet on Jake.

Not only does she think this is the intuitive reading of the cases, but this is also justified by legal norms. We would never convict someone of a crime based on statistical evidence alone.²⁰¹ In a related example from the legal literature, Buchak explains that a jury would never convict a bus company for hitting someone merely based on the fact that they operate 90% of buses in that town. It is interesting to note, however, they would

²⁰¹ See Enoch, Spectre, and Fisher (2012), Blome-Tillmann (2015, 2017), and Di Bello (Forthcoming).

generally convict the company based on the testimony of a 90% reliable eyewitness.²⁰²

The idea that it is irrational to form a belief based on statistical evidence alone makes sense of this behavior; if our evidence doesn't allow us to rationally believe a company is guilty, we ought not convict them, even if it gives us high confidence they are guilty.²⁰³

Thus, "naked statistical evidence" is credence-justifying but not belief-justifying.²⁰⁴

5.3.2 Lottery propositions

The second case is relatively familiar: the lottery paradox. Suppose I have a lottery ticket that is part of a fair lottery of 100 tickets. I ought to have a high credence my ticket will lose (0.99). However, many have the intuition that I ought not believe my ticket will lose; after all, one ticket is going to win, and my ticket might just be the winner. We need not rely merely on this intuition; there are also arguments that one ought not believe their ticket will lose.

If I can rationally believe my ticket will lose, and rational belief is closed under conjunction, then I rationally believe the large conjunction that <ticket 1 will lose and ticket 2 will lose and ticket 3 will lose...>. However, I also believe the negation of this conjunction, since one ticket will win. Assuming it is irrational to have contradictory

²⁰² Buchak (2014). For earlier discussions of similar cases, see Thomson (1986) and Schauer (2003); this case originated with a real civil case from the 1940s. Thanks to an anonymous referee.

²⁰³ See Thomson (1986), Kaplan (1996), Smith (2010, 2016, forthcoming), Nelkin (2010), Enoch, Spectre, and Fisher (2012), Staffel (2015), Pasnau (2018).

²⁰⁴ One might worry that the reason it seems impermissible to form such beliefs is not because of the nature of one's evidence, but because of the moral stakes involved. See Bolinger (forthcoming). Thanks to Wes Siscoe. However, consider a case where I know either a man or a woman is wearing a hat, and I know that men are 10x more likely to wear hats than women. It still seems like I shouldn't believe the man is wearing the hat merely on the basis of the statistic alone, even though nothing is at stake morally. Further, there aren't high moral stakes in many versions of the lottery and hedged assertions, but those cases also don't justify belief.

beliefs, we ought to reject one of the above assumptions, and a natural assumption to reject is that I can rationally believe my ticket is a loser.²⁰⁵ I will borrow Hawthorne's terminology and call propositions like <my ticket is a loser> "lottery propositions."²⁰⁶

A second argument that one ought not believe lottery propositions is as follows. I cannot know my lottery ticket lost. Knowledge is the norm of belief. Therefore, I ought not believe my lottery ticket lost.²⁰⁷ Thus, it is plausible that one ought to have a high credence in but not believe lottery propositions; one's evidence that one lost the lottery is credence-justifying but not belief-justifying.²⁰⁸

A related case is from Martin Smith (2010), adapted from Dana Nelkin (2000). This case is similar to the lottery case, but I include it to show that lottery-style cases can be quite broad.

"Suppose that I have set up my computer such that, whenever I turn it on, the colour of the background is determined by a random number generator. For one value out of one million possible values the background will be red. For the remaining 999 999 values, the background will be blue. One day I turn on my computer and then go into the next room to attend to something else. In the meantime, Bruce, who knows nothing about how my computer's background colour is determined, wanders into the computer room and sees that the computer is displaying a blue background."²⁰⁹

²⁰⁵ See Staffel (2015). Horgan (2017) also maintains one ought not believe lottery propositions: "outright belief that one's lottery ticket will lose does not seem epistemically justified, no matter how high are the odds against winning." For other discussions of the lottery paradox, especially with respect to the relationship between belief and credence, see Kyburg (1961), Foley (1993) ch. 4, Christensen (2004: ch. 2), Sturgeon (2008), Nelkin (2000), Collins (2006), Kelp (2017).

²⁰⁶ Hawthorne (2003: ch. 1).

²⁰⁷ Staffel (2015). See Williamson (2000: 255).

²⁰⁸ See Kelp (2017) for an additional argument that it is irrational to believe lottery propositions.

²⁰⁹ Smith (2010: 13-14).

Smith's verdict is that, while Bruce can justifiably believe that his computer's background is blue, Smith himself ought not to believe this. However, Smith ought to have a very high credence (0.999999) that Smith's background is blue.²¹⁰ Thus, as in the lottery case, Smith's evidence in the computer screen case is credence-justifying but not belief-justifying.

5.3.3 Hedged assertions

A final case that is credence-justifying but not belief-justifying is the case of hedged assertions. Suppose you are trying to figure out if it will rain tomorrow, and you ask a friend about it. They report, "I think it is supposed to rain tomorrow, but I'm honestly not sure." Or, they might say, "It will probably rain tomorrow, but there's a chance I'm wrong." In this case, it seems as though you ought to raise your credence it will rain tomorrow, but since these assertions are hedged, you should not form a belief that it will rain tomorrow. As Adler notes, "Expressions for full belief are unqualified assertions, but expressions for [credence] are explicitly introduced by epistemic qualifiers like 'I am pretty sure that...' or 'On the evidence, it is probable that...'"²¹¹ Thus, many cases of hedged assertions are credence-justifying but not belief-justifying.

Note that hedged assertions have a different epistemic character than the statistical evidence cases and the lottery cases—in the former two cases, your evidence makes p extremely probable, but you still ought not believe p . In the case of hedged

²¹⁰ Smith does not explicitly note this because his focus is not on credence, but I take this to be uncontroversial. He does note that "the probability of P given E can reach any level (short, perhaps, of one) without one having justification for believing P " (17).

²¹¹ Adler (2002: 42).

assertions, however, the evidence may not significantly raise the probability of p ; many cases of hedged assertions wouldn't warrant exceptionally high credences. (Of course, you might receive testimony of the form "I'm 99% sure it is raining," but it seems natural to classify this as statistical evidence for p).²¹²

Nonetheless, I mention these cases of hedged assertions because they still fall under the general description of the first two scenarios: cases that are credence-justifying but not belief-justifying. All else equal, we should prefer an account of evidence that can classify all the cases together—when evidence justifies a raised credence but not belief, and when evidence justifies a very high credence but not belief. I will show how my account provides a unified explanation for all these cases; the more surprising ones (where one ought to have a very high credence but ought not believe) and the less surprising ones (where one's credence ought to slightly increase but one ought not believe).

5.3.4 Proposed explanations

We have seen three cases of high credence without belief: cases of naked statistical evidence, lottery cases, and hedged assertions. Several accounts have been proposed to explain these cases, including accounts that appeal to safety or sensitivity,²¹³ a view on which we ought not form beliefs on the basis of mere statistical evidence, and a view that appeals to a notion called "normic support." In what follows, I propose an

²¹² Thanks to an anonymous referee.

²¹³ For discussion, see Enoch, Spectre, and Fisher (2012), Enoch and Fisher (2015), Bloom-Tillman (2015).

alternative account. I will set aside the safety/sensitivity views, and I discuss the statistical evidence view extensively in the next section. However, the normic support view warrants some discussion, as it compliments the account I eventually endorse in noteworthy ways.

Martin Smith is one of the primary defenders of the normic support account.²¹⁴

Recall the case above where Smith is merely aware of the random number generator that determines the computer's background color, but Bruce perceives the blue background. Smith uses the term "normic support" to describe the kind of evidential support Bruce has for the proposition that the background is blue. Smith's support for this proposition, however, is non-normic. One way to demarcate the difference between normic and non-normic support involves when evidentially supported but false beliefs cry out for explanation. When we have normic support for a belief and the belief turns out to be false, we seek some kind of explanation for why it is false. More precisely:

A piece of evidence E **normically supports** a proposition P just in case the situation in which E is true and P is false is abnormal, in the sense of requiring special explanation.

Bruce's belief has normic support, and this is why, if Bruce's belief that the screen was blue is false, we'd want to know why – was he hallucinating, or suddenly struck with color blindness? However, if Smith's belief were false, we would not seek such an explanation. Thus, when we have evidence that non-normically supports some

²¹⁴ Smith (2010, 2016, forthcoming).

proposition, no such explanation is sought.²¹⁵ Smith suggests that for one's belief that p to be justified, one's evidence must normically support p.²¹⁶

Smith's account, while plausible and thought-provoking, still leaves some questions unanswered. Specifically, what kinds of evidence provide normic support, and what kinds do not? What evidence generates the need for an explanation, in the event that the proposition in question turns out to be false?²¹⁷ In what follows, I hope to shed light on some of these questions. I do not intend to criticize Smith's account, but rather to expand it and offer further explanation for its verdicts.²¹⁸ Before doing so, I both clarify and criticize an alternative view—the statistical evidence view.

5.4 Rational belief and statistical evidence

I begin this section by clarifying a popular theory about rational belief and evidence—what I will call the “statistical evidence view.” I suggest a plausible version of the statistical evidence view and show how it makes sense of our three cases above. Finally, I raise a few worries for it. Ultimately, I will not fully reject the idea behind the statistical evidence view, namely, that in many cases, we ought not form beliefs on the basis of statistical evidence alone. Something like it will complement the account I eventually endorse. However, I think this account gets a small number of cases wrong, and that my account offers a more complete and accurate explanation of the data.

²¹⁵ Smith (2010: 15-19).

²¹⁶ Ibid, 17.

²¹⁷ Thanks to an anonymous referee.

²¹⁸ However, for a recent criticism of Smith, see Backes (forthcoming).

A number of authors, including Julia Staffel and Lara Buchak, have suggested that, in general, statistical evidence should not produce belief.²¹⁹ For example, Staffel claims that “it is irrational to hold outright beliefs based on purely statistical evidence.”²²⁰

A plausible precisification of this principle is as follows:

(1*) It is irrational to believe that p or withdraw belief that p on the basis of mere statistical evidence that bears on p.

A few notes about (1*). First, because it is widely accepted that statistical evidence can produce probabilistic belief, it is crucial to keep the content of the evidence and the content of the belief the same.²²¹ Second, I’ve used the phrase “withdraw belief from p” to indicate going from believing p to withholding belief that p.²²² In the same way statistical evidence alone doesn’t justify belief, it also seems like if one’s body of evidence justifies belief that p, and then one gets statistical evidence *against* p (i.e. for not-p), one ought not withhold belief that p on that basis.²²³ For example, suppose someone reliably testifies that the Blue Bus company hit the pedestrian, and then you learn that 5% of the buses operating that day were from the Blue Bus company. You

²¹⁹ See Buchak (2014), Thomson (1986), Kaplan (1996), Nelkin (2000).

²²⁰ Staffel (2015: 1725).

²²¹ Thanks to John Keller.

²²² Thanks to an anonymous referee.

²²³ For a discussion of related cases, see Smith (2016: 109-120).

shouldn't withhold belief that the Blue Bus company did it on this basis, although you should plausibly lower your credence.²²⁴

(1*) explains the first two cases. Consider the case where a bus company would not be convicted simply because they operated 90% of the buses in a particular city, but they would be convicted on the basis of a 90% reliable eyewitness. If (1*) is true, then we can see why: in the first scenario, you have merely statistical evidence that the company is responsible. However, in the second scenario, you have fairly reliable testimony that they did it, and this justifies belief.

(1*) also explains the lottery case. Several philosophers have defended the idea that the reason it is irrational to believe lottery propositions is because statistical evidence should not produce belief.²²⁵ If, in a lottery scenario, you only have statistical evidence you will lose, this account can explain why it is irrational to believe your ticket will lose. Further, if your computer's background is determined by a random number generator, even if 999,999/1,000,000 times it is blue, you still have mere statistical evidence it is blue. However, the direct perception of the blue background isn't statistical evidence; you can rationally believe on this basis.

However, I have four main worries about endorsing (1*) as a complete or final explanation for the cases. First, it is unclear that the statistical evidence view gives the correct verdict on the hedged assertion case; it's hard to see why a hedged assertion

²²⁴ However, it is plausible that the fact that you shouldn't withhold belief here is because the statistical evidence is trumped by the testimonial evidence, so this case may not draw any sort of interesting contrast between belief and credence. Thanks to an anonymous referee.

²²⁵ Thomson (1986), Kaplan (1996), Nelkin (2000).

(especially one that doesn't appeal to any specific probabilities) should be a piece of naked statistical evidence. While, as mentioned above, the hedged assertion case seems different than the lottery case and Buchak's case (because it doesn't raise one's credence as significantly), we still have reason to prefer an account that can give a unified explanation of all three cases.²²⁶

The second worry for (1*) involves all-or-nothing statistics. Consider the case where I know that either Jake or Barbara took my phone. Suppose, instead of knowing that men are 10 times more likely to steal cell phones than women, I know that 100% of people who steal cell phones are men.²²⁷ This is a piece of statistical evidence, but it also seems like I can rationally believe that a man stole my phone on this basis alone.

Two caveats for this second worry. First, probability 1 may not suffice for belief in general, such as in lotteries with infinitely many tickets. Plausibly, in an infinite lottery, the probability your ticket will lose is 1, but you ought not believe it will lose.²²⁸ One option here is to appeal to infinitesimals, and maintain that the probability you will lose isn't 1, but is infinitely close to 1. However, whether you find infinitesimals plausible or not, it is reasonable to think that probability 1 suffices for belief in finite

²²⁶ Thanks to an anonymous referee.

²²⁷ For a similar criticism of the statistical evidence view, see Enoch and Fisher (2015: Part I). One might worry that 'statistics' in the limit are not merely statistical evidence, because they posit a necessary connection between two things. However, it is unclear why evidence's drawing a necessary connection between two things precludes that evidence's being statistical. For example, suppose someone claims that having blue hair causes cancer. You ask for some statistical evidence to support their claim, and they say "100% of people with blue hair have cancer." This seems like an apt response. It would be odd to complain that this isn't mere statistical evidence because the correlation is too tight; it is unclear that a perfect correlation precludes that connection's being statistical. I am grateful to an anonymous referee for raising this objection.

²²⁸ Thanks to Daniel Rubio and an anonymous referee.

cases, and this is enough to generate a problem for the statistical evidence view. Second, the clearest case where the 100% statistic justifies belief is when it ranges over past, present, and future cases—then the statistical evidence entails that a man is guilty. A less clear statistic (but potentially a more realistic one) would only apply to past cases; however, knowing only men have stolen cell phones in the past may not justify believing a man is guilty.²²⁹

A third case that is tricky for (1*) is a case where you get testimony for *p* from an eyewitness that is, say, 85% reliable. The more you focus on their assertion that ‘*p*,’ the more it seems like you can rationally believe on the basis of their testimony. However, the more you focus on the fact that they are merely 85% reliable, the more their testimony begins to seem like statistical evidence, and the intuition that you can rationally believe on the basis of their testimony is less clear. This kind of case generalizes; in fact, it seems like any case where the evidence is uncertain can be described in a way that makes it seem like statistical evidence.²³⁰ What is interesting about these cases is that the way in which the evidence is presented, can, at least sometimes, affect whether the agents in question ought to form a belief or merely a credence. Why would the presentation of the evidence matter?

A final way (1*) could be improved involves the completeness of its explanation. Even if it tells us something interesting about what evidence doesn’t justify belief, but what evidence *does* justify belief? Buchak notes that one upshot of her cases is that, when

²²⁹ Thanks to an anonymous referee.

²³⁰ See Buchak (2014: 301).

it comes to rational belief and rational credence, type of evidence matters. She says that “rational credence and rational belief are sensitive to different features of evidence...[a body of evidence] separately determines rational credence and rational belief.”²³¹

Presumably, credences are sensitive to all parts of a body of evidence. Any kind of evidence gain or loss ought to move around one’s credences. (1*), then, tells us what kind of evidence rational belief is insensitive to, but doesn’t tell us what kinds of evidence rational belief is *sensitive* to. What part of a body of evidence justifies belief?

A natural answer on behalf of the statistical evidence view is that non-statistical evidence justifies belief.²³² However, there are at least two problems with this suggestion. First, we need a story about what counts as non-statistical evidence. Given the difficulties of defining what counts as statistical evidence,²³³ this could be a challenging task. Second, there are cases of non-statistical evidence that do not justify belief, including both testimonial and perceptual evidence. Consider again the hedged assertion: it may raise one’s credence, but may not justify belief that p; e.g. “I think it will rain this afternoon, but I’m not sure.” There are also perceptual cases with the same structure. One might see a blurry object from far away that slightly resembles a familiar object, e.g., you briefly see a faraway deer running quickly through the woods. In both cases, you have non-statistical evidence for some proposition that is credence-justifying and not belief-

²³¹ Ibid, 295.

²³² Thanks to an anonymous referee.

²³³ See Buchak (2014: 301) on the problem of defining statistical evidence.

justifying. Thus, there seem to be some problems for the suggestion that non-statistical evidence justifies belief. In the next section, I offer an alternative view.

5.5 B-evidence and c-evidence

In this section, I distinguish between two kinds of evidence and suggest that this demarcation can capture the way in which beliefs respond to evidence differently than credences. I explain the distinction and clarify how it shows what part of a body of evidence is merely credence-generating, and what part is also belief-generating. Then, I motivate my view by arguing that it makes sense of all three cases in section 5.3, but does better than the statistical evidence account with respect to the worries I raised in section 5.4.

5.5.1 Two kinds of evidence

The distinction I have in mind divides one's evidence for a particular proposition into two categories, depending on the possibilities that the evidence makes salient. More specifically:

B-evidence: Evidence for p that does *not* make salient the possibility of not- p .

C-evidence: Evidence for p that makes salient the possibility of not- p .²³⁴

Some examples might help illustrate this distinction. We often get B-evidence when we get evidence that p is true without qualification, such as when someone asserts

²³⁴ Thanks to Blake Roeber. See Ross and Schroder (2014: 276).

p.²³⁵ We get C-evidence for p when we get statistical evidence for p, but also when we get evidence for p that is hedged or qualified in some way: “P is decently likely, but I’m honestly not sure.” Given this distinction, we can modify (1*) as follows:

(1) It is irrational to believe that p or withdraw belief that p on the basis of mere C-evidence that bears on p.

The basic idea behind (1*) is that, in general, rational agents hold beliefs on the basis of evidence that does not make salient the possibility they are wrong. However, C-evidence will affect a rational agent’s credences. Accordingly, insofar as there is a connection between credence and betting behavior, C-evidence will have behavioral import.²³⁶

(1) also does not mean that *believing* p is incompatible with not-p being salient (or that withholding belief is incompatible with the possibility of p being salient). Rational agents hold beliefs all the time in face of the possibility that they are wrong.²³⁷ For example, you might be a juror on a court case and rationally decide the evidence best supports the proposition that Jones is the murderer. This belief is compatible with the possibility that you are wrong being salient, e.g. many fellow jurors may be asserting that Jones is not the murderer and giving evidence for this. However, your belief that Jones is the murderer, if rational, will at least partially be based on *evidence* that does not make

²³⁵ However, there are exceptions to this. Someone uttering “That is a zebra, not a cleverly painted mule” may make salient the possibility it is not a zebra, and thus count as C-evidence, and thus not justify belief. Thanks to an anonymous referee.

²³⁶ For this reason, agents who fail to alter their beliefs on the basis of C-evidence will not be susceptible to the base rate fallacy. They will alter their credences in accord with the base rates, and bet accordingly. For more on the base rate fallacy see Kahneman (2011: ch. 14); for a response to Kahneman, see Feldman (1988: 85-86).

²³⁷ Thanks to Lara Buchak. See Locke (2014), Tang (2015), Moon (2018).

salient the possibility that he is the murderer. That is, sufficient B-evidence must be at least part of the basis for your belief in Jones's guilt. This is why, for example, it would be irrational to believe that Jones did it simply because of a statistical generalization about his gender or race.

This distinction also suggests the following:

(2) It is rational to believe that p on the basis of sufficient B-evidence for p, and rational to withdraw belief that p on the basis of sufficient B-evidence for not-p.

(2) includes the modifier 'sufficient' because whether one ought to form a belief on the basis of B-evidence depends on many factors, such as how good the B-evidence is and what the rest of the agent's body of evidence looks like. Still, (2) gives us an idea of what kind of evidence generally justifies forming or giving up a belief.

5.5.2 Salience

The difference between B-evidence and C-evidence has to do with what possibilities each makes salient. But what is salience? David Lewis suggests that salience is closely connected to the possibilities to which one is attending.²³⁸ Taking a cue from Lewis's suggestion, I distinguish two ways a proposition X might be salient:

Descriptive Salience: X is descriptively salient for S iff S pays attention to X.

²³⁸ Lewis (1996: 559). See especially Lewis's "Rule of Attention." See also Stalnaker (2002), Fantl and McGrath (2010: 55-58).

Normative Salience: X is normatively salient for S iff S ought to pay attention to X.²³⁹

Here, “pay attention” involves what S is focused on. This involves propositions, possibilities, and representations that are occurrent for S. For example, it might involve the beliefs S forms about possibilities. At first blush, a general definition of salience would have both a descriptive and a normative component, as it seems like it would involve both what one is actually paying attention to, but also might involve, say, possibilities that are obvious but one is irrationally ignoring.²⁴⁰

In showing how my view explains the cases above, it is especially important to clarify what it means for *a possibility* to be salient for an agent. If one follows Lewis closely, one might think that descriptive salience best captures what makes a possibility salient:

◆ Possibility p is salient for S iff S pays attention to p.

Though, recall that in this chapter, we are concerned with agents who properly respond to their evidence. If S is responding to her evidence appropriately, S will pay attention to the possibilities she ought. Hence, when the above definition is applied to the agents I have in mind in this chapter, the following holds:

◆ S pays attention to p iff given S’s evidence, S ought to pay attention to p.

In other words, for the rational agents of concern in this chapter, Descriptive Salience and Normative Salience collapse. Here is an example to illustrate this point.

²³⁹ Thanks to Alan Hajek.

²⁴⁰ Thanks to Ben Lennertz and Andrew Moon.

Suppose, in normal circumstances, a reliable testifier informs you that your significant other is at the grocery store. If you are responding to your evidence correctly, you should form a belief that your partner is at the store. However, suppose instead, you are irrational and overly paranoid that your partner is cheating on you. Then, in response to the testimony, you might doubt they are at the store, consider the possibility that they are elsewhere, worry you are being lied to, etc.²⁴¹ Since this latter agent isn't responding to their evidence as they ought, whether they ought to form beliefs or credences in response to their evidence is beyond the scope of this chapter; my focus is on the former sort of agent. Thus, for all S, where S is a rational agent:

◆ Possibility p is salient for S iff S rationally pays attention to p,

where S pays attention to all the possibilities that S ought to be considering. It is also worth noting that agents who are rational in my sense will not, in every circumstance, consider the possibility they might be wrong.²⁴² They respond to their evidence properly, but they have limited cognitive faculties, as we do. Thus, they cannot

²⁴¹ This raises an interesting question: given your irrational paranoia, should you believe your partner is at the store? A larger project that involved both rational and irrational agents would say something about this question. More generally, it would discuss agents who respond to their evidence in less-than-ideal ways, either because they fail to consider possibilities they ought to pay attention to (someone being careless or thoughtless), or because they consider possibilities they ought not consider (an overly neurotic, anxious person). It might be the case that the neurotic person ought not to form as many beliefs as the person who is responding normally to evidence, because the anxious person's evidence would make the possibility they are wrong more salient. However, what doxastic attitudes irrational agents ought to form in response to their evidence is ultimately beyond the scope of this chapter.

²⁴² Thanks to Fritz Warfield.

always consider the possibility of error. They will do so when their evidence calls for it, but they will also ignore or close off possibilities.²⁴³

5.6 Motivating my account

At this point, I hope that the reader has a grasp on the basic distinction between B-evidence and C-evidence, and how this distinction applies to the relationship between rational belief and evidence (claims 1 and 2). In this section, I argue that my account makes sense of all three cases in section 5.3, and does better than the statistical evidence account with respect to the worries I raised in section 5.4.

5.6.1 Explaining the cases

First, my account gives us the right result in Buchak's cases. When one learns that men are 10 times more likely to steal cell phones than women, one ought to think it is likely a man was the thief, but the statistic makes clear that a woman's being guilty is a live possibility. Thus, in the non-limit cases, statistical evidence will count as C-evidence. In the bus case, the fact that 90% of the buses in a town are run by Company X is merely C-evidence that Company X hit the pedestrian, and thus, we ought not believe Company X did it or convict them on this basis. However, when a reliable eyewitness testifies that they saw one of Company X's buses hit the pedestrian, we have B-evidence that Company X is responsible, and ought to both believe they did it and (in normal circumstances) convict them on this basis.

²⁴³ Note also that if pragmatic encroachment occurs, then a change in stakes might cause a change in what possibilities ought to be salient for an agent, and thus affect what that agent should believe. However, I remain neutral on whether stakes affect what is salient for rational agents.

Second, recall the lottery paradox. My account can explain why one ought not believe their ticket will lose: in a normal lottery set-up, agents have evidence that directs their attention to the possibility that they might win. One knows that one ticket is going to win, and winners are celebrated and given lots of attention. When a lottery ticket is in hand, one's evidence calls one to pay attention to the possibility they might just be the winner. Because one's evidence makes salient the possibility that they won't lose, one's evidence is C-evidence. Since rational belief is not based on C-evidence alone, one ought not believe one will lose.²⁴⁴ Since credence is sensitive to C-evidence, one nonetheless ought to have a high credence they will lose.²⁴⁵

Finally, my view explains the hedged assertion case. Qualified or hedged assertions that p, such as "I think that p, but I'm honestly not sure," or "Probably p, but there's a chance I'm wrong" make salient the possibility of not-p, and thus count as mere C-evidence for p. Thus, they are credence-justifying but not belief-justifying. Further, a hazy or far away perception of p also calls the agent to pay attention to the possibility of error, so the agent should raise her credence in p but ought not believe p.²⁴⁶ In both cases, the agents receive mere C-evidence, which isn't a basis for rational belief.

²⁴⁴ Collins (2006) also argues that the salience of the possibility of error does important work in the lottery paradox, but his application is to knowledge, rather than rational belief. He suggests the following necessary condition on knowledge to explain lottery cases, which nicely complements my account: "If there is some possibility that is very close to actuality that p is false, and to which S assigns a non-zero probability, then no matter how subjectively improbable this possibility is, S doesn't know that p." For a related discussion about the relationship between lotteries, statistical evidence, and knowledge, see Nelkin (2000).

²⁴⁵ Staffel (2015: 5-7). See also Hawthorne (2003: ch. 1).

²⁴⁶ For instance: suppose we are trying to figure out what time it is, and there is a far-away, blurry clock (with hands), that makes it look roughly like it is 5:30 but it could also be 4:30 or 6:30. This would be some evidence that it is 5:30, but the nature of the perception should cause us to pay attention to the fact

5.6.2 Normic support and c-evidence

My account compliments and illuminates Smith's account. My account can explain why we ought to have a high credence in but not believe propositions for which we have mere non-normic support. C-evidence for p will almost always provide non-normic support for p ; given only C-evidence, one ought not think that p is true under normal conditions. Why? Recall that cases of non-normic support are marked by the fact that we don't look for an explanation if our belief turns out to be false. Since C-evidence calls us to pay attention to the possibility of error, it makes sense that we wouldn't seek an explanation for the false belief—error was already a real, live possibility. In other words, there is a correlation between the following:

- ◆ S has evidence for p that makes salient the possibility of not- p .
- ◆ S does not look for an explanation if S learns not- p .

To see this, consider Smith's example again. Smith, who knows his computer background is determined by a random number generator, takes the possibility the background is red to be live, even though it is overwhelmingly likely that his background is blue. Since his evidence makes the possibility of error salient, he doesn't look for an explanation if turns out to be red, and he ought not believe the background is blue.

On the other hand, B-evidence for p is correlated with normic support for p . When Bruce perceives the blue background, his perceptual evidence does not call to mind the possibility that the background isn't blue; he is not considering the possibility of error. If

that we might be wrong; it would be natural to classify a blurry perception of this clock as C-evidence. For more on how perception might probabilistic, see Wedgewood (forthcoming).

he finds out he was wrong about the computer background, this will be surprising; this is a possibility he had not considered. Thus, he will wonder why this surprising fact obtained, and look for an explanation for it. So there is also a correlation between the following:

- ◆ S has evidence for p that does not make salient the possibility of not-p.
- ◆ S looks for an explanation if S learns not-p.

Thus, my account complements and illuminates Smith's. In this, one can accept both my view and Smith's view: since they give the same verdicts on the relevant cases, I see no reason to think that we must pick between them. Rather, they elucidate each other and shed light on the relevant phenomena. For instance: why do we tend to look for an explanation when a false belief is normically supported? Because the possibility of not-p was not one we were considering. Why do we tend not to look for an explanation when a false belief is not normically supported? Because not-p was already a real, live possibility. Thus, salience can help us understand normic support, and normic support can help us understand salience.

5.6.3 Statistical evidence and c-evidence

Not only can my account explain the three cases from section 5.3, but it also does better than the statistical evidence account in section 5.4. Recall the first worry for the statistical evidence account: it seems like I can rationally form a belief that p on the basis of an all-or-nothing statistic that supports p. My account can explain this. In the case where one knows that 100% of people who steal cell phones are men, one's evidence,

although statistical, will be B-evidence, and this explains why one can rationally believe a man did it on the basis. In the limit case, statistical evidence is B-evidence.

Second, unlike the statistical evidence account, my view tells us what kind of evidence is usually belief-justifying: B-evidence. This explains all of our cases: why hearing the winning numbers justifies your belief you lost the lottery,²⁴⁷ why the eyewitness testimony justifies you believing Jake is guilty, and why perceiving the blue computer screen justifies your belief that it is blue. In all of these cases, you can rationally form a belief that p because your evidence does not make salient the possibility of not-p. Of course, not all B-evidence will justify altering one's beliefs; this depends on a variety of factors, such as what evidence you already possess, how confident you are in that particular belief, etc. In many of these cases, however, when one rationally changes one's beliefs, this will generally be due to a gain or loss in B-evidence. When one ought not to, say, give up a belief on the basis of some B-evidence, it will often be because they have even stronger B-evidence in favor of that proposition. The close relationship between rational belief and B-evidence becomes apparent when all the B-evidence is taken into account.

Recall the case discussed above in which an 85% reliable eyewitness testifies that p.²⁴⁸ It is difficult to say whether one ought to form a belief on this basis; it is not pre-theoretically obvious what one ought to believe. However, we noted above that intuitions

²⁴⁷ See DeRose (1995: 24), Schaffer (2004).

²⁴⁸ Buchak (2014: 292).

about this case do seem to vary with the way the case is described or the way the evidence is presented.

My view can explain this ambivalence, and specifically it can explain why the way the evidence is presented matters. Whether one ought to form a belief will depend on what the evidence makes salient. If the witness simply asserts *p* (even if you know upon reflection that the witness is not perfectly reliable), then their testimony, qua B-evidence, can justify belief. At the same time, it is plausible that if the lawyer emphasizes the fact that a certain eyewitness is *only 85% reliable*, then it is much less clear that you ought to form a full-out belief on the basis of the eyewitness's testimony. Rather, you ought to pay more attention to the possibility that the witness is unreliable; thus, the possibility that not-*p* is salient. Thus, in this evidential situation, their testimony is a piece of C-evidence rather than a piece of B-evidence. Nonetheless, you ought to still give the witness some evidential weight, and adjust your credences accordingly. In short, cases in which you know the testifier is less than fully reliable can count as either B-evidence or C-evidence, depending on the specifics of the case and to what agents with the evidence ought to be paying attention.

One might worry that this is a counterintuitive consequence rather than an interesting feature of my account. It seems odd that presenting the same piece of evidence in two different ways can affect whether agents *ought* to form beliefs in response to evidence. Of course, as a matter of psychological fact, our dispositions to form beliefs might differ based on the way the evidence is presented. Rational agents, however, would not be sensitive to epistemically irrelevant features about the way evidence is presented,

e.g., the difference between someone's testimony and a lawyer's emphasizing the fact that the testifier is not fully reliable.²⁴⁹

In response, I acknowledge this is *prima facie* counterintuitive, but the seeming counterintuitiveness is due to a conflation of two different kinds of rationality. Recall that the notion of rationality I am considering applies to agents like us. As agents with limited cognitive faculties, we cannot always consider the possibility that we are wrong, but will do so when our evidence brings this possibility to mind. Whether this possibility ought to come to mind for finite agents can, in some cases, be a matter of the way the evidence is presented. This will, in turn, affect whether a cognitively limited agent ought to believe on that basis. Idealized agents, on the other hand, will not be affected by the presentation of evidence in this way because they can consider the possibility of error in every situation. Thus, I commit to the following two claims:

- ◆ How evidence is presented makes no difference to the appropriate doxastic response of ideal agents.
- ◆ How evidence is presented *can* make a difference to the appropriate doxastic response of non-ideal, rational agents.

When these two senses of rationality are disambiguated, the counterintuitiveness goes away. One might wonder, given this distinction: what is the difference between credence-justifying evidence and belief-justifying evidence for *ideally rational agents*? If ideally rational agents have beliefs, we would need a different story about rational belief formation for these agents. However, some have suggested that the primary reason

²⁴⁹ Thanks to Fritz Warfield.

we have beliefs is to simplify reasoning by ruling out small error possibilities;²⁵⁰ on this picture, it is natural to think that ideally rational reasoners would not have beliefs.²⁵¹ I will not take a stand on this debate, but it has important consequences for a further project that extends the theory of evidence to include the ideally rational.

Finally, my account can explain why many have been tempted to endorse the statistical evidence view, that we ought not form/alter beliefs on the basis of statistical evidence. Naked statistical evidence for p , excluding cases of 0% and 100%, will almost always make the possibility of not- p salient; for this reason, my view can vindicate the insight that, in many cases, it seems irrational to form beliefs on the basis of statistics alone. Thus, I do not want to fully reject the statistical evidence account; it gives us insight into the nature of rational belief. My account should be preferred, however, because it gets even more cases right and gives a more complete explanation of the nature of rational belief and credence.

5.7 Conclusion

In this chapter, I have argued that, while it is irrational to base a belief on mere C-evidence, rational belief is based on B-evidence. I examined three cases in which rational belief and rational credence come apart: lottery cases, cases of naked statistical evidence, and hedged assertions, with an eye toward finding a unified explanation for these cases. I argued that the statistical evidence view, while illuminating, is problematic and in need of

²⁵⁰ See especially Staffel (2017, Forthcoming_a), and also Lin (2013), Lin and Kelly (2012), Wedgwood (2012), Smithies (2012: 278), Tang (2015), Weatherson (2016), Staffel (Forthcoming_b).

²⁵¹ See Ross and Schroeder (2014), especially the last section, “Historical Postscript.”

supplementation. I suggested my own view: that it is irrational to alter one's beliefs on the basis of C-evidence, but rational to alter them on the basis of sufficient B-evidence.²⁵² I argued this explains all three of the cases in question but does better than the statistical evidence view. Thus, I suggest that the distinction between B-evidence and C-evidence does important work with respect to the question of how rational belief and rational credence respond to evidence.²⁵³

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²⁵² I apply this view to questions about the rationality of faith in Jackson (forthcoming_b).

²⁵³ Thanks to Andrew Moon, Blake Roeber, Fritz Warfield, John Keller, Martin Smith, Renee Bolinger, Greta Turnbull, Wes Siscoe, Calum Miller, Lara Buchak, Alan Hajek, Jeff Tolly, Ben Lennertz, Ting Lau, Anne Jeffery, Nevin Climenhaga, Dustin Crummett, Ross Jensen, Rebecca Chan, Julia Staffel, Robert Audi, Lizzie Fricker, Daniel Nolan, the Doxastic Voluntarism seminar and the epistemology reading group at Notre Dame, and audiences at the 2016 St. Thomas Summer Seminar, 2016 Society for Christian Philosophers Eastern Regional Meeting, the 2016 Indiana Philosophical Association, the 2017 Philosopher's Cocoon Conference, and three anonymous referees from this journal for helpful comments that improved this chapter in many ways.

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CHAPTER 6:
BELIEF, CREDENCE, AND FAITH

Abstract: I argue that faith’s going beyond the evidence need not compromise faith’s epistemic rationality. First, I explain how some of the recent literature on belief and credence points to a distinction between what I call B-evidence and C-evidence. Then, I apply this distinction to rational faith. I argue that if faith is more sensitive to B-evidence than to C-evidence, faith can go beyond the evidence and still be epistemically rational.

Keywords: Belief; Credence; Faith; Evidence; Rationality; Lottery paradox; Statistical evidence; Saliency

6.1 Introduction

In the Preface to the Second Edition of his *Critique of Pure Reason*, Kant famously reports, “I have... found it necessary to deny knowledge, in order to make room for faith.”²⁵⁴ Similarly, Kierkegaard contrasts using his powers of reasoning with acting by virtue of the absurd, noting that “The Absurd, or to act by virtue of the absurd, is to act upon faith.”²⁵⁵ Both of these authors suggest that faith is opposed to epistemically rational attitudes: Kierkegaard contrasts having faith with acting in accordance with

²⁵⁴ Kant (1787/1933), 29.

²⁵⁵ Kierkegaard (1849).

reason, and Kant suggests that, at least in many cases, faith is incompatible with knowledge.²⁵⁶

These remarks hint at the famous problem of faith and reason. Specifically: it seems like epistemically rational attitudes are sensitive to evidence, including counterevidence. Yet it is essential to the nature of faith that it is resilient in the face of counterevidence.²⁵⁷ Some have argued that, for this reason, faith is simply irrational. For example, the New Atheists, such as Sam Harris and Richard Dawkins, suggest that faith closes one off to evidence and argument, and this leads to vices such as dogmatism and fundamentalism.²⁵⁸ Others, such as Kierkegaard, maintain that faith is epistemically irrational but nonetheless valuable. However, suppose that we don't want to say that faith is epistemically irrational. What other options do we have?

In this chapter, I argue that faith that *p* can be epistemically rational, even if it persists in light of significant evidence against *p*. To do so, I explore the relationship between rational belief and rational credence and relate it to rational faith. Specifically, I provide cases in which rational *belief* is insensitive to certain kinds of evidence. I argue that these cases point us to an important distinction between two types of evidence that I call B-evidence and C-evidence. Then, I apply this to rational faith, and argue that faith's being insensitive to certain kinds of evidence need not compromise faith's epistemic

²⁵⁶ I acknowledge there are delicate interpretative issues here, and I do not claim to give a full picture of Kant's or Kierkegaard's views on faith.

²⁵⁷ See Buchak (2012), 229 and Buchak (2017).

²⁵⁸ Dawkins (2006), 320, Harris (2004), 48. For a response to these arguments, see Jackson (forthcoming_b).

rationality. One key upshot of my view is that both rational belief that p and rational faith that p come apart from one's probabilistic support for p.²⁵⁹ Overall, this is my basic argument:

(1) Rational belief is more sensitive to B-evidence than to C-evidence. [premise, supported by contemporary epistemology]

(2) If rational belief is more sensitive to B-evidence than to C-evidence, then faith is both (i) more sensitive to B-evidence than C-evidence and (ii) rational. [premise]

(3) Faith is both (i) more sensitive to B-evidence than C-evidence and (ii) rational. [1,2]

(4) One way for an attitude A to “go beyond the evidence” is for A to be more sensitive to certain kinds of evidence than others. [premise]

(5) Thus, faith goes beyond the evidence and is rational. [3,4]

This chapter proceeds as follows. In **Section 6.2**, I defend premise 1 by summarizing some recent work in the literature on belief and credence. I explain a distinction between two kinds of evidence: B-evidence and C-evidence. In **Section 6.3**, I apply this distinction to rational faith and argue for premises 2 and 4. In **Section 6.4**, I describe a few generalizations and upshots that emerge from my picture and conclude.

A few caveats before I begin: first, the focus of this chapter is normative, not descriptive. I am interested in rational faith (and rational belief & rational credence).

²⁵⁹ When I talk about probabilistic support in this chapter, the type of probability I have in mind is *epistemic probability*, or the probability of some proposition given one's evidence. For more on epistemic probability, see Goldstick (2000) and Fumerton (2004).

Thus, I am not primarily concerned with providing a psychological description of these mental states, but how these states function for a rational agent.

What notion of rationality am I working with? Philosophers have noted that there are many strands of rationality; some have suggested there are as many as nine different kinds.²⁶⁰ First, I am interested in *epistemic* rationality. This brings my account of faith's rationality in contrast with other accounts in the literature, which have focused on the practical rationality of action-oriented faith.²⁶¹ I am interested in the epistemic rationality of faith qua mental state, rather than the practical rationality of faith qua commitment to act. Second, I will focus on a specific strand of epistemic rationality that describes agents with the same cognitive powers as us who respond to evidence in an epistemically appropriate way. So, hold our mental processing power fixed; I am interested in questions about how we should respond to the evidence we encounter.

Finally, I am interested in propositional faith, or faith that some proposition is true. Many maintain this is not the only variety of faith. For example, Robert Audi (2011) contrasts propositional faith with attitudinal faith (faith in a person or entity) and volitional faith (a largely voluntary state of the will which disposes one to act certain ways).²⁶² Insofar as these varieties of faith are not subject to epistemic evaluation, my arguments in this chapter are not intended to apply to them. While I do not want to rule

²⁶⁰ See Cohen (2010), 663 and Plantinga (1993), vii-viii.

²⁶¹ See e.g. Buchak (2012) and McKaughan (2016).

²⁶² Audi (2011), Part II. Audi actually distinguishes between seven kinds of faith, but these are the main three.

out the wider applicability of my arguments, propositional faith is clearly epistemically evaluable, and thus I will focus there.

6.2 Belief, credence, b-evidence, and c-evidence

Belief is a familiar doxastic attitude; belief that p is taking p to be the case or regarding p as true.²⁶³ Yet we are more confident in some of our beliefs than in others. I believe both that $1+1=2$ and that my car is parked outside, but I am significantly more confident in the former belief than in the latter belief. For this reason, epistemologists have appealed to another doxastic attitude they call *credences*. Credences are, in many ways, similar to degrees of confidence. Credences are much more fine-grained than beliefs and are often given a value on the $[0,1]$ interval. For example, I have a credence of 1 that $1+1=2$, a 0.99 credence my car is parked outside, and a 0.5 credence that a fair 2-sided coin will land heads.²⁶⁴

6.2.1 Rational high credence without rational belief

A topic of recent interest to epistemologists involves the ways that belief and credence respond to evidence. In many cases where we gain significant evidence for some proposition p , we ought to both believe that p and have a high credence that p . I perceive a coffee cup on the table, so I both believe and have a high credence it is on the table. I hear from a reliable friend that the talk is at 3:00 today, so I believe and have a

²⁶³ Schwitzgebel (2015).

²⁶⁴ See Jackson (forthcoming_c) for an extended discussion of why the relationship between belief and credence is an important epistemological question.

high credence the talk is at 3:00. However, not all cases are like these. Sometimes, one's evidence generates a rational high credence but not rational belief. Three examples of these cases are as follows:

Lottery propositions: Suppose I have a lottery ticket that is part of a fair lottery of 100 tickets. I ought to have a high credence my ticket will lose (0.99). However, I ought not believe my ticket will lose.

There are at least two arguments that I ought not believe my ticket will lose. First, if I can rationally believe my ticket will lose, and rational belief is closed under conjunction, then I rationally believe the large conjunction that <ticket 1 will lose and ticket 2 will lose and ticket 3 will lose...>. However, I also believe the negation of this conjunction, since one ticket will win. Assuming it is irrational to have contradictory beliefs, I ought to reject one of the above assumptions, and a natural assumption to reject is that I ought not believe my ticket is a loser.²⁶⁵

The second is as follows: I cannot know my lottery ticket lost. Knowledge is the norm of belief. Therefore, I ought not believe my lottery ticket lost.²⁶⁶ Thus, it is plausible that I ought to have a high credence in but not believe lottery propositions; my evidence that I lost the lottery is credence-justifying but not belief-justifying.²⁶⁷

²⁶⁵ See Staffel (2015). For other discussions of the lottery paradox, especially with respect to the relationship between belief and credence, see Kyburg (1961), Foley (1993), ch. 4, Christensen (2004), ch. 2, Sturgeon (2008), Nelkin (2000), Collins (2006), Kelp (2017).

²⁶⁶ Staffel (2015). See Williamson (2000), 255.

²⁶⁷ See Kelp (2017) for an additional argument that it is irrational to believe lottery propositions. Horgan (2017) also maintains one ought not believe lottery propositions: "outright belief that one's lottery ticket will lose does not seem epistemically justified, no matter how high are the odds against winning" (242).

A second example of evidence that is credence-generating but not belief-generating is from Lara Buchak (2014), as follows:

Naked Statistical Evidence: Suppose I am a juror trying to figure out which bus company hit some victim, and 90% of the buses in town are operated by the Blue Bus Company. I ought not believe that the Blue Bus Company hit the victim on this basis, even though the evidence justifies raising my credence (potentially even significantly) that they did it.²⁶⁸

Not only does Buchak think this is the intuitive reading of the cases, but it is also justified by legal norms. For example, it would be impermissible to convict the Blue Bus Company based on statistical evidence alone.²⁶⁹

A final case is from Martin Smith (2010), adapted from Dana Nelkin (2000):

Non-normic support: Suppose I have set up my computer such that the background color is determined by a random number generator, and 1/1,000,000 times it is red; otherwise it is blue. One day I turn on my computer and go into the next room to do something else. I ought to have a very high credence (0.999999) that my computer's background is blue, but I ought not believe it is blue.²⁷⁰

Smith notes, however, that if his friend Bruce wanders in and sees a blue background on the computer, it seems like Bruce can justifiedly believe the background is blue. Smith uses the term “normic support” to describe the kind of evidential support Bruce has; Smith merely has “non-normic” support for this proposition. Smith maintains that what differentiates normic and non-normic support involves when evidentially

²⁶⁸ Buchak (2014). The case originates in Schauer (2003). See also Staffel (2015).

²⁶⁹ See Thomson (1986), Cohen (1977), Colyvan et al (2001), Enoch et al (2012) and Blome-Tillmann (2015, 2017).

²⁷⁰ Smith (2010), 13-14.

supported but false beliefs cry out for explanation. Specifically, when we have normic support for a belief and the belief turns out to be false, we seek some kind of explanation for why it is false. This is why, if Bruce's belief that the screen was blue is false, we would want to know why – was he hallucinating, or suddenly struck with color blindness? However, when we have evidence that frequently but not normally supports some proposition, no such explanation is sought. If Smith's belief were false, we would not seek such an explanation.²⁷¹ Thus, when we have mere non-normic support for p, we are justified in having a high credence, but not believing that p.

In all three of these cases, there is evidence that is credence-generating but not belief-generating. These cases suggest that rational belief is not merely a matter of probabilistic support; whatever justifies belief isn't *merely* a high probability that the believed proposition is true.²⁷²

Another interesting feature of these cases is that there are close versions of the cases that seem to generate both rational belief and rational high credence. In the first case, when I hear the winning numbers announced and realize they are not my numbers, I rationally believe my ticket lost. In the second case, when I hear a reliable eyewitness testify that the Blue Bus Company is guilty, I rationally believe the Blue Bus Company is guilty. In the third case, Bruce rationally believes the background is blue based on his perceptual evidence.

²⁷¹ Ibid, 15-19.

²⁷² See Smith (2010, 2016). It is controversial whether maximal probabilistic support (i.e. to degree 1) justifies rational belief. *Prima facie*, it might seem that rational credence 1 that p entails rational belief that p, but some, e.g. Moss (2018) have suggested there are cases of rational credence 1 without rational belief (33).

Why might this be? What kind of evidence affects our beliefs and credences, and what kind of evidence affects only our credences? I will suggest a distinction between two types of evidence that makes sense of the above cases.²⁷³

6.2.2 B-evidence and c-evidence

What is the difference between evidence that is credence-generating and evidence that is belief-generating? I submit that the answer has to do with the following distinction:

B-evidence: Evidence for *p* that does *not* make salient the possibility that not-*p*.

C-evidence: Evidence for *p* that makes salient the possibility that not-*p*.²⁷⁴

A salient possibility is a possibility to which an agent is rationally paying attention.²⁷⁵ To illustrate this distinction further, consider some examples. A common way to get B-evidence is to get evidence that *p* is true without qualification, such as when someone asserts *p*. C-evidence for *p* includes statistical evidence for *p*, and also includes evidence for *p* that is hedged or qualified in some way, e.g., “*P* is decently likely, but I’m

²⁷³ One might think that the answer is that rational agents do not form beliefs on the basis of statistical evidence alone. While this suggestion gets many of the cases right, I argue that my account is superior in Jackson (forthcoming_a).

²⁷⁴ Thanks to Blake Roeber. See Ross and Schroder (2014), 18. One might wonder in what sense B-evidence and C-evidence are different *kinds* of evidence. I remain agnostic on whether this is a metaphysically robust, joint-carving distinction, but I do think that it has epistemic significance. This account of the difference between belief-generating and credence-generating evidence is further developed in Jackson (forthcoming_a).

²⁷⁵ See Lewis (1996), 559. See especially his “Rule of Attention.” For more on the role of salience in B-evidence and C-evidence, see Jackson (forthcoming_a).

honestly not sure.” Given this distinction, we can explain the cases above in the following way:

Rational belief is more sensitive to B-evidence than to C-evidence.

Note that (1) is the first premise of our argument. Since the word “sensitive” is somewhat vague, we can clarify (1) in the following way:

(1.1) It is usually irrational to believe that p on the basis of mere C-evidence for p.²⁷⁶

(1.2) It is usually rational to believe that p on the basis of (good) B-evidence for p.

6.2.3 Explaining the cases

(1.1) and (1.2) explain why I ought not believe lottery propositions, propositions for which I have only statistical evidence, and propositions with mere non-normic support. It also explains why I *can* believe the relevant propositions in the alternative versions of the cases mentioned above.

In the lottery case, I have evidence that directs my attention to the possibility that I might win. I know that one ticket is going to win, and winners are celebrated and given lots of attention. When a lottery ticket is in my hand, my evidence calls me to pay attention to the possibility that I might just be the winner, so my evidence is C-evidence. Since rational belief is not based on C-evidence alone, I ought not believe I will lose. However, if I am given B-evidence for the proposition that I lost, I can rationally believe

²⁷⁶ (1.1) is qualified because there may be exceptions to it, such as the following: suppose I know that the bus arrives on time in 98% of cases, and on that basis, I believe it will arrive on time today. It is not obvious that my belief is irrational, even though it has merely C-evidence in its favor. Sometimes, a low-stakes belief with extremely good statistical evidence going for it seems at least rationally permissible, and (1.1) makes room for that. For related cases see Pasnau (2018). Thanks to an anonymous referee.

I lost; this happens when I hear the winning numbers (that aren't on my ticket). Thus, (1.1) and (1.2) can explain lottery cases.

In the statistical evidence case, the fact that 90% of the buses in a town are run by the Blue Bus Company is merely C-evidence that the Blue Bus Company is guilty; it makes salient the possibility that another bus company might be responsible. Thus, I ought not believe the Blue Bus Company is guilty or convict them on this basis. However, when a reliable eyewitness testifies that they saw one of the Blue Bus Company's buses hit the pedestrian, I have B-evidence that the Blue Bus Company is responsible, and ought to both believe they did it and (in normal circumstances) convict them on this basis.

In the non-normic support case, the fact that Smith's computer background is determined by a random number generator that makes it blue 999,999/1,000,000 times is mere C-evidence that the background is blue. However, upon seeing the blue background, Bruce has B-evidence that the background is blue.

Thus, I maintain that the distinction between B-evidence and C-evidence plays an important role in the relationship between rational belief, rational credence, and evidence. However, while I have argued that my account can explain the above cases well, I have not considered other accounts that may also explain these cases. Thus, while I prefer my suggested account, I also think that the distinction between B-evidence and C-evidence could be spelled out in a more ecumenical way.²⁷⁷ For example, consider the following chart:

²⁷⁷ Thanks to an anonymous referee.

TABLE 6.1:
B-EVIDENCE AND C-EVIDENCE

B-Evidence	C-Evidence
<ul style="list-style-type: none"> ◆ Many cases of testimony and perception, especially e.g. flat-out assertions, clear perceptions of medium-sized objects ◆ Evidence for p that would require an explanation of p turned out to be false ◆ Evidence for p that doesn't make salient the possibility of not-p 	<ul style="list-style-type: none"> ◆ Evidence for lottery propositions ◆ Statistical evidence ◆ Hedged assertions ◆ Evidence for p that would not require an explanation of p turned out to be false ◆ Evidence for p that makes salient the possibility of not-p

One could define B-Evidence and C-Evidence as the items listed above (or a subset of them); this would be less controversial, explain the cases, and apply equally well to the problem of faith and reason. I will proceed assuming my preferred account is true, but it is worth noting that many of the same moves can be made while employing a less controversial version of the distinction.

Now, I will argue that the distinction between B-evidence and C-evidence is important for understanding rational faith.

6.3 Faith, b-evidence, and c-evidence

6.3.1 A defense of premise 2

In this section, I defend the second premise of my argument:

- (2) If rational belief is more sensitive to B-evidence than to C-evidence, then faith is both (i) more sensitive to B-evidence than C-evidence and (ii) rational.

The idea behind (2) is that there is rational parity between faith and belief; if belief can be more sensitive to some kinds of evidence than others and nonetheless rational, then it seems as though rational faith can be similarly sensitive to some kinds of evidence more than others.

To further defend and explain (2), I will give four cases of faith that are structurally similar to the lottery, statistical, and non-normic cases in section 6.2. If rational belief is more sensitive to B-evidence than C-evidence in these cases, then structurally similar cases of faith can be rational as well. Or so I will argue.

Case 1: Sally knows (let's say) that 90% of philosophers keep secrets. Sally is considering telling Rebecca, her new philosopher friend, a secret, but since Sally just met her, Sally doesn't have faith that she is trustworthy. Sally doesn't have faith that Rebecca will keep the secret just based on the statistic about philosophers.

Case 1 is structurally similar to the case of naked statistical evidence case. I cannot believe that the Blue Bus Company is guilty simply because they operate 90% of the buses in town, and Sally cannot have faith that Rebecca is trustworthy just because 90% of philosophers keep secrets. However, consider a version of the case on which Sally receives B-evidence that Rebecca is trustworthy, e.g. Sally receives testimony from some of Rebecca's friends that Rebecca is honest and dependable, or Sally gets to know Rebecca and perceives these virtues in her. Then, Sally can rationally have faith Rebecca will keep the secret. This second version of the case parallels the case where I have testimonial evidence rather than merely statistical evidence that the Blue Bus Company is guilty. The testimony (B-evidence), but not the mere statistic (C-evidence), justifies rational belief and rational faith.

Case 2: John does not have faith that God exists. He reads online about the fine-tuning argument, which purports to show that facts about the physical conditions required for life make theism much more probable than atheism. John finds the argument convincing, and raises his credence that God exists; however, the evidence from the fine-tuning argument does not produce in John faith that God exists.

As in Case 1, Case 2 parallels the cases above in which C-evidence generates a high credence that p but not belief that p. The mere fact that the fine-tuning argument makes theism probable does not justify John's having faith that God exists. However, suppose John hears his friend Sarah's testimony. Sarah describes her personal relationship with God and ways that God has helped her and cared for her. After hearing Sarah's story, John has faith that God exists. The B-evidence that God exists from Sarah justifies John's faith that God exists.

Cases 1 and 2 directly parallel the cases of rational belief above, in which I have a high credence in p but do not believe p. However, the distinction between B-evidence and C-evidence also enables the generation of cases with the opposite structure: belief that p is rational, even though I get evidence that (even significantly) lowers my credence that p. For example, you might have an eyewitness testify that the Green Bus Company is guilty, and then learn that the Green Bus Company only operates 10% of the buses in town. Similarly, I might perceive the computer's red background, and then learn that the background is determined by a random number generator which makes this extremely unlikely. In both cases, the C-evidence against the proposition requires me to lower my credence in p, but I can nonetheless still rationally believe p. These cases are especially interesting when applied to faith, because they are cases in which epistemically rational faith can remain steadfast in light of counterevidence. For example:

Case 3: Billy is happily engaged and will be married soon. He has good evidence that he and his spouse are uniquely sincere and serious. Based on their backgrounds and personalities, he has reason to think that their level of commitment is stronger than that of many other couples. Billy has faith that he and his future spouse will not get divorced. Then, Billy learns that half of all marriages end in divorce. Learning this statistic does not affect his faith that they will not get divorced.

In Case 3, Billy has good B-evidence that he and his spouse won't get divorced. The statistic (C-evidence) that Billy learns ought to count against this to some degree, and Billy should lower his credence. Nonetheless, it still seems rational for Billy to continue to have faith that he and his spouse will remain committed. Thus, Billy's faith is rational, even upon his receiving the statistical counterevidence.

Consider a final case:

Case 4: Susan, a Christian, has had many personal experiences of God through prayer and liturgy. She has faith that an all-good God exists (call this proposition G). She reads an article that presents the evidential problem of evil; it uses examples of evil in the world to (purportedly) lower the probability of G. Susan continues to have faith that G despite her new evidence that lowers the probability of G.²⁷⁸

In Case 4, assume that Susan's religious experiences are evidentially significant.²⁷⁹ Then, Susan has good B-evidence for G. Susan then gets evidence that lowers the probability of G. Getting this evidence might require Susan to lower her credence in G, but in virtue of the fact that it is C-evidence, it does not flat out establish that the existence of an all-good God is impossible. Since Susan's religious experiences

²⁷⁸ Thanks to an anonymous referee.

²⁷⁹ For a defense of the claim that religious experience can be evidentially significant, see Alston (1991).

are quite evidentially significant, Susan can nonetheless rationally continue to have faith that G.

It is worth noting, however, that while rational faith that p is consistent with C-evidence against p, it isn't consistent with any amount of C-evidence against p. Presumably, if the C-evidence were significant enough to substantially lower Susan's credence (say, well below 0.5), continuing to have faith may no longer be rational.²⁸⁰ Uncontroversially, rational faith's steadfastness will depend on the weight of the evidence for and against the proposition of faith. However, the point here is that the *type of evidence* also matters; rational faith is not a mere matter of probabilistic support. Rational faith, like rational belief, can remain steadfast in cases where it otherwise would not, if it is supported by good B-evidence and has merely or mainly C-evidence going against it.

Thus, I maintain that if rational belief is more sensitive to B-evidence than to C-evidence, then rational faith is more sensitive to B-evidence than C-evidence as well. The cases that support this thesis about belief can be extended to cases of faith. In the same way that rational belief is not merely a matter of probabilistic support, rational faith is also not merely about probabilistic support.

Another way of putting this point is that the Lockean view of rational belief and rational faith is false. The Lockean Thesis, usually stated as a thesis about belief, claims that S's belief that p is rational iff it is rational for S to have a sufficiently high credence

²⁸⁰ At least, continuing to have propositional faith may no longer be rational. There may be other types of faith (e.g. acts of faith) that could be rational in this situation.

that p.²⁸¹ One could also hold a Lockean view of rational faith, i.e., S's faith that p is rational iff it is rational for S to have a sufficiently high credence that p. I have argued that both of these versions of the Lockean Thesis are false. One can have a high credence in p but not have rational faith that p, and rational faith that p is consistent with a rational low credence in p.

We now have a defense of premises (1) and (2), and therefore our first conclusion:

(3) Faith is both (i) more sensitive to B-evidence than C-evidence and (ii) rational.

We can fill out this account as we did with rational belief, with a similar understanding of sensitivity. That is:

(3.1) It is usually irrational to have (or lose) faith that p on the basis of mere C-evidence for p,

and

(3.2) It is usually rational to have faith that p on the basis of (good) B-evidence for p.

6.3.2 A defense of premise 4

In this section, I defend premise (4) of my argument:

(4) One way for an attitude A to “go beyond the evidence” is for A to be more sensitive to certain kinds of evidence than others.

²⁸¹ See Foley (1993), 140-141. For defenses of the Lockean Thesis, see Foley (1993), ch. 4, Christensen (2004), Sturgeon (2008), Lin and Kelly (2013), Locke (2013), Fitelson & Shear (2018), Dorst (2019). For arguments against the Lockean Thesis, see Friedman (2013), Buchak (2014), Staffel (2015), Smith (2010, 2016), Kelp (2017).

“Going beyond the evidence” is, admittedly, a phrase that is both metaphorical and somewhat vague.²⁸² However, I maintain that at least one way that S’s attitude A might go beyond the evidence is that A is insensitive to certain parts of S’s body of evidence. A paradigm example of an attitude that does *not* go beyond the evidence is rational credence; S’s credence, if rational, tightly tracks the amount of evidence S has for or against some proposition. Nonetheless, I have argued that certain attitudes do not perfectly track evidence in this way, even though they are rational. One may have a lot of evidential or probabilistic support for some proposition and nonetheless fail to have justification to believe it or have faith that it is true. Additionally, one might have evidence that justifies faith/belief, and be justified in maintaining these attitudes even in light of counterevidence that lowers (even significantly) the probability of the proposition in question. Once one sees that probabilistic support comes apart from what justifies faith/belief, it becomes clear that there is a sense in which both attitudes go beyond the evidence. They remain steadfast as C-evidence lowers and raises the probability of the relevant proposition.

Here, an objector might worry that, even if I have pointed out an interesting sense in which rational faith goes beyond the evidence, my account also entails that rational *belief* goes beyond the evidence. But that’s a somewhat odd suggestion; *prima facie*, belief does not seem to be an attitude that goes beyond the evidence. My response is as follows: if faith entails belief, this is not surprising. If faith does not entail belief, then faith can go beyond the evidence in a way that belief does not.

²⁸² See Buchak (2012), 229-232, for more on faith and going beyond the evidence.

Suppose first that faith entails belief. Most who have defended the view that faith entails belief argue for a “belief-plus” view of faith, on which faith is partially constituted by belief.²⁸³ On most versions of the “belief-plus” view, faith is a subset of our beliefs that meet certain other conditions, e.g. the ones we have an affective attitude toward. If faith just is a kind of believing, and faith goes beyond the evidence, then at least a subset of one’s beliefs do as well. Of course, it is a leap from this to say that *all* beliefs go beyond the evidence, but this model makes that conclusion much less of a bullet to bite. So, on the “belief plus” model, the conclusion that belief goes beyond the evidence is not surprising.

Suppose instead that faith does not entail belief.²⁸⁴ Then, faith can go beyond the evidence in a way that belief does not, as faith may be even more steadfast in light of counterevidence than belief. Defenders of the view that faith doesn’t entail belief have argued that this can give faith a unique steadfastness in the face of counterevidence; one might receive counterevidence such that they can no longer rationally believe *p*, but this need not rule out rational faith that *p*.²⁸⁵ For example, suppose I get B-evidence for a proposition *p* that justifies both faith and belief that *p*. Then, I get significant C-evidence against *p*, such that my credence that *p* goes well below 0.5. Assuming that rational

²⁸³ See Mugg (2016) and Malcom and Scott (2016) for defenses of the belief-plus model.

²⁸⁴ See Audi (1991), Alston (1996), Kvanvig (2013, 2016), Howard-Snyder (2013, 2016, 2017) and McKaughan (2016, 2017) for defenses of the claim that faith does not entail belief. One might worry that this claim is in tension with things I’ve argued above; for example, why do we need to give so much attention to rational belief for an understanding of rational faith, if faith does not entail belief? In response, note that all I have argued above is that faith and belief share a certain necessary condition that involves sensitivity to evidence. This need not rule out the idea that it is possible to have faith that *p* without believing that *p*; the attitudes can otherwise come apart in many ways. Thanks to an anonymous referee.

²⁸⁵ See, e.g. Audi (1991), Howard-Snyder (2013, 2016), McKaughan (2016).

credence well below 0.5 that p is inconsistent with rational belief that p (lower the credence as you like), I can no longer rationally believe that p . However, this may not rule out rational faith, if faith does not entail belief. As Dan Howard Snyder (2013) points out, I may have other attitudes toward p that count toward faith that p : I accept that p , I believe p is not especially improbable, I believe p is more likely than alternatives, I desire that p , etc. Thus, on this view of faith, faith that p can be steadfast in light of significant evidence against p – potentially even more steadfast than belief. There may still be some sense in which belief goes beyond the evidence, but faith does so in a more drastic and significant way.

Thus, I conclude that one way an attitude goes beyond the evidence is for that attitude to be more sensitive to some parts of a body of evidence than other parts. While this might entail that rational belief goes beyond the evidence, this is either not surprising or occurs in a much more modest way than in the case of rational faith.

6.4 Upshots and conclusion

There are several noteworthy features of faith my view captures. First, this picture of faith explains the personal aspect of faith. Many paradigm examples of B-evidence are testimonial.²⁸⁶ Faith's sensitivity to testimonial B-evidence more than C-evidence explains why community and personal interaction is so important to faith, and

²⁸⁶ Especially when the content of the testimony is not hedged or statistical. However, this might depend on one's view of testimony. On certain reductionist views of testimony, it might be less straightforward that testimony is generally B-evidence. For example, if what grounds a testimonial belief is e.g. "S asserted p and S is statistically reliable," testimonial evidence begins to look like C-evidence. Thanks to an anonymous referee.

faith is a virtue and a vital characteristic of strong communities. Further, a clear perception that p is also paradigm example of B-evidence for p, and this can explain the idea that perception and experience of God can lead to rational religious faith.²⁸⁷ Thus, my view explains why having a tight-knit religious community, a close relationship with God, and religious experiences are important aspects of religious faith.

Second, it is notable that many common objections to religious faith are based on C-evidence. For example, the evidential problem of evil purportedly lowers the probability of the existence of an all-good God, but is not B-evidence against God's existence. Some arguments against the existence of miracles are also plausibly construed as C-evidence, insofar as they purport to lower the probability of a miracle's occurring, given the regular laws of nature we observe. Further, direct experiences of God's non-existence that would count as B-evidence for atheism seem quite rare, if they occur at all.²⁸⁸

Third, my account provides a picture that divides our epistemic lives into two camps, putting credences, C-evidence, and statistical evidence in one epistemic group, and belief, faith, and B-evidence in another epistemic group. One suggestion is that we have two different "epistemic toolboxes," and which toolbox we use depends on both our epistemic and practical situation.²⁸⁹ This further supports the idea that belief and faith

²⁸⁷ See Alston (1991), Turri (2008), West and Pelsler (2015).

²⁸⁸ Thanks to an anonymous referee.

²⁸⁹ This is also supported by the "adaptive toolbox" model in psychology. See Payne et al (1993), Gigerenzer and Goldstein (1996), Gigerenzer et al. (1999), Payne & Bettman (2004).

have a similar function, and this role is different than the role of credence and C-evidence.²⁹⁰

Finally, some, such as Jacob Ross and Mark Schroeder, have suggested that one reason we have beliefs is because of our non-ideal cognitive state.²⁹¹ While an ideal agent might reason using only credences, beliefs are necessary because we do not have the cognitive power to assign probabilities to every relevant proposition and do the (large and complex) resulting calculation.²⁹² (Recall that the notion of rationality I am concerned with is how we ought to respond to evidence, given our limited cognitive faculties). Ross and Schroeder's suggestion is, of course, controversial, but is potentially interesting when combined with my view of faith. One might think faith is similar to belief in that it is a result of our non-ideal cognitive state. If we could access and perfectly assess all the relevant evidence for and against a proposition, faith might not be necessary. There is some evidence from religious texts that faith is necessary because of our cognitive limitations: we "live by faith and not by sight,"²⁹³ and "now we see things imperfectly, like puzzling reflections in a mirror, but then we will see everything with perfect clarity."²⁹⁴ I commit myself to a mere conditional claim here: if beliefs are a result of our

²⁹⁰ See Buchak (2014), Weisberg (forthcoming).

²⁹¹ See Foley (1993), ch.4, Ross and Schroeder (2014), Tang (2015), Weisberg (forthcoming).

²⁹² Ross and Schroeder (2014), 285-286. See also Kaplan (1996), Maher (1993), ch. 6, and Staffel (2017).

²⁹³ 2 Cor. 5:7 (English Standard Version).

²⁹⁴ 1 Cor. 13:12 (New Living Translation).

non-ideal cognitive state, and faith and belief function similarly with respect to evidence, it makes sense that faith would also be a result of our non-ideal cognitive state.

In conclusion, I have argued that faith can both be rational and can also “go beyond the evidence.” I have done so by arguing that rational belief is more sensitive to some parts of a body of evidence than other parts, and that the same can hold true for faith without compromising its rationality. I conclude that both rational faith and rational belief are more sensitive to B-evidence than to C-evidence. That this is true of rational belief explains why evidence that a ticket will lose the lottery and mere statistical evidence justify high credence but not belief. That this is true of faith, I have argued, provides an account of how faith can be both rational and go beyond the evidence. My hope is that my arguments in this chapter can be a part of the solution to the problem of faith and reason.²⁹⁵

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